

QUICK SELECTION GUIDE 2019



CEILING DIFFUSERS



SLOT DIFFUSERS



VENTILATION GRILLES



DISPLACEMENT FLOW
DIFFUSERS



OTHER AIR TERMINAL DEVICES



AIR WATER SYSTEM



DECENTRALISED VENTILATION





The art of handling air

TROX understands the art of handling air like no other company. Our slogan "The art of handling air" is where we derive our mandate: "Air is life". For all beings depend on air; it is one of the most natural and at the same time one of the most precious goods. [Good air is a factor in people's quality of life;](#) this is why it should be improved. For us, [well-being, safety and efficiency are at the centre of our actions, as people are the measure of all things and their well-being is our goal.](#)

Our products should therefore add to the well-being and comfort of people, i.e. provide indoor air of a good quality. Our production processes have to be efficient, and the resulting products have to be energy-efficient. All components have to be safe to install, safe to use and ensure safety, for example, with regard to fire protection.

Since the company's inception in 1951, we have been developing and producing advanced components, units and systems for the ventilation and air conditioning of rooms as well as for fire and smoke protection. We have become a global leader of innovation in these fields. TROX and their X-Fans building fans ideally complete the TROX portfolio.

The Heinz Trox Foundation, which was founded in 1991 and based in Neukirchen-Vluyn, has a 94 % stake in TROX GmbH. It is an expression of the life's work of its founder, Heinz Trox, and its founding paved the way for [TROX GmbH to continue as an independent company.](#) The object of the foundation is the advancement of scientific projects in the field of ventilation and air-conditioning technology and the support of social and cultural activities.



More than the sum of its parts

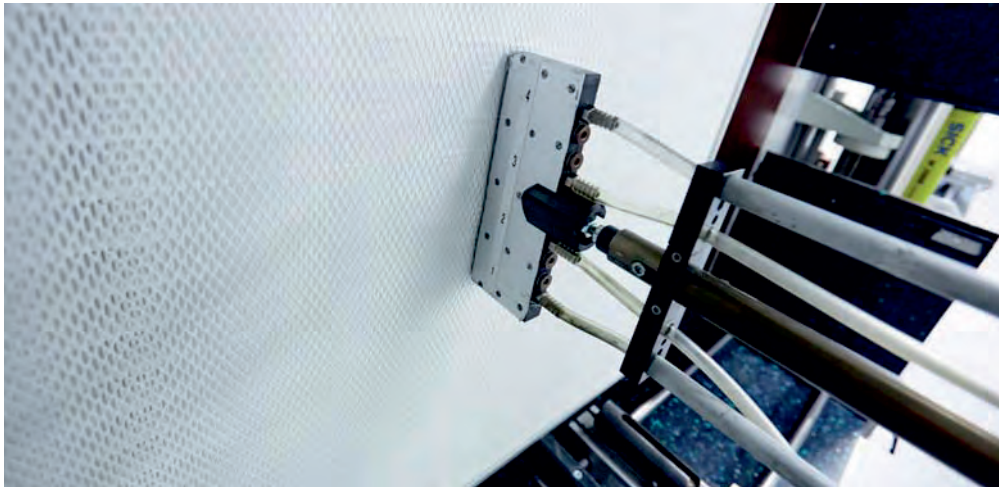
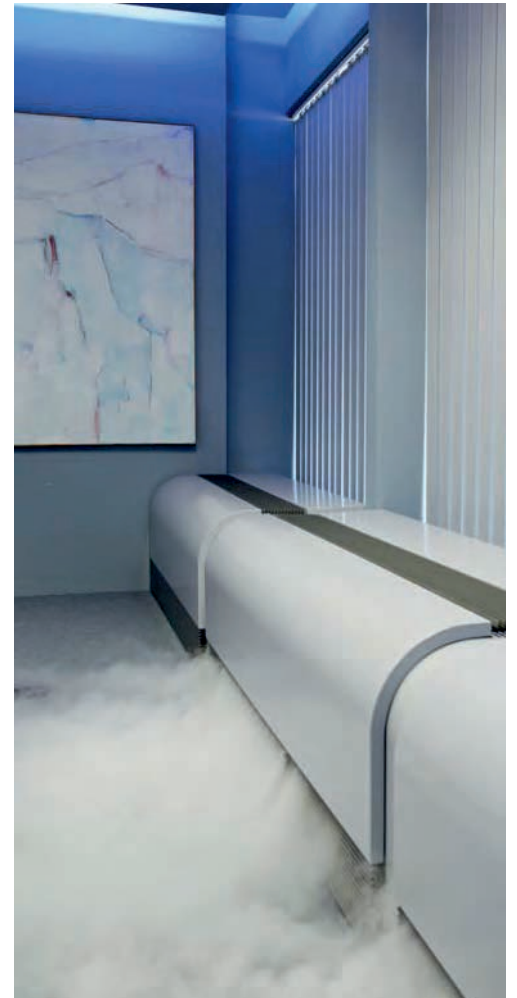
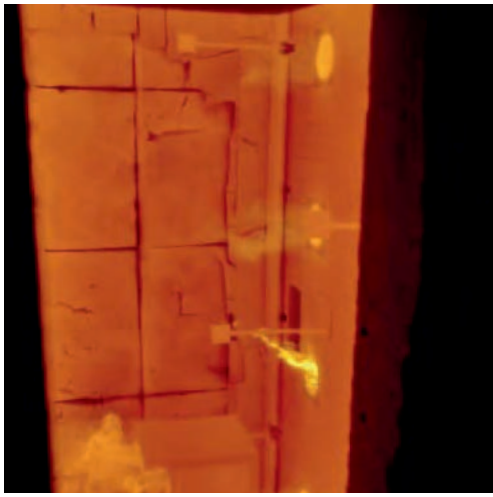
Modern buildings are unimaginable without individually designed air-conditioning and ventilation systems. Architecture and technical functions should complement each other and form a dynamic unit of perfectly coordinated components, devices and systems. For a project to be successful, comprehensive product and systems expertise in the field of ventilation and air conditioning is indispensable. **TROX offer all this from a single source.** The benefits for specialist consultants and HVAC contractors: **one face to the customer.**

Working closely with its customers, TROX develops demand-based solutions that take the relevant criteria for each building into account and meet the requirements of its occupants. This close cooperation leads to sustainable solutions that help to increase people's well-being and to protect life and the environment.

The wide variety of components is what forms the basis of our company. Developments in technology, particularly increasing **digitalisation** – in our sector also – has allowed us to combine various components and devices to create **sub-systems and systems**. As a result, TROX today offers closed loop control and open loop control for a wide range of different applications of ventilation and air-conditioning technology.

- Intelligent control for centralised room air conditioning (X-CUBE control)
- Demand-based control for rooms and zones (X-AIRCONTROL)
- Control of fire and smoke protection systems (TROXNETCOM)
- Control of smoke exhaust fans (X-FAN control)
- Room air management for sensitive areas (LABCONTROL) and
- Visualisation, open loop control and closed loop control of the entire air conditioning and ventilation system (X-TAIRMINAL)

These open loop control and closed loop control systems from TROX work as a system unit to ensure an energy-efficient, safe and highly functional system with a high level of comfort for a number of different types of buildings.



Always a step ahead

Our extensive research and development efforts help to find innovative solutions in all areas of indoor ventilation and air conditioning technology. In total, TROX has over [450 property rights worldwide](#) and [12 development centres](#). In addition to the continuous and planned development work for individual product groups, project-related development is becoming increasingly important.

The [International Center Fire Protection](#) is located at the TROX Group International Head Office in Neukirchen-Vluyn. It is the most modern fire protection laboratory in Europe. The test facilities enable fire tests to be carried out in accordance with all the established international standards. The furnace is the heart of the facility, being large enough to test huge tunnel dampers for the smoke extraction of underground transport systems.

In our [International Center for Air Conditioning and Acoustics](#), in addition to two reverberation chambers – as almost every new or further developed product is acoustically measured and optimised – there are various test equipment for control, indoor air and filter technology as well as demo labs for air management systems or air flow studios.

The main activities of our R&D include:

- Developing new products and technologies
- Optimising existing products
- Project-related tests with product development
- Preparations for technical documentation, lectures and publications and
- Customer support

The Research & Development department also works closely with universities and research institutions around the world.

TROX

International subsidiaries

TROX Arabia
TROX Argentina
TROX Australia
TROX Austria
TROX Belgium
TROX Brazil
TROX Bulgaria
TROX China
TROX Croatia
TROX Czech Republic
TROX Denmark
TROX France
TROX X-FANS Germany
TROX Hong Kong
TROX Hungary
TROX India
TROX Italy
TROX Malaysia
TROX Morocco
TROX Mexico
TROX Middle East
TROX Netherlands
TROX Auranor Norway
TROX BSH Poland
TROX Romania
TROX Russia
TROX Serbia
TROX South Africa
TROX Spain
TROX HESCO Switzerland
TROX Turkey
TROX UK
TROX USA

International representatives

Abu Dhabi
Algeria
Bosnia and Herzegovina
Chile
Cyprus
Finland
Greece
Iceland
Indonesia
Ireland
Israel
Latvia
Lithuania
Malta
New Zealand
Oman
Pakistan
Philippines
Portugal
Saudi Arabia
Singapore
Slovak Republic
Slovenia
South Korea
Sweden
Taiwan
Thailand
Tunisia
Ukraine
Uruguay
Vietnam
Zimbabwe

www.trox.de/en/international

We are here to help

Good advice doesn't need to be expensive, so please feel free to contact our experts directly. With a [comprehensive customer support service](#) and an extensive service network, TROX can guarantee a full range of services from the initial design stage and throughout the entire life cycle of your system.

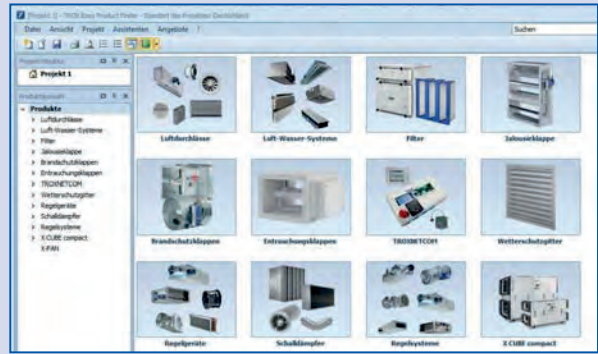
Client-oriented services are an integral part of the successful ventilation and air conditioning solutions at TROX. They decidedly improve the cost-effectiveness of any property during its life.

From as early as the design stage, you can benefit from intensive support from our employees. Thanks to direct contact with your personal TROX advisor and various design aids, you will be given the best chance of ensuring a successful project outcome from the very early stages of development. From product selection through to commissioning, you can count on optimum support from TROX.

Our Technical Service staff are also available beyond the commissioning phase as competent partners and advisors.

TROX also sets a precedent, in that it is continually striving for excellence – which is why TROX offers a wide-ranging training programme in its TROX Academy.

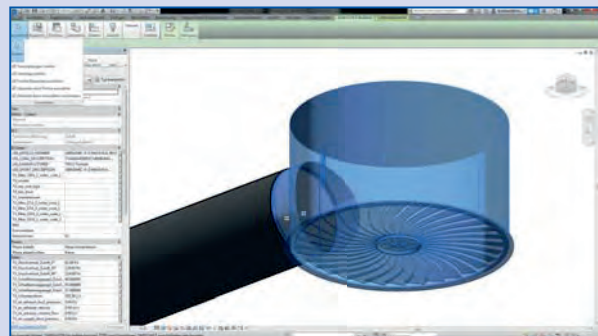
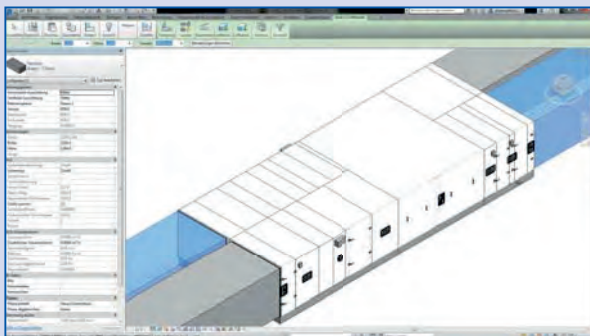
TROX Product Data / Easy Product Finder



X-BIM CAD Browser



Revit / AutoCAD



Simple, optimum design

With its intuitive operating concept, the [TROX design programme Easy Product Finder](#) offers fast, simple design of TROX products for projects. Reliable technical data, interactive design assistants and numerous report functions such as reports on input parameters and design results, specification texts and bills of materials, make the Easy Product Finder an indispensable tool in the building services engineering industry.

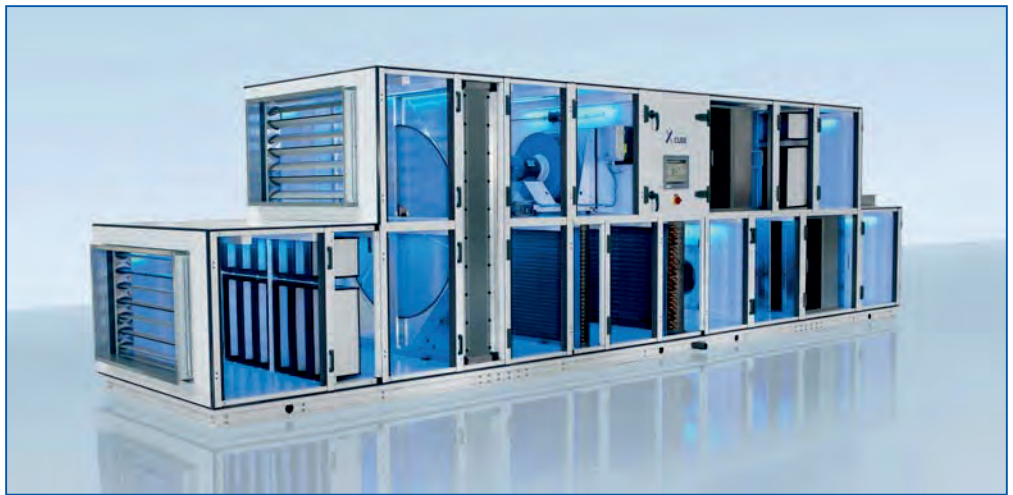
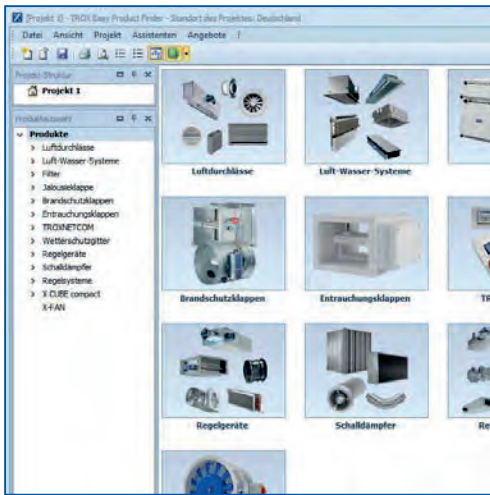
X-BIM – design with digital product models

Interdisciplinary building design and construction, computer-aided, and with all trades working on the same data model: this is what BIM is about. As early as in the project phase, a digital model of the building is created. All relevant data for the design, construction and management of an object are included and made available to all parties involved. To make the benefits of digital design efficiently usable, TROX provides a wide range of digital product data – free of charge – for a large number of TROX products.

One of our solutions is the X-BIM CAD browser to generate digital product data for TROX components and X-CUBE air handling units. At the touch of a button, you can import the data directly into the current Revit or AutoCAD project.

More information on BIM and TROX, the X-BIM CAD browser and all other solutions can be found on our website.

www.trox.de/bim



► Labor-Luft ► ► Perfektes Reiseklima ► ► 5-Sterne-Klima. ► ► Gesundes Klima ► ► Reine Luft ►

Sicheres Klima- und Luft-M Lüftungs- und Brandschutztechnik im Wohlbefinden und Sicherheit für den F Lüftungs- und Klimatechnik im Ho Mehr Sicherheit und Komfort in Intelligentes Klima- und Lüftungsma

TROX[®]TECHNIK
The art of handling air

KONTAKT HOME TROX WORLDWIDE LANGUAGE
PRODUKTE IHR KOMPETENZFELD SERVICES UNTERNEHMEN

PRODUKTE

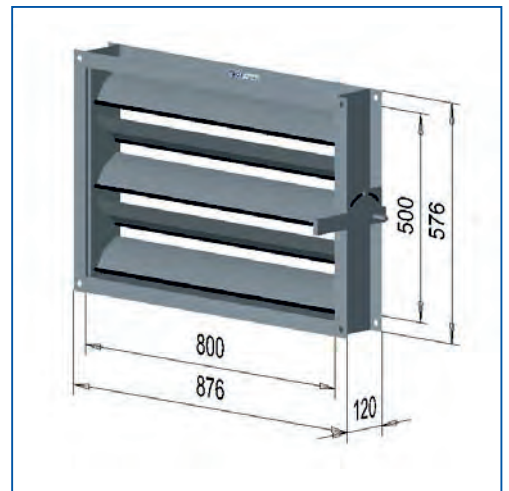
- Luftdurchlässe
- Luft-Wasser-Systeme
- Dezentrale Lüftung
- Schalldämpfer
- Brand- und Rauchschutzsysteme
- Regelgeräte
- Filtergeräte Filterelemente
- Raumlufttechnische Geräte
- X-FANS



Montage- und Betriebsanleitung DE/de

Brandschutzklappe

Serie FK-EU
gemäß Leistungserklärung
DoP / FK-EU / DE / 003



Deckendralldurchlässe Serie VDW

Mit niedriger Schalleistung für Komfortbereiche, mit einzeln manuell verstellbaren Luftleitelementen

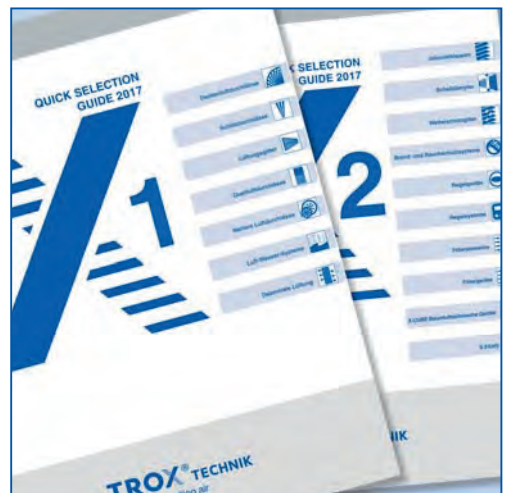
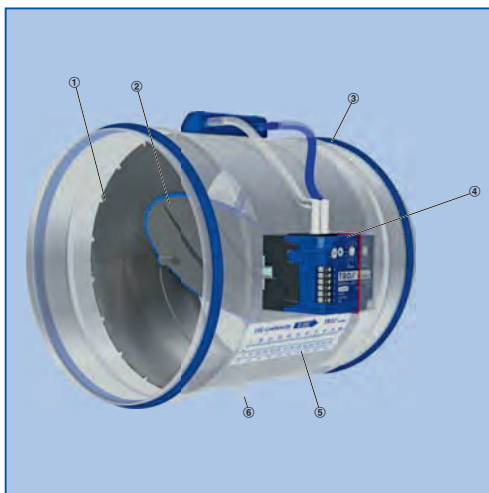
Runde und quadratische Deckendralldurchlässe für hohe Luftwechsel

- Nenngrößen 300, 400, 500, 600, 625, 825
- Volumenstrombereich 7 – 470 l/s oder 25 – 1692 m³/h
- Frontdurchlass aus pulverbeschichtetem verzinktem Stahlblech
- Für Zuluft und Abluft
- Für konstante und variable Volumenströme
- Für Deckensysteme aller Art und mit Randverbreiterung auch freihängend
- Hohe Induktion zum schnellen Abbau der Temperaturdifferenz und der Luftgeschwindigkeit
- Bis 35-facher Luftwechsel durch Reihenanordnung mit minimalem Mittenabstand von 0,9 m
- Ideal für Komfortbereiche

Optionale Ausstattung und Zubehör

- Sichtseite des Frontdurchlasses in Farben nach RAL Classic, Luftleitelemente schwarz und weiß
- Luftleitungsanschluss horizontal und vertikal
- Anschlusskasten mit Drosselement, Seilzugverstellung und Messnippel
- Akustisch optimierter Anschlusskasten FLEXTRO

TROX[®]TECHNIK PD – VDW



All of this – and more!

The TROX media world is just as diverse as the product range. Digital or printed, static or interactive – depending on the demand, we offer a wide range of different media for investors, specialist consultants and HVAC contractors. Have a look – and discover the extensive range of information from TROX.

Product overview

From extract grilles to zone modules, air handling units to air terminal devices or ventilation fans through to all the components needed for a complete smoke and heat extraction system, the [Quick Selection Guide](#) will give you information on everything TROX has to offer. With the most important technical data, dimensions and weights as well as a brief description of the products. Everything you need for an initial overview. All at hand.

Detailed information just a click away

For anyone who would like more than an overview, the TROX website www.troxtechnik.com provides all the information you need on TROX and our products. Product data sheets, operating manuals, certificates and, and ... Everything is available online, just a click away.

Direct design

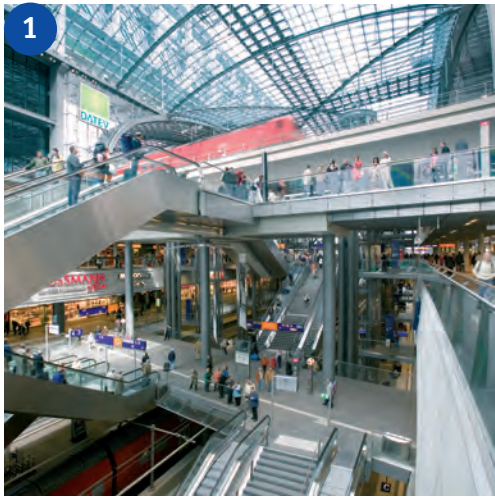
The TROX design tool [Easy Product Finder](#) offers additional technical information – above and beyond the Quick Selection Guide and Internet. Simply download from our website and install on your PC and you'll have all you need to start designing our components for your project. www.trox.de/epf

Simple configuration

The Easy Product Finder for TROX components is what the TROX X-FANS [product configurator](#) is for our fans. Simply go to X-FANS in the product section of our website. From here you are only two clicks away from the configurator . www.trox-xfans.de

Knowing what works

Whether we are talking about hotels, hospitals, offices, labs, airports, clean-rooms or shopping malls, in each of these very different building types there are various tasks and challenges related to ventilation and air-conditioning technology. Depending on the type of building, the focal points are, for instance, hygiene, good room air quality, personal protection but also protection of production processes or fire protection and smoke extraction. Here, investors, specialist consultants and architects get a lot of interesting information and suggestions in advance.



TROX, wherever you look

We have been developing, producing and selling products for ventilation and air-conditioning technology for over 65 years. And this can be seen wherever you look. Around the world in airports, hotels, sports arenas and many other public buildings. Here is a brief overview:

- 1 Berlin main train station – application: infrastructure and transport
- 2 Max Planck Institute, Münster – application: cleanrooms
- 3 Canary Wharf Station, London – application: tunnels
- 4 Frauenkirche Dresden – application: cultural monuments
- 5 Exhibition Hall 11, Frankfurt –
application trade fair and convention buildings
- 6 National stadium, Beijing – application: stadiums
- 7 Crane buildings, Cologne – application: offices and living space
- 8 Rhine-Waal University of Applied Sciences, Kamp-Lintfort, Germany –
application: laboratories
- 9 Frankfurt Airport – application: infrastructure and transport
- 10 Sydney Opera House – application: theatres and concert halls
- 11 Hotel Burj al Arab, Dubai – application: hotels
- 12 MyZeil, Frankfurt – application: shopping centres/retail



CEILING DIFFUSERS



SLOT DIFFUSERS



VENTILATION GRILLES



DISPLACEMENT FLOW DIFFUSERS



OTHER AIR TERMINAL DEVICES



AIR-WATER SYSTEMS



DECENTRALISED VENTILATION



PRODUCT INDEX



CEILING DIFFUSERS	5
Table of contents.....	6
Ceiling swirl diffusers	11
Design ceiling swirl diffusers.....	68
Ceiling diffusers	90
Plenum boxes	130
SLOT DIFFUSERS	135
Table of contents.....	136
Slot diffusers for ceiling installation	139
Slot diffusers for wall installation	186
VENTILATION GRILLES	193
Table of contents.....	194
Ventilation grilles for installation into walls, sills or rectangular ducts.....	198
Ventilation grilles for floor installation	237
Ventilation grilles for door and wall installation	246
Ventilation grilles for installation into circular ducts.....	249
Volume flow rate balancing	253
DISPLACEMENT FLOW DIFFUSERS	257
Table of contents.....	258
Displacement flow diffusers for installation on a wall.....	262
Displacement flow diffusers for installation into a wall.....	311
Free-standing displacement flow diffusers.....	324
Displacement flow diffusers for floor installation	336
SPECIAL AIR TERMINAL DEVICES	339
Table of contents.....	340
Displacement flow diffusers	344
Impulse diffusers.....	348
Jet nozzles.....	353
Disc valves.....	369
Floor diffusers	375
Staircase swirl diffusers	383
Control modules.....	391
Actuators	392
AIR-WATER SYSTEMS	401
Table of contents.....	402
Induction units for suspended ceilings	408
Active chilled beams for bulkhead or wall installation.....	456
Freely suspended units.....	460
Wall and under sill induction units	466
Under sill induction units	469
Under floor induction units	472
Passive chilled beams	476
Control equipment for air-water systems.....	479
DECENTRALISED VENTILATION	485
Table of contents.....	486
Under sill units	489
Vertical units	496
Ceiling units	506
Under floor units	509
Accessories for decentralised ventilation systems	512
PRODUCT INDEX	514



CEILING DIFFUSERS



1 CEILING DIFFUSERS

1.1 Ceiling swirl diffusers



For the most demanding requirements of technical function, comfort, and design

AIRNAMIC

11



With low sound power level for comfort zones, with individually manually adjustable air control blades

VDW

15



With very low sound power level for comfort zones and individually manually adjustable air control blades

TDV-SilentAIR

21



With low sound power level for comfort and industrial zones, with fixed air control blades

RFD

27



RFD-SIRIUS is an air terminal device combined with a VAV terminal unit

RFD-SIRIUS

37



For comfort zones, with fixed air control blades

FD

42



With very low sound power level for comfort zones, with fixed air control blades

TDF-SilentAIR

47



For high rooms, with adjustable air control blades

VD

53



For high rooms, with adjustable air control blades

VDL

58

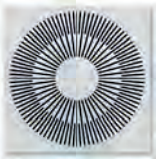


For high volume flow rates, with fixed air control blades

FDE

64

1.2 Design ceiling swirl diffusers



For more refined comfort zones with special demands on architecture and design, with fixed air control blades

XARTO

68



For the creative design of ceilings in comfort zones, with fixed air control blades

ADD

73



For horizontal swirling supply air discharge creating high induction levels, with fixed air control blades

DCS

79

1.3 Ceiling diffusers



For large temperature differences in heating mode, high penetration of air, with adjustable air control blades

VDR

90



For four-way horizontal supply air discharge, with fixed air control blades - aluminium diffuser face

ADLQ

95



For four-way horizontal supply air discharge, with fixed air control blades - sheet steel diffuser face

DLQ

100



For horizontal radial supply air discharge, with fixed air control blades - aluminium diffuser face

ADLR

105



For horizontal one-way to four-way air discharge, for comfort zones, with fixed baffle element

DLQL

116



For horizontal one-way to four-way supply air discharge, with fixed air control blades - sheet steel diffuser face

DLQ-AK

123



For horizontal four-way air discharge, with integral fire barrier for mineral fibre false ceilings, with fixed air control blades

DLK-Fb

128

1.4 Plenum boxes



Universal plenum box, available in many variants

AK-Uni

130

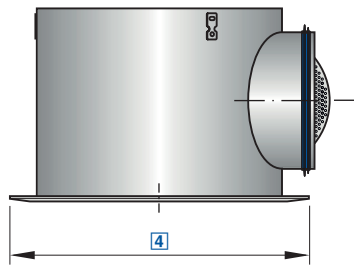
Ceiling swirl diffusers


	Ceiling swirl diffusers								
	AIRNAMI C	VDW	TDV- SilentAIR	RFD	FD	TDF- SilentAIR	VD	VDL	FDE
Diffuser face style									
Circular	●	●	●	●	●	●		●	
Square	●						●		●
Diffuser face									
Circular	●	●	●	●	●	●		●	
Square	●	●	●	●	●	●	●		●
Galvanised sheet steel		●	●	●	●	●		●	●
Aluminium				●			●		
Plastic	●								
Air control blades									
Fixed	●			●	●	●			●
Adjustable		●	●				●	●	
Plastic, black and white		●	●						
Duct connection									
Horizontal	●	●	●	●	●	●	●	●	●
Vertical		●	●	●	●	●	●	●	
Attachments									
Damper blade	●	●	●	●	●	●			●
Pressure tap		●	●	●	●	●			●
Actuator							●	●	
Accessories									
Lip seal	●	●	●	●	●	●			●
Protective cage							●	●	
Extended border							●	●	
Nominal sizes									
Circular diffuser face	400, 600	300, 400, 500, 600, 625	300, 400, 500, 600, 625		300, 400, 500, 600, 625	300, 400, 500, 600, 625			
Square diffuser face	300, 600, 625	300, 400, 500, 600, 625, 825	300, 400, 500, 600, 625		300, 400, 500, 600, 625	300, 400, 500, 600, 625	425, 600, 775, 1050		600, 625
Spigot Nominal diameter				125, 160, 200, 250, 315, 400				315, 400, 630, 800	250, 315
Technical data									
Volume flow rate range [l/s]	13 - 385	7 - 470	11 - 315	4 - 330	9 - 235	10 - 295	95 - 1490	65 - 1080	51 - 365
Volume flow rate range [m³/h]	47 - 1386	25 - 169 2	40 - 1134	14 - 118 8	31 - 846	36 - 1026	342 - 536 4	234 - 388 8	184 - 131 4
Supply air to room air temperature difference [K]	-12 - +10	-12 - +10	-12 - +10	-12 - +10	-12 - +10	-12 - +10	-12 - +15	-12 - +15	-12 - +10
Explanation									
● - Standard									
○ - Optional									

List of abbreviations

L_{WA} [dB(A)]	A-weighted sound power level of air-regenerated noise
\dot{V} [m ³ /h] and [l/s]	Volume flow rate
Δt_z [K]	Supply air to room air temperature difference, i.e. supply air temperature minus room temperature
Δp_t [Pa]	Total differential pressure
A_{eff} [m ²]	Effective air discharge area
$\varnothing D$ [mm]	Outer diameter of the spigot
$\varnothing D_1$ [mm]	Outer diameter of a circular diffuser face
$\varnothing D_2$ [mm]	Diameter of a circular diffuser face style
$\varnothing D_3$ [mm]	Diameter of a circular plenum box
Q_1 [mm]	Outer diameter of a square diffuser face
Q_2 [mm]	Dimensions of a square diffuser face style
Q_3 [mm]	Dimensions of a square plenum box
H_1 [mm]	Distance (height) from the lower edge of the suspended ceiling to the lower edge of the diffuser face
H_2 [mm]	Height of a ceiling diffuser, from the lower edge of the suspended ceiling to the upper edge of the spigot
H_3 [mm]	Height of a ceiling diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box or of the spigot
A [mm]	Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling
C [mm]	Length of the spigot
m [kg]	Weight

All sound power levels are based on 1 pW.



For the most demanding requirements of technical function, comfort, and design

Order code

AIRNAMIC - R - Z / 400H / S1 - RAL ...

1 2 3 4 5

<p>1 Type AIRNAMIC Swirl diffuser</p> <p>2 Construction style R Circular Q Square</p> <p>3 System Z Supply air A Extract air</p>	<p>4 Nominal size [mm] Construction style R 400L 400H 600 Construction style Q 300L 300H 600</p>	<p>625 L Low volume flow rate H High volume flow rate</p> <p>5 Surface S1 No entry: coated RAL 9010, pure white Coated, specify RAL CLASSIC colour</p>
--	---	---

Features

- Circular and square ceiling swirl diffusers with fixed air control blades, for high volume flow rates at low sound power levels and low differential pressure due to innovative polymer technology
- ▶ Nominal sizes 300, 400, 600, 625
 - ▶ Volume flow rate range 13 - 385 l/s or 47 - 1386 m³/h
 - ▶ Plastic diffuser face with overlapping, three-dimensionally profiled blades, for the most efficient swirl and high induction
 - ▶ For supply and extract air
 - ▶ For variable and constant volume flows
 - ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
 - ▶ Diffuser face with gently sloped, flat border - only 3 mm high
 - ▶ Plenum box with acoustically optimised and lockable damper blade
 - ▶ Ideal for comfort zones

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours

Application

- ▶ Type AIRNAMIC ceiling swirl diffusers are used as supply air or extract air diffusers for comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Horizontal swirling supply air discharge for mixed flow ventilation
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For all types of ceiling systems
- ▶ With an extended border also suitable for freely suspended installation (supply air variant)

Variants

- ▶ AIRNAMIC-Q: Square diffuser face
- ▶ AIRNAMIC-R: Circular diffuser face
- ▶ AIRNAMIC-*-Z: Supply air
- ▶ AIRNAMIC-*-A: Extract air

Connection

- ▶ Horizontal duct connection

Special characteristics

- ▶ Plastic diffuser face with overlapping, three-dimensionally profiled blades, for the most efficient swirl and high induction
- ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
- ▶ Diffuser face with gently sloped, flat border - only 3 mm high
- ▶ Plenum box for supply air, with an optimised equalising element that ensures a uniform airflow through the diffuser face

Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	300, 400, 600, 625 mm
Minimum volume flow rate, with $\Delta t_z = -6$ K	13 - 76 l/s or 47 - 274 m ³ /h
Maximum volume flow rate, with $L_{WA} \cong 50$ dB(A)	95 - 385 l/s or 342 - 1386 m ³ /h
Supply air to room air temperature difference	-12 to +10 K



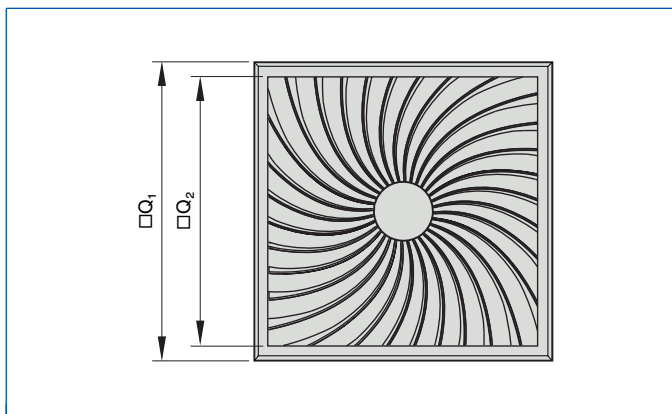
AIRNAMIC-Q-Z (supply air), sound power level and total differential pressure

Nominal size	\dot{V}	\dot{V}	Damper blade position					
			0°		45°		90°	
	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}		
	l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300L	13	47	1	<15	2	<15	2	<15
	40	144	9	24	16	24	23	24
	68	245	27	37	45	38	65	39
	95	342	53	50	89	51	127	51
300H	16	58	1	<15	2	<15	4	<15
	55	198	15	22	27	24	41	27
	90	324	41	37	72	39	111	42
	130	468	86	50	150	51	232	54
600, 625	76	274	3	<15	7	<15	13	18
	180	648	18	24	41	31	72	41
	285	1026	44	40	102	47	180	58
	385	1386	80	50	185	59	329	71

AIRNAMIC-R-Z (supply air), sound power level and total differential pressure

Nominal size	\dot{V}	\dot{V}	Damper blade position					
			0°		45°		90°	
	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}		
	l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
400L	17	61	1	<15	1	<15	2	<15
	55	198	9	25	14	25	20	29
	95	342	27	38	41	39	59	41
	135	486	55	50	82	51	118	52
400H	24	86	1	<15	2	<15	4	<15
	75	270	14	26	21	28	34	28
	130	468	41	40	64	40	101	44
	180	648	79	50	123	50	193	54
600, 625	57	205	2	<15	4	<15	8	<15
	160	576	17	27	35	28	60	36
	265	954	47	40	97	45	163	54
	365	1314	89	50	185	58	310	66

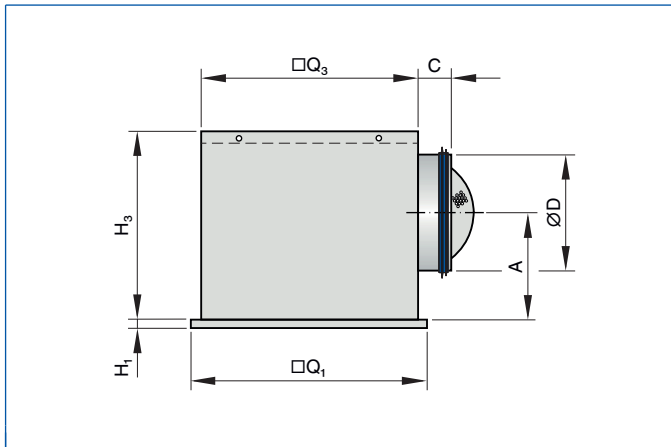
Diffuser face AIRNAMIC-Q



Dimensions [mm]

Nominal size	□Q ₁	□Q ₂	A _{eff} m ²
	mm	mm	
Q/300L	298	262	0.0139
Q/300H	298	262	0.0175
Q/600	598	539	0.0616
Q/625	623	539	0.0616

Square diffuser face with plenum box for horizontal duct connection

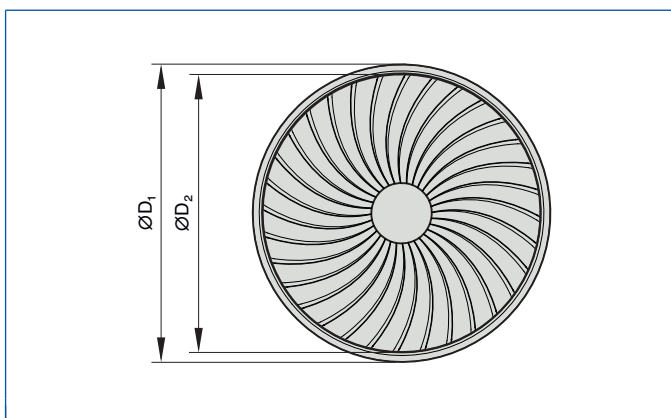


Dimensions [mm] and weight [kg]

Nominal size	□Q ₁	H ₁	□Q ₃	H ₃	ØD	A	C	Plenum box	m kg
	mm	mm	mm	mm	mm	mm	mm		
Q/300L	298	3	290	250	158	139	60	AK-H-Q/300	3.0
Q/300H	298	3	290	250	158	139	60	AK-H-Q/300	3.0
Q/600	598	3	567	345	248	194	60	AK-H-Q/600	8.7
Q/625	623	3	567	345	248	194	60	AK-H-Q/600	8.7

Weights apply to the supply air variant

Diffuser face AIRNAMIC-R

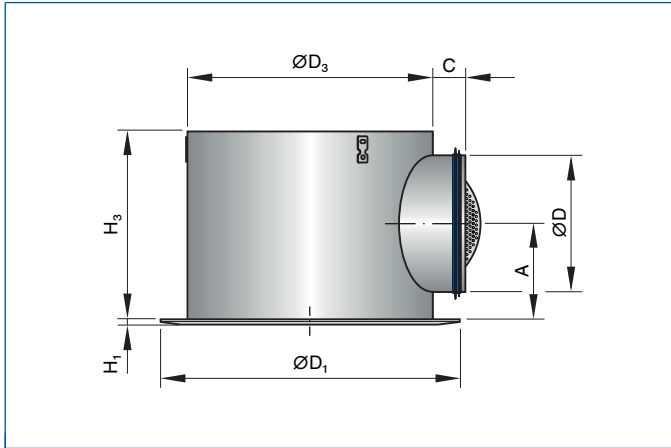


Dimensions [mm]

Nominal size	ØD ₁	ØD ₂	A _{eff} m ²
	mm	mm	
R/400L	400	352	0.0186
R/400H	400	352	0.0258
R/600	600	546	0.0504



 AIRNAMIC-R with plenum box for horizontal duct connection

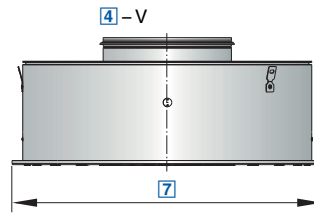
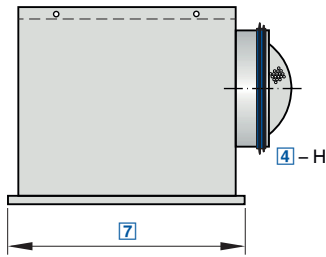


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	H ₁	ØD ₃	H ₃	ØD	A	C	Plenum box	m
	mm	mm	mm	mm	mm	mm	mm		
R/400L	400	3	364	280	198	151	60	AK-H-R/400	4.0
R/400H	400	3	364	280	198	151	60	AK-H-R/400	4.0
R/600	600	3	575	345	248	194	60	AK-H-R/600	7.5

Weights apply to the supply air variant





With low sound power level for comfort zones, with individually manually adjustable air control blades

Order code

VDW – Q – Z – H – M – L / 500 × 24 / Q21 / P1 – RAL ...

1 2 3 4 5 6 7 8 9

<p>1 Type VDW Swirl diffuser</p> <p>2 Construction style R Circular Q Square</p> <p>3 System Z Supply air A Extract air</p> <p>4 Connection H Horizontal V Vertical</p> <p>5 Damper blade for volume flow rate balancing No entry: without damper blade M With</p>	<p>MN With cords and pressure tap (only for connection H)</p> <p>6 Accessories No entry: without accessories L With lip seal</p> <p>7 Nominal size [mm] 300 × 8 400 × 16 500 × 24 600 × 24 600 × 48 625 × 24 VDW-Q only 625 × 54 825 × 72</p>	<p>8 Colour of air control blades No entry: supply air - black air control blades, extract air - no air control blades Q11 Extract air - black air control blades Q21 Supply air - white air control blades, Extract air - white air control blades</p> <p>9 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p>
---	--	---

+ Features

- Circular and square ceiling swirl diffusers for high room air change rates
- ▶ Nominal sizes 300, 400, 500, 600, 625, 825
 - ▶ Volume flow rate range 7 - 470 l/s or 25 - 1692 m³/h
 - ▶ Diffuser face made of galvanised sheet steel, powder-coated
 - ▶ For supply and extract air
 - ▶ For variable and constant volume flows
 - ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
 - ▶ Air change rates of up to 35 per hour can be achieved by arranging several diffusers in a row with a minimum pitch of 0.9 m (centre line to centre line)
 - ▶ Ideal for comfort zones

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours, air control blades in black or white
- ▶ Horizontal or vertical duct connection
- ▶ Plenum box with cord-operated damper blade and pressure tap

X Application

- ▶ Type VDW ceiling swirl diffusers are used as

supply air or extract air diffusers for comfort zones

- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Horizontal swirling supply air discharge for mixed flow ventilation
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity (supply air variant)
- ▶ Individually adjustable air control blades to meet individual requirements
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For all types of ceiling systems
- ▶ With an extended border also suitable for freely suspended installation (supply air variant)

◊ Variants

- ▶ VDW-Q: Square diffuser face
- ▶ VDW-R: Circular diffuser face
- ▶ VDW-*Z: Supply air
- ▶ VDW-*A: Extract air

Connection

- ▶ H: Horizontal duct connection
- ▶ V: Vertical duct connection

⬡ Attachments

- ▶ M: Damper blade for volume flow rate balancing
- ▶ MN: Pressure tap and cord-operated damper blade for volume flow rate balancing with the diffuser face in place

& Accessories

- ▶ Lip seal

★ Special characteristics

- ▶ Air control blades can be adjusted individually manually for adjusting the air pattern
- ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
- ▶ Black or white air control blades
- ▶ Air change rates of up to 35 per hour can be achieved by arranging several diffusers in a row with a minimum pitch of 0.9 m (centre line to centre line)

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



Technical data

Nominal sizes	300, 400, 500, 600, 625, 825 mm
Minimum volume flow rate, with $\Delta t_z = -6$ K	7 - 99 l/s or 25 - 357 m ³ /h
Maximum volume flow rate, with $L_{WA} \approx 50$ dB(A)	80 - 470 l/s or 288 - 1692 m ³ /h
Supply air to room air temperature difference	-12 to +10 K

VDW*-Z-H (supply air), sound power level and total differential pressure

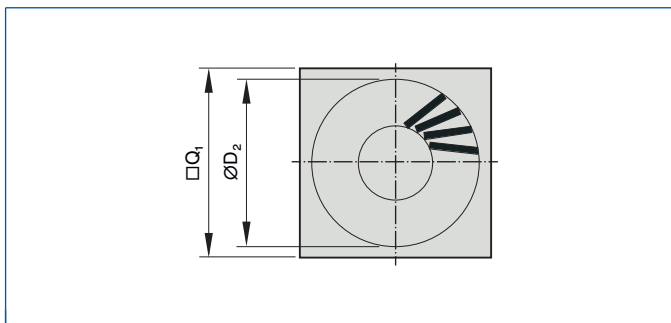
Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300 × 8	7	26	1	<15	1	<15	1	<15
	35	126	15	23	18	22	30	24
	60	216	45	39	53	38	87	40
	85	306	91	50	105	50	174	51
400 × 16	13	46	1	<15	1	<15	1	<15
	60	216	13	22	15	23	28	25
	100	360	36	38	42	39	78	42
	140	504	71	50	83	50	154	54
500 × 24	19	70	1	<15	1	<15	3	<15
	70	252	11	19	14	19	34	24
	125	450	35	38	45	37	108	42
	175	630	68	50	89	49	212	54
600 × 24, 625 × 24	28	102	1	<15	1	<15	2	<15
	105	378	11	20	15	21	33	22
	165	594	26	34	37	34	83	36
	260	936	65	50	91	51	205	55
600 × 48	40	145	1	<15	2	<15	5	<15
	130	468	12	21	18	23	50	29
	210	756	32	37	47	40	131	45
	305	1098	67	50	98	55	276	60
625 × 54	52	186	2	<15	2	<15	7	<15
	140	504	13	22	16	24	48	33
	225	810	34	38	41	39	125	51
	310	1116	64	50	77	52	238	64
825 × 72	99	357	2	<15	4	<15	10	<15
	225	810	13	24	21	27	51	33
	400	1440	41	44	65	49	161	54
	470	1692	56	50	90	57	222	61



VDW*-Z-V (supply air), sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300 × 8	7	26	1	<15	1	<15	1	<15
	30	108	12	20	14	20	22	21
	55	198	41	38	46	38	74	39
	80	288	87	50	98	51	157	52
400 × 16	13	46	1	<15	1	<15	1	<15
	55	198	11	21	13	20	26	20
	100	360	38	39	44	40	85	40
	140	504	74	50	86	51	167	52
500 × 24	19	70	1	<15	1	<15	3	<15
	70	252	10	18	14	21	35	24
	125	450	31	36	45	40	112	43
	180	648	65	50	94	54	233	59
600 × 24, 625 × 24	28	102	1	<15	1	<15	2	<15
	100	360	10	22	13	23	30	26
	170	612	28	38	38	40	87	43
	240	864	56	50	75	54	174	57
600 × 48	40	145	1	<15	2	<15	4	<15
	120	432	10	22	16	26	39	31
	200	720	27	38	43	44	109	48
	280	1008	53	50	85	58	214	63
625 × 54	52	186	2	<15	3	<15	7	<15
	130	468	10	23	16	26	42	33
	210	756	27	38	42	44	109	49
	290	1044	51	50	81	59	208	62
825 × 72	99	357	3	<15	4	<15	10	<15
	210	756	11	25	17	27	46	28
	320	1152	26	39	39	42	107	42
	430	1548	47	50	70	55	193	54

Diffuser face VDW-Q



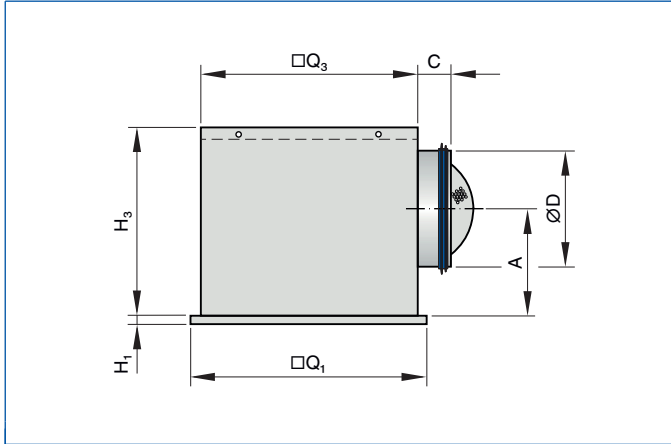
Dimensions [mm]

Nominal size	$\square Q_1$ mm	$\varnothing D_2$ mm	n	A_{eff} m ²
300 × 8	298	269	8	0.0070
400 × 16	398	352	16	0.0140
500 × 24	498	440	24	0.0210
600 × 24	598	546	24	0.0295
600 × 48	598	568	48	0.0390
625 × 24	623	546	24	0.0295
625 × 54	623	594	54	0.0470
825 × 72	825	773	72	0.0730

n = no. of air control blades



Square diffuser face with plenum box for horizontal duct connection

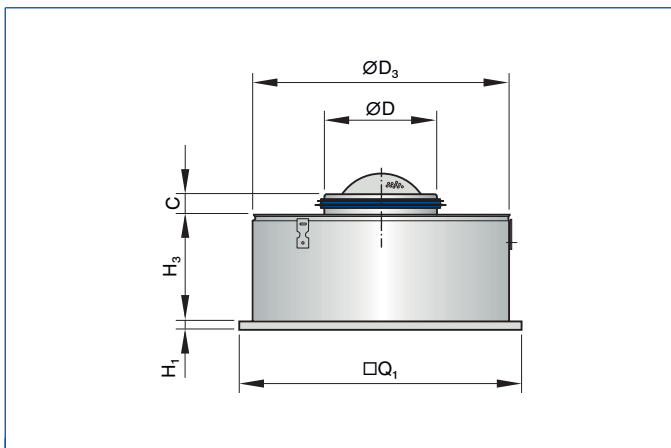


Dimensions [mm] and weight [kg]

Nominal size	□Q ₁	H ₁	□Q ₃	H ₃	ØD	A	C	Plenum box	m
	mm	mm	mm	mm	mm	mm	mm		
300 × 8	298	8	290	250	158	139	50	AK-Uni-001	3.7
400 × 16	398	8	372	295	198	164	50	AK-Uni-002	5.7
500 × 24	498	8	476	295	198	164	50	AK-Uni-003	7.8
600 × 24	598	8	567	345	248	199	48	AK-Uni-004	11.1
600 × 48	598	8	590	345	248	189	48	AK-Uni-005	11.4
625 × 24	623	8	567	345	248	199	48	AK-Uni-004	11.3
625 × 54	623	8	615	345	248	189	48	AK-Uni-006	12.0
825 × 72	825	8	806	410	313	222	50	AK-Uni-007	21.2

Weights apply to the supply air variant

Square diffuser face with plenum box for vertical duct connection



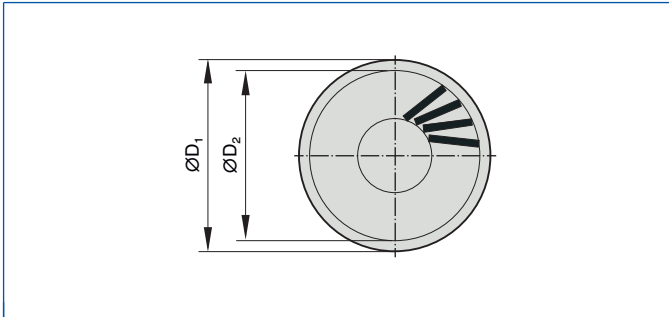
Dimensions [mm] and weight [kg]

Nominal size	□Q ₁	H ₁	ØD ₃	H ₃	ØD	C	m
	mm	mm	mm	mm	mm	mm	
300 × 8	298	8	275	200	158	50	2.7
400 × 16	398	8	364	200	198	50	4.2
500 × 24	498	8	462	200	198	50	6.0
600 × 24	598	8	559	200	248	48	8.4
600 × 48	598	8	575	300	248	48	9.6
625 × 24	623	8	559	200	248	48	8.6
625 × 54	623	8	600	300	248	48	10.3
825 × 72	825	8	796	300	313	50	16.2

Weights apply to the supply air variant



Diffuser face VDW-R

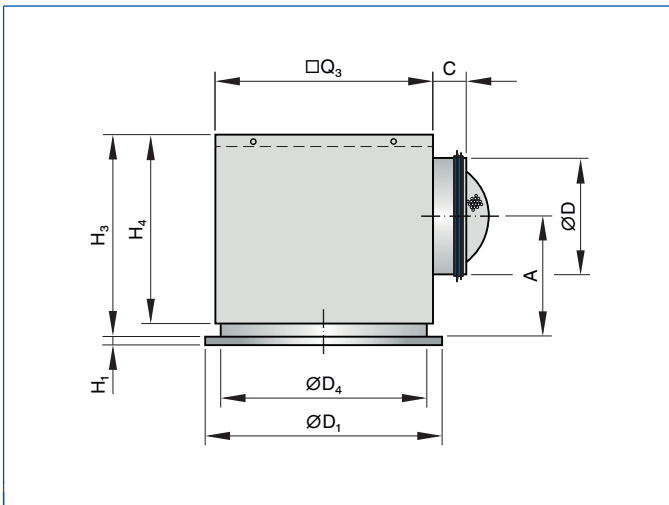


Dimensions [mm]

Nominal size	ØD ₁ mm	ØD ₂ mm	n	A _{eff} m ²
300 × 8	300	269	8	0.0070
400 × 16	400	352	16	0.0140
500 × 24	500	440	24	0.0210
600 × 24	600	546	24	0.0295
600 × 48	600	568	48	0.0390
625 × 24	625	546	24	0.0295

n = no. of air control blades

Circular diffuser face with plenum box for horizontal duct connection



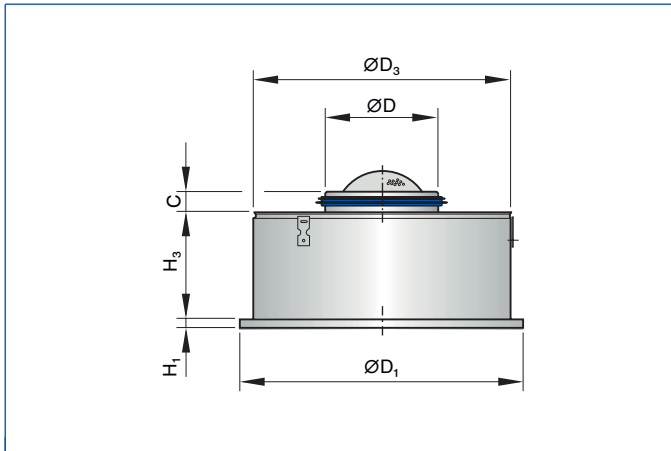
Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	H ₁	□Q ₃	H ₃	ØD ₄	H ₄	ØD	A	C	Plenum box	m
	mm	mm	mm	mm	mm	mm	mm	mm	mm		kg
300 × 8	300	8	290	285	278	250	158	174	50	AK-Uni-013	3.9
400 × 16	400	8	372	330	362	295	198	199	50	AK-Uni-014	6.0
500 × 24	500	8	476	330	460	295	198	199	50	AK-Uni-015	8.3
600 × 24	600	8	567	380	557	345	248	234	48	AK-Uni-016	11.3
600 × 48	600	8	590	380	578	345	248	224	48	AK-Uni-017	11.6
625 × 24	625	8	567	380	557	345	248	234	48	AK-Uni-016	11.5

Weights apply to the supply air variant



Circular diffuser face with plenum box for vertical duct connection

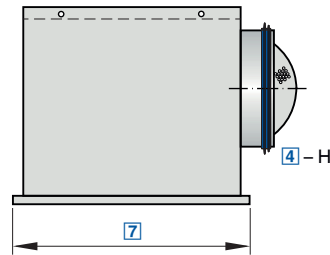


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	H ₁	ØD ₃	H ₃	ØD	C	m
	mm	mm	mm	mm	mm	mm	kg
300 × 8	300	8	275	200	158	50	2.5
400 × 16	400	8	364	200	198	50	3.9
500 × 24	500	8	462	200	198	50	5.6
600 × 24	600	8	559	200	248	48	7.5
600 × 48	600	8	575	300	248	48	8.7
625 × 24	625	8	559	200	248	48	7.7

Weights apply to the supply air variant





With very low sound power level for comfort zones and individually manually adjustable air control blades

Order code

TDV-SA - Q - Z - H - M - L / 500 / Q21 / P1 - RAL ...

1 2 3 4 5 6 7 8 9

1 Type
TDV-SA Swirl diffuser

2 Construction style
R Circular
Q Square

3 System
Z Supply air
A Extract air

4 Connection
H Horizontal
V Vertical

5 Damper blade for volume flow rate balancing
No entry: without damper blade
M With damper blade

MN With cords and pressure tap (only for connection H)

6 Accessories
No entry: without accessories
L With lip seal

7 Nominal size [mm]
300, 400, 500, 600, 625

8 Colour of air control blades
No entry: supply air - black air control blades, extract air - no air control blades

Q11 Extract air - black air control blades
Q21 Supply air - white air control blades
Extract air - white air control blades

9 Exposed surface
No entry: powder-coated RAL 9010, pure white
P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

+ Features

- Circular and square ceiling swirl diffusers
- ▶ Nominal sizes 300, 400, 500, 600, 625
- ▶ Volume flow rate range 11 - 315 l/s or 40 - 1134 m³/h
- ▶ Diffuser face made of galvanised sheet steel, powder-coated
- ▶ For supply and extract air
- ▶ For variable and constant volume flows
- ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
- ▶ Air control blades can be adjusted individually for adjusting the air pattern
- ▶ Ideal for comfort zones

- Optional equipment and accessories
- ▶ Exposed diffuser face available in RAL CLASSIC colours, air control blades in black or white
 - ▶ Horizontal or vertical duct connection
 - ▶ Plenum box with cord-operated damper blade and pressure tap

Application

- ▶ Type TDV-SilentAIR ceiling swirl diffusers are used as supply air or extract air diffusers

- for comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Horizontal swirling supply air discharge for mixed flow ventilation
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity (supply air variant)
- ▶ Individually adjustable air control blades to meet individual requirements
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For all types of ceiling systems
- ▶ With an extended border also suitable for freely suspended installation (supply air variant)

◊ Variants

- ▶ TDV-SA-Q: Square diffuser face
- ▶ TDV-SA-R: Circular diffuser face
- ▶ TDV-SA-*-Z: Supply air
- ▶ TDV-SA-*-A: Extract air

- Connection
- ▶ H: Horizontal duct connection
 - ▶ V: Vertical duct connection

⬡ Attachments

- ▶ M: Damper blade for volume flow rate balancing
- ▶ MN: Pressure tap and cord-operated damper blade for volume flow rate balancing with the diffuser face in place

& Accessories

- ▶ Lip seal

★ Special characteristics

- ▶ Very low sound power level, ideal for comfort zones
- ▶ Individually manually adjustable air control blades
- ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
- ▶ Black or white air control blades

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



Technical data

Nominal sizes	300, 400, 500, 600, 625 mm
Minimum volume flow rate, with $\Delta t_z = -6$ K	11 - 47 l/s or 40 - 169 m ³ /h
Maximum volume flow rate, with $L_{WA} \approx 50$ dB(A)	95 - 315 l/s or 342 - 1134 m ³ /h
Supply air to room air temperature difference	-12 to +10 K

TDV-SA-Q-Z-H (supply air), sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300	11	40	1	<15	1	<15	2	<15
	40	144	11	25	14	27	32	25
	65	234	28	37	37	37	83	38
	95	342	60	50	79	48	179	52
400	20	72	1	<15	1	<15	3	<15
	60	216	10	26	12	18	28	27
	100	360	26	39	35	36	79	39
	140	504	52	50	68	49	154	49
500	30	108	1	<15	2	<15	6	<15
	80	288	11	22	16	21	46	26
	135	486	30	38	46	38	130	43
	190	684	59	50	91	51	257	55
600, 625	47	169	2	<15	2	<15	6	<15
	125	450	12	22	15	22	44	27
	200	720	30	38	39	37	112	43
	275	990	57	50	74	49	212	55

TDV-SA-R-Z-H (supply air), sound power level and total differential pressure

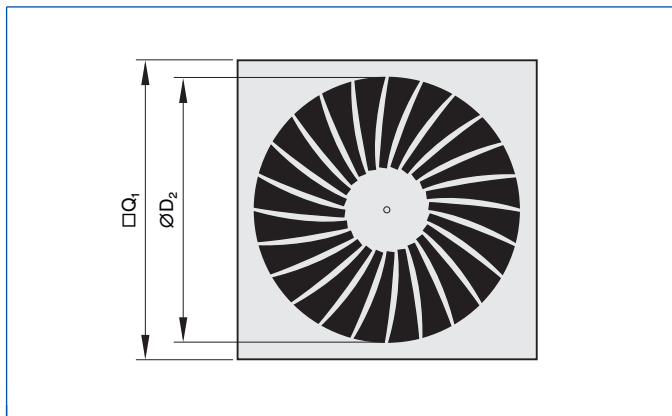
Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300	11	40	1	<15	1	<15	2	<15
	40	144	10	25	14	24	32	23
	70	252	31	35	43	36	97	38
	111	398	78	50	108	50	243	54
400	20	72	1	<15	1	<15	3	<15
	65	234	11	25	14	25	34	25
	115	414	34	39	45	39	105	41
	155	558	62	50	82	48	191	51
500	30	108	1	<15	2	<15	6	<15
	90	324	13	22	20	23	56	28
	155	558	39	38	59	40	165	45
	215	774	75	50	114	52	318	57
600, 625	47	169	2	<15	2	<15	6	<15
	130	468	13	21	19	22	47	30
	215	774	35	37	51	38	130	45
	295	1062	66	50	96	50	244	57



TDV-SA-⁺-Z-V (supply air), sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300	11	40	1	<15	1	<15	2	<15
	30	108	6	17	8	19	17	18
	65	234	29	37	36	38	82	38
	95	342	63	50	77	51	174	52
400	20	72	1	<15	1	<15	3	<15
	60	216	9	21	12	23	29	22
	110	396	31	39	40	39	96	42
	150	540	58	50	73	51	179	54
500	30	108	1	<15	2	<15	6	<15
	85	306	11	20	18	23	49	29
	140	504	30	38	49	42	133	46
	195	702	59	50	94	56	258	58
600, 625	47	169	2	<15	3	<15	7	<15
	120	432	12	23	17	25	42	33
	190	684	29	38	42	42	106	48
	260	936	55	50	79	55	198	60

Diffuser face TDV-SA-Q

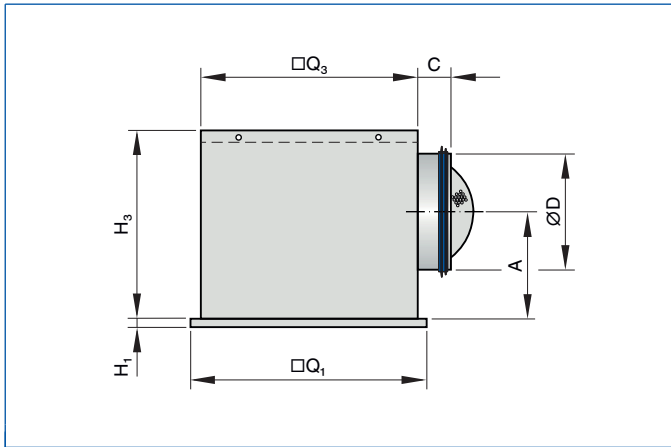


Dimensions [mm]

Nominal size	$\square Q_1$ mm	$\varnothing D_2$ mm	A_{eff} m ²
300	298	254	0.0120
400	398	336	0.0210
500	498	440	0.0310
600	598	530	0.0440
625	623	530	0.0440



 Square diffuser face with plenum box for horizontal duct connection

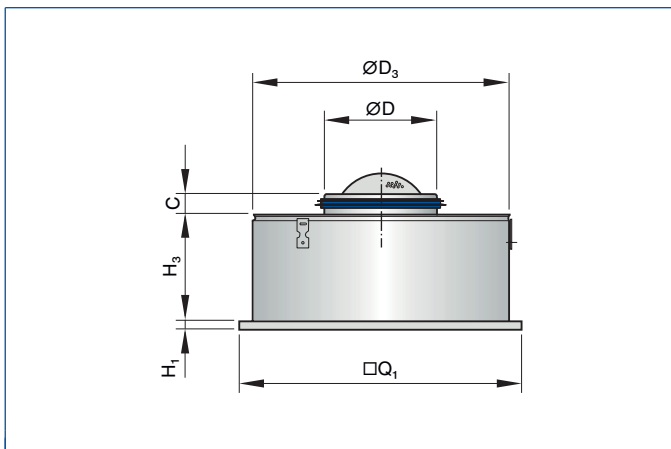


Dimensions [mm] and weight [kg]

Nominal size	$\square Q_1$	H_1	$\square Q_3$	H_3	$\varnothing D$	A	C	Plenum box	m
	mm	mm	mm	mm	mm	mm	mm		
300	298	8	290	250	158	139	50	AK-Uni-001	3.7
400	398	8	372	295	198	164	50	AK-Uni-002	5.7
500	498	8	476	295	198	164	50	AK-Uni-003	7.8
600	598	8	567	345	248	199	48	AK-Uni-004	10.9
625	623	8	567	345	248	199	48	AK-Uni-004	11.5

Weights apply to the supply air variant

Square diffuser face with plenum box for vertical duct connection



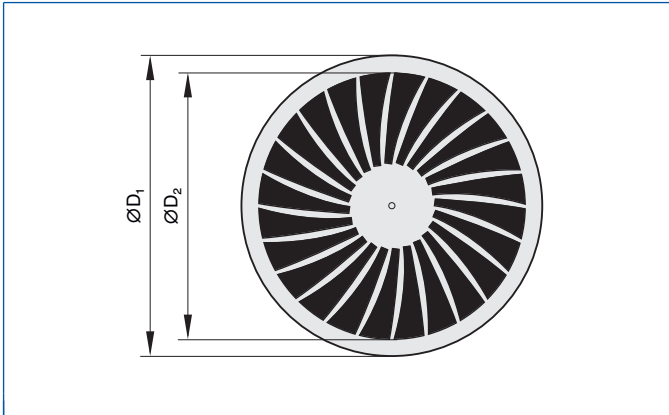
Dimensions [mm] and weight [kg]

Nominal size	$\square Q_1$	H_1	$\varnothing D_3$	H_3	$\varnothing D$	C	m
	mm	mm	mm	mm	mm	mm	
300	298	8	275	200	158	50	2.7
400	398	8	364	200	198	50	4.2
500	498	8	462	200	198	50	6.0
600	598	8	559	200	248	48	8.2
625	623	8	559	200	248	48	8.4

Weights apply to the supply air variant



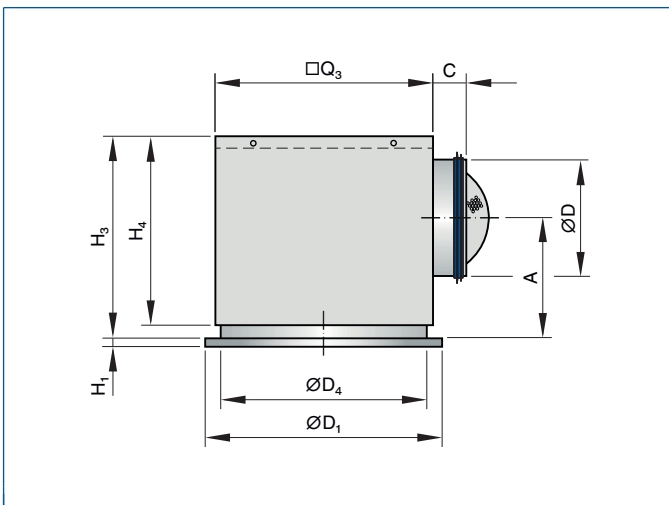
Diffuser face TDV-SA-R



Dimensions [mm]

Nominal size	$\varnothing D_1$	$\varnothing D_2$	A_{eff} m ²
	mm	mm	
300	300	254	0.0120
400	400	336	0.0210
500	500	440	0.0310
600	600	530	0.0440
625	625	530	0.0440

Circular diffuser face with plenum box for horizontal duct connection



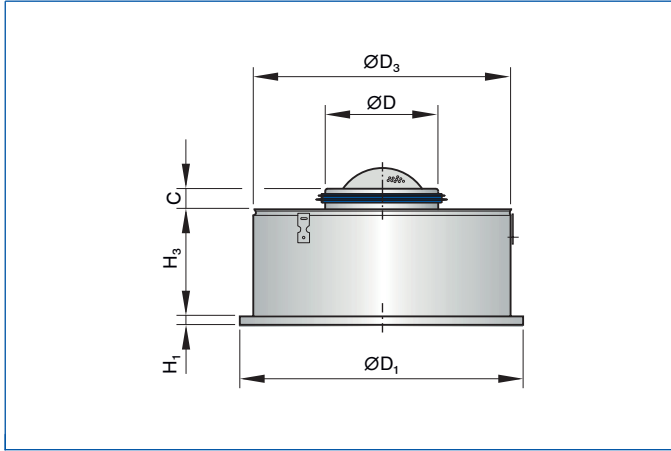
Dimensions [mm] and weight [kg]

Nominal size	$\varnothing D_1$	H_1	$\square Q_3$	H_3	$\varnothing D_4$	H_4	$\varnothing D$	A	C	Plenum box	m
	mm	mm	mm	mm	mm	mm	mm	mm	mm		kg
300	300	8	290	285	278	250	158	174	50	AK-Uni-013	4.0
400	400	8	372	330	362	295	198	199	50	AK-Uni-014	6.1
500	500	8	476	330	460	295	198	199	50	AK-Uni-015	8.3
600	600	8	567	380	557	345	248	234	48	AK-Uni-016	11.2
625	625	8	567	380	557	345	248	234	48	AK-Uni-016	11.8

Weights apply to the supply air variant



 Circular diffuser face with plenum box for vertical duct connection

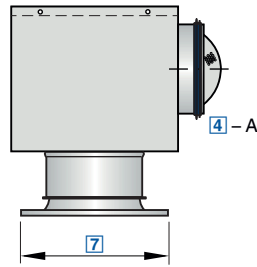


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	H ₁	ØD ₃	H ₃	ØD	C	m
	mm	mm	mm	mm	mm	mm	kg
300	300	8	275	200	158	50	2.6
400	400	8	364	200	198	50	4.0
500	500	8	462	200	198	50	5.7
600	600	8	559	200	248	48	7.4
625	625	8	559	200	248	48	7.6

Weights apply to the supply air variant





With low sound power level for comfort and industrial zones, with fixed air control blades

Order code

RFD - Q - D - A - M - L / 200 / P1 - RAL ...

1 2 3 4 5 6 7 8

1 Type

RFD Swirl diffuser

2 Construction style

R Circular
Q Square

3 Construction

D No entry: without discharge nozzle
D With discharge nozzle

4 Connection

K Vertical, with duct collar
US Vertical, with transition piece
A Horizontal, with plenum box

Only RFD-R

UO Vertical, with transition piece and cross bar

UD Only RFD-R-D
Vertical, with transition piece, cross bar and discharge nozzle
N Horizontal, with shallow plenum box

5 Damper blade for volume flow rate balancing

M No entry: none
With (only for connection types A and N)
MN With cords and pressure tap (only for connection type A)

6 Accessories

L No entry: none
With lip seal (only for connection types A and N)

7 Nominal size [mm]

125, 160, 200, 250, 315, 400

8 Exposed surface

No entry required
Powder-coated RAL 9010, pure white
P1 Powder-coated, specify RAL CLASSIC colour
Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

+ Features

- Circular and square ceiling swirl diffusers
- ▶ Nominal sizes 125, 160, 200, 250, 315, 400
- ▶ Volume flow rate range 4 - 330 l/s or 14 - 1188 m³/h
- ▶ Diffuser face made of galvanised sheet steel, powder-coated, or of aluminium (depending on variant)
- ▶ For supply and extract air
- ▶ For variable and constant volume flows
- ▶ For all types of ceiling systems
- ▶ With discharge nozzle ideal for cooling in case of freely suspended installation
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
- ▶ Air change rates of up to 35 per hour can be achieved by arranging several diffusers in a row with a minimum pitch of 0.9 m (centre line to centre line)
- ▶ Ideal for comfort zones

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours
- ▶ Horizontal or vertical duct connection
- ▶ Plenum box with cord-operated damper blade and pressure tap
- ▶ Shallow plenum box

Application

- ▶ Type RFD ceiling swirl diffusers are used as supply air or extract air diffusers for comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Horizontal swirling supply air discharge for mixed flow ventilation
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For all types of ceiling systems
- ▶ With an extended border and discharge nozzle also suitable for freely suspended installation (supply air variant)

Variants

- ▶ RFD-Q: Square diffuser face
- ▶ RFD-R: Circular diffuser face
- ▶ RFD-*-D: Diffuser face with discharge nozzle

Connection

- ▶ **K**: Vertical duct connection, with duct collar
- ▶ **US**: Vertical duct connection, with transition piece
- ▶ **A**: Horizontal duct connection, with plenum box

Only RFD-R

- ▶ **UO**: Vertical duct connection, with transition piece and cross bar

Only RFD-R-D

- ▶ **UD**: Vertical duct connection, with transition piece, cross bar and discharge nozzle
- ▶ **N**: Horizontal duct connection, with shallow plenum box to be installed above open cell ceilings

Attachments

- ▶ **M**: Damper blade for volume flow rate balancing
- ▶ **MN**: Pressure tap and cord-operated damper blade for volume flow rate balancing with the diffuser face in place

& Accessories

- ▶ Lip seal





Special characteristics

- ▶ Low sound power level, ideal for comfort zones

- ▶ Fixed blades
- ▶ For all types of ceiling systems
- ▶ Horizontal or vertical duct connection
- ▶ Air change rates of up to 35 per hour can be achieved by arranging several diffusers in a row with a minimum pitch of 0.9 m (centre line to centre line)



Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



Technical data

Nominal sizes	125, 160, 200, 250, 315, 400 mm
Minimum volume flow rate, with $\Delta t_z = -6$ K	4 - 36 l/s or 14 - 130 m ³ /h
Maximum volume flow rate, with $L_{WA} \approx 50$ dB(A)	22 - 330 l/s or 79 - 1188 m ³ /h
Supply air to room air temperature difference	-12 to +10 K

RFD-*-K, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t Pa	L_{WA} dB(A)
	l/s	m ³ /h		
125	4.4	16	2	<15
	10	36	16	29
	15	54	36	38
	24	86	92	50
160	5	18	1	<15
	15	54	8	16
	30	108	34	34
	47	169	83	50
200	7	25	1	<15
	30	108	15	26
	50	180	43	38
	75	270	96	50
250	10	36	1	<15
	45	162	14	27
	80	288	43	41
	114	410	87	50
315	19	68	1	<15
	75	270	12	25
	130	468	37	40
	185	666	75	50
400	27	97	1	<15
	95	342	12	26
	165	594	35	40
	230	828	69	50

RFD-*-D-K, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t Pa	L_{WA} dB(A)
	l/s	m ³ /h		
125	4.4	16	1	<15
	15	54	8	18
	30	108	33	36
	46	166	79	50
160	6,4	23	1	<15
	25	90	8	16
	45	162	26	33
	76	274	74	50
200	9	32	0	<15
	45	162	11	23
	75	270	31	37
	110	396	66	50
250	14	50	0	<15
	65	234	10	21
	115	414	33	38
	164	590	66	50





Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
315	25	90	1	<15
	95	342	11	23
	165	594	32	38
	240	864	67	50
400	36	130	1	<15
	135	486	12	24
	235	846	36	40
	330	1188	71	50

RFD*-US, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
125	4	14	2	<15
	10	36	17	28
	15	54	37	39
	22	79	80	50
160	5	18	1	<15
	20	72	15	24
	30	108	35	37
	42	151	68	50
200	7	25	1	<15
	30	108	22	23
	50	180	60	39
	70	252	117	50
250	10	36	1	<15
	45	162	19	25
	80	288	61	40
	114	410	123	50
315	19	68	1	<15
	70	252	17	25
	130	468	59	42
	170	612	101	50
400	27	97	1	<15
	90	324	15	24
	155	558	44	39
	220	792	88	50

RFD*-D-US, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
125	4.4	16	1	<15
	15	54	10	17
	25	90	28	34
	38	137	64	50
160	6	22	1	<15
	25	90	9	16
	45	162	29	35
	66	238	62	50
200	9	32	1	<15
	40	144	22	20
	70	252	66	37
	102	367	140	50
250	14	50	1	<15
	60	216	21	22
	105	378	63	39
	145	522	120	50



Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
315	25	90	2	<15
	90	324	21	22
	155	558	62	38
	220	792	125	50
400	36	130	1	<15
	120	432	17	22
	205	738	49	38
	285	1026	95	50

RFD*-A, sound power level and total differential pressure

Nominal size	\dot{V}	\dot{V}	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
125	4	14	2	<15	3	<15	4	<15
	10	36	17	28	19	28	26	28
	15	54	38	38	43	39	58	38
	22	79	82	50	93	49	124	50
160	5	18	1	<15	1	<15	1	<15
	15	54	9	16	11	17	15	15
	30	108	35	34	43	36	60	34
	47	169	86	50	105	51	147	51
200	7	25	1	<15	1	<15	1	<15
	25	90	12	21	15	21	20	21
	44	158	36	35	45	36	61	35
	70	252	91	50	114	52	156	51
250	10	36	1	<15	1	<15	1	<15
	45	162	14	25	19	26	25	25
	75	270	40	38	52	40	70	39
	110	396	86	50	113	52	151	52
315	19	68	1	<15	1	<15	2	<15
	70	252	12	24	17	26	22	24
	120	432	35	39	49	40	63	38
	175	630	75	50	103	52	135	50
400	27	97	1	<15	1	<15	1	<15
	90	324	10	24	13	25	17	24
	160	576	33	40	40	41	53	39
	220	792	63	50	75	52	100	49

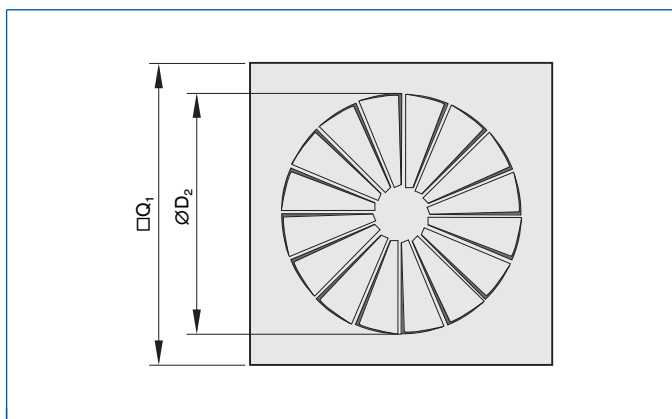
RFD*-D-A, sound power level and total differential pressure

Nominal size	\dot{V}	\dot{V}	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
125	4.4	16	1	<15	1	<15	3	<15
	15	54	12	19	17	20	33	23
	30	108	48	37	68	40	132	41
	43	155	98	50	139	52	271	53
160	6.4	23	1	<15	1	<15	2	<15
	30	108	16	22	24	22	44	25
	50	180	45	37	68	38	123	41
	71	256	91	50	138	53	250	54



Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
200	9	32	1	<15	1	<15	2	<15
	40	144	13	21	19	22	34	24
	70	252	39	37	59	38	104	40
	105	378	89	50	133	53	234	54
250	14	50	1	<15	1	<15	2	<15
	60	216	12	20	18	23	32	23
	108	389	39	37	58	39	103	40
	153	551	79	50	116	53	207	52
315	25	90	1	<15	2	<15	2	<15
	90	324	13	23	20	25	29	25
	150	540	35	38	55	40	82	40
	215	774	72	50	114	52	168	52
400	36	130	1	<15	1	<15	2	<15
	120	432	11	23	15	23	22	23
	205	738	33	38	44	39	65	39
	290	1044	65	50	87	50	131	51

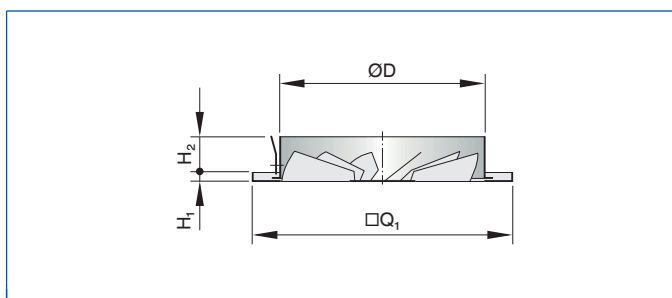
Diffuser face RFD-Q



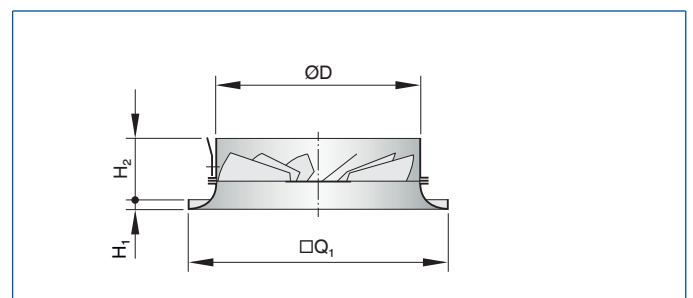
Dimensions [mm]

Nominal size	RFD-Q-K		RFD-Q-D-K		ØD ₂ mm
	□Q ₁ mm	A _{eff} m ²	□Q ₁ mm	A _{eff} m ²	
125	198	0.0026	198	0.0034	120
160	198	0.0037	248	0.0060	155
200	248	0.0066	248	0.0092	195
250	298	0.0110	298	0.0150	245
315	398	0.0205	398	0.0265	310
400	498	0.0280	498	0.0355	395

RFD-Q-K



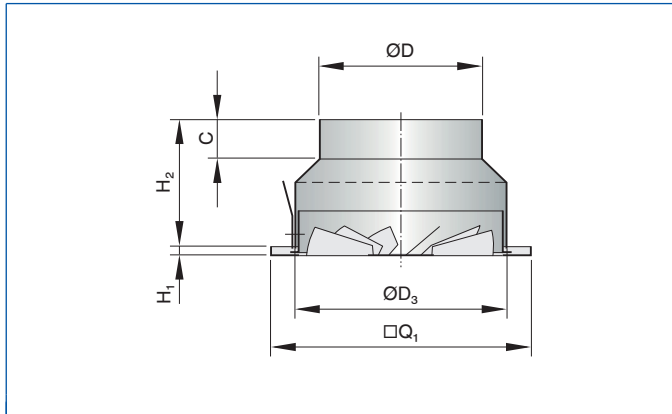
RFD-Q-D-K



Dimensions [mm] and weight [kg]

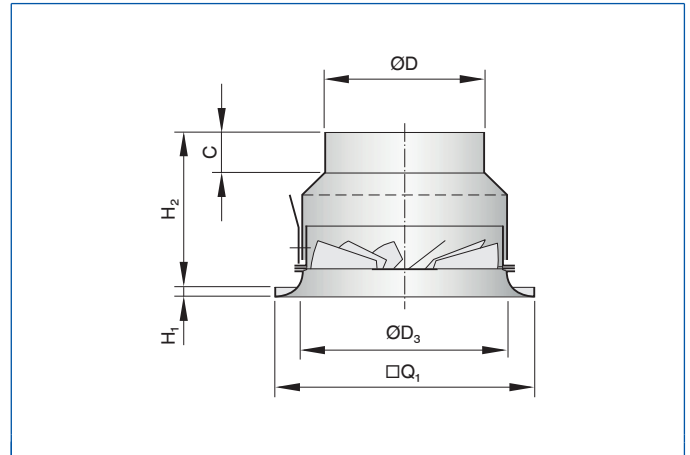
Nominal size	RFD-Q-K			RFD-Q-D-K			ØD	H ₁
	□Q ₁	H ₂	m	□Q ₁	H ₂	m		
	mm	mm	kg	mm	mm	kg		
125	198	42	0.6	198	67	0.7	123	8
160	198	45	0.7	248	70	0.9	158	8
200	248	45	1.0	248	70	1.2	198	8
250	298	42	1.5	298	67	1.7	248	8
315	398	45	2.4	398	80	2.9	313	8
400	498	45	3.6	498	80	4.3	398	8

RFD-Q-US



Sizes 125 and 160 without perforated sheet metal

RFD-Q-D-US

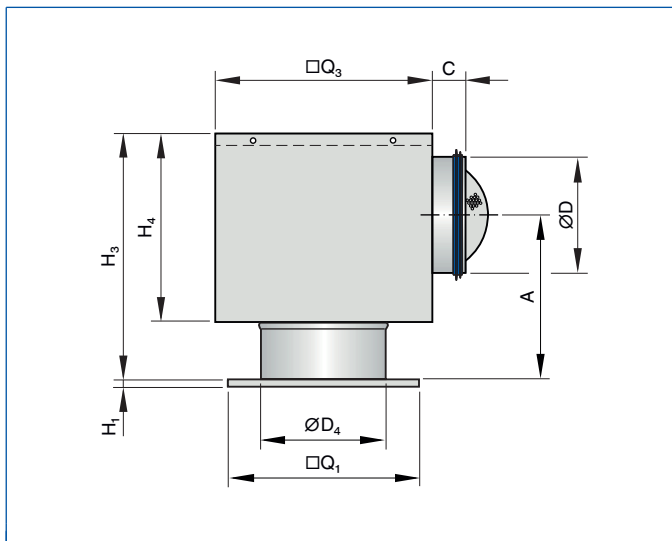


Sizes 125 and 160 without perforated sheet metal

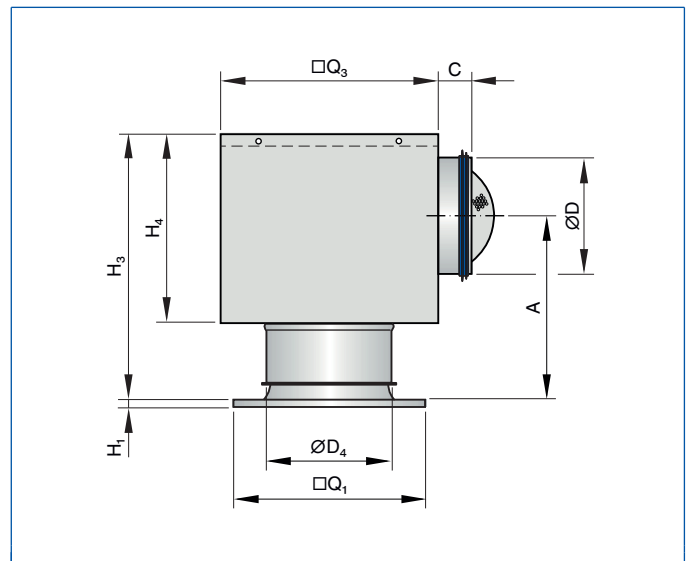
Dimensions [mm] and weight [kg]

Nominal size	RFD-Q-US			RFD-Q-D-US						
	□Q ₁	H ₂	m	□Q ₁	H ₂	m	ØD	H ₁	ØD ₃	C
	mm	mm	kg	mm	mm	kg	mm	mm	mm	mm
125	198	120	0.7	198	145	0.8	98	8	127	40
160	198	125	0.9	248	150	1.1	123	8	162	40
200	248	128	1.2	248	153	1.4	158	8	202	40
250	298	133	1.7	298	158	2.0	198	8	252	40
315	398	140	2.7	398	175	3.2	248	8	318	40
400	498	150	4.1	498	185	4.7	313	8	403	40

RFD-Q-A



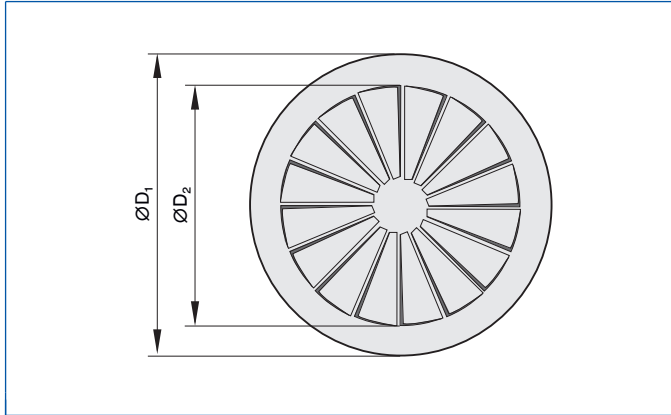
RFD-Q-D-A



Dimensions [mm] and weight [kg]

Nominal size	RFD-Q-A				RFD-Q-D-A				H ₁	□Q ₃	H ₄	ØD ₄	ØD	C	Plenum box
	□Q ₁	H ₃	A	m	□Q ₁	H ₃	A	m							
	mm	mm	mm	kg	mm	mm	mm	kg	mm	mm	mm	mm	mm	mm	
125	198	255	170	3.0	198	276	196	3.1	8	216	195	125	98	50	AK-Uni-028
160	198	280	182	3.5	248	301	208	3.8	8	266	220	160	123	48	AK-Uni-029
200	248	310	194	4.3	248	331	220	4.5	8	290	250	200	158	50	AK-Uni-030
250	298	355	219	8.7	298	376	245	9.0	8	476	295	250	198	50	AK-Uni-031
315	398	395	244	12.0	398	436	281	12.5	8	567	345	315	248	48	AK-Uni-032
400	498	470	277	15.1	498	501	313	15.8	8	615	410	400	313	50	AK-Uni-033

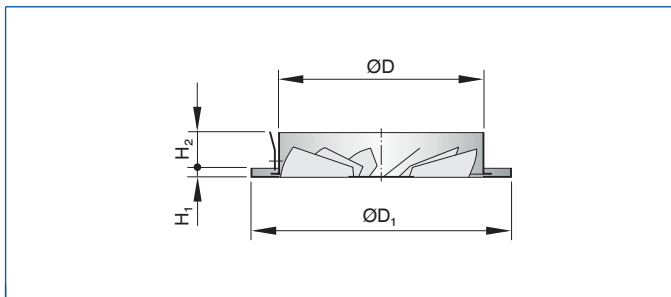
Diffuser face RFD-R



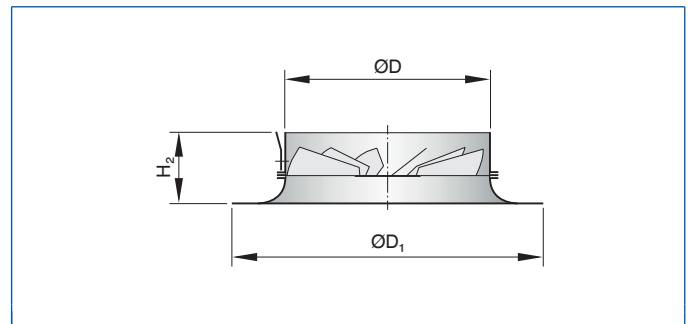
Dimensions [mm]

Nominal size	RFD-R-K		RFD-R-D-K		ØD ₂ mm
	ØD ₁ mm	A _{eff} m ²	ØD ₁ mm	A _{eff} m ²	
125	158	0.0026	200	0.0034	120
160	197	0.0037	250	0.0060	155
200	241	0.0066	300	0.0092	195
250	295	0.0110	350	0.0150	245
315	364	0.0205	450	0.0265	310
400	450	0.0280	580	0.0355	395

RFD-R-K



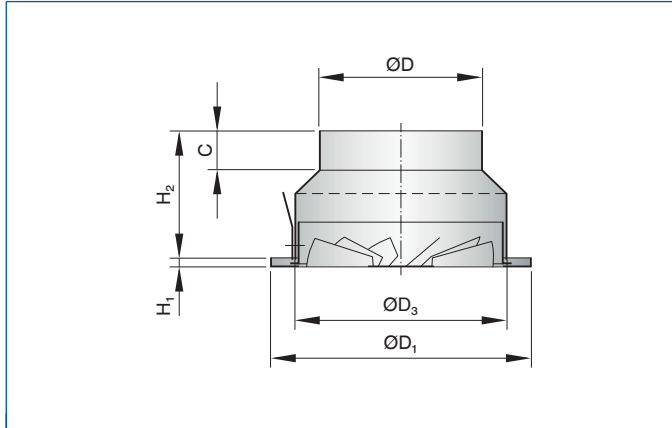
RFD-R-D-K



Dimensions [mm] and weight [kg]

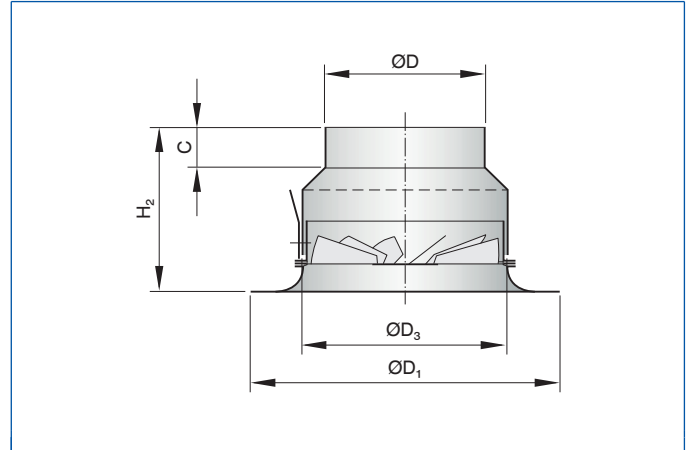
Nominal size	RFD-R-K				RFD-R-D-K						
	ØD_1 mm	A_{eff} m ²	H_2 mm	m kg	ØD_1 mm	A_{eff} m ²	H_2 mm	m kg	ØD_2 mm	ØD mm	H_1 mm
125	158	0.0026	42	0.4	200	0.0034	67	0.5	120	123	8
160	197	0.0037	45	0.6	250	0.0060	70	1.0	155	158	8
200	241	0.0066	45	0.9	300	0.0092	70	1.3	195	198	8
250	295	0.0110	42	1.3	350	0.0150	67	1.8	245	248	8
315	364	0.0205	45	1.9	450	0.0265	80	2.8	310	313	8
400	450	0.0280	45	2.9	580	0.0355	80	4.1	395	398	8

RFD-R-US



Sizes 125 and 160 without perforated sheet metal

RFD-R-D-US

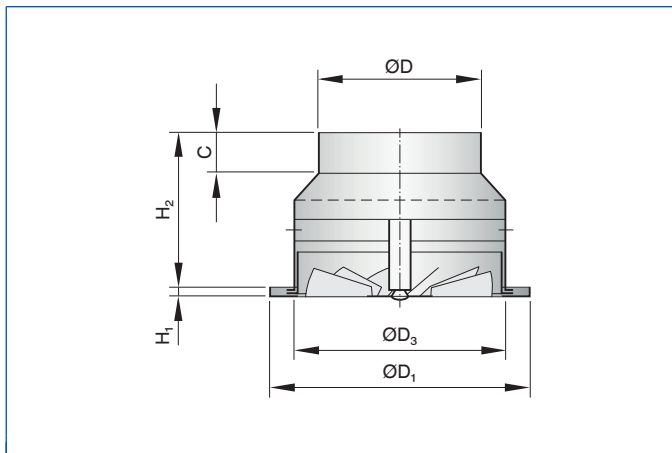


Sizes 125 and 160 without perforated sheet metal

Dimensions [mm] and weight [kg]

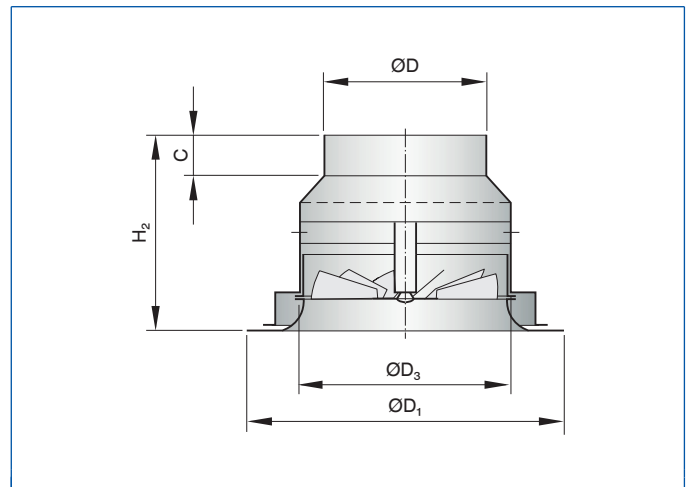
Nominal size	RFD-R-US			RFD-R-D-US							
	ØD_1 mm	H_2 mm	m kg	ØD_1 mm	H_2 mm	m kg	ØD mm	H_1 mm	ØD_3 mm	C mm	
125	158	120	0.5	200	153	0.6	98	8	127	40	
160	197	125	0.8	250	158	1.1	123	8	162	40	
200	241	128	1.1	300	161	1.5	158	8	202	40	
250	295	133	1.6	350	166	2.1	198	8	252	40	
315	364	140	2.3	450	183	3.2	248	8	318	40	
400	450	150	3.4	580	193	4.6	313	8	403	40	

RFD-R-UO



Sizes 125 and 160 without perforated sheet metal

RFD-R-D-UO



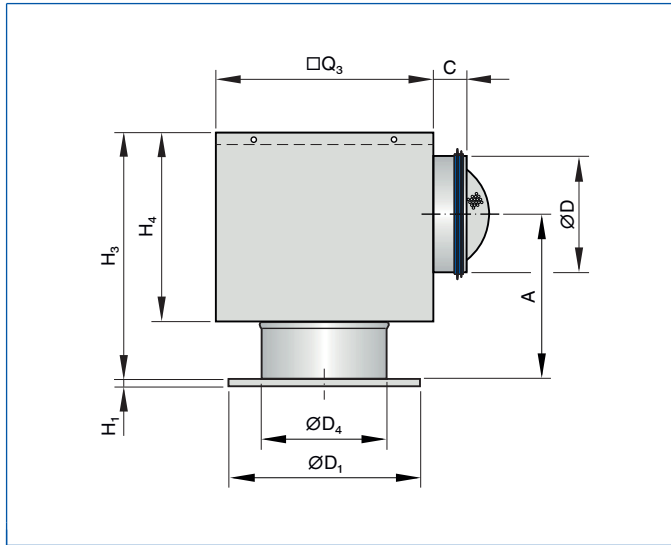
Sizes 125 and 160 without perforated sheet metal



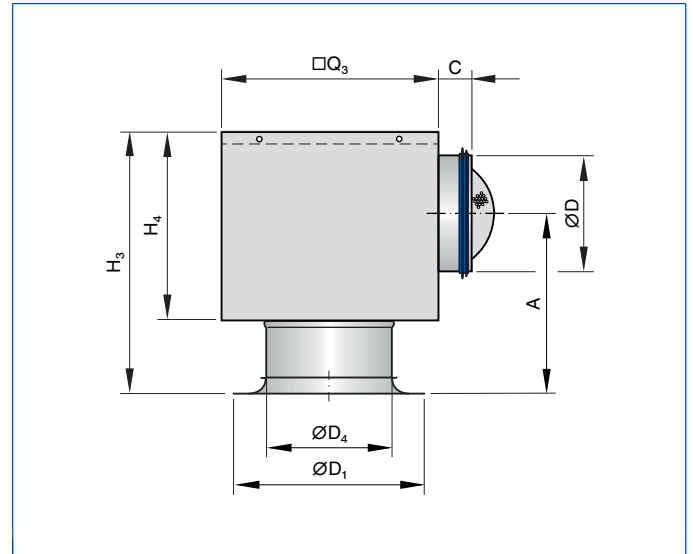
Dimensions [mm] and weight [kg]

Nominal size	RFD-R-UO			RFD-R-D-UD			ØD	H ₁	ØD ₃	C
	ØD ₁ mm	H ₂ mm	m kg	ØD ₁ mm	H ₂ mm	m kg				
125	158	146	0.6	200	192	0.7	98	8	127	40
160	197	151	0.8	250	196	1.2	123	8	162	40
200	241	154	1.2	300	197	1.7	158	8	202	40
250	295	159	1.6	350	202	2.2	198	8	252	40
315	364	166	2.5	450	219	3.6	248	8	318	40
400	450	176	3.7	580	229	5.3	313	8	403	40

RFD-R-A



RFD-R-D-A

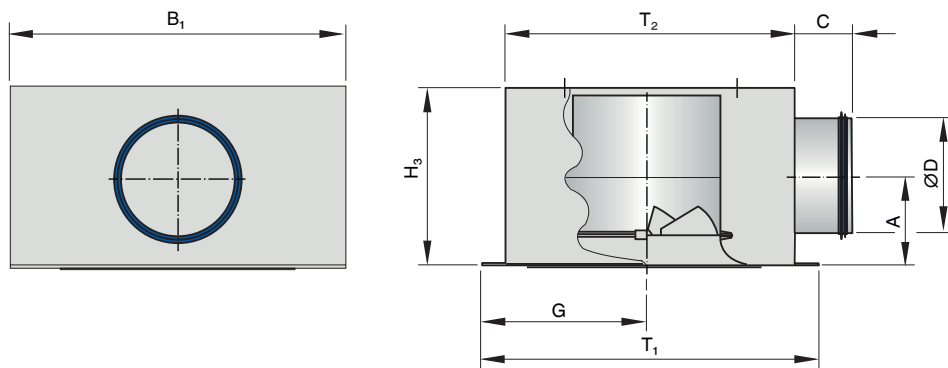


Dimensions [mm] and weight [kg]

Nominal size	RFD-R-A				RFD-R-D-A				H ₁	□Q ₃	H ₄	ØD ₄	ØD	C	Plenum box
	ØD ₁ mm	H ₃ mm	A mm	m kg	ØD ₁ mm	H ₃ mm	A mm	m kg							
125	158	255	170	2.8	200	284	204	2.9	8	216	195	125	98	50	AK-Uni-028
160	197	280	182	3.5	250	309	216	3.8	8	266	220	160	123	48	AK-Uni-029
200	241	310	194	4.2	300	339	228	4.6	8	290	250	200	158	50	AK-Uni-030
250	295	355	219	8.5	350	384	253	9.0	8	476	295	250	198	50	AK-Uni-031
315	364	395	244	11.6	450	444	289	12.5	8	567	345	315	248	48	AK-Uni-032
400	450	470	277	14.4	580	509	321	15.7	8	615	410	400	313	50	AK-Uni-033



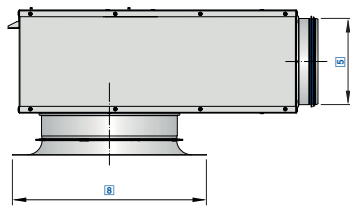
RFD-R-D-N



Dimensions [mm] and weight [kg]

Nominal size	ØD	B ₁	T ₁	H ₃	T ₂	A	C	G	m
	mm	mm	mm	mm	mm	mm	mm	mm	kg
125	98	283	304	152	264	77	50	159	2.4
160	123	335	333	177	293	90	48	155	3.8
200	158	392	413	212	373	108	50	195	5.1
250	198	435	456	262	416	132	50	195	6.5
315	248	496	516	312	476	157	48	230	10.0
400	313	728	692	377	652	190	50	305	15.0





RFD-SIRIUS is an air terminal device combined with a VAV terminal unit

Order code

RFD-SIRIUS – R – D – T / 160 – 250 / BC0 / E0 / 40 – 200 / P1 – RAL 9010

1 2 3 4 5 6 7 8 9

<p>1 Type RFD-SIRIUS Ceiling diffuser</p> <p>2 Construction style R Circular Q Square</p> <p>3 Construction D No entry: without discharge nozzle With discharge nozzle</p> <p>4 Connection T Cross bar with magnets and quick fixing kit</p> <p>5 Nominal size [mm] Ø spigot for duct connection 125 For diffuser faces 160 and 200 160 For diffuser faces 200 and 250 200 For diffuser faces 250 and 315 250 For diffuser faces 315 and 400</p>	<p>Ø spigot for diffuser face connection (nominal size of diffuser face) 160, 200, 250, 315, 400</p> <p>6 Attachment (control component) BC0 Volume flow controller with MP bus interface and analogue interface 0 - 10 V / 2 - 10 V BL0 Volume flow controller with LonWorks FTT-10A interface BM0 Volume flow controller with Modbus RTU interface BM0-J6 Volume flow controller with Modbus RTU interface and RJ12 socket for connecting an X-AIRCONTROL zone module</p>	<p>7 Signalling (can be selected only for BC0) E0 0 - 10 V DC (variable volume flow rate) F0 0 - 10 V DC (constant volume flow rate) E2 2 - 10 V DC (variable volume flow rate) F2 2 - 10 V DC (constant volume flow rate)</p> <p>8 Volume flow rate Variable: $\dot{V}_{min}, \dot{V}_{max}$ Constant: \dot{V}_{const}</p> <p>9 Exposed surface of diffuser face No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p>
---	---	---

Features

- RFD-SIRIUS is used in ventilation and air conditioning systems for the demand-based volume flow control and as an air terminal device.
- ▶ RFD nominal sizes: 160, 200, 250, 315 and 400
 - ▶ SIRIUS nominal sizes: 125, 160, 200 and 250
 - ▶ Volume flow rate range: 4.7 to 171.3 l/s or 17 to 617 m³/h
 - ▶ For supply air
 - ▶ Flush ceiling installation, with discharge nozzle also suspended installation
 - ▶ Control input signal via MP bus, LonWorks FTT-10A, Modbus RTU, or analogue signal
 - ▶ Integral noise insulation element
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
 - ▶ Ideal for comfort zones

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours

Application

- ▶ For supplying air to comfort zones in cases where the supply air flow rate is to be controlled

- ▶ The variant with discharge nozzle allows for suspended installation
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity
- ▶ Closed-loop volume flow control using an external power supply
- ▶ Differential pressure measurement with integral measuring tubes

Variants

- Diffuser face
- ▶ RFD-R: Circular diffuser face
 - ▶ RFD-Q: Square diffuser face
 - ▶ RFD-*-D: Diffuser face with discharge nozzle

- Control components
- ▶ BC0
 - ▶ BL0
 - ▶ BM0
 - ▶ BM0-J6

For information on control components see Type Compact controllers.

Attachments

Variable volume flow control with electronic Compact controller to switch an external control signal and an actual value signal for integration into the central BMS.

- ▶ Supply voltage 24 V AC/DC
- ▶ The signal interface depends on the selected control component variant
- ▶ Variable air or constant air volume flow control
- ▶ The flow rate is measured according to the dynamic measurement principle
- ▶ Volume flow rate control range: approx. 10 - 100 % of the nominal volume flow rate

Deviation from the operating range:

- ▶ 10 - 20% of the nominal volume flow rate: +/- 25%
- ▶ 20 - 40% of the nominal volume flow rate: +/- 10%
- ▶ 40 - 100% of the nominal volume flow rate: +/- 4%

Electrical connection with cable or plug, depending on the selected control component variant.





Special characteristics

- ▶ RFD-SIRIUS combines the functions of a volume flow controller, sound attenuator, plenum box and air terminal device in one unit.

- ▶ Low sound power level, ideal for comfort zones
- ▶ For all types of ceiling systems, also suitable for freely suspended installation
- ▶ Differential pressure measurement with integral measuring tubes



Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135
- ▶ Hygiene conforms to VDI 6022



Technical data

RFD nominal sizes	160, 200, 250, 315, 400 mm
SIRIUS nominal sizes	125, 160, 200, 250 mm
Volume flow rate	4.7 - 171.4 l/s or 17 - 617 m ³ /h
Supply air to room air temperature difference	-12 to +10 K

Sound power level [dB (A)] - RFD-SIRIUS

Combination	\dot{V}		Δp_t			
	l/s	m ³ /h	Pa			
			50	100	200	300
RFD-160 SIRIUS 125	5	17	≤15	≤15	≤15	15
	14	52	25	27	29	30
	24	87	32	34	36	37
	34	123	36	38	40	42
RFD-200 SIRIUS 125	7	25	15	17	20	22
	22	80	25	28	31	33
	37	134	30	33	36	38
	53	189	33	36	39	41
RFD-200 SIRIUS 160	7	25	≤15	15	18	20
	25	90	25	29	32	33
	43	155	31	34	37	39
	61	219	-	38	41	43
RFD-250 SIRIUS 160	10	37	≤15	15	18	20
	34	121	23	26	29	31
	57	204	27	31	34	35
	80	288	31	34	37	39
RFD-250 SIRIUS 200	10	37	20	24	28	30
	39	141	28	32	36	38
	68	245	31	35	39	41
	97	349	-	37	41	43
RFD-315 SIRIUS 200	19	68	27	31	36	39
	50	180	29	34	39	42
	81	292	31	35	40	43
	112	404	32	36	41	44
RFD-315 SIRIUS 250	19	68	18	22	26	28
	52	187	26	30	34	36
	85	305	30	34	38	40
	118	424	32	36	40	42
RFD-400 SIRIUS 250	27	96	24	29	33	36
	73	263	29	33	38	40
	119	429	31	35	40	42
	166	596	32	36	41	44

Sound power level [dB (A)] - RFD-SIRIUS-D

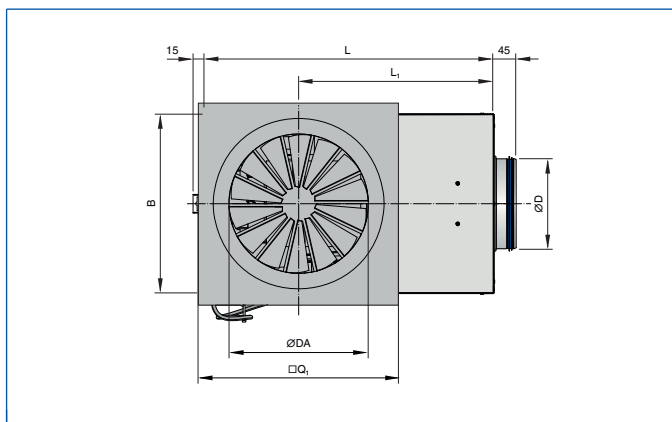
Combination	\dot{V}		Δp_t			
	l/s	m ³ /h	Pa			
			50	100	200	300
RFD-D-160 SIRIUS 125	6	23	22	24	27	28
	20	72	29	31	34	35
	34	122	32	35	37	38
	48	171	34	37	39	40



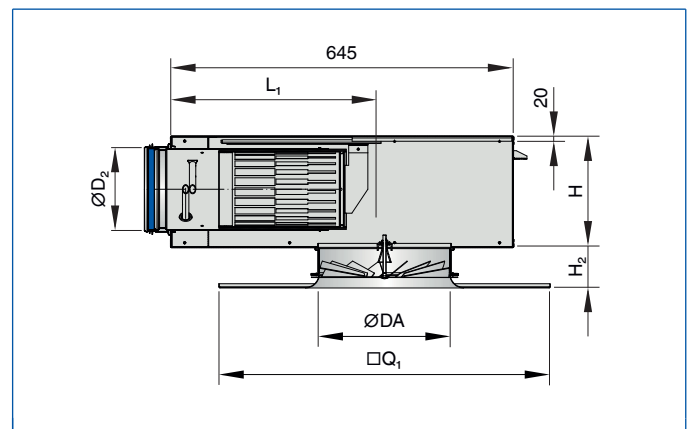


Combination	\dot{V}		Δp_t			
	l/s	m ³ /h	Pa			
			50	100	200	300
RFD-D-200 SIRIUS 125	9	32	15	18	21	23
	27	97	23	27	30	32
	45	161	27	31	34	36
	63	226	30	33	36	38
RFD-D-200 SIRIUS 160	9	32	20	23	26	28
	34	121	28	31	34	36
	58	210	32	35	37	39
	83	299	34	37	40	41
RFD-D-250 SIRIUS 160	14	50	≤15	15	19	22
	37	134	19	24	28	31
	61	218	24	28	33	35
	84	303	27	31	36	38
RFD-D-250 SIRIUS 200	14	50	20	25	30	32
	47	170	27	32	37	40
	81	290	30	35	40	43
	114	410	32	37	42	45
RFD-D-315 SIRIUS 200	25	90	23	29	35	39
	59	214	26	32	38	42
	94	339	27	34	40	44
	129	463	28	35	41	45
RFD-D-315 SIRIUS 250	25	90	22	26	29	31
	68	245	28	31	35	37
	111	401	30	34	37	39
	154	556	32	36	39	41
RFD-D-400 SIRIUS 250	36	128	25	28	31	34
	81	291	29	32	34	38
	126	454	31	34	37	40
	171	617	32	36	38	41

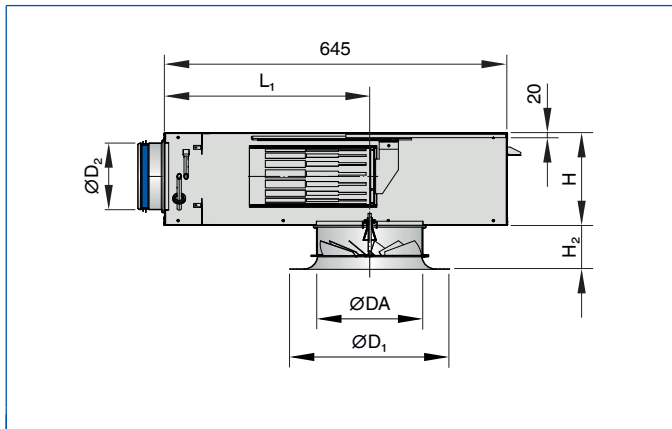
RFD-SIRIUS-Q



RFD-SIRIUS-Q-D



RFD-Sirius-R-D



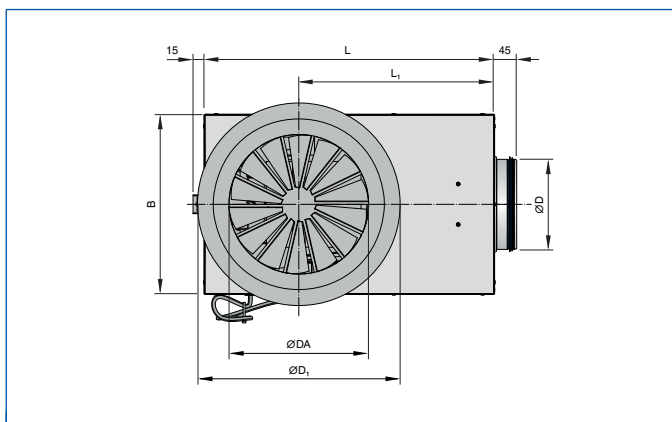
RFD-SIRIUS-Q-K

Nominal size	RFD				SIRIUS					RFD + SIRIUS
	□Q ₁	ØD _A	H ₁	H ₂	L	L ₁	B	H	ØD	m
	mm									
RFD 160 SIRIUS 125	198	158	8	45	645	386	325	175	123	8.7
RFD 200 SIRIUS 125	248	198	8	45	645	386	325	175	123	9.0
RFD 200 SIRIUS 160	248	198	8	45	645	402	360	210	158	10.0
RFD 250 SIRIUS 160	298	248	8	42	645	402	360	210	158	10.5
RFD 250 SIRIUS 200	298	248	8	42	645	435	400	240	198	12.0
RFD 315 SIRIUS 200	398	313	8	45	645	435	400	240	198	12.9
RFD 315 SIRIUS 250	398	313	8	45	645	392	450	290	248	14.4
RFD 400 SIRIUS 250	498	398	8	45	645	392	450	290	248	15.6

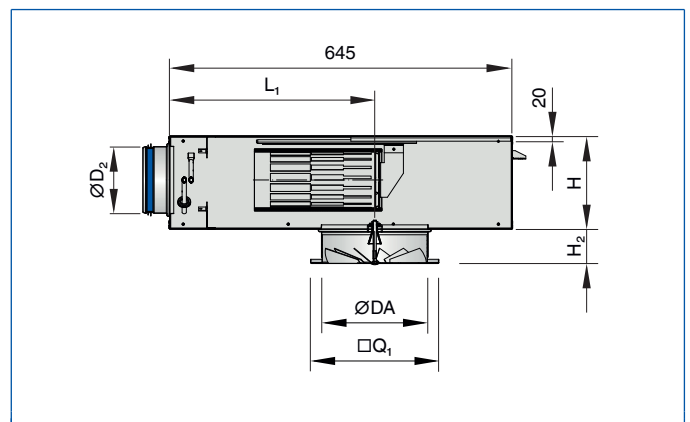
RFD-SIRIUS-Q-D-K

Nominal size	RFD				SIRIUS					RFD + SIRIUS
	□Q ₁	ØD _A	H ₁	H ₂	L	L ₁	B	H	ØD	m
	mm									
RFD 160 SIRIUS 125	198	158	8	70	645	386	325	175	123	8.9
RFD 200 SIRIUS 125	248	198	8	70	645	386	325	175	123	9.2
RFD 200 SIRIUS 160	248	198	8	70	645	402	360	210	158	10.2
RFD 250 SIRIUS 160	298	248	8	67	645	402	360	210	158	10.7
RFD 250 SIRIUS 200	298	248	8	67	645	435	400	240	198	12.2
RFD 315 SIRIUS 200	398	313	8	80	645	435	400	240	198	13.1
RFD 315 SIRIUS 250	398	313	8	80	645	392	450	290	248	14.6
RFD 400 SIRIUS 250	498	398	8	80	645	392	450	290	248	15.8

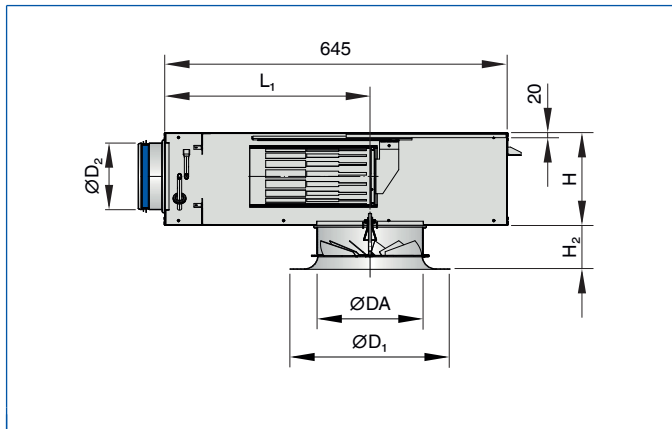
RFD-SIRIUS-R



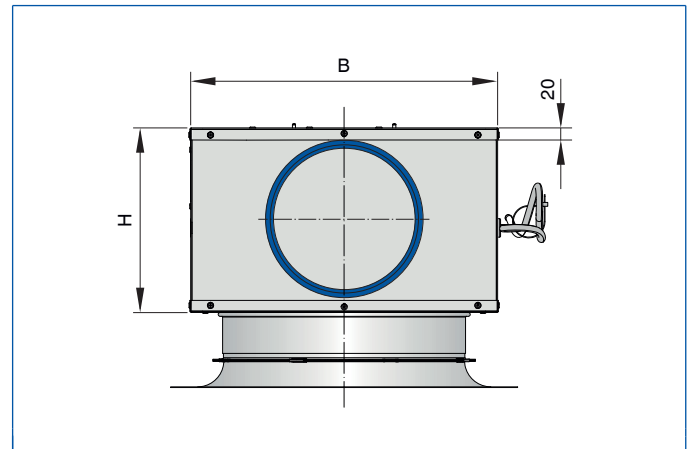
RFD-SIRIUS-Q



RFD-SIRIUS-R-D



RFD-SIRIUS-R and RFD-SIRIUS-R-D (RFD-SIRIUS-R-D shown)



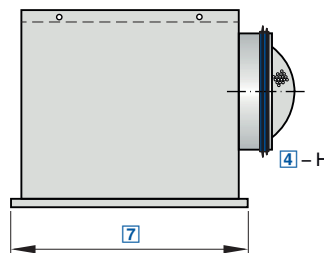
RFD-SIRIUS-R-K

Nominal size	RFD				SIRIUS					RFD + SIRIUS
	□Q ₁	ØD _A	H ₁	H ₂	L	L ₁	B	H	ØD	m
	mm									
RFD 160 SIRIUS 125	197	158	8	45	645	386	325	175	123	8.6
RFD 200 SIRIUS 125	241	198	8	45	645	386	325	175	123	8.9
RFD 200 SIRIUS 160	241	198	8	45	645	402	360	210	158	9.9
RFD 250 SIRIUS 160	295	248	8	42	645	402	360	210	158	10.3
RFD 250 SIRIUS 200	295	248	8	42	645	435	400	240	198	11.8
RFD 315 SIRIUS 200	364	313	8	45	645	435	400	240	198	12.4
RFD 315 SIRIUS 250	364	313	8	45	645	392	450	290	248	13.9
RFD 400 SIRIUS 250	450	398	8	45	645	392	450	290	248	14.9

RFD-SIRIUS-R-D-K

Nominal size	RFD			SIRIUS					RFD + SIRIUS
	□Q ₁	ØD _A	H ₂	L	L ₁	B	H	ØD	m
	mm								
RFD 160 SIRIUS 125	250	158	70	645	386	325	175	123	9.0
RFD 200 SIRIUS 125	300	198	70	645	386	325	175	123	9.3
RFD 200 SIRIUS 160	300	198	70	645	402	360	210	158	10.3
RFD 250 SIRIUS 160	350	248	67	645	402	360	210	158	10.7
RFD 250 SIRIUS 200	350	248	67	645	435	400	240	198	12.2
RFD 315 SIRIUS 200	450	313	80	645	435	400	240	198	12.8
RFD 315 SIRIUS 250	450	313	80	645	392	450	290	248	14.3
RFD 400 SIRIUS 250	580	398	80	645	392	450	290	248	15.3





For comfort zones, with fixed air control blades

Order code

FD - Q - Z - H - M - L / 500 / P1 - RAL ...

1 2 3 4 5 6 7 8

1 Type

FD Swirl diffuser

2 Construction style

R Circular
Q Square

3 System

Z Supply air
A Extract air

4 Connection

H Horizontal
V Vertical

5 Damper blade for volume flow rate balancing

No entry: without damper blade
M With damper blade
MN With cords and pressure tap (only for connection type H)

6 Accessories

No entry: without accessories
L With lip seal

7 Nominal size [mm]

300, 400, 500, 600, 625

8 Exposed surface

No entry: powder-coated RAL 9010, pure white
P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

+ Features

Circular and square ceiling swirl diffusers that create high induction levels, for high room air change rates

- ▶ Nominal sizes 300, 400, 500, 600, 625
- ▶ Volume flow rate range 9 - 235 l/s or 31 - 846 m³/h
- ▶ Diffuser face made of galvanised sheet steel, powder-coated
- ▶ For supply and extract air
- ▶ For variable and constant volume flows
- ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
- ▶ Air change rates of up to 35 per hour can be achieved by arranging several diffusers in a row with a minimum pitch of 0.9 m (centre line to centre line)
- ▶ Ideal for comfort zones

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours
- ▶ Plenum box with cord-operated damper blade and pressure tap

Application

- ▶ Type FD ceiling swirl diffusers are used as

supply air or extract air diffusers for comfort zones

- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Horizontal swirling supply air discharge for mixed flow ventilation
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For all types of ceiling systems
- ▶ With an extended border also suitable for freely suspended installation (supply air variant)

Variants

- ▶ FD-Q: Square diffuser face
- ▶ FD-R: Circular diffuser face
- ▶ FD-*-Z: Supply air
- ▶ FD-*-A: Extract air

Connection

- ▶ H: Horizontal duct connection
- ▶ V: Vertical duct connection

Attachments

- ▶ M: Damper blade for volume flow rate balancing
- ▶ MN: Pressure tap and cord-operated damper blade for volume flow rate balancing with the diffuser face in place

& Accessories

- ▶ Lip seal

★ Special characteristics

- ▶ High induction results in a rapid reduction of the supply air to room air temperature difference and airflow velocity
- ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
- ▶ Horizontal or vertical duct connection
- ▶ Air change rates of up to 35 per hour can be achieved by arranging several diffusers in a row with a minimum pitch of 0.9 m (centre line to centre line)

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135





Technical data

Nominal sizes	300, 400, 500, 600, 625 mm
Minimum volume flow rate, with $\Delta t_z = -6$ K	9 - 28 l/s or 31 - 102 m ³ /h
Maximum volume flow rate, with $L_{WA} \cong 50$ dB(A)	70 - 235 l/s or 252 - 846 m ³ /h
Supply air to room air temperature difference	-12 to +10 K



FD⁻-Z-H (supply air), sound power level and total differential pressure

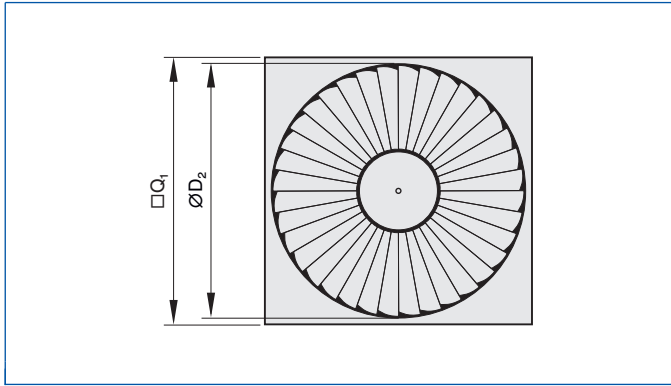
Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300	9	31	1	<15	1	<15	2	<15
	35	126	13	28	17	27	27	27
	55	198	31	39	41	40	67	39
	80	288	67	50	87	54	142	54
400	16	59	1	<15	1	<15	2	<15
	60	216	10	24	14	25	27	26
	105	378	32	39	42	40	83	44
	145	522	60	50	81	53	158	57
500	24	85	1	<15	2	<15	4	<15
	80	288	12	24	19	26	43	29
	135	486	33	39	53	41	123	45
	185	666	62	50	99	54	231	58
600, 625	28	102	1	<15	1	<15	3	<15
	95	342	10	25	15	25	29	24
	160	576	28	39	41	40	81	39
	225	810	55	50	81	52	160	53

FD⁻-Z-V (supply air), sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300	9	31	1	<15	1	<15	2	<15
	30	108	9	25	11	25	19	25
	50	180	26	38	32	38	54	38
	70	252	51	49	62	49	106	49
400	16	59	1	<15	1	<15	2	<15
	60	216	10	24	13	23	23	24
	105	378	31	39	40	39	72	42
	145	522	60	50	77	51	138	55
500	24	85	1	<15	1	<15	4	<15
	80	288	11	24	14	23	44	29
	130	468	28	38	36	39	117	44
	180	648	54	50	70	53	223	56
600, 625	28	102	1	<15	1	<15	2	<15
	95	342	9	25	12	24	28	27
	160	576	26	40	35	41	78	44
	220	792	50	51	67	55	148	57



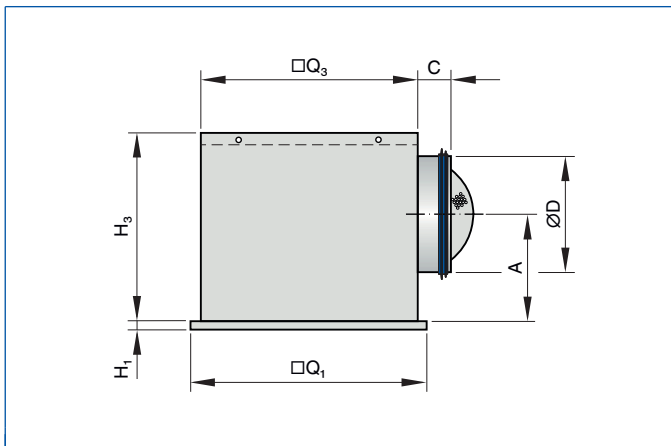
Diffuser face FD-Q



Dimensions [mm]

Nominal size	□Q ₁	ØD ₂	A _{eff}
	mm	mm	m ²
300	298	250	0.0088
400	398	350	0.0180
500	498	450	0.0251
600	598	538	0.0295
625	623	538	0.0295

Square diffuser face with plenum box for horizontal duct connection



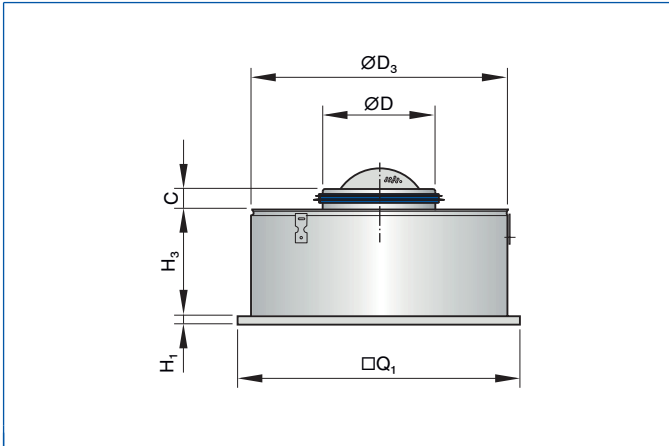
Dimensions [mm] and weight [kg]

Nominal size	□Q ₁	H ₁	□Q ₃	H ₃	ØD	A	C	Plenum box	m
	mm	mm	mm	mm	mm	mm	mm		kg
300	298	8	290	250	158	139	50	AK-Uni-001	4.0
400	398	8	372	295	198	164	50	AK-Uni-002	6.2
500	498	8	476	295	198	164	50	AK-Uni-003	8.5
600	598	8	567	345	248	199	48	AK-Uni-004	11.6
625	623	8	567	345	248	199	48	AK-Uni-004	11.9

Weights apply to the supply air variant



Square diffuser face with plenum box for vertical duct connection

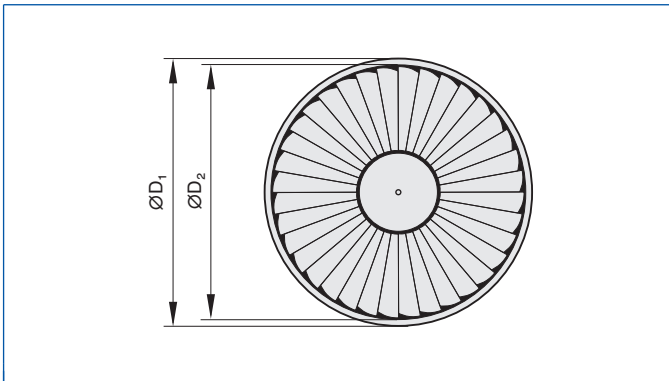


Dimensions [mm] and weight [kg]

Nominal size	□Q₁ mm	H₁ mm	ØD₃ mm	H₃ mm	ØD mm	C mm	m kg
300	298	8	275	200	158	50	3.0
400	398	8	364	200	198	50	4.7
500	498	8	462	200	198	50	6.7
600	598	8	559	200	248	48	8.9
625	623	8	559	200	248	48	9.2

Weights apply to the supply air variant

Diffuser face FD-R

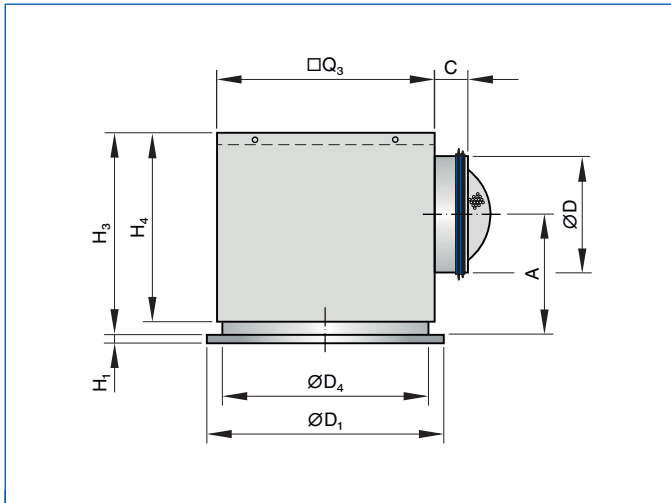


Dimensions [mm]

Nominal size	ØD₁ mm	ØD₂ mm	A _{eff} m²
300	300	250	0.0088
400	400	350	0.0180
500	500	450	0.0251
600	600	538	0.0295
625	625	538	0.0295



Circular diffuser face with plenum box for horizontal duct connection

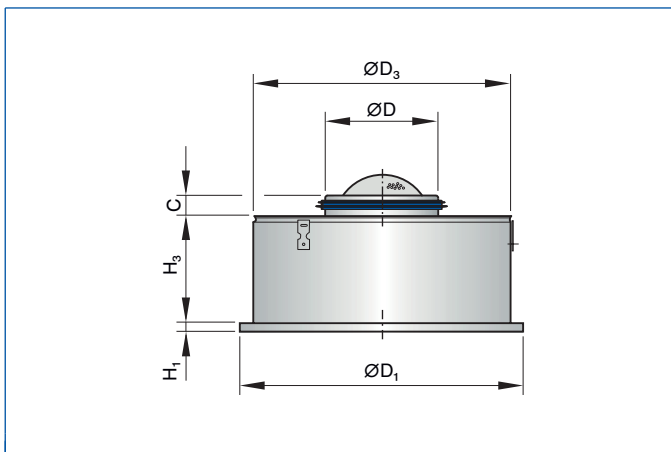


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	H ₁	□Q ₃	H ₃	ØD ₄	H ₄	ØD	A	C	Plenum box	m kg
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
300	300	8	290	285	278	250	158	174	50	AK-Uni-013	4.2
400	400	8	372	330	362	295	198	199	50	AK-Uni-014	6.5
500	500	8	476	330	460	295	198	199	50	AK-Uni-015	9.0
600	600	8	567	380	557	345	248	234	48	AK-Uni-016	12.3
625	625	8	567	380	557	345	248	234	48	AK-Uni-016	12.5

Weights apply to the supply air variant

Circular diffuser face with plenum box for vertical duct connection

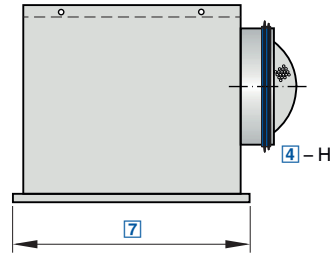


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	H ₁	ØD ₃	H ₃	ØD	C	m kg
	mm	mm	mm	mm	mm	mm	
300	300	8	275	200	158	50	2.8
400	400	8	364	200	198	50	4.4
500	500	8	462	200	198	50	6.3
600	600	8	559	200	248	48	8.5
625	625	8	559	200	248	48	8.7

Weights apply to the supply air variant





With very low sound power level for comfort zones, with fixed air control blades

Order code

TDF-SA - Q - Z - H - M - L / 500 / P1 - RAL ...

1 2 3 4 5 6 7 8

<p>1 Type TDF-SA Swirl diffuser</p> <p>2 Construction style R Circular Q Square</p> <p>3 System Z Supply air A Extract air</p> <p>4 Connection H Horizontal V Vertical</p>	<p>5 Damper blade for volume flow rate balancing M No entry: without damper blade With damper blade MN With cords and pressure tap (only for connection type H)</p> <p>6 Accessories No entry: without accessories L With lip seal</p> <p>7 Nominal size [mm] 300, 400, 500, 600, 625</p>	<p>8 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour</p> <p>Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p>
---	--	---

+ Features

- Circular and square ceiling swirl diffusers
- ▶ Nominal sizes 300, 400, 500, 600, 625
 - ▶ Volume flow rate range 10 - 295 l/s or 36 - 1026 m³/h
 - ▶ Diffuser face made of galvanised sheet steel, powder-coated
 - ▶ For supply and extract air
 - ▶ For variable and constant volume flows
 - ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
 - ▶ Ideal for comfort zones

- Optional equipment and accessories
- ▶ Exposed diffuser face available in RAL CLASSIC colours
 - ▶ Horizontal or vertical duct connection
 - ▶ Plenum box with cord-operated damper blade and pressure tap

X Application

- ▶ Type TDF-SilentAIR ceiling swirl diffusers are used as supply air or extract air diffusers for comfort zones

- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Horizontal swirling supply air discharge for mixed flow ventilation
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For all types of ceiling systems
- ▶ With an extended border also suitable for freely suspended installation (supply air variant)

◇ Variants

- ▶ TDF-SA-Q: Square diffuser face
- ▶ TDF-SA-R: Circular diffuser face
- ▶ TDF-SA-*-Z: Supply air
- ▶ TDF-SA-*-A: Extract air

- Connection
- ▶ H: Horizontal duct connection
 - ▶ V: Vertical duct connection

⬡ Attachments

- ▶ M: Damper blade for volume flow rate balancing
- ▶ MN: Pressure tap and cord-operated damper blade for volume flow rate balancing with the diffuser face in place

& Accessories

- ▶ Lip seal

★ Special characteristics

- ▶ Very low sound power level, ideal for comfort zones
- ▶ Fixed blades
- ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
- ▶ Horizontal or vertical duct connection

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



Technical data

Nominal sizes	300, 400, 500, 600, 625 mm
Minimum volume flow rate, with $\Delta t_z = -6$ K	10 - 42 l/s or 36 - 151 m ³ /h
Maximum volume flow rate, with $L_{WA} \approx 50$ dB(A)	80 - 285 l/s or 288 - 1026 m ³ /h
Supply air to room air temperature difference	-12 to +10 K

TDF-SA-Q-Z-H (supply air), sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300	10	36	1	<15	1	<15	2	<15
	35	126	14	27	16	26	29	26
	60	216	40	40	46	39	86	41
	80	288	71	50	83	49	153	53
400	18	65	1	<15	1	<15	3	<15
	65	234	13	24	17	22	34	24
	115	414	40	39	52	39	107	41
	160	576	76	50	101	51	206	52
500	27	97	1	<15	2	<15	5	<15
	80	288	12	23	16	22	47	26
	135	486	34	37	45	37	134	43
	195	702	71	50	95	51	280	56
600, 625	42	151	2	<15	2	<15	5	<15
	115	414	12	23	16	22	39	26
	185	666	32	38	41	36	101	41
	260	936	62	50	82	49	200	52

TDF-SA-R-Z-H (supply air), sound power level and total differential pressure

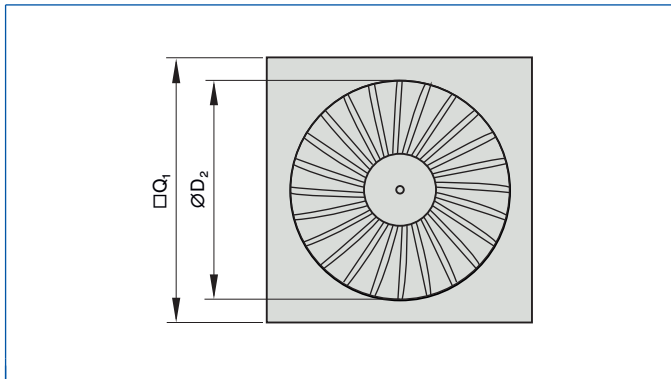
Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300	10	36	1	<15	1	<15	2	<15
	40	144	17	29	20	28	38	28
	70	252	53	45	63	45	118	45
	80	288	70	50	82	51	154	51
400	18	65	1	<15	1	<15	3	<15
	65	234	12	23	15	22	35	24
	115	414	39	38	45	38	110	41
	160	576	76	50	88	50	212	51
500	27	97	1	<15	2	<15	5	<15
	90	324	15	23	22	24	58	28
	155	558	45	39	65	40	171	45
	201	724	75	50	108	50	287	55
600, 625	42	151	2	<15	2	<15	5	<15
	130	468	16	26	21	25	50	30
	215	774	43	41	56	40	137	46
	265	954	65	50	86	48	208	53



TDF-SA-[±]-Z-V (supply air), sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300	10	36	1	<15	1	<15	2	<15
	35	126	14	26	16	25	29	25
	60	216	40	40	46	39	85	40
	80	288	71	50	83	50	153	51
400	18	65	1	<15	1	<15	3	<15
	65	234	12	23	16	25	35	24
	115	414	39	39	50	40	110	42
	155	558	71	50	91	51	200	53
500	27	97	1	<15	2	<15	5	<15
	80	288	12	23	16	25	46	28
	130	468	31	37	42	39	121	44
	180	648	59	50	81	53	232	55
600, 625	42	151	2	<15	2	<15	5	<15
	115	414	13	26	19	28	42	32
	185	666	35	41	48	44	108	48
	230	828	54	49	74	52	166	57

Diffuser face TDF-SA-Q

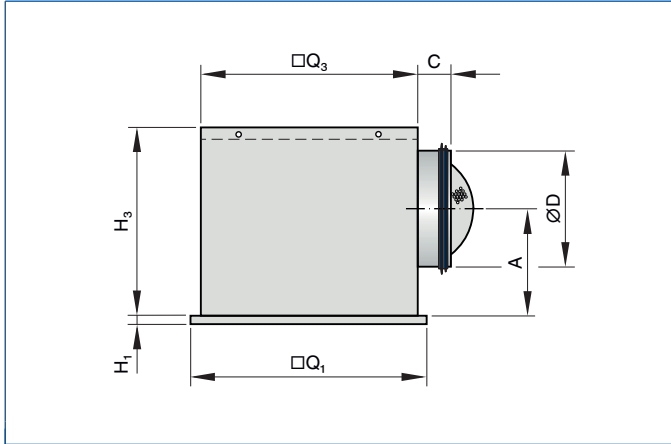


Dimensions [mm]

Nominal size	$\square Q_1$ mm	$\varnothing D_2$ mm	A_{eff} m ²
300	298	254	0.0108
400	398	336	0.0193
500	498	440	0.0280
600	598	530	0.0400
625	623	530	0.0400



 Square diffuser face with plenum box for horizontal duct connection

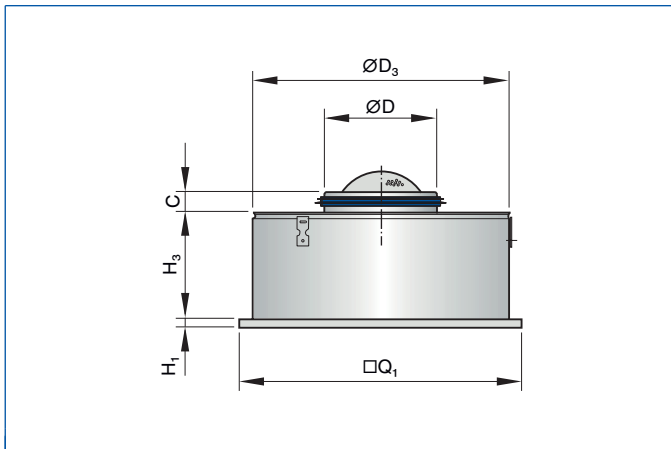


Dimensions [mm] and weight [kg]

Nominal size	$\square Q_1$	H_1	$\square Q_3$	H_3	$\varnothing D$	A	C	Plenum box	m
	mm	mm	mm	mm	mm	mm	mm		
300	298	8	290	250	158	139	50	AK-Uni-001	4.0
400	398	8	372	295	198	164	50	AK-Uni-002	6.2
500	498	8	476	295	198	164	50	AK-Uni-003	8.5
600	598	8	567	345	248	199	48	AK-Uni-004	11.6
625	623	8	567	345	248	199	48	AK-Uni-004	11.9

Weights apply to the supply air variant

Square diffuser face with plenum box for vertical duct connection



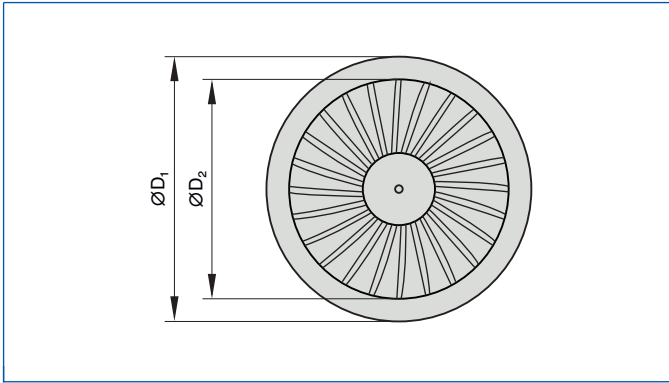
Dimensions [mm] and weight [kg]

Nominal size	$\square Q_1$	H_1	$\varnothing D_3$	H_3	$\varnothing D$	C	m
	mm	mm	mm	mm	mm	mm	
300	298	8	275	200	158	50	3.0
400	398	8	364	200	198	50	4.7
500	498	8	462	200	198	50	6.7
600	598	8	559	200	248	48	8.9
625	623	8	559	200	248	48	9.2

Weights apply to the supply air variant



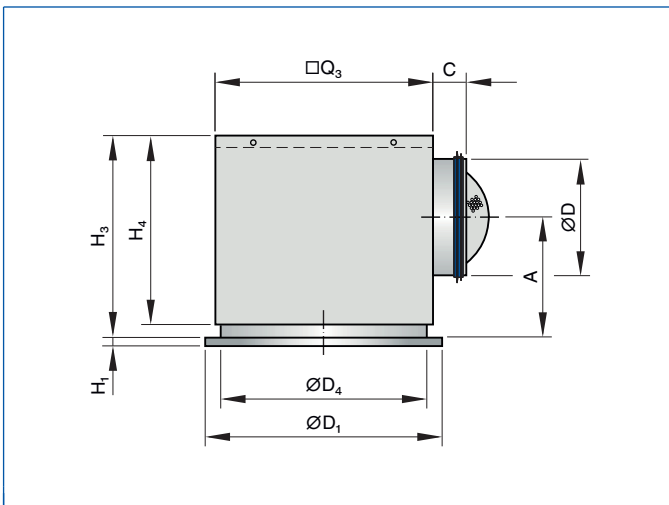
Diffuser face TDF-SA-R



Dimensions [mm]

Nominal size	$\varnothing D_1$ mm	$\varnothing D_2$ mm	A_{eff} m ²
300	300	254	0.0108
400	400	336	0.0193
500	500	440	0.0280
600	600	530	0.0400
625	625	530	0.0400

Circular diffuser face with plenum box for horizontal duct connection



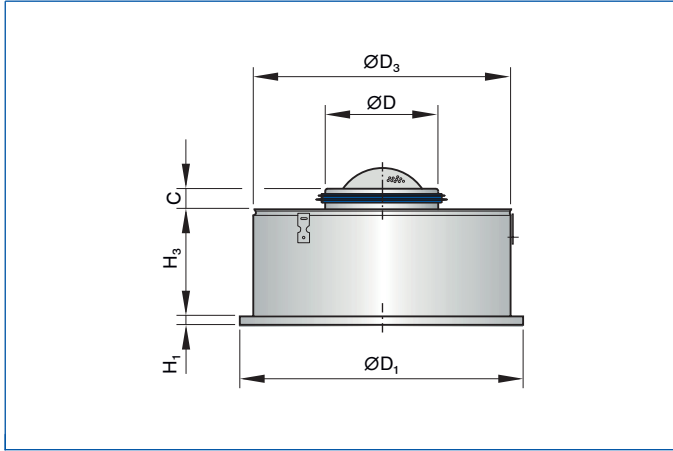
Dimensions [mm] and weight [kg]

Nominal size	$\varnothing D_1$	H_1	$\square Q_3$	H_3	$\varnothing D_4$	H_4	$\varnothing D$	A	C	Plenum box	m kg
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
300	300	8	290	285	278	250	158	174	50	AK-Uni-013	4.2
400	400	8	372	330	362	295	198	199	50	AK-Uni-014	6.5
500	500	8	476	330	460	295	198	199	50	AK-Uni-015	9.0
600	600	8	567	380	557	345	248	234	48	AK-Uni-016	12.3
625	625	8	567	380	557	345	248	234	48	AK-Uni-016	12.5

Weights apply to the supply air variant



 Circular diffuser face with plenum box for vertical duct connection

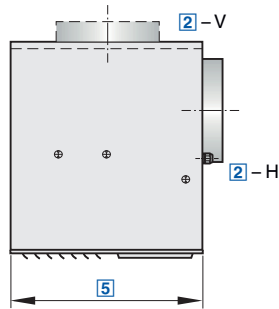


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	H ₁	ØD ₃	H ₃	ØD	C	m
	mm	mm	mm	mm	mm	mm	kg
300	300	8	275	200	158	50	2.8
400	400	8	364	200	198	50	4.4
500	500	8	462	200	198	50	6.3
600	600	8	559	200	248	48	8.5
625	625	8	559	200	248	48	8.7

Weights apply to the supply air variant





For high rooms, with adjustable air control blades

Order code

VD - V - E1 - K / 600 / P1 - RAL ...

1 2 3 4 5 6

1 Type

VD Swirl diffuser

2 Connection

No entry: diffuser face only
H Horizontal, with plenum box
V Vertical, with plenum box

3 Adjustment

No entry: manual
Electric actuator
E1 230 V AC, 3-point
E2 24 V AC/DC, 3-point
E3 24 V AC/DC, modulating 2 - 10 V DC

4 Accessories

Only for connections H and V supplied separately
K Extended border
S Protective cage

K and S cannot be combined

5 Nominal size [mm]

425, 600, 775, 1050

6 Exposed surface of diffuser face

No entry: anodised, natural colour, E6-C-0
P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

+ Features

- Square ceiling swirl diffusers, with manual or motorised adjustment of the air pattern to ensure draught-free ventilation of the occupied zone both in heating and cooling modes
- ▶ Nominal sizes 425, 600, 775, 1050
 - ▶ Volume flow rate range 95 - 1490 l/s or 342 - 5364 m³/h
 - ▶ Diffuser face made of aluminium with anodised finish
 - ▶ For supply air
 - ▶ For variable and constant volume flows
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
 - ▶ Discharge direction can be adjusted manually or with an actuator
 - ▶ Ideal for high rooms

- Optional equipment and accessories
- ▶ Exposed diffuser face available in RAL CLASSIC colours
 - ▶ Horizontal or vertical duct connection
 - ▶ An extended border improves the horizontal air discharge in cooling mode
 - ▶ Protective cage for use in gymnasiums
 - ▶ Actuators for adjusting the air discharge direction

X Application

- ▶ Type VD ceiling swirl diffusers are used as supply air diffusers for high rooms in comfort and industrial zones
- ▶ For production halls, gymnasiums, theatres and conference rooms as well as for large internal spaces in airports, railway stations and shopping centres
- ▶ For mixed flow ventilation with different air patterns in heating and cooling modes
- ▶ Horizontal swirling supply air discharge in cooling mode
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity
- ▶ Angled or vertical air discharge in heating mode
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +15 K
- ▶ For room heights exceeding 3.8 m
- ▶ With freely suspended installation, an extended border supports the horizontal air discharge in cooling mode

◇ Variants

- ▶ Diffuser face only
- Connection
- ▶ H: Horizontal duct connection
 - ▶ V: Vertical duct connection

& Accessories

- ▶ Electric actuators for adjusting the air discharge direction
- ▶ Extended border and protective cage

+ Useful additions

- ▶ TDC temperature difference control module

★ Special characteristics

- ▶ With adjustable air control blades for high rooms
- ▶ The air pattern can be adjusted manually or with an actuator
- ▶ Horizontal or vertical duct connection

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



Technical data

Nominal sizes	425, 600, 775, 1050 mm
Minimum volume flow rate	95 - 675 l/s or 342 - 2430 m ³ /h
Maximum volume flow rate, with $L_{WA} \approx 50$ dB(A)	280 - 1490 l/s or 1008 - 5364 m ³ /h
Supply air to room air temperature difference	-12 to +15 K

VD-H, sound power level and total differential pressure

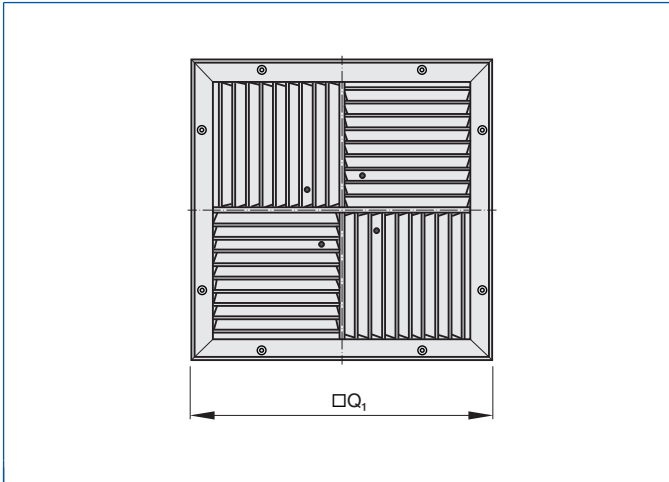
Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
425	95	342	6	21
	150	540	15	32
	215	774	31	42
	280	1008	52	50
600	210	756	9	28
	310	1116	20	37
	410	1476	35	44
	510	1836	54	50
775	375	1350	8	26
	510	1836	14	34
	660	2376	23	41
	885	3186	42	50
1050	675	2430	13	36
	825	2970	19	41
	975	3510	27	46
	1120	4032	35	50

VD-V, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
425	95	342	6	17
	175	630	19	31
	260	936	41	41
	340	1224	70	50
600	210	756	7	19
	355	1278	21	32
	410	1476	28	36
	660	2376	75	50
775	375	1350	6	22
	545	1962	14	32
	715	2574	24	42
	885	3186	38	50
1050	675	2430	11	30
	950	3420	22	38
	1225	4410	37	44
	1490	5364	55	50



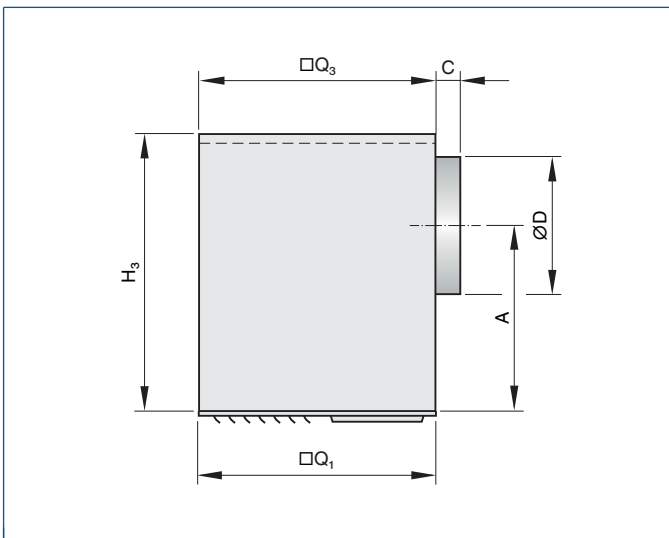
Diffuser face VD



Dimensions [mm]

Nominal size	□Q ₁ mm	A _{eff} m ²	A _{eff} vertical air discharge m ²
425	425	0.0307	0.0781
600	595	0.0685	0.1819
775	763	0.1242	0.3405
1050	1043	0.2247	0.6358

VD-H

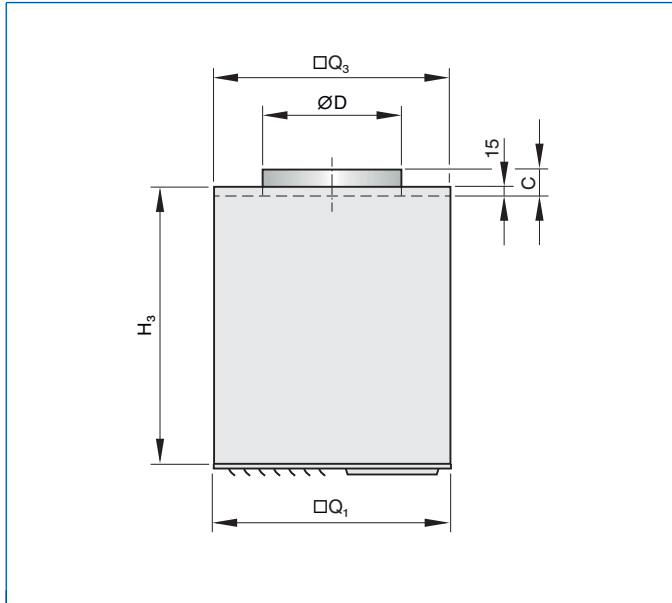


Dimensions [mm] and weight [kg]

Nominal size	□Q ₁ mm	□Q ₃ mm	H ₃ mm	ØD mm	A mm	C mm	m kg
425	425	425	500	248	335	46	11
600	595	600	550	313	353	48	19
775	763	775	750	448	498	60	34
1050	1043	1050	800	498	523	60	57

Weights apply to the variant with actuator



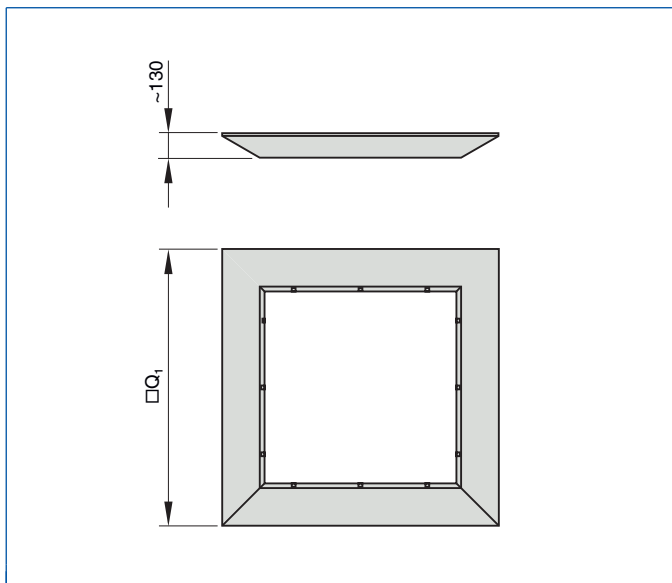


Dimensions [mm] and weight [kg]

Nominal size	$\square Q_1$	$\square Q_3$	H_3	$\varnothing D$	C	m
	mm	mm	mm	mm	mm	kg
425	425	425	500	248	46	11
600	595	600	550	313	48	19
775	763	775	550	448	60	29
1050	1043	1050	600	498	60	51

Weights apply to the variant with actuator

VD-*-K

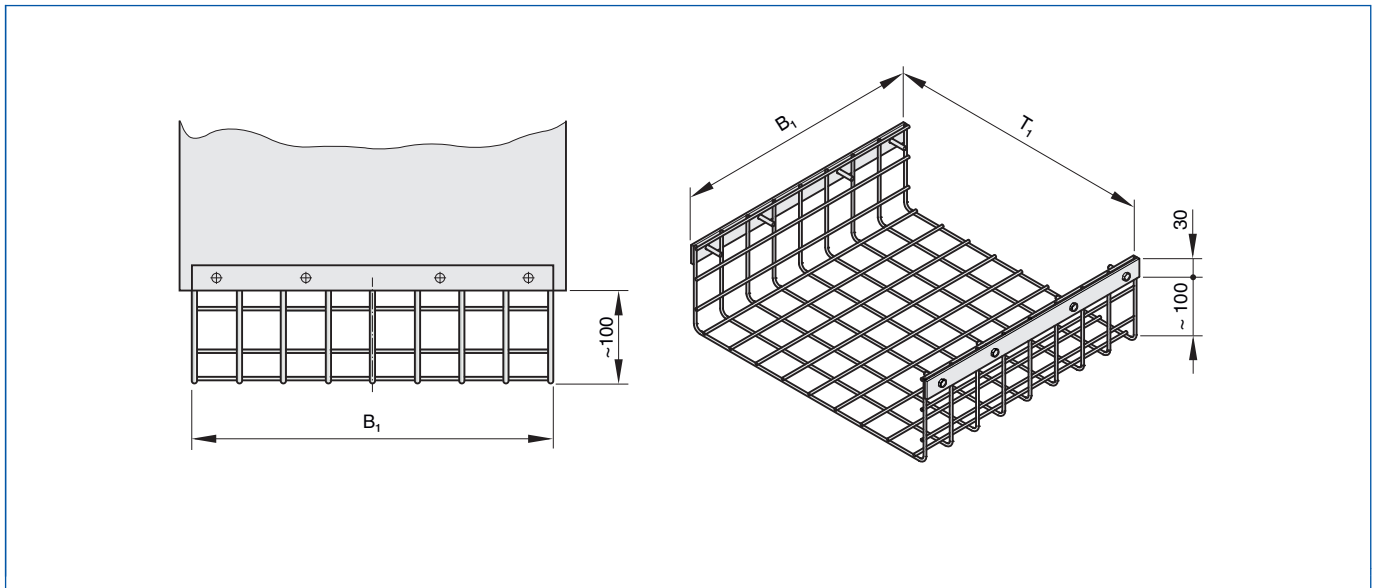


Dimensions [mm] and weight [kg]

Nominal size	$\square Q_1$	m
	mm	kg
425	833	5
600	1003	6
775	1171	8
1050	1451	10



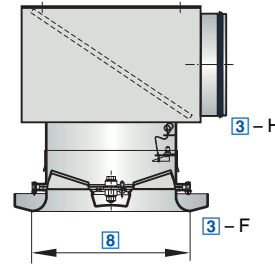
VD-⁺-S



Dimensions [mm] and weight [kg]

Nominal size	B_1		T_1		m
	mm		mm		
425	404		449		3
600	604		624		4
775	754		799		6
1050	1054		1074		9





For high rooms, with adjustable air control blades

Order code

VDL - B - H - L - D - S - E3 / 400 / P1 - RAL ...

1 2 3 4 5 6 7 8 9

1 Type

VDL Swirl diffuser

2 Construction style - diffuser face

A Diffuser face without flange
B Diffuser face with flange

3 Connection

F Diffuser face only
H Horizontal, with plenum box
V Vertical

4 Accessories 1

L No entry: none
L With lip seal (only for connection types V and H)

5 Diffuser face

Only in combination with connection H or V
N Non-removable
D Removable

6 Accessories 2

Only in combination with diffuser face construction style B, supplied separately
K Extended border
S Protective cage

7 Adjustment

M Manual
X Without (fixed blades, only horizontal air discharge)

Electric actuator
E1 230 V AC, 3-point
E2 24 V AC/DC, 3-point
E3 24 V AC/DC, modulating 2 - 10 V DC

8 Nominal size [mm]

315, 400, 630, 800

9 Exposed surface of diffuser face

No entry: powder-coated RAL 9010, pure white
P1 Powder-coated, specify RAL CLASSIC colour
Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

+ Features

- Circular ceiling swirl diffusers, with manual or motorised adjustment of the air pattern to ensure draught-free ventilation of the occupied zone both in heating and cooling modes
- ▶ Nominal sizes 315, 400, 630, 800
 - ▶ Volume flow rate range 65 - 1080 l/s or 234 - 3888 m³/h
 - ▶ Diffuser face made of galvanised, powder-coated sheet steel and of aluminium
 - ▶ For supply air
 - ▶ For variable and constant volume flows
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
 - ▶ Discharge direction can be adjusted manually or with an actuator
 - ▶ Diffuser face with aerodynamically optimised contours
 - ▶ Ideal for high rooms

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours
- ▶ Horizontal or vertical duct connection
- ▶ An extended border improves the horizontal air discharge in cooling mode
- ▶ Protective cage for use in gymnasiums
- ▶ Actuators for adjusting the air discharge direction
- ▶ Diffuser face can be removed from the room side

X Application

- ▶ Type VDL ceiling swirl diffusers are used as supply air diffusers for high rooms in comfort and industrial zones
- ▶ For production halls, gymnasiums, theatres and conference rooms as well as for large internal spaces in airports, railway stations and shopping centres
- ▶ For mixed flow ventilation with different air patterns in heating and cooling modes
- ▶ Horizontal swirling supply air discharge in cooling mode
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity
- ▶ Angled or vertical air discharge in heating mode
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +15 K
- ▶ For room heights exceeding 3.8 m
- ▶ With freely suspended installation, an extended border supports the horizontal air discharge in cooling mode

◊ Variants

- ▶ **A:** Diffuser face without flange
- ▶ **B:** Diffuser face with flange

Connection

- ▶ **F:** Diffuser face only
- ▶ **H:** Horizontal duct connection, with plenum box
- ▶ **V:** Vertical duct connection, with plenum box

Diffuser face

- ▶ **N:** Non-removable diffuser face
- ▶ **D:** Removable diffuser face, only in variant with plenum box

& Accessories

- ▶ Lip seal
- ▶ Electric actuators for adjusting the air discharge direction
- ▶ Extended border and protective cage

+ Useful additions

- ▶ TDC temperature difference control module

★ Special characteristics

- ▶ For high rooms, with adjustable air control blades
- ▶ Diffuser face with aerodynamically optimised contours
- ▶ The air pattern can be adjusted manually or with an actuator
- ▶ Horizontal or vertical duct connection





Technical data

Nominal sizes	315, 400, 630, 800 mm
Minimum volume flow rate	65 - 320 l/s or 234 - 1152 m ³ /h
Maximum volume flow rate, with L _{WA} ≅ 50 dB(A)	170 - 1080 l/s or 612 - 3888 m ³ /h
Supply air to room air temperature difference	-12 to +15 K

VDL*-H-...-M, VDL*-H-...-E*, sound power level and total differential pressure

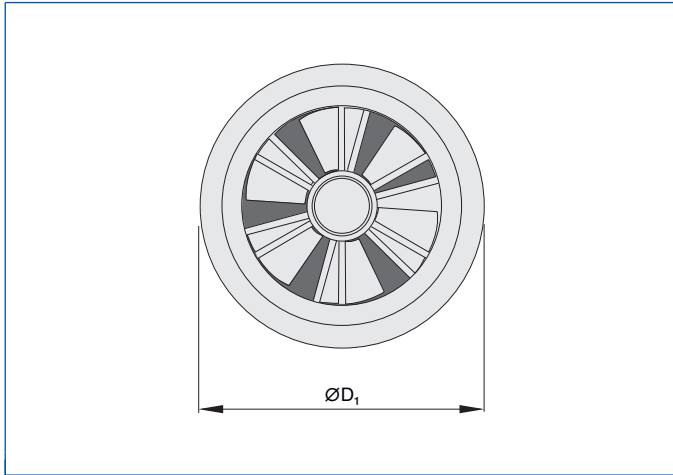
Nominal size	\dot{V}		Δp_t	L _{WA}
	l/s	m ³ /h	Pa	dB(A)
315	65	234	9	22
	100	360	20	34
	135	486	37	43
	170	612	59	50
400	95	342	7	18
	170	612	22	32
	250	900	49	42
	325	1170	82	50
630	235	846	8	23
	365	1314	20	35
	495	1782	38	44
	625	2250	60	50
800	320	1152	8	24
	470	1692	18	35
	620	2232	31	43
	765	2754	47	50

VDL*-V-...-M, VDL*-V-...-E*, VDL*-F-M, sound power level and total differential pressure

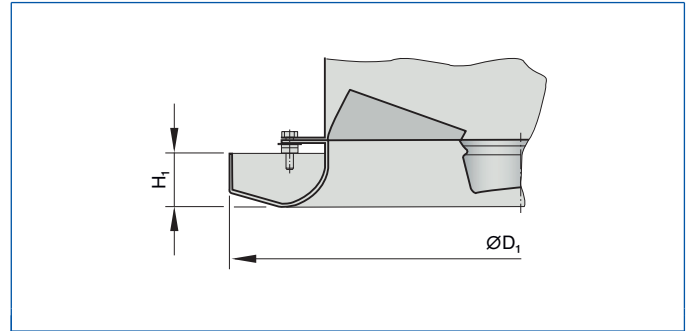
Nominal size	\dot{V}		Δp_t	L _{WA}
	l/s	m ³ /h	Pa	dB(A)
315	65	234	6	19
	115	414	19	33
	165	594	39	43
	215	774	66	50
400	95	342	5	15
	180	648	19	31
	265	954	41	41
	350	1260	71	50
630	235	846	6	16
	405	1458	18	32
	575	2070	36	43
	730	2628	58	50
800	320	1152	7	20
	500	1800	17	33
	680	2448	32	43
	865	3114	52	50



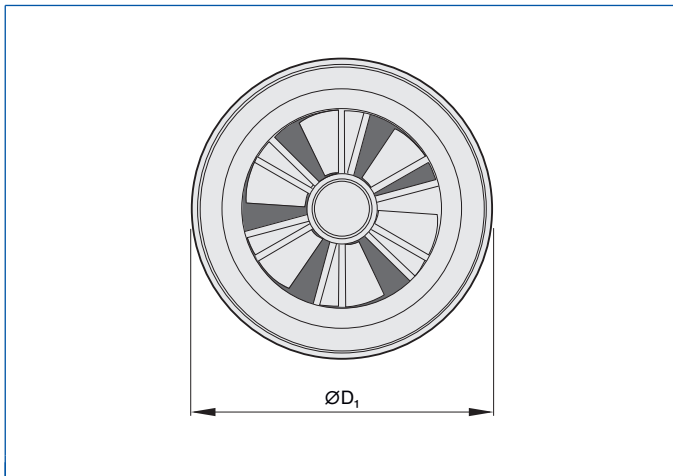
VDL-A



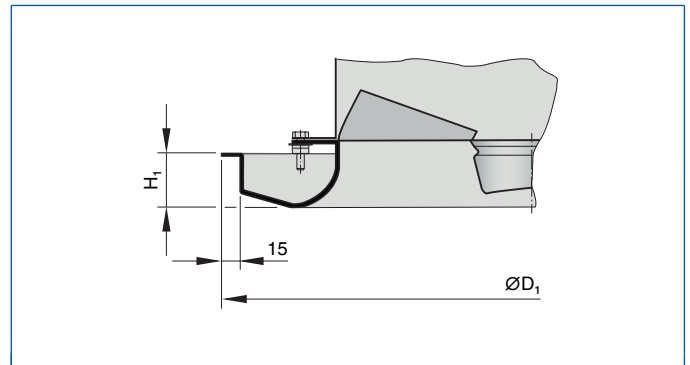
VDL-A



VDL-B



VDL-B



Dimensions [mm]

Nominal size	VDL-A		VDL-B		H ₁ mm	A _{eff} m ²
	ØD ₁ mm		mm			
315	464		494		42	0.022
400	567		597		45	0.031
630	871		901		51	0.077
800	1077		1107		55	0.106

VDL*-F-X

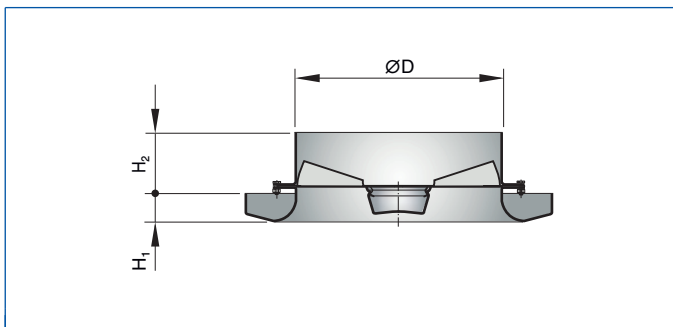


Illustration shows VDL-A-F-X

VDL*-F-M

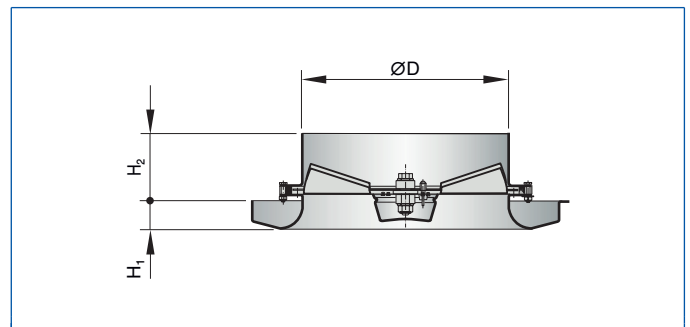


Illustration shows VDL-A-F-M



Dimensions [mm] and weight [kg]

Nominal size	H ₁	H ₂	ØD	m
	mm	mm	mm	kg
315	42	103	313	3
400	45	112	398	4
630	51	153	628	11
800	55	174	798	19

VDL*-H-N

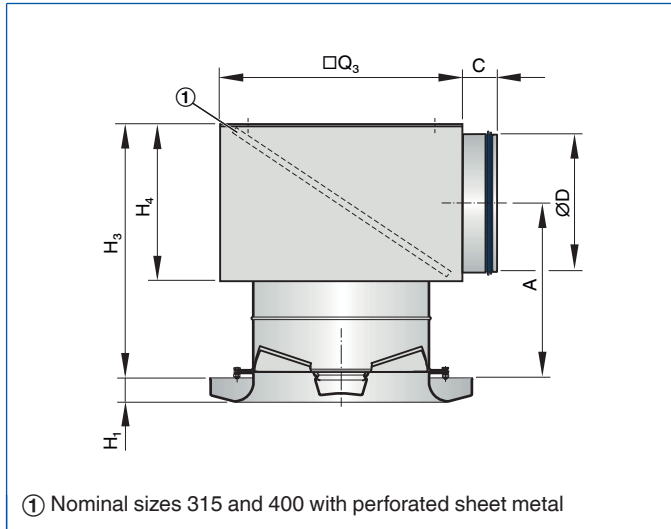


Illustration shows VDL-A-H-L-N-M

VDL*-H-D

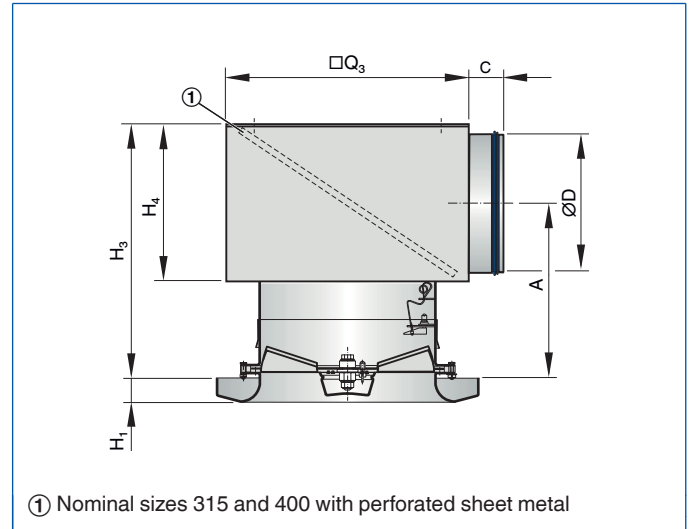


Illustration shows VDL-A-H-L-D-M

Dimensions [mm] and weight [kg]

Nominal size	H ₁	□Q ₃	H ₃	H ₄	ØD	A	C	m
	mm	mm	mm	mm	mm	mm	mm	kg
315	42	435	432	282	248	290	65	11
400	45	500	536	368	313	351	65	16
630	51	750	761	468	398	526	65	35
800	55	1000	1026	568	498	741	65	59

VDL*-V-N

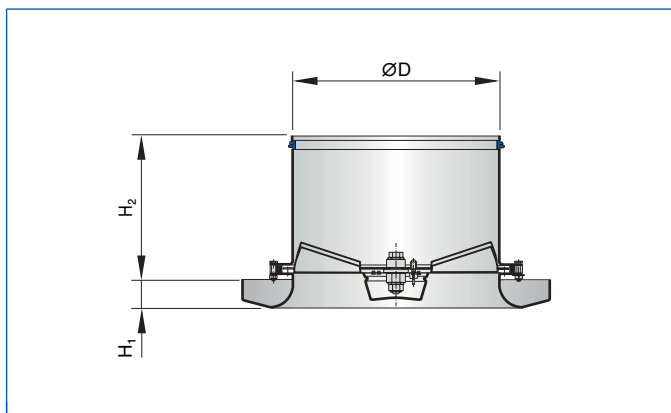


Illustration shows VDL-A-V-L-N-M

VDL*-V-D

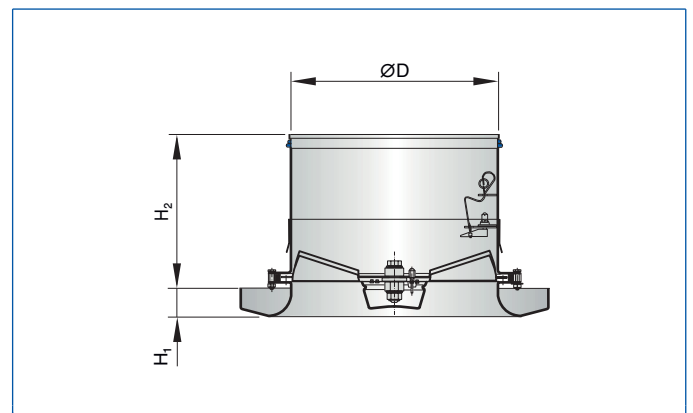


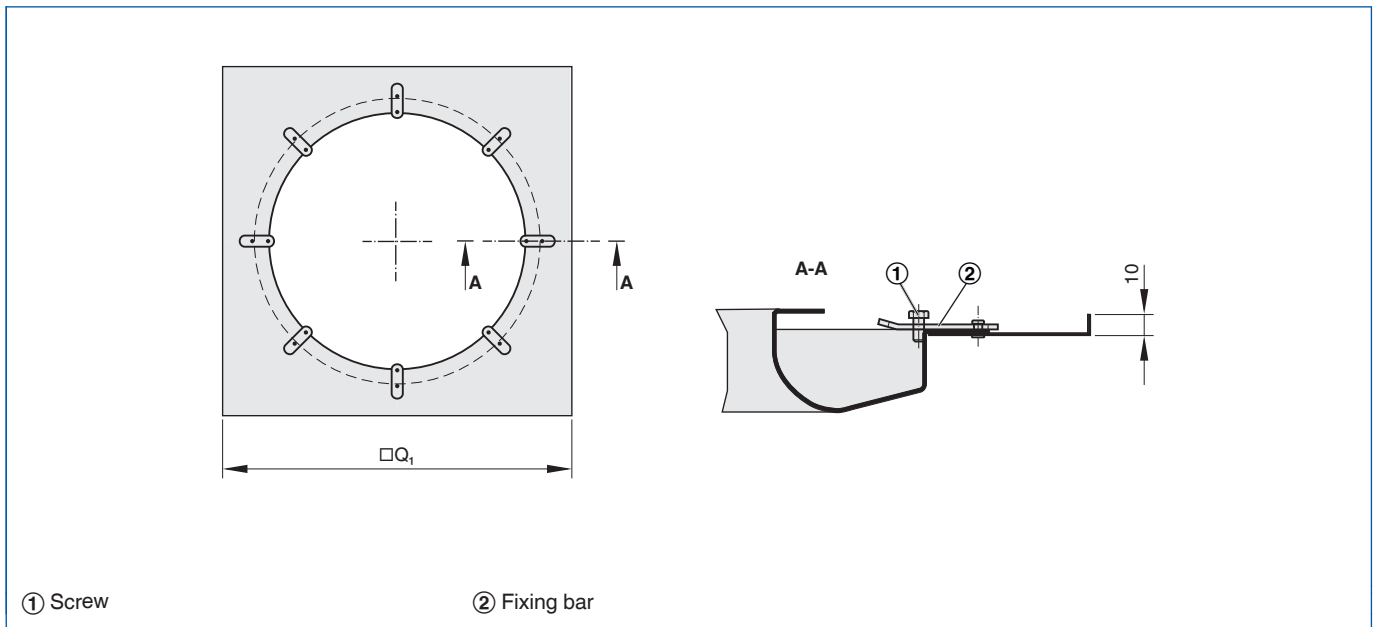
Illustration shows VDL-A-V-L-D-M



Dimensions [mm] and weight [kg]

Nominal size	VDL-*-V-N		VDL-*-V-D		ØD	m
	H ₂	H ₁	H ₂	H ₁		
	mm	mm	mm	mm	mm	kg
315		219	42	313	6	
400		228	45	398	8	
630	316	316	51	628	19	
800	483	483	55	798	33	

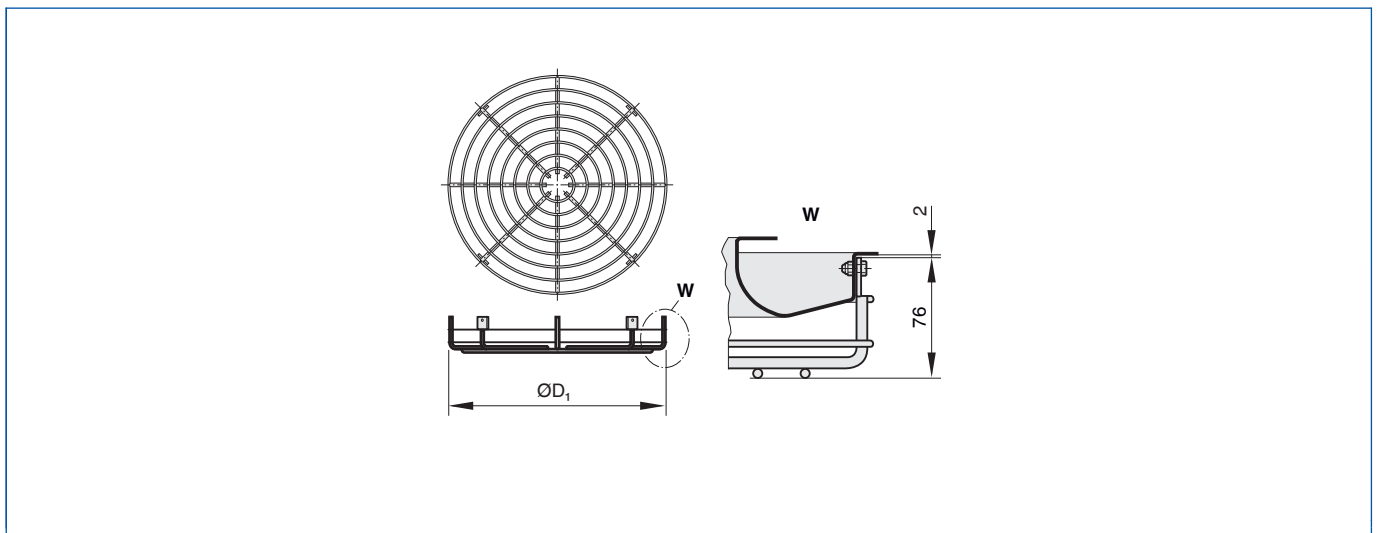
Extended border



Dimensions [mm] and weight [kg]

Nominal size	□Q ₁	m
	mm	
315	630	2
400	800	3
630	1260	8
800	1600	13

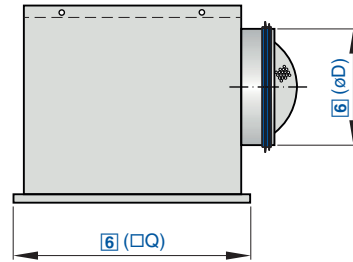
Protective cage



Dimensions [mm] and weight [kg]

Nominal size	ØD_1	m	
	mm	kg	
315	488		3
400	591		3
630	895		6
800	1101		9





For high volume flow rates, with fixed air control blades

Order code

FDE - Z - H - M - L / 625 × 248 / P1 - RAL ...

1 2 3 4 5 6 7

<p>1 Type FDE Swirl diffuser</p> <p>2 System Z Supply air A Extract air</p> <p>3 Connection H Horizontal</p> <p>4 Damper blade for volume flow rate balancing No entry: none M With</p>	<p>MN With cords and pressure tap</p> <p>5 Accessories L No entry: none With lip seal</p> <p>6 Nominal size [mm] □Q × ∅D 600 × 248 625 × 248 600 × 313 625 × 313</p>	<p>7 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour</p> <p>Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p>
---	---	---

+ Features

- ▶ Square ceiling swirl diffusers
- ▶ Nominal sizes 600, 625
- ▶ Volume flow rate range 51 - 365 l/s or 184 - 1314 m³/h
- ▶ Diffuser face made of galvanised sheet steel, powder-coated
- ▶ For supply and extract air
- ▶ For variable and constant volume flows
- ▶ For all types of ceiling systems
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity

- Optional equipment and accessories
- ▶ Exposed diffuser face available in RAL CLASSIC colours
 - ▶ Plenum box with cord-operated damper blade and pressure tap

Y Application

- ▶ Type FDE ceiling swirl diffusers are used as

W Technical data

Nominal sizes	600, 625 mm
Minimum volume flow rate, at -6 K	51 - 365 l/s or 184 - 1314 m ³ /h
Maximum volume flow rate, at approx. 50 dB(A)	330 - 365 l/s or 1188 - 1314 m ³ /h
Supply air to room air temperature difference	-12 to +10 K

- ▶ supply air or extract air diffusers for comfort zones
- ▶ Horizontal swirling supply air discharge for mixed flow ventilation
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +10 K
- ▶ For room heights up to 4.2 m (lower edge of suspended ceiling)
- ▶ For all types of ceiling systems

◊ Variants

- ▶ FDE-Z: Supply air
- ▶ FDE-A: Extract air

⬡ Attachments

- ▶ M: Damper blade for volume flow rate

- ▶ balancing
- ▶ MN: Pressure tap and cord-operated damper blade for volume flow rate balancing with the diffuser face in place

& Accessories

- ▶ Lip seal

★ Special characteristics

- ▶ For high volume flow rates, with fixed air control blades
- ▶ High induction results in a rapid reduction of the supply air to room air temperature difference and airflow velocity
- ▶ For all types of ceiling systems
- ▶ Horizontal duct connection

ISO Standards and guidelines

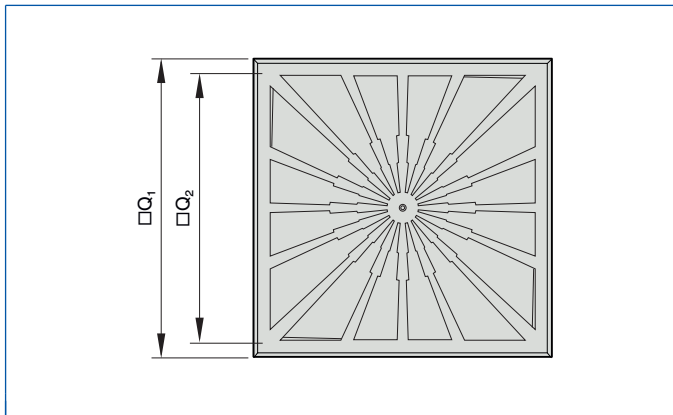
- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



FDE-Z (supply air), sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600 × 248, 625 × 248	51	184	2	<15	3	<15	6	<15
	145	522	14	26	22	30	46	38
	235	846	38	39	57	44	122	51
	330	1188	75	50	113	56	240	62
600 × 313, 625 × 313	51	184	1	<15	1	<15	3	<15
	160	575	10	26	14	28	28	31
	260	936	25	39	37	42	74	45
	365	1314	50	50	73	52	145	56

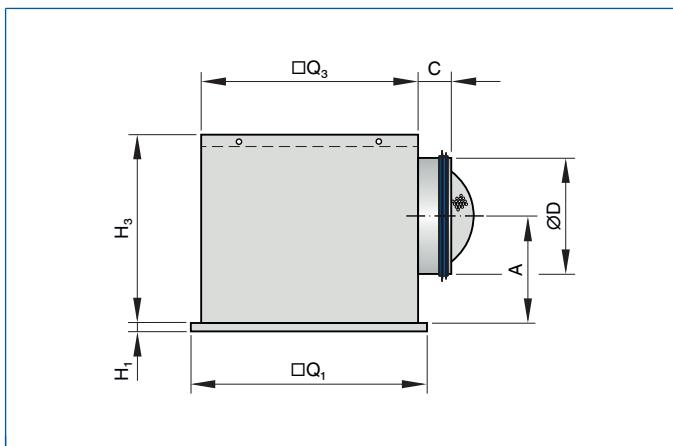
Diffuser face FDE



Dimensions [mm]

Nominal size	$\square Q_1$	$\square Q_2$	A_{eff} m ²
	mm	mm	
600 × 248	598	543	0.0447
600 × 313	598	543	0.0447
625 × 248	623	543	0.0447
625 × 313	623	543	0.0447

Square diffuser face with plenum box for horizontal duct connection





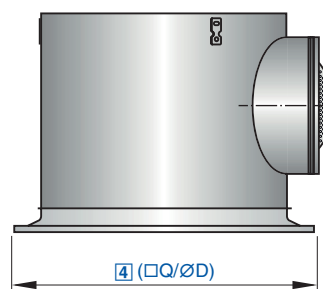
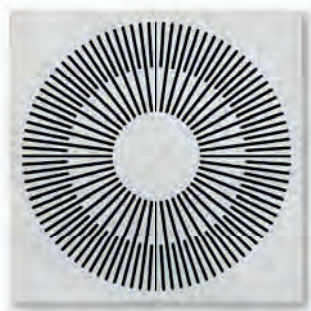
Dimensions [mm] and weight [kg]

Nominal size	□Q ₁	H ₁	□Q ₃	H ₃	ØD	A	C	Plenum box	m
	mm	mm	mm	mm	mm	mm	mm		kg
600 × 248	598	8	567	345	248	199	48	AK-Uni-004	13.1
600 × 313	598	8	567	410	313	222	50	AK-Uni-011	14.4
625 × 248	623	8	567	345	248	199	48	AK-Uni-004	13.1
625 × 313	623	8	567	410	313	222	50	AK-Uni-011	14.1




Design ceiling swirl diffusers

	Design ceiling swirl diffusers		
	XARTO	ADD	DCS
Diffuser face style			
Circular	●	●	●
Square	●		●
Diffuser face			
Circular	●	●	
Square	●	●	●
Galvanised sheet steel	●	●	●
Aluminium			
Plastic			
Air control blades			
Fixed	●	●	●
Adjustable			
Plastic, black and white			
Duct connection			
Horizontal	●	●	●
Vertical		●	●
FLEXTRO			
Attachments			
Damper unit or blade	●	●	
Pressure tap		●	
Actuator			
Accessories			
Lip seal	●	●	
Protective cage			
Extended border			
Nominal sizes			
Circular diffuser face	600	250, 300, 450, 500, 600	
Square diffuser face	600, 625	250, 300, 450, 500, 600, 625	600, 625
Spigot Nominal diameter		125, 160, 200, 250, 315	125, 160, 200, 250, 315, 400
Technical data			
Volume flow rate range [l/s]	31 - 265	20 - 465	4 - 260
Volume flow rate range [m³/h]	110 - 954	72 - 1674	16 - 936
Supply air to room air temperature difference [K]	-12 - +10	-12 - +10	-12 - +10
Explanation			
● - Standard			
○ - Optional			



For more refined comfort zones with special demands on architecture and design, with fixed air control blades

Order code

XARTO – R1 – Z / 625 / P1 – RAL ...

1 2 3 4 5

1 Type

XARTO Ceiling swirl diffuser

2 Construction style

Square diffuser face

Circular face style

R1
R2
R3
R4

Square face style

Q1
Q2
Q3
Q4

Q5

Q6

Circular diffuser face

Circular face style

C1

C2

C3

C4

C5

C6

3 System

Z Supply air

A Extract air

4 Nominal size [mm]

600 □Q, ∅D

625 □Q only

5 Surface

No entry: powder-coated RAL 9010, pure white

P1 Powder-coated, specify RAL CLASSIC colour

Gloss level

RAL 9010 50 %

RAL 9006 30 %

All other RAL colours 70 %

+ Features

Circular and square ceiling swirl diffusers for high volume flow rates at low sound power levels and low differential pressure

- ▶ Nominal sizes 600, 625
- ▶ Volume flow rate range 31 - 265 l/s or 110 - 954 m³/h
- ▶ Diffuser face made of galvanised sheet steel, powder-coated
- ▶ For supply and extract air
- ▶ For variable and constant volume flows
- ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
- ▶ Swirl unit inside for the best swirl effect and high induction levels
- ▶ Plenum box with acoustically optimised and lockable damper blade
- ▶ Ideal for comfort zones

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours

X Application

- ▶ Type XARTO ceiling swirl diffusers are used as supply air or extract air diffusers for comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Horizontal swirling supply air discharge for mixed flow ventilation
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For all types of ceiling systems
- ▶ With an extended border also suitable for freely suspended installation (supply air variant)

◇ Variants

- ▶ XARTO-Q*: Square diffuser face, square face style
- ▶ XARTO-R*: Square diffuser face, circular face style
- ▶ XARTO-C*: Circular diffuser face, circular face style
- ▶ XARTO-**-Z: Supply air
- ▶ XARTO-**-A: Extract air

★ Special characteristics

- ▶ For the most demanding requirements of technical function, comfort, and design
- ▶ Diffuser face in many different designs
- ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
- ▶ Horizontal duct connection

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135





Technical data

Nominal sizes	600, 625 mm
Minimum volume flow rate, with $\Delta t_z = -6$ K	31 - 43 l/s or 110 - 155 m ³ /h
Maximum volume flow rate, with $L_{WA} \cong 50$ dB(A)	220 - 265 l/s or 792 - 954 m ³ /h
Supply air to room air temperature difference	-12 to +10 K



XARTO-Q*-Z (supply air), sound power level and total differential pressure

Diffuser face	\dot{V}	\dot{V}	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)
Q1	39	142	2	<15	3	<15	5	<15
	100	360	11	19	18	20	33	33
	160	576	29	32	46	33	85	47
	260	936	77	50	122	52	224	77
Q2	38	137	2	<15	3	<15	5	16
	105	378	13	21	20	24	36	36
	175	630	36	35	56	37	101	50
	255	918	76	50	118	51	215	68
Q3	42	151	2	<15	3	<15	6	<15
	115	414	14	22	23	24	42	37
	185	666	37	37	59	38	108	52
	258	930	72	50	115	50	211	65
Q4	34	124	1	<15	2	<15	4	<15
	105	378	13	22	20	22	34	32
	175	630	37	37	56	37	96	50
	245	882	73	50	110	51	187	62
Q5	42	150	2	<15	3	<15	5	<15
	115	414	14	22	23	24	41	36
	190	684	38	37	62	39	112	56
	265	954	75	50	120	52	217	76
Q6	43	155	2	<15	3	<15	6	<15
	120	432	16	23	25	25	46	38
	190	684	39	37	63	38	116	54
	260	936	73	50	117	51	217	73

XARTO-R*-Z, XARTO-C*-Z (supply air), sound power level and total differential pressure

Diffuser face	\dot{V}	\dot{V}	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)
C1 R1	38	138	2	<15	3	<15	5	<15
	105	378	13	24	19	24	34	34
	170	612	33	38	50	38	89	50
	240	864	66	50	99	51	178	64
C2 R2	38	138	2	<15	2	<15	4	<15
	105	378	12	23	19	23	33	32
	170	612	32	36	49	37	86	49
	240	864	65	50	97	50	172	66
C3 R3	38	136	2	<15	2	<15	4	<15
	105	378	13	23	19	23	33	33
	170	612	33	37	49	37	85	50
	240	864	65	50	98	51	170	67



Diffuser face	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
C4 R4	31	110	1	<15	2	<15	3	<15
	95	342	12	23	17	22	27	28
	155	558	31	37	44	37	73	46
	220	792	63	50	89	51	147	62
C5	38	138	2	<15	3	<15	4	<15
	110	396	14	26	25	25	37	31
	180	648	37	39	66	40	98	48
	250	900	72	51	128	52	189	62
C6	38	138	2	<15	2	<15	4	<15
	110	396	14	26	18	26	35	31
	180	648	36	39	48	39	95	48
	250	900	70	50	93	51	182	61

Diffuser face XARTO

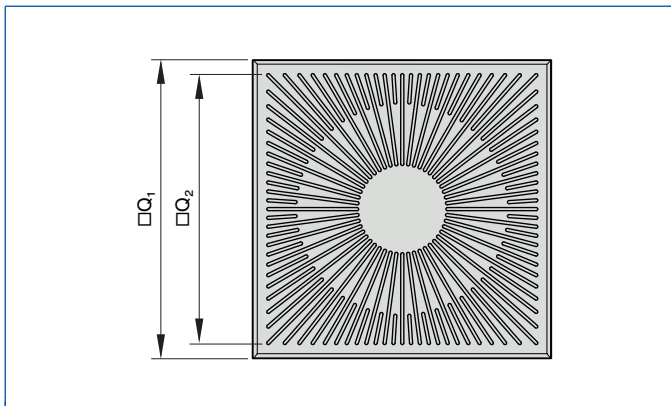
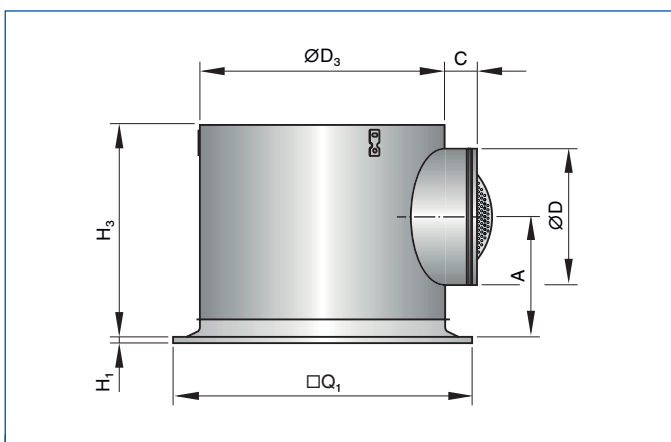


Illustration shows XARTO-Q1

Dimensions [mm]

Variant	□Q ₂	A _{eff} m ²
	mm	
Q1	566	0.0384
Q2	566	0.0374
Q3	566	0.0403
Q4	566	0.0344
Q5	566	0.0401
Q6	566	0.0411

XARTO-Q



Dimensions [mm] and weight [kg]

Nominal size	XARTO-Q*-Z	XARTO-Q*-A	□Q ₁	H ₁	ØD ₃	H ₃	ØD	A	C
	m								
	kg	kg	mm	mm	mm	mm	mm	mm	mm
600	9.5	9.0	598	8	462	371	248	220	60
625	9.5	9.0	623	8	462	371	248	220	60

Diffuser face XARTO-R

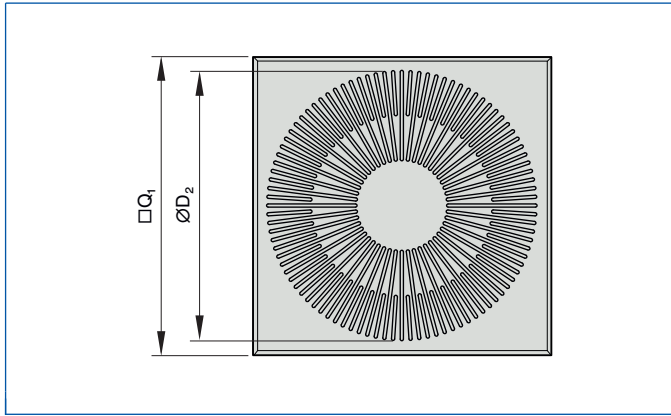
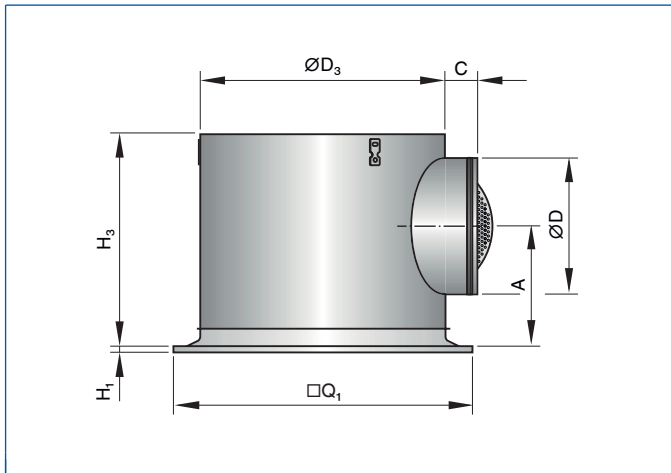


Illustration shows XARTO-R1

Dimensions [mm]

Variant	ØD ₂ mm	A _{eff} m ²
R1	550	0.03760
R2	550	0.03750
R3	550	0.03720
R4	550	0.03130

XARTO-R



Dimensions [mm] and weight [kg]

Nominal size	XARTO-R*-Z	XARTO-R*-A	□Q ₁	H ₁	ØD ₃	H ₃	ØD	A	C
	m								
	kg	kg	mm	mm	mm	mm	mm	mm	mm
600	9.0	8.5	598	8	462	356	248	205	60
625	9.0	8.5	623	8	462	356	248	205	60



Diffuser face XARTO-C

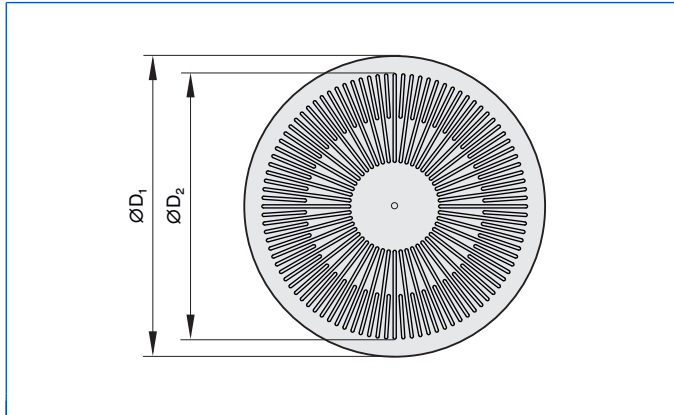
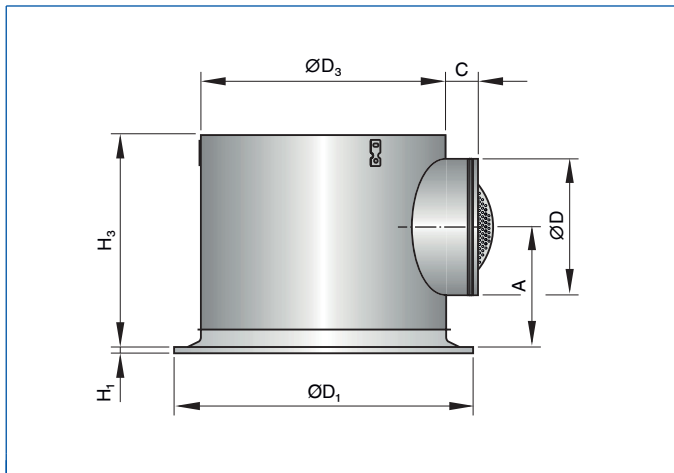


Illustration shows XARTO-C1

Dimensions [mm]

Variant	ØD ₁ mm	ØD ₂ mm	A _{eff} m ²
C1	600	550	0.03760
C2	600	550	0.03750
C3	600	550	0.03720
C4	600	550	0.03130
C5	600	550	0.03764
C6	600	550	0.03764

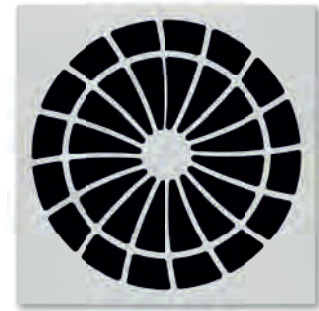
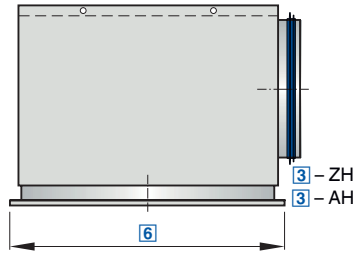
XARTO-C



Dimensions [mm] and weight [kg]

Nominal size	XARTO-C*-Z	XARTO-C*-A	ØD ₁ mm	H ₁ mm	ØD ₃ mm	H ₃ mm	ØD mm	A mm	C mm
	kg	kg							
600	8.5	8.0	600	8	462	356	248	205	60

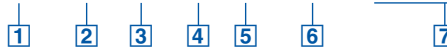




For the creative design of ceilings in comfort zones, with fixed air control blades

Order code

ADD - Q - ZH - M - L / 600 / P1 - RAL ...



1 Type ADD Ceiling swirl diffuser	4 Damper blade for volume flow rate balancing No entry: none M With Only for connections ZH and AH MN With cords and pressure tap	7 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %
2 Construction style R Circular (not with nominal size 625) Q Square	5 Accessories No entry: none L With lip seal	
3 Connection ZH Horizontal, supply air ZV Vertical, supply air AH Horizontal, extract air AV Vertical, extract air	6 Nominal size [mm] 250, 300, 400, 450, 500, 600, 625 (nur ADD-Q)	

+ Features

- Circular and square ceiling swirl diffusers
 - ▶ Nominal sizes 250, 300, 400, 450, 500, 600, 625
 - ▶ Volume flow rate range 20 - 465 l/s or 72 - 1674 m³/h
 - ▶ Diffuser face made of galvanised sheet steel, powder-coated
 - ▶ For supply and extract air
 - ▶ For variable and constant volume flows
 - ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
 - ▶ Swirl unit inside for the best swirl effect and high induction levels
 - ▶ Ideal for comfort zones

- Optional equipment and accessories
- ▶ Exposed diffuser face available in RAL CLASSIC colours
 - ▶ Horizontal or vertical duct connection
 - ▶ Plenum box with cord-operated damper blade and pressure tap

X Application

- ▶ Type ADD ceiling swirl diffusers are used as supply air or extract air diffusers for comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Horizontal swirling supply air discharge for mixed flow ventilation
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For all types of ceiling systems

◊ Variants

- ▶ ADD-Q: Square diffuser face
- ▶ ADD-R: Circular diffuser face
- ▶ ADD-*-Z: Supply air
- ▶ ADD-*-A: Extract air

Connection

- ▶ H: Horizontal duct connection
- ▶ V: Vertical duct connection

⬡ Attachments

- ▶ M: Damper blade for volume flow rate balancing
- ▶ MN: Pressure tap and cord-operated damper blade for volume flow rate balancing with the diffuser face in place

& Accessories

- ▶ Lip seal

★ Special characteristics

- ▶ For the creative design of ceilings in comfort zones
- ▶ Diffuser faces in many different designs
- ▶ For all types of ceiling systems, and with an extended border also suitable for freely suspended installation
- ▶ Horizontal or vertical duct connection

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



Technical data

Nominal sizes	250, 300, 400, 450, 500, 600, 625 mm
Minimum volume flow rate, with $\Delta t_z = -6$ K	20 - 200 l/s or 72 - 720 m ³ /h
Maximum volume flow rate, with $L_{WA} \approx 50$ dB(A)	70 - 465 l/s or 256 - 1674 m ³ /h
Supply air to room air temperature difference	-12 to +10 K

ADD*-ZH (supply air), sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
250	20	72	7	16	9	17	19	17
	35	126	21	29	29	31	58	31
	50	180	43	38	58	41	119	41
	70	256	87	50	118	52	240	53
300	30	108	5	<15	8	<15	16	15
	60	216	22	29	32	31	64	33
	90	324	49	40	72	44	144	46
	120	432	88	50	127	53	255	56
400	55	198	7	16	9	16	19	20
	100	360	23	31	31	32	64	37
	145	522	49	42	66	44	134	49
	185	666	80	50	107	54	219	58
450	70	252	5	<15	7	<15	14	16
	140	504	21	29	29	31	57	35
	200	720	42	40	59	42	115	46
	275	990	80	50	112	53	218	60
500	85	306	6	<15	9	17	19	22
	155	558	21	29	31	33	64	38
	225	810	44	40	65	44	135	50
	300	1080	79	50	116	55	240	62
600 625	200	720	14	23	18	24	38	34
	290	1044	29	34	38	36	80	44
	380	1368	50	43	65	45	138	53
	465	1674	75	50	97	53	206	61

ADD*-ZV (supply air), sound power level and total differential pressure

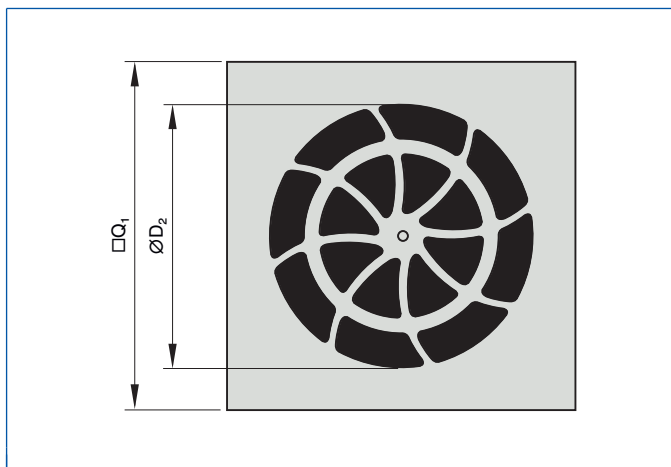
Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
250	20	72	5	<15	8	16	15	17
	40	144	20	31	31	35	58	36
	60	216	44	43	70	48	131	50
	75	270	69	50	109	57	205	60
300	30	108	3	<15	5	<15	13	<15
	60	216	12	27	22	31	51	36
	95	342	31	40	55	45	129	52
	130	468	58	50	103	56	241	71
400	55	198	4	<15	7	16	17	23
	105	378	14	29	24	33	62	41
	155	558	32	41	52	45	134	56
	205	738	55	50	91	55	235	70





Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
450	70	252	3	<15	4	<15	11	17
	145	522	11	28	19	31	48	37
	220	792	26	40	43	45	110	51
	295	1062	47	50	78	56	198	63
500	85	306	4	<15	5	<15	17	23
	155	558	12	29	18	33	56	42
	225	810	26	41	38	45	118	55
	295	1062	45	50	66	54	203	72
600 625	200	720	9	27	14	30	34	35
	280	1008	17	36	27	40	66	45
	355	1278	28	43	43	47	106	53
	435	1566	41	50	65	54	159	61

Diffuser face ADD-Q

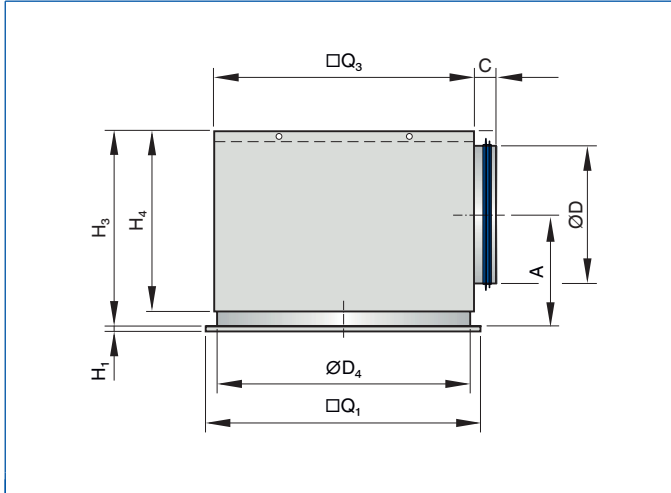


Dimensions [mm]

Nominal size	□Q ₁ mm	ØD ₂ mm	A _{eff} m ²
250	248	192	0.0092
300	298	248	0.0137
400	398	304	0.0259
450	448	360	0.0336
500	498	416	0.0424
600	598	528	0.0635
625	623	528	0.0635



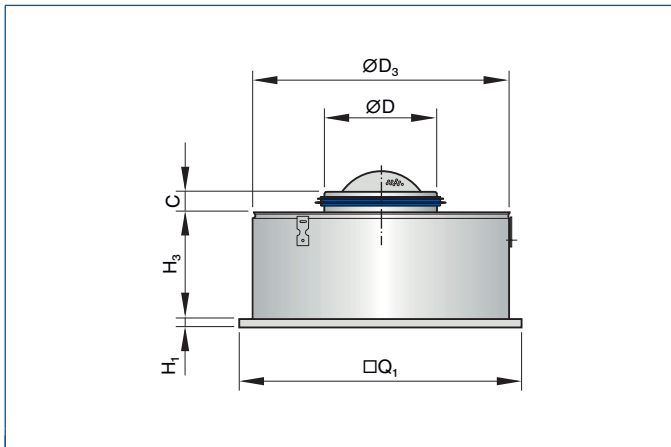
 Square diffuser face with plenum box for horizontal duct connection



Dimensions [mm] and weight [kg]

Nominal size	□Q ₁	H ₁	□Q ₃	H ₃	ØD ₄	H ₄	ØD	A	C	Plenum box	m kg
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
250	248	8	266	255	202	220	123	161	48	AK-Uni-019	3.6
300	298	8	290	285	258	250	158	174	50	AK-Uni-020	4.4
400	398	8	372	330	314	295	198	199	50	AK-Uni-021	6.7
450	448	8	476	380	362	345	248	224	48	AK-Uni-022	9.0
500	498	8	476	380	426	345	248	224	48	AK-Uni-023	10.2
600	598	8	590	445	578	410	313	257	50	AK-Uni-025	14.2
625	623	8	590	445	578	410	313	257	50	AK-Uni-025	14.5

Square diffuser face with plenum box for vertical duct connection

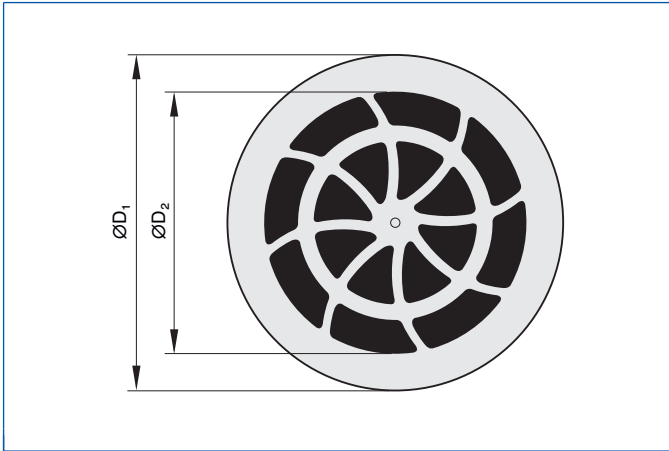


Dimensions [mm] and weight [kg]

Nominal size	□Q ₁	H ₁	ØD ₃	H ₃	ØD	C	m kg
	mm	mm	mm	mm	mm	mm	
250	248	8	143	192	123	50	2.0
300	298	8	199	192	158	50	2.4
400	398	8	255	192	198	50	3.3
450	448	8	311	222	248	50	4.5
500	498	8	367	222	248	50	5.8
600	598	8	479	252	313	50	8.4
625	623	8	479	252	313	50	8.7



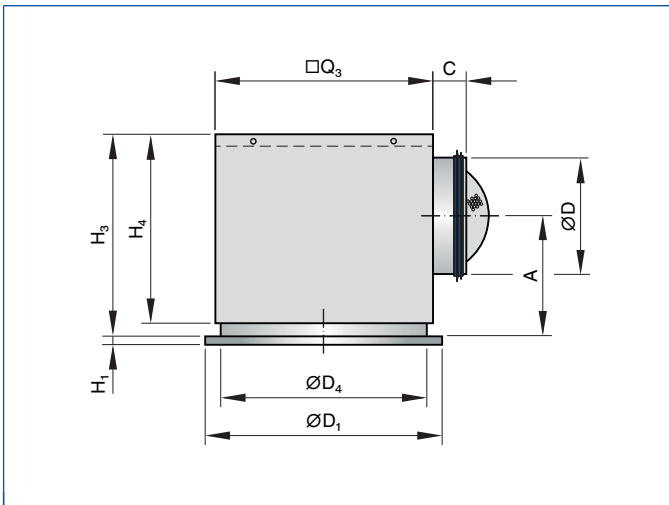
Diffuser face ADD-R



Dimensions [mm]

Nominal size	ØD ₁	ØD ₂	A _{eff} m ²
	mm	mm	
250	250	192	0.0092
300	300	248	0.0137
400	400	304	0.0259
450	450	360	0.0336
500	500	416	0.0424
600	600	528	0.0635

Circular diffuser face with plenum box for horizontal duct connection

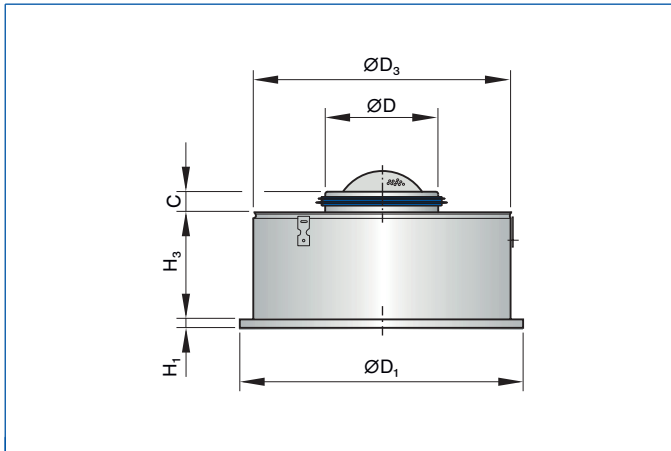


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	H ₁	□Q ₃	H ₃	ØD ₄	H ₄	ØD	A	C	Plenum box	m
	mm	mm	mm	mm	mm	mm	mm	mm	mm		kg
250	250	8	266	255	202	220	123	161	48	AK-Uni-019	3.5
300	300	8	290	285	258	250	158	174	50	AK-Uni-020	4.2
400	400	8	372	330	314	295	198	199	50	AK-Uni-021	6.4
450	450	8	476	380	362	345	248	224	48	AK-Uni-022	8.6
500	500	8	476	380	426	345	248	224	48	AK-Uni-023	9.7
600	600	8	590	445	578	410	313	257	50	AK-Uni-025	13.6



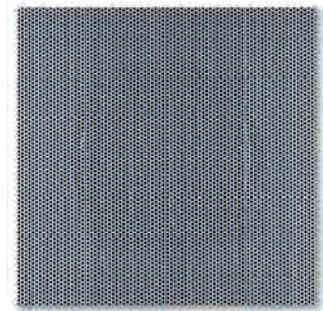
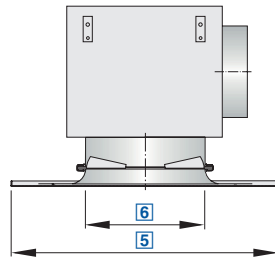
Circular diffuser face with plenum box for vertical duct connection



Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	H ₁	ØD ₃	H ₃	ØD	C	m
	mm	mm	mm	mm	mm	mm	kg
250	250	8	143	192	123	50	1.6
300	300	8	199	192	158	50	2.2
400	400	8	255	192	198	50	3.0
450	450	8	311	222	248	50	4.1
500	500	8	367	222	248	50	5.3
600	600	8	479	252	313	50	7.8





For horizontal swirling supply air discharge creating high induction levels, with fixed air control blades

Order code

DCS – P – V – AK / 593x315 / P1 – RAL ...



1 Type

DCS Swirl diffuser

2 Construction style

- P** Diffuser face, perforated
- N** Diffuser face, unperforated
- C** Diffuser face with discharge nozzle

3 Installation type

- V** T-bars exposed (diffuser face rests on T-bars)
- H** T-bars concealed (diffuser face conceals T-bars)

4 Connection

- K** Vertical, with duct collar
- US** Vertical, with transition piece
- A** Horizontal, with plenum box
- AK** Horizontal, with plenum box and lining

5 Size of diffuser face plate

- Installation type V
- 593**
- 618**
- Installation type H
- 598**
- 623**

6 Nominal size [mm]

125, 160, 200, 250, 315, 400

7 Exposed surface

- No entry: powder-coated RAL 9010, pure white
- P1** Powder-coated, specify RAL CLASSIC colour
- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %

+ Features

- Square ceiling swirl diffusers with perforated face plate, for comfort and industrial zones
- ▶ Nominal sizes 600, 625
 - ▶ Volume flow rate range 4 - 260 l/s or 16 - 936 m³/h
 - ▶ Perforated diffuser face made of galvanised sheet steel, powder-coated
 - ▶ For supply and extract air
 - ▶ For variable and constant volume flows
 - ▶ For all types of ceiling systems, particularly for T-bar ceilings
 - ▶ Swirl unit inside, 6 sizes, for the best swirl effect and high induction levels
 - ▶ Ideal for comfort zones

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours
- ▶ Horizontal or vertical duct connection
- ▶ Plenum box with lining

X Application

- ▶ Type DCS ceiling swirl diffusers are preferably used as supply air diffusers for comfort and industrial zones
- ▶ Perfect integration with suspended perforated sheet metal ceilings
- ▶ Horizontal swirling supply air discharge for mixed flow ventilation
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences -12 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For T-bar ceilings

◇ Variants

- ▶ DCS-P: Perforated diffuser face
- ▶ DCS-N: Unperforated diffuser face
- ▶ DCS-C: Diffuser face with exposed discharge nozzle

Installation type

- ▶ V: Exposed T-bars
- ▶ H: Concealed T-bars

Connection

- ▶ K: Vertical duct connection, with duct collar
- ▶ US: Vertical duct connection, with transition piece
- ▶ A: Horizontal duct connection, with plenum box
- ▶ AK: Horizontal duct connection, with plenum box and lining

★ Special characteristics

- ▶ Horizontal air discharge creating high induction levels
- ▶ Design variants with perforated square or circular diffuser face style
- ▶ For T-bar ceilings
- ▶ Horizontal or vertical duct connection

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



Technical data

Nominal sizes - diffuser face	593, 598, 618, 623 mm
Nominal sizes - swirl unit	125, 160, 200, 250, 315, 400 mm
Minimum volume flow rate, with $\Delta t_z = -6$ K	4 - 36 l/s or 16 - 128 m ³ /h
Maximum volume flow rate, with $L_{WA} \approx 50$ dB(A)	37 - 260 l/s or 132 - 936 m ³ /h
Supply air to room air temperature difference	-12 to +10 K

DCS-P-K, DCS-N-K, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
125	4	16	1	<15
	20	72	17	28
	30	108	38	40
	40	146	69	50
160	6	23	1	<15
	30	108	16	26
	50	180	43	39
	70	252	85	50
200	9	32	1	<15
	35	126	8	21
	65	234	28	37
	98	354	65	50
250	14	50	1	<15
	55	198	10	26
	95	342	29	39
	135	486	59	50
315	25	90	1	<15
	85	306	9	27
	145	522	27	40
	200	720	52	50
400	36	128	1	<15
	110	396	9	26
	185	666	27	39
	260	936	53	50

DCS-C-K, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
125	4	16	1	<15
	15	54	16	21
	30	108	64	43
	40	128	89	50
160	6	23	1	<15
	20	72	9	21
	40	144	37	39
	60	216	83	51
200	9	32	1	<15
	35	126	12	24
	65	234	42	40
	85	306	71	50
250	14	50	1	2
	50	180	10	26
	85	306	29	39
	115	414	53	50





Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
315	25	90	1	3
	70	252	10	24
	120	432	28	38
	170	612	56	50
400	36	128	1	14
	100	360	9	30
	165	594	25	40
	225	810	46	50

DCS-P-US, DCS-N-US, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
125	4	16	1	<15
	20	72	19	30
	30	108	43	43
	37	132	64	50
160	6	23	1	<15
	30	108	15	29
	50	180	42	43
	63	225	66	50
200	9	32	1	<15
	35	126	17	22
	65	234	57	38
	93	334	116	50
250	14	50	1	<15
	50	180	16	22
	85	306	47	36
	128	460	106	50
315	25	90	2	<15
	85	306	21	28
	145	522	60	42
	180	648	92	50
400	36	128	2	<15
	110	396	16	26
	180	648	42	39
	250	900	81	50

DCS-C-US, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
125	4	16	2	<15
	15	54	19	27
	20	72	33	36
	30	108	74	50
160	6	23	1	<15
	20	72	10	20
	40	144	39	40
	55	198	74	51
200	9	32	1	<15
	35	126	22	25
	60	216	64	40
	80	288	114	50
250	14	50	1	<15
	45	162	14	23
	75	270	40	37
	105	378	79	50





Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
315	25	90	2	5
	70	252	17	27
	115	414	45	40
	160	576	86	50
400	36	128	2	5
	100	360	14	27
	160	576	36	39
	220	792	69	50

DCS-P-A, DCS-P-AK, DCS-N-A, DCS-N-AK, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
125	4	16	1	<15
	15	54	13	21
	25	90	36	35
	39	140	88	51
160	6	23	1	<15
	25	90	12	20
	45	162	40	36
	65	234	84	50
200	9	32	1	<15
	35	126	11	22
	65	234	39	39
	90	324	76	50
250	14	50	1	<15
	50	180	10	23
	90	324	34	38
	128	462	68	50
315	25	90	1	<15
	80	288	12	25
	130	468	31	38
	185	666	62	50
400	36	128	1	<15
	110	396	11	25
	180	648	29	39
	250	900	57	50

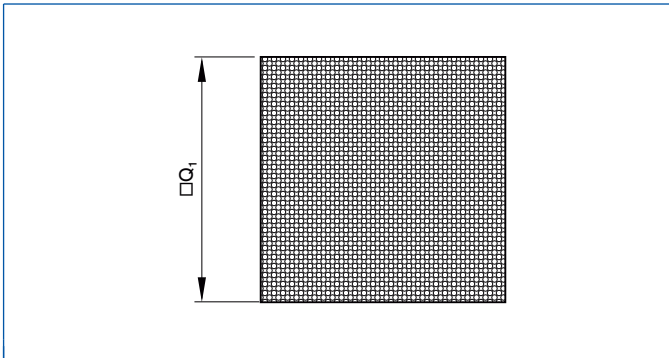
DCS-C-A, DCS-C-AK, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
125	4	16	2	<15
	15	54	19	24
	25	90	53	39
	35	126	105	51
160	6	23	1	2
	20	72	10	15
	35	126	32	32
	55	200	80	50
200	9	32	1	<15
	35	126	15	24
	65	234	53	43
	80	288	80	50
250	14	50	1	<15
	45	162	10	21
	50	180	12	24
	110	396	58	50



Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
315	25	90	1	0
	70	252	11	24
	115	414	31	38
	160	576	60	50
400	36	128	1	3
	95	342	9	24
	155	558	25	37
	225	810	52	50

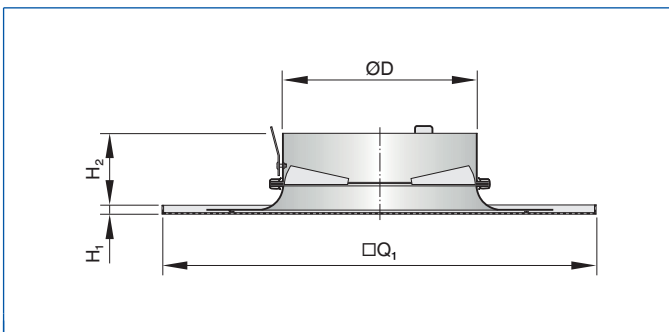
Diffuser face DCS-P



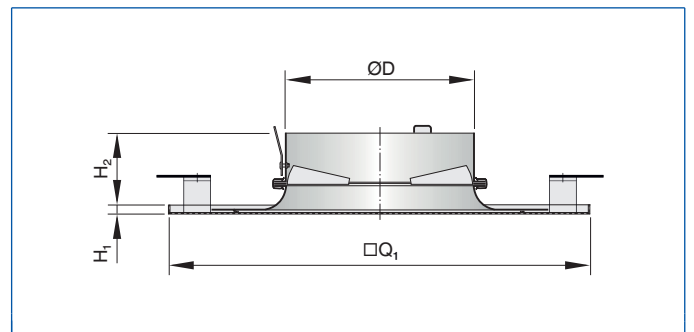
Dimensions [mm]

Nominal size	A_{eff} m ²
... x 125	0.0034
... x 160	0.0060
... x 200	0.0092
... x 250	0.0150
... x 315	0.0265
... x 400	0.0355

DCS-P-V-K



DCS-P-H-K

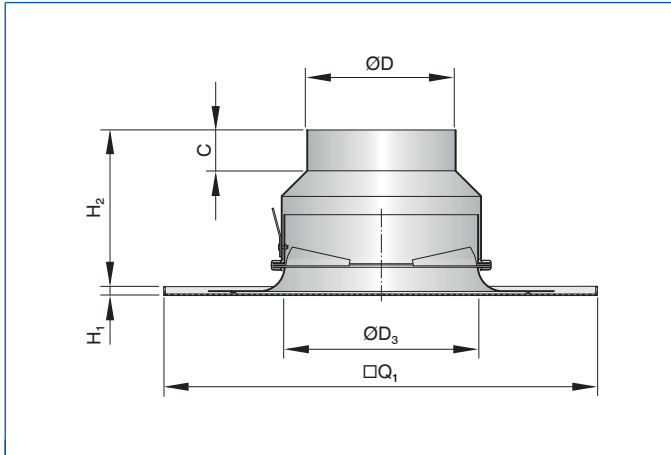


Dimensions [mm] and weight [kg]

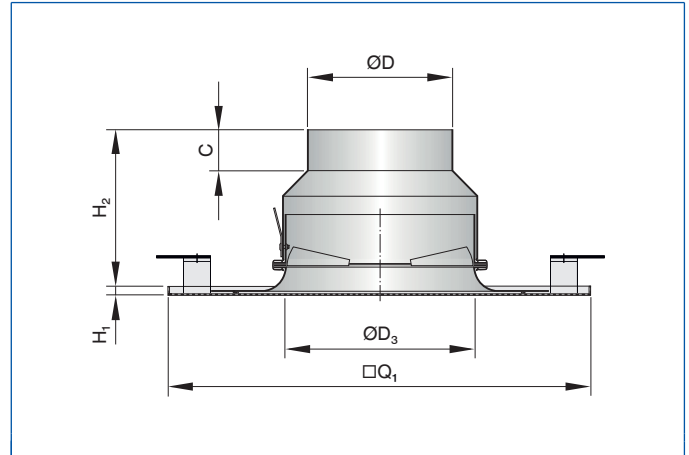
Nominal size	H-*/598 x ...	H-*/623 x ...	V-*/593 x ...	V-*/618 x ...	H ₁	H ₂	ØD	m
	mm	mm	mm	mm	mm	mm	mm	kg
... x 125	598	623	593	618	8	69	123	1.9
... x 160	598	623	593	618	8	69	158	2.2
... x 200	598	623	593	618	8	69	198	2.3
... x 250	598	623	593	618	8	69	248	2.5
... x 315	598	623	593	618	8	79	313	3.1
... x 400	598	623	593	618	8	79	398	3.8



DCS-P-V-US



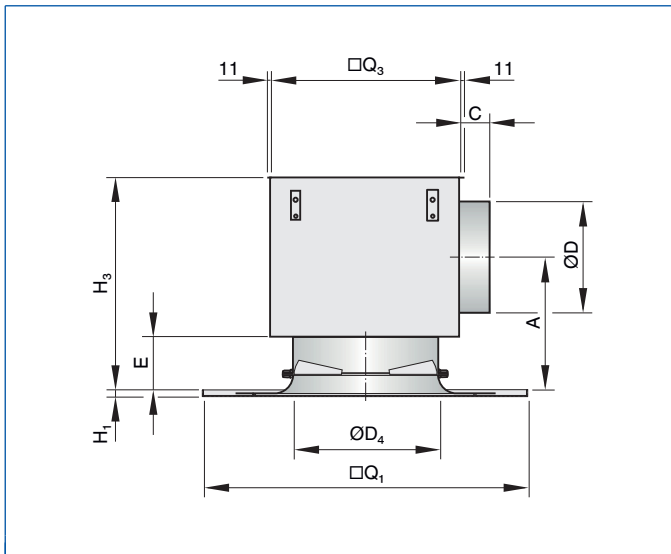
DCS-P-H-US



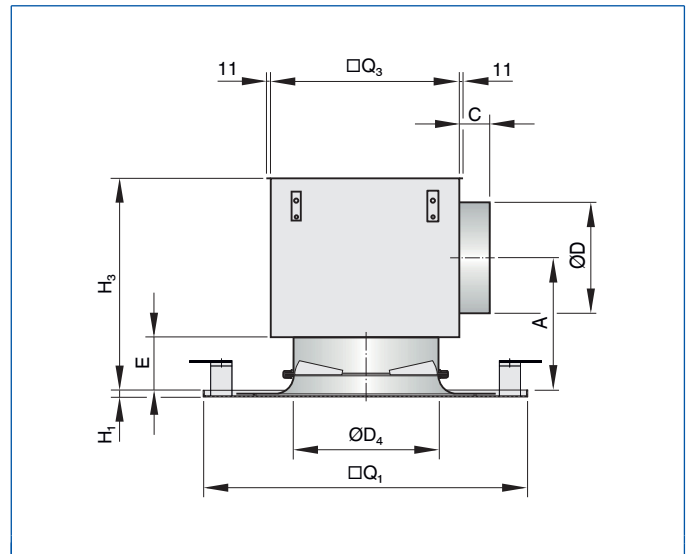
Dimensions [mm] and weight [kg]

Nominal size	H-*/598 × ...	H-*/623 × ...	V-*/593 × ...	V-*/618 × ...	H ₁	H ₂	ØD ₃	ØD	C	m
	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
... × 125	598	623	593	618	8	146	123	98	40	2.0
... × 160	598	623	593	618	8	151	158	123	40	2.3
... × 200	598	623	593	618	8	154	198	158	40	2.5
... × 250	598	623	593	618	8	159	248	198	40	2.8
... × 315	598	623	593	618	8	176	313	248	40	3.5
... × 400	598	623	593	618	8	186	398	313	40	4.3

DCS-P-V-A



DCS-P-H-A

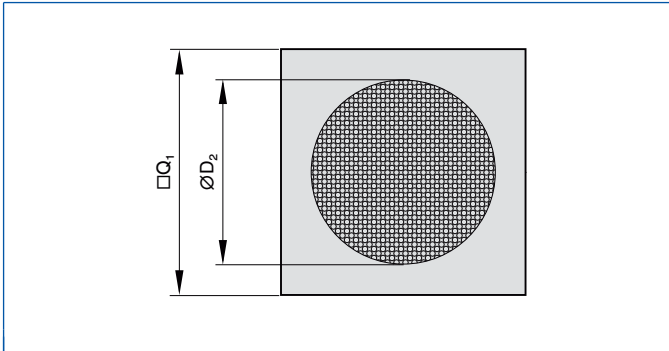


Dimensions [mm] and weight [kg]

Nominal size	H-*/598 × ...	H-*/623 × ...	V-*/593 × ...	V-*/618 × ...	H ₁	H ₃	□Q ₃	ØD ₄	E	ØD	A	C	m
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
... × 125	598	623	593	618	8	225	180	123	69	98	136	49	3.4
... × 160	598	623	593	618	8	249	215	158	69	123	149	49	4.2
... × 200	598	623	593	618	8	284	255	198	69	158	167	49	5.0
... × 250	598	623	593	618	8	324	305	248	69	198	187	49	6.4
... × 315	598	623	593	618	8	384	370	313	79	248	222	49	8.5
... × 400	598	623	593	618	8	440	454	398	79	313	257	49	11.8



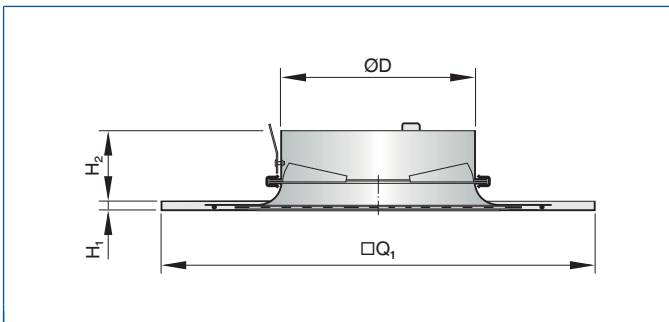
Diffuser face DCS-N



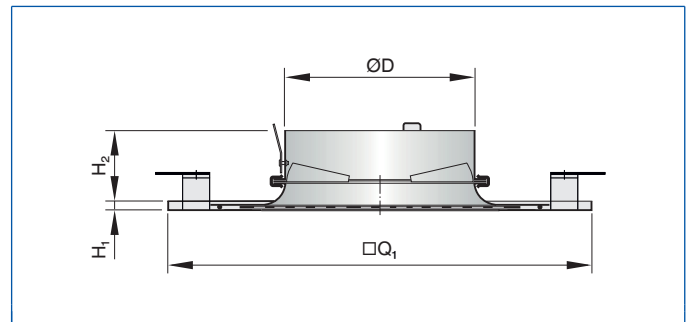
Dimensions [mm]

Nominal size	$\varnothing D_2$	A_{eff}
	mm	m ²
... x 125	175	0.0034
... x 160	210	0.0060
... x 200	250	0.0092
... x 250	300	0.0150
... x 315	385	0.0265
... x 400	470	0.0355

DCS-N-V-K



DCS-N-H-K

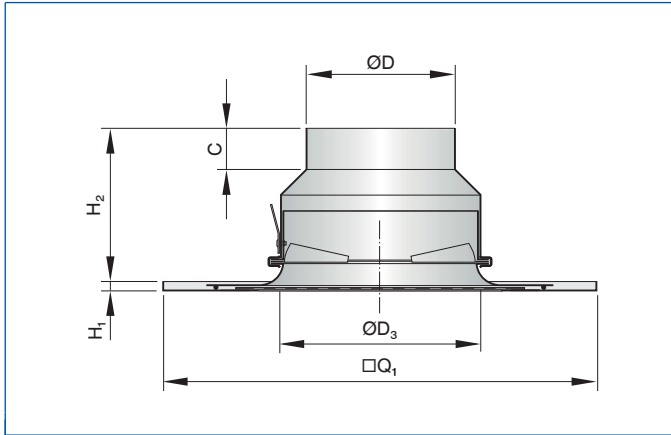


Dimensions [mm] and weight [kg]

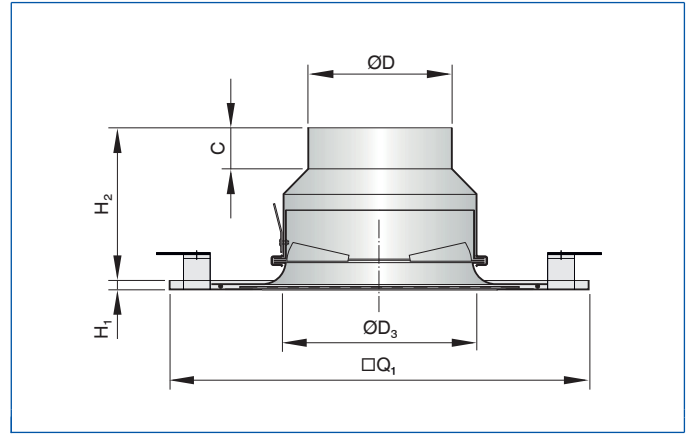
Nominal size	H-*/598 x ...	H-*/623 x ...	V-*/593 x ...	V-*/618 x ...	H_1	H_2	$\varnothing D$	m
	mm	mm	mm	mm				
... x 125	598	623	593	618	8	69	123	3.5
... x 160	598	623	593	618	8	69	158	3.7
... x 200	598	623	593	618	8	69	198	3.8
... x 250	598	623	593	618	8	69	248	3.9
... x 315	598	623	593	618	8	79	313	4.4
... x 400	598	623	593	618	8	79	398	4.9



DCS-N-V-US



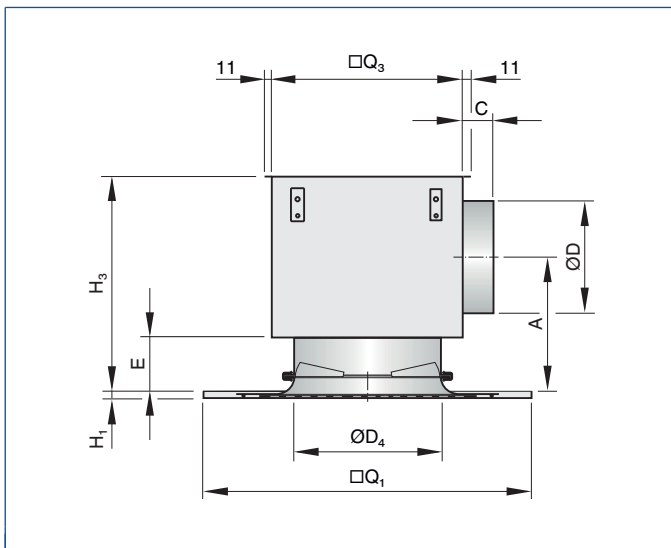
DCS-N-H-US



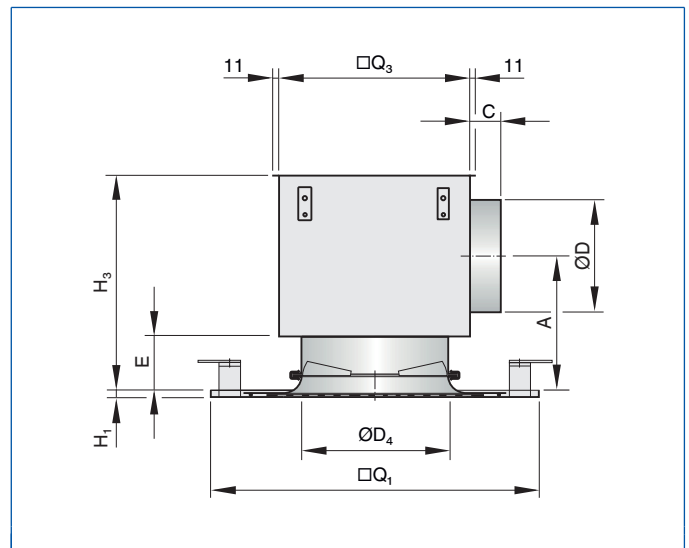
Dimensions [mm] and weight [kg]

Nominal size	H-*/598 × ...	H-*/623 × ...	V-*/593 × ...	V-*/618 × ...	H ₁	H ₂	ØD ₃	ØD	C	m
	□Q ₁									
	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
... × 125	598	623	593	618	8	146	123	98	40	3.6
... × 160	598	623	593	618	8	151	158	123	40	3.9
... × 200	598	623	593	618	8	154	198	158	40	4.0
... × 250	598	623	593	618	8	159	248	198	40	4.2
... × 315	598	623	593	618	8	176	313	248	40	4.8
... × 400	598	623	593	618	8	186	398	313	40	5.4

DCS-N-V-A



DCS-N-H-A

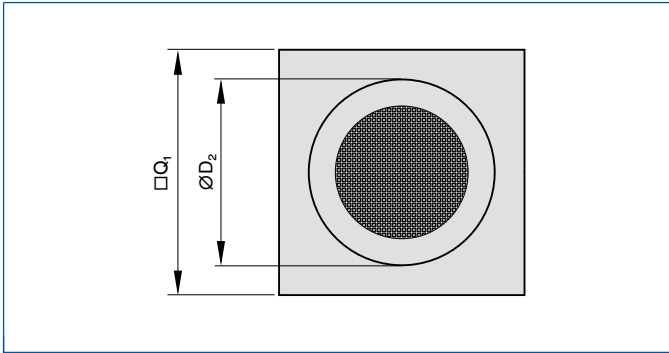


Dimensions [mm] and weight [kg]

Nominal size	H-*/598 × ...	H-*/623 × ...	V-*/593 × ...	V-*/618 × ...	H ₁	H ₃	□Q ₃	ØD ₄	E	ØD	A	C	m
	□Q ₁												
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
... × 125	598	623	593	618	8	225	180	123	69	98	136	49	4.9
... × 160	598	623	593	618	8	249	215	158	69	123	149	49	5.7
... × 200	598	623	593	618	8	284	255	198	69	158	167	49	6.4
... × 250	598	623	593	618	8	324	305	248	69	198	187	49	7.7
... × 315	598	623	593	618	8	384	370	313	79	248	222	49	9.8
... × 400	598	623	593	618	8	440	454	398	79	313	257	49	12.9



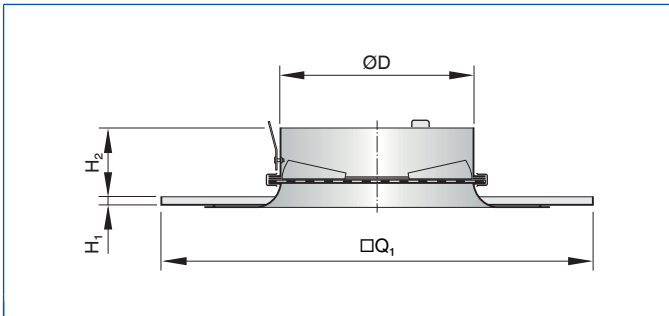
Diffuser face DCS-C



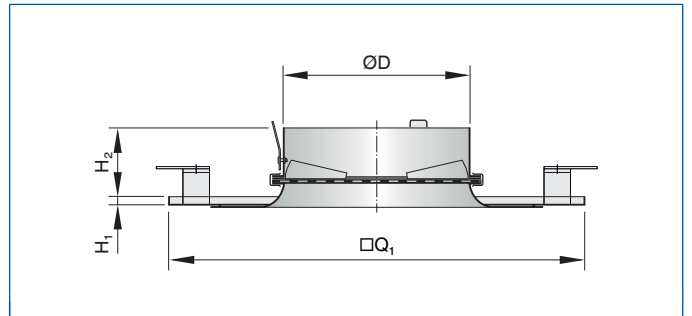
Dimensions [mm]

Nominal size	$\text{\O}D_2$		A_{eff} m ²
	mm		
... x 125	200		0.0034
... x 160	250		0.0060
... x 200	300		0.0092
... x 250	350		0.0150
... x 315	450		0.0265
... x 400	580		0.0355

DCS-C-V-K



DCS-C-H-K

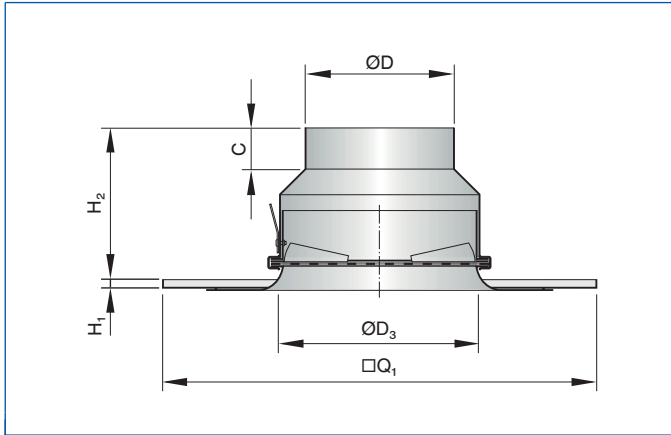


Dimensions [mm] and weight [kg]

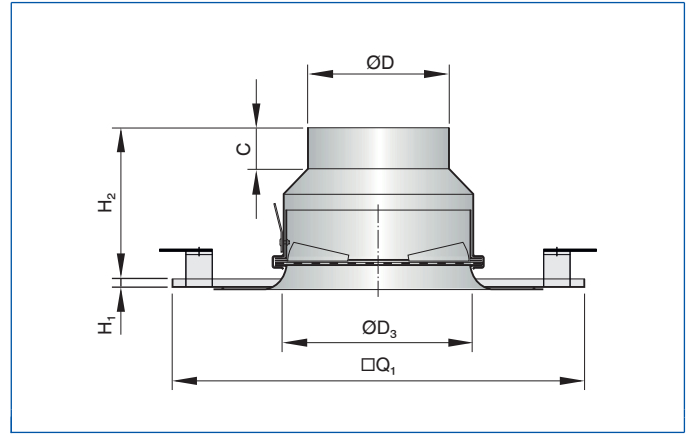
Nominal size	H-*/598 x ...	H-*/623 x ...	V-*/593 x ...	V-*/618 x ...	H_1 mm	H_2 mm	$\text{\O}D$ mm	m kg
	$\square Q_1$							
	mm	mm	mm	mm				
... x 125	598	623	593	618	8	69	123	3.4
... x 160	598	623	593	618	8	69	158	3.6
... x 200	598	623	593	618	8	69	198	3.6
... x 250	598	623	593	618	8	69	248	3.8
... x 315	598	623	593	618	8	79	313	4.3
... x 400	598	623	593	618	8	79	398	4.7



DCS-C-V-US



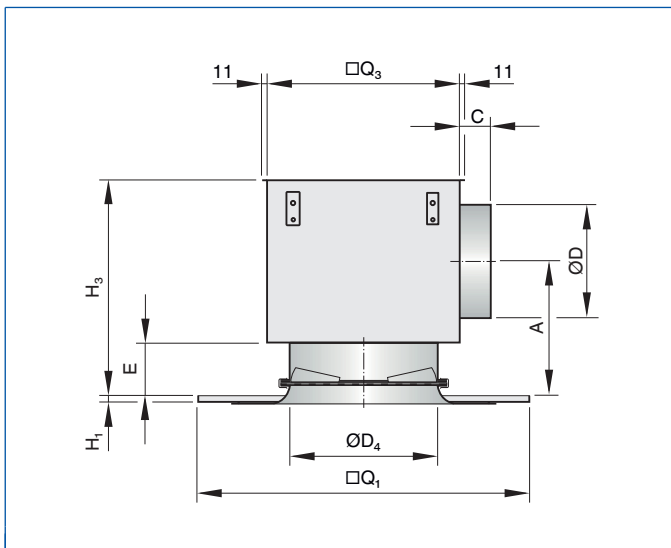
DCS-C-H-US



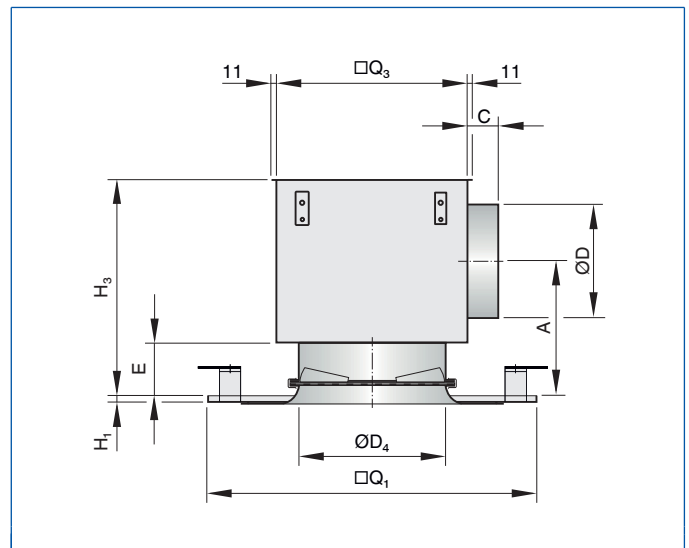
Dimensions [mm] and weight [kg]

Nominal size	H-*/598 x ...	H-*/623 x ...	V-*/593 x ...	V-*/618 x ...	H ₁	H ₂	ØD ₃	ØD	C	m
	□Q ₁									
	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
... x 125	598	623	593	618	8	146	123	98	40	3.5
... x 160	598	623	593	618	8	151	158	123	40	3.8
... x 200	598	623	593	618	8	154	198	158	40	3.9
... x 250	598	623	593	618	8	159	248	198	40	4.1
... x 315	598	623	593	618	8	176	313	248	40	4.6
... x 400	598	623	593	618	8	186	398	313	40	5.2

DCS-C-V-A



DCS-C-H-A



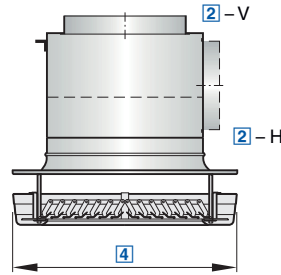
Dimensions [mm] and weight [kg]

Nominal size	H-*/598 x ...	H-*/623 x ...	V-*/593 x ...	V-*/618 x ...	H ₁	H ₃	□Q ₃	ØD ₄	E	ØD	A	C	m
	□Q ₁												
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
... x 125	598	623	593	618	8	225	180	123	69	98	136	49	4.8
... x 160	598	623	593	618	8	249	215	158	69	123	149	49	5.6
... x 200	598	623	593	618	8	284	255	198	69	158	167	49	6.3
... x 250	598	623	593	618	8	324	305	248	69	198	187	49	7.7
... x 315	598	623	593	618	8	384	370	313	79	248	222	49	9.7
... x 400	598	623	593	618	8	440	454	398	79	313	257	49	12.7



Ceiling diffusers


	Ceiling diffusers						
	VDR	ADLQ	DLQ	ADLR	DLQL	DLQ-AK	DLK-Fb
Diffuser face style							
Circular	●			●			
Square		●	●		●	●	●
Diffuser face							
Circular	●			●			
Square		●	●	●	●	●	●
Galvanised sheet steel			●		●	●	●
Aluminium	●	●		●			
Plastic							
Air control blades							
Fixed		●	●	●	●	●	●
Adjustable	●						
Plastic, black and white							
Duct connection							
Horizontal	●	●	●	●	●	●	●
Vertical	●			●	●		
Attachments							
Damper unit or blade		●	●	●	●		
Pressure tap		●	●	●			
Actuator	●						
Accessories							
Lip seal		●	●	●	●		
Protective cage							
Extended border							
Nominal sizes							
Circular diffuser face	630, 800			244, 300, 356, 412, 468, 542, 598, 654			
Square diffuser face		250, 300, 400, 500, 600, 625	250, 300, 400, 500, 600, 625	600, 625	250, 300, 400, 500, 600	300, 400, 500, 600, 625	600, 625
Nominal diameter of spigot	315, 400, 630, 800						
Technical data							
Volume flow rate range [l/s]	175 - 1495	20 - 665	20 - 700	20 - 650	6 - 285	40 - 565	220 - 460
Volume flow rate range [m ³ /h]	630 - 5382	72 - 2394	72 - 2520	72 - 2340	22 - 1026	144 - 2034	792 - 1656
Supply air to room air temperature difference [K]	-10 - +15	-10 - +10	-10 - +10	-10 - +10	-10 - +10	-10 - +10	-10 - +10
Explanation							
● - Standard							
○ - Optional							



For large temperature differences in heating mode, high penetration of air, with adjustable air control blades

Order code

VDR - V - E1 / 630 / P1 - RAL ...

1 2 3 4 5

1 Type

VDR Ceiling diffuser

2 Connection

No entry: diffuser face only
H Horizontal, with plenum box
V Vertical, with plenum box

3 Adjustment

No entry: manual
Electric actuator
E1 230 V AC, 3-point
E2 24 V AC/DC, 3-point
E3 24 V AC/DC, modulating 2 - 10 V DC

4 Nominal size [mm]

315, 400, 630, 800

5 Exposed surface of diffuser face

No entry: powder-coated RAL 9010, pure white
P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

+ Features

Circular ceiling diffusers, with manual or motorised adjustment of the air discharge direction, particularly suitable for high rooms

- Nominal sizes 315, 400, 630, 800
- Volume flow rate range 175 - 1495 l/s or 630 - 5382 m³/h
- Diffuser face made of aluminium
- For supply air
- For variable and constant volume flows
- Discharge direction can be adjusted manually or with an actuator
- High penetration of air at low sound power level

Optional equipment and accessories

- Exposed diffuser face available in RAL CLASSIC colours
- Horizontal or vertical duct connection
- Actuators for adjusting the air discharge direction

X Application

Type VDR ceiling diffusers are used as supply air diffusers for high rooms in comfort and industrial zones

- For mixed flow ventilation with different air patterns in heating and cooling modes
- Horizontal two-way supply air discharge in cooling mode
- High induction results in a rapid reduction of the temperature difference and airflow velocity
- Angled or vertical air discharge in heating mode
- For variable and constant volume flows
- For supply air to room air temperature differences from -10 to +15 K
- For room heights exceeding 3.8 m
- For suspended ceilings
- Freely suspended installation
- Ideal for use with TDC temperature difference control module

◊ Variants

Diffuser face only

Connection

- H: Horizontal duct connection
- V: Vertical duct connection

⬡ Attachments

- Electric actuators for adjusting the air discharge direction

⊕ Useful additions

- TDC temperature difference control module

★ Special characteristics

- High penetration of air at low sound power level
- Particularly suitable for rooms with varying heat loads
- Ideal adaptation of the air discharge pattern due to two sections of adjustable blades
- Discharge direction can be adjusted manually or with an actuator
- Plenum box with side entry or top entry spigot, and variant with electric actuator and inspection access

ISO Standards and guidelines

- Sound power level of the air-regenerated noise measured according to EN ISO 5135

📈 Technical data

Nominal sizes	315, 400, 630, 800 mm
Minimum volume flow rate	175 - 695 l/s or 630 - 2502 m ³ /h
Maximum volume flow rate, with L _{WA} ≈ 50 dB(A)	320 - 1495 l/s or 1152 - 5382 m ³ /h
Supply air to room air temperature difference	-10 to +15 K





VDR, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
315	175	630	5	19
	255	918	10	32
	335	1206	17	42
	420	1512	27	50
400	250	900	5	18
	400	1440	14	32
	550	1980	26	44
	650	2340	36	50
630	555	1998	7	30
	680	2448	11	38
	805	2898	15	45
	925	3330	20	50
800	556	2500	6	27
	870	3132	8	33
	1185	4266	16	42
	1495	5382	25	50

VDR-H, sound power level and total differential pressure

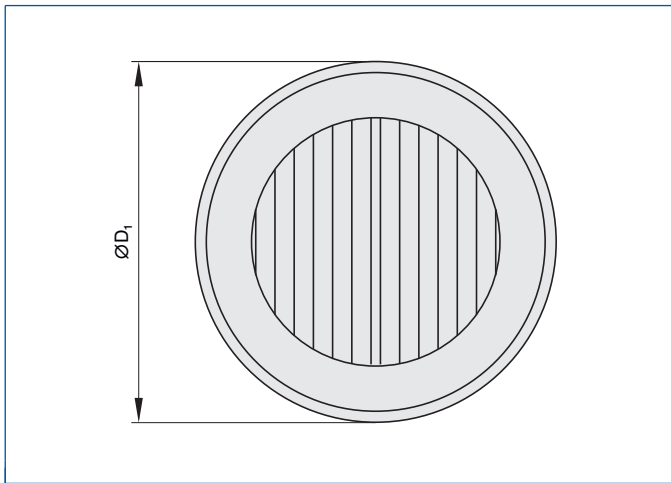
Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
315	175	630	22	28
	230	828	38	37
	280	1008	57	45
	320	1152	74	50
400	250	900	19	27
	320	1152	31	36
	390	1404	46	43
	465	1674	65	50
630	490	1764	24	28
	615	2214	38	36
	740	2664	55	44
	870	3132	75	50
800	695	2502	21	30
	855	3078	31	37
	1015	3654	44	44
	1180	4248	59	50

VDR-V, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
315	175	630	10	29
	230	828	18	38
	280	1008	27	45
	320	1152	35	50
400	250	900	9	30
	330	1188	16	38
	405	1458	24	45
	480	1728	33	50
630	490	1764	18	27
	650	2340	32	36
	810	2916	49	44
	970	3492	71	50
800	695	2502	15	28
	940	3384	27	36
	1190	4284	43	44
	1450	5220	64	50



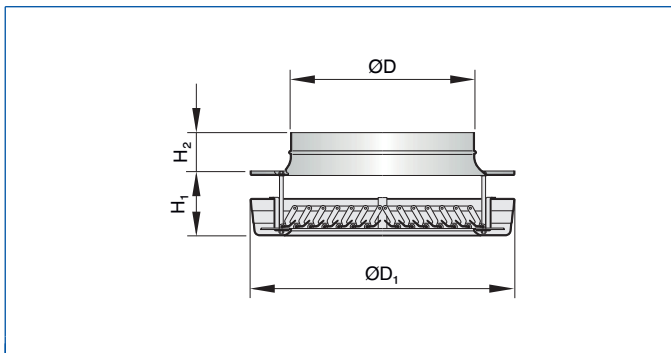
 Diffuser face VDR



Dimensions [mm]

Nominal size	ØD ₁		A _{eff}
	mm		m ²
315	450		0.0885
400	570		0.1260
630	870		0.2450
800	1070		0.3480

VDR

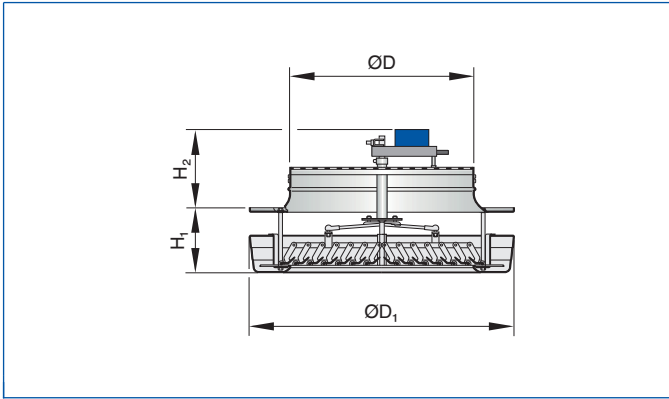


Dimensions [mm] and weight [kg]

Nominal size	ØD	ØD ₁	H ₁	H ₂	m
	mm	mm	mm	mm	kg
315	313	450	122	77	3
400	398	570	139	84	5
630	628	870	184	114	11
800	798	1070	220	135	15



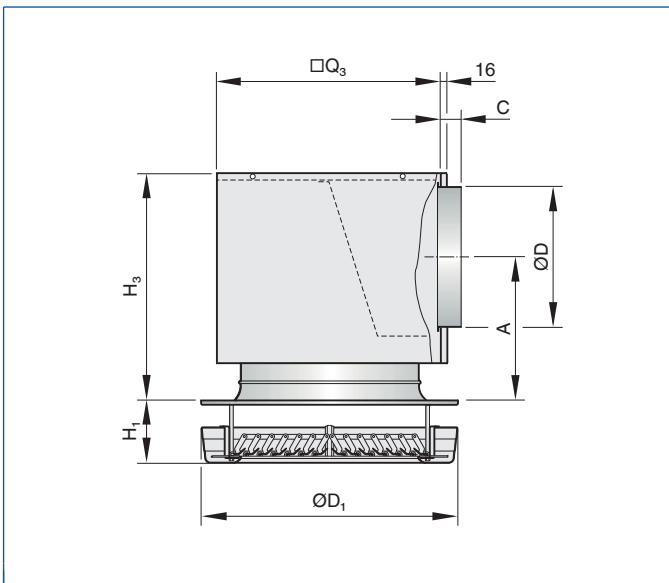
VDR-E*



Dimensions [mm] and weight [kg]

Nominal size	ØD mm	ØD ₁ mm	H ₁ mm	H ₂ mm	m kg
315	313	450	122	158	5
400	398	570	139	166	7
630	628	870	184	196	13
800	798	1070	220	218	18

VDR-H



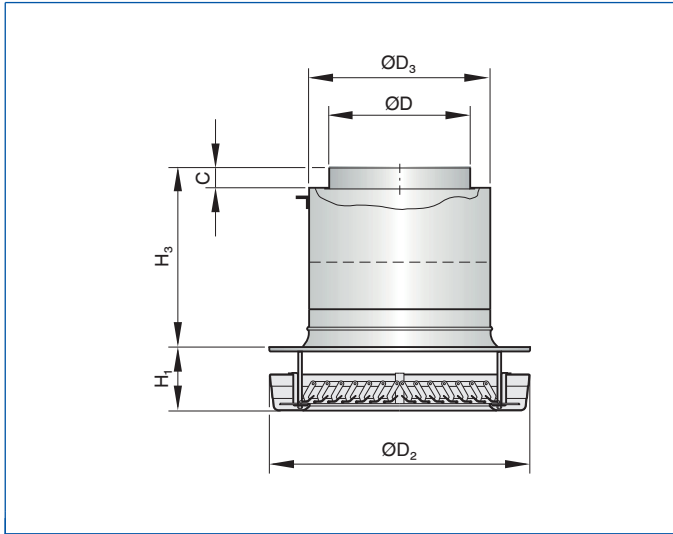
Dimensions [mm] and weight [kg]

Nominal size	ØD mm	ØD ₁ mm	H ₁ mm	H ₃ mm	□Q ₃ mm	C mm	A mm	m kg
315	248	450	122	448	415	45	292	12
400	313	570	139	528	500	45	339	16
630	398	870	184	623	750	45	392	31
800	498	1070	220	745	920	45	464	43

Weights apply to the variant with actuator



 VDR-V



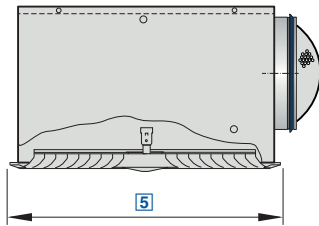
Dimensions [mm] and weight [kg]

Nominal size	ØD	ØD_1	H_1	A_{eff}	H_3	ØD_3	C	m
	mm	mm	mm	m^2	mm	mm	mm	kg
315	248	450	122	0.0885	305	314	45	8
400	313	570	139	0.1260	411	399	45	12
630	398	870	184	0.2450	486	629	45	22
800	498	1070	220	0.3480	570	799	45	32

Weights apply to the variant with actuator



2 - ZH, AH



For four-way horizontal supply air discharge, with fixed air control blades - aluminium diffuser face

Order code

ADLQ - ZH - M - L / 500 / / P1 - RAL ...

1 2 3 4 5 6 7

1 Type

ADLQ Ceiling diffuser

2 Connection

- A** Diffuser face only
- AR** Vertical, with connecting frame
- AG** Vertical, with blades (not for nominal size 250)
- C** Vertical, with butterfly damper
- ZH** Horizontal, supply air, with plenum box
- AH** Horizontal, extract air, with plenum box

3 Damper blade for volume flow rate balancing

- No entry: without damper blade
- Only for connections ZH, AH
- M** With damper blade
- MN** With cords and pressure tap

4 Accessories

- No entry: without accessories
- L** With lip seal (only with plenum box)

5 Nominal size [mm]

250, 300, 400, 500, 600, 625

6 Cross bar

- No entry: without cross bar
- E1** With duct cross bar
- G1** With standard cross bar

7 Exposed surface

- No entry: anodised, E6-C-0, natural colour
- P1** Powder-coated, specify RAL CLASSIC colour
- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %

+ Features

- Square ceiling diffusers
 - ▶ Nominal sizes 250, 300, 400, 500, 600, 625
 - ▶ Volume flow rate range 20 - 665 l/s or 72 - 2394 m³/h
 - ▶ Square diffuser face
 - ▶ Diffuser face made of aluminium with anodised finish
 - ▶ For supply and extract air
 - ▶ For variable and constant volume flows
 - ▶ For all types of ceiling systems
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours
- ▶ Horizontal or vertical duct connection
- ▶ Blanking plates for adjusting the discharge direction
- ▶ Duct cross bar for installation without plenum box
- ▶ Plenum box with cord-operated damper blade and pressure tap

Application

- ▶ Type ADLQ ceiling diffusers are used as supply air or extract air diffusers for comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Horizontal four-way supply air discharge for mixed flow ventilation
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -10 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For all types of ceiling systems

Variant

- ▶ Square diffuser face

Connection

- ▶ A: Diffuser face only
- ▶ AR: Vertical duct connection, with connecting frame

- ▶ AG: Vertical duct connection, with blades
- ▶ C: Vertical duct connection with butterfly damper
- ▶ AK: Horizontal duct connection, with plenum box

& Accessories

- ▶ Lip seal

★ Special characteristics

- ▶ Horizontal four-way supply air discharge
- ▶ Diffuser face made of aluminium
- ▶ For all types of ceiling systems
- ▶ Horizontal or vertical duct connection

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



Technical data

Nominal sizes	250, 300, 400, 500, 600, 625 mm
Minimum volume flow rate	20 - 250 l/s or 72 - 900 m ³ /h
Maximum volume flow rate, with L _{WA} ≈ 50 dB(A)	575 - 665 l/s or 2070 - 2394 m ³ /h
Supply air to room air temperature difference	-10 to +10 K

ADLQ-A, ADLQ-AR (supply air), sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L _{WA}
	l/s	m ³ /h	Pa	dB(A)
250	20	72	3	18
	50	180	20	30
	80	288	50	41
	105	378	86	50
300	35	126	3	<15
	80	288	14	24
	125	450	35	35
	175	630	68	50
400	75	270	2	<15
	175	630	13	25
	280	1008	34	38
	385	1386	65	50
500	135	486	3	<15
	270	972	10	25
	505	1818	36	47
	545	1962	42	50
600	220	792	3	21
	380	1368	9	33
	535	1926	17	42
	675	2430	27	50
625	250	900	3	20
	390	1404	7	33
	540	1944	13	43
	665	2394	19	50

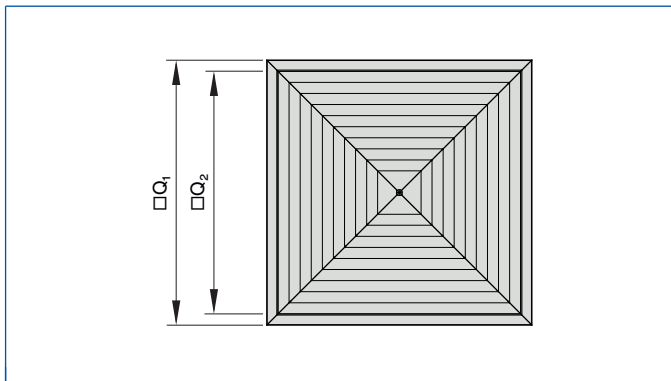
ADLQ-AK (supply air), sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L _{WA}	Δp_t	L _{WA}	Δp_t	L _{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
250	20	72	5	<15	6	<15	11	<15
	40	144	20	30	24	29	42	30
	60	216	46	42	54	41	95	42
	85	306	92	51	108	51	190	52
300	35	126	6	<15	9	<15	20	18
	70	252	26	30	37	32	81	38
	100	360	52	41	75	43	166	48
	130	468	89	50	126	51	280	57
400	75	270	9	<15	15	19	32	29
	130	468	27	31	44	38	95	45
	185	666	54	42	90	48	192	58
	230	828	84	50	138	56	297	69
500	135	486	12	15	18	23	42	35
	210	756	29	32	45	39	101	49
	285	1026	53	42	82	48	185	60
	360	1296	84	50	131	57	295	71



Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	220	792	12	22	19	25	50	34
	330	1188	27	33	43	39	112	46
	440	1584	48	43	77	49	198	55
	540	1944	72	50	116	56	299	63
625	250	900	14	22	27	33	63	39
	330	1188	25	32	47	42	110	47
	410	1476	38	39	73	50	170	53
	575	2070	75	50	143	64	333	67

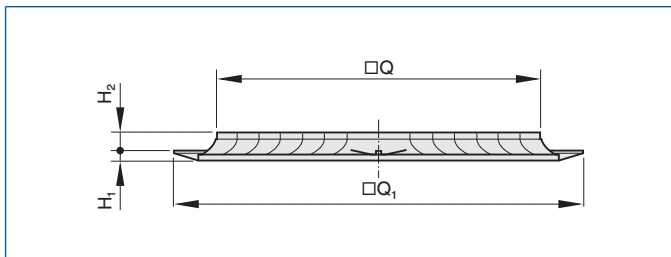
Diffuser face ADLQ



Dimensions [mm]

Nominal size	□Q ₁ mm	□Q ₂ mm	A _{eff} m ²
250	248	198	0.0095
300	298	248	0.0175
400	398	348	0.0370
500	498	448	0.0675
600	598	548	0.1100
625	623	573	0.1230

ADLQ-A

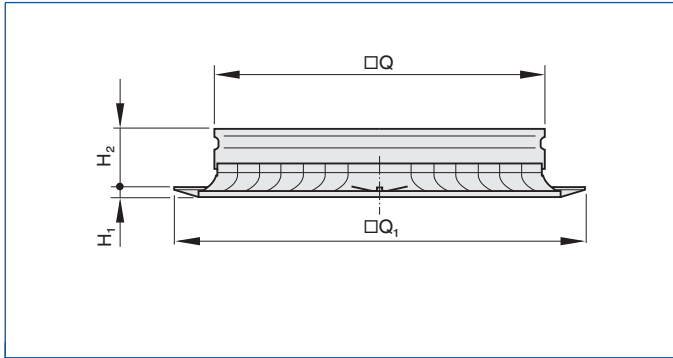


Dimensions [mm] and weight [kg]

Nominal size	□Q mm	□Q ₁ mm	H ₁ mm	H ₂ mm	m kg
250	140	248	13	29	0.5
300	190	298	13	29	0.7
400	290	398	13	29	1.3
500	390	498	13	29	1.8
600	490	598	13	29	2.5
625	515	623	13	29	2.6



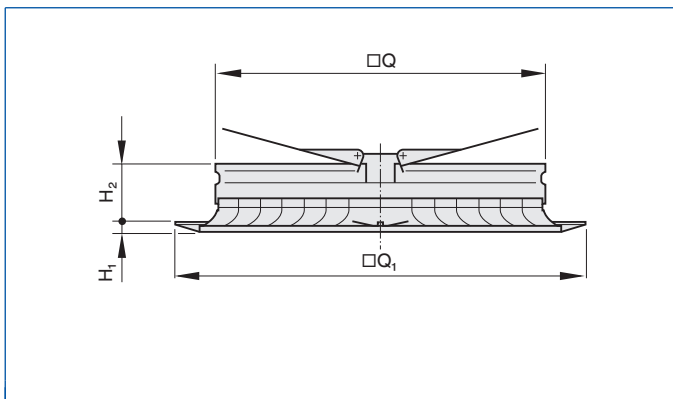
 ADLQ-AR



Dimensions [mm] and weight [kg]

Nominal size	□Q	□Q ₁	H ₁	H ₂	m
	mm	mm	mm	mm	kg
250	143	248	13	52	0.7
300	193	298	13	52	1.0
400	293	398	13	52	1.7
500	393	498	13	52	2.3
600	493	598	13	52	3.0
625	518	623	13	52	3.2

ADLQ-C

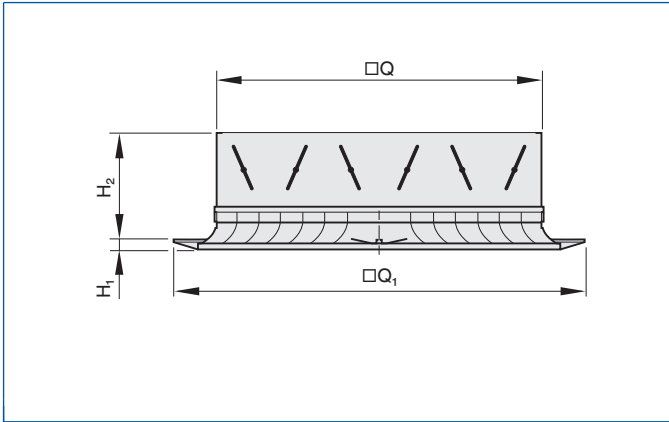


Dimensions [mm] and weight [kg]

Nominal size	□Q	□Q ₁	H ₁	H ₂	m
	mm	mm	mm	mm	kg
250	143	248	13	52	1.2
300	193	298	13	52	1.7
400	293	398	13	52	2.9
500	393	498	13	52	4.2
600	493	598	13	52	5.9
625	518	623	13	52	6.3



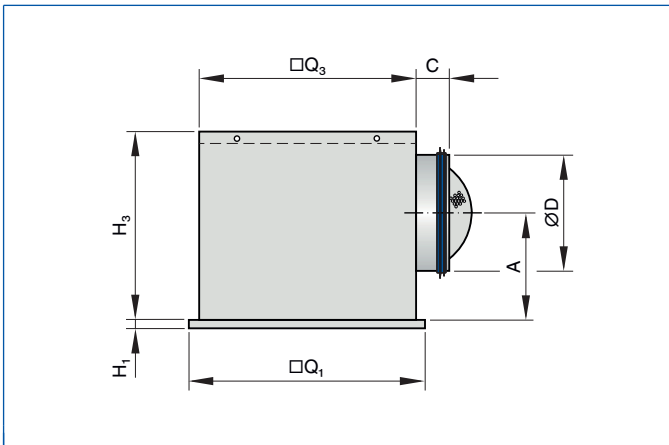
ADLQ-AG



Dimensions [mm] and weight [kg]

Nominal size	□Q mm	□Q ₁ mm	H ₁ mm	H ₂ mm	m kg
250	143	248	13	95	0.9
300	193	298	13	95	1.4
400	293	398	13	95	2.5
500	393	498	13	95	3.6
600	493	598	13	95	5.0
625	518	623	13	95	5.6

Square diffuser face with plenum box for horizontal duct connection

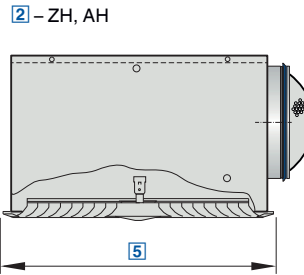


Dimensions [mm] and weight [kg]

Nominal size	□Q ₁ mm	H ₁ mm	□Q ₃ mm	H ₃ mm	∅D mm	A mm	C mm	Plenum box	m kg
250	248	13	216	250	158	139	50	AK-Uni-008	2.7
300	298	13	266	250	158	139	50	AK-Uni-009	3.4
400	398	13	372	295	198	164	50	AK-Uni-002	5.8
500	498	13	476	345	248	189	48	AK-Uni-010	8.5
600	598	13	567	410	313	222	50	AK-Uni-011	11.6
625	623	13	567	410	313	222	50	AK-Uni-011	11.8

Weights apply to the supply air variant





For four-way horizontal supply air discharge, with fixed air control blades - sheet steel diffuser face

Order code

DLQ - ZH - M - L / 500 / / P1 - RAL ...

1 2 3 4 5 6 7

<p>1 Type DLQ Ceiling diffuser</p> <p>2 Connection A Diffuser face only AR Vertical, with connecting frame AG Vertical, with blades (not for nominal size 250) C Vertical, with butterfly damper ZH Horizontal, supply air, with plenum box AH Horizontal, extract air, with plenum box</p> <p>3 Damper blade for volume flow rate balancing No entry: without damper blade Only for connections ZH, AH</p>	<p>M With damper blade MN With cords and pressure tap</p> <p>4 Accessories L With lip seal (only with plenum box)</p> <p>5 Nominal size [mm] 250, 300, 400, 500, 600, 625</p> <p>6 Cross bar No entry: without cross bar E1 With duct cross bar G1 With standard cross bar</p>	<p>7 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour</p> <p>Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p>
---	---	--

Features

- Square ceiling diffusers
 - ▶ Nominal sizes 250, 300, 400, 500, 600, 625
 - ▶ Volume flow rate range 20 - 700 l/s or 72 - 2520 m³/h
 - ▶ Square diffuser face
 - ▶ Diffuser face made of sheet steel, powder-coated
 - ▶ For supply and extract air
 - ▶ For variable and constant volume flows
 - ▶ For all types of ceiling systems
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
- Optional equipment and accessories
 - ▶ Exposed diffuser face available in RAL CLASSIC colours
 - ▶ Horizontal or vertical duct connection
 - ▶ Blanking plates for adjusting the discharge direction
 - ▶ Duct cross bar for installation without plenum box
 - ▶ Plenum box with cord-operated damper blade and pressure tap

Application

- ▶ Type DLQ ceiling diffusers are used as supply air or extract air diffusers for comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Horizontal four-way supply air discharge for mixed flow ventilation
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -10 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For all types of ceiling systems

Variant

- ▶ Square diffuser face
- Connection
- ▶ A: Diffuser face only

- ▶ AR: Vertical duct connection, with connecting frame
- ▶ AG: Vertical duct connection, with blades
- ▶ C: Vertical duct connection with butterfly damper
- ▶ AK: Horizontal duct connection, with plenum box

Accessories

- ▶ Lip seal

Special characteristics

- ▶ Horizontal four-way supply air discharge
- ▶ Diffuser face made of galvanised sheet steel
- ▶ For all types of ceiling systems
- ▶ Horizontal or vertical duct connection

Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	250, 300, 400, 500, 600, 625 mm
Minimum volume flow rate	20 - 250 l/s or 72 - 900 m ³ /h
Maximum volume flow rate, with L _{WA} ≈ 50 dB(A)	575 - 700 l/s or 2070 - 2520 m ³ /h
Supply air to room air temperature difference	-10 to +10 K



DLQ-A, DLQ-AR (supply air), sound power level and total differential pressure

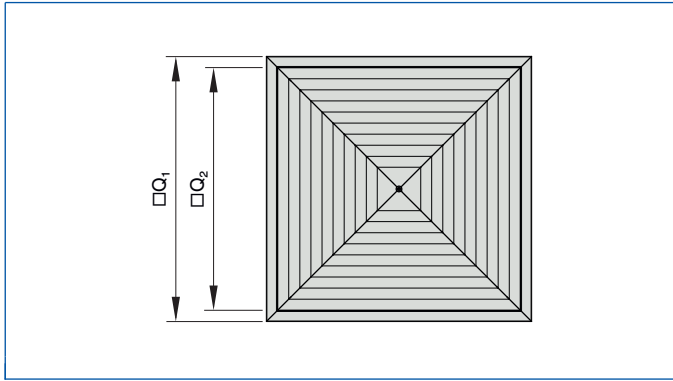
Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
250	20	72	3	<15
	55	198	20	26
	95	342	59	40
	130	468	111	50
300	35	126	2	<15
	95	342	18	24
	155	558	47	38
	210	756	87	50
400	75	270	2	<15
	190	684	13	25
	310	1116	35	38
	430	1548	68	50
500	135	486	2	<15
	295	1062	10	27
	455	1638	23	39
	615	2214	43	50
600	220	792	2	15
	380	1440	8	34
	535	1980	15	43
	690	2484	24	50
625	250	900	2	20
	400	1440	6	34
	550	1980	12	43
	700	2520	19	50

DLQ-AK (supply air), sound power level and total differential pressure

Nominal size	\dot{V}	\dot{V}	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
250	20	72	5	<15	5	<15	10	<15
	35	126	14	22	16	22	31	25
	60	216	41	38	46	38	92	41
	90	324	92	51	104	51	208	53
300	35	126	6	9	9	11	20	19
	70	252	26	30	37	32	81	39
	100	360	53	41	75	43	165	49
	135	486	96	51	137	54	301	59
400	75	270	9	13	15	21	33	30
	130	468	28	31	46	39	98	45
	185	666	56	42	93	50	198	57
	235	846	90	50	150	61	319	67
500	135	486	12	16	15	19	48	35
	210	756	28	32	36	35	116	49
	285	1026	52	42	66	45	213	58
	360	1296	83	50	105	53	340	65
600	220	792	12	18	19	26	49	35
	330	1188	26	32	44	39	111	47
	440	1584	46	42	78	49	197	57
	545	1962	71	50	119	58	303	66
625	250	900	14	21	26	33	64	39
	330	1188	24	31	46	42	111	47
	410	1476	37	39	70	49	171	55
	575	2070	74	50	138	61	336	74



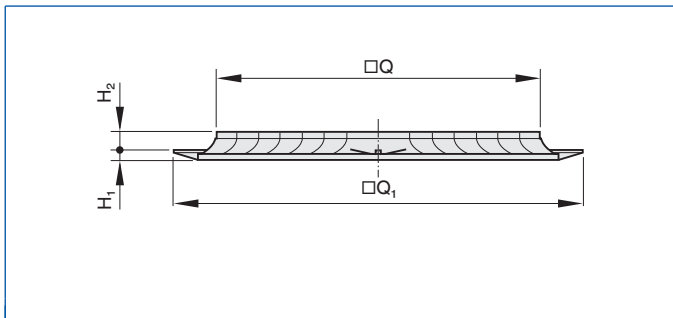
 Diffuser face DLQ



Dimensions [mm]

Nominal size	$\square Q_1$ mm	$\square Q_2$ mm	A_{eff} m ²
250	248	198	0.0095
300	298	248	0.0175
400	398	348	0.0370
500	498	448	0.0675
600	598	548	0.1100
625	623	573	0.1230

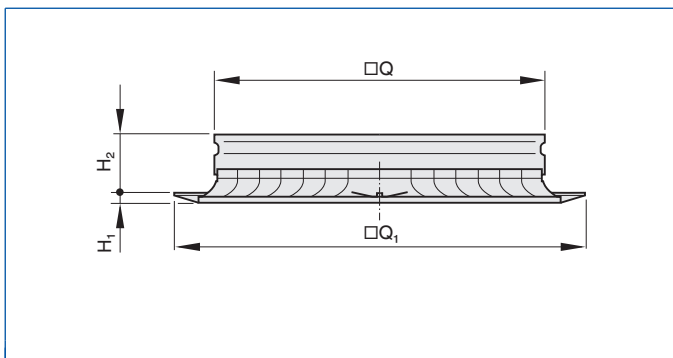
DLQ-A



Dimensions [mm] and weight [kg]

Nominal size	$\square Q$ mm	$\square Q_1$ mm	H_1 mm	H_2 mm	m kg
250	140	248	13	29	0.8
300	190	298	13	29	1.1
400	290	398	13	29	1.9
500	390	498	13	29	2.8
600	490	598	13	29	4.0
625	515	623	13	29	4.2

DLQ-AR

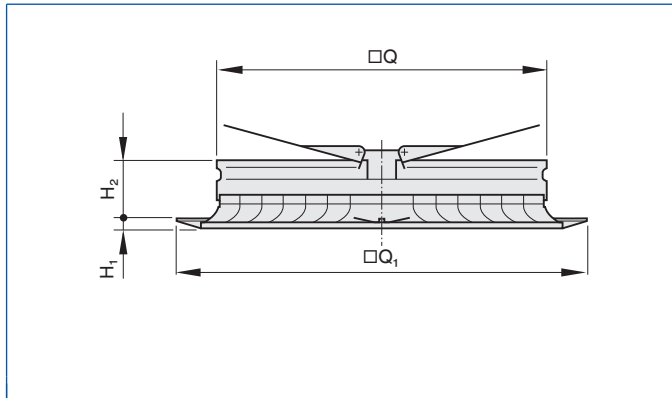


Dimensions [mm] and weight [kg]

Nominal size	□Q mm	□Q ₁ mm	H ₁ mm	H ₂ mm	m kg
250	143	248	13	52	1.0
300	193	298	13	52	1.4
400	293	398	13	52	2.3
500	393	498	13	52	3.3
600	493	598	13	52	4.6
625	518	623	13	52	4.8



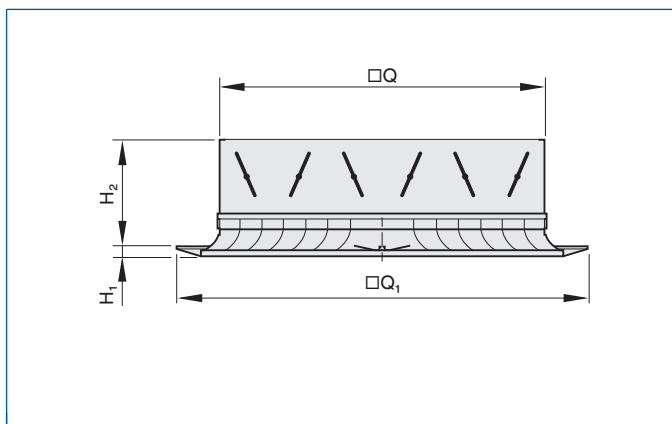
DLQ-C



Dimensions [mm] and weight [kg]

Nominal size	□Q mm	□Q ₁ mm	H ₁ mm	H ₂ mm	m kg
250	143	248	13	52	1.5
300	193	298	13	52	2.1
400	293	398	13	52	3.5
500	393	498	13	52	5.2
600	493	598	13	52	7.4
625	518	623	13	52	7.9

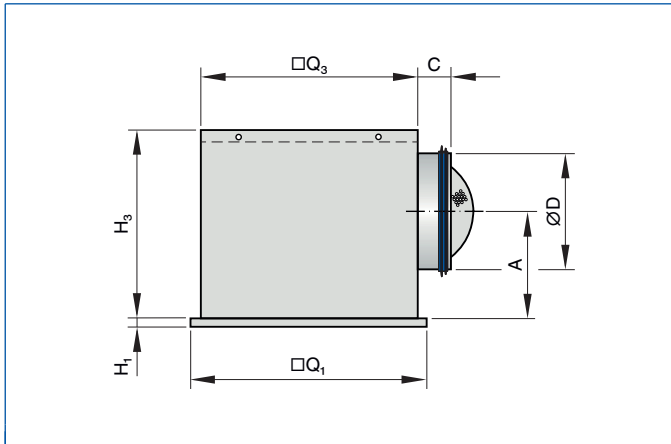
DLQ-AG



Dimensions [mm] and weight [kg]

Nominal size	□Q	□Q ₁	H ₁	H ₂	m
	mm	mm	mm	mm	kg
250	143	248	13	95	1.3
300	193	298	13	95	1.8
400	293	398	13	95	3.1
500	393	498	13	95	4.6
600	493	598	13	95	6.5
625	518	623	13	95	7.2

Square diffuser face with plenum box for horizontal duct connection

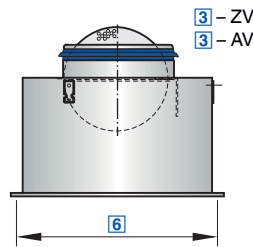
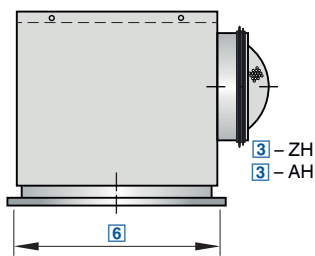


Dimensions [mm] and weight [kg]

Nominal size	□Q ₁	H ₁	□Q ₃	H ₃	ØD	A	C	Plenum box	m
	mm	mm	mm	mm	mm	mm	mm		kg
250	248	13	216	250	158	139	50	AK-Uni-008	3.0
300	298	13	266	250	158	139	50	AK-Uni-009	3.8
400	398	13	372	295	198	164	50	AK-Uni-002	6.4
500	498	13	476	345	248	189	48	AK-Uni-010	9.4
600	598	13	567	410	313	222	50	AK-Uni-011	13.2
625	623	13	567	410	313	222	50	AK-Uni-011	13.4

Weights apply to the supply air variant





For horizontal radial supply air discharge, with fixed air control blades - aluminium diffuser face

Order code

ADLR – Q – ZH – M – L / 598 × 4 / P1 – RAL ...

1 2 3 4 5 6 7

<p>1 Type ADLR Ceiling diffuser</p> <p>2 Construction style No entry: circular Q Square</p> <p>3 Connection A Diffuser face only AR Vertical, with connecting frame C Vertical, with butterfly damper ZV Vertical, supply air, with plenum box AV Vertical, extract air, with plenum box ZH Horizontal, supply air, with plenum box AH Horizontal, extract air, with plenum box</p>	<p>4 Damper blade for volume flow rate balancing No entry: none M With (only for connections ZV, AV, ZH, AH) MN With cords and pressure tap (only for connections ZH, AH)</p> <p>5 Accessories No entry: none L With lip seal (only for connections ZV, AV, ZH, AH)</p> <p>6 Nominal size ADLR (circular) 1 to 8 ADLR-Q (square)</p>	<p>7 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour</p> <p>Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p>
---	---	--

+ Features

- Circular and square ceiling diffusers for radial air discharge, for high comfort levels, ideal integration into suspended ceilings
- ▶ Nominal sizes 1, 2, 3, 4, 5, 6, 7, 8
 - ▶ Volume flow rate range 20 - 650 l/s or 72 - 2340 m³/h
 - ▶ Circular or square diffuser face
 - ▶ Diffuser face made of aluminium with anodised finish
 - ▶ For supply and extract air
 - ▶ For variable and constant volume flows
 - ▶ For suspended continuous plasterboard or grid ceilings
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours
- ▶ Horizontal or vertical duct connection
- ▶ Plenum box with cord-operated damper blade and pressure tap

Application

- ▶ Type ADLR ceiling diffusers are used as supply air or extract air diffusers for comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Horizontal radial supply air discharge for mixed flow ventilation
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -10 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For suspended continuous plasterboard or grid ceilings

Variant

- ▶ Circular diffuser face
- ▶ Square diffuser face

Connection

- ▶ A: Diffuser face only
- ▶ AR: Vertical duct connection, with connecting frame

- ▶ C: Vertical duct connection with butterfly damper
- ▶ ZV: Vertical duct connection, with plenum box for supply air
- ▶ AV: Vertical duct connection, with plenum box for extract air
- ▶ ZH: Horizontal duct connection, with plenum box for supply air
- ▶ AH: Horizontal duct connection, with plenum box for extract air

& Accessories

- ▶ Standard cross bar
- ▶ Duct cross bar
- ▶ Lip seal

★ Special characteristics

- ▶ Horizontal radial supply air discharge
- ▶ Diffuser face made of aluminium
- ▶ For suspended continuous plasterboard or grid ceilings
- ▶ Horizontal or vertical duct connection

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



Technical data

Nominal sizes - circular diffuser face	244, 300, 356, 412, 468, 542, 598, 654 mm
Nominal sizes - square diffuser face	593, 598, 618, 623 mm
Nominal sizes - diffuser	1, 2, 3, 4, 5, 6, 7, 8
Minimum volume flow rate	20 - 230 l/s or 72 - 828 m ³ /h
Maximum volume flow rate, with $L_{WA} \approx 50$ dB(A)	515 - 650 l/s or 1854 - 2340 m ³ /h
Supply air to room air temperature difference	-10 to +10 K

ADLR-A, ADLR-AR (supply air), sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
1	20	72	5	19
	40	144	20	34
	55	198	39	42
	70	252	63	49
2	35	126	3	<15
	70	252	11	25
	105	378	26	34
	140	504	46	42
3	55	198	3	18
	110	396	12	26
	165	594	27	36
	220	792	48	48
4	80	288	3	19
	160	576	13	29
	240	864	28	38
	320	1152	50	47
5	110	396	3	21
	220	792	13	31
	330	1188	29	44
	440	1584	52	63
6	150	540	4	20
	300	1080	16	36
	450	1620	36	50
	600	2160	65	64
7	200	720	5	23
	367	1320	16	37
	533	1920	35	51
	700	2520	60	64
8	230	828	5	25
	422	1518	15	37
	613	2208	32	48
	805	2898	56	60

ADLR-C (supply air), sound power level and total differential pressure

Nominal size	\dot{V}	\dot{V}	Damper blade position			
			0°		45°	
			Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)
1	20	72	7	23	32	38
	35	126	21	35	98	53
	55	198	52	47	241	68
	60	216	62	49	287	72
2	35	126	3	<15	13	27
	70	252	13	26	54	46
	115	414	36	39	145	64
	160	576	70	50	280	78





Nominal size	\dot{V}	\dot{V}	Damper blade position			
			0°		45°	
	Δp_t	L_{WA}	Δp_t	L_{WA}		
	l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)
3	55	198	3	18	16	29
	115	414	15	29	68	51
	175	630	34	40	158	70
	235	846	62	50	285	92
4	80	288	3	16	15	31
	155	558	13	29	58	50
	235	846	29	40	133	67
	310	1116	51	50	232	82
5	110	396	4	23	19	35
	180	648	10	30	51	50
	250	900	19	37	98	62
	325	1170	32	50	165	77
6	150	540	5	19	9	34
	240	864	12	31	23	47
	335	1206	23	41	46	59
	435	1566	38	50	121	71
7	200	720	7	26	14	35
	285	1026	13	35	29	46
	370	1332	22	43	49	55
	455	1638	34	50	75	64
8	230	828	8	28	12	33
	325	1170	16	36	24	42
	420	1512	27	44	41	50
	515	1854	40	50	61	57

ADLR-ZH (supply air), sound power level and total differential pressure

Nominal size	\dot{V}	\dot{V}	Damper blade position					
			0°		45°		90°	
	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}		
	l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
1	20	72	7	19	9	15	19	17
	35	126	21	30	27	29	58	30
	55	198	51	41	67	41	144	43
	75	270	94	50	125	50	268	53
2	35	126	7	17	10	18	22	21
	65	234	25	31	33	32	74	35
	100	360	58	42	79	43	176	47
	130	468	98	51	134	52	298	56
3	55	198	7	18	8	19	21	21
	95	342	21	29	24	30	62	35
	145	522	49	41	56	41	144	48
	190	684	85	50	97	50	247	57
4	80	288	7	21	9	18	20	21
	135	486	20	30	26	29	56	34
	190	684	40	39	51	39	110	43
	250	900	69	50	89	49	191	52
5	110	396	10	22	15	22	36	28
	175	630	25	32	37	35	92	39
	240	864	47	41	70	45	173	49
	305	1098	76	50	113	54	279	59





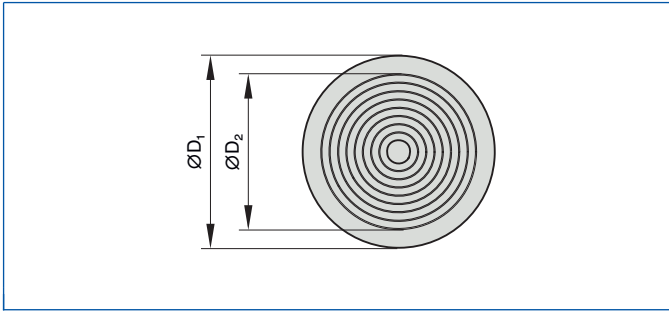
Nominal size	\dot{V}	\dot{V}	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)
6	150	540	9	23	12	25	26	26
	230	828	21	31	29	34	62	39
	310	1116	37	40	53	43	113	49
	400	1440	62	50	88	52	188	60
7	200	720	14	25	20	28	40	36
	290	1044	29	34	42	38	84	46
	380	1368	49	43	72	47	144	56
	465	1674	74	50	108	55	215	65
8	230	828	15	28	22	29	59	41
	325	1170	31	36	44	39	118	50
	420	1512	51	44	74	48	197	57
	515	1854	77	50	112	55	295	65

ADLR-ZV (supply air), sound power level and total differential pressure

Nominal size	\dot{V}	\dot{V}	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)
1	20	72	6	15	9	18	20	16
	35	126	20	28	28	31	60	30
	55	198	49	41	69	43	148	43
	75	270	90	50	129	53	275	53
2	35	126	6	<15	9	19	21	19
	65	234	22	29	32	33	74	33
	100	360	53	41	76	45	175	46
	130	468	89	50	128	53	295	56
3	55	198	7	<15	10	17	21	21
	100	360	22	29	32	32	71	34
	150	540	49	40	72	44	160	46
	200	720	87	50	127	54	284	56
4	80	288	6	16	9	19	21	20
	140	504	20	29	27	31	64	33
	205	738	42	39	58	43	137	44
	270	972	73	50	101	52	237	53
5	110	396	8	22	14	25	37	26
	175	630	22	32	34	36	92	38
	240	864	40	41	65	46	174	49
	310	1116	67	50	108	55	290	59
6	150	540	8	25	11	24	25	24
	235	846	20	34	27	35	61	35
	320	1152	37	42	51	44	113	45
	410	1476	60	50	83	53	185	55
7	200	720	11	28	17	29	39	30
	290	1044	22	36	36	39	83	41
	380	1368	38	44	62	48	142	50
	470	1692	59	50	94	56	217	58
8	230	828	12	28	19	31	53	33
	310	1116	22	35	34	39	96	41
	390	1404	34	43	54	46	152	49
	470	1692	50	51	79	52	221	56



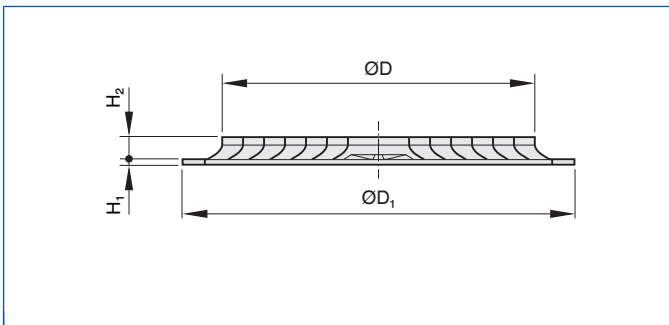
Diffuser face ADLR



Dimensions [mm]

Nominal size	ØD ₁	ØD ₂	A _{eff}
	mm	mm	m ²
1	244	192	0.0066
2	300	248	0.0161
3	356	304	0.0257
4	412	360	0.0349
5	468	416	0.0473
6	542	472	0.0544
7	598	528	0.0691
8	654	584	0.0843

ADLR-A

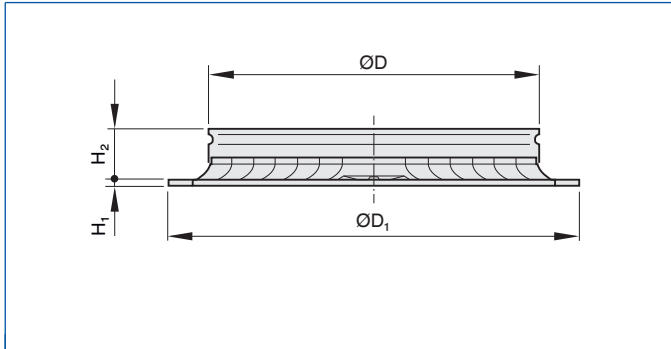


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	H ₁	H ₂	ØD	m
	mm	mm	mm	mm	kg
1	244	6	29	137	0.2
2	300	6	29	193	0.2
3	356	6	29	249	0.3
4	412	6	29	305	0.4
5	468	6	29	361	0.5
6	542	6	29	417	0.7
7	598	6	29	473	0.9
8	654	6	29	529	1.1



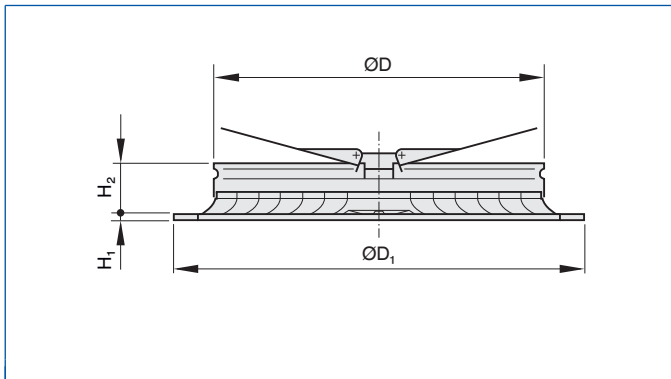
ADLR-AR



Dimensions [mm] and weight [kg]

Nominal size	ØD ₁ mm	H ₁ mm	H ₂ mm	ØD mm	m kg
1	244	6	54	141	0.4
2	300	6	54	197	0.4
3	356	6	54	253	0.6
4	412	6	54	309	0.7
5	468	6	54	365	0.9
6	542	6	54	421	1.1
7	598	6	54	477	1.4
8	654	6	54	523	1.6

ADLR-C

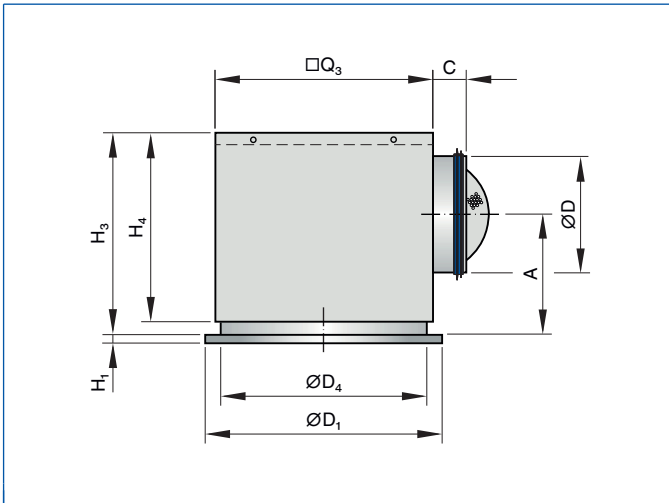


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁ mm	H ₁ mm	H ₂ mm	ØD mm	m kg
1	244	6	54	141	0.7
2	300	6	54	197	1.0
3	356	6	54	253	1.3
4	412	6	54	309	1.7
5	468	6	54	365	2.1
6	542	6	54	421	2.7
7	598	6	54	477	3.1
8	654	6	54	523	3.7



Circular diffuser face with plenum box for horizontal duct connection

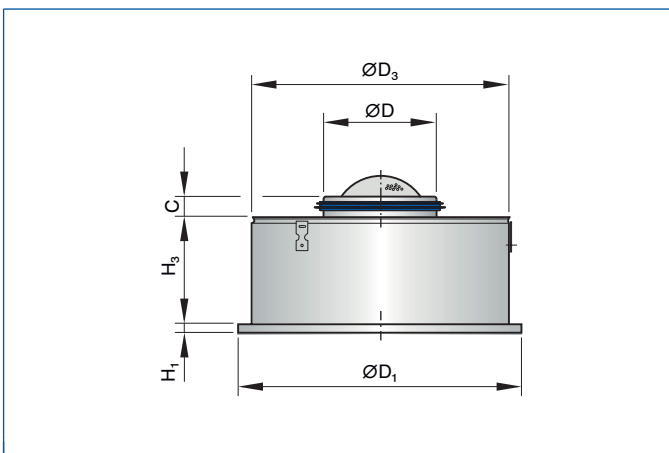


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	H ₁	□Q ₃	H ₃	ØD ₄	H ₄	ØD	A	C	Plenum box	m kg
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
1	244	6	266	255	202	220	123	161	48	AK-Uni-019	3.1
2	300	6	290	285	258	250	158	174	50	AK-Uni-020	3.7
3	356	6	372	330	314	295	198	199	50	AK-Uni-021	5.5
4	412	6	476	380	362	345	248	224	48	AK-Uni-022	8.2
5	468	6	476	380	426	345	248	224	48	AK-Uni-023	8.1
6	542	6	567	445	482	410	313	257	50	AK-Uni-024	11.2
7	598	6	590	445	578	410	313	257	50	AK-Uni-025	11.7
8	654	6	615	445	590	410	313	257	50	AK-Uni-026	12.5

Weights apply to the supply air variant

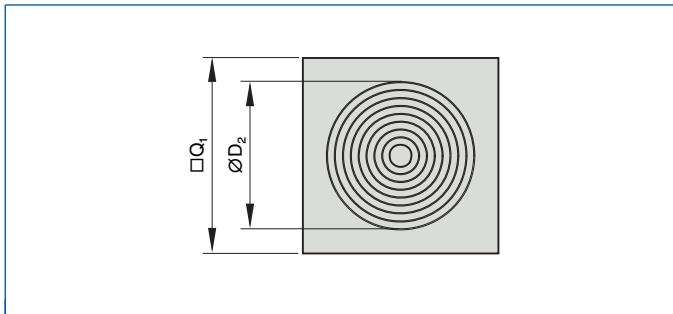
Circular diffuser face with plenum box for vertical duct connection



Dimensions [mm] and weight [kg]

Nominal size	ØD_1 mm	H_1 mm	ØD_3 mm	H_3 mm	ØD mm	C mm	m kg
1	244	6	202	227	123	50	1.7
2	300	6	258	227	158	50	2.2
3	356	6	314	227	198	50	3.0
4	412	6	370	261	248	50	3.9
5	468	6	426	261	248	50	4.7
6	542	6	482	292	313	50	5.8
7	598	6	538	292	313	50	6.9
8	654	6	594	292	313	50	8.1

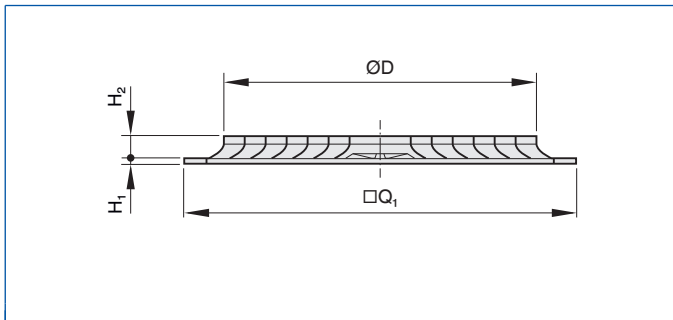
Diffuser face ADLR-Q



Dimensions [mm]

Nominal size	ØD_2 mm	A_{eff} m^2
... x 1	192	0.0066
... x 2	248	0.0161
... x 3	304	0.0257
... x 4	360	0.0349
... x 5	416	0.0473
... x 6	472	0.0544
... x 7	528	0.0691
... x 8	584	0.0843

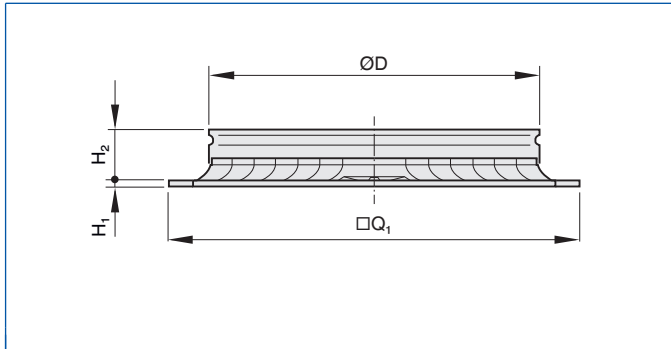
ADLR-Q-A



Dimensions [mm] and weight [kg]

Nominal size	593 × ...	598 × ...	618 × ...	623 × ...	H ₁ mm	H ₂ mm	ØD mm	m kg
	□Q ₁ mm							
... × 1	593	598	618	623	6	29	137	1.3
... × 2	593	598	618	623	6	29	193	1.3
... × 3	593	598	618	623	6	29	249	1.4
... × 4	593	598	618	623	6	29	305	1.5
... × 5	593	598	618	623	6	29	361	1.6
... × 6	593	598	618	623	6	29	417	1.8
... × 7	593	598	618	623	6	29	473	2.0
... × 8	593	598	618	623	6	29	529	2.2

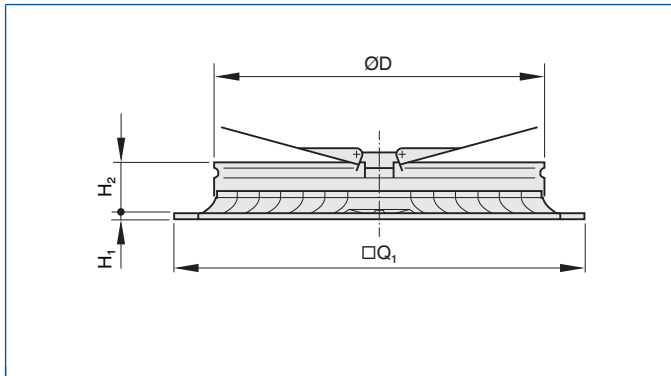
ADLR-Q-AR



Dimensions [mm] and weight [kg]

Nominal size	593 × ...	598 × ...	618 × ...	623 × ...	H ₁ mm	H ₂ mm	ØD mm	m kg
	□Q ₁ mm							
... × 1	593	598	618	623	6	54	141	1.5
... × 2	593	598	618	623	6	54	197	1.5
... × 3	593	598	618	623	6	54	253	1.7
... × 4	593	598	618	623	6	54	309	1.8
... × 5	593	598	618	623	6	54	365	1.9
... × 6	593	598	618	623	6	54	421	2.2
... × 7	593	598	618	623	6	54	477	2.4
... × 8	593	598	618	623	6	54	523	2.7

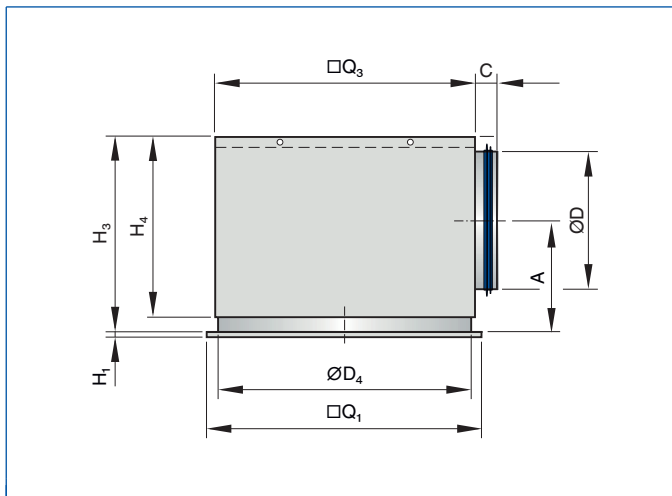
ADLR-Q-C



Dimensions [mm] and weight [kg]

Nominal size	593 × ...	598 × ...	618 × ...	623 × ...	H ₁ mm	H ₂ mm	ØD mm	m kg
	□Q ₁ mm							
... × 1	593	598	618	623	6	54	141	1.8
... × 2	593	598	618	623	6	54	197	2.1
... × 3	593	598	618	623	6	54	253	2.5
... × 4	593	598	618	623	6	54	309	2.9
... × 5	593	598	618	623	6	54	365	3.3
... × 6	593	598	618	623	6	54	421	4.0
... × 7	593	598	618	623	6	54	477	4.7
... × 8	593	598	618	623	6	54	523	5.4

Square diffuser face with plenum box for horizontal duct connection



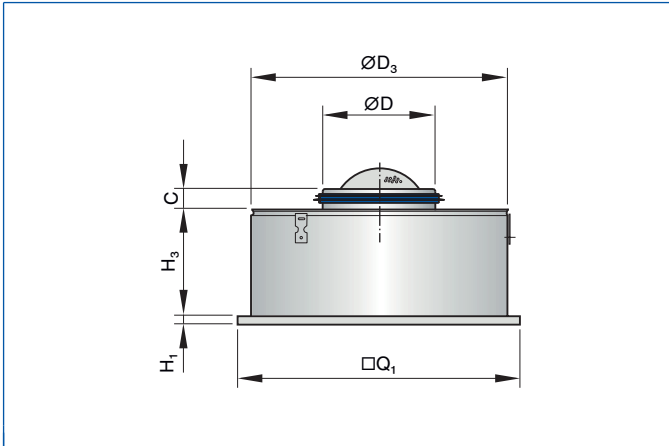
Dimensions [mm] and weight [kg]

Nominal size	593 × ...	598 × ...	618 × ...	623 × ...	H ₁ mm	□Q ₃ mm	H ₃ mm	ØD ₄ mm	H ₄ mm	ØD mm	A mm	C mm	Plenum box	m kg
	□Q ₁ mm													
... × 1	593	598	618	623	6	266	255	202	220	123	161	48	AK-Uni-019	4.2
... × 2	593	598	618	623	6	290	285	258	250	158	174	50	AK-Uni-020	4.8
... × 3	593	598	618	623	6	372	330	314	295	198	199	50	AK-Uni-021	6.6
... × 4	593	598	618	623	6	476	380	362	345	248	224	48	AK-Uni-022	9.3
... × 5	593	598	618	623	6	476	380	426	345	248	224	48	AK-Uni-023	9.2
... × 6	593	598	618	623	6	567	445	482	410	313	257	50	AK-Uni-024	12.3
... × 7	593	598	618	623	6	590	445	578	410	313	257	50	AK-Uni-025	12.8
... × 8	593	598	618	623	6	615	445	590	410	313	257	50	AK-Uni-026	13.6

Weights apply to the supply air variant



Square diffuser face with plenum box for vertical duct connection

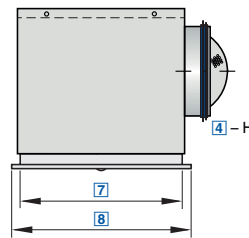
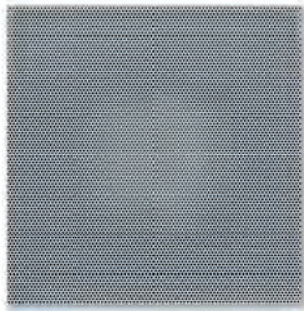


Dimensions [mm] and weight [kg]

Nominal size	593 x ...	598 x ...	618 x ...	623 x ...	H ₁ mm	ØD ₃ mm	H ₃ mm	ØD mm	C mm	m kg
	□Q ₁ mm									
... x 1	593	598	618	623	6	202	227	123	50	2.8
... x 2	593	598	618	623	6	258	227	158	50	3.3
... x 3	593	598	618	623	6	314	227	198	50	4.1
... x 4	593	598	618	623	6	370	261	248	50	5.0
... x 5	593	598	618	623	6	426	261	248	50	5.8
... x 6	593	598	618	623	6	482	292	313	50	6.9
... x 7	593	598	618	623	6	538	292	313	50	8.0
... x 8	593	598	618	623	6	594	292	313	50	9.2

Weights apply to the supply air variant





For horizontal one-way to four-way air discharge, for comfort zones, with fixed baffle element

Order code

DLQL - T - Z - H - M - L / 600 x 593 / P1 - RAL ...

1 2 3 4 5 6 7 8 9

1 Type

DLQL Ceiling diffuser

2 Ceiling system

P Grid or plasterboard ceiling
T T-bar ceiling

3 System

Z Supply air
A Extract air

4 Connection

H Horizontal
V Vertical

5 Damper blade for volume flow rate balancing

No entry: none
M With (only for connection type H)

6 Accessories

No entry: none
L With lip seal

7 Nominal size [mm]

250, 300, 400, 500, 600

8 Size of diffuser face plate [mm]

DLQL-P
No entry: size of diffuser face plate = nominal size - 2 mm
598 For grid size 600
623 For grid size 625
... Other dimensions, 623 mm max.
DLQL-T
593 For T-bar ceilings, grid size 600
618 For T-bar ceilings, grid size 625

9 Exposed surface

No entry: powder-coated RAL 9010, pure white
P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

+ Features

- Square ceiling diffusers
- Nominal sizes 250, 300, 400, 500, 600
- Volume flow rate range 6 - 285 l/s or 22 - 1026 m³/h
- Square diffuser face
- Diffuser face made of galvanised sheet steel, powder-coated
- For supply and extract air
- For variable and constant volume flows
- For all types of ceiling systems
- Perforated diffuser face with special baffle element for horizontal air discharge and high induction levels

Optional equipment and accessories

- Exposed diffuser face available in RAL CLASSIC colours
- Horizontal or vertical duct connection
- Blanking plates for adjusting the discharge direction
- Plenum box with damper blade

X Application

- Type DLQL ceiling diffusers are used as supply air or extract air diffusers for comfort zones

- Perfect integration with suspended perforated sheet metal ceilings
- Horizontal one-way to four-way supply air discharge for mixed flow ventilation
- High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
- For variable and constant volume flows
- For supply air to room air temperature differences from -10 to +10 K
- For room heights up to 4 m (lower edge of suspended ceiling)
- For all types of ceiling systems

◇ Variants

- DLQL-P: Grid ceilings and continuous plasterboard ceilings
- DLQL-T: T-bar ceilings
- DLQL-*-Z: Supply air
- DLQL-*-A: Extract air

Connection

- H: Horizontal duct connection
- V: Vertical duct connection

⬡ Attachments

- M: Damper blade for volume flow rate balancing with horizontal connection

& Accessories

- Lip seal

⊕ Useful additions

- Blanking plates

★ Special characteristics

- Horizontal one-way to four-way supply air discharge
- Perforated diffuser face made of galvanised sheet steel
- For all types of ceiling systems
- Horizontal or vertical duct connection

ISO Standards and guidelines

- Sound power level of the air-regenerated noise measured according to EN ISO 5135





Technical data

Nominal sizes - ceiling tile	248, 298, 398, 498, 593, 598, 618, 623 mm
Nominal sizes - diffuser	250, 300, 400, 500, 600 mm
Minimum volume flow rate	6 - 145 l/s or 22 - 522 m ³ /h
Maximum volume flow rate, with L _{WA} ≈ 50 dB(A)	275 - 285 l/s or 990 - 1026 m ³ /h
Supply air to room air temperature difference	-10 to +10 K



DLQL*-Z-H with one-way air discharge (supply air), sound power level and total differential pressure

Nominal size	Ḃ l/s	Ḃ m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
250	6	22	3	<15	3	<15	6	<15
	15	54	20	22	22	22	40	22
	20	72	35	31	39	31	70	31
	30	108	79	49	87	49	158	49
300	10	36	5	<15	6	<15	11	<15
	20	72	22	30	24	30	43	31
	30	108	49	42	54	42	98	43
	40	144	87	52	95	52	173	53
400	15	54	5	<15	5	<15	9	<15
	30	108	19	28	21	29	38	30
	45	162	43	42	47	43	85	44
	55	198	64	49	70	50	127	51
500	25	90	7	<15	8	<15	14	<15
	40	144	17	28	19	29	35	29
	55	198	33	42	36	43	66	43
	70	252	54	50	59	51	107	51
600	35	126	5	<15	6	<15	11	<15
	60	216	16	28	17	28	32	28
	85	306	32	41	35	41	63	41
	110	396	53	50	58	50	106	50

DLQL*-Z-H with two-way air discharge (supply air), sound power level and total differential pressure

Nominal size	Ḃ l/s	Ḃ m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
250	15	54	8	17	9	17	16	17
	25	90	22	30	24	30	44	30
	35	126	43	39	48	39	87	39
	50	180	89	51	97	51	177	51
300	20	72	9	18	10	18	18	19
	30	108	20	29	22	29	40	30
	40	144	36	38	39	38	72	39
	55	198	68	50	75	50	136	51
400	35	126	10	18	11	19	20	20
	50	180	20	30	23	31	41	32
	70	252	40	42	44	43	80	44
	85	306	59	49	65	50	118	51
500	50	180	10	20	11	21	20	21
	70	252	20	32	22	33	39	33
	95	342	36	43	40	44	72	44
	115	414	53	50	58	51	106	51
600	75	270	9	16	10	16	19	16
	105	378	19	31	20	31	37	31
	140	504	33	42	36	42	66	42
	175	630	52	50	57	50	103	50





DLQL^{-*}-Z-H with three-way air discharge (supply air), sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
250	20	72	9	20	10	20	18	20
	35	126	27	34	30	34	54	34
	50	180	55	45	61	45	110	45
	60	216	80	52	87	52	159	52
300	30	108	13	23	14	23	26	24
	40	144	23	32	25	32	46	33
	50	180	36	40	40	40	72	41
	65	234	61	49	67	49	122	50
400	50	180	12	21	13	22	24	23
	70	252	23	32	26	33	47	34
	90	324	39	42	43	43	77	44
	110	396	58	50	64	51	115	52
500	75	270	13	22	14	23	26	23
	100	360	23	35	25	36	46	36
	125	450	36	43	39	44	72	44
	150	540	52	50	57	51	103	51
600	110	396	12	19	13	19	23	19
	150	540	22	33	24	33	43	33
	190	684	35	42	38	42	69	42
	235	846	53	50	58	50	106	50

DLQL^{-*}-Z-H with four-way air discharge (supply air), sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
250	25	90	10	23	11	22	17	22
	35	126	19	30	21	30	34	30
	50	180	39	40	43	41	69	40
	65	234	66	49	72	49	116	49
300	35	126	14	23	16	24	28	25
	45	162	23	31	26	32	46	32
	60	216	41	41	46	41	81	41
	75	270	64	50	72	49	127	49
400	65	234	15	23	19	25	35	26
	75	270	20	28	25	30	47	31
	95	342	32	37	40	38	75	39
	135	486	64	50	80	51	151	51
500	100	360	18	27	20	27	37	28
	130	468	30	38	33	37	62	38
	160	576	46	46	50	45	94	46
	180	648	58	50	63	50	118	50
600	145	522	15	25	17	25	30	25
	185	666	24	34	28	34	49	34
	230	828	38	43	44	43	75	43
	275	990	54	50	63	50	107	49





DLQL-*-Z-V with one-way air discharge (supply air), sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
250	6	22	5	<15
	15	54	34	34
	20	72	60	43
	25	90	94	50
300	10	36	6	15
	20	72	24	33
	30	108	53	46
	35	126	72	51
400	15	54	5	<15
	30	108	20	32
	45	162	45	45
	50	180	56	49
500	25	90	6	19
	40	144	15	30
	55	198	28	40
	75	270	52	51
600	35	126	5	19
	60	216	15	32
	85	306	30	43
	100	360	42	50

DLQL-*-Z-V with two-way air discharge (supply air), sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
250	15	54	10	20
	25	90	29	35
	35	126	56	45
	40	144	73	50
300	20	72	8	16
	30	108	18	31
	40	144	32	41
	50	180	50	49
400	35	126	9	18
	50	180	18	32
	70	252	35	44
	80	288	45	49
500	50	180	8	20
	70	252	15	33
	95	342	28	44
	115	414	41	51
600	75	270	8	20
	105	378	15	33
	130	468	24	41
	165	594	38	50





DLQL*-Z-V with three-way air discharge (supply air), sound power level and total differential pressure

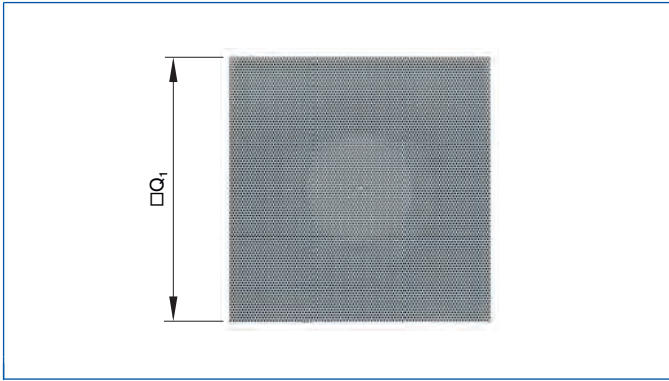
Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
250	20	72	9	19
	35	126	27	36
	50	180	55	47
	60	216	80	53
300	30	108	11	20
	40	144	19	31
	50	180	29	40
	65	234	50	49
400	50	180	9	21
	70	252	17	33
	90	324	29	43
	110	396	43	50
500	75	270	9	20
	100	360	16	35
	125	450	25	44
	150	540	36	50
600	110	396	8	21
	150	540	15	33
	190	684	24	42
	230	828	35	51

DLQL*-Z-V with four-way air discharge (supply air), sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
250	25	90	9	18
	35	126	17	29
	50	180	35	41
	65	234	59	50
300	35	126	9	<15
	50	180	17	30
	65	234	29	41
	85	306	50	51
400	65	234	9	19
	85	306	16	32
	110	396	27	42
	135	486	40	49
500	100	360	11	26
	125	450	17	37
	150	540	25	45
	170	612	32	50
600	145	522	8	20
	190	684	14	33
	235	846	22	42
	285	1026	32	50



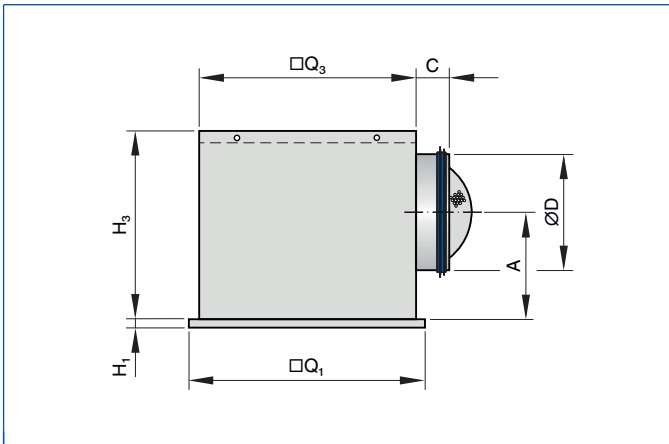
Diffuser face DLQL



Dimensions [mm]

Nominal size	DLQL-P	DLQL-T	A _{eff} m ²
	□Q ₁		
	mm	mm	
250	248	593	0.0100
300	298	593	0.0145
400	398	593	0.0258
500	498	593	0.0403
600	598	593	0.0580

Square diffuser face with plenum box for horizontal duct connection

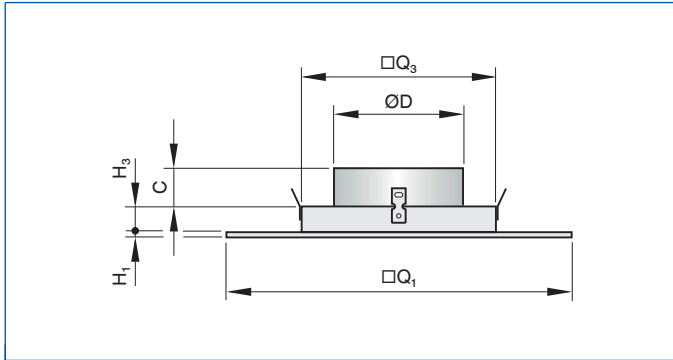


Dimensions [mm] and weight [kg]

Nominal size	DLQL-P	DLQL-T	ØD	H ₁	□Q ₃	H ₃	A	C	Plenum box	m
	□Q ₁									
	mm	mm								
250	248	593	158	8	216	250	139	50	AK-Uni-008	2.8
300	298	593	158	8	290	250	139	50	AK-Uni-001	4.0
400	398	593	198	8	372	295	164	50	AK-Uni-002	6.5
500	498	593	248	8	476	345	189	48	AK-Uni-010	9.6
600	598	593	313	8	590	410	222	50	AK-Uni-012	13.8



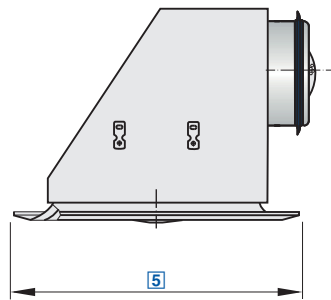
 DLQL...-V



Dimensions [mm] and weight [kg]

Nominal size	DLQL-P	DLQL-T	$\varnothing D$	H_1	$\square Q_3$	H_3	C	m
	$\square Q_1$ mm	$\square Q_1$ mm						
250	248	593	123	8	198	20	50	0.9
300	298	593	158	8	272	26	50	1.2
400	398	593	198	8	354	36	50	2.0
500	498	593	248	8	458	47	50	3.1
600	598	593	313	8	572	56	50	4.4





For horizontal one-way to four-way supply air discharge, with fixed air control blades - sheet steel diffuser face

Order code

DLQ-AK - 2 - M - L / 400 / P1 - RAL ... / B

1 2 3 4 5 6 7

<p>1 Type DLQ-AK Ceiling diffuser</p> <p>2 No. of sides for air discharge 1 2 2E 3 4</p> <p>3 Damper blade for volume flow rate balancing No entry: none M With</p>	<p>4 Accessories No entry: none L With lip seal</p> <p>5 Nominal size [mm] 300, 400, 500, 600, 625</p> <p>6 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p>	<p>7 Spigot side No specification required in case of 4-way air discharge</p> <p>A B C D</p>
--	--	---

Features

- Square ceiling diffusers
- ▶ Nominal sizes 300, 400, 500, 600, 625
 - ▶ Volume flow rate range 40 - 565 l/s or 144 - 2034 m³/h
 - ▶ Square diffuser face
 - ▶ Diffuser face made of galvanised sheet steel, powder-coated
 - ▶ For supply air
 - ▶ For variable and constant volume flows
 - ▶ For all types of ceiling systems
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours
- ▶ Horizontal duct connection
- ▶ Plenum box with damper blade

Application

- ▶ Type DLQL-AK ceiling diffusers are used as supply air diffusers for comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Horizontal one-way to four-way supply air discharge for mixed flow ventilation
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -10 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For all types of ceiling systems

Variants

- ▶ DLQ-AK-1: One-way air discharge
- ▶ DLQ-AK-2: Two-way air discharge
- ▶ DLQ-AK-2E: Two-way air discharge, for

corners

- ▶ DLQ-AK-3: Three-way air discharge
- ▶ DLQ-AK-4: Four-way air discharge

Attachments

- ▶ M: Damper blade for volume flow rate balancing

Special characteristics

- ▶ Horizontal one-way to four-way supply air discharge
- ▶ Diffuser face made of formed sheet steel, powder-coated
- ▶ For all types of ceiling systems
- ▶ Spigot side can be selected
- ▶ Horizontal duct connection

Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	300, 400, 500, 600, 625 mm
Minimum volume flow rate	40 - 150 l/s or 144 - 540 m ³ /h
Maximum volume flow rate, with L _{WA} ≈ 50 dB(A)	545 - 565 l/s or 1962 - 2034 m ³ /h
Supply air to room air temperature difference	-10 to +10 K



DLQ-AK-1, DLQ-AK-2, DLQ-AK-3, DLQ-AK-4 (supply air), sound power level and total differential pressure

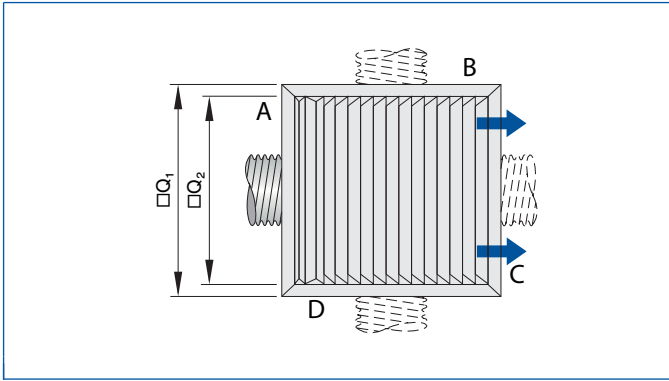
Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300	40	144	10	16	12	19	18	23
	65	234	26	31	32	34	47	38
	95	342	56	42	67	45	101	49
	120	432	90	50	107	53	161	57
400	50	180	4	<15	6	<15	10	13
	105	378	19	28	25	32	42	35
	160	576	45	41	58	45	99	48
	215	774	81	50	105	54	178	57
500	100	360	5	16	7	19	14	23
	180	648	16	32	22	35	46	39
	260	936	33	43	47	46	97	50
	340	1224	57	50	80	53	166	57
600	150	540	4	14	7	19	14	23
	265	954	14	31	21	36	44	40
	385	1386	29	42	44	47	94	51
	505	1818	50	50	76	55	161	59
625	150	540	4	11	7	16	15	21
	265	954	14	28	21	33	46	38
	385	1386	29	39	44	44	97	49
	545	1962	59	50	88	55	194	60

DLQ-AK-2E (supply air), sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
300	40	144	9	16	11	18	17	22
	65	234	24	31	28	33	45	37
	95	342	50	42	61	44	96	48
	120	432	80	50	97	52	153	56
400	50	180	4	<15	6	9	10	13
	105	378	19	28	25	31	45	35
	160	576	45	41	59	44	104	48
	215	774	82	50	106	53	188	57
500	100	360	5	12	7	16	15	20
	180	648	16	30	23	34	47	38
	260	936	34	41	47	45	98	49
	350	1260	61	50	86	54	178	58
600	150	540	4	11	7	15	13	20
	265	954	13	29	21	33	41	38
	385	1386	27	41	43	45	87	50
	515	1854	48	50	78	54	155	59
625	150	540	4	8	7	13	14	17
	265	954	13	26	21	31	42	35
	385	1386	27	38	43	43	89	47
	565	2034	58	50	93	55	193	59



Diffuser face DLQ-AK-1

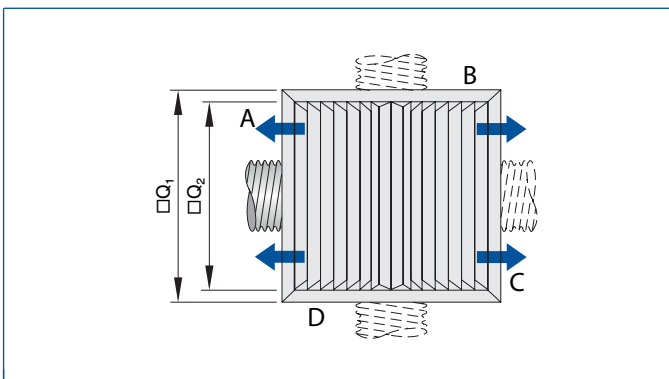


Spigot sides - A, B, C, D

Dimensions [mm]

Nominal size	$\square Q_1$	$\square Q_2$	A_{eff} m ²
	mm	mm	
300	298	246	0.0175
400	398	346	0.0370
500	498	446	0.0675
600	598	546	0.1100
625	623	571	0.1230

Diffuser face DLQ-AK-2



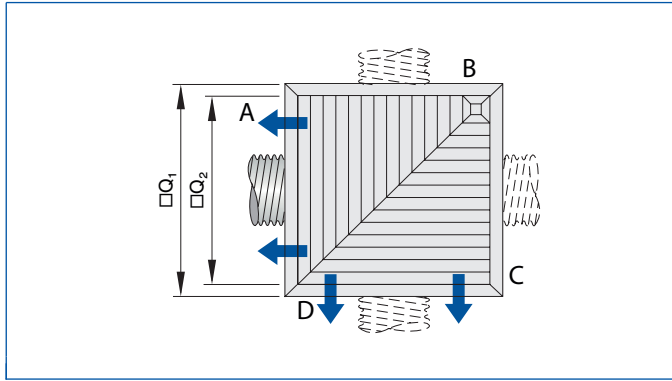
Spigot sides - A, B, C, D

Dimensions [mm]

Nominal size	$\square Q_1$	$\square Q_2$	A_{eff} m ²
	mm	mm	
300	298	246	0.0165
400	398	346	0.0350
500	498	446	0.0610
600	598	546	0.1040
625	623	571	0.1150



Diffuser face DLQ-AK-2E

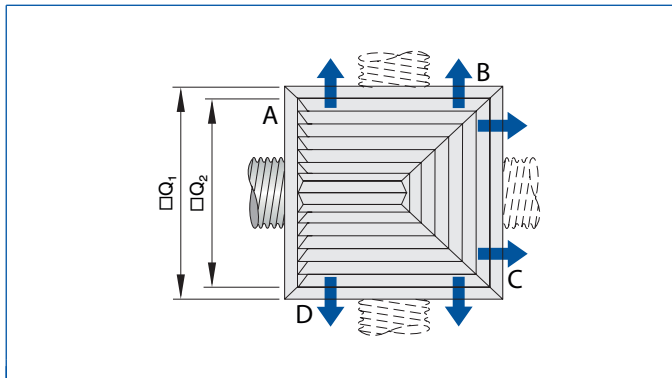


Spigot sides - A, B, C, D

Dimensions [mm]

Nominal size	□Q ₁	□Q ₂	A _{eff} m ²
	mm	mm	
300	298	246	0.0182
400	398	346	0.0385
500	498	446	0.0671
600	598	546	0.1144
625	623	571	0.1265

Diffuser face DLQ-AK-3



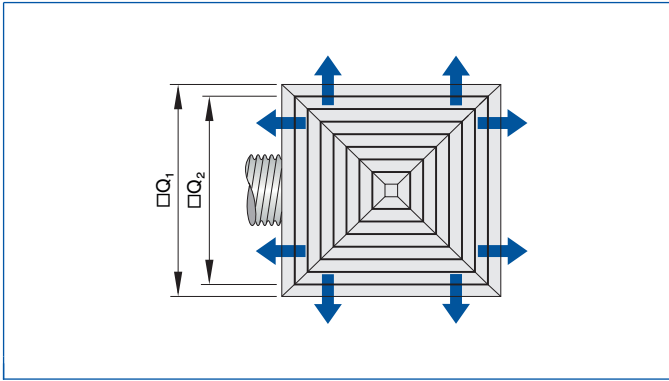
Spigot sides - A, B, C, D

Dimensions [mm]

Nominal size	□Q ₁	□Q ₂	A _{eff} m ²
	mm	mm	
300	298	246	0.0175
400	398	346	0.0370
500	498	446	0.0675
600	598	546	0.1100
625	623	571	0.1230



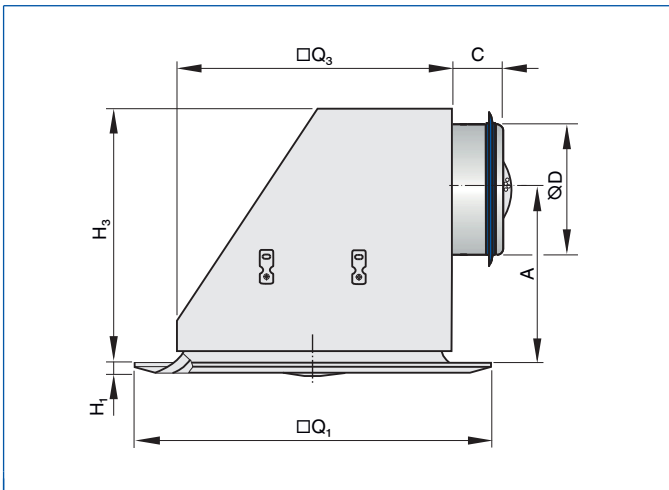
Diffuser face DLQ-AK-4



Dimensions [mm]

Nominal size	$\square Q_1$ mm	$\square Q_2$ mm	A_{eff} m ²
300	298	246	0.0175
400	398	346	0.0370
500	498	446	0.0675
600	598	546	0.1100
625	623	571	0.1230

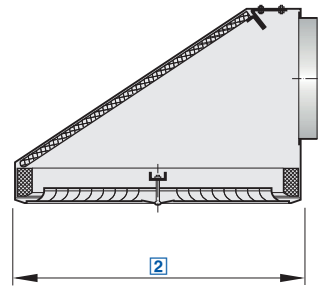
DLQ-AK



Dimensions [mm] and weight [kg]

Nominal size	$\square Q_1$ mm	H_1 mm	$\square Q_3$ mm	H_3 mm	$\varnothing D$ mm	A mm	C mm	m kg
300	298	13	195	277	158	162	42	3.0
400	398	13	295	307	198	177	42	4.5
500	498	13	395	377	248	217	42	7.0
600	598	13	495	427	313	235	42	10.0
625	623	13	520	427	313	235	42	10.5





For horizontal four-way air discharge, with integral fire barrier for mineral fibre false ceilings, with fixed air control blades

Order code

DLK – Fb / 625 / P1 – RAL ...

1

2

3

1 Type

DLK-Fb Ceiling diffuser

2 Nominal size [mm]

600, 625

3 Exposed surface

No entry: powder-coated RAL 9010, pure white

P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

+ Features

Square ceiling diffusers for Odenwald false ceilings, to ensure fire integrity in the event of a fire on the room side

- ▶ Nominal sizes 600, 625
- ▶ Volume flow rate range 220 - 460 l/s or 792 - 1656 m³/h
- ▶ Square diffuser face
- ▶ Diffuser face made of galvanised sheet steel, powder-coated
- ▶ Automatic release at 72 °C in the event of a fire
- ▶ For supply and extract air
- ▶ For variable and constant volume flows
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours
- ▶ Horizontal duct connection

X Application

- ▶ Type DLK-Fb ceiling diffusers with integral fire barrier are used as supply air or extract air diffusers for comfort zones
- ▶ For fire integrity in the event of a fire on the room side (DIN 4102-2, clause 7.2.1.)
- ▶ Max. fire load in the false ceiling void: 7 kWh/m²
- ▶ Release in the event of a fire is by fusible link
- ▶ Horizontal four-way supply air discharge for mixed flow ventilation
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -10 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For installation into mineral fibre false ceilings made by Odenwald
- ▶ Important! Type DLK-Fb ceiling diffusers are not approved for self-supporting fire-resistant false ceilings; for such ceilings, Type KU-K30 fire dampers or Type FVZ-K30 fire protection valves must be used

EN Classification

- ▶ Fire resistance class according to certificate 80764-M1/Schu
- ▶ Suspended ceilings combined with steel girder ceilings, F90
- ▶ Suspended ceilings combined with steel reinforced concrete ceilings, F90
- ▶ Suspended ceilings combined with wooden beam ceilings, F30

★ Special characteristics

- ▶ Horizontal four-way supply air discharge
- ▶ Diffuser face made of galvanised sheet steel
- ▶ With integral fire barrier for mineral fibre false ceilings
- ▶ Horizontal duct connection

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

📈 Technical data

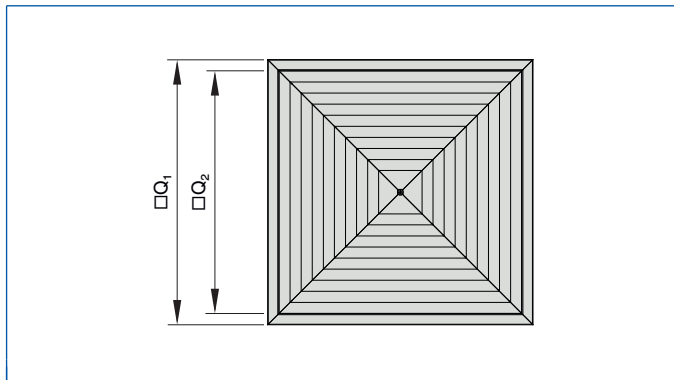
Nominal sizes	600, 625 mm
Minimum volume flow rate	220 - 380 l/s or 792 - 1368 m ³ /h
Maximum volume flow rate, with $L_{WA} \approx 50$ dB(A)	300 - 460 l/s or 1080 - 1656 m ³ /h
Supply air to room air temperature difference	-10 to +10 K



DLK-Fb, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
600 625	220	792	9	28
	300	1080	17	37
	380	1368	28	44
	460	1656	41	50

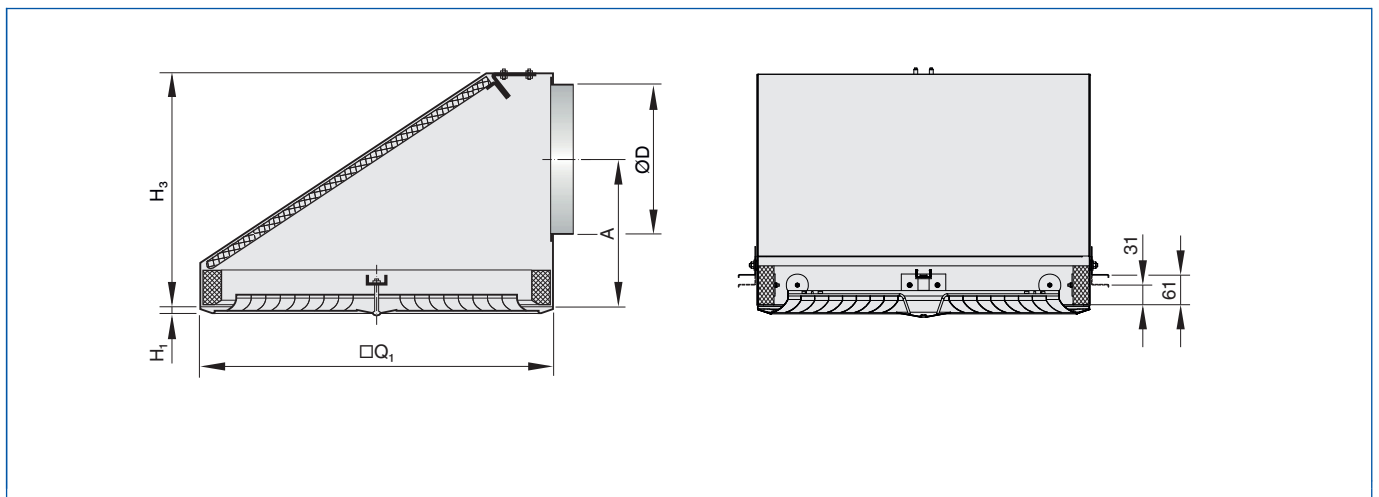
Diffuser face DLK-Fb



Dimensions [mm]

Nominal size	$\square Q_1$	$\square Q_2$	A_{eff}
	mm	mm	m ²
600	598	548	0.1100
625	623	573	0.1230

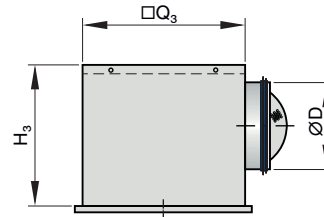
DLK-Fb



Dimensions [mm] and weight [kg]

Nominal size	$\varnothing D$	$\square Q_1$	H_1	H_3	A	C	m
	mm	mm	mm	mm	mm	mm	kg
600	298	598	13	416	250	40	17.0
625	298	623	13	430	260	40	19.0





Universal plenum box, available in many variants

Order code

AK - Uni - 002 - ZL - M - L

1 2 3 4 5

1 Type
AK-Uni Plenum box

2 Variant
001 to 033

3 System
ZL Supply air
AL Extract air

4 Damper blade for volume flow rate balancing
No entry: none

M With
MN With cords and pressure tap

5 Accessories
L No entry: none
L With lip seal

Features

- Plenum boxes for supply air and extract air
- ▶ For circular and square diffuser faces
- ▶ Plenum box made of galvanised sheet steel
- ▶ For supply and extract air
- ▶ For all types of ceiling systems
- ▶ Horizontal duct connection
- ▶ Equalising element that ensures a uniform airflow through the diffuser face (supply air variant)
- ▶ For comfort zones and industrial zones

Optional equipment and accessories

- ▶ Damper blade for volume flow rate balancing
- ▶ Pressure tap and cord-operated damper blade for volume flow rate balancing
- ▶ Lip seal

Application

- ▶ Type AK-Uni plenum boxes for the connection of circular and square diffuser faces to circular ducts, suitable for supply air or extract air applications in comfort and industrial zones
- ▶ For diffuser faces of Types VDW, TDV, RFD, FD, TDF, ADD, ADLQ, DLQ, ADLR, and DLQL, with central screw fixing
- ▶ For variable and constant volume flows
- ▶ For all types of ceiling systems

Variants

- ▶ AK-Uni-...-ZL: Supply air
- ▶ AK-Uni-...-AL: Extract air

Attachments

- ▶ M: Damper blade for volume flow rate balancing
- ▶ MN: Pressure tap and cord-operated damper blade for volume flow rate balancing with the diffuser face in place

Accessories

- ▶ Lip seal

Special characteristics

- ▶ Plenum box made of galvanised sheet steel
- ▶ For all types of ceiling systems
- ▶ For circular and square diffuser faces
- ▶ Horizontal duct connection
- ▶ For comfort zones and industrial zones

Standard combinations with square diffusers

Variant	ØD	Diffuser face Variant							
		VDW-Q	TDV-SA-Q	FD-Q	TDF-SA-Q	ADD-Q	ADLQ DLQ	ADLR-Q	DLQL
AK-Uni-001	158	300 × 8	300	300	300				300
AK-Uni-002	198	400 × 16	400	400	400		400		400
AK-Uni-003	198	500 × 24	500	500	500				
AK-Uni-004	248	600 × 24 625 × 24	600 625	600 625	600 625				
AK-Uni-005	248	600 × 48							
AK-Uni-006	248	625 × 54							
AK-Uni-007	313	825 × 72							
AK-Uni-008	158						250		250
AK-Uni-009	158						300		
AK-Uni-010	248						500		500
AK-Uni-011	313						600 625		





Variant	ØD	Diffuser face Variant							
		VDW-Q	TDV-SA-Q	FD-Q	TDF-SA-Q	ADD-Q	ADLQ DLQ	ADLR-Q	DLQL
AK-Uni-012	313								600
AK-Uni-019	123					250			1
AK-Uni-020	158					300			2
AK-Uni-021	198					400			3
AK-Uni-022	248					450			4
AK-Uni-023	248					500			5
AK-Uni-024	313								6
AK-Uni-025	313					600 625			7
AK-Uni-026	313								8

Alternative combinations with square diffusers

Variant	ØD	Diffuser face Variant		
		VDW-Q	FD-Q	ADLQ DLQ
AK-Uni-004	248			600<, 625<
AK-Uni-005	248	600 × 24 625 × 24	600 625	600< 625<
AK-Uni-006	248	625 × 24	625	625<
AK-Uni-010	248	500 × 24>	500>	
AK-Uni-011	313	600 × 24> 625 × 24>	600> 625>	
AK-Uni-012	313	600 × 24> 625 × 24>	600< 625<	600 625
AK-Uni-027	313	600 × 48>		
	313	625 × 24>	625>	625
	313	625 × 54>		

< Smaller connection diameter
> Larger connection diameter

Standard combinations with circular diffusers

Variant	ØD	Diffuser face Variant					
		VDW-R	TDV-SA-R	FD-R	TDF-SA-R	ADD-R	ADLR
AK-Uni-013	158	300 × 8	300	300	300		
AK-Uni-014	198	400 × 16	400	400	400		
AK-Uni-015	198	500 × 24	500	500	500		
AK-Uni-016	248	600 × 24 625 × 24	600 625	600 625	600 625		
AK-Uni-017	248	600 × 48					
AK-Uni-019	123					250	1
AK-Uni-020	158					300	2
AK-Uni-021	198					400	3
AK-Uni-022	248					450	4
AK-Uni-023	248					500	5
AK-Uni-024	313						6
AK-Uni-025	313					600	7
AK-Uni-026	313						8

Alternative combinations with circular diffusers

Variant	ØD	Diffuser face Variant		
		VDW-R	FD-R	ADLR
AK-Uni-013	158			2
AK-Uni-014	198			4>
AK-Uni-016	248			7<
AK-Uni-017	248	600 × 24 625 × 24	600 625	7



Variant	ØD	Diffuser face Variant		
		VDW-R	FD-R	ADLR
AK-Uni-018	248	625 × 24	625	8<
AK-Uni-022	248	400 × 16>	400>	
AK-Uni-024	313	500 × 24>	500>	
AK-Uni-025	313	600 × 24>	600>	
		625 × 24>	625>	
	313	600 × 48>		
AK-Uni-026	313	625 × 24>	625>	

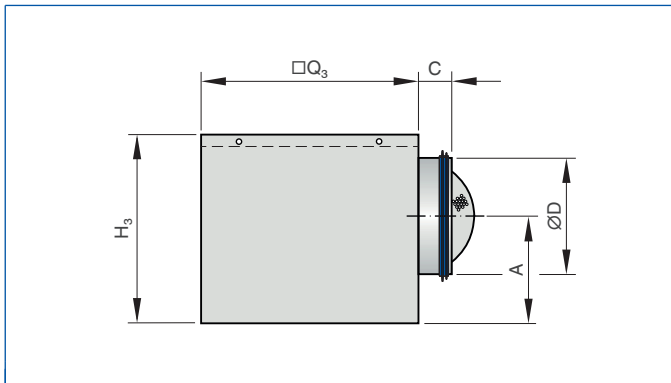
< Smaller connection diameter

> Larger connection diameter

Standard combinations with diffuser RFD

Variant	ØD	Diffuser face type	
		RFD	
AK-Uni-028	98		125
AK-Uni-029	123		160
AK-Uni-030	158		200
AK-Uni-031	198		250
AK-Uni-032	248		315
AK-Uni-033	313		400

Universal plenum box AK-Uni for square diffuser faces

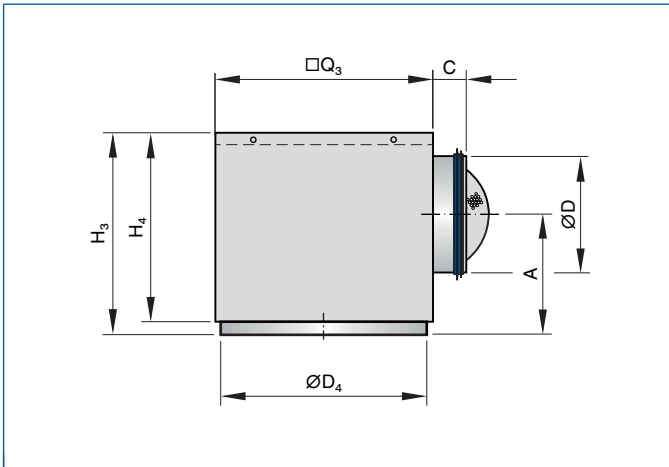


Dimensions [mm] and weight [kg]

Variant	ØD	□Q ₃	H ₃	A	C	m
	mm	mm	mm	mm	mm	kg
AK-Uni-001	158	290	250	139	50	3.0
AK-Uni-002	198	372	295	164	50	4.5
AK-Uni-003	198	476	295	164	50	6.0
AK-Uni-004	248	567	345	199	48	8.2
AK-Uni-005	248	590	345	189	48	8.6
AK-Uni-006	248	615	345	189	48	9.0
AK-Uni-007	313	806	410	222	50	16.0
AK-Uni-008	158	216	250	139	50	2.2
AK-Uni-009	158	266	250	139	50	2.7
AK-Uni-010	248	476	345	189	48	6.6
AK-Uni-011	313	567	410	222	50	9.2
AK-Uni-012	313	590	410	222	50	9.6
AK-Uni-027	313	615	410	222	50	10.2



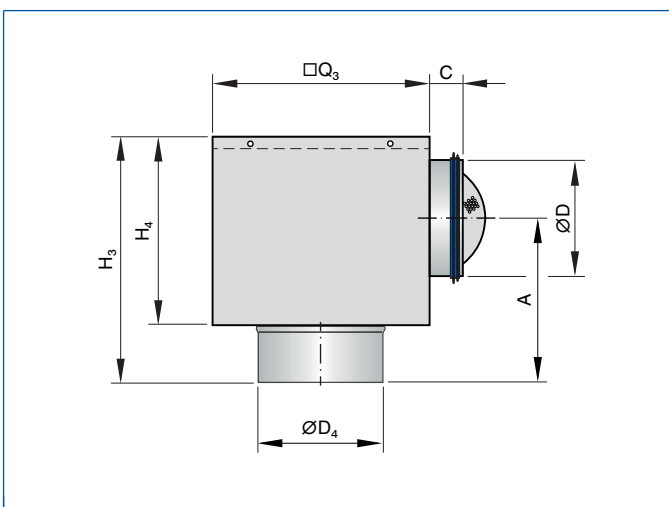
Universal plenum box AK-Uni for circular and square diffuser faces with circular face style



Dimensions [mm] and weight [kg]

Variant	$\square Q_3$	H_3	$\varnothing D_4$	H_4	$\varnothing D$	A	C	m
	mm	mm	mm	mm	mm	mm	mm	kg
AK-Uni-013	290	285	278	250	158	174	50	3.4
AK-Uni-014	372	330	362	295	198	199	50	5.1
AK-Uni-015	476	330	460	295	198	199	50	6.9
AK-Uni-016	567	380	557	345	248	234	48	9.3
AK-Uni-017	590	380	578	345	248	224	48	9.7
AK-Uni-018	615	380	590	345	248	224	48	10.3
AK-Uni-019	266	255	202	220	123	161	48	2.9
AK-Uni-020	290	285	258	250	158	174	50	3.5
AK-Uni-021	372	330	314	295	198	199	50	5.2
AK-Uni-022	476	380	362	345	248	224	48	7.8
AK-Uni-023	476	380	426	345	248	224	48	7.6
AK-Uni-024	567	445	482	410	313	257	50	10.5
AK-Uni-025	590	445	578	410	313	257	50	10.8
AK-Uni-026	615	445	590	410	313	257	50	11.4

Universal plenum box AK-Uni for RFD





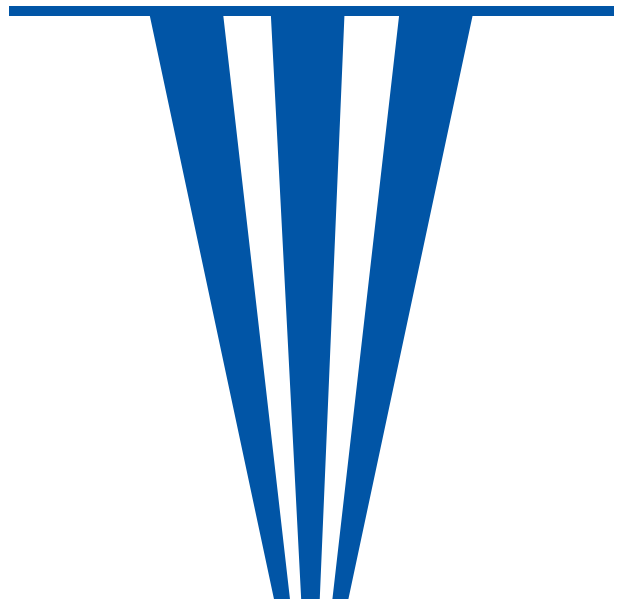
Dimensions [mm] and weight [kg]

Variant	□Q ₃	H ₃	ØD ₄	H ₄	ØD	A	C	m
	mm	mm	mm	mm	mm	mm	mm	kg
AK-Uni-028	216	255	125	195	98	170	50	2.5
AK-Uni-029	266	280	160	220	123	182	48	3.0
AK-Uni-030	290	310	200	250	158	194	50	3.5
AK-Uni-031	476	355	250	295	198	219	50	7.5
AK-Uni-032	567	395	315	345	248	244	48	10.0
AK-Uni-033	615	470	400	410	313	277	50	12.0





SLOT DIFFUSERS





2 SLOT DIFFUSERS

2.1 Slot diffusers for ceiling installation

	Particularly slim diffuser face, available in numerous variants for many different installation situations	PureLine18	139
	Numerous variants for many different installation situations	PureLine35	147
	With slim diffuser face	VSD15	156
	Numerous variants for many different installation situations	VSD35	161
	With wide diffuser face for larger volume flow rates	VSD50	174

2.2 Slot diffusers for wall installation

	For the space saving installation into lightweight partition walls with a metal support structure	VSD50-1-LT	186
	Ventilation and extract ventilation combined in one casing	VSD35-3-AZ	189

Slot diffusers for ceiling installation

	Ceiling installation					Wall installation	
	PureLine 18	PureLine 35	VSD15	VSD35	VSD50	VSD50-1-LT	VSD35-3-AZ
Technical data							
Volume flow rate range	5 - 84 (l/s)/m	7 - 197 (l/s)/m	7 - 30 (l/s)/m	15 - 135 (l/s)/m	20 - 120 (l/s)/m	10 - 70 l/s	8 - 40 l/s
Volume flow rate range	17 - 302 (l/s)/m	27 - 709 (l/s)/m	25 - 108 (m ³ /h)/m	54 - 486 (m ³ /h)/m	72 - 432 (m ³ /h)/m	36 - 252 m ³ /h	30 - 144 m ³ /h
Air patterns							
Horizontal, one-way	●	●	●	●	●	●	●
Alternating horizontal	●	●	●	●	●		
Alternating angled	●	●	●	●	●		
Vertical	●	●					
Diffuser fixing							
Screw fixing	●	●			●	●	
Rigid connection	●	●	●				●
Clamp fixing			●	●	●		
Spring clip fixing						●	●
Air control elements							
Black	●	●	●	●	●	●	●
White	●	●	●	●	●	●	●
Grey	●	●					
Plenum box							
With lining (insulation)	●	●	●	●	●	●	
Neck extension		●		●	●		
Asymmetric diffuser face	●	●		●	●		
Nominal sizes							
Number of slots	1, 2	1, 2, 3, 4	1	1, 2, 3, 4	1, 2	1	3
Nominal width	18 mm	35 mm	15 mm	35 mm	50 mm	50 mm	35 mm
Nominal length	600 - 2000 mm	600 - 1950 mm	600 - 1500 mm	600 - 1950 mm	600 - 1950 mm	550, 1175 mm	600 - 1200 mm
Spigot	80, 100, 125, 140, 160, 200	80, 100, 125, 140, 160, 200	80	100, 125, 140, 160, 200	125, 160, 200	80, 100	80
Continuous linear arrangement if required	●	●	●	●	●		
Corner section	●	●		●	●		
Explanation							
● - Standard							

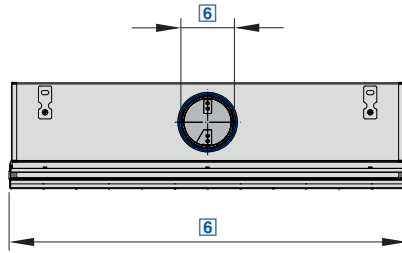




List of abbreviations

L_{WA} [dB(A)]	A-weighted sound power level of air-regenerated noise
\dot{V} [m ³ /h] and [l/s]	Volume flow rate
Δt_z [K]	Supply air to room air temperature difference, i.e. supply air temperature minus room temperature
Δp_t [Pa]	Total differential pressure
A_{eff} [m ²]	Effective air discharge area
$\varnothing D$ [mm]	Outer diameter of the spigot
$\varnothing D_1$ [mm]	Outer diameter of a circular diffuser face
$\varnothing D_2$ [mm]	Diameter of a circular diffuser face style
$\varnothing D_3$ [mm]	Diameter of a circular plenum box
Q_1 [mm]	Outer diameter of a square diffuser face
Q_2 [mm]	Dimensions of a square diffuser face style
Q_3 [mm]	Dimensions of a square plenum box
H_1 [mm]	Distance (height) from the lower edge of the suspended ceiling to the lower edge of the diffuser face
H_2 [mm]	Height of a ceiling diffuser, from the lower edge of the suspended ceiling to the upper edge of the spigot
H_3 [mm]	Height of a ceiling diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box or of the spigot
A [mm]	Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling
C [mm]	Length of the spigot
m [kg]	Weight

All sound power levels are based on 1 pW.



Particularly slim diffuser face, available in numerous variants for many different installation situations

Order code

PL18 - 1 - S - SF - HS / 1200x1000x98 / 2 - D - LS - L - RI / AS / B00 / EA / P1 - RAL 9016 / W															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

<p>1 Type PureLine18 Slot diffuser</p> <p>2 Number of slots 1 1 slot 2 2 slots</p> <p>3 System S Supply air E Extract air</p> <p>4 Variant DF Diffuser face with extended border (B00) and spring clip DS Diffuser face with extended border (B00) and fixing screws PB Plenum box only PF Diffuser face fixed to the plenum box, non-detachable SF Diffuser face fixed to the plenum box, detachable (only with B00)</p> <p>5 Plenum box variant HS Symmetric position of plenum box, side entry spigot VS Symmetric position of plenum box, top entry spigot HA Asymmetric position of plenum box, side entry spigot</p>	<p>6 Nominal size [mm] Diffuser face x Plenum box x Spigot diameter Nominal size L_N 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000 Plenum box L_N 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000 Spigot diameter ØD 78 With 1 slot 98 With 1 or 2 slots 123 With 2 slots</p> <p>7 No. of spigots 1 1 spigot 2 2 spigot</p> <p>8 Damper blade for volume flow rate balancing D No entry: none With damper blade</p> <p>9 Lip seal LS No entry: none With lip seal</p> <p>10 Plenum box lining L No entry: none With</p>	<p>11 Position of plenum box No entry: centre LE Left side RI Right side</p> <p>12 Air pattern (100 mm air control element) AS No entry: alternating horizontal AL Alternating angled HL Horizontal left HR Horizontal right V Vertical</p> <p>13 Extended border B00 No entry: none With (B00)</p> <p>14 End pieces EP No entry: none End plate EA End angle</p> <p>15 Surface No entry: anodised, E6-C-0, natural colour P1 Powder-coated, specify RAL CLASSIC colour</p> <p>16 Colour of air control elements No entry: similar to RAL 9005, black W Similar to RAL 9010, white G Similar to RAL 9006, grey</p>
--	--	--

+ Features

- Slot diffusers with 18 mm diffuser face (nominal width) and adjustable air control elements
- ▶ Nominal length 600 - 2000 mm (length of air control element 100 mm), 1 or 2 slots
 - ▶ Volume flow rate range 5 - 84 l/s or 17 - 302 m³/h
 - ▶ Individually adjustable air control elements for horizontal, angled or vertical air discharge
 - ▶ One-way or alternating air discharge meets individual local requirements
 - ▶ Uniform air pattern reduces contamination of the ceiling due to the induction of room air
 - ▶ Air control elements have grooves that allow for precise positioning

Optional equipment and accessories

- ▶ Attractive appearance due to extruded aluminium sections with anodised finish or powder coating
- ▶ Symmetric or asymmetric position of plenum box
- ▶ Plenum box with lining
- ▶ End plates, end angles, corner sections
- ▶ Different looks due to choice of black, grey or white air control elements

Application

- ▶ Type PureLine18 slot diffusers are used as supply air or extract air devices in comfort zones
- ▶ Particularly unobtrusive diffuser due to its sleek design
- ▶ Installation into suspended ceilings

- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For suspended ceilings; suitable for restricted ceiling voids due to the low overall height of the plenum box
- ▶ Suitable for continuous linear arrangement
- ▶ Adjustable air control elements allow for horizontal, angled or vertical air discharge
- ▶ Mixed flow system with one-way or alternating air discharge, can be adapted to the building structure
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -10 to +10 K



 **Variants**

- ▶ PL18-*: 1 or 2 slots
- ▶ PL18*-DF: Diffuser face with spring clip
- ▶ PL18*-DS: Diffuser face with extended border (B00) and screw fixing
- ▶ PL18*-PB: Plenum box for screw fixing
- ▶ PL18*-PF: Diffuser face and plenum box, non-detachable fixing
- ▶ PL18*-SF: Diffuser face and plenum box, detachable fixing
- ▶ PL18*-CS: Corner section

Position of plenum box on the front diffuser

- ▶ Central position
- ▶ On the left (LE)
- ▶ On the right (RI)

Plenum box variant

- ▶ Symmetric position of plenum box, side entry spigot (HS)
- ▶ Symmetric position of plenum box, top entry spigot (VS)
- ▶ Asymmetric position of plenum box, side entry spigot (HA)

 **Construction**

Diffuser face finish

- ▶ Anodised, E6-C-0, natural colour
- ▶ P1: Powder-coated RAL 9010, pure white, gloss level 50%
- ▶ P1: Powder-coated RAL 9006, white aluminium, gloss level 30%
- ▶ P1: Powder-coated in any other RAL CLASSIC colour, gloss level 70%

 **Attachments**

- ▶ D: Damper blade for volume flow rate balancing
- ▶ LS: Lip seal
- ▶ L: Internal insulation
- ▶ EP: Two end plates
- ▶ EA: Two end angles

Single diffusers are factory fitted with end plates or end angles.

 **Accessories**

- ▶ EP: Two end plates
- ▶ EA: Two end angles

For a continuous linear arrangement the end plates or end angles have to be ordered separately and fitted by others.

 **Special characteristics**

- ▶ Uniform air pattern reduces contamination of the ceiling due to the induction of room air
- ▶ Horizontal, angled or vertical air discharge by means of manually adjustable air control elements
- ▶ Comfortable indoor air climate due to high induction and rapid reduction of temperature differences and airflow velocities
- ▶ High-quality look thanks to anodised extruded aluminium sections (E6-C-0, natural colour) or powder coating (RAL CLASSIC colour)
- ▶ Diffuser face has been optimised for maximum volume flow rate at low sound power levels
- ▶ Suitable for continuous linear arrangement

 **Standards and guidelines**

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

 **Technical data**

Nominal length	600 - 2000 mm, in increments of 100 mm
Number of slots	1 or 2
Minimum volume flow rate, with $\Delta t_z = -10$ K	5 l/s or 17 m ³ /h
Maximum volume flow rate, with $L_{WA} \approx 50$ dB(A)	84 l/s or 302 m ³ /h
Supply air to room air temperature difference	-10 to +10 K

PL18-1, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	\dot{V} l/s m ³ /h		Damper blade position											
			0°				45°				90°			
			D = 78		D = 98		D = 78		D = 98		D = 78		D = 98	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
		Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	
600	5	17	4	<15	3	<15	5	<15	4	<15	8	<15	5	<15
	10	38	15	29	14	26	21	29	16	26	35	29	22	26
	16	58	34	40	31	38	49	41	37	38	81	41	50	38
	22	78	62	49	57	46	88	49	67	46	148	49	91	46
700	6	20	4	<15	3	<15	6	<15	4	<15	10	<15	6	<15
	12	42	14	29	13	26	22	29	16	26	39	30	23	27
	18	63	32	40	28	38	49	41	35	38	89	41	51	38
	24	85	57	48	51	46	88	49	63	46	159	49	91	46
800	6	23	4	<15	3	<15	6	<15	4	<15	12	<15	7	<15
	13	46	14	29	12	27	23	30	16	27	44	30	24	27
	19	69	31	40	27	38	51	41	35	38	98	41	54	38
	26	92	54	48	47	46	91	49	61	46	173	49	94	46



Nominal length	\dot{V}		Damper blade position											
			0°				45°				90°			
	l/s m³/h		D = 78		D = 98		D = 78		D = 98		D = 78		D = 98	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
900	7	26	4	<15	4	<15	7	<15	5	<15	14	<15	7	<15
	14	50	14	30	12	27	25	30	16	27	50	31	26	28
	21	75	30	41	25	38	54	41	35	38	109	41	57	38
	28	99	52	48	44	46	95	49	61	46	190	49	99	46
1000	8	29	4	<15	4	<15	8	<15	5	<15	16	<15	8	<15
	15	54	14	30	11	27	27	30	17	28	56	31	28	28
	22	80	29	41	24	38	57	41	35	38	119	41	60	38
	29	105	51	48	41	45	99	49	60	46	206	49	104	46
1100	9	32	5	<15	4	<15	9	<15	6	<15	19	<15	10	<15
	16	58	14	30	11	28	29	31	17	28	62	31	30	28
	24	85	29	41	23	38	60	41	36	38	130	42	64	38
	31	111	50	48	39	45	104	49	61	46	224	49	109	46
1200	10	35	5	<15	4	<15	10	15	6	<15	22	16	11	<15
	17	62	14	31	11	28	31	31	18	28	69	32	33	29
	25	90	29	41	23	38	64	41	37	38	143	42	68	39
	33	117	50	48	38	45	109	49	62	46	243	49	115	46
1300	11	38	5	16	4	<15	11	16	6	<15	25	17	12	<15
	18	66	15	31	11	28	34	32	19	29	77	32	36	29
	26	95	30	41	22	38	69	41	38	38	156	42	73	39
	34	123	50	48	37	45	116	49	64	46	263	49	123	46
1400	11	41	6	16	4	<15	13	17	7	<15	29	17	13	<15
	19	70	15	31	11	28	36	32	20	29	84	32	39	29
	27	99	30	41	22	38	73	41	39	38	168	42	77	39
	36	128	50	48	36	45	121	49	65	46	281	49	129	46
1500	12	44	6	17	4	<15	14	18	8	<15	33	18	15	15
	20	74	16	32	11	29	40	32	21	29	93	33	42	30
	29	104	31	41	22	38	78	42	41	39	183	42	83	39
	37	134	51	48	36	45	129	49	67	46	304	49	137	46
1600	13	47	4	<15	3	<15	6	<15	4	<15	12	<15	7	<15
	24	86	12	30	11	28	20	31	14	28	38	31	21	28
	35	125	25	41	22	38	42	41	29	38	80	41	44	39
	46	164	43	48	37	46	72	49	49	46	138	49	75	46
1700	14	49	4	<15	3	<15	7	<15	5	<15	13	<15	7	<15
	25	90	12	31	10	28	21	31	14	28	40	31	22	28
	36	130	25	41	21	38	43	41	28	38	84	42	45	39
	47	170	42	48	36	46	74	49	48	46	144	49	77	46
1800	15	52	4	<15	4	<15	7	15	5	<15	14	16	7	<15
	26	94	12	31	10	28	22	31	14	28	43	32	23	29
	37	135	25	41	21	38	44	41	29	38	89	42	46	39
	49	176	41	48	35	46	75	49	48	46	151	49	79	46
1900	15	55	4	15	4	<15	8	16	5	<15	15	16	8	<15
	27	98	12	31	10	28	22	31	14	29	46	32	24	29
	39	140	24	41	20	38	46	41	29	38	93	42	48	39
	51	182	41	48	34	46	77	49	48	46	158	49	81	46
2000	16	58	4	16	4	<15	8	16	5	<15	16	17	8	<15
	28	101	12	31	10	28	23	32	14	29	48	32	24	29
	40	144	24	41	20	38	47	41	29	38	97	42	49	39
	52	187	40	48	33	45	78	49	48	46	164	49	82	46



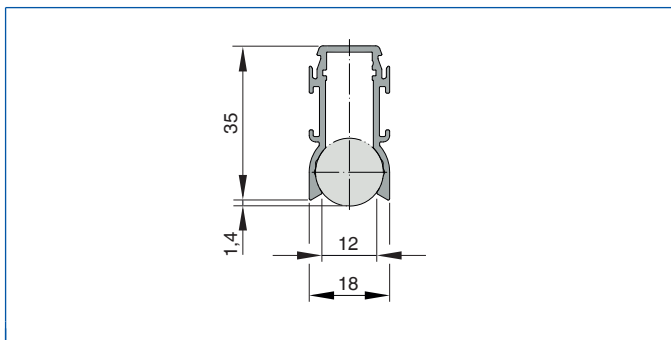
PL18-2, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	V̇	V̇	Damper blade position											
			0°				45°				90°			
			D = 98		D = 123		D = 98		D = 123		D = 98		D = 123	
			Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}
	l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	10	35	4	<15	4	<15	6	<15	4	<15	11	<15	6	<15
	19	67	13	28	11	26	21	29	15	26	37	30	21	27
	27	98	28	39	24	36	46	40	31	37	81	41	46	38
	36	130	49	47	42	44	79	48	54	45	141	49	79	45
700	11	41	4	<15	4	<15	7	<15	5	<15	13	<15	7	<15
	21	74	13	29	11	26	23	30	15	27	43	31	23	27
	30	108	27	39	22	36	48	40	31	37	90	41	48	38
	39	141	46	47	38	44	82	48	52	44	155	49	82	45
800	13	47	5	<15	4	<15	9	<15	5	<15	16	16	9	<15
	23	81	13	29	11	26	25	31	15	27	49	32	25	28
	32	116	26	39	21	36	51	40	31	37	100	42	51	38
	42	151	44	47	35	43	85	48	51	44	169	49	85	45
900	15	52	5	15	4	<15	10	16	6	<15	20	18	10	<15
	25	89	14	30	10	27	28	31	16	27	56	32	28	28
	35	125	26	39	20	36	54	41	31	37	111	42	54	38
	45	161	44	46	33	43	90	48	52	44	185	49	90	45
1000	16	58	6	16	4	<15	12	18	7	<15	24	19	12	15
	27	95	14	30	10	27	30	32	17	28	64	33	30	29
	37	133	27	39	19	36	58	41	32	37	123	42	58	38
	47	170	43	46	31	43	95	48	52	44	201	49	95	45
1100	18	64	6	18	4	<15	13	19	7	15	28	20	13	16
	28	102	14	31	10	27	33	32	18	28	71	34	33	29
	39	140	27	39	19	36	62	41	33	37	134	42	62	38
	49	178	43	46	30	43	100	48	53	44	216	49	100	45
1200	19	70	7	19	5	15	15	20	8	16	33	22	15	18
	30	109	15	31	10	28	36	33	19	29	79	34	36	30
	41	147	27	40	18	36	66	41	34	37	146	43	66	38
	52	186	43	46	29	43	105	48	54	44	232	49	105	45
1300	21	76	7	20	5	16	17	21	9	17	38	23	17	19
	32	115	16	31	10	28	40	33	20	29	88	35	39	30
	43	155	28	40	18	36	71	41	36	37	158	43	71	39
	54	194	44	46	29	43	112	48	56	44	249	49	111	45
1400	23	81	8	21	5	17	20	22	10	18	44	24	20	20
	34	121	17	32	11	28	43	33	21	30	97	35	43	31
	45	161	29	40	18	36	75	41	37	37	170	43	75	39
	56	201	45	46	28	42	117	48	57	44	265	49	117	45
1500	24	87	8	22	5	18	22	23	11	19	50	25	22	21
	35	128	17	32	11	29	47	34	22	30	106	35	46	31
	47	168	30	40	18	36	80	42	39	38	183	43	80	39
	58	208	46	46	28	42	123	48	59	44	281	49	123	45
1600	26	93	5	17	4	<15	9	18	5	<15	16	19	9	15
	42	152	12	31	9	28	22	32	13	28	43	33	22	29
	59	211	22	40	17	37	42	41	25	37	83	42	42	38
	75	270	36	47	28	44	68	48	41	44	135	49	68	45
1700	27	99	5	18	4	<15	9	19	6	15	18	20	9	16
	44	159	12	31	9	28	23	32	14	28	46	33	23	29
	61	218	22	40	17	37	43	41	25	37	87	42	43	38
	77	278	35	46	27	43	70	48	41	44	140	49	69	45
1800	29	105	5	18	4	15	10	20	6	16	20	21	10	17
	46	165	12	31	9	28	24	32	14	29	49	34	24	30
	63	226	22	40	17	37	45	41	26	37	92	42	45	38
	80	287	35	46	26	43	72	48	41	44	147	49	72	45

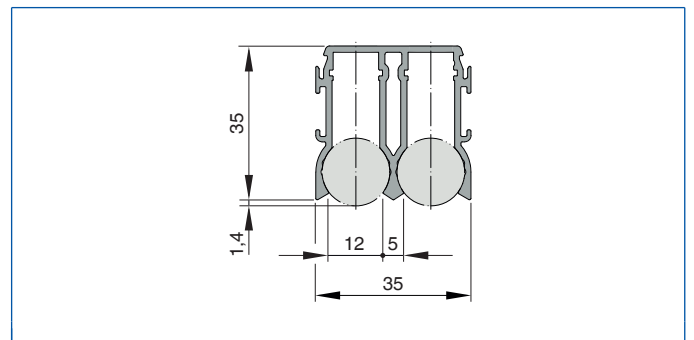


Nominal length	\dot{V}		Damper blade position											
			0°				45°				90°			
			D = 98		D = 123		D = 98		D = 123		D = 98		D = 123	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
1900	31	111	5	19	4	16	11	20	6	17	22	22	11	18
	48	172	12	31	9	28	25	33	14	29	52	34	25	30
	65	234	22	40	16	37	46	41	26	38	96	43	46	39
	82	295	35	46	26	43	74	48	41	44	153	49	73	45
2000	32	116	6	20	4	16	12	21	7	17	24	22	12	18
	50	178	12	32	9	28	26	33	15	29	56	34	26	30
	67	240	22	40	16	37	48	41	26	38	100	43	48	39
	84	302	34	46	25	43	75	48	41	44	159	49	75	45

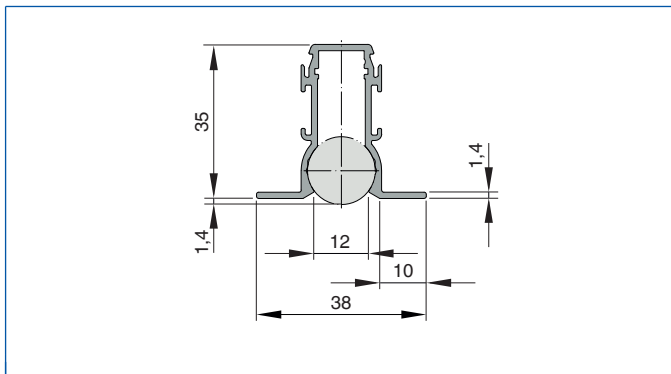
PL18-1 profile



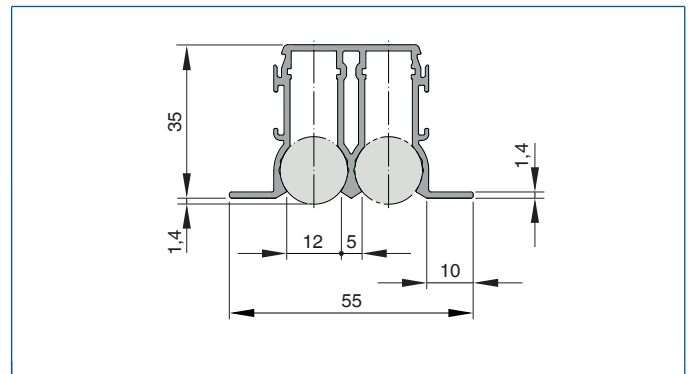
PL18-2 profile



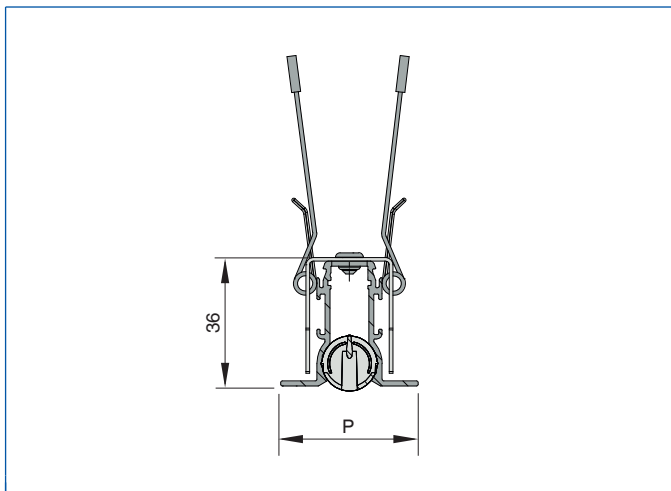
PL18-1/B00 profile



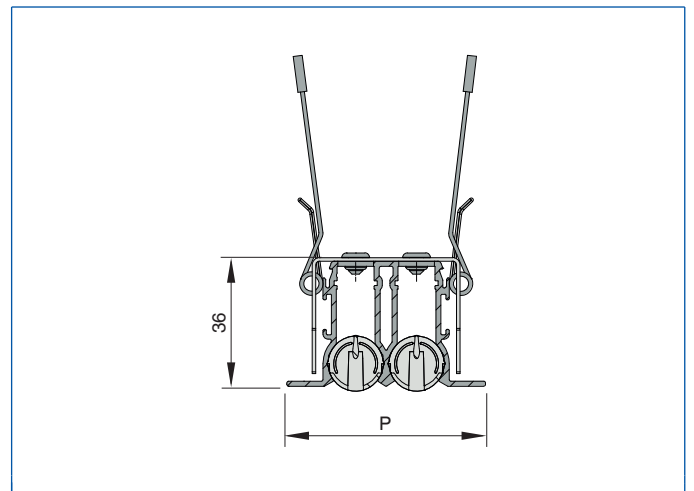
PL18-2/B00 profile



PL18-1*-DF (diffuser face with spring clip)



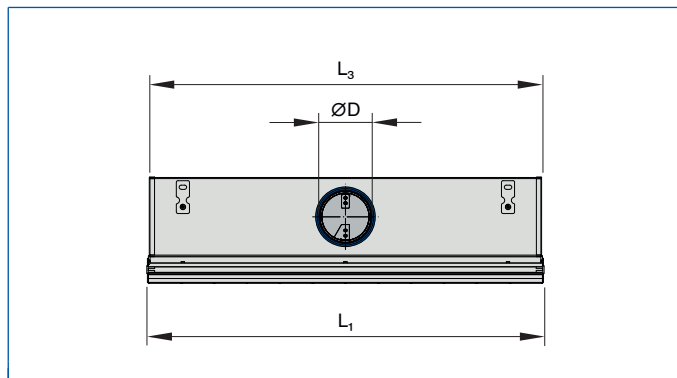
PL18-2*-DF (diffuser face with spring clip)



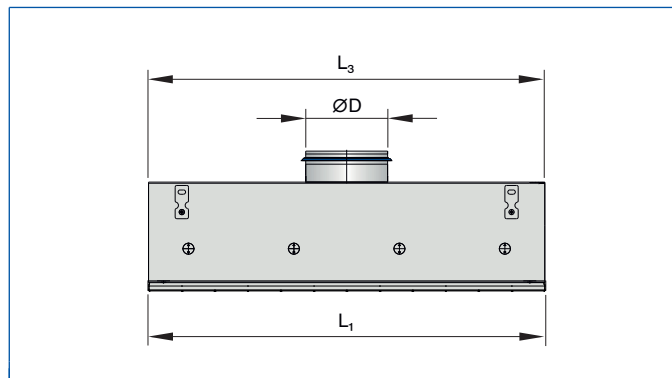
Dimensions [mm]

Variant	With extended border	
	P	
	mm	
PL18-1		38
PL18-2		55

Plenum box with side entry spigot (HS / HA)



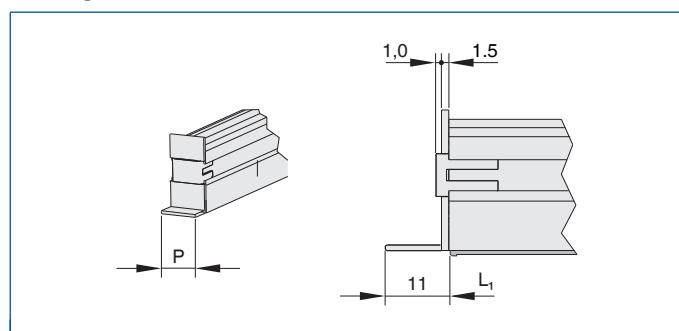
Plenum box with top entry spigot (VS)



Dimensions [mm]

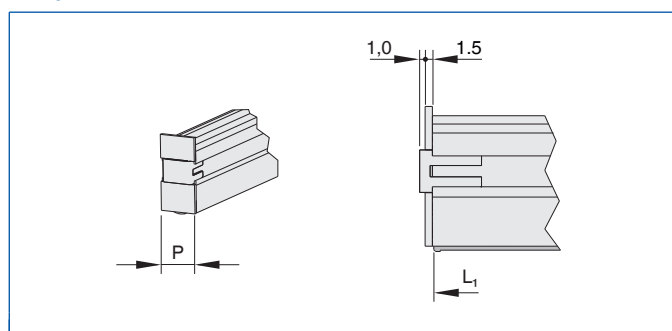
Nominal length	L ₁	L ₃
600	600	595
700	700	695
800	800	795
900	900	895
1000	1000	995
1100	1100	1095
1200	1200	1195
1300	1300	1295
1400	1400	1395
1500	1500	1495
1600	1600	1595
1700	1700	1695
1800	1800	1795
1900	1900	1895
2000	2000	1995

End angle EA



Profile without extended border

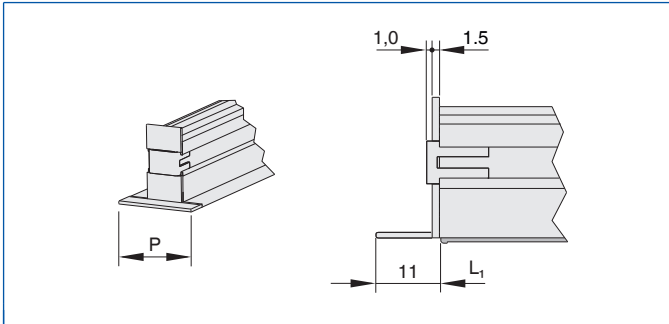
End plate EP



Profile without extended border



End angle EA



Profile with extended border

PL18-*-HS (symmetric position of plenum box, side entry spigot)

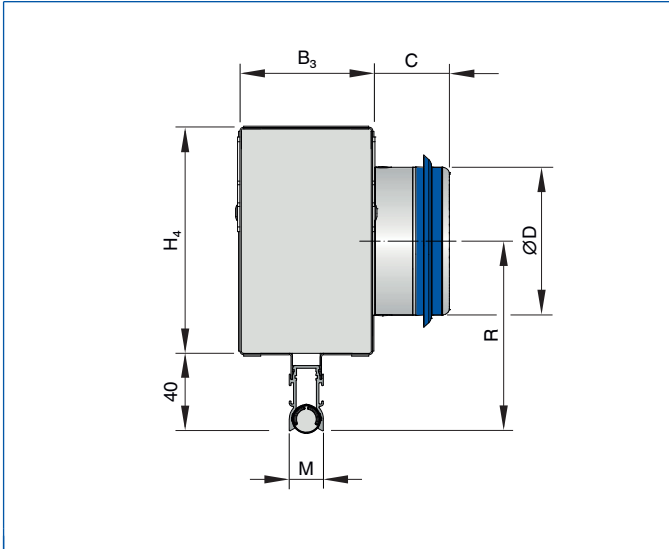
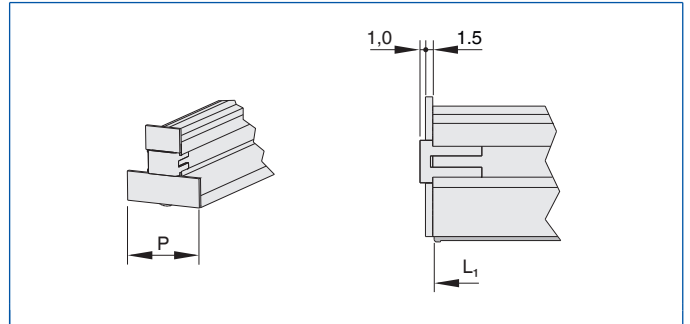


Illustration shows PL18-1-HS

End plate EP



Profile with extended border

PL18-*-HA (asymmetric position of plenum box, side entry spigot)

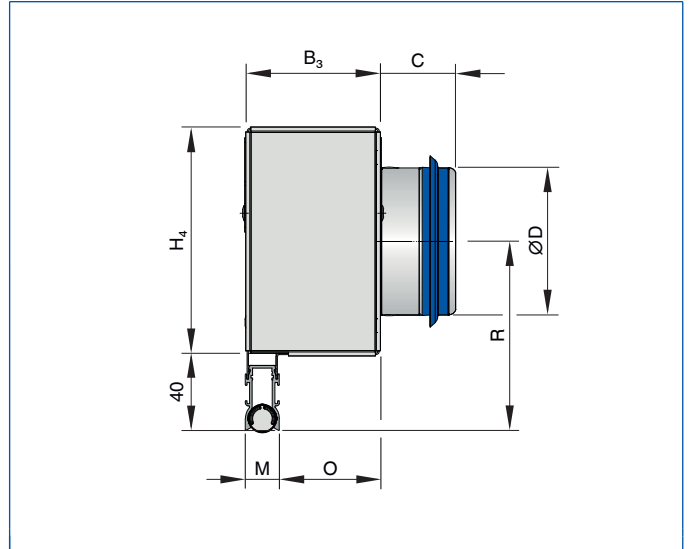


Illustration shows PL18-1-HA

PL18-*-VS (symmetric position of plenum box, top entry spigot)

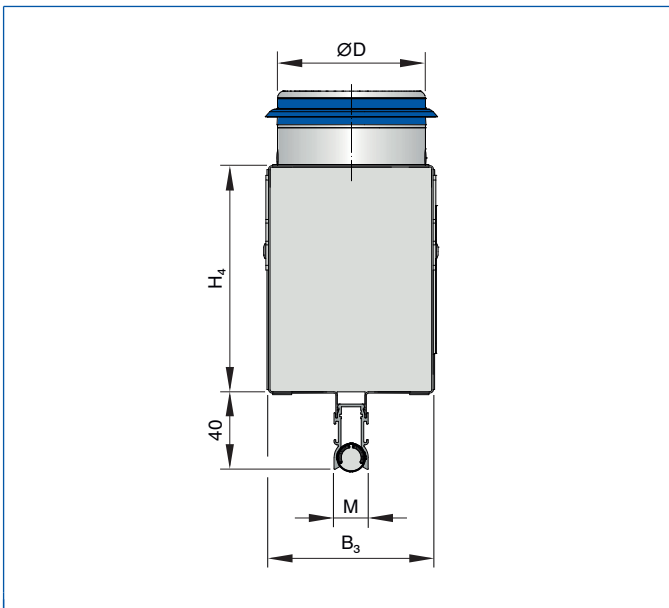
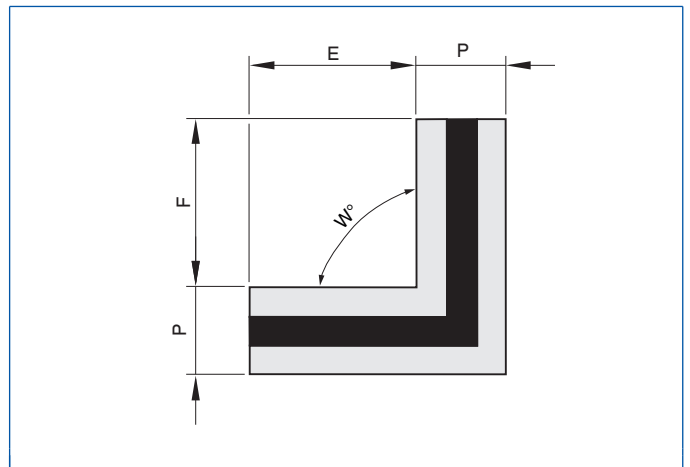


Illustration shows PL18-1-VS

PL18-*-CS



Dimensions [mm]

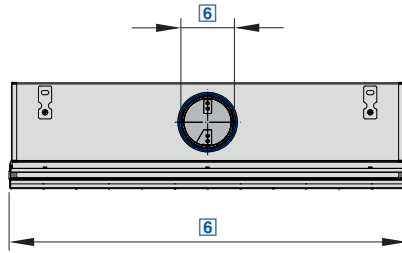
Variant	P		E		B ₃	M	O
	Without extended border	with extended border	Without extended border	with extended border			
PL18-1	18	38	110	100	70	15	55
PL18-2	35	55	110	100	100	32	68



Dimensions [mm]

Variant	ØD	H ₄	R	C
PL18-1	78	120	60	42
	98	120	60	50
PL18-2	98	150	75	50
	123	150	75	48





Numerous variants for many different installation situations

Order code

PL35 - 1 - S - SF - HS / 1200x1000x123x30 / 2 - D - LS - L - RI / AS / B00 / EA / P1 - RAL 9016 / W															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

<p>1 Type PureLine35 Slot diffuser</p> <p>2 Number of slots 1 1 slot 2 2 slots 3 3 slots 4 4 slots</p> <p>3 System S Supply air E Extract air</p> <p>4 Connection DF Diffuser face with extended border (B00) and spring clip CS 90° corner section only PB Plenum box only PF Diffuser face fixed to the plenum box, non-detachable SF Diffuser face fixed to the plenum box, detachable (only with B00) DS Diffuser face with extended border (B00) and fixing screws</p> <p>5 Plenum box construction variant HS Standard plenum box VS Standard plenum box with top entry spigot HA Assymetric plenum box with side entry spigot</p>	<p>6 Nominal size [mm] Diffuser face x Plenum box x Spigot diameter x Neck extension Nominal size L_N 600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800, 1950 Plenum box L_N 600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800, 1950 Spigot diameter ØD 78, 98, 123, 138, 158, 198 Neck extension Y No entry: 0 30, 55, 80, 105, 129</p> <p>7 No. of spigots 1 1 spigot 2 2 spigot 3 3 spigots (from length 1200 mm)</p> <p>8 Damper blade for volume flow rate balancing D No entry: none With damper blade</p> <p>9 Accessories No entry: none LS With lip seal</p> <p>10 Plenum box lining No entry: none L With</p>	<p>11 Position of plenum box No entry: centre LE Left side RI Right side</p> <p>12 Air pattern (100 mm long roller) No entry: alternating horizontal AS Alternating angled HL Horizontal left HR Horizontal right V Vertical</p> <p>13 Extended border No entry: none B00 With (B00)</p> <p>14 End pieces No entry: none EP End plate EA End angle</p> <p>15 Surface No entry: anodised, E6-C-0, natural colour P1 Powder-coated, specify RAL CLASSIC colour</p> <p>16 Colour of air control elements No entry: similar to RAL 9005, black W Similar to RAL 9010, white G Similar to RAL 9006, grey</p>
---	---	---

+ Features

- Slot diffusers with 35 mm diffuser face (nominal width) and adjustable air control elements
- ▶ Nominal length 600 - 1950 mm (length of air control element 150 mm), 1 to 4 slots
 - ▶ Volume flow rate range 7 - 197 l/s or 27 - 709 m³/h
 - ▶ Individually adjustable air control elements for horizontal, angled or vertical air discharge
 - ▶ One-way or alternating air discharge meets individual local requirements
 - ▶ Uniform air pattern reduces contamination of the ceiling due to the induction of room air
 - ▶ Air control elements have grooves that allow for precise positioning

Optional equipment and accessories

- ▶ Attractive appearance due to extruded aluminium sections with anodised finish or powder coating (RAL CLASSIC colour)
- ▶ Symmetric or asymmetric position of plenum box
- ▶ Plenum box with lining
- ▶ End plates, end angles, corner sections
- ▶ Different looks due to choice of black, grey or white air control elements

X Application

- ▶ Type PureLine35 slot diffusers are used as supply air or extract air devices in comfort zones
- ▶ The many variants allow for flexible use as mixed ventilation systems and make them suitable for different applications

- ▶ Unobtrusive integration into suspended ceilings
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For suspended ceilings; suitable for restricted ceiling voids due to the low overall height of the plenum box
- ▶ Suitable for continuous linear arrangement
- ▶ Adjustable air control elements allow for horizontal, angled or vertical air discharge
- ▶ One-way or alternating air discharge can be set on site to meet local requirements
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -10 to +10 K



Variants

- ▶ PL35-*: 1 to 4 slots
- ▶ PL35*-DF: Diffuser face only
- ▶ PL35*-DS: Diffuser face with extended border (B00) and screw fixing
- ▶ PL35*-PB: Plenum box only
- ▶ PL35*-PF: Diffuser face and plenum box, non-detachable fixing
- ▶ PL35*-SF: Diffuser face and plenum box, detachable fixing
- ▶ PL35*-CS: 90° corner section

Position of plenum box if combined with a slot diffuser

- ▶ Central position
- ▶ On the left (LE)
- ▶ On the right (RI)

Plenum box variant

- ▶ Symmetric position of plenum box, side entry spigot (HS)
- ▶ Symmetric position of plenum box, top entry spigot (VS)
- ▶ Asymmetric position of plenum box, side entry spigot (HA)

Construction

Diffuser face finish

- ▶ Anodised, E6-C-0, natural colour
- ▶ P1: Powder-coated RAL 9010, pure white, gloss level 50%
- ▶ P1: Powder-coated RAL 9006, white aluminium, gloss level 30%
- ▶ P1: Powder-coated in any other RAL CLASSIC colour, gloss level 70%

Attachments

- ▶ D: Damper blade for volume flow rate balancing
- ▶ LS: Lip seal
- ▶ L: Internal insulation
- ▶ EP: Two end plates
- ▶ EA: Two end angles

Single diffusers are factory fitted with end plates or end angles.

Accessories

- ▶ EP: Two end plates
- ▶ EA: Two end angles

For a continuous linear arrangement the end plates or end angles have to be ordered separately and fitted by others.

Special characteristics

- ▶ Uniform air pattern reduces contamination of the ceiling due to the induction of room air
- ▶ Horizontal, angled or vertical air discharge by means of manually adjustable air control elements
- ▶ Comfortable indoor climate due to high induction and rapid reduction of temperature differences and airflow velocities
- ▶ Attractive appearance due to extruded aluminium sections with anodised finish or powder coating (RAL CLASSIC colour)
- ▶ Diffuser face has been optimised for maximum volume flow rate at low sound power levels
- ▶ Suitable for continuous linear arrangement

Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal length	600 - 1950 mm, in increments of 150 mm
Number of slots	1, 2, 3 or 4
Neck extension	30, 55, 80, 105, 129
Minimum volume flow rate, with $\Delta t_z = -10$ K	7 l/s or 27 m ³ /h
Maximum volume flow rate, with $L_{WA} \cong 50$ dB(A)	197 l/s or 709 m ³ /h
Supply air to room air temperature difference	-10 to +10 K

PL35-1, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position											
			0°				45°				90°			
			D = 98		D = 123		D = 98		D = 123		D = 98		D = 123	
			Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)
600	7	27	3	<15	3	<15	4	<15	3	<15	7	<15	4	<15
	17	60	14	28	12	25	21	28	15	26	32	29	19	26
	26	93	33	40	29	37	49	40	35	38	76	41	46	38
	35	126	61	48	52	46	90	48	64	46	139	49	84	46
750	9	33	4	<15	3	<15	6	<15	4	<15	9	<15	5	<15
	19	70	14	28	11	26	23	29	15	26	38	30	21	27
	29	106	31	39	25	37	52	40	33	37	87	41	48	38
	39	142	56	47	45	45	92	48	60	45	156	49	86	46
900	11	40	4	<15	3	<15	7	<15	4	<15	12	<15	6	<15
	22	79	14	29	11	26	25	29	15	27	45	30	23	27
	33	118	31	39	24	37	56	40	34	38	100	41	51	38
	44	157	55	47	41	45	99	48	59	45	177	49	90	46
1050	13	47	5	<15	3	<15	8	<15	5	<15	15	<15	8	<15
	24	88	15	29	11	26	29	30	16	27	53	31	26	28
	36	129	31	39	22	37	61	40	34	38	113	41	55	38
	47	170	54	47	39	44	106	48	59	45	197	49	96	46



Nominal length	\dot{V}	\dot{V}	Damper blade position													
			0°				45°				90°					
			D = 98		D = 123		D = 98		D = 123		D = 98		D = 123			
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
1200	15	53	5	<15	4	<15	10	<15	6	<15	19	15	9	<15		
	27	96	16	29	11	27	32	31	17	28	62	32	29	28		
	39	140	32	40	22	37	67	41	36	38	129	42	61	38		
	51	183	55	47	37	44	115	48	61	45	221	49	104	46		
1350	17	60	6	<15	4	<15	12	16	6	<15	24	17	11	<15		
	29	105	17	30	11	27	37	31	19	28	71	32	33	29		
	42	150	34	40	22	37	74	41	38	38	145	42	66	39		
	54	195	57	47	36	44	125	48	64	45	245	49	112	46		
1500	18	67	7	16	4	<15	15	17	7	<15	28	18	13	<15		
	31	113	18	30	11	28	41	32	20	28	81	33	37	29		
	44	160	36	40	22	37	81	41	40	38	161	42	72	39		
	57	206	59	47	36	44	135	48	66	45	268	49	120	46		
1650	20	73	4	<15	3	<15	6	<15	4	<15	10	<15	6	<15		
	38	136	12	30	9	27	20	30	13	28	35	31	18	28		
	55	198	25	40	19	37	42	41	26	38	73	42	39	39		
	73	261	42	47	33	45	73	48	45	45	126	49	67	46		
1800	22	80	4	<15	3	<15	7	<15	4	<15	12	15	6	<15		
	40	144	12	30	9	27	21	31	13	28	38	32	19	29		
	58	209	24	40	19	37	44	41	26	38	78	42	40	39		
	76	273	42	47	31	45	75	48	45	45	134	49	68	46		
1950	24	86	4	<15	3	<15	8	16	5	<15	13	16	7	<15		
	42	153	12	30	9	28	23	31	13	28	41	32	21	29		
	61	219	25	40	18	37	46	41	27	38	84	42	42	39		
	79	285	41	47	30	45	78	48	45	45	142	49	71	46		

PL35-2, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	\dot{V}	\dot{V}	Damper blade position													
			0°				45°				90°					
			D = 123		D = 138		D = 123		D = 138		D = 123		D = 138			
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	15	53	4	<15	4	<15	6	<15	5	<15	11	<15	8	<15		
	28	102	13	28	12	27	21	29	17	27	39	30	29	28		
	42	150	28	39	27	38	44	40	37	38	85	41	62	39		
	55	199	49	47	46	45	77	48	64	46	148	49	109	47		
750	18	67	4	<15	4	<15	7	<15	6	<15	15	<15	11	<15		
	33	118	12	29	11	27	22	30	18	28	47	31	33	29		
	47	170	25	39	23	37	45	40	36	38	97	41	68	39		
	61	221	42	47	39	45	77	48	60	46	165	49	116	47		
900	22	80	5	<15	4	<15	9	16	7	<15	21	18	14	15		
	37	134	12	30	11	28	25	31	19	29	57	32	39	30		
	52	188	23	39	21	37	49	40	37	38	112	42	77	40		
	67	242	39	46	34	45	80	48	61	46	186	49	127	47		
1050	26	93	5	17	4	15	11	18	8	16	27	20	18	18		
	41	149	12	30	11	28	28	32	21	30	68	33	46	31		
	57	204	23	39	20	37	52	41	38	39	127	42	86	40		
	72	260	36	46	31	44	84	47	62	45	206	49	138	47		



Nominal length	\dot{V}		Damper blade position											
			0°				45°				90°			
			D = 123		D = 138		D = 123		D = 138		D = 123		D = 138	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
	l/s	m ³ /h												
1200	30	106	6	19	5	17	14	20	10	18	34	22	23	20
	45	163	12	31	11	29	31	32	23	30	79	34	53	32
	61	220	22	39	19	37	57	41	41	39	144	43	96	40
	77	277	35	46	30	44	90	47	64	45	228	49	151	47
1350	33	120	6	20	5	18	16	22	12	20	42	24	28	21
	49	177	13	31	11	29	35	33	25	31	92	35	60	33
	65	235	22	39	18	37	61	41	43	39	160	43	106	41
	81	292	34	45	28	44	95	47	66	45	248	49	163	47
1500	37	133	7	22	6	20	19	24	14	21	51	25	34	23
	53	191	14	32	11	30	39	34	27	32	105	36	69	33
	69	249	23	39	18	38	67	41	46	39	178	43	116	41
	85	307	34	45	27	43	101	47	70	45	271	49	177	47
1650	41	146	4	17	4	16	8	19	6	17	18	20	13	18
	65	233	11	31	10	29	20	32	16	30	45	33	31	31
	89	320	19	40	18	38	38	41	29	39	84	42	58	40
	113	407	31	46	28	45	60	48	47	46	135	49	94	47
1800	44	160	5	19	4	17	9	20	7	18	21	21	14	19
	69	248	11	31	9	29	21	32	16	30	49	34	34	32
	93	337	19	40	17	38	39	41	30	39	90	42	62	40
	118	425	30	46	27	45	62	48	47	46	143	49	98	47
1950	48	173	5	20	4	18	10	21	8	19	24	22	16	20
	73	262	11	31	9	30	23	33	17	31	54	34	37	32
	98	352	18	40	16	38	40	41	30	39	96	43	65	40
	123	441	29	46	25	44	63	47	47	45	151	49	102	47

PL35-3, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	\dot{V}		Damper blade position											
			0°				45°				90°			
			D = 138		D = 158		D = 138		D = 158		D = 138		D = 158	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
	l/s	m ³ /h												
600	22	80	5	<15	5	<15	8	<15	6	<15	15	16	10	<15
	39	140	15	28	13	26	24	30	19	27	44	32	31	29
	55	199	29	38	27	36	48	40	38	37	89	42	62	39
	72	259	49	46	45	44	81	47	63	45	151	49	104	46
750	28	100	6	16	5	<15	10	18	8	15	21	20	14	17
	44	160	14	29	12	27	26	31	19	28	53	33	35	30
	61	221	26	38	23	36	49	40	36	37	100	42	66	39
	78	281	42	45	37	43	79	47	58	44	161	49	106	46
900	33	120	6	19	5	16	13	21	9	18	28	23	18	20
	50	180	14	30	12	28	29	32	21	30	63	35	40	32
	66	239	24	38	20	36	51	40	36	38	111	43	71	40
	83	299	38	44	31	42	80	47	56	44	173	49	110	46
1050	39	140	7	21	6	19	16	24	11	21	37	26	23	23
	55	198	14	31	12	29	33	33	22	31	74	36	46	33
	71	257	23	38	19	36	55	41	37	38	123	43	77	40
	88	316	35	44	28	42	82	47	56	44	186	49	116	46
1200	44	160	8	23	7	21	20	26	14	23	47	28	29	25
	60	216	15	32	12	29	37	35	24	32	85	37	53	34
	76	273	23	38	18	36	58	41	39	38	136	44	84	41
	92	330	34	44	26	41	85	46	56	44	198	49	122	46



Nominal length	\dot{V}		Damper blade position											
			0°				45°				90°			
			D = 138		D = 158		D = 138		D = 158		D = 138		D = 158	
	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	l/s	m³/h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
1350	50	180	9	25	7	23	25	28	16	25	58	31	36	28
	65	234	16	33	12	30	41	36	27	33	99	38	60	35
	80	289	23	39	18	36	63	42	41	39	150	44	91	41
	96	344	33	43	25	41	89	46	57	43	212	49	129	46
1500	55	200	11	27	8	24	29	30	19	27	71	33	43	29
	70	252	16	33	12	31	46	37	30	34	112	39	68	36
	84	304	24	39	18	36	67	42	43	39	163	45	99	41
	99	356	32	43	24	41	92	46	59	43	224	49	135	46
1650	61	220	6	22	5	20	12	24	9	22	24	26	16	23
	86	309	12	32	10	30	23	34	17	31	48	36	31	33
	111	399	19	39	16	37	38	41	27	38	79	43	51	40
	136	489	28	45	24	42	56	47	41	44	118	49	77	46
1800	67	240	6	23	5	21	13	26	9	23	28	28	18	25
	91	328	12	32	10	30	24	35	17	32	52	37	33	34
	116	417	18	39	16	37	39	41	27	39	84	44	54	41
	140	505	27	44	23	42	57	47	40	44	123	49	79	46
1950	72	259	7	25	6	22	15	27	10	24	32	29	20	26
	96	346	12	33	10	31	26	35	18	32	57	38	36	35
	120	432	18	39	15	37	40	41	28	39	89	44	56	41
	144	519	26	44	21	42	58	47	40	44	128	49	81	46

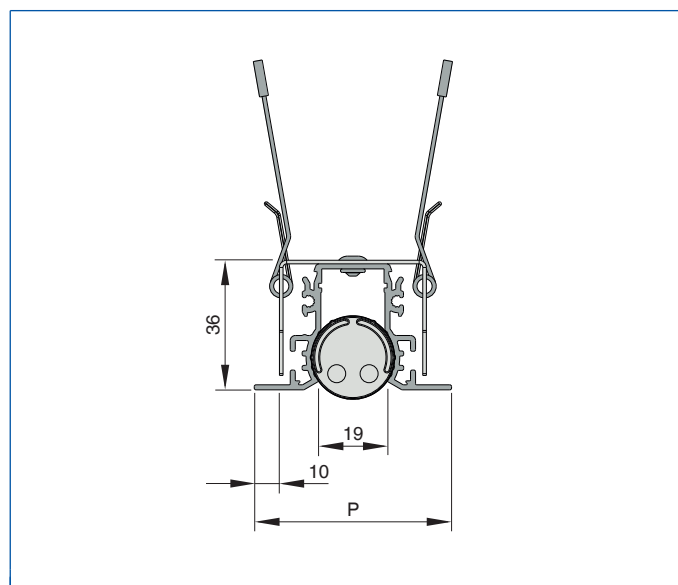
PL35-4, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	\dot{V}		Damper blade position											
			0°				45°				90°			
			D = 158		D = 198		D = 158		D = 198		D = 158		D = 198	
	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	l/s	m³/h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	30	106	4	16	4	<15	8	17	5	<15	14	18	8	<15
	48	173	11	30	9	26	20	31	12	27	37	32	19	28
	67	240	20	40	16	36	37	41	23	36	70	42	36	37
	85	307	33	47	26	43	60	48	37	43	114	49	59	44
750	37	133	5	19	4	<15	10	20	6	16	20	22	10	17
	56	203	11	31	8	27	23	33	13	28	46	34	23	29
	76	272	20	40	15	36	41	41	23	36	83	42	41	37
	95	342	31	47	23	42	65	48	37	43	131	49	64	44
900	44	160	6	22	4	17	13	23	7	18	28	24	13	19
	64	231	12	32	8	28	28	34	15	29	58	35	27	30
	84	303	21	40	14	36	47	42	25	37	99	43	46	38
	104	374	31	46	21	42	72	48	38	43	151	49	70	44
1050	52	186	7	24	5	19	17	25	9	20	37	27	17	22
	72	258	13	33	9	29	33	35	16	30	70	36	32	31
	92	330	22	40	14	36	53	42	27	37	115	43	52	38
	112	402	32	46	20	42	78	48	39	43	170	49	76	44
1200	59	213	8	26	5	21	22	27	11	22	47	29	21	24
	79	285	15	34	9	30	38	36	18	31	84	37	37	32
	99	356	23	41	14	36	59	42	29	37	131	44	58	39
	119	428	33	46	20	41	85	48	41	43	189	49	83	44
1350	67	240	10	27	6	23	26	29	13	24	59	31	26	25
	86	310	16	35	9	30	44	37	21	32	99	38	43	33
	106	381	24	41	14	36	66	43	31	38	148	44	64	39
	126	452	34	46	20	41	93	48	43	43	208	49	90	44

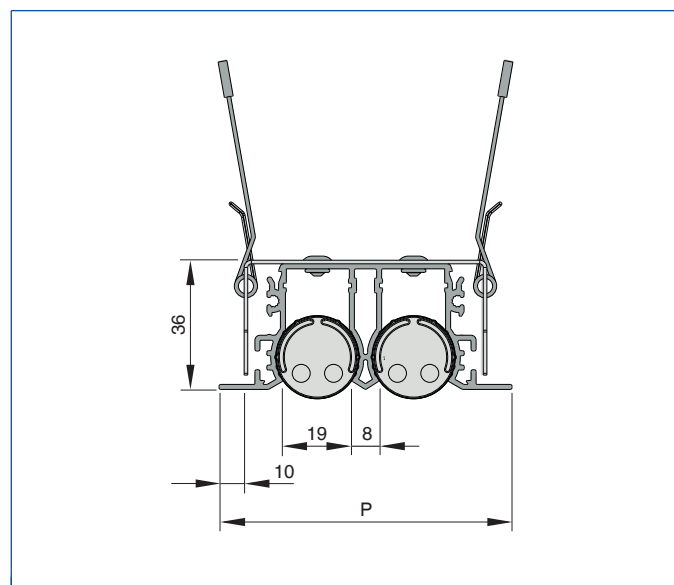


Nominal length	\dot{V}	\dot{V}	Damper blade position											
			0°				45°				90°			
			D = 158		D = 198		D = 158		D = 198		D = 158		D = 198	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
1500	74	266	12	29	6	24	32	31	15	26	72	32	31	27
	93	336	18	36	10	31	50	38	23	32	114	39	49	34
	113	405	26	41	14	36	73	43	34	38	166	44	71	39
	132	475	36	46	20	41	101	48	46	42	228	49	98	44
1650	81	293	6	23	4	19	12	24	7	20	24	26	12	21
	115	413	11	33	8	29	23	34	13	30	47	36	22	31
	148	534	18	41	12	36	38	42	21	37	79	43	37	38
	182	655	26	46	19	42	57	48	31	43	118	49	56	44
1800	89	319	6	24	4	20	13	26	7	21	28	27	13	22
	122	441	11	34	8	29	25	35	13	30	53	36	25	31
	156	562	18	41	12	36	41	42	21	37	85	43	40	38
	190	683	26	46	18	42	60	48	31	43	126	49	58	44
1950	96	346	7	25	5	21	15	27	8	22	32	28	15	23
	130	467	12	34	8	30	27	36	14	31	58	37	27	32
	163	588	18	41	12	36	43	42	22	37	92	44	42	38
	197	709	26	46	17	42	62	48	32	43	134	49	61	44

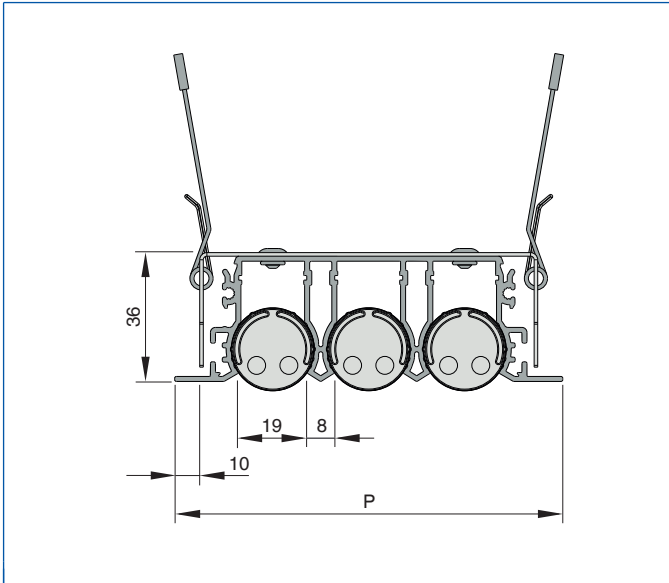
PL35-1/.../B00



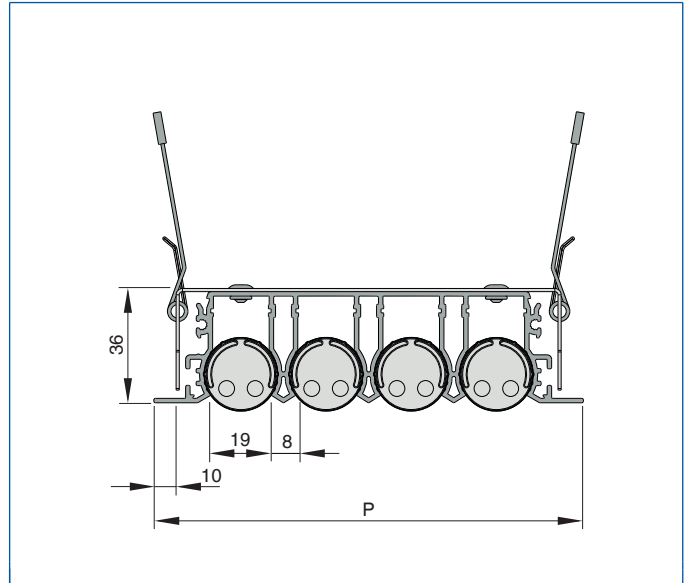
PL35-2/.../B00



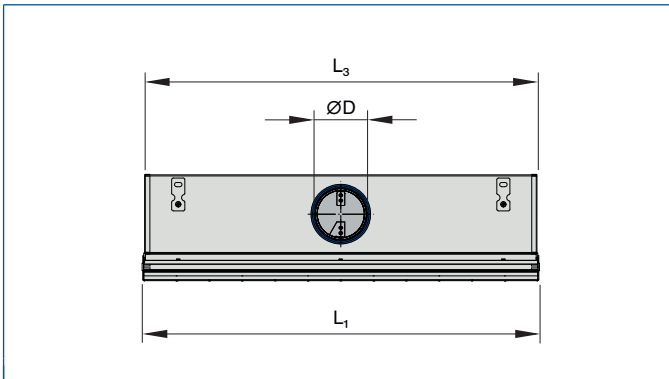
PL35-3/.../B00



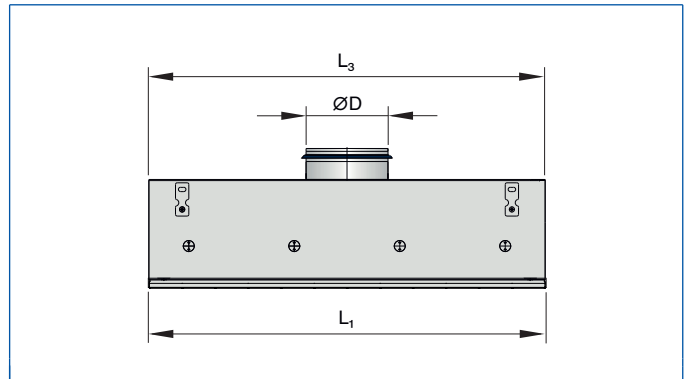
PL35-4/.../B00



Plenum box with side entry spigot (HS / HA)



Plenum box with top entry spigot (VS)



PL35-PF-HS (symmetric position of plenum box, side entry spigot)

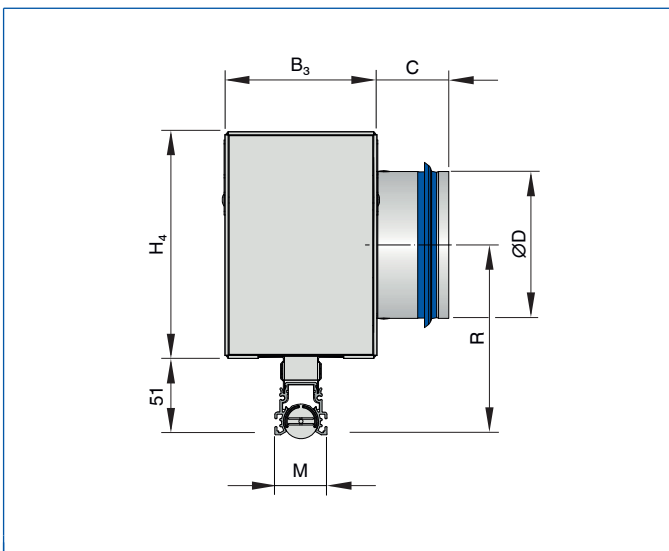


Illustration shows PL35-1-HS

PL35-⁺-HA (asymmetric position of plenum box, side entry spigot)

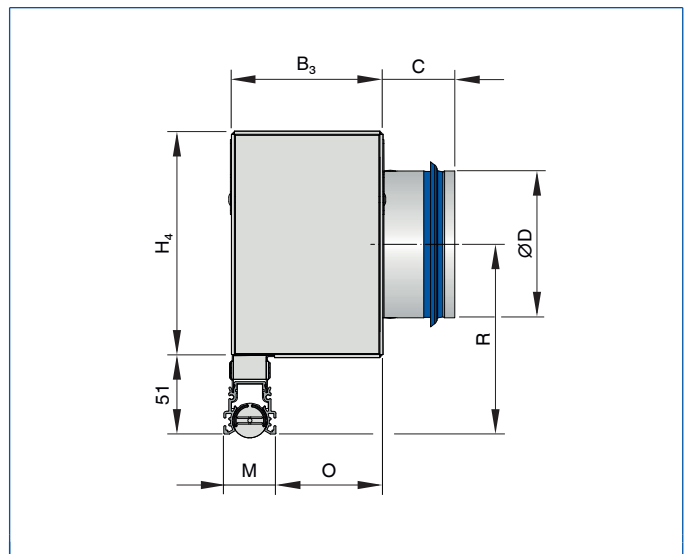
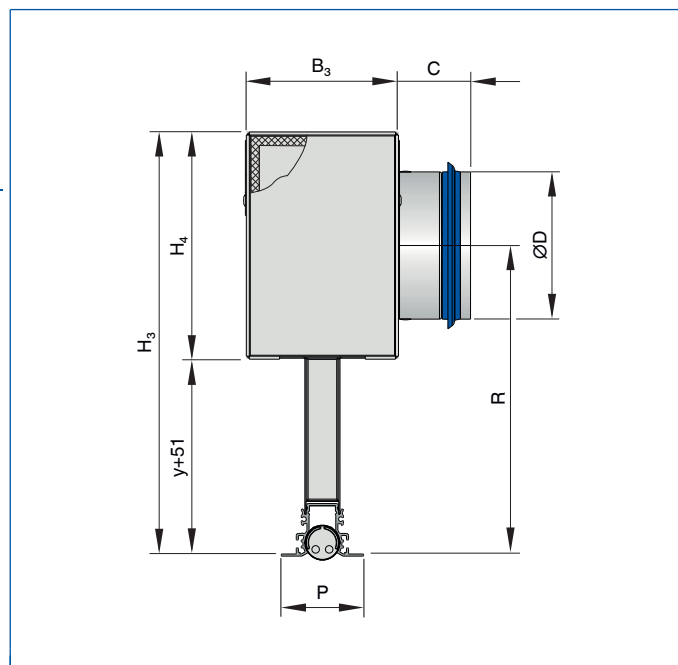


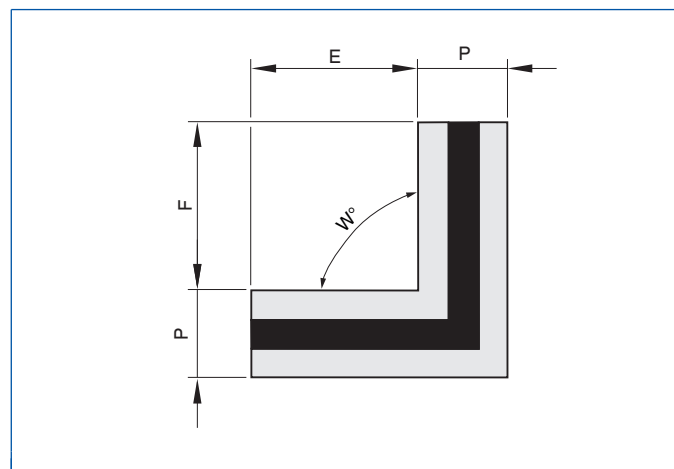
Illustration shows PL18-1-HA



PL35-*-AK



PL35-*-CS



Dimensions [mm]

Variant	P		E	
	Without extended border	With extended border	Without extended border	With extended border
PL35-1	35	55	110	100
PL35-2	62	82	110	100
PL35-3	89	109	110	100
PL35-4	116	136	110	100

Dimensions [mm]

Variant	Y=0		Y=30		Y=55		Y=80		Y=105		Y=129		B ₃	H ₄	ØD
	H ₃	R	H ₃	R	H ₃	R	H ₃	R	H ₃	R	H ₃	R			
PL35-1/...x 80	201	126	231	156	256	181	281	206	306	231	330	255	100	150	80
PL35-1/...x 100	201	126	231	156	256	181	281	206	306	231	330	255	100	150	100
PL35-1/...x 125	201	126	231	156	256	181	281	206	306	231	330	255	100	150	125
PL35-2/...x 80	231	141	261	171	286	196	311	221	336	246	360	270	138	180	80
PL35-2/...x 100	231	141	261	171	286	196	311	221	336	246	360	270	138	180	100
PL35-2/...x 125	231	141	261	171	286	196	311	221	336	246	360	270	138	180	125
PL35-2/...x 140	231	141	261	171	286	196	311	221	336	246	360	270	138	180	140
PL35-3/...x 80	249	150	279	180	304	205	329	230	354	255	378	279	176	198	80
PL35-3/...x 100	249	150	279	180	304	205	329	230	354	255	378	279	176	198	100
PL35-3/...x 125	249	150	279	180	304	205	329	230	354	255	378	279	176	198	125
PL35-3/...x 140	249	150	279	180	304	205	329	230	354	255	378	279	176	198	140
PL35-3/...x 160	249	150	279	180	304	205	329	230	354	255	378	279	176	198	160
PL35-4/...x 80	281	166	311	196	336	221	361	246	386	271	410	295	214	230	80
PL35-4/...x 100	281	166	311	196	336	221	361	246	386	271	410	295	214	230	100
PL35-4/...x 125	281	166	311	196	336	221	361	246	386	271	410	295	214	230	125
PL35-4/...x 140	281	166	311	196	336	221	361	246	386	271	410	295	214	230	140
PL35-4/...x 160	281	166	311	196	336	221	361	246	386	271	410	295	214	230	160
PL35-4/...x 200	281	166	311	196	336	221	361	246	386	271	410	295	214	230	200

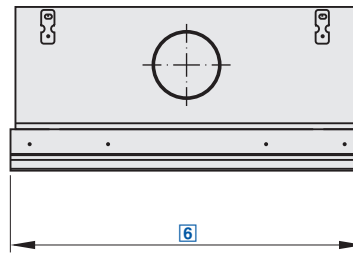
Dimensions [mm]

Nominal length	L1	L2
600	600	595
750	750	745
900	900	895
1050	1050	1045
1200	1200	1195



Nominal length	L1		L2	
1350		1350		1345
1500		1500		1495
1650		1650		1645
1800		1800		1795
1950		1950		1945





With slim diffuser face

 **Order code**

VSD15 – A – M – Z0 – L / 900 / CA / P1 – RAL ... / WS / WW

1 2 3 4 5 6 7 8 9 10

<p>1 Type VSD15 Slot diffuser</p> <p>2 Connection F Diffuser face only A Plenum box D Plenum box with lining</p> <p>Diffusers with a shorter plenum box as well as non-active diffusers require a rear blanking plate Length of blanking plate = $L_1 - L_3$</p> <p>3 Damper blade for volume flow rate balancing M No entry: none M With</p> <p>4 Extended border Z0 No entry: none Z0 With extended border</p>	<p>5 Accessories L No entry: none L With lip seal</p> <p>6 Nominal size [mm] Nominal length L_N 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500</p> <p>7 End pieces A9 No entry: none A9 End seals on both ends (VSD15) CA End angles on both ends (VSD15-Z0) To be ordered separately for slot diffusers for linear arrangement</p> <p>8 Exposed surface No entry: VSD15 powder-coated RAL 9005, black VSD15-Z0 with anodised finish E6-C-0, natural colour</p>	<p>P1 Powder-coated, specify RAL CLASSIC colour</p> <p>Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p> <p>9 Air pattern No entry: alternating horizontal (WH) WS Alternating angled HL Horizontal left (opposite direction from spigot) HR Horizontal right (same direction as spigot)</p> <p>10 Colour of air control elements WW No entry: similar to RAL 9005, black WW Similar to RAL 9010, white</p>
---	--	--

- + Features**
Slot diffusers with 15 mm diffuser face (nominal width) and adjustable air control elements
- ▶ Nominal lengths from 600 to 1500 mm, 1 slot
 - ▶ Volume flow rate range from 7 to 30 (l/s)/m or 25 to 108 (m³/h)/m
 - ▶ Diffuser face made of extruded aluminium sections
 - ▶ For variable and constant volume flows
 - ▶ Suitable for continuous linear arrangement
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
 - ▶ Individually adjustable air control elements to meet individual local requirements
- Optional equipment and accessories
- ▶ Exposed diffuser face available in RAL CLASSIC colours
 - ▶ Diffuser face with extended border
 - ▶ Damper blade for volume flow rate balancing, can be adjusted through the diffuser face
 - ▶ Plenum box with lining
 - ▶ End angle, end seal
 - ▶ White air control elements

- Application**
- ▶ Type VSD15 slot diffusers are used as supply air or extract air devices in comfort zones
 - ▶ Air discharge is one-way or alternating horizontal, or alternating angled; turbulent flow (mixed flow ventilation)
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
 - ▶ For variable and constant volume flows
 - ▶ For supply air to room air temperature differences from -10 to +10 K
 - ▶ For room heights up to 4 m (lower edge of suspended ceiling)
 - ▶ For suspended ceilings; suitable for restricted ceiling voids due to the low overall height of the plenum box
 - ▶ Ideal for suspended panelled ceilings with standard 16 mm gaps
 - ▶ Suitable for continuous linear arrangement
- Variants**
- ▶ VSD15-F: Diffuser face only
 - ▶ VSD15-...: Diffuser face without extended border
 - ▶ VSD15-...-Z0: Diffuser face with extended

- border
 - ▶ VSD15-...: Black air control elements
 - ▶ VSD15-.../WW: White air control elements
- Connection
- ▶ A: Plenum box
 - ▶ D: Plenum box with lining
- Attachments**
- ▶ M: Damper blade for volume flow rate balancing
 - ▶ A9: End seal (only for diffuser face without extended border)
 - ▶ CA: End angle (only for diffuser face with extended border Z0)
- & Accessories**
- ▶ Lip seal
- Useful additions**
- ▶ ED: Two end seals (only for diffuser face without extended border)
 - ▶ EW: Two end angles (only for diffuser face with extended border Z0)
 - ▶ To be ordered separately for continuous linear runs



★ Special characteristics

- Individually adjustable air control elements to meet individual local requirements
- High induction results in a rapid reduction of the temperature difference and airflow

velocity

- Ideal for suspended panelled ceilings with standard 16 mm gaps
- Suitable for continuous linear arrangement

ISO Standards and guidelines

- Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

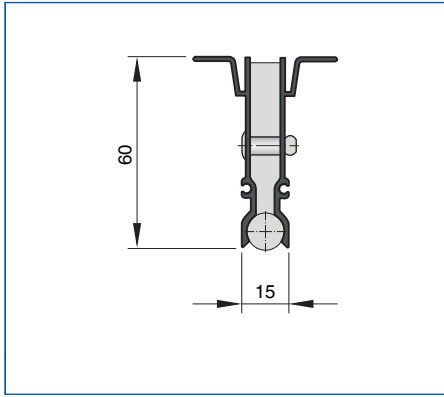
Nominal length	600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500 mm
Number of slots	1
Minimum volume flow rate	7 (l/s)/m or 25 (m ³ /h)/m
Maximum volume flow rate, with L _{WA} ≅ 50 dB(A)	30 (l/s)/m or 108 (m ³ /h)/m
Supply air to room air temperature difference	-10 to +10 K

VSD15, supply air, alternating horizontal air discharge, sound power level and total differential pressure

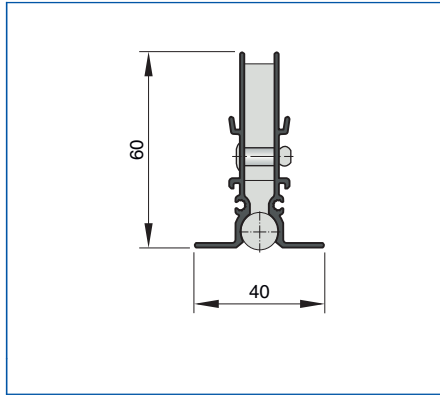
Nominal length	Ḃ l/s	Ḃ m ³ /h	Damper blade position					
			0°		45°		90°	
			Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	5	18	5	15	6	<15	10	<15
	10	36	20	34	24	32	39	32
	15	54	45	45	55	43	88	43
	20	72	80	53	98	50	157	50
700	5	18	4	<15	5	<15	9	<15
	10	36	16	30	20	28	35	29
	15	54	35	41	45	39	78	39
	20	72	62	49	80	47	139	47
800	6	22	5	<15	6	<15	11	<15
	15	54	29	38	39	36	72	37
	20	72	51	46	69	44	128	45
	25	90	80	52	108	50	200	50
900	7	25	5	15	7	<15	15	<15
	15	54	24	35	34	34	68	35
	20	72	43	43	61	42	120	42
	25	90	67	49	95	48	188	48
1000	7	25	5	<15	7	<15	14	<15
	10	36	9	22	14	21	29	22
	20	72	37	41	55	39	115	40
	30	108	84	51	125	50	258	51
1100	8	29	5	<15	8	<15	18	<15
	10	36	8	20	13	19	28	20
	20	72	33	39	51	37	110	38
	30	108	75	49	115	48	248	49
1200	9	32	6	15	10	<15	22	15
	15	54	17	29	27	28	60	29
	25	90	47	43	75	42	167	43
	35	126	92	52	147	51	328	52
1300	9	32	6	<15	9	<15	21	<15
	15	54	16	27	26	26	59	28
	25	90	43	41	71	40	164	41
	35	126	85	50	140	49	321	50
1400	10	36	6	15	11	<15	26	15
	20	72	26	33	44	33	103	34
	30	108	58	44	98	43	231	45
	40	144	103	52	175	51	411	52
1500	10	36	6	<15	10	<15	25	<15
	20	72	24	32	42	31	101	33
	30	108	54	43	95	42	228	43
	40	144	97	50	168	50	405	51



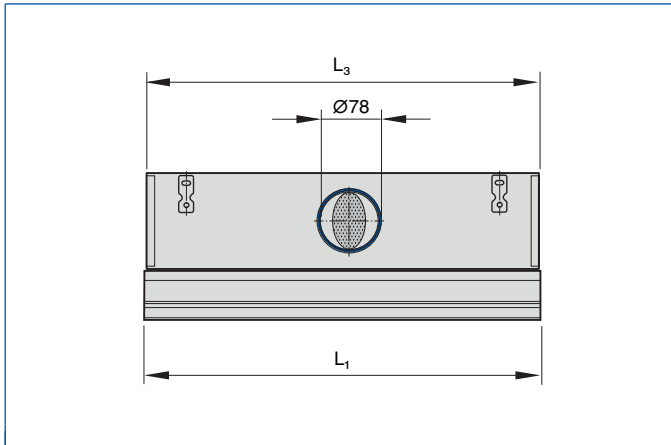
VSD15



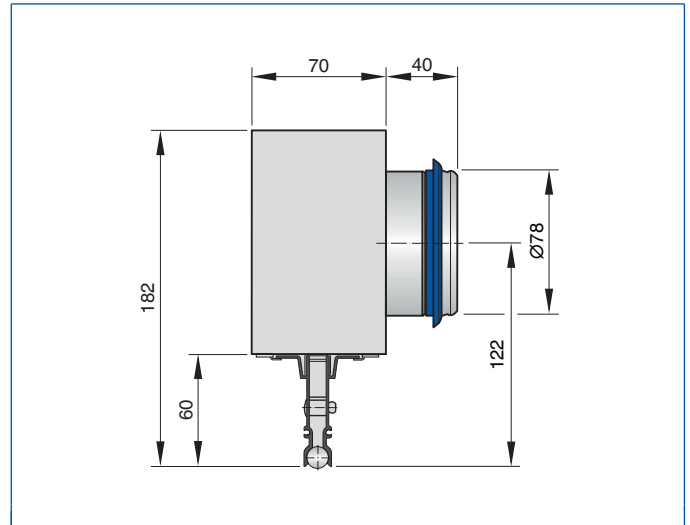
VSD15...-Z0



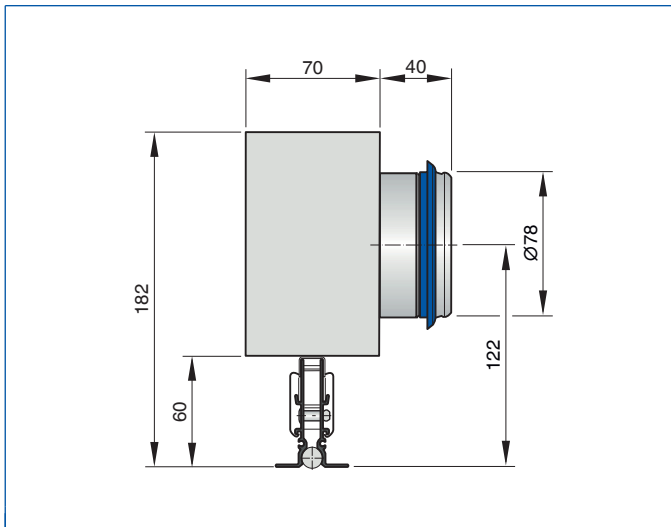
VSD15



VSD15-A



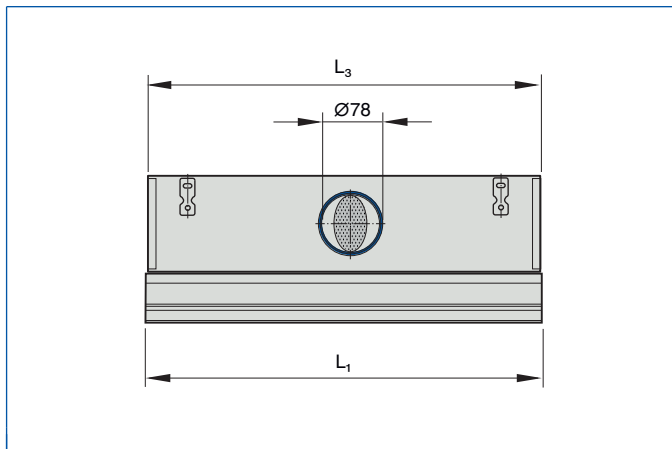
VSD15-A-Z0



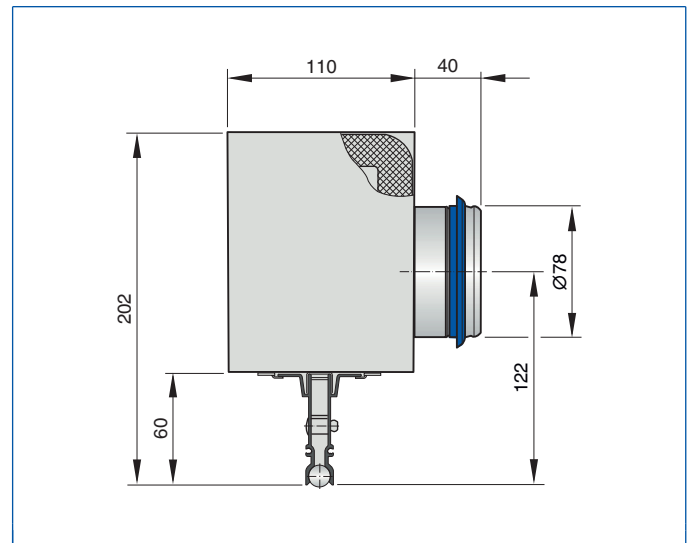
Dimensions [mm] and weight [kg]

Nominal length	L ₁ mm	L ₃ mm	A _{eff} m ²	A _{eff} WS m ²	m kg
600	600	595	0.0021	0.0021	1.8
700	700	695	0.0025	0.0025	2.2
800	800	795	0.0028	0.0028	2.5
900	900	895	0.0032	0.0032	2.8
1000	1000	995	0.0035	0.0035	3.1
1100	1100	1095	0.0039	0.0039	3.4
1200	1200	1195	0.0042	0.0042	3.7
1300	1300	1295	0.0046	0.0046	4.0
1400	1400	1395	0.0049	0.0049	4.3
1500	1500	1495	0.0053	0.0053	4.6

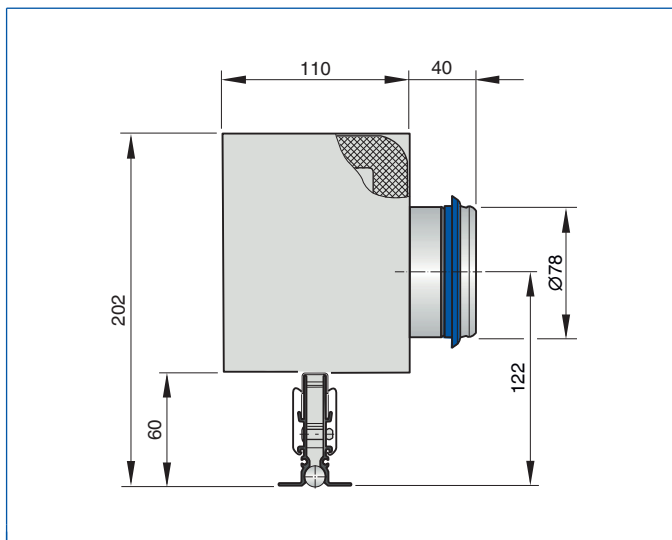
VSD15



VSD15-D



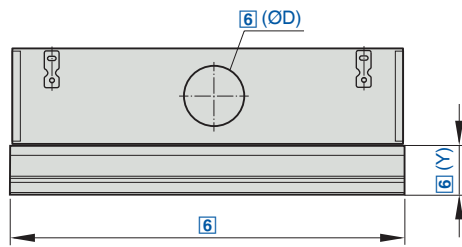
VSD15-D-Z0



Dimensions [mm] and weight [kg]

Nominal length	L ₁	L ₃	A _{eff}	A _{eff} WS	m
	mm	mm	m ²	m ²	kg
600	600	595	0.0021	0.0021	2.6
700	700	695	0.0025	0.0025	3.0
800	800	795	0.0028	0.0028	3.4
900	900	895	0.0032	0.0032	3.8
1000	1000	995	0.0035	0.0035	4.3
1100	1100	1095	0.0039	0.0039	4.7
1200	1200	1195	0.0042	0.0042	5.1
1300	1300	1295	0.0046	0.0046	5.6
1400	1400	1395	0.0049	0.0049	6.0
1500	1500	1495	0.0053	0.0053	6.4





Numerous variants for many different installation situations

Order code

VSD35 - 1 - AK - M - L / 900x98x30 / C2 / B00 / P1 - RAL ... / WS / WW

1 2 3 4 5 6 7 8 9 10 11

<p>1 Type VSD35 Slot diffuser</p> <p>2 Number of slots 1 2 3 4</p> <p>3 Connection F Diffuser face only E 90° corner section only Plenum box AK With clamp fixing DK With lining and clamp fixing AS With concealed screw fixing DS With lining and concealed screw fixing AA Asymmetric and with clamp fixing</p> <p>Diffusers with a shorter plenum box as well as non-active diffusers require a rear blanking plate</p> <p>4 Damper blade for volume flow rate balancing No entry: none M With</p> <p>5 Accessories No entry: none L With lip seal</p>	<p>6 Nominal size [mm] Nominal length L_N 600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800, 1950 Specify ØD and Y only for AK, DK, AS, DS and AA Up to L_N 1500 with one spigot, from L_N 1650 with two spigots spigot diameter ØD 98 1 slot 123 1 or 2 slots 138 2 or 3 slots 158 3 or 4 slots 198 4 slots Neck extension Y No entry: 0 30 55 80 105 129 (129 only AK, DK and AA)</p> <p>7 End pieces No entry: without Both ends with end angles factory fitted C1 to profile 000 C2 to profile B00 Both ends with end plates factory fitted</p>	<p>C5 to profile 000 C6 to profile B00 To be ordered separately for slot diffusers for linear arrangement</p> <p>8 Extended border No entry: without (only AK, DK, AA) B00 With extended border</p> <p>9 Exposed surface No entry: anodised, E6-C-0, natural colour P1 Powder-coated, specify RAL CLASSIC colour Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p> <p>10 Air pattern No entry: alternating horizontal (WH) WS Alternating angled HL Horizontal left (opposite direction from spigot) HR Horizontal right (same direction as spigot)</p> <p>11 Colour of air control elements No entry: similar to RAL 9005, black WW Similar to RAL 9010, white</p>
---	---	---

+ Features

- Slot diffusers with 35 mm diffuser face (nominal width) and adjustable air control elements
- ▶ Nominal length from 600 to 1950 mm, 1 to 4 slots
 - ▶ Volume flow rate range 15 - 135 (l/s)/m or 54 - 486 (m³/h)/m
 - ▶ Diffuser face made of extruded aluminium sections
 - ▶ For variable and constant volume flows
 - ▶ Suitable for continuous linear arrangement
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
 - ▶ Individually adjustable air control elements to meet individual local requirements

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours
- ▶ Diffuser face with extended border
- ▶ Damper blade for volume flow rate balancing, can be adjusted through the diffuser face
- ▶ Concealed screw fixing that simplifies installation of the diffuser after the ceiling has been completed
- ▶ Symmetric and asymmetric plenum boxes, with or without lining
- ▶ End plates, end angles, corner sections

Application

- ▶ Type VSD35 slot diffusers are used as supply air or extract air devices in comfort

zones

- ▶ They blend in inconspicuously with continuous grid ceilings and plasterboard ceilings
- ▶ Air discharge is one-way or alternating horizontal, or alternating angled; turbulent flow (mixed flow ventilation)
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -10 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For suspended ceilings; suitable for restricted ceiling voids due to the low overall height of the plenum box
- ▶ Suitable for continuous linear arrangement



Variants

- ▶ VSD35-*: 1, 2, 3 or 4 slots
- ▶ VSD35-*F: Diffuser face only
- ▶ VSD35-*E: Corner section
- ▶ VSD35-...: Diffuser face without extended border
- ▶ VSD35-.../B00: Diffuser face with extended border
- ▶ VSD35-...: Black air control elements
- ▶ VSD35-.../WW: White air control elements

Plenum box and diffuser face fixing

- ▶ AK: Plenum box and clamp fixing
- ▶ DK: Plenum box with lining and clamp fixing
- ▶ AS: Plenum box and concealed screw fixing
- ▶ DS: Plenum box with lining and concealed screw fixing
- ▶ AA: Asymmetric plenum box and clamp fixing

Attachments

- ▶ M: Damper blade for volume flow rate balancing
- ▶ C1, C2: Two end plates
- ▶ C5, C6: Two end angles

Accessories

- ▶ Lip seal

Useful additions

- ▶ EP: Two end plates
- ▶ EW: Two end angles
- ▶ To be ordered separately for continuous linear runs

Special characteristics

- ▶ Individually adjustable air control elements to meet individual local requirements
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
- ▶ Diffuser face has been optimised for maximum volume flow rate at low sound power levels
- ▶ Suitable for continuous linear arrangement

Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal length	600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800, 1950 mm
Number of slots	1, 2, 3, 4
Neck extension	0, 30, 55, 80, 104, 105, 129 mm
Minimum volume flow rate	15 - 50 (l/s)/m or 54 - 180 (m³/h)/m
Maximum volume flow rate with $L_{WA} \cong 50$ dB(A)	45 - 135 (l/s)/m or 162 - 486 (m³/h)/m
Supply air to room air temperature difference	-10 to +10 K

VSD35-1, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	\dot{V} l/s	\dot{V} m³/h	Damper blade position											
			0°				45°				90°			
			D = 98		D = 123		D = 98		D = 123		D = 98		D = 123	
			Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)
600	7	25	4	<15	4	<15	5	<15	4	<15	8	<15	5	<15
	15	54	17	27	15	22	23	27	18	23	35	27	23	23
	20	72	30	35	27	31	41	35	31	31	62	36	40	32
	30	108	66	47	60	44	91	48	70	44	139	49	90	44
750	10	36	5	<15	5	<15	8	<15	6	<15	14	<15	8	<15
	20	72	21	31	18	27	32	32	22	27	53	32	31	28
	25	90	32	38	28	34	49	38	35	34	83	39	48	34
	35	126	63	48	55	44	96	49	68	44	162	50	94	45
900	11	40	5	<15	4	<15	9	<15	6	<15	15	<15	8	<15
	20	72	16	28	13	24	27	29	18	24	48	30	26	25
	30	108	35	40	29	36	60	41	39	36	108	42	59	37
	40	144	63	49	52	45	106	50	69	45	192	51	104	46
1050	15	54	7	19	6	<15	14	19	8	15	26	19	13	15
	25	90	20	32	16	28	37	33	23	28	71	34	36	29
	30	108	29	37	23	33	53	38	33	34	101	39	52	34
	45	162	65	50	51	45	120	51	73	46	228	52	116	47
1200	15	54	6	17	5	<15	13	17	7	<15	25	18	12	<15
	30	108	25	35	18	31	49	36	28	31	97	37	48	32
	40	144	43	44	33	39	87	45	50	40	172	46	84	41
	50	180	68	50	51	46	136	52	78	47	269	53	132	48
1350	20	72	10	23	7	18	21	23	11	19	42	24	20	19
	30	108	22	33	16	29	46	34	25	30	94	35	45	30
	40	144	38	42	27	37	82	43	45	38	167	44	79	39
	50	180	60	48	42	44	128	50	70	45	261	51	124	46
1500	20	72	9	21	6	<15	20	22	11	17	41	22	19	18
	30	108	20	32	13	27	44	33	23	28	92	34	43	29
	40	144	35	40	24	36	78	41	41	36	163	43	76	37
	55	198	65	49	44	45	148	51	78	46	309	53	143	47



Nominal length	\dot{V}	\dot{V}	Damper blade position											
			0°				45°				90°			
			D = 98		D = 123		D = 98		D = 123		D = 98		D = 123	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	l/s	m³/h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
1650	20	72	5	17	4	<15	8	17	6	<15	14	17	8	<15
	45	162	25	38	21	34	40	39	27	35	70	40	39	35
	50	180	31	41	26	37	50	42	34	38	86	43	48	38
	70	252	60	52	51	48	97	53	66	48	169	54	95	49
1800	25	90	7	21	6	17	12	21	8	17	21	22	11	18
	40	144	18	33	15	29	30	34	19	30	53	35	29	30
	60	216	39	45	32	41	66	46	43	42	119	47	64	42
	70	252	53	50	44	46	90	51	59	46	162	52	88	47
1950	25	90	6	20	5	16	11	20	7	16	20	21	11	17
	40	144	16	32	13	28	28	33	18	28	51	34	27	29
	50	180	24	39	20	34	43	39	27	35	80	40	42	36
	70	252	47	49	38	44	84	50	53	45	156	51	82	46

VSD35-2, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	\dot{V}	\dot{V}	Damper blade position											
			0°				45°				90°			
			D = 123		D = 138		D = 123		D = 138		D = 123		D = 138	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	l/s	m³/h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	15	54	5	<15	4	<15	7	<15	6	<15	12	<15	9	<15
	30	108	18	31	17	29	28	31	23	29	48	32	35	30
	33	120	23	34	21	32	35	35	29	32	59	35	44	33
	55	198	61	49	56	47	94	50	77	48	159	51	118	49
750	20	72	6	17	5	15	11	17	8	15	19	18	14	16
	35	126	18	32	16	30	32	32	25	30	58	33	41	31
	50	180	37	42	32	40	64	43	50	41	118	44	84	42
	65	234	62	50	55	48	108	51	84	49	199	53	141	50
900	25	90	8	20	6	18	14	21	11	18	28	21	19	19
	40	144	19	33	16	30	36	33	27	31	71	34	49	32
	55	198	35	42	30	40	68	43	51	40	133	44	92	42
	70	252	57	49	48	47	111	50	82	48	216	52	149	49
1050	25	90	6	18	5	16	13	19	10	17	27	19	18	17
	45	162	20	34	16	31	42	35	31	32	86	36	58	33
	60	216	35	42	29	40	75	43	54	41	152	44	103	42
	75	270	55	49	45	46	117	50	84	47	237	52	160	49
1200	30	108	8	21	6	19	18	22	13	19	37	22	25	20
	50	180	22	35	17	32	49	36	35	33	103	37	69	34
	70	252	42	44	34	42	96	46	68	43	201	47	134	44
	85	306	62	50	49	48	141	52	100	49	296	54	197	51
1350	35	126	10	23	8	21	23	24	16	22	50	25	33	22
	55	198	24	36	18	33	57	37	39	34	122	38	80	35
	75	270	44	44	34	42	105	46	73	43	226	48	149	45
	90	324	62	50	49	48	152	52	105	49	326	54	215	51
1500	35	126	9	22	7	20	23	23	15	20	49	23	32	21
	55	198	22	34	17	32	55	35	38	33	120	37	79	34
	75	270	40	43	31	40	102	44	70	42	223	46	146	43
	95	342	64	50	49	47	164	52	112	49	357	54	234	51
1650	40	144	6	21	5	19	11	21	8	19	20	21	14	19
	65	234	15	33	13	31	28	34	21	32	53	35	37	33
	90	324	29	43	25	41	53	44	41	41	101	45	71	42
	115	414	47	50	41	48	87	51	66	49	165	53	115	50



Nominal length	\dot{V}	\dot{V}	Damper blade position											
			0°				45°				90°			
			D = 123		D = 138		D = 123		D = 138		D = 123		D = 138	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
1800	45	162	7	22	6	20	13	23	10	21	25	24	17	21
	70	252	16	34	14	32	31	35	23	33	60	36	41	34
	95	342	29	43	25	41	56	44	42	42	110	45	76	43
	120	432	46	50	39	48	89	51	67	49	175	53	120	50
1950	45	162	6	21	5	19	12	22	9	20	24	22	17	20
	70	252	15	33	12	31	29	34	22	32	58	35	40	32
	95	342	26	42	22	39	54	43	39	40	107	44	73	41
	125	450	45	50	38	48	93	51	68	49	185	53	126	50

VSD35-3, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	\dot{V}	\dot{V}	Damper blade position											
			0°				45°				90°			
			D = 138		D = 158		D = 138		D = 158		D = 138		D = 158	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	25	90	6	18	6	16	11	18	8	16	19	19	13	16
	40	144	16	30	14	28	27	31	21	28	49	32	33	29
	60	216	36	42	31	40	61	43	46	40	109	44	74	41
	75	270	55	49	49	47	95	50	71	47	171	51	116	48
750	30	108	7	20	6	17	13	20	9	18	25	21	17	18
	50	180	19	33	16	31	36	34	26	31	70	35	45	32
	70	252	36	43	30	40	70	44	50	41	137	46	89	42
	85	306	53	49	44	46	103	50	74	47	201	52	131	49
900	35	126	8	21	6	19	16	22	11	19	33	22	21	20
	55	198	18	33	15	31	39	34	27	31	80	35	51	32
	75	270	34	42	27	39	73	43	50	40	149	45	94	42
	95	342	54	49	43	47	117	51	80	48	239	52	151	49
1050	35	126	7	19	5	16	15	20	10	17	32	20	20	18
	55	198	16	31	12	28	37	32	24	29	78	33	48	30
	80	288	33	42	26	39	78	43	51	40	165	44	102	41
	105	378	57	50	44	47	134	51	88	48	283	53	175	50
1200	45	162	10	24	7	21	24	25	15	22	51	25	31	22
	70	252	23	36	17	33	57	37	37	34	123	38	76	35
	95	342	42	44	31	42	105	46	68	43	227	48	139	44
	115	414	62	50	46	47	153	52	99	49	333	54	203	51
1350	50	180	11	25	8	22	28	26	18	23	62	27	38	24
	75	270	24	36	18	33	63	37	40	34	140	39	85	35
	100	360	43	44	31	41	112	46	71	43	248	48	150	44
	120	432	62	50	44	47	162	52	103	48	357	54	216	50
1500	55	198	12	26	9	23	33	27	21	24	74	28	45	25
	80	288	26	36	18	33	70	38	44	35	157	39	95	36
	105	378	45	44	31	41	121	46	76	43	271	48	163	44
	130	468	68	50	48	47	185	52	116	49	415	55	249	51
1650	60	216	7	23	6	21	14	24	10	22	27	25	17	22
	90	324	15	34	12	32	30	35	21	32	61	36	39	33
	120	432	26	42	22	40	54	44	38	41	108	45	69	42
	155	558	44	50	36	47	90	51	62	49	179	53	114	50
1800	65	234	7	24	6	22	15	25	11	22	31	26	20	23
	100	360	17	36	13	33	36	37	25	34	73	38	46	35
	130	468	28	43	22	41	60	45	41	42	123	46	78	43
	165	594	45	50	36	48	97	52	66	49	199	54	125	51



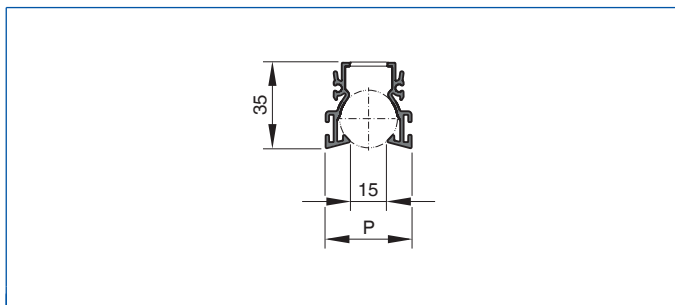
Nominal length	\dot{V}		Damper blade position											
			0°				45°				90°			
	i/s m³/h		D = 138		D = 158		D = 138		D = 158		D = 138		D = 158	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
1950	70	252	8	25	6	23	17	26	12	23	35	27	22	24
	100	360	16	35	12	32	35	36	23	33	72	37	45	34
	135	486	28	43	22	41	63	44	42	42	131	46	82	43
	170	612	44	50	35	47	99	52	67	49	207	54	129	50

VSD35-4, supply air, alternating horizontal air discharge, sound power level and total differential pressure

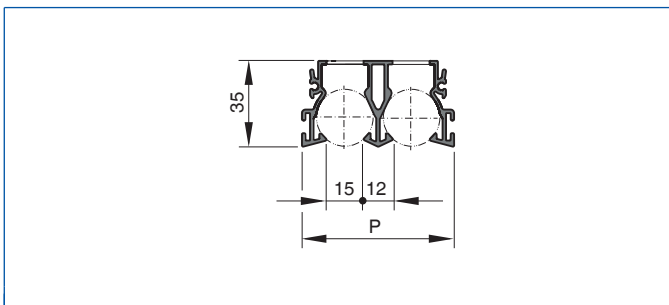
Nominal length	\dot{V}		Damper blade position											
			0°				45°				90°			
	i/s m³/h		D = 158		D = 198		D = 158		D = 198		D = 158		D = 198	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	30	108	5	17	4	<15	9	17	6	<15	16	17	9	<15
	55	198	17	32	14	28	29	33	19	29	53	34	29	29
	75	270	32	41	26	37	54	42	35	38	99	43	53	39
	100	360	56	50	46	46	96	51	62	47	175	53	94	48
750	40	144	7	21	5	17	13	21	8	17	26	22	13	17
	65	234	18	34	14	29	35	34	21	30	68	36	34	31
	90	324	34	43	26	39	67	44	39	40	131	46	65	40
	110	396	51	49	39	45	100	51	58	46	195	52	97	47
900	45	162	7	21	5	17	15	22	9	18	31	22	15	18
	70	252	17	33	12	29	37	34	20	29	76	35	36	30
	100	360	35	43	24	39	75	45	41	40	154	46	73	41
	125	450	54	50	38	46	117	52	64	47	240	53	114	48
1050	50	180	8	22	5	18	18	22	9	18	38	23	17	19
	75	270	17	33	11	28	40	34	21	29	84	35	39	30
	105	378	33	42	22	38	78	44	40	39	164	45	75	40
	135	486	54	50	36	45	128	51	66	46	272	54	124	48
1200	55	198	8	23	5	19	21	23	10	19	44	24	20	19
	85	306	20	34	12	30	49	35	24	30	106	37	47	31
	115	414	36	43	22	38	89	44	44	39	193	46	86	41
	145	522	56	50	35	45	141	52	70	46	307	54	137	48
1350	65	234	11	25	6	21	28	26	13	22	61	27	27	22
	95	342	23	36	13	31	59	37	28	32	130	38	57	33
	125	450	39	43	23	39	102	45	49	40	225	47	99	41
	155	558	59	50	35	45	156	52	75	47	346	54	151	48
1500	70	252	12	26	7	22	31	27	15	22	70	28	30	23
	100	360	23	36	13	31	64	37	30	32	143	39	62	33
	135	486	43	44	24	39	116	46	54	41	260	48	112	42
	165	594	63	50	36	45	173	52	81	47	388	55	168	49
1650	80	288	7	25	5	21	14	25	8	21	28	26	14	22
	120	432	15	35	11	31	31	36	18	32	62	37	30	33
	160	576	27	44	20	39	55	45	31	40	111	46	54	41
	200	720	42	50	30	46	86	52	49	47	173	54	84	48
1800	85	306	7	25	5	21	15	26	8	22	31	26	15	22
	125	450	15	35	11	31	32	36	18	32	66	37	32	33
	170	612	28	44	18	39	60	45	31	40	122	47	55	41
	210	756	42	50	30	46	91	52	49	47	186	54	88	48
1950	90	324	7	25	5	22	16	26	9	22	34	27	16	23
	133	480	16	36	11	32	36	37	19	32	74	38	35	33
	177	636	28	44	19	39	62	45	33	40	130	47	60	42
	220	792	42	50	29	46	96	52	51	47	201	54	93	49



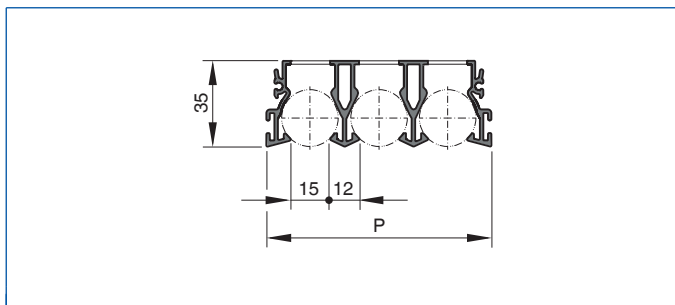
VSD35-1/.../000



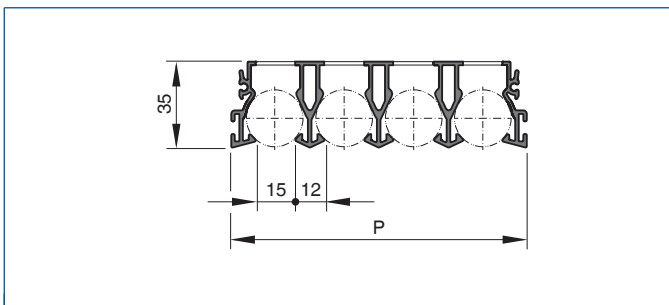
VSD35-2/.../000



VSD35-3/.../000



VSD35-4/.../000



Dimensions [mm]

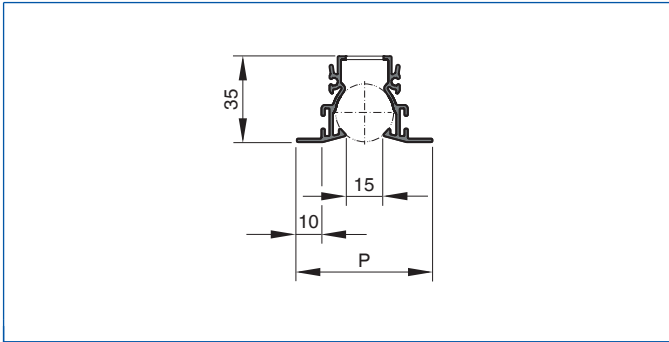
Variant	000	P	mm
VSD35-1			35
VSD35-2			62
VSD35-3			89
VSD35-4			116

Dimensions [mm]

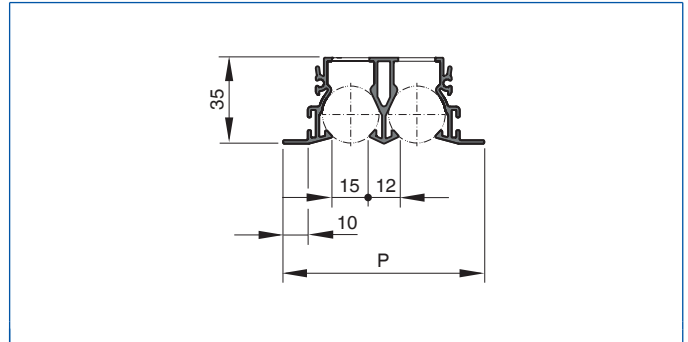
Nominal length	VSD35-1		VSD35-2		VSD35-3		VSD35-4		L ₁ mm
	A _{eff} m ²	A _{eff} WS m ²	A _{eff} m ²	A _{eff} WS m ²	A _{eff} m ²	A _{eff} WS m ²	A _{eff} m ²	A _{eff} WS m ²	
600	0.0035	0.0039	0.0070	0.0078	0.0105	0.0117	0.0140	0.0156	600
750	0.0044	0.0049	0.0088	0.0097	0.0131	0.0146	0.0175	0.0194	750
900	0.0053	0.0058	0.0105	0.0117	0.0158	0.0175	0.0210	0.0233	900
1050	0.0061	0.0068	0.0123	0.0136	0.0184	0.0204	0.0245	0.0272	1050
1200	0.0070	0.0078	0.0140	0.0156	0.0210	0.0233	0.0280	0.0311	1200
1350	0.0079	0.0088	0.0158	0.0175	0.0237	0.0262	0.0315	0.0350	1350
1500	0.0088	0.0097	0.0175	0.0194	0.0263	0.0292	0.0350	0.0389	1500
1650	0.0096	0.0107	0.0193	0.0214	0.0289	0.0321	0.0385	0.0428	1650
1800	0.0105	0.0117	0.0210	0.0233	0.0315	0.0350	0.0421	0.0467	1800
1950	0.0114	0.0126	0.0228	0.0253	0.0342	0.0379	0.0456	0.0505	1950



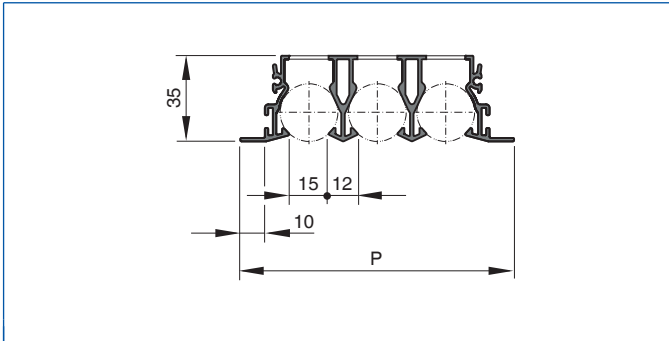
VSD35-1/.../B00



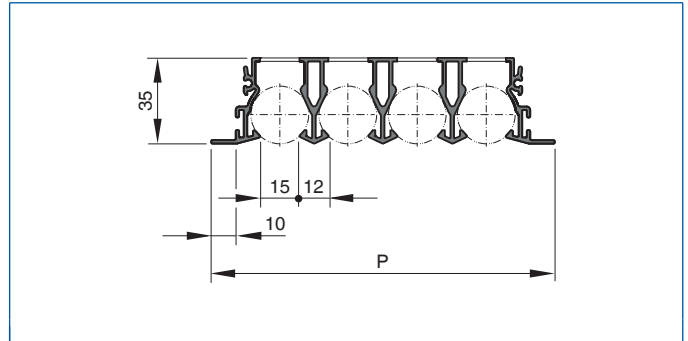
VSD35-2/.../B00



VSD35-3/.../B00



VSD35-4/.../B00



Dimensions [mm]

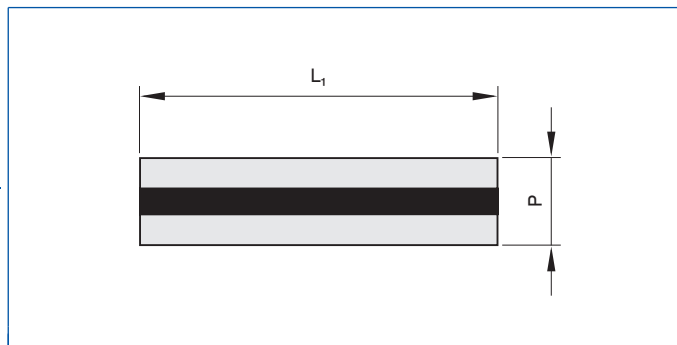
Variant	B00	
	P	
	mm	
VSD35-1	55	
VSD35-2	82	
VSD35-3	109	
VSD35-4	136	

Dimensions [mm]

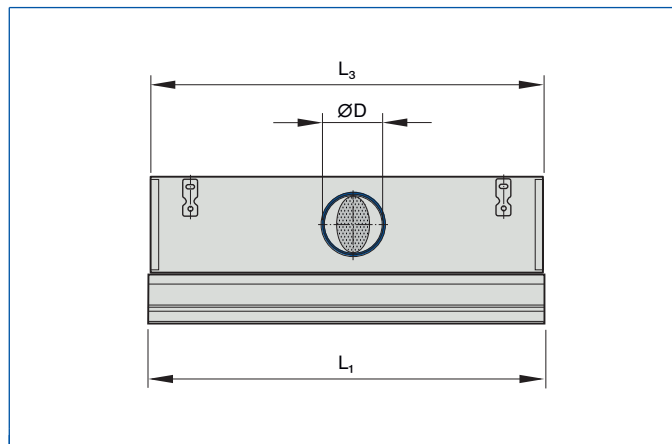
Nominal length	VSD35-1		VSD35-2		VSD35-3		VSD35-4		L ₁ mm
	A _{eff} m ²	A _{eff} WS m ²	A _{eff} m ²	A _{eff} WS m ²	A _{eff} m ²	A _{eff} WS m ²	A _{eff} m ²	A _{eff} WS m ²	
600	0.0035	0.0039	0.0070	0.0078	0.0105	0.0117	0.0140	0.0156	600
750	0.0044	0.0049	0.0088	0.0097	0.0131	0.0146	0.0175	0.0194	750
900	0.0053	0.0058	0.0105	0.0117	0.0158	0.0175	0.0210	0.0233	900
1050	0.0061	0.0068	0.0123	0.0136	0.0184	0.0204	0.0245	0.0272	1050
1200	0.0070	0.0078	0.0140	0.0156	0.0210	0.0233	0.0280	0.0311	1200
1350	0.0079	0.0088	0.0158	0.0175	0.0237	0.0262	0.0315	0.0350	1350
1500	0.0088	0.0097	0.0175	0.0194	0.0263	0.0292	0.0350	0.0389	1500
1650	0.0096	0.0107	0.0193	0.0214	0.0289	0.0321	0.0385	0.0428	1650
1800	0.0105	0.0117	0.0210	0.0233	0.0315	0.0350	0.0421	0.0467	1800
1950	0.0114	0.0126	0.0228	0.0253	0.0342	0.0379	0.0456	0.0505	1950



Diffuser face VSD...-*-F



VSD35, LN: 600 - 1500



Dimensions [mm]

Nominal length	L_1		L_3	
	mm		mm	
600	600		595	
750	750		745	
900	900		895	
1050	1050		1045	
1200	1200		1195	
1350	1350		1345	
1500	1500		1495	
1650	1650		1645	
1800	1800		1795	
1950	1950		1945	

Number of spigots and spigot diameter

Nominal length	VSD35-1		VSD35-2		VSD35-3		VSD35-4	
	$\varnothing D$							
	mm							
600 - 1500	1 × 98	1 × 123	1 × 123	1 × 138	1 × 138	1 × 158	1 × 158	1 × 198
1650 - 1950	2 × 98	2 × 123	2 × 123	2 × 138	2 × 138	2 × 158	2 × 158	2 × 198

VSD35-*-AS

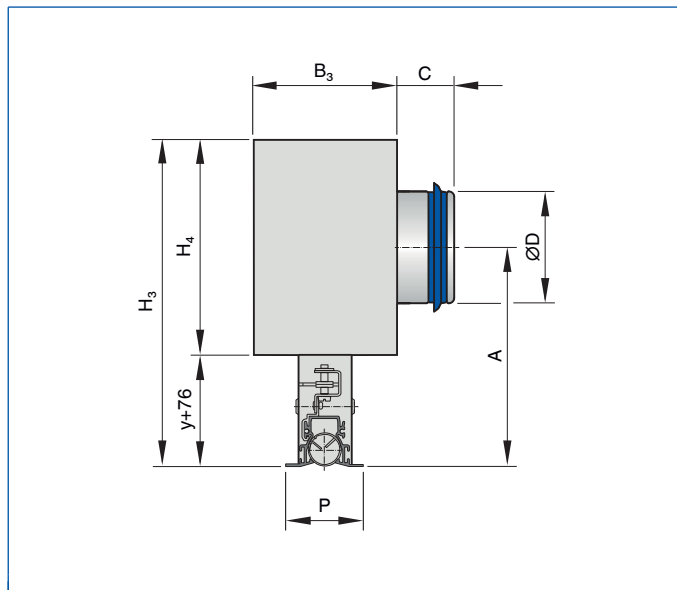


Illustration shows VSD35-1-AS-L/.../B00



Dimensions [mm]

Variant	B00	
	P	
	mm	
VSD35-1		55
VSD35-2		82
VSD35-3		109
VSD35-4		136

Dimensions [mm]

Variant	Y = 0	Y = 30		Y = 55		Y = 80		Y = 104		B ₃	H ₄	ØD	C	
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃					A
	mm	mm	mm	mm	mm	mm	mm	mm	mm					mm
VSD35-1/... x 98	228	153	258	183	283	208	308	233	332	257	100	152	98	48
VSD35-1/... x 123	228	153	258	183	283	208	308	233	332	257	100	152	123	46
VSD35-2/... x 123	258	168	288	198	313	223	338	248	362	272	138	182	123	46
VSD35-2/... x 138	258	168	288	198	313	223	338	248	362	272	138	182	138	40
VSD35-3/... x 138	276	177	306	207	331	232	356	257	380	281	176	200	138	40
VSD35-3/... x 158	276	177	306	207	331	232	356	257	380	281	176	200	158	48
VSD35-4/... x 158	308	193	338	223	363	248	388	273	412	297	214	232	158	48
VSD35-4/... x 198	308	193	338	223	363	248	388	273	412	297	214	232	198	48

Weight [kg]

Nominal length	VSD35-1		VSD35-2		VSD35-3		VSD35-4	
	m							
	kg		kg		kg		kg	
600		3.0		3.7		4.3		5.1
750		3.7		4.5		5.3		6.3
900		4.4		5.4		6.3		7.4
1050		5.1		6.2		7.3		8.5
1200		5.8		7.1		8.2		9.6
1350		6.5		7.9		9.2		10.7
1500		7.2		8.8		10.2		11.9
1650		7.9		9.6		11.1		13.0
1800		8.6		10.5		12.1		14.1
1950		9.3		11.3		13.1		15.2

VSD35*-DS

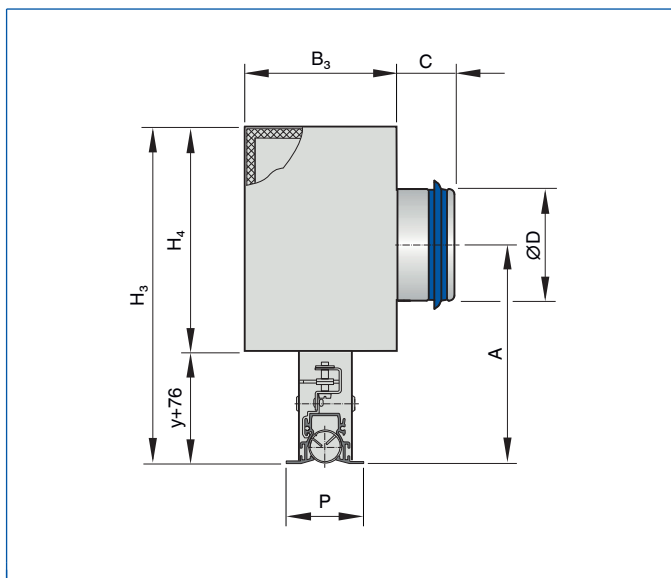


Illustration shows VSD35-1-DS-L/.../B00



Dimensions [mm]

Variant	B00	
	P	
	mm	
VSD35-1	55	
VSD35-2	82	
VSD35-3	109	
VSD35-4	136	

Dimensions [mm]

Variant	Y = 0		Y = 30		Y = 55		Y = 80		Y = 104					
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A	B ₃	H ₄	ØD	C
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
VSD35-1/... × 98	248	153	278	183	303	208	328	233	352	257	138	172	98	48
VSD35-1/... × 123	248	153	278	183	303	208	328	233	352	257	138	172	123	46
VSD35-2/... × 123	278	168	308	198	333	223	358	248	382	272	176	202	123	46
VSD35-2/... × 138	278	168	308	198	333	223	358	248	382	272	176	202	138	40
VSD35-3/... × 138	296	177	326	207	351	232	376	257	400	281	214	220	138	40
VSD35-3/... × 158	296	177	326	207	351	232	376	257	400	281	214	220	158	48
VSD35-4/... × 158	328	193	358	223	383	248	408	273	432	297	254	252	158	48
VSD35-4/... × 198	328	193	358	223	383	248	408	273	432	297	254	252	198	48

Weight [kg]

Nominal length	VSD35-1	VSD35-2	VSD35-3	VSD35-4
	m			
	kg	kg	kg	kg
600	3.8	4.6	5.4	6.2
750	4.7	5.7	6.6	7.6
900	5.6	6.7	7.8	9.0
1050	6.4	7.8	8.9	10.3
1200	7.3	8.8	10.1	11.7
1350	8.2	9.9	11.3	13.1
1500	9.1	10.9	12.5	14.4
1650	10.0	11.9	13.7	15.8
1800	10.8	13.0	14.9	17.2
1950	11.7	14.0	16.1	18.5

VSD35*-AK

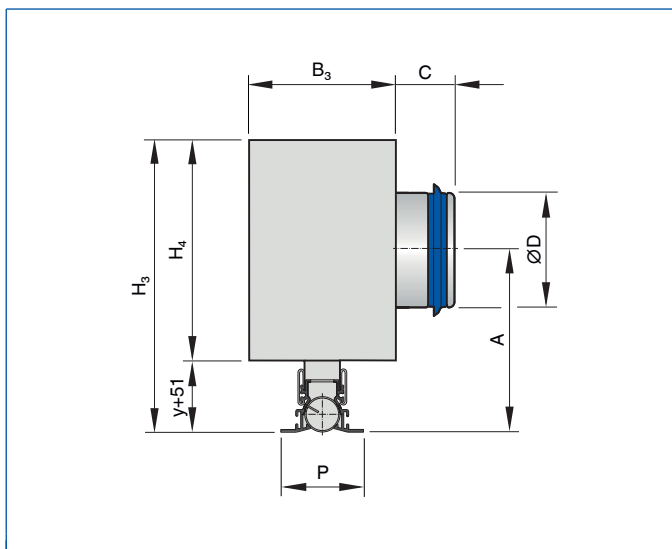


Illustration shows VSD35-1-AK-L-.../B00



Dimensions [mm]

Variant	000		B00	
	P			
	mm		mm	
VSD35-1		35		55
VSD35-2		62		82
VSD35-3		89		109
VSD35-4		116		136

Dimensions [mm]

Variant	Y = 0	Y = 30		Y = 55		Y = 80		Y = 105		Y = 129		B ₃	H ₄	ØD	C	
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃					A
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm					mm
VSD35-1/... x 98	203	127	233	157	258	182	283	207	308	232	332	256	100	152	98	48
VSD35-1/... x 123	203	127	233	157	258	182	283	207	308	232	332	256	100	152	123	46
VSD35-2/... x 123	233	143	263	173	288	198	313	223	338	248	362	272	138	182	123	46
VSD35-2/... x 138	233	143	263	173	288	198	313	223	338	248	362	272	138	182	138	40
VSD35-3/... x 138	251	152	281	182	306	207	331	232	356	257	380	281	176	200	138	40
VSD35-3/... x 158	251	152	281	182	306	207	331	232	356	257	380	281	176	200	158	48
VSD35-4/... x 158	283	168	313	198	338	223	363	248	388	273	412	297	214	232	158	48
VSD35-4/... x 198	283	168	313	198	338	223	363	248	388	273	412	297	214	232	198	48

Weight [kg]

Nominal length	VSD35-1		VSD35-2		VSD35-3		VSD35-4	
	m							
	kg		kg		kg		kg	
600		2.2		2.9		3.6		4.3
750		2.7		3.6		4.4		5.3
900		3.3		4.3		5.1		6.2
1050		3.8		4.9		5.9		7.2
1200		4.3		5.6		6.7		8.1
1350		4.8		6.3		7.5		9.0
1500		5.3		6.9		8.3		10.0
1650		5.8		7.6		9.1		10.9
1800		6.4		8.2		9.9		11.9
1950		6.9		8.9		10.7		12.8

VSD35*-DK

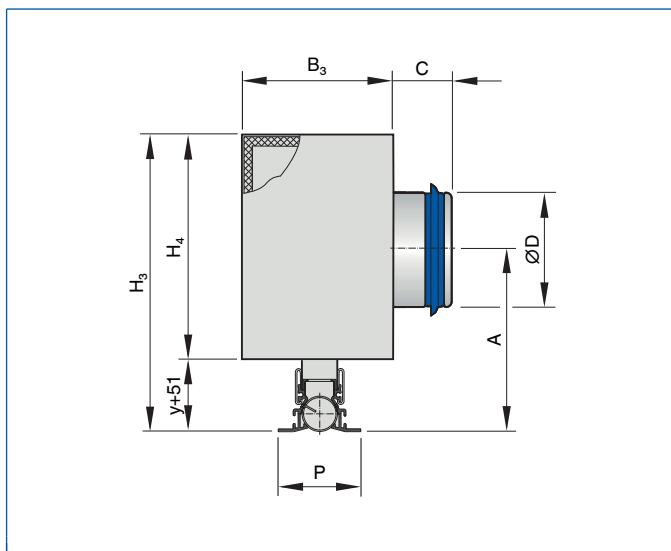


Illustration shows VSD35-1-DK-L /.../B00



Dimensions [mm]

Variant	000		B00	
	P			
	mm		mm	
VSD35-1		35		55
VSD35-2		62		82
VSD35-3		89		109
VSD35-4		116		136

Dimensions [mm]

Variant	Y = 0		Y = 30		Y = 55		Y = 80		Y = 105		Y = 129					
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A	B ₃	H ₄	ØD	C
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
VSD35-1/... × 98	223	127	253	157	278	182	303	207	328	232	352	256	138	172	98	48
VSD35-1/... × 123	223	127	253	157	278	182	303	207	328	232	352	256	138	172	123	46
VSD35-2/... × 123	253	143	283	173	308	198	333	223	358	248	382	272	176	202	123	46
VSD35-2/... × 138	253	143	283	173	308	198	333	223	358	248	382	272	176	202	138	40
VSD35-3/... × 138	271	152	301	182	326	207	351	232	376	257	400	281	214	220	138	40
VSD35-3/... × 158	271	152	301	182	326	207	351	232	376	257	400	281	214	220	158	48
VSD35-4/... × 158	303	168	333	198	358	223	383	248	408	273	432	297	254	252	158	48
VSD35-4/... × 198	303	168	333	198	358	223	383	248	408	273	432	297	254	252	198	48

Weight [kg]

Nominal length	VSD35-1		VSD35-2		VSD35-3		VSD35-4	
	m							
	kg		kg		kg		kg	
600		3.1		3.9		4.6		5.5
750		3.8		4.7		5.6		6.6
900		4.4		5.6		6.6		7.8
1050		5.1		6.5		7.6		9.0
1200		5.8		7.3		8.6		10.2
1350		6.5		8.2		9.6		11.4
1500		7.2		9.0		10.7		12.5
1650		7.9		9.9		11.7		13.7
1800		8.6		10.8		12.7		14.9
1950		9.3		11.6		13.7		16.1

VSD35*-AA

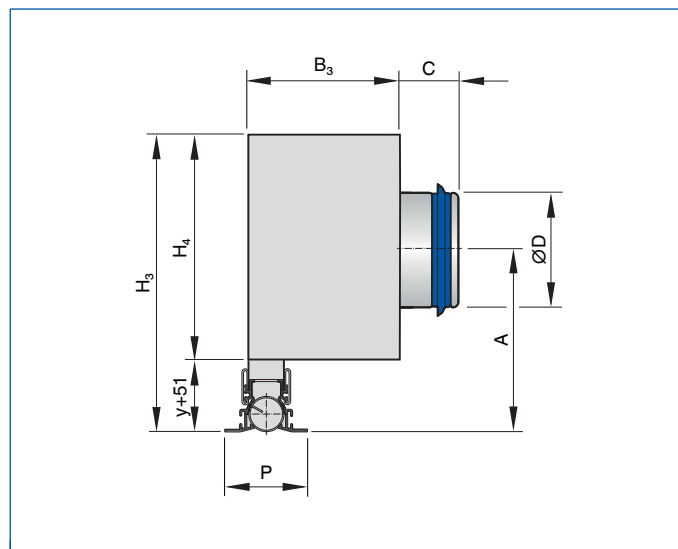


Illustration shows VSD35-1-AA-L/.../B00



Dimensions [mm]

Variant	000		B00	
	P			
	mm		mm	
VSD35-1		35		55
VSD35-2		62		82
VSD35-3		89		109
VSD35-4		116		136

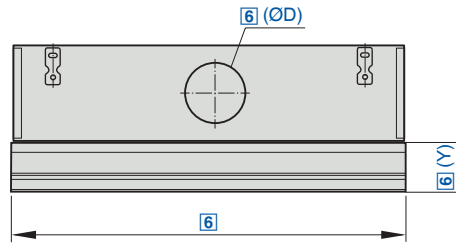
Dimensions [mm]

Variant	Y = 0	Y = 30		Y = 55		Y = 80		Y = 105		Y = 129		B ₃	H ₄	ØD	C	
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃					A
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm					mm
VSD35-1/... x 98	203	127	233	157	258	182	283	207	308	232	332	256	100	152	98	48
VSD35-1/... x 123	203	127	233	157	258	182	283	207	308	232	332	256	100	152	123	46
VSD35-2/... x 123	233	143	263	173	288	198	313	223	338	248	362	272	138	182	123	46
VSD35-2/... x 138	233	143	263	173	288	198	313	223	338	248	362	272	138	182	138	40
VSD35-3/... x 138	251	152	281	182	306	207	331	232	356	257	380	281	176	200	138	40
VSD35-3/... x 158	251	152	281	182	306	207	331	232	356	257	380	281	176	200	158	48
VSD35-4/... x 158	283	168	313	198	338	223	363	248	388	273	412	297	214	232	158	48
VSD35-4/... x 198	283	168	313	198	338	223	363	248	388	273	412	297	214	232	198	48

Weight [kg]

Nominal length	VSD35-1		VSD35-2		VSD35-3		VSD35-4	
	m							
	kg		kg		kg		kg	
600		2.2		2.9		3.6		4.3
750		2.7		3.6		4.4		5.3
900		3.3		4.3		5.1		6.2
1050		3.8		4.9		5.9		7.2
1200		4.3		5.6		6.7		8.1
1350		4.8		6.3		7.5		9.0
1500		5.3		6.9		8.3		10.0
1650		5.8		7.6		9.1		10.9
1800		6.4		8.2		9.9		11.9
1950		6.9		8.9		10.7		12.8





With wide diffuser face for larger volume flow rates

 **Order code**

VSD50 - 1 - AK - M - L / 900x123x25 / C2 / B00 / P1 - RAL ... / WS / WW

1 2 3 4 5 6 7 8 9 10 11

<p>1 Type VSD50 Slot diffuser</p> <p>2 Number of slots 1 2</p> <p>3 Connection F Diffuser face only E 90° corner section only Plenum box AK With clamp fixing DK With lining and clamp fixing AS With concealed screw fixing DS With lining and concealed screw fixing AA Asymmetric and with clamp fixing</p> <p>Diffusers with a shorter plenum box as well as non-active diffusers require a rear blanking plate Length of blanking plate = $L_1 - L_3$</p> <p>4 Damper blade for volume flow rate balancing No entry: none M With</p> <p>5 Accessories No entry: none L With lip seal</p>	<p>6 Nominal size [mm] Nominal length L_N 600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800, 1950</p> <p>Specify ØD and Y only for AK, DK, AS, DS and AA Up to L_N 1500 with one spigot, from L_N 1650 with two spigots spigot diameter ØD</p> <p>123 1 slot 158 1 or 2 slots 198 2 slots Neck extension Y No entry: 0</p> <p>25 50 75 100 125 (125 only AK, DK and AA)</p> <p>7 End pieces No entry: without Both ends with end angles factory fitted</p> <p>C1 to profile 000 C2 to profile B00 Both ends with end plates factory fitted C5 to profile 000</p>	<p>C6 to profile B00 To be ordered separately for slot diffusers for linear arrangement</p> <p>8 Extended border No entry: without (only AK, DK, AA) B00 With extended border</p> <p>9 Exposed surface No entry: anodised, E6-C-0, natural colour P1 Powder-coated, specify RAL CLASSIC colour</p> <p>Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p> <p>10 Air pattern No entry: alternating horizontal (WH) WS Alternating angled HL Horizontal left (opposite direction from spigot) HR Horizontal right (same direction as spigot)</p> <p>11 Colour of air control elements No entry: similar to RAL 9005, black WW Similar to RAL 9010, white</p>
---	---	---

 **Features**

- Slot diffusers with 50 mm diffuser face (nominal width) and adjustable air control elements
- ▶ Nominal length from 600 to 1950 mm, 1 to 2 slots
 - ▶ Volume flow rate range 20 - 120 (l/s)/m or 72 - 432 (m³/h)/m
 - ▶ Diffuser face made of extruded aluminium sections
 - ▶ For variable and constant volume flows
 - ▶ Suitable for continuous linear arrangement
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
 - ▶ Individually adjustable air control elements to meet individual local requirements

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours
- ▶ Diffuser face with extended border
- ▶ Damper blade for volume flow rate balancing, can be adjusted through the diffuser face
- ▶ Concealed screw fixing that simplifies installation of the diffuser after the ceiling has been completed
- ▶ Symmetric and asymmetric plenum boxes, with or without lining
- ▶ End plates, end angles, corner sections

 **Application**

- ▶ Type VSD50 slot diffusers are used as supply air or extract air devices in comfort

zones

- ▶ Air discharge is one-way or alternating horizontal, or alternating angled; turbulent flow (mixed flow ventilation)
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -10 to +10 K
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For suspended ceilings; suitable for restricted ceiling voids due to the low overall height of the plenum box
- ▶ Suitable for continuous linear arrangement





Variants

- ▶ VSD50-*: 1 or 2 slots
- ▶ VSD50-*F: Diffuser face only
- ▶ VSD50-*E: Corner section
- ▶ VSD50-...: Diffuser face without extended border
- ▶ VSD50-.../B00: Diffuser face with extended border
- ▶ VSD50-...: Black air control elements
- ▶ VSD50-.../WW: White air control elements

Plenum box and diffuser face fixing

- ▶ AK: Plenum box and clamp fixing
- ▶ DK: Plenum box with lining and clamp fixing
- ▶ AS: Plenum box and concealed screw fixing
- ▶ DS: Plenum box with lining and concealed screw fixing
- ▶ AA: Asymmetric plenum box and clamp fixing



Attachments

- ▶ M: Damper blade for volume flow rate balancing
- ▶ C1, C2: Two end plates
- ▶ C5, C6: Two end angles



Accessories

- ▶ Lip seal



Useful additions

- ▶ EP: Two end plates
- ▶ EW: Two end angles
- ▶ To be ordered separately for continuous linear runs



Special characteristics

- ▶ Individually adjustable air control elements to meet individual local requirements
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
- ▶ Diffuser face has been optimised for maximum volume flow rate at low sound power levels
- ▶ Suitable for continuous linear arrangement



Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



Technical data

Nominal length	600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800, 1950 mm
Number of slots	1, 2
Neck extension	0, 25, 50, 75, 100, 125 mm
Minimum volume flow rate	20 - 40 (l/s)/m or 72 - 144 (m³/h)/m
Maximum volume flow rate, with L _{WA} ≅ 50 dB(A)	70 - 120 (l/s)/m or 252 - 432 (m³/h)/m
Supply air to room air temperature difference	-10 to +10 K

VSD50-1, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	V̇		Damper blade position											
			0°				45°				90°			
			D = 123		D = 158		D = 123		D = 158		D = 123		D = 158	
			Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}
	l/s	m³/h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	11	38	4	<15	3	<15	5	<15	4	<15	7	<15	4	<15
	25	90	19	31	17	28	25	32	20	28	36	32	24	28
	40	144	49	45	44	42	65	46	50	42	91	46	60	42
	50	180	77	52	69	49	101	53	78	49	143	54	93	50
750	15	54	5	<15	4	<15	7	15	5	<15	11	15	7	12
	30	108	20	33	17	29	28	33	20	29	43	34	25	29
	40	144	35	41	30	37	50	42	35	37	77	42	45	38
	55	198	65	51	56	47	94	52	66	48	145	53	85	48
900	15	54	4	<15	3	<15	6	<15	4	<15	10	<15	5	<15
	35	126	20	34	17	30	32	34	21	30	53	35	28	31
	50	180	41	44	33	41	65	45	42	41	107	46	58	41
	65	234	70	53	56	49	110	54	71	49	181	55	97	50
1050	20	72	6	17	4	<15	9	17	6	<15	16	18	8	<15
	40	144	22	35	17	31	37	36	22	32	64	37	32	32
	55	198	41	45	31	41	70	45	42	41	120	46	60	42
	70	252	66	52	50	48	113	53	68	49	195	55	98	50
1200	25	90	7	20	5	17	13	21	8	17	24	21	11	17
	40	144	19	33	13	29	34	34	19	29	61	34	29	30
	55	198	35	42	25	38	64	43	36	39	114	44	54	39
	75	270	64	52	47	48	118	53	67	48	212	54	101	49
1350	25	90	7	19	5	15	13	19	7	15	23	20	11	15
	45	162	21	34	14	30	40	35	21	31	74	36	34	31
	65	234	43	45	29	41	83	46	44	42	154	47	70	42
	80	288	65	52	44	48	126	53	67	48	233	54	106	49



Nominal length	\dot{V}	\dot{V}	Damper blade position											
			0°				45°				90°			
			D = 123		D = 158		D = 123		D = 158		D = 123		D = 158	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
1500	30	108	8	22	6	18	17	22	9	18	32	23	14	19
	50	180	23	36	15	31	47	37	24	32	89	37	39	33
1500	70	252	45	46	29	41	92	47	47	42	174	48	77	43
	85	306	66	52	43	47	135	53	69	48	256	55	113	49
1650	30	108	5	18	4	<15	7	18	5	<15	11	19	6	<15
	50	180	13	31	11	28	20	32	13	28	31	33	18	28
	75	270	29	43	24	40	44	44	30	40	70	45	39	40
	100	360	51	52	43	49	78	53	52	49	124	54	69	50
1800	35	126	6	20	5	17	9	21	6	17	15	21	8	17
	58	210	16	34	13	30	25	35	16	31	40	36	22	31
	82	294	30	44	25	40	48	45	31	41	79	46	42	41
	105	378	50	52	41	48	79	53	51	49	130	54	70	50
1950	35	126	5	19	4	16	8	20	5	16	14	20	7	16
	60	216	15	34	12	30	24	34	15	30	41	35	21	31
	85	306	30	44	23	40	49	45	30	41	82	46	42	41
	110	396	49	52	39	48	81	53	51	49	137	55	71	50

VSD50-2, supply air, alternating horizontal air discharge, sound power level and total differential pressure

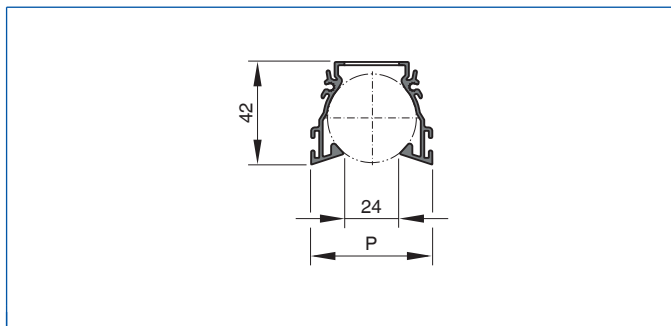
Nominal length	\dot{V}	\dot{V}	Damper blade position											
			0°				45°				90°			
			D = 158		D = 198		D = 158		D = 198		D = 158		D = 198	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	25	90	5	17	5	<15	8	17	6	<15	11	17	7	<15
	45	162	17	32	15	29	24	33	18	29	37	33	23	29
	65	234	35	43	31	40	50	44	37	40	76	45	47	41
	85	306	60	52	52	49	85	53	62	49	130	54	80	50
750	30	108	6	18	5	<15	9	18	6	<15	14	19	8	15
	50	180	15	31	12	28	24	32	16	28	39	33	22	29
	80	288	38	45	31	42	61	46	41	42	100	47	56	43
	100	360	60	53	49	49	95	54	63	50	156	55	88	51
900	35	126	6	19	5	16	10	19	6	16	18	20	9	16
	60	216	17	34	13	30	30	34	18	30	52	35	27	31
	85	306	34	44	26	40	60	45	37	41	104	46	55	42
	110	396	57	52	44	49	100	53	61	49	174	55	91	50
1050	40	144	7	20	5	17	12	21	7	17	22	21	11	17
	65	234	17	33	12	30	32	34	18	30	58	35	29	31
	90	324	32	43	23	39	61	44	35	40	110	45	55	41
	120	432	57	52	41	48	108	53	62	49	196	55	98	50
1200	45	162	7	21	5	18	14	22	8	18	27	23	13	18
	70	252	17	33	12	30	34	34	19	30	64	35	31	31
	100	360	35	44	24	40	70	45	38	41	131	46	63	42
	130	468	58	52	40	48	118	54	64	49	222	55	106	50
1350	50	180	8	22	5	19	17	23	9	19	32	24	15	19
	80	288	20	35	13	31	43	36	22	32	82	37	38	33
	110	396	38	45	25	41	80	46	42	42	155	47	72	43
	140	504	61	52	40	48	130	54	68	50	250	56	116	51
1500	55	198	9	23	6	19	20	24	10	20	38	25	17	20
	90	324	23	37	15	33	52	38	26	34	102	39	46	35
	125	450	45	47	28	43	100	48	50	44	196	50	89	45
	150	540	65	53	40	49	144	54	72	50	282	56	128	51



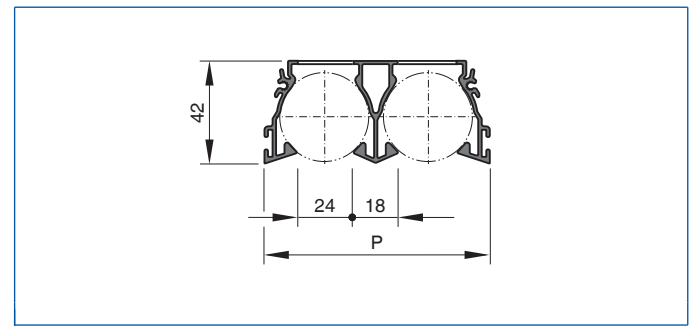
Nominal length	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position											
			0°				45°				90°			
			D = 158		D = 198		D = 158		D = 198		D = 158		D = 198	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
		Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	
1650	60	216	5	21	4	18	9	22	6	18	15	22	8	18
	95	342	13	34	11	31	22	35	14	31	37	36	20	31
	135	486	26	45	21	41	44	46	28	42	75	47	41	42
	175	630	44	53	35	49	74	54	47	50	126	56	68	51
1800	65	234	6	22	4	19	10	23	6	19	17	23	9	19
	105	378	14	36	11	32	25	36	16	32	44	37	23	33
	145	522	27	45	21	42	48	46	29	42	83	47	44	43
	185	666	44	53	34	50	78	54	48	50	135	56	71	51
1950	70	252	6	23	5	19	11	24	6	20	19	24	10	20
	110	396	14	36	11	32	26	36	16	32	47	37	24	33
	150	540	27	45	20	41	48	46	29	42	86	47	44	43
	190	684	43	52	32	49	78	54	46	50	138	55	71	51



VSD50-1/.../000



VSD50-2/.../000



Dimensions [mm]

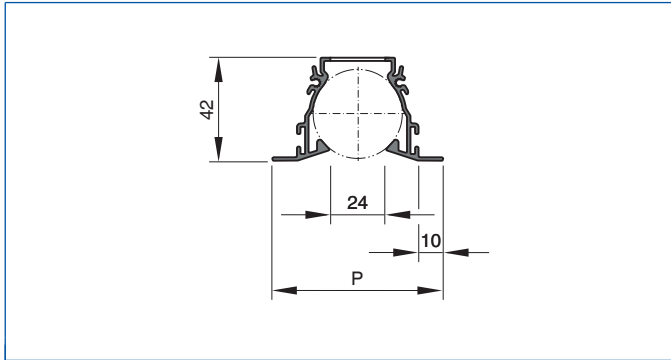
Variant	000	P	mm
VSD50-1			50
VSD50-2			92

Dimensions [mm]

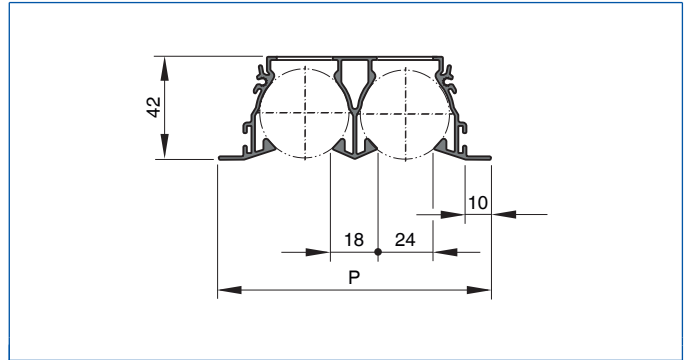
Nominal length	VSD50-1		VSD50-2		L_1 mm
	A_{eff} m ²	A_{eff} WS m ²	A_{eff} m ²	A_{eff} WS m ²	
600	0.0053	0.0060	0.0106	0.0121	600
750	0.0066	0.0076	0.0133	0.0151	750
900	0.0080	0.0091	0.0159	0.0181	900
1050	0.0093	0.0106	0.0185	0.0211	1050
1200	0.0106	0.0121	0.0212	0.0241	1200
1350	0.0119	0.0136	0.0238	0.0272	1350
1500	0.0133	0.0151	0.0265	0.0302	1500
1650	0.0146	0.0166	0.0291	0.0332	1650
1800	0.0159	0.0181	0.0318	0.0362	1800
1950	0.0172	0.0196	0.0344	0.0392	1950



VSD50-1/.../B00



VSD50-2/.../B00



Dimensions [mm]

Variant	B00	
	P	
	mm	
VSD50-1	70	
VSD50-2	112	

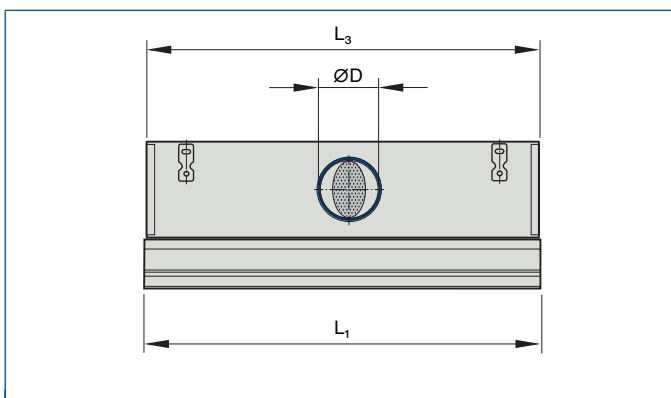
Dimensions [mm]

Nominal length	VSD50-1		VSD50-2		L ₁ mm
	A _{eff} m ²	A _{eff} WS m ²	A _{eff} m ²	A _{eff} WS m ²	
600	0.0053	0.0060	0.0106	0.0121	600
750	0.0066	0.0076	0.0133	0.0151	750
900	0.0080	0.0091	0.0159	0.0181	900
1050	0.0093	0.0106	0.0185	0.0211	1050
1200	0.0106	0.0121	0.0212	0.0241	1200
1350	0.0119	0.0136	0.0238	0.0272	1350
1500	0.0133	0.0151	0.0265	0.0302	1500
1650	0.0146	0.0166	0.0291	0.0332	1650
1800	0.0159	0.0181	0.0318	0.0362	1800
1950	0.0172	0.0196	0.0344	0.0392	1950

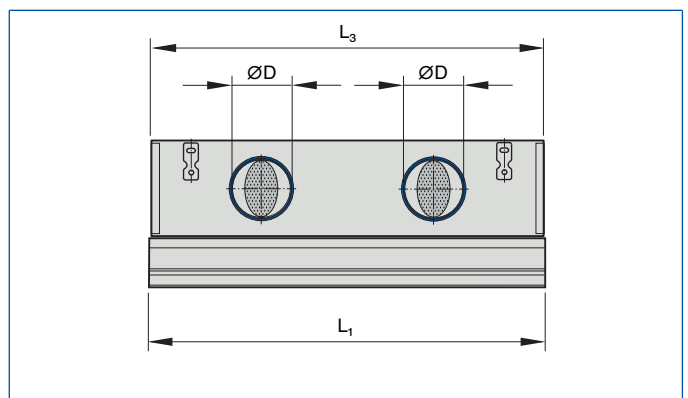
Dimensions [mm]

Variant	000		B00	
	P		P	
	mm		mm	
VSD50-1	50		70	
VSD50-2	92		112	

VSD50, LN: 600 - 1500



VSD50, LN: 1650 - 1950



Dimensions [mm]

Nominal length	L_1		L_3	
	mm		mm	
600	600		595	
750	750		745	
900	900		895	
1050	1050		1045	
1200	1200		1195	
1350	1350		1345	
1500	1500		1495	
1650	1650		1645	
1800	1800		1795	
1950	1950		1945	

VSD50-*-AS

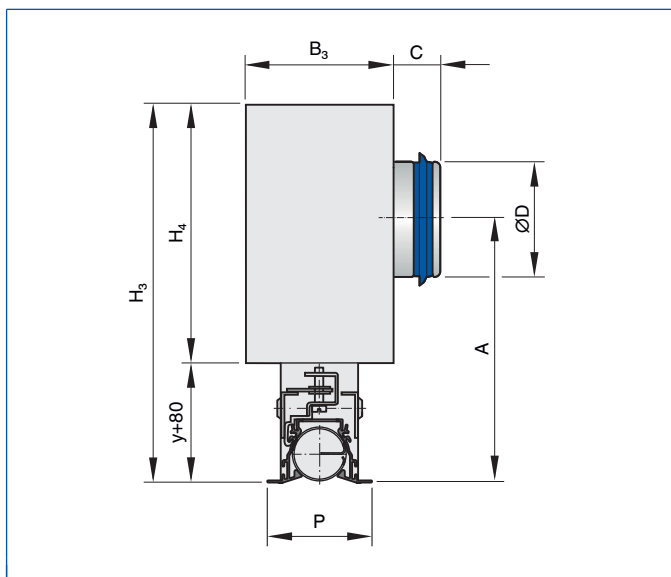


Illustration shows VSD50-1-AS-L-.../B00

Dimensions [mm]

Variant	B00													
	P													
	mm													
VSD50-1														70
VSD50-2														112

Dimensions [mm]

Variant	y = 0		y = 25		y = 50		y = 75		y = 100		B_3	H_4	$\varnothing D$	C
	H_3	A	H_3	A	H_3	A	H_3	A	H_3	A				
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
VSD50-1/... x 123	267	174	292	199	317	224	342	249	367	274	100	187	123	46
VSD50-1/... x 158	267	174	292	199	317	224	342	249	367	274	100	187	158	48
VSD50-2/... x 158	307	194	332	219	357	244	382	269	407	294	138	227	158	48
VSD50-2/... x 198	307	194	332	219	357	244	382	269	407	294	138	227	198	48



Weight [kg]

Nominal length	VSD50-1		VSD50-2	
	m			
	kg		kg	
600		4.0		5.0
750		5.0		6.1
900		5.9		7.2
1050		6.9		8.3
1200		7.8		9.4
1350		8.7		10.5
1500		9.7		11.6
1650		10.6		12.7
1800		11.5		13.8
1950		12.5		14.9

VSD50*-DS

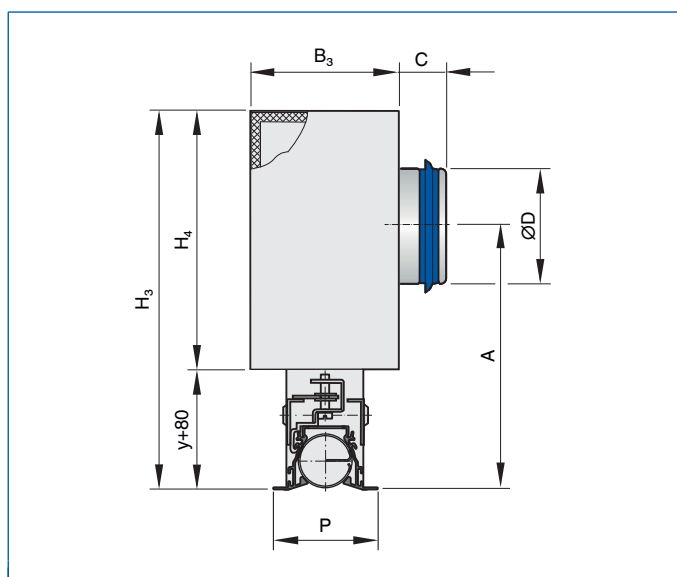


Illustration shows VSD50-1-DS-L/.../B00

Dimensions [mm]

Variant	B00														
	P														
	mm														
VSD50-1															70
VSD50-2															112

Dimensions [mm]

Variant	y = 0		y = 25		y = 50		y = 75		y = 100		B ₃	H ₄	ØD	C
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A				
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
VSD50-1/... × 123	287	174	312	199	337	224	362	249	387	274	138	207	123	46
VSD50-1/... × 158	287	174	312	199	337	224	362	249	387	274	138	207	158	48
VSD50-2/... × 158	327	194	352	219	377	244	402	269	427	294	176	247	158	48
VSD50-2/... × 198	327	194	352	219	377	244	402	269	427	294	176	247	198	48



Weight [kg]

Nominal length	VSD50-1		VSD50-2	
	m			
	kg		kg	
600		4.9		6.0
750		6.1		7.3
900		7.2		8.6
1050		8.3		10.0
1200		9.5		11.3
1350		10.6		12.6
1500		11.7		13.9
1650		12.9		15.3
1800		14.0		16.6
1950		15.1		17.9

VSD50*-AK

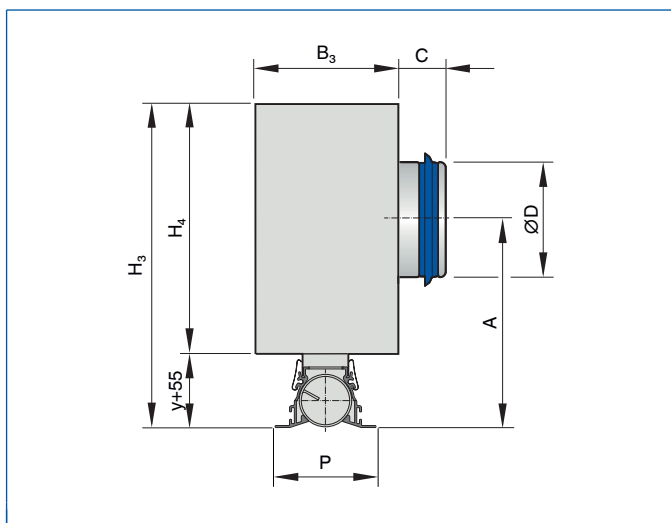


Illustration shows VSD50-1-AK-L/.../B00

Dimensions [mm]

Variant	000				B00													
	P																	
	mm				mm													
VSD50-1					50												70	
VSD50-2					92													112

Dimensions [mm]

Variant	y = 0		y = 25		y = 50		y = 75		y = 100		y = 125		B ₃	H ₄	ØD	C
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A				
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
VSD50-1/... x 123	242	149	267	174	292	199	317	224	342	249	367	274	100	187	123	46
VSD50-1/... x 158	242	149	267	174	292	199	317	224	342	249	367	274	100	187	158	48
VSD50-2/... x 158	282	169	307	194	332	219	357	244	382	269	407	294	138	227	158	48
VSD50-2/... x 198	282	169	307	194	332	219	357	244	382	269	407	294	138	227	198	48



Weight [kg]

Nominal length	VSD50-1		VSD50-2	
	kg	m	kg	m
600		3.4		4.3
750		4.2		5.3
900		5.0		6.3
1050		5.8		7.2
1200		6.6		8.2
1350		7.4		9.2
1500		8.2		10.1
1650		9.0		11.1
1800		9.8		12.1
1950		10.6		13.0

VSD50*-DK

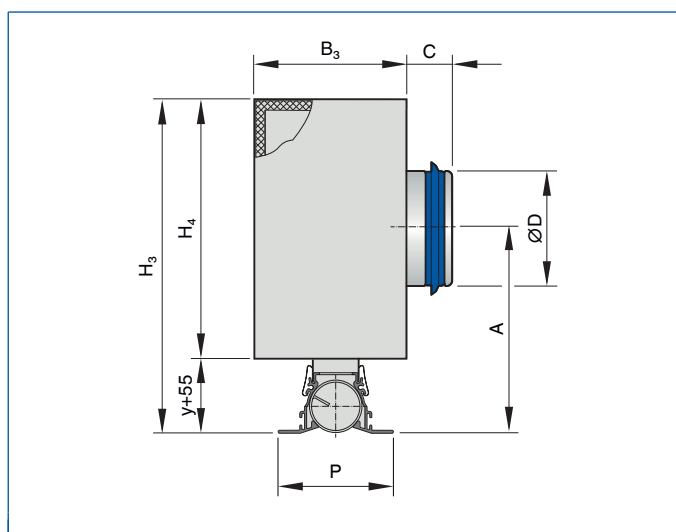


Illustration shows VSD50-1-DK-L /.../B00

Dimensions [mm]

Variant	000		B00	
	P		P	
	mm		mm	
VSD50-1	50		70	
VSD50-2	92		112	

Dimensions [mm]

Variant	y = 0		y = 25		y = 50		y = 75		y = 100		y = 125		B ₃	H ₄	ØD	C
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A				
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
VSD50-1/... × 123	262	149	287	174	312	199	337	224	362	249	387	274	138	207	123	46
VSD50-1/... × 158	262	149	287	174	312	199	337	224	362	249	387	274	138	207	158	48
VSD50-2/... × 158	302	169	327	194	352	219	377	244	402	269	427	294	176	247	158	48
VSD50-2/... × 198	302	169	327	194	352	219	377	244	402	269	427	294	176	247	198	48



Weight [kg]

Nominal length	VSD50-1		VSD50-2	
	m			
	kg		kg	
600		4.4		5.4
750		5.4		6.6
900		6.4		7.8
1050		7.4		9.0
1200		8.4		10.2
1350		9.4		11.4
1500		10.4		12.6
1650		11.4		13.8
1800		12.4		15.0
1950		13.4		16.2

VSD50*-AA

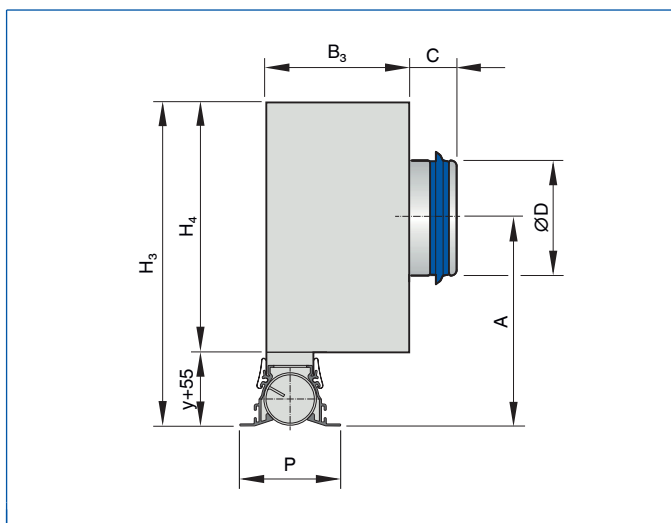


Illustration shows VSD50-1-AA-L/.../B00

Dimensions [mm]

Variant	000				B00			
	P							
	mm				mm			
VSD50-1					50			70
VSD50-2					92			112

Dimensions [mm]

Variant	y = 0		y = 25		y = 50		y = 75		y = 100		y = 125		B ₃	H ₄	ØD	C
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A				
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
VSD50-1/... x 123	242	149	267	174	292	199	317	224	342	249	367	274	100	187	123	46
VSD50-1/... x 158	242	149	267	174	292	199	317	224	342	249	367	274	100	187	158	48
VSD50-2/... x 158	282	169	307	194	332	219	357	244	382	269	407	294	138	227	158	48
VSD50-2/... x 198	282	169	307	194	332	219	357	244	382	269	407	294	138	227	198	48



Weight [kg]

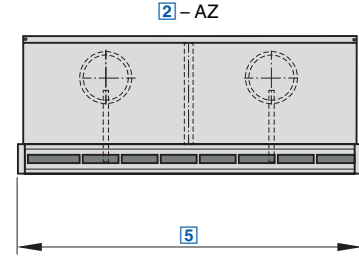
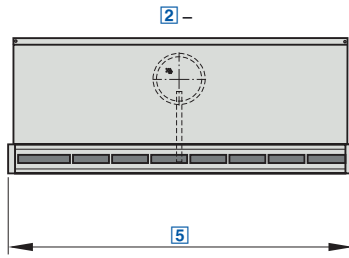
Nominal length	VSD50-1		VSD50-2	
	m		kg	
	kg		kg	
600		3.4		4.3
750		4.2		5.3
900		5.0		6.3
1050		5.8		7.2
1200		6.6		8.2
1350		7.4		9.2
1500		8.2		10.1
1650		9.0		11.1
1800		9.8		12.1
1950		10.6		13.0



Slot diffusers for wall installation

	Ceiling installation					Wall installation	
	PureLine 18	PureLine 35	VSD15	VSD35	VSD50	VSD50-1-LT	VSD35-3-AZ
Technical data							
Volume flow rate range	5 - 84 (l/s)/m	7 - 197 (l/s)/m	7 - 30 (l/s)/m	15 - 135 (l/s)/m	20 - 120 (l/s)/m	10 - 70 l/s	8 - 40 l/s
Volume flow rate range	17 - 302 (l/s)/m	27 - 709 (l/s)/m	25 - 108 (m ³ /h)/m	54 - 486 (m ³ /h)/m	72 - 432 (m ³ /h)/m	36 - 252 m ³ /h	30 - 144 m ³ /h
Air patterns							
Horizontal, one-way	●	●	●	●	●	●	●
Alternating horizontal	●	●	●	●	●		
Alternating angled	●	●	●	●	●		
Vertical	●	●					
Diffuser fixing							
Screw fixing	●	●			●	●	
Rigid connection	●	●	●				●
Clamp fixing			●	●	●		
Spring clip fixing						●	●
Air control elements							
Black	●	●	●	●	●	●	●
White	●	●	●	●	●	●	●
Grey	●	●					
Plenum box							
With lining (insulation)	●	●	●	●	●	●	
Neck extension		●		●	●		
Asymmetric diffuser face	●	●		●	●		
Nominal sizes							
Number of slots	1, 2	1, 2, 3, 4	1	1, 2, 3, 4	1, 2	1	3
Nominal width	18 mm	35 mm	15 mm	35 mm	50 mm	50 mm	35 mm
Nominal length	600 - 2000 mm	600 - 1950 mm	600 - 1500 mm	600 - 1950 mm	600 - 1950 mm	550, 1175 mm	600 - 1200 mm
Spigot	80, 100, 125, 140, 160, 200	80, 100, 125, 140, 160, 200	80	100, 125, 140, 160, 200	125, 160, 200	80, 100	80
Continuous linear arrangement if required	●	●	●	●	●		
Corner section	●	●		●	●		
Explanation							
● - Standard							





For the space saving installation into lightweight partition walls with a metal support structure

 **Order code**

VSD50 - 1 - LT - AZ - M - L / 1175 / P1 - RAL ... / WW

1 **2** **3** **4** **5** **6** **7**

<p>1 Type VSD50-1-LT Slot diffuser for lightweight partition walls</p> <p>2 Construction AZ No entry: supply or extract air Supply and extract air combination (only nominal size 1175 mm)</p> <p>3 Damper blade for volume flow rate balancing M No entry: none With</p> <p>4 Accessories</p>	<p>L No entry: none With lip seal</p> <p>5 Nominal size [mm] Nominal length L_N 550 1175</p> <p>6 Exposed surface No entry: anodised, E6-C-0, natural colour P1 Powder-coated, specify RAL CLASSIC colour</p>	<p>Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p> <p>7 Colour of air control elements WW No entry: similar to RAL 9005, black Similar to RAL 9010, white</p>
---	--	--

- + Features**
- Slot diffusers with 50 mm diffuser face (nominal width) and adjustable air control elements
 - Nominal length: 550, 1175 mm, 1 slot
 - Volume flow rate range 10 - 70 l/s or 36 - 252 m³/h
 - Diffuser face made of extruded aluminium sections
 - For variable and constant volume flows
 - Installation into lightweight partition walls with a 50 mm wide metal support structure and a wall thickness of 100 mm
 - Diffuser face with spring clip fixing
 - High induction results in a rapid reduction of the temperature difference and airflow velocity
 - Individually adjustable air control elements to meet individual local requirements

- Optional equipment and accessories
- Exposed diffuser face available in RAL CLASSIC colours
 - Damper blade for volume flow rate balancing, can be adjusted through the diffuser face

- Application**
- Type VSD50-1-LT slot diffusers are used as supply air or extract air devices or as supply and extract air combinations in comfort zones
 - Angled one-way air discharge for turbulent flow (mixed flow ventilation)
 - High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
 - For variable and constant volume flows
 - For supply air to room air temperature differences from -10 to +10 K
 - For room heights up to 4 m (lower edge of suspended ceiling)
 - For the space saving installation into lightweight partition walls with a 50 mm wide metal support structure and a wall thickness of 100 mm

- Variants**
- VSD50 -1-LT: Slot diffuser for supply air or extract air
 - VSD50 -1-LT-AZ: Slot diffuser as a supply and extract air combination (only LN 1175 mm)
 - VSD50 -1-LT-.../WW: White air control elements

- Attachments**
- Damper blade for volume flow rate balancing

- & Accessories**
- Lip seal

- ★ Special characteristics**
- Individually adjustable air control elements to meet individual local requirements
 - High induction results in a rapid reduction of the temperature difference and airflow velocity
 - Diffuser face has been optimised for maximum volume flow rate at low sound power levels
 - Internal acoustic lining that reduces room-to-room cross talk through the ductwork
 - Diffuser face with spring clip fixing that allows for easy installation of the diffuser face after drywalling is complete

- ISO Standards and guidelines**
- Sound power level of the air-regenerated noise measured according to EN ISO 5135



 **Technical data**

Nominal length	550, 1175 mm
Number of slots	1
Minimum volume flow rate	10, 25 l/s or 36, 90 m ³ /h
Maximum volume flow rate, with L _{WA} ≈ 50 dB(A)	35, 70 l/s or 126, 252 m ³ /h
Supply air to room air temperature difference	-10 to +10 K

VSD50-1-LT, supply air, sound power level and total differential pressure

Nominal length	Ḃ	Ḃ	Damper blade position					
			0°		45°		90°	
			Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
550	10	36	7	<15	11	<15	29	<15
	15	54	17	18	24	23	64	22
	25	90	46	34	66	38	179	40
	35	126	90	45	130	47	350	51
1175	25	90	18	19	26	24	63	26
	45	162	60	36	86	40	204	42
	55	198	89	43	128	45	305	47
	70	252	145	50	207	52	494	54

VSD50-1-LT, extract air, sound power level and total differential pressure

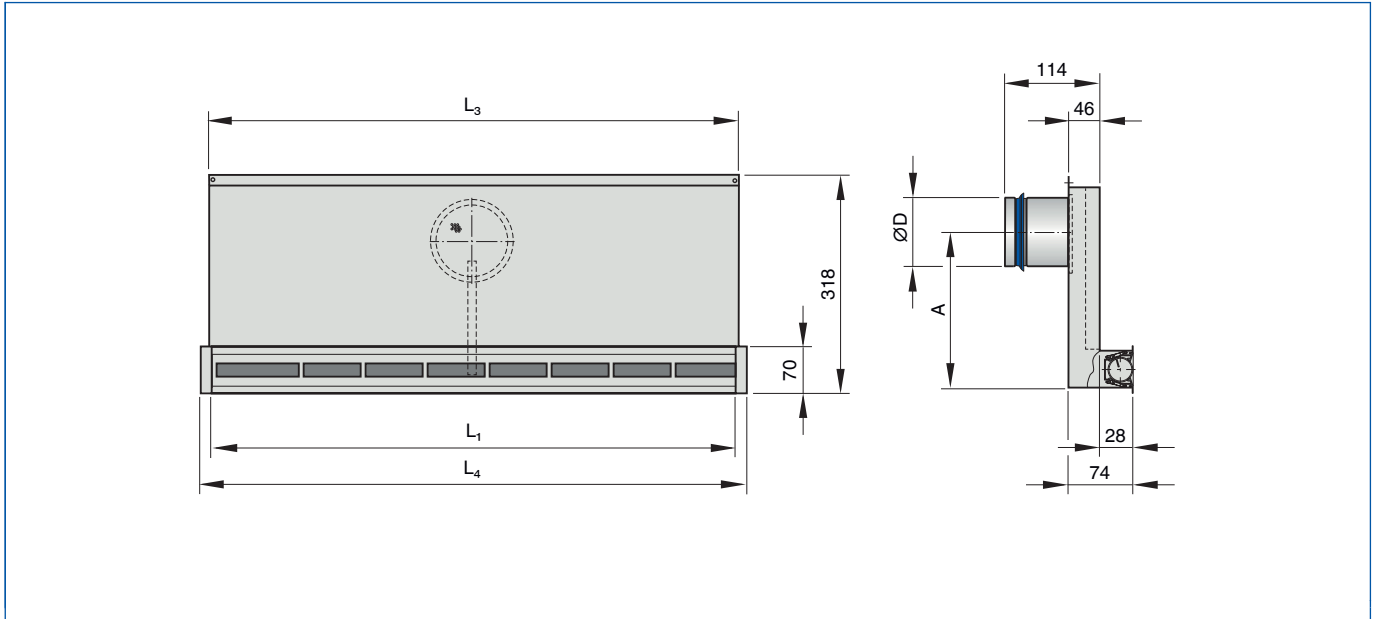
Nominal length	Ḃ	Ḃ	Damper blade position					
			0°		45°		90°	
			Δp _t	L _{WA}	Δp _t	L _{WA}	Δp _t	L _{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
550	10	36	7	<15	9	<15	33	18
	15	54	16	15	21	18	74	31
	25	90	43	37	59	39	205	47
	35	126	85	51	116	53	401	58
1175	25	90	18	17	26	20	62	26
	45	162	59	34	85	38	199	42
	55	198	89	40	126	44	298	48
	70	252	144	47	204	51	483	54

VSD50-1-LT-AZ, supply and extract air combination, sound power level and total differential pressure

Nominal length	Ḃ	Ḃ	Damper blade position								
			0°			45°			90°		
			Δp _t supply air	Δp _t extract air	L _{WA}	Δp _t supply air	Δp _t extract air	L _{WA}	Δp _t supply air	Δp _t extract air	L _{WA}
			Pa		dB(A)	Pa		dB(A)	Pa		dB(A)
1175	10	36	7	6	<15	12	10	15	30	33	17
	15	54	15	13	20	26	23	26	68	75	29
	25	90	43	35	36	72	64	40	188	208	45
	40	144	110	90	50	186	163	53	482	532	61



VSD50-1-LT

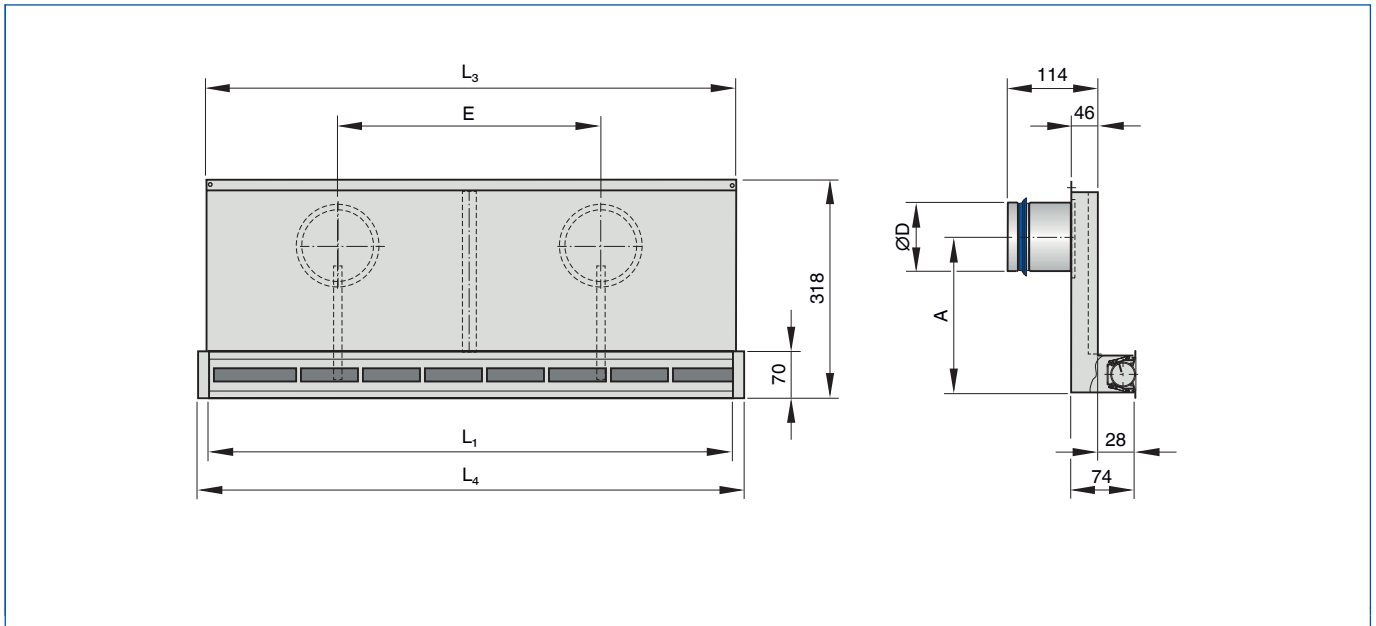


Dimensions [mm] and weight [kg]

Nominal length	L ₁	L ₃	L ₄	ØD	A	A _{eff}	m
	mm	mm	mm	mm	mm	m ²	kg
550	530	550	586	78	227	0.0055	6.1
1175	1155	1175	1211	98	227	0.0118	12.3

A_{eff}: One-way angled air discharge (supply air)

VSD50-1-LT-AZ

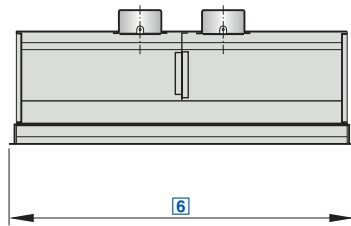


Dimensions [mm] and weight [kg]

Nominal length	L ₁	L ₃	L ₄	ØD	A	E	A _{eff}	m
	mm	mm	mm	mm	mm	mm	m ²	kg
1175	1155	1175	1211	78	227	620	0.0055	13.6

A_{eff}: One-way angled air discharge (supply air)





Ventilation and extract ventilation combined in one casing

Order code

VSD35 - 3 - AZ - AS - ZT - M - L / 900 / C2 / W00 / P1 - RAL ... / WW

1 2 3 4 5 6 7 8 9 10

<p>1 Type VSD35-3-AZ Slot diffuser as supply and extract air combination</p> <p>2 Connection Plenum box AK With rigid fixing AS With spring clip fixing</p> <p>3 Acoustic lining for cross talk reduction (accessory) No entry: none ZT With</p> <p>4 Damper blade for volume flow rate balancing No entry: none M With</p>	<p>5 Accessories No entry: none L With lip seal</p> <p>6 Nominal size [mm] 600, 750, 900, 1050, 1200</p> <p>7 End pieces No entry: none C2 Both ends with factory fitted end angles</p> <p>8 Fixing (accessory) No entry: none W00 Fixing brackets for fixing the diffuser to the wall (supplied separately)</p>	<p>9 Exposed surface No entry: anodised, E6-C-0, natural colour P1 Powder-coated, specify RAL CLASSIC colour Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p> <p>10 Colour of air control elements No entry: similar to RAL 9005, black WW Similar to RAL 9010, white</p>
--	--	--

+ Features

- Slot diffusers with 35 mm nominal width, used as supply and extract air combination
- ▶ Nominal length from 600 to 1200 mm, 3 slots
 - ▶ Volume flow rate range 8 - 40 l/s or 30 - 144 m³/h
 - ▶ Diffuser face made of extruded aluminium sections
 - ▶ For variable and constant volume flows
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
 - ▶ Individually adjustable air control elements to meet individual local requirements

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours
- ▶ Damper blade for volume flow rate balancing, can be adjusted through the diffuser face
- ▶ Acoustic lining that ensures very good transmission loss
- ▶ Spring clip fixing
- ▶ End angles, fixing brackets

Application

- ▶ Type VSD35-3-AZ slot diffusers are used as

- supply and extract air combinations in comfort zones
- ▶ Angled one-way air discharge for turbulent flow (mixed flow ventilation)
 - ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
 - ▶ For variable and constant volume flows
 - ▶ For supply air to room air temperature differences from -10 to +10 K
 - ▶ For room heights up to 4 m (lower edge of suspended ceiling)
 - ▶ For horizontal installation into walls and bulkheads

◊ Variants

- ▶ VSD35-3-AZ-...: supply and extract air combination without acoustic lining (cross talk reduction)
- ▶ VSD35-3-AZ-...-ZT: supply and extract air combination with acoustic lining (cross talk reduction)
- ▶ VSD35-3-AZ-...: Black air control elements
- ▶ VSD35-3-AZ-.../WW: White air control elements

Plenum box and diffuser face fixing

- ▶ **AK**: Plenum box with rigid fixing
- ▶ **AS**: Plenum box with spring clip fixing

⬡ Attachments

- ▶ Damper blade for volume flow rate balancing
- ▶ End angles

& Accessories

- ▶ Lip seal
- ▶ Fixing brackets

★ Special characteristics

- ▶ Individually adjustable air control elements to meet individual local requirements
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
- ▶ Diffuser face has been optimised for maximum volume flow rate at low sound power levels
- ▶ Suitable for continuous linear arrangement

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135





Technical data

Nominal length	600, 750, 900, 1050, 1200 mm
Number of slots	3
Minimum volume flow rate, with $\Delta t_z = -6$ K	8 - 15 l/s or 30 - 54 m ³ /h
Maximum volume flow rate, with $L_{WA} \approx 50$ dB(A)	25 - 40 l/s or 90 - 144 m ³ /h
Supply air to room air temperature difference	-10 to +10 K

VSD35-3-AZ, sound power level and total differential pressure

Nominal length	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position								
			0°			45°			90°		
			$\Delta p_{t \text{ supply air}}$	$\Delta p_{t \text{ extract air}}$	L_{WA}	$\Delta p_{t \text{ supply air}}$	$\Delta p_{t \text{ extract air}}$	L_{WA}	$\Delta p_{t \text{ supply air}}$	$\Delta p_{t \text{ extract air}}$	L_{WA}
			Pa		dB(A)	Pa		dB(A)	Pa		dB(A)
600	8	30	6	3	15	9	5	17	26	13	24
	15	54	19	9	31	31	16	34	85	43	40
	25	90	54	26	45	86	45	47	237	120	54
	30	108	77	37	50	124	65	52	341	173	59
750	10	37	7	4	21	12	8	23	28	19	31
	20	72	28	15	38	44	31	40	107	74	47
	25	90	44	24	44	68	48	46	167	116	53
	30	108	64	35	48	98	70	51	241	167	57
900	12	44	9	6	23	14	10	26	37	28	29
	20	72	24	15	36	37	27	39	97	74	44
	30	108	55	33	46	82	60	50	217	167	55
	35	126	74	45	51	112	82	54	296	228	60
1050	15	54	12	8	28	17	15	30	58	39	38
	25	90	34	22	40	48	41	44	161	110	51
	35	126	66	43	49	95	80	53	316	215	60
	40	144	86	56	52	124	104	56	413	281	63
1200	15	54	11	8	26	20	13	29	55	41	38
	30	108	44	30	44	79	52	47	218	165	56
	35	126	60	41	48	107	71	52	297	225	60
	40	144	79	54	51	140	92	55	388	293	63

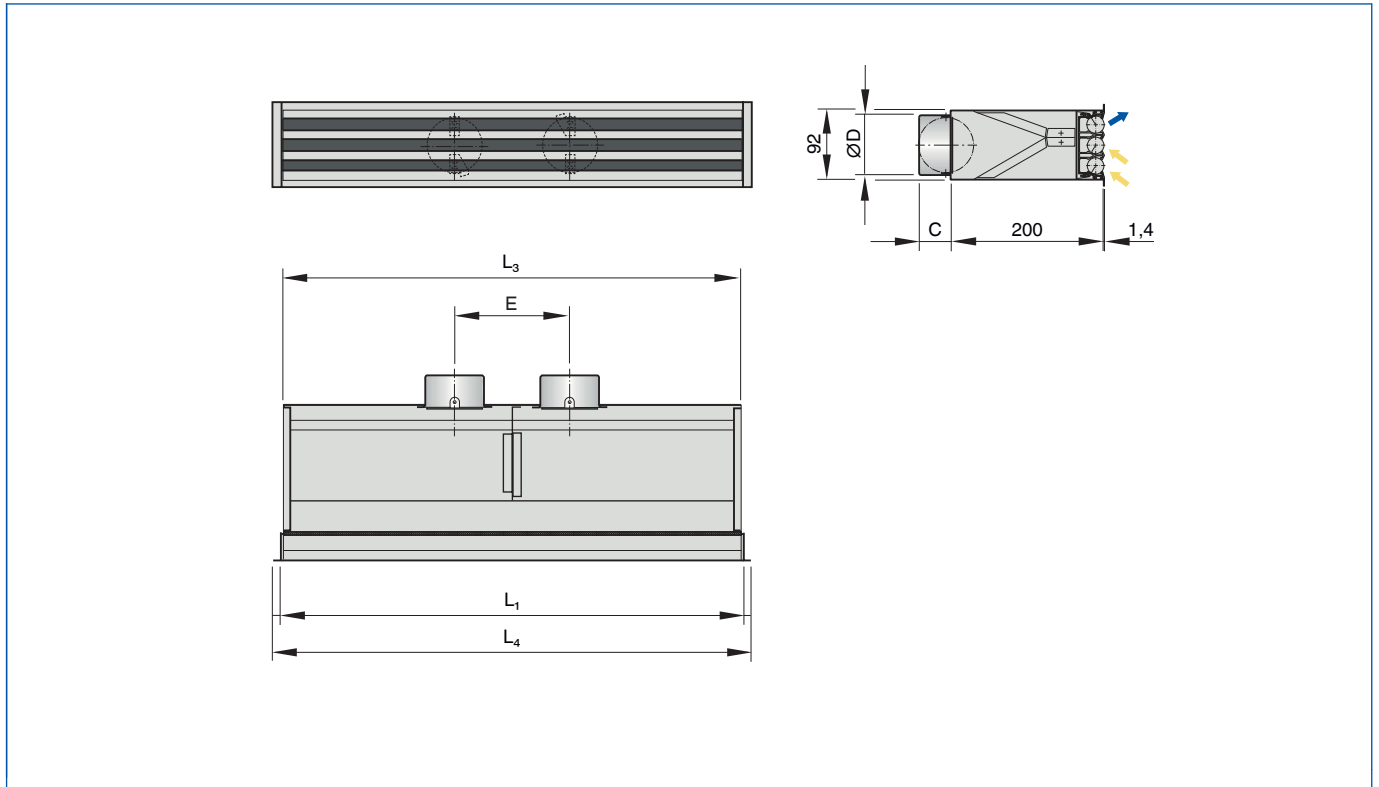
VSD35-3-AZ-ZT, sound power level and total differential pressure

Nominal length	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position								
			0°			45°			90°		
			$\Delta p_{t \text{ supply air}}$	$\Delta p_{t \text{ extract air}}$	L_{WA}	$\Delta p_{t \text{ supply air}}$	$\Delta p_{t \text{ extract air}}$	L_{WA}	$\Delta p_{t \text{ supply air}}$	$\Delta p_{t \text{ extract air}}$	L_{WA}
			Pa		dB(A)	Pa		dB(A)	Pa		dB(A)
600	8	30	13	9	18	13	10	18	22	17	20
	15	54	42	30	35	43	35	36	73	58	36
	20	72	74	53	44	76	62	44	130	104	44
	25	90	116	83	50	119	96	51	203	162	50
750	10	36	19	15	24	12	16	25	32	31	26
	15	54	43	33	36	44	36	37	73	69	37
	20	72	76	58	44	68	65	46	129	122	44
	25	90	118	91	51	98	101	52	202	191	50
900	12	44	19	14	24	14	17	24	45	36	26
	20	72	51	37	38	37	44	37	118	95	39
	25	90	79	58	44	82	69	43	184	149	45
	30	108	114	83	49	112	100	48	265	215	50
1050	15	54	27	21	30	17	31	31	65	56	32
	25	90	76	59	44	48	86	45	182	155	45
	30	108	110	84	49	95	124	50	261	223	50
	35	126	149	115	53	124	169	54	356	304	54



Nominal length	\dot{V}	\dot{V}	Damper blade position								
			0°			45°			90°		
			$\Delta p_{t \text{ supply air}}$	$\Delta p_{t \text{ extract air}}$	L_{WA}	$\Delta p_{t \text{ supply air}}$	$\Delta p_{t \text{ extract air}}$	L_{WA}	$\Delta p_{t \text{ supply air}}$	$\Delta p_{t \text{ extract air}}$	L_{WA}
			Pa		dB(A)	Pa		dB(A)	Pa		dB(A)
l/s	m³/h										
1200	15	54	28	21	30	20	26	29	65	54	31
	20	72	49	38	38	79	45	37	116	95	39
	30	108	111	85	49	107	102	48	261	215	49
	35	126	151	115	53	140	139	52	355	292	53

VSD35-3-AZ



Dimensions [mm]

Nominal length	A_{eff} m²	L_1 mm
600	0.0039	600
750	0.0049	750
900	0.0058	900
1050	0.0068	1050
1200	0.0078	1200

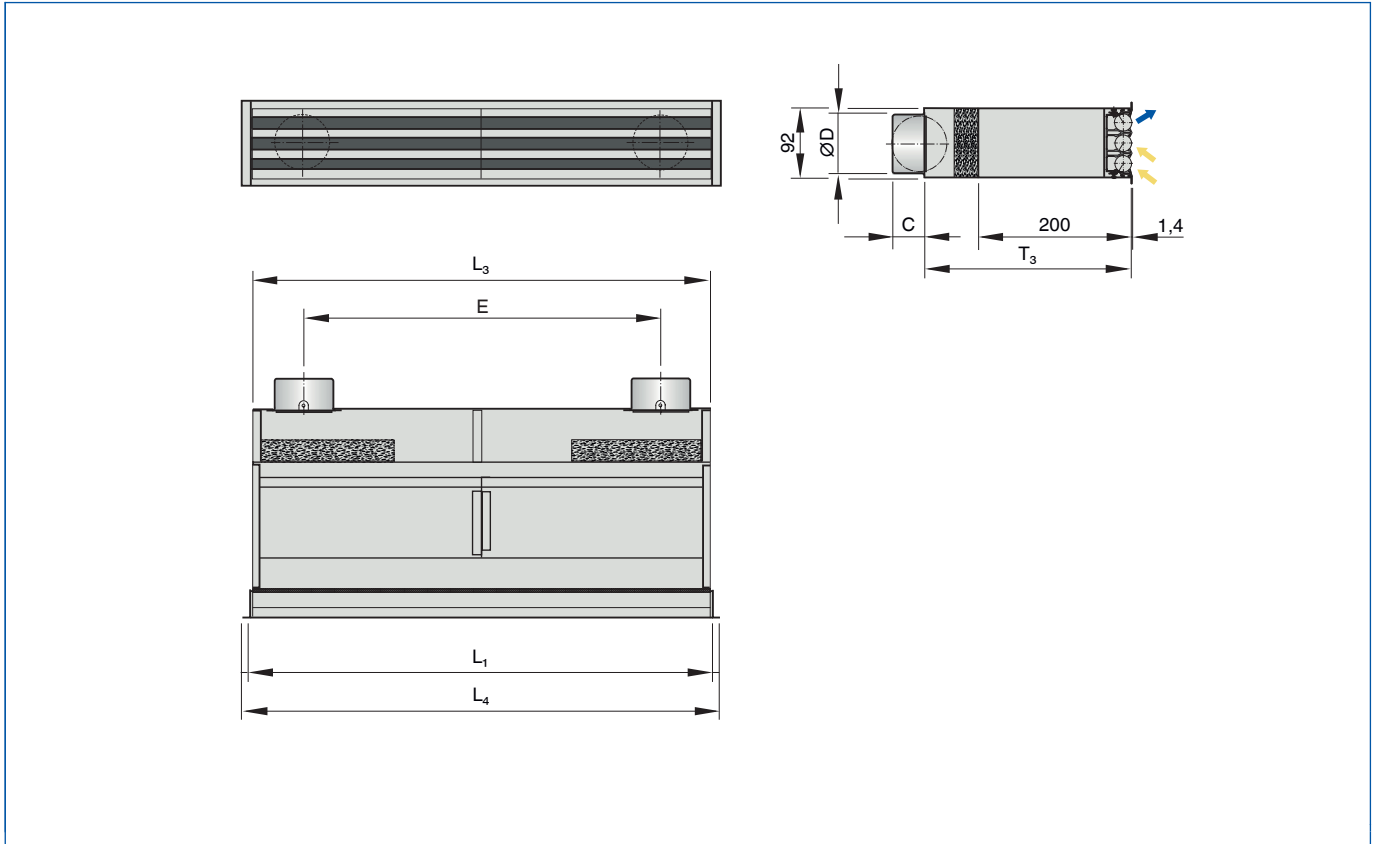
Dimensions [mm] and weight [kg]

Nominal length	L_1 mm	L_3 mm	L_4 mm	$\varnothing D$ mm	C mm	E mm	m kg
600	600	595	622	78	40	150	3.9
750	750	745	772	78	40	150	4.8
900	900	895	922	78	40	150	5.6
1050	1050	1045	1072	78	40	150	6.5
1200	1200	1195	1222	78	40	150	7.4

A_{eff} : One-way angled air discharge (supply air)



VSD35-3-AZ-...-ZT



Dimensions [mm]

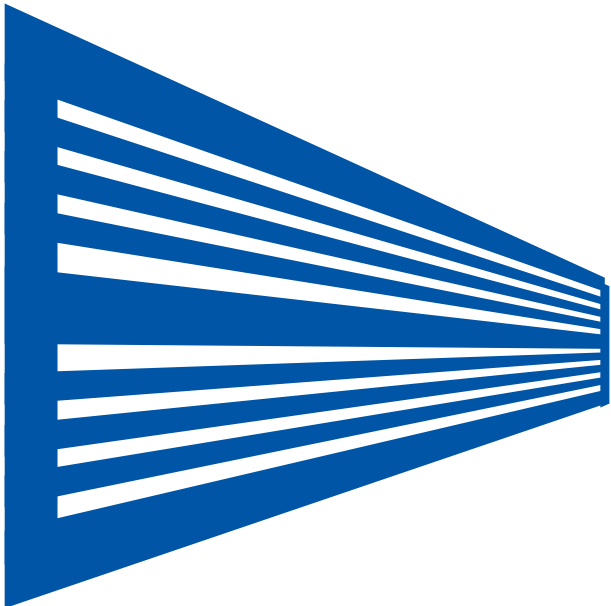
Nominal length	A_{eff}		L_1
	m^2		
600	0.0039		600
750	0.0049		750
900	0.0058		900
1050	0.0068		1050
1200	0.0078		1200

Dimensions [mm] and weight [kg]

Nominal length	L_1	L_3	L_4	T_3	ØD	C	E	m
	mm	mm	mm	mm	mm	mm	mm	kg
600	600	595	622	270	78	40	464	4.9
750	750	745	772	270	78	40	464	5.8
900	900	895	922	290	78	40	664	7.2
1050	1050	1045	1072	290	78	40	664	8.1
1200	1200	1195	1222	290	78	40	664	8.9



VENTILATION GRILLES



3 VENTILATION GRILLES

3.1 Ventilation grilles for installation into walls, sills or rectangular ducts

	Ventilation grilles, made of high-quality aluminium - also for continuous horizontal runs	X-GRILLE Cover	198
	Ventilation grilles with flat border construction - also for continuous horizontal runs	X-GRILLE Basic	202
	Ventilation grilles, made of aluminium, with individually adjustable, horizontal blades and diffuser-type front border	ASL	206
	Ventilation grilles, made of aluminium, with individually adjustable, horizontal blades	AT	209
	Ventilation grilles, made of aluminium, with individually adjustable, vertical blades	VAT	212
	Ventilation grilles, made of aluminium, with fixed horizontal blades - also for horizontal runs	AH	215
	Ball impact resistant ventilation grille made of aluminium, with fixed horizontal blades	AWT	220
	Ventilation grilles, made of sheet steel, with individually adjustable, horizontal blades and diffuser-type front border - also for horizontal runs	SL	223
	Ventilation grilles, made of sheet steel, with individually adjustable, horizontal blades	TR	227
	Ventilation grilles, made of sheet steel, with individually adjustable, vertical blades	TRS	230



Ventilation grilles, made of galvanised sheet steel, with individually adjustable, vertical blades, for installation into rectangular ducts

TRS-K

233

3.2 Ventilation grilles for floor installation



Ventilation grilles, made of aluminium, with fixed longitudinal blades, for floor installation - also for horizontal runs

AF

237



Grille cores made of aluminium, with fixed horizontal blades

EF

242

3.3 Ventilation grilles for door and wall installation



Non-vision air transfer grilles, made of aluminium, with fixed horizontal blades

AGS

246

3.4 Ventilation grilles for installation into circular ducts



Ventilation grilles, made of galvanised sheet steel, with individually adjustable, vertical blades, for installation into circular ducts

TRS-R

249

3.5 Volume flow rate balancing



Damper units, made of dip coated sheet steel, for installation into rectangular ducts

AGW

253



Hit and miss dampers, made of sheet steel, for installation into rectangular ducts

ASW

254



Damper units, made of dip coated sheet steel, with air control blades, for installation into rectangular ducts

DGW

255

Ventilation grilles for installation into walls, sills or rectangular ducts

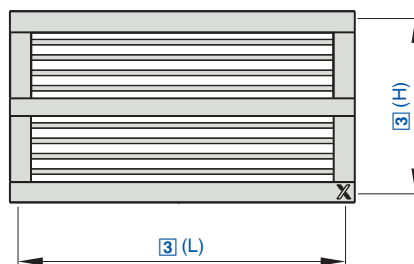
	Installation into walls, sills or rectangular ducts										
	X-GRILLE Cover	X-GRILLE Basic	ASL	AT	VAT	AH	AWT	SL	TR	TRS	TRS-K
Blades											
Longitudinal	●	●	●	●		●	●	●	●		
Transverse					●					●	●
Fixed						●	●				
Adjustable	●	●	●	●	●			●	●	●	●
Aluminium	●	●	●	●	●	●	●				
Galvanised sheet steel									●	●	●
Sheet steel								●	●	●	
Discharge angle	var.	var.	var.	var.	var.	0°, 15°	0°	var.	var.	var.	var.
Blade pitch [mm]	20	20	16.7	16.7	16.7	12.5	16.7	20	20	20	20
Front border											
Width of longitudinal section [mm]	28	26	28	23, 27	23, 27	20, 28	30	28	27	27	27
Width of transverse section [mm]	28	26	28	23, 27	23, 27	20, 28	30	20	27	27	27
Aluminium	●		●	●	●	●	●				
Galvanised sheet steel		●							●	●	●
Sheet steel								●	●	●	
Concealed screw fixing	●	●	●	●	●	●		●	●	●	
Spring clip fixing	●	●	●	●	●	●					
Screw fixing	●			●	●	●	●		●	●	●
Attachments											
AG, AS, D,DG	●	●	●	●	●	●	●	●	●	●	
*S, *5											●
Accessories											
Installation subframe	●	●	●	●	●	●	●	●	●	●	●
Installation subframe with filter casing	●	●		●	●	●		●	●	●	
Nominal sizes											
Length [mm]	225 - 1225	225 - 1225	225 - 1225	225 - 1225	225 - 1225	225 - 1225	325 - 1225	225 - 1225	225 - 1225	225 - 1225	225 - 1225
Horizontal run section	●	●				●		●			
Height [mm]	125 - 525	125 - 525	125 - 525	125 - 525	75 - 525	75 - 425	125 - 325	125 - 525	125 - 525	75 - 325	75 - 325
Technical data											
Volume flow rate range [l/s]*	16 - 2554	19 - 2651	11 - 1999	11 - 1999	11 - 1999	10 - 1234	17 - 949	11 - 1999	11 - 1999	11 - 1999	11 - 1999
Volume flow rate range [m³/h]*	58 - 9194	68 - 9544	40 - 7196	40 - 7196	40 - 7196	36 - 4442	61 - 3416	40 - 7196	40 - 7196	40 - 7196	40 - 7196
Explanation											
● - Standard											
○ - Optional											

*V_{max} applies to a grille without damper unit, which is fully open and has a maximum sound power level of 40 dB(A)


List of abbreviations

L_{WA} [dB(A)]	A-weighted sound power level of air-regenerated noise
\dot{V} [m ³ /h] and [l/s]	Volume flow rate
L [mm]	Nominal length of the ventilation grille
H [mm]	Nominal height of the ventilation grille
m [kg]	Weight
Δp_t [Pa]	Total differential pressure
l_s [m]	Distance from single grille or horizontal run section (throw distance)





Ventilation grilles, made of high-quality aluminium - also for continuous horizontal runs

Order code

X-GRILLE-Cover – AS / L x H / B1 / VS / P1 – RAL ... / P2 – RAL ...

1 2 3 4 5 6 7

1 Type

X-GRILLE-Cover Single grille

2 Attachments

- A** Without (grille face only)
- AG** Damper unit, opposed action blades
- AS** Hit and miss damper
- D** Air direction control, blades installed at 90° to the front blades, independently adjustable
- DG** D combined with AG

3 Nominal size [mm]

L x H

4 Installation subframe

VS, KF only with installation subframe
No entry: none

B1 With

5 Fixing

No entry: countersunk holes, concealed by cover plates
VS Concealed screw fixing
KF Spring clip fixing
VS, KF only with installation subframe

P1 Powder-coated, RAL ... CLASSIC

7 Surface finish - cover plates

No entry: powder-coated RAL 9006, white aluminium

P2 Powder-coated, RAL ... CLASSIC

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

6 Surface (border and blades)

No entry: powder-coated RAL 9005, jet black

Order code

X-GRILLE-Cover – E – R – AG / L x H / D1 / VS / P1 – RAL ... / P2 – RAL ...

1 2 3 4 5 6 7 8 9

1 Type

X-GRILLE-Cover Horizontal run section

2 Section

- E** End section
- M** Middle section

3 End section

- Specify only for end section
- R** Right end section
- L** Left end section

4 Attachments

- A** Without (grille face only)
- AG** Damper unit, opposed action blades
- D** Air direction control, blades installed at 90° to the front blades, independently adjustable

DG D combined with AG

5 Nominal size [mm]

L x H
Length
Middle section: 2000 mm
End section: 950 - 2025 mm
Height: 125, 225, 325

6 Installation subframe

VS only with installation subframe
No entry: none

D1 For end section

F1 For middle section

7 Fixing

No entry: countersunk holes, concealed by cover plates

VS Concealed screw fixing
VS only with installation subframe

8 Surface (border and blades)

No entry: powder-coated RAL 9005, jet black

P1 Powder-coated, RAL ... CLASSIC

9 Surface finish - cover plates

No entry: powder-coated RAL 9006, white aluminium

P2 Powder-coated, RAL ... CLASSIC

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

+ Features

The new X-GRILLE Cover ventilation grilles, made of high-quality aluminium combine function with an attractive design; they can be installed in walls, sills or rectangular ducts.

- ▶ Nominal sizes 225 x 125 - 1225 x 525 mm

- ▶ Volume flow rate range 16 - 2554 l/s or 58 - 9194 m³/h
- ▶ Energy-efficient and acoustically optimised air discharge
- ▶ Symmetric blade profile for two-way entry flow
- ▶ Uniform look and easy adjustment due to

- concealed blade linkage
- ▶ Concealed, optimised screw fixing
- ▶ Linear look, ideal for continuous horizontal runs
- ▶ Easily exchangeable cover plates allow for a lively two-colour look
- ▶ Use of existing rear assemblies



- ▶ Easy replacement of existing grilles due to standard installation dimensions

Optional equipment and accessories

- ▶ Installation subframe
- ▶ Attachments for volume flow rate balancing and air direction control
- ▶ Concealed screw fixing
- ▶ Spring clip fixing

X **Application**

- ▶ Ventilation grille of Type X-GRILLE Cover as supply air or extract air variant for comfort zones and industrial zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Two-colour look blends in nicely with the interior of reception or executive rooms
- ▶ Directed supply air discharge for mixed flow ventilation
- ▶ Blades are adjustable to meet different local

- requirements
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +4 K
- ▶ For installation in walls, sills and rectangular ducts

◻ **Variants**

- ▶ Single grille
- ▶ Horizontal run section

Fixing

- ▶ Countersunk holes, concealed by cover plate
 - ▶ VS: Concealed screw fixing
 - ▶ KF: Spring clip fixing
- VS, KF only with installation subframe

◻ **Attachments**

- ▶ AG, AS, D, DG: For volume flow rate balancing and for air direction control

& **Accessories**

- ▶ Installation subframe: For the fast and simple installation of ventilation grilles

★ **Special characteristics**

- ▶ Symmetric blade profile for two-way entry flow
- ▶ Concealed blade linkage for adjusting the blades simultaneously
- ▶ Countersunk screw holes, covered by cover plates, allow for screw fixing
- ▶ Easily exchangeable cover plates allow for a lively two-colour look
- ▶ Linear look, ideal for continuous horizontal runs

ISO **Standards and guidelines**

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

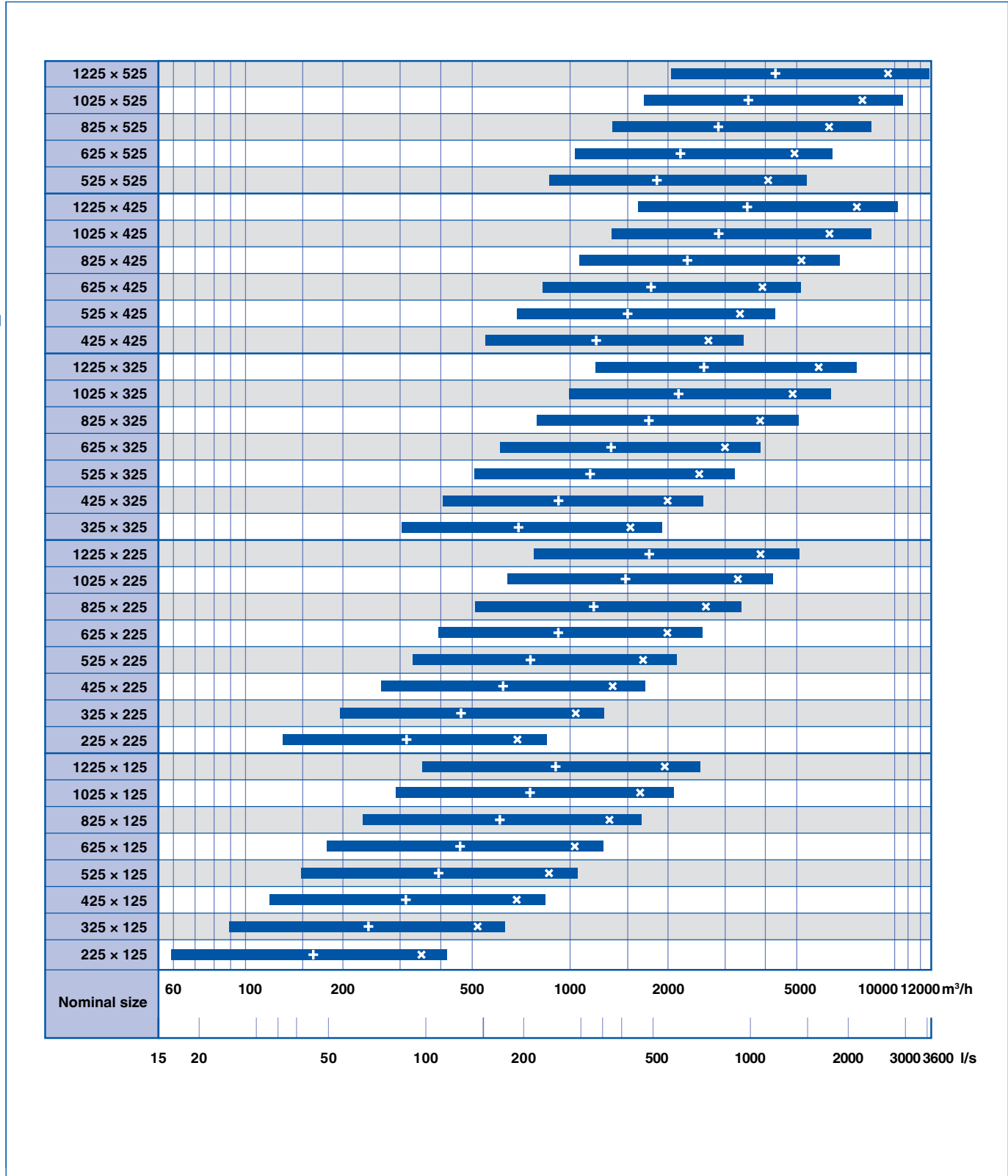
📈 **Technical data**

Nominal sizes	225 × 125 to 1225 × 525 mm
Horizontal run section	H: 125, 225, 325 mm
Minimum volume flow rate	16 - 568 l/s or 58 - 2045 m ³ /h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	97 - 2651 l/s or 350 - 9544 m ³ /h
Supply air to room air temperature difference	-12 to +4 K

Volumen flow rates for single grille for supply air.



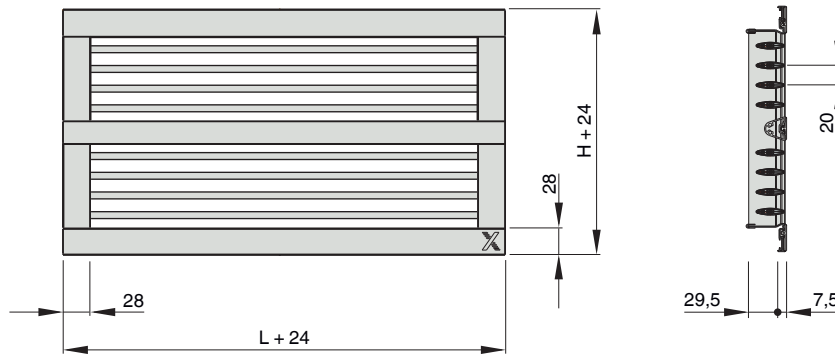
X-GRILLE Cover, X-GRILLE Basic, volume flow rate ranges



× LWA = 40 dB(A) with unrestricted airflow+ LWA = 40 dB(A) with airflow restricted by 50 %



X-GRILLE Cover, 28 mm wide front border



L Nominal length
Vertical centre mullion if L > 625 mm

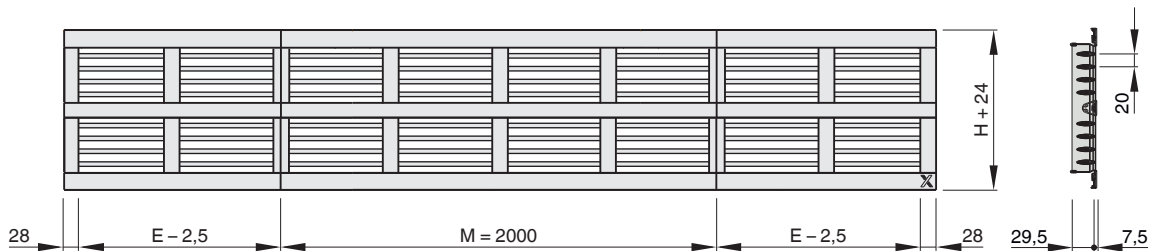
H Nominal height
Horizontal centre mullion from H = 225 mm

X-GRILLE Cover, single grille

H	L [mm]							
	225	325	425	525	625	825	1025	1225
mm	m							
	kg							
125	0.4	0.6	0.7	0.9	1.0	1.7	2.1	2.5
225	0.6	0.9	1.1	1.3	1.5	2.3	2.9	3.4
325		1.1	1.4	1.7	2.0	3.0	3.6	4.3
425			1.9	2.3	2.7	3.9	4.7	5.6
525				2.7	3.2	4.5	5.5	6.5

Weights apply to ventilation grilles without attachments

X-GRILLE Cover, continuous horizontal run



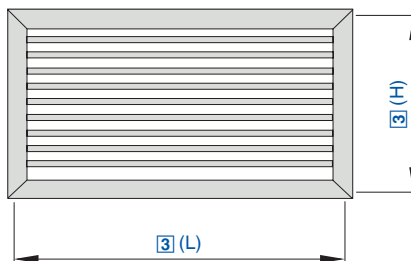
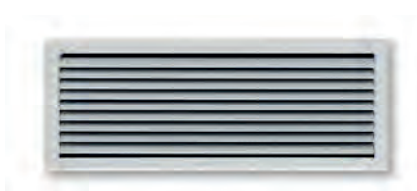
E End section M Middle section H Nominal height

X-GRILLE Cover, continuous horizontal run

H	Section	
	E	M
mm	kg/m	kg
125	2.0	4.0
225	2.8	5.6
325	3.5	7.0

Middle section M: 2000 mm
End section E: 950 - 2025 mm in increments of 1 mm
Weights apply to sections without attachments





Ventilation grilles with flat border construction - also for continuous horizontal runs



Order code

X-GRILLE-Basic – AG / L x H / B1 / VS / P1 – RAL ...

1 2 3 4 5 6

1 Type

X-GRILLE-Basic Single grille

3 Nominal size [mm]

L x H

6 Surface

No entry: powder-coated RAL 9010, pure white

2 Attachments

- A** Without (grille face only)
- AG** Damper unit, opposed action blades
- AS** Hit and miss damper
- D** Air direction control, blades installed at 90° to the front blades, independently adjustable
- DG** D combined with AG

4 Installation subframe

- VS, KF** only with installation subframe
- No entry: none
- B1** With

P1 Powder-coated, RAL ... CLASSIC

- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %

5 Fixing

- VS** Concealed screw fixing
- KF** Spring clip fixing
- KB** Without fixing material
- VS, KF** only with installation subframe



Order code

X-GRILLE-Basic – E – R – AG / LxH / D1 / VS / P1 – RAL ...

1 2 3 4 5 6 7 8

1 Type

X-GRILLE-Basic Horizontal run section

90° to the front blades, independently adjustable

7 Fixing

- VS** Concealed screw fixing
- KB** Without fixing material
- VS** only with installation subframe

2 Section

- E** End section
- M** Middle section

5 Nominal size [mm]

- L x H
- Length
- Middle section: 2000 mm
- End section: 950 - 2025 mm
- Height: 125, 225, 325

8 Surface

No entry: powder-coated RAL 9010, pure white

P1 Powder-coated, RAL ... CLASSIC

3 End section

- Specify only for end section
- R** Right end section
- L** Left end section

4 Attachments

- A** Without (grille face only)
- AG** Damper unit, opposed action blades
- D** Air direction control, blades installed at

6 Installation subframe

- No entry: none
- D1** For end section
- F1** For middle section

- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %



Features

The new X-GRILLE Basic ventilation grilles with their gently sloped border combine function with an attractive design; they can be installed in walls, sills or rectangular ducts.

- Nominal sizes 225 x 125 - 1225 x 525 mm
- Volume flow rate range 19 - 2651 l/s or 68 - 9544 m³/h

- Energy-efficient and acoustically optimised air discharge
- Symmetric blade profile for two-way entry flow
- Uniform look and easy adjustment due to concealed blade linkage
- Gently sloped border construction, almost completely flush with the installation surface
- Linear look, ideal for continuous horizontal runs

- Use of existing rear assemblies
 - Easy replacement of existing grilles due to standard installation dimensions
- Optional equipment and accessories
- Installation subframe
 - Attachments for volume flow rate balancing and air direction control
 - Concealed screw fixing
 - Spring clip fixing





Application

- ▶ Ventilation grille of Type X-GRILLE Basic as supply air or extract air variant for comfort zones and industrial zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Directed supply air discharge for mixed flow ventilation
- ▶ Blades are adjustable to meet different local requirements
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +4 K
- ▶ For installation in walls, sills and rectangular ducts



Variants

- ▶ Single grille
- ▶ Horizontal run section

Fixing

- ▶ VS: Concealed screw fixing
 - ▶ KF: Spring clip fixing
- VS, KF only with installation subframe



Attachments

- ▶ AG, AS, D, DG: For volume flow rate balancing and for air direction control



Accessories

- ▶ Installation subframe: For the fast and simple installation of ventilation grilles



Special characteristics

- ▶ Symmetric blade profile for two-way entry flow
- ▶ Concealed blade linkage for adjusting the blades simultaneously
- ▶ Gently sloped border construction, almost completely flush with the installation surface
- ▶ Linear look, ideal for continuous horizontal runs



Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



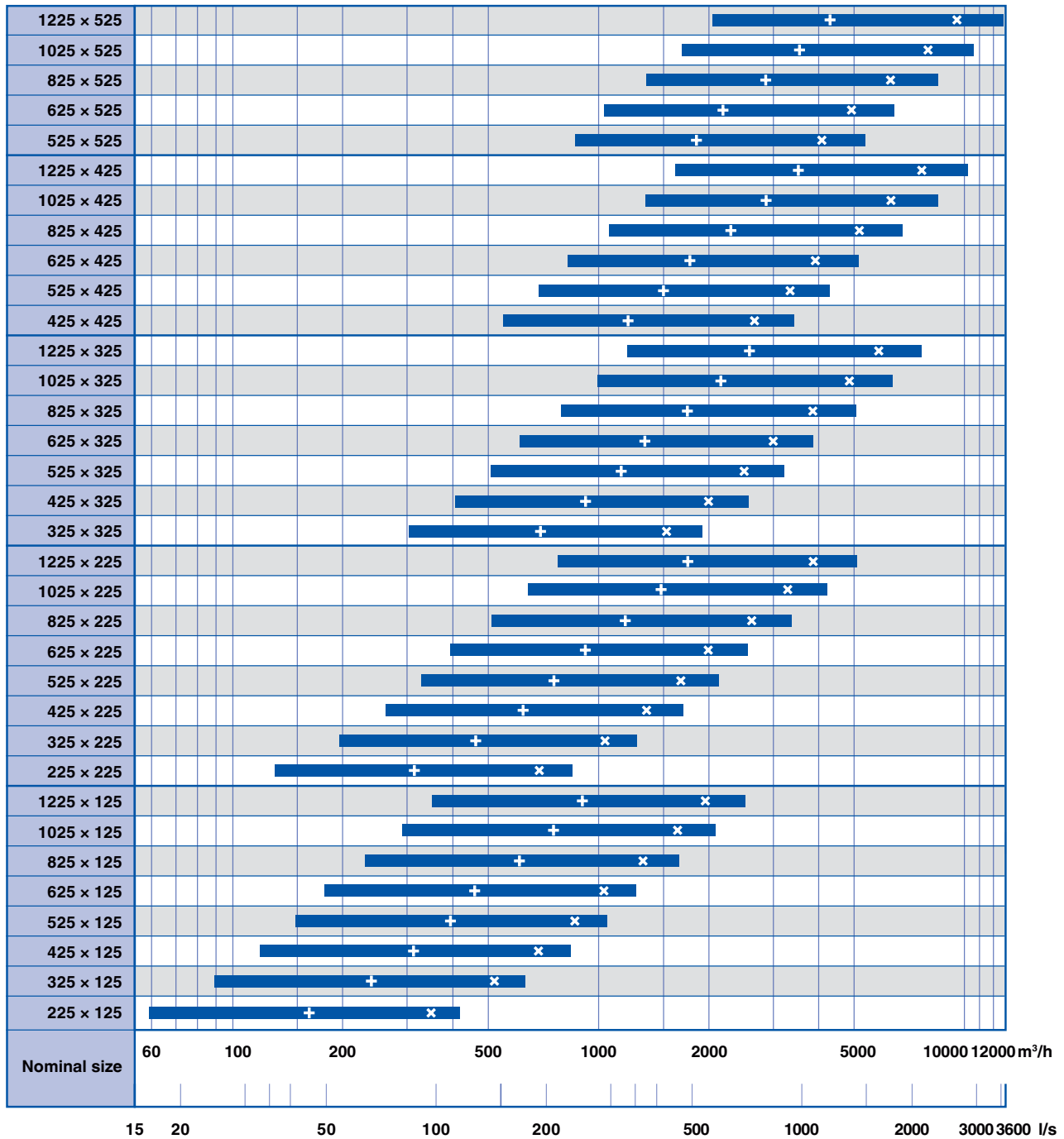
Technical data

Nominal sizes	225 × 125 to 1225 × 525 mm
Horizontal run section	H: 125, 225, 325 mm
Minimum volume flow rate	16 - 568 l/s or 58 - 2045 m ³ /h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	97 - 2651 l/s or 350 - 9544 m ³ /h
Supply air to room air temperature difference	-12 to +4 K

Volumen flow rates for single grille for supply air.



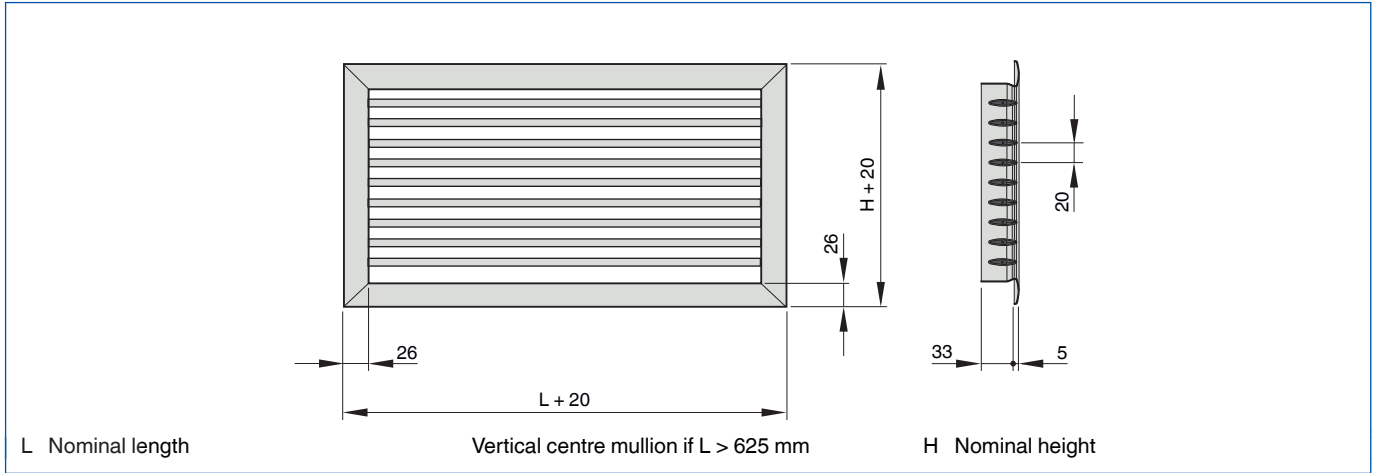
X-GRILLE Cover, X-GRILLE Basic, volume flow rate ranges



x LWA = 40 dB(A) with unrestricted airflow+ LWA = 40 dB(A) with airflow restricted by 50 %



X-GRILLE Basic, 26 mm wide front border

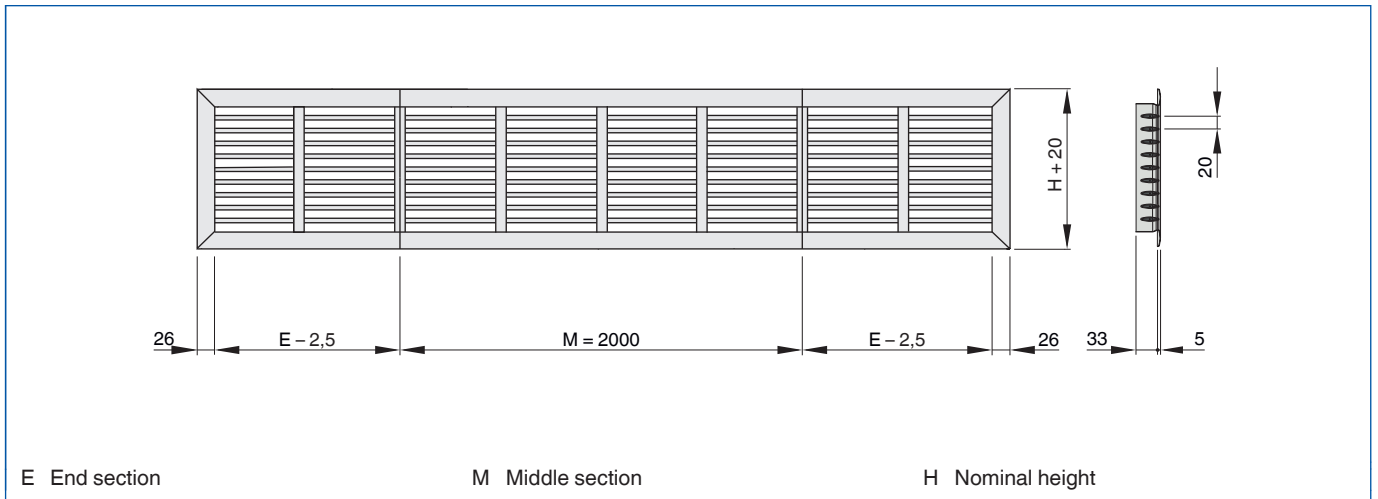


X-GRILLE Basic, single grille

H	L [mm]							
	225	325	425	525	625	825	1025	1225
mm	kg							
125	0.5	0.6	0.8	0.9	1.1	1.4	1.7	2.0
225	0.8	1.0	1.2	1.5	1.7	2.2	2.7	3.1
325		1.4	1.7	2.0	2.3	3.0	3.7	4.3
425			2.2	2.6	3.0	3.9	4.7	5.5
525				3.1	3.6	4.8	5.7	6.7

Weights apply to ventilation grilles without attachments

X-GRILLE Basic for continuous horizontal runs

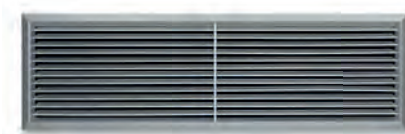
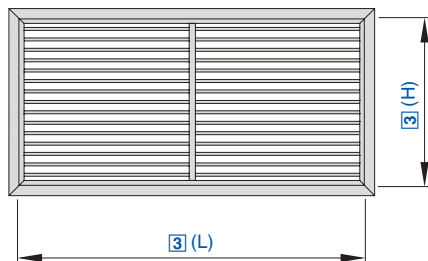


X-GRILLE Basic for continuous horizontal runs

H	Section	
	E	M
mm	kg/m	kg
125	1.6	3.2
225	2.6	5.2
325	3.6	7.2

Middle section M: 2000 mm
End section E: 950 - 2025 mm in increments of 1 mm
Weights apply to sections without attachments





Ventilation grilles, made of aluminium, with individually adjustable, horizontal blades and diffuser-type front border

Order code

ASL – AG / 825x225 / A1 / B11 / P1 – RAL ...

1 2 3 4 5 6

1 Type

ASL Single grille

3 Nominal size [mm]

L x H

6 Exposed surface

No entry: anodised, E6-C-0, natural colour

2 Attachments

- A** Without (grille face only)
- AG** Damper unit, opposed action blades
- AS** Hit and miss damper
- D** Air direction control, blades installed at 90° to the front blades, independently adjustable
- DG** D combined with AG

4 Installation subframe

- No entry: none
- A1** With

P1 Powder-coated, specify RAL CLASSIC colour

5 Fixing

- No entry: concealed screw fixing
- B11** Spring clip fixing

- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %

+ Features

- Ventilation grille with droplet shaped blades
- ▶ Nominal sizes 225 x 125 - 1225 x 525 mm
- ▶ Volume flow rate range 23 - 2000 l/s or 83 - 7200 m³/h
- ▶ Grille face made of aluminium with anodised finish
- ▶ Diffuser-type front border, 28 mm wide
- ▶ Concealed screw fixing

Optional equipment and accessories

- ▶ Grille face in RAL CLASSIC colours
- ▶ Installation subframe
- ▶ Attachments for volume flow rate balancing and air direction control
- ▶ Spring clip fixing

Application

- ▶ Ventilation grille of Type ASL as supply air or extract air variant for comfort zones and industrial zones
- ▶ Directed supply air discharge for mixed flow ventilation
- ▶ Blades are adjustable to meet different local requirements
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +4 K
- ▶ For installation in walls, sills and rectangular ducts

Variants

- Fixing
- ▶ Concealed screw fixing
- ▶ Spring clip fixing

Attachments

- ▶ AG, AS, D, DG: For volume flow rate balancing and for air direction control

& Accessories

- ▶ Installation subframe: For the fast and simple installation of ventilation grilles

★ Special characteristics

- ▶ Individually adjustable blades
- ▶ Diffuser-type front border
- ▶ Concealed screw fixing or spring clip fixing

ISO Standards and guidelines

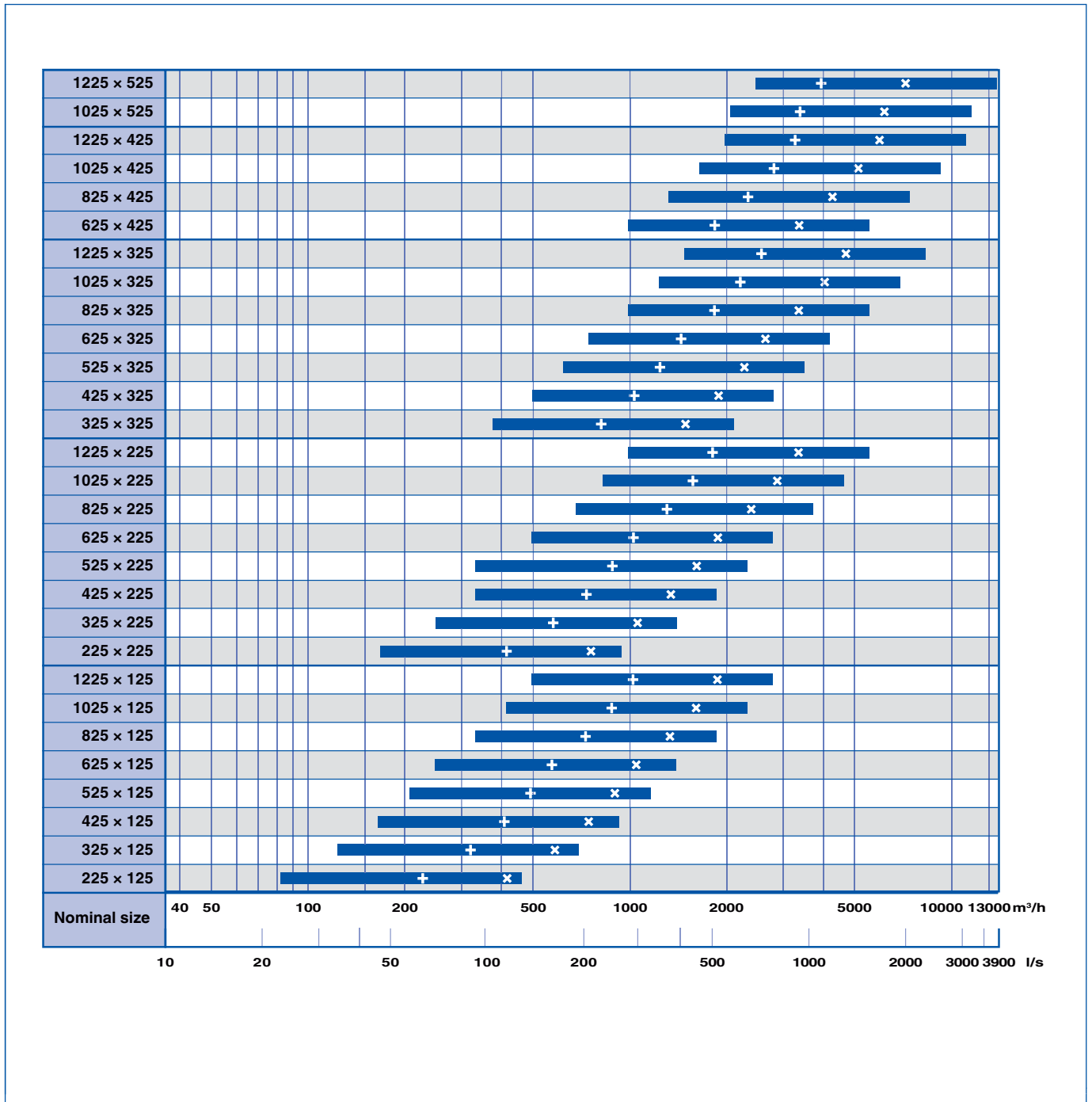
- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	225 x 125 to 1225 x 525 mm
Minimum volume flow rate	23 - 685 l/s or 83 - 2466 m ³ /h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	115 - 2000 l/s or 414 - 7200 m ³ /h
Supply air to room air temperature difference	-12 to +4 K

Volume flow rates apply to supply air

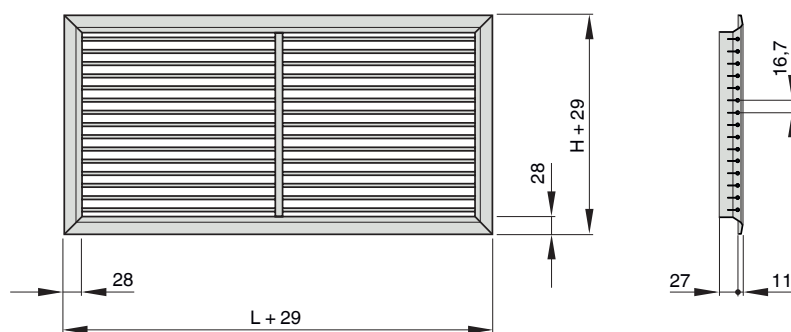
ASL, volume flow rate ranges



x LWA = 40 dB(A) with unrestricted airflow+ LWA = 40 dB(A) with airflow restricted by 50 %



ASL, 28 mm wide front border



L Nominal length

Vertical centre mullion if L > 625 mm

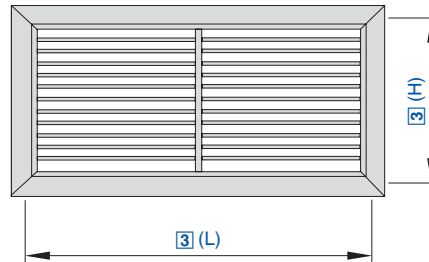
H Nominal height

ASL

H	L [mm]							
	225	325	425	525	625	825	1025	1225
	m							
mm	kg							
125	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.2
225	0.5	0.6	0.8	0.9	1.1	1.4	1.6	1.8
325		0.8	1.0	1.2	1.4	1.8	2.1	2.5
425					1.7	2.2	2.7	3.1
525							3.2	3.7

Weights apply to ventilation grilles without attachments





Ventilation grilles, made of aluminium, with individually adjustable, horizontal blades

Order code

AT – AG / 825x225 / A1 / B11 / P1 – RAL ...

1 Type	L x H	H11 Spring clip fixing, F = 23 mm
AT Single grille		
2 Attachments	4 Installation subframe	6 Exposed surface
A Without (grille face only)	No entry: none	No entry: anodised, E6-C-0, natural colour
AG Damper unit, opposed action blades	A1 For front border width F = 27 mm	P1 Powder-coated, specify RAL CLASSIC colour
AS Hit and miss damper	B1 For front border width F = 23 mm	
D Air direction control, blades installed at 90° to the front blades, independently adjustable	5 Fixing	Gloss level
DG D combined with AG	No entry: concealed screw fixing, F = 27 mm	RAL 9010 50 %
	G11 Concealed screw fixing, F = 23 mm	RAL 9006 30 %
	A11 Countersunk holes, F = 27 mm	All other RAL colours 70 %
	B11 Spring clip fixing, F = 27 mm	
3 Nominal size [mm]		

Order code

AT – EF – AS / 825x225 / P1 – RAL ...

1 Type	AS Hit and miss damper	P1 Powder-coated, specify RAL CLASSIC colour
AT Single grille, 27 mm wide front border		
2 Construction	4 Nominal size [mm]	Gloss level
EF Installation subframe with filter element and spring clip fixing	L x H	RAL 9010 50 %
	5 Exposed surface	RAL 9006 30 %
3 Attachments	No entry: anodised, E6-C-0, natural colour	All other RAL colours 70 %
A Without		

+ Features

- Ventilation grille with droplet shaped blades
- ▶ Nominal sizes 225 x 125 - 1225 x 525 mm
- ▶ Volume flow rate range 23 - 2000 l/s or 83 - 7200 m³/h
- ▶ Grille face made of aluminium with anodised finish
- ▶ Front border, 23 mm or 27 mm wide
- ▶ Concealed screw fixing

- Optional equipment and accessories
- ▶ Grille face in RAL CLASSIC colours
 - ▶ Installation subframe
 - ▶ Installation subframe for fitting filter media
 - ▶ Attachments for volume flow rate balancing and air direction control
 - ▶ Spring clip fixing

X Application

- ▶ Ventilation grille of Type AT as supply air or extract air variant for comfort zones and industrial zones
- ▶ Directed supply air discharge for mixed flow ventilation
- ▶ Blades are adjustable to meet different local requirements
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +4 K
- ▶ For installation in walls, sills and rectangular ducts

D Variants

- Front border
- ▶ 27 mm wide

- ▶ G11: 23 mm wide

Fixing

- ▶ Concealed screw fixing
- ▶ G11: Concealed screw fixing (23 mm)
- ▶ A11: Countersunk holes (only 27 mm)
- ▶ B11: Spring clip fixing (27 mm)
- ▶ H11: Spring clip fixing (23 mm)

Hexagon Attachments

- ▶ AG, AS, D, DG: For volume flow rate balancing and for air direction control

& Accessories

- ▶ Installation subframe: For the fast and simple installation of ventilation grilles
- ▶ Filter casing: Frame with filter element and spring clip fixing (only with 27 mm wide front border)



Special characteristics

- Individually adjustable blades
- Front border in two widths
- Concealed screw fixing, spring clip fixing or

countersunk holes

- Optional installation subframe and casing for the fitting of filter media

ISO Standards and guidelines

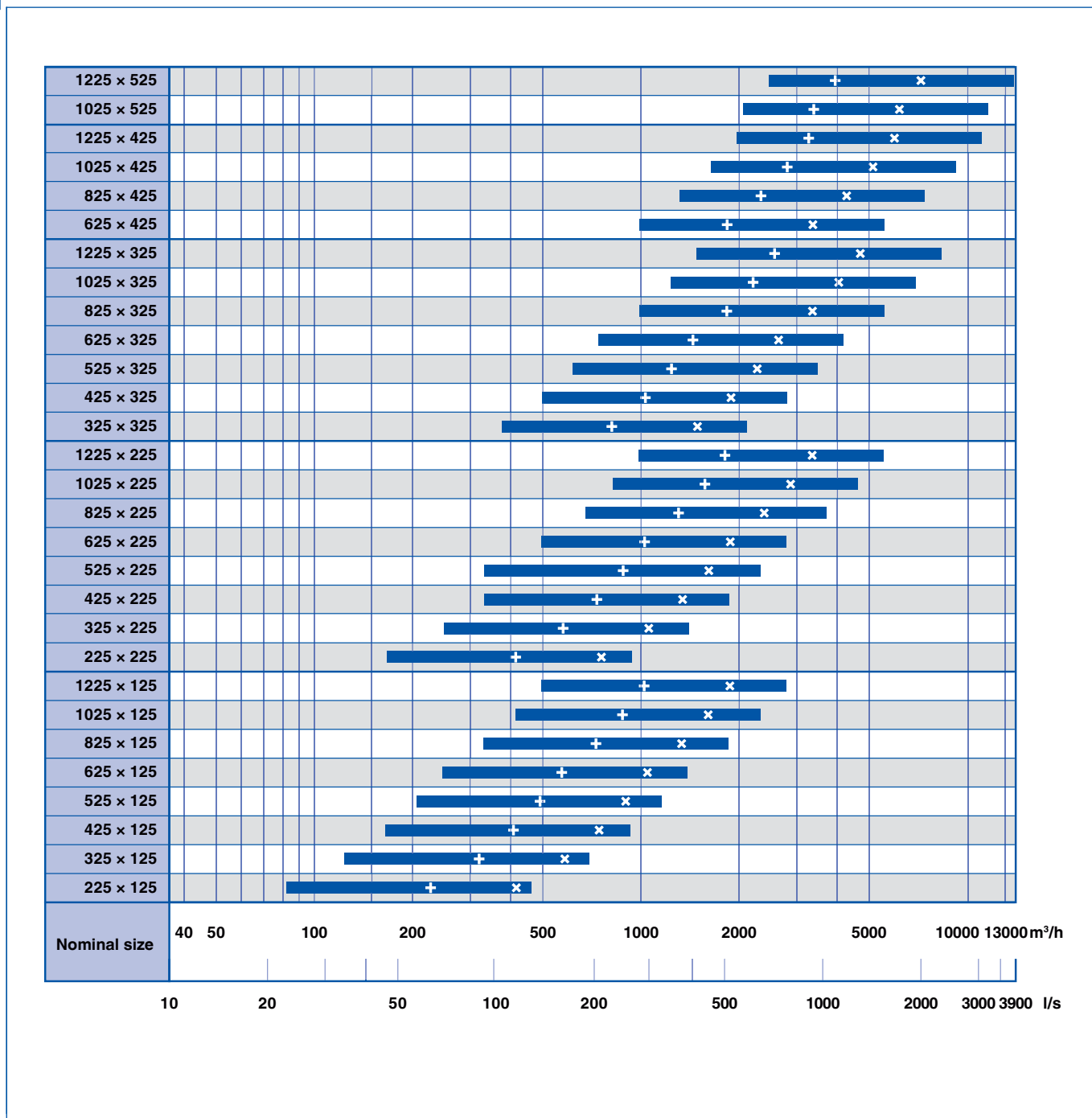
- Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	225 × 125 to 1225 × 525 mm
Minimum volume flow rate	23 - 685 l/s or 83 - 2466 m³/h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	115 - 2000 l/s or 414 - 7200 m³/h
Supply air to room air temperature difference	-12 to +4 K

Volume flow rates apply to supply air

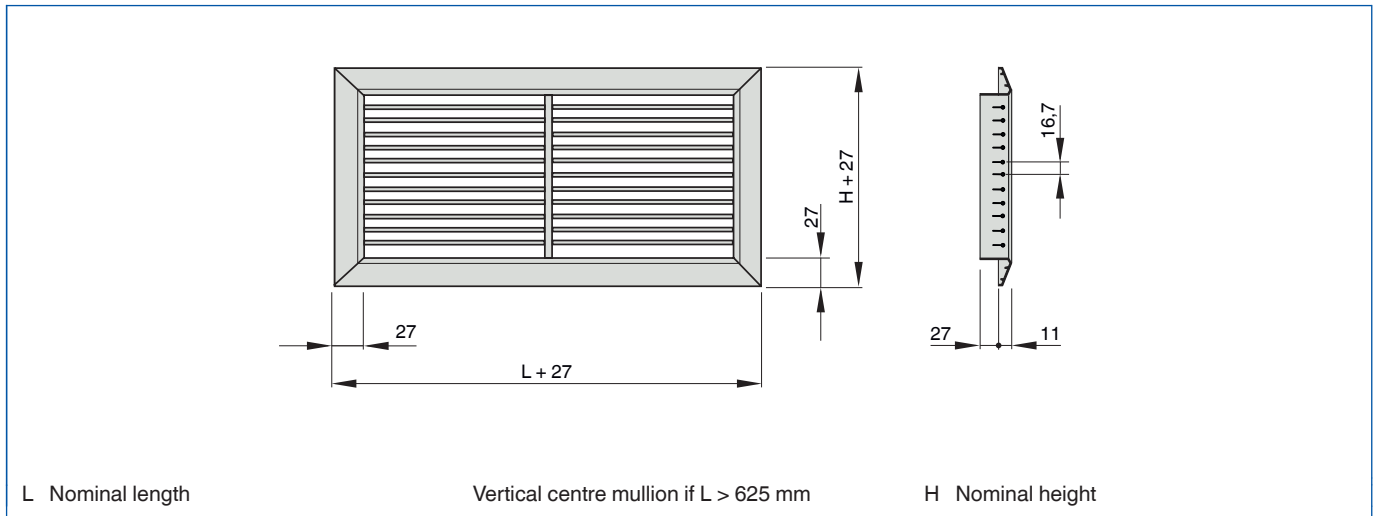
AT, volume flow rate ranges



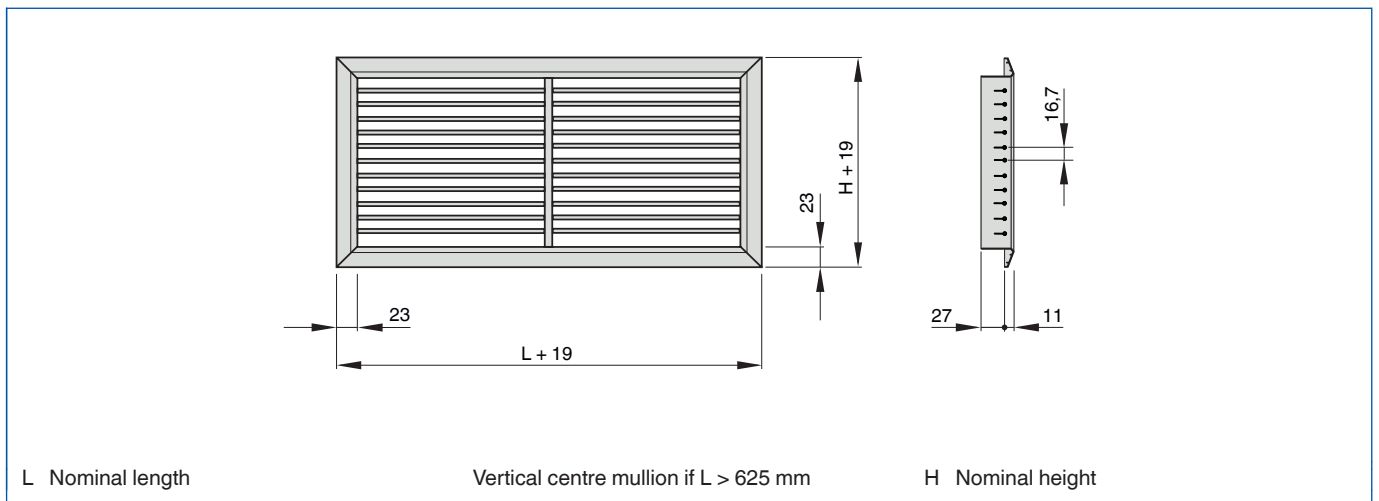
× LWA = 40 dB(A) with unrestricted airflow+ LWA = 40 dB(A) with airflow restricted by 50 %



AT, 27 mm wide front border



AT, 23 mm wide front border

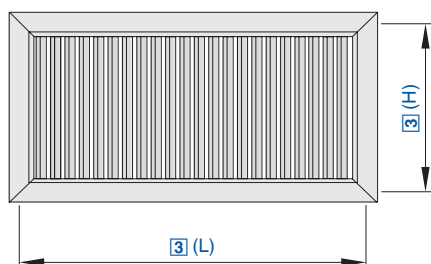


AT

H	L [mm]							
	225	325	425	525	625	825	1025	1225
	m							
mm	kg							
125	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.2
225	0.5	0.6	0.8	0.9	1.1	1.4	1.6	1.8
325		0.8	1.0	1.2	1.4	1.8	2.1	2.5
425					1.7	2.2	2.7	3.1
525							3.2	3.7

Weights apply to ventilation grilles without attachments





Ventilation grilles, made of aluminium, with individually adjustable, vertical blades



Order code

VAT – AG / 825x225 / A1 / B11 / P1 – RAL ...

1 Type	3 Nominal size [mm]	B11 Spring clip fixing, F = 27 mm
VAT Single grille	L x H	H11 Spring clip fixing, F = 23 mm
2 Attachments	4 Installation subframe	6 Exposed surface
A Without (grille face only)	No entry: none	No entry: anodised, E6-C-0, natural colour
AG Damper unit, opposed action blades	A1 For front border width F = 27 mm	P1 Powder-coated, specify RAL CLASSIC colour
AS Hit and miss damper	B1 For front border width F = 23 mm	Gloss level
D Air direction control, blades installed at 90° to the front blades, independently adjustable	5 Fixing	RAL 9010 50 %
DG D combined with AG	No entry: concealed screw fixing, F = 27 mm	RAL 9006 30 %
	G11 Concealed screw fixing, F = 23 mm	All other RAL colours 70 %
	A11 Countersunk holes, F = 27 mm	

Order code

VAT – EF – AS / 825x225 / P1 – RAL ...

1 Type	AS Hit and miss damper	P1 Powder-coated, specify RAL CLASSIC colour
VAT Single grille, 27 mm wide front border		
2 Construction	4 Nominal size [mm]	Gloss level
EF Installation subframe with filter element and spring clip fixing	L x H	RAL 9010 50 %
3 Attachments	5 Exposed surface	RAL 9006 30 %
A Without	No entry: anodised, E6-C-0, natural colour	All other RAL colours 70 %

+ Features

- Ventilation grille with droplet shaped blades
- ▶ Nominal sizes 225 x 75 - 1225 x 525 mm
- ▶ Volume flow rate range 11 - 2000 l/s or 40 - 7200 m³/h
- ▶ Grille face made of aluminium with anodised finish
- ▶ Front border, 23 mm or 27 mm wide
- ▶ Concealed screw fixing

Optional equipment and accessories

- ▶ Grille face in RAL CLASSIC colours
- ▶ Installation subframe
- ▶ Installation subframe for fitting filter media
- ▶ Attachments for volume flow rate balancing and air direction control
- ▶ Spring clip fixing

Z Application

- ▶ Ventilation grille of Type VAT as supply air or extract air variant for comfort zones and industrial zones
- ▶ Directed supply air discharge for mixed flow ventilation
- ▶ Blades are adjustable to meet different local requirements
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +4 K
- ▶ For installation in walls, sills and rectangular ducts

D Variants

- Front border
- ▶ 27 mm wide

- ▶ G11: 23 mm wide

Fixing

- ▶ Concealed screw fixing
- ▶ G11: Concealed screw fixing (23 mm)
- ▶ A11: Countersunk holes (only 27 mm)
- ▶ B11: Spring clip fixing (27 mm)
- ▶ H11: Spring clip fixing (23 mm)

⬡ Attachments

- ▶ AG, AS, D, DG: For volume flow rate balancing and for air direction control

& Accessories

- ▶ Installation subframe: For the fast and simple installation of ventilation grilles
- ▶ Filter casing: Frame with filter element and spring clip fixing (only with 27 mm wide front border)



★ Special characteristics

- ▶ Individually adjustable blades
- ▶ Front border in two widths

- ▶ Concealed screw fixing, spring clip fixing or countersunk holes
- ▶ Optional installation subframe and casing for the fitting of filter media

ISO Standards and guidelines

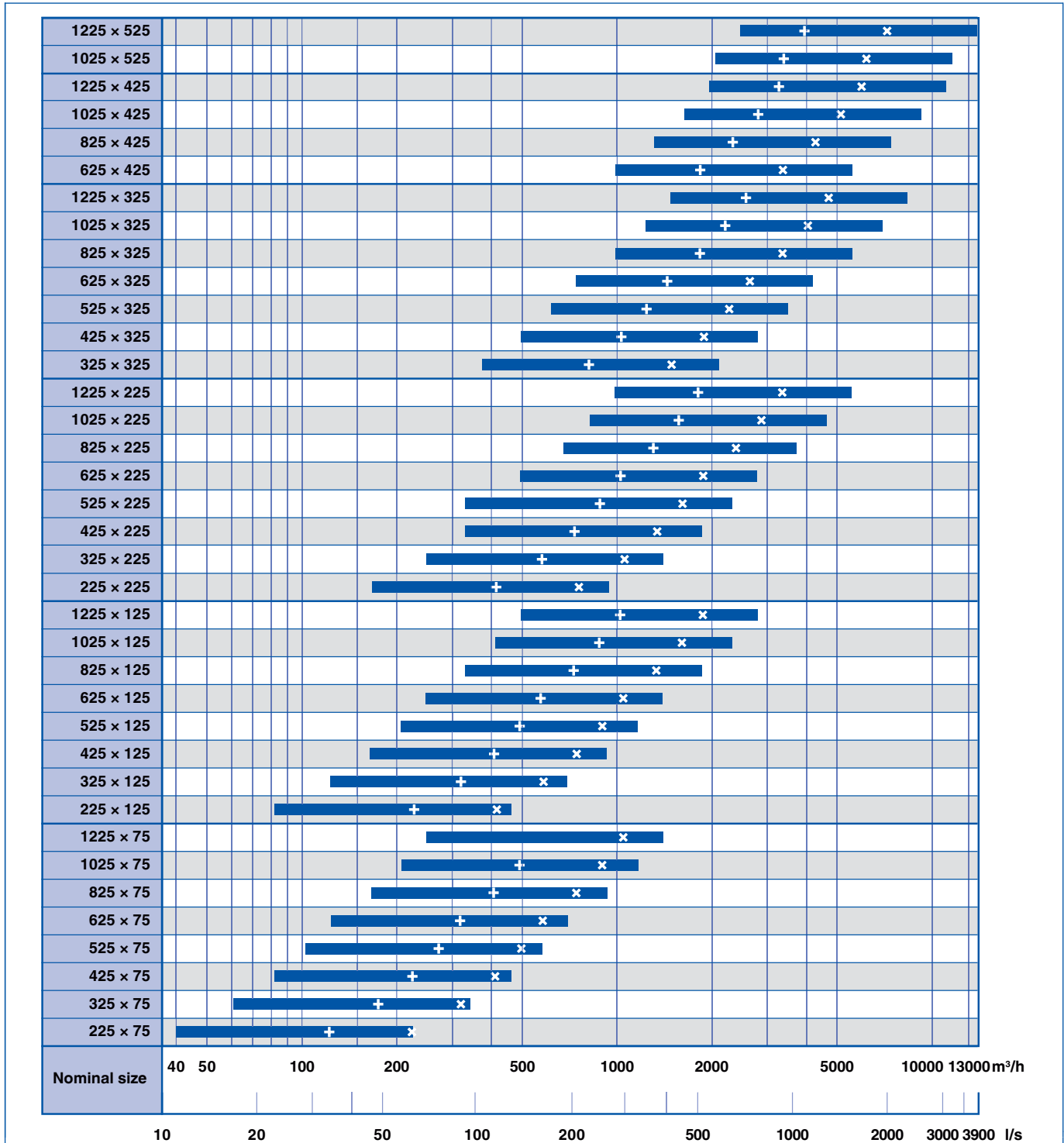
- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	225 × 75 to 1225 × 525 mm
Minimum volume flow rate	11 - 685 l/s or 40 - 2466 m³/h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	62 - 2000 l/s or 223 - 7200 m³/h
Supply air to room air temperature difference	-12 to +4 K

Volume flow rates apply to supply air

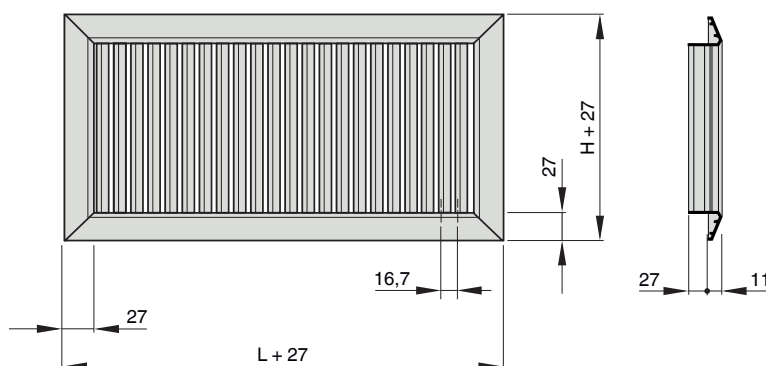
VAT, volume flow rate ranges



× LWA = 40 dB(A) with unrestricted airflow + LWA = 40 dB(A) with airflow restricted by 50 %



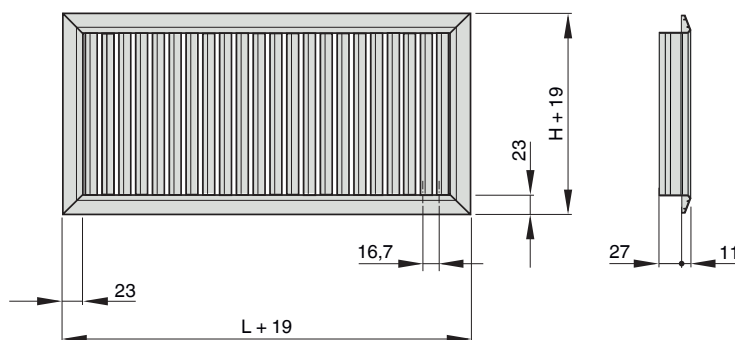
VAT, 27 mm wide front border



L Nominal length

H Nominal height

VAT, 23 mm wide front border



L Nominal length

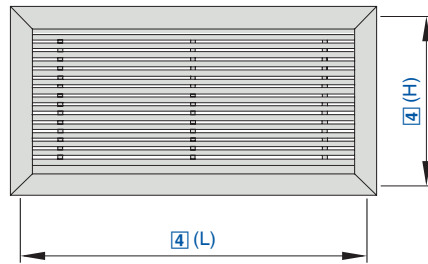
H Nominal height

VAT

H	L [mm]							
	225	325	425	525	625	825	1025	1225
	m							
mm	kg							
75	0.3	0.3	0.4	0.5	0.6	0.7	0.8	1.0
125	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.3
225	0.5	0.6	0.8	0.9	1.1	1.4	1.7	1.9
325		0.8	1.0	1.2	1.4	1.8	2.2	2.6
425					1.7	2.2	2.7	3.2
525							3.3	3.8

Weights apply to ventilation grilles without attachments





Ventilation grilles, made of aluminium, with fixed horizontal blades - also for horizontal runs

Order code

AH - 0 - AG / 825x225 / A1 / B11 / P1 - RAL ...

1 2 3 4 5 6 7

1 Type

AH Single grille

2 Blade construction style

0 0° blades (straight)
15 15° blades (angled)

3 Attachments

A Without (grille face only)
AG Damper unit, opposed action blades
D Air direction control, blades installed at 90° to the front blades, independently adjustable
DG D combined with AG

4 Nominal size [mm]

L x H

5 Installation subframe

No entry: none
A1 For front border width F = 28 mm
B1 For front border width F = 20 mm

6 Fixing

No entry: concealed screw fixing, F = 28 mm
E11 Concealed screw fixing, F = 20 mm
A11 Countersunk holes, F = 28 mm
B11 Spring clip fixing, F = 28 mm
F11 Spring clip fixing F = 20 mm

7 Exposed surface

No entry: anodised, E6-C-0, natural colour
P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

Order code

M - AH - 15 - AG / 950x225 / E1 / A11 / P1 - RAL ...

2 1 3 4 5 6 7 8

1 Type

AH Horizontal run section

2 Section

E End section
EL Left end section, blade construction style 15
ER Right end section, blade construction style 15
M Middle section

3 Blade construction style

0 0° blade (straight)
15 15° blades (angled)

4 Attachments

A Without (grille face only)
AG Damper unit, opposed action blades

D Air direction control, blades installed at 90° to the front blades, independently adjustable

DG D combined with AG

5 Nominal size [mm]

E (end section) x height H
M (middle section) x height H

6 Installation subframe

No entry: none
C1 For end section, front border width F = 28 mm
D1 For end section, F = 20 mm
E1 For middle section, F = 28 mm
F1 For middle section, F = 20 mm

7 Fixing

No entry: concealed screw fixing, F = 28 mm
E11 Concealed screw fixing, F = 20 mm
A11 Countersunk holes, F = 28 mm

8 Exposed surface

No entry: anodised, E6-C-0, natural colour
P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %



Order code

AH – EF – 15 – AS / 825x225 / P1 – RAL ...



1 Type AH Single grille, 28 mm wide front border	4 Attachments A Without AS Hit and miss damper	P1 Powder-coated, specify RAL CLASSIC colour
2 Construction EF Installation subframe with filter element and spring clip fixing	5 Nominal size [mm] L x H	Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %
3 Blade construction style 0 0° blades (straight) 15 15° blades (angled)	6 Exposed surface No entry: anodised, E6-C-0, natural colour	

Features

- Single ventilation grilles and horizontal run sections with special profiled blades
 - ▶ Nominal sizes 225 x 75 - 1225 x 425 mm and horizontal run sections
 - ▶ Volume flow rate range 10 - 1235 l/s or 36 - 4446 m³/h
 - ▶ Grille face made of aluminium with anodised finish
 - ▶ Front border, 20 mm or 28 mm wide
 - ▶ Straight (0°) or angled (15°) air discharge
 - ▶ Concealed screw fixing

Optional equipment and accessories

- ▶ Grille face in RAL CLASSIC colours
- ▶ Installation subframe
- ▶ Installation subframe for fitting filter media
- ▶ Attachments for volume flow rate balancing and air direction control
- ▶ Spring clip fixing or countersunk holes (only for 28 mm wide front border)

Application

- ▶ Ventilation grille of Type AH as supply air or extract air variant for comfort zones and industrial zones

- ▶ Directed supply air discharge for mixed flow ventilation
- ▶ Blades for straight (0°) or angled (15°) air discharge to meet different local requirements
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +4 K
- ▶ For installation in walls, sills and rectangular ducts

Variants

- ▶ AH: Single grille
- ▶ E-AH, M-AH: Horizontal run section

- Front border
- ▶ 28 mm wide
 - ▶ 20 mm wide

Fixing

- ▶ Concealed screw fixing
- ▶ E11: Concealed screw fixing (20 mm)
- ▶ A11: Countersunk holes (only 28 mm)
- ▶ B11: Spring clip fixing (28 mm)
- ▶ F11: Spring clip fixing (20 mm)

Attachments

- ▶ AG, AS, D, DG: For volume flow rate balancing and for air direction control

Accessories

- ▶ Installation subframe: For the fast and simple installation of ventilation grilles
- ▶ Filter casing: Frame with filter element and spring clip fixing (only with 28 mm wide front border)

Special characteristics

- ▶ Fixed blades
- ▶ Front border in two widths
- ▶ Concealed screw fixing, spring clip fixing or countersunk holes
- ▶ Also for continuous horizontal runs
- ▶ Optional installation subframe and casing for the fitting of filter media

Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

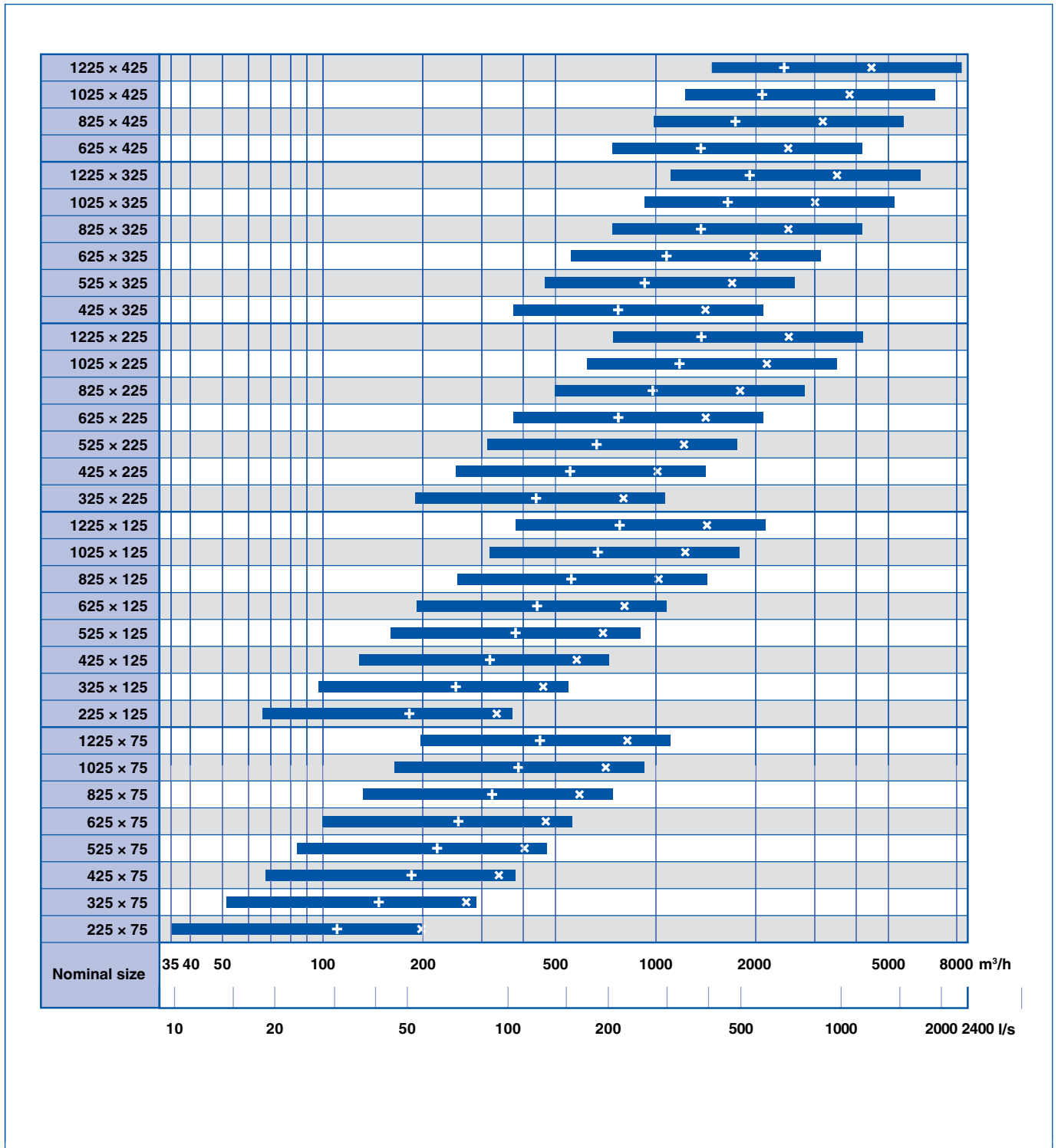
Technical data

Nominal sizes	225 x 75 to 1225 x 425 mm
Horizontal run section	H: 75, 125, 225, 325 mm
Minimum volume flow rate	10 - 410 l/s or 36 - 1476 m³/h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	55 - 1235 l/s or 198 - 4446 m³/h
Supply air to room air temperature difference	-12 to +4 K

Volumen flow rates for single grille for supply air.



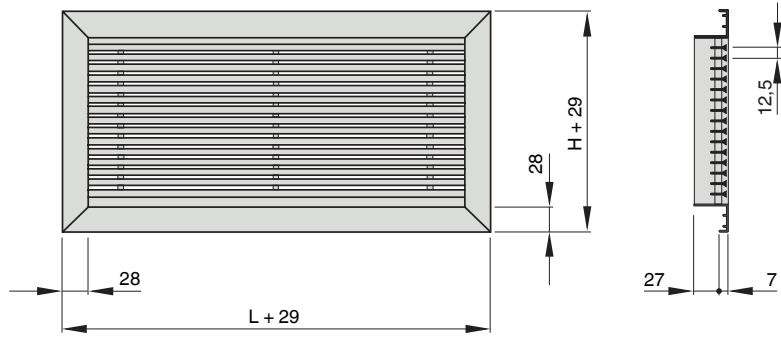
AH, volume flow rate ranges



x LWA = 40 dB(A) with unrestricted airflow + LWA = 40 dB(A) with airflow restricted by 50 %



AH, 28 mm wide front border



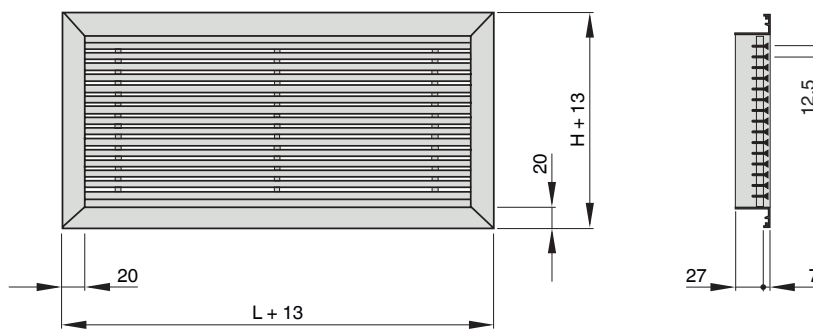
L Nominal length

Vertical centre mullion if L > 625 mm

H Nominal height

Illustration shows AH-0

AH, 20 mm wide front border



L Nominal length

Vertical centre mullion if L > 625 mm

H Nominal height

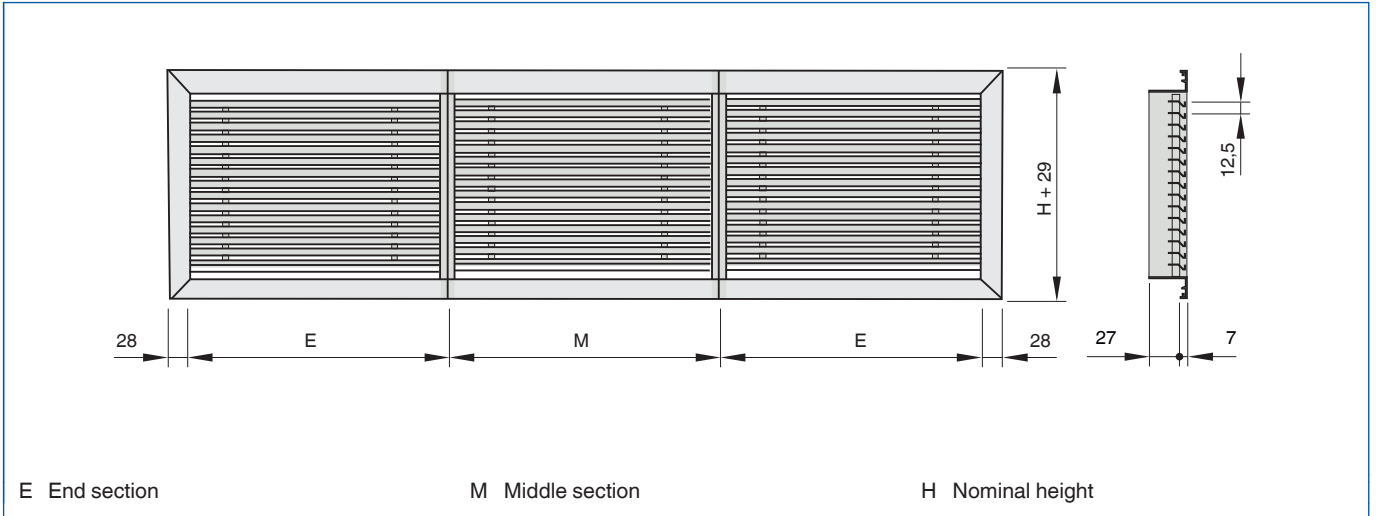
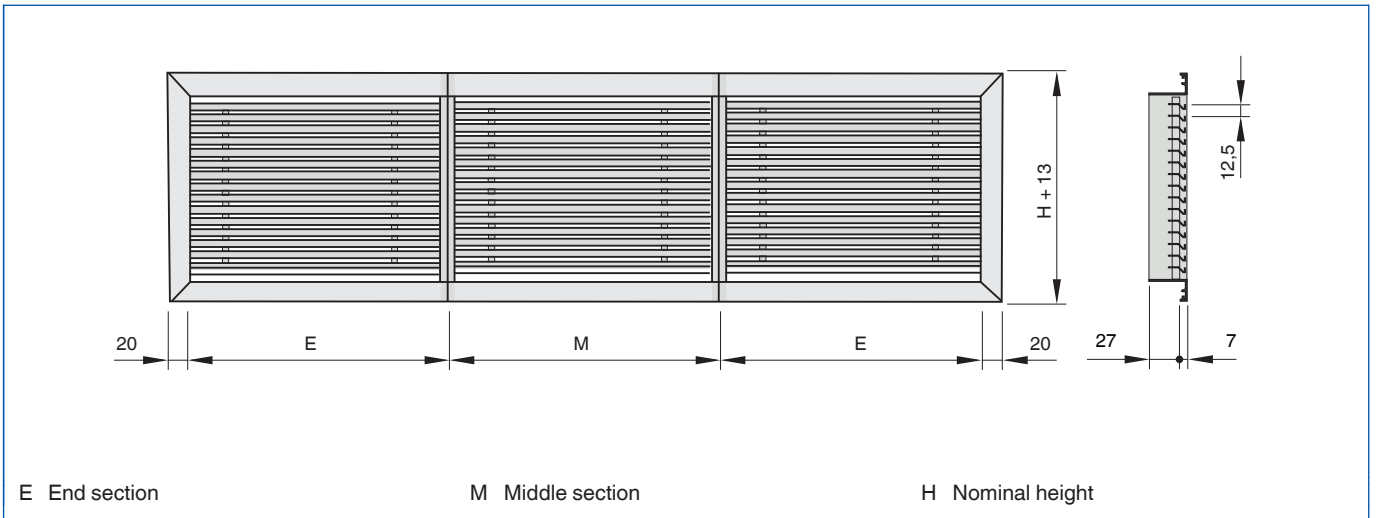
Illustration shows AH-0

AH, single grille

H	L [mm]							
	225	325	425	525	625	825	1025	1225
	m							
mm	kg							
75	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.5
125	0.5	0.7	0.9	1.1	1.3	1.7	2.1	2.5
225		1.3	1.6	2.0	2.4	3.1	3.8	4.6
325			2.4	2.9	3.4	4.5	5.5	6.7
425					4.5	5.9	7.3	8.7

Weights apply to ventilation grilles without attachments



AH, 28 mm wide front border, horizontal run section

AH, 20 mm wide front border, horizontal run section

AH, horizontal run section

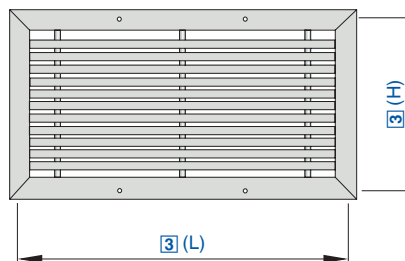
H	Section	
	E	M
mm	kg/m	kg
125	4.1	8.2
225	6.1	12.2
325	8.2	16.4

Middle section M: 2000 mm

End section E: 950 - 2025 mm in increments of 1 mm

Weights apply to sections without attachments





Ball impact resistant ventilation grille made of aluminium, with fixed horizontal blades



Order code

AWT – AG / 825x225 / A1 / P1 – RAL ...



1 Type

AWT Single grille

3 Nominal size [mm]

L x H

P1

Powder-coated, specify RAL CLASSIC colour

2 Attachments

- A** Without (grille face only)
- AG** Damper unit, opposed action blades
- D** Air direction control, blades installed at 90° to the front blades, independently adjustable
- DG** D combined with AG

4 Installation subframe

- A1** No entry: none
- A1** With

5 Exposed surface

No entry: anodised, E6-C-0, natural colour

- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %



Features

- Ventilation grille with special profiled blades (rectangular cross section)
 - ▶ Nominal sizes 325 x 125 - 1225 x 325 mm
 - ▶ Volume flow rate range 17 - 950 l/s or 61 - 3420 m³/h
 - ▶ Grille face made of aluminium with anodised finish
 - ▶ Tested for installation in gymnasiums
 - ▶ Front border with countersunk holes, 30 mm wide

Optional equipment and accessories

- ▶ Grille face in RAL CLASSIC colours
- ▶ Installation subframe



Application

- ▶ Type AWT ventilation grille to be used for supply air or extract air
- ▶ For gymnasiums
- ▶ Meets the requirements for impact resistance of DIN 18032, part 3
- ▶ Directed supply air discharge for mixed flow ventilation
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +4 K
- ▶ For installation in walls, sills and rectangular ducts



Attachments

- ▶ AG, AS, D, DG: For volume flow rate balancing and for air direction control



Accessories

- ▶ Installation subframe: For the fast and simple installation of ventilation grilles



Special characteristics

- ▶ Fixed blades
- ▶ Countersunk holes



Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



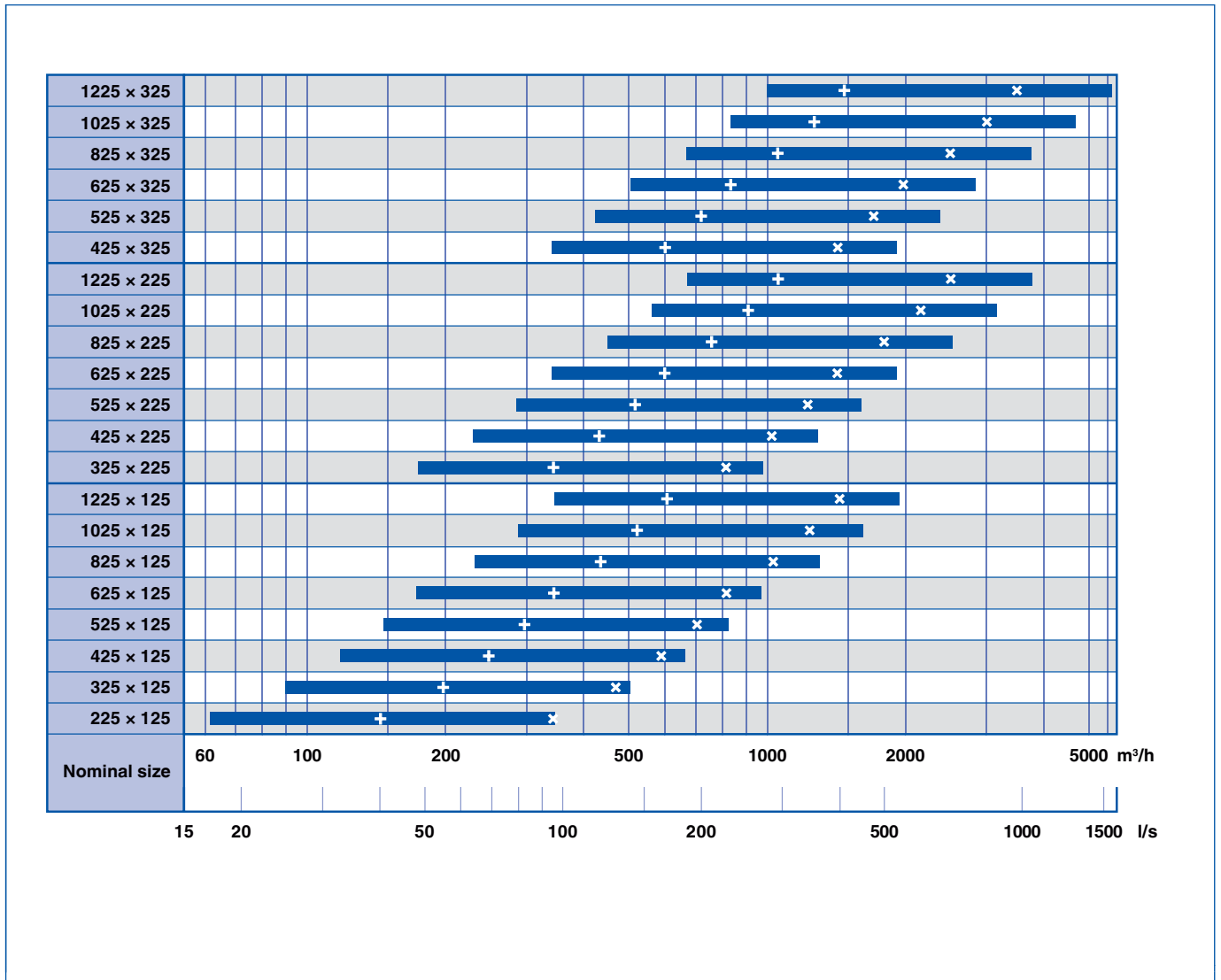
Technical data

Nominal sizes	325 x 125 to 1225 x 325 mm
Minimum volume flow rate	17 - 275 l/s or 61 - 990 m ³ /h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	95 - 950 l/s or 342 - 3420 m ³ /h
Supply air to room air temperature difference	-12 to +4 K

Volume flow rates apply to supply air

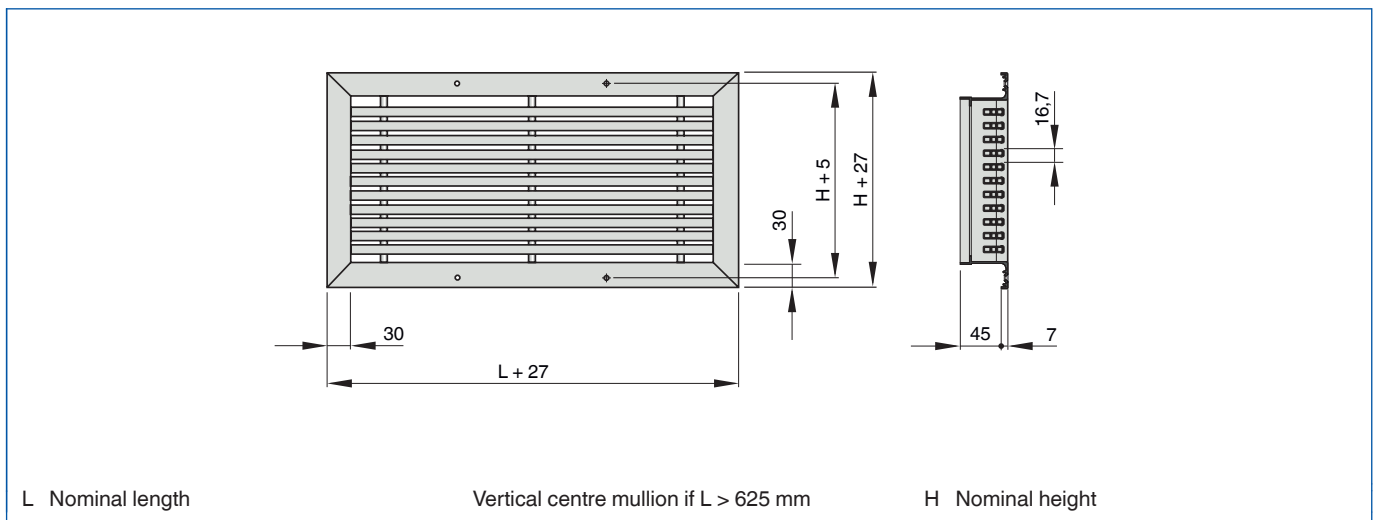


AWT, volume flow rate ranges



× LWA = 40 dB(A) with unrestricted airflow + LWA = 40 dB(A) with airflow restricted by 50 %

AT, 30 mm wide front border

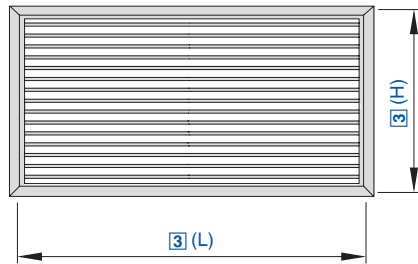


AWT

H	L [mm]						
	325	425	525	625	825	1025	1225
	m						
mm	kg						
125	1.3	1.6	2.0	2.3	3.0	3.6	4.3
225	1.9	2.4	2.9	3.4	4.4	5.4	6.4
325		3.2	3.8	4.5	5.8	7.1	8.5

Weights apply to ventilation grilles without attachments





Ventilation grilles, made of sheet steel, with individually adjustable, horizontal blades and diffuser-type front border - also for horizontal runs



Order code

SL – AG / 825x225 / M1 / P1 – RAL ...

1 **2** **3** **4** **5**

1 Type

SL Single grille

DG D combined with AG

5 Exposed surface

No entry: powder-coated RAL 9010, pure white

2 Attachments

A Without (grille face only)

AG Damper unit, opposed action blades

AS Hit and miss damper

D Air direction control, blades installed at 90° to the front blades, independently adjustable

3 Nominal size [mm]
L × H

4 Installation subframe

No entry: none

M1 With

P1 Powder-coated, specify RAL CLASSIC colour

Gloss level

RAL 9010 50 %

RAL 9006 30 %

All other RAL colours 70 %



Order code

E – SL – AG / 950x225 / N1 / P1 – RAL ...

2 **1** **3** **4** **5** **6**

1 Type

SL Horizontal run section

DG adjustable
D combined with AG

6 Exposed surface

No entry: powder-coated RAL 9010, pure white

2 Section

E End section

M Middle section

4 Nominal size [mm]
E (end section) × height H
M (middle section) × height H

P1 Powder-coated, specify RAL CLASSIC colour

3 Attachments

A Without (grille face only)

AG Damper unit, opposed action blades

D Air direction control, blades installed at 90° to the front blades, independently adjustable

5 Installation subframe

No entry: none

N1 For end section

E1 For middle section

Gloss level

RAL 9010 50 %

RAL 9006 30 %

All other RAL colours 70 %



Order code

SL – EF – AS / 825x225 / P1 – RAL ...

1 **2** **3** **4** **5**

1 Type

SL Single grille

AS Hit and miss damper

P1 Powder-coated, specify RAL CLASSIC colour

2 Construction

EF Installation subframe with filter element and spring clip fixing

4 Nominal size [mm]
L × H

5 Exposed surface

No entry: powder-coated RAL 9010, pure white

Gloss level

RAL 9010 50 %

RAL 9006 30 %

All other RAL colours 70 %

3 Attachments

A Without



+ Features

- Single ventilation grilles and horizontal run sections with droplet shaped blades
- ▶ Nominal sizes 225 × 125 - 1225 × 525 mm and horizontal run sections
 - ▶ Volume flow rate range 23 - 2000 l/s or 83 - 7200 m³/h
 - ▶ Grille face made of sheet steel, powder-coated
 - ▶ Diffuser-type front border, 28 mm wide longitudinal section, 20 mm wide transverse section
 - ▶ Concealed screw fixing

Optional equipment and accessories

- ▶ Grille face in RAL CLASSIC colours
- ▶ Installation subframe
- ▶ Installation subframe for fitting filter media
- ▶ Attachments for volume flow rate balancing and air direction control

/ Application

- ▶ Ventilation grille of Type SL as supply air or extract air variant for comfort zones and industrial zones
- ▶ Directed supply air discharge for mixed flow ventilation
- ▶ Blades are adjustable to meet different local requirements
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +4 K
- ▶ For installation in walls, sills and rectangular ducts

◊ Variants

- ▶ SL: Single grille
- ▶ E-SL, M-SL: Horizontal run section

⬡ Attachments

- ▶ AG, AS, D, DG: For volume flow rate balancing and for air direction control

& Accessories

- ▶ Installation subframe: For the fast and simple installation of ventilation grilles
- ▶ Filter casing: Frame with filter element and spring clip fixing

★ Special characteristics

- ▶ Individually adjustable blades
- ▶ Diffuser-type front border
- ▶ Concealed screw fixing

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

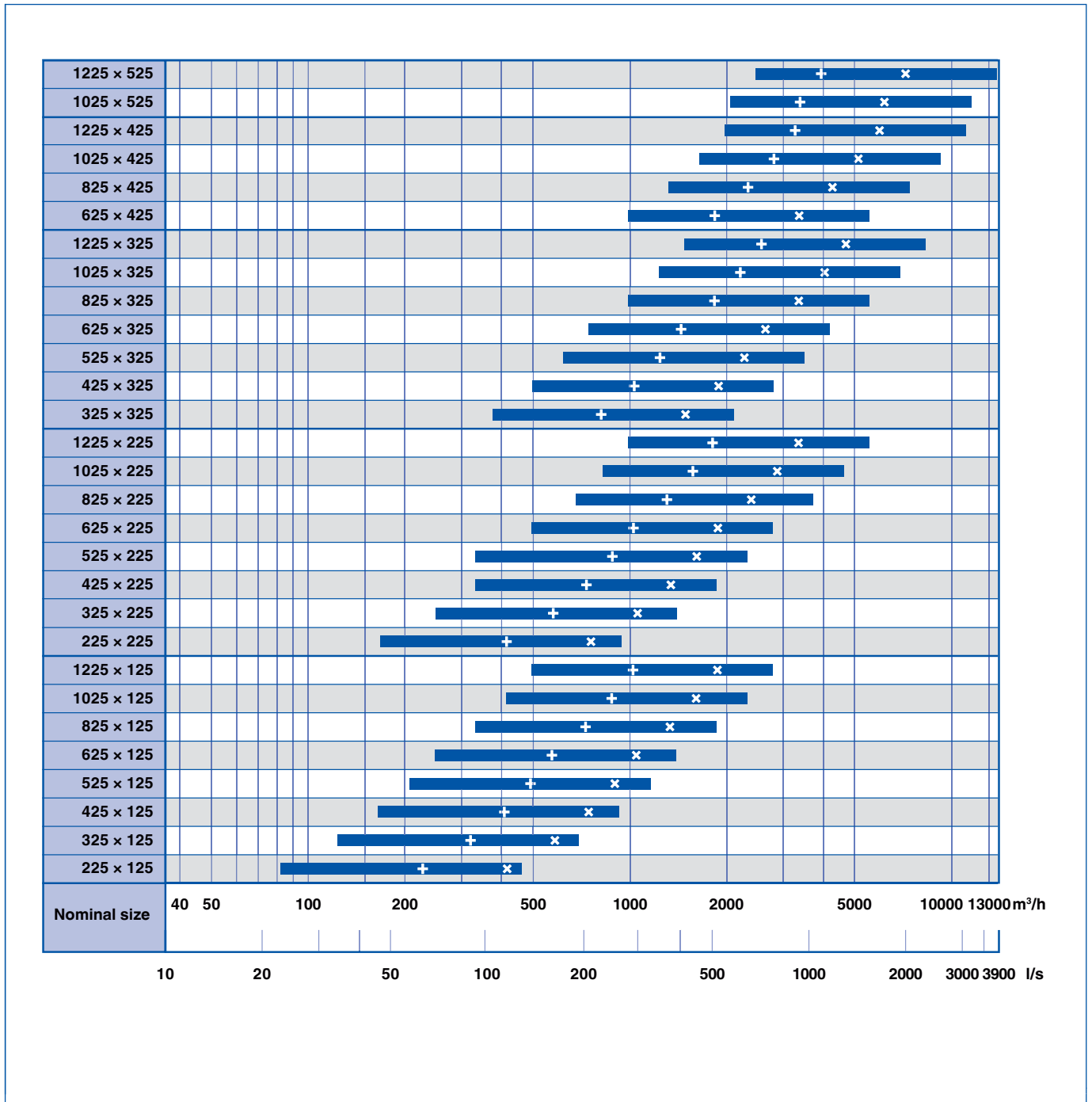
📈 Technical data

Nominal sizes	225 × 125 to 1225 × 525 mm
Horizontal run section	H: 125, 225, 325 mm
Minimum volume flow rate	23 - 685 l/s or 83 - 2466 m ³ /h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	115 - 2000 l/s or 414 - 7200 m ³ /h
Supply air to room air temperature difference	-12 to +4 K

Volumen flow rates for single grille for supply air.



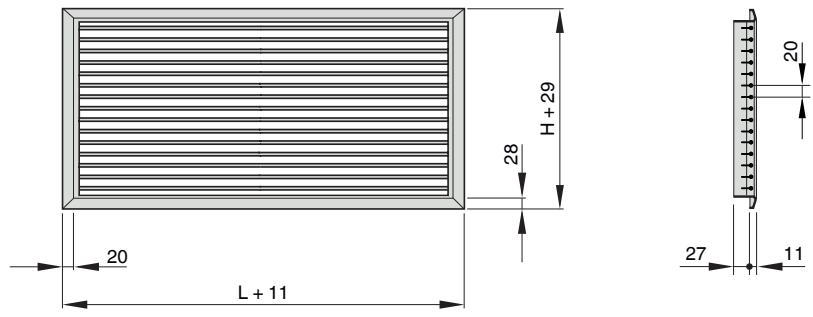
SL, volume flow rate ranges



x LWA = 40 dB(A) with unrestricted airflow + LWA = 40 dB(A) with airflow restricted by 50 %



SL, front border width 28 mm (L) and 20 mm (H)



L Nominal length

Vertical centre mullion if L > 625 mm

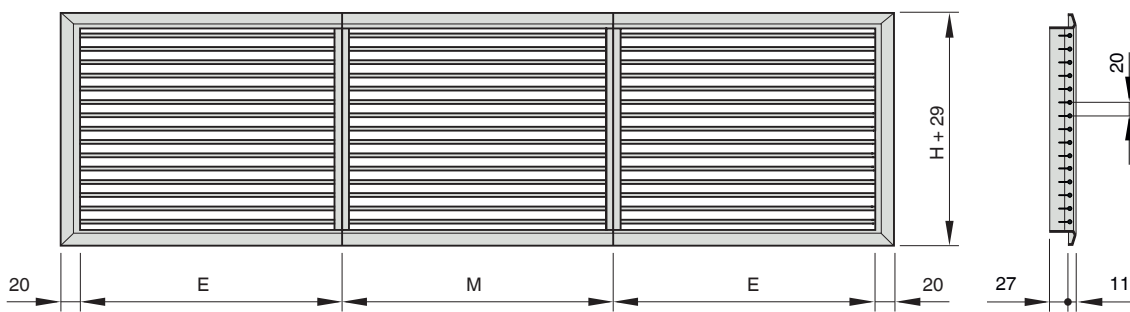
H Nominal height

SL, single grille

H	L [mm]							
	225	325	425	525	625	825	1025	1225
mm	m							
mm	kg							
125	0.6	0.8	1.0	1.2	1.3	1.7	2.1	2.4
225		1.2	1.5	1.7	2.0	2.5	3.0	3.6
325			2.0	2.3	2.7	3.4	4.0	4.7
425					3.3	4.2	5.0	5.9
525							6.0	7.0

Weights apply to ventilation grilles without attachments

SL, front border width 28 mm (L) and 20 mm (H), horizontal run section



E End section

M Middle section

H Nominal height

SL, horizontal run section

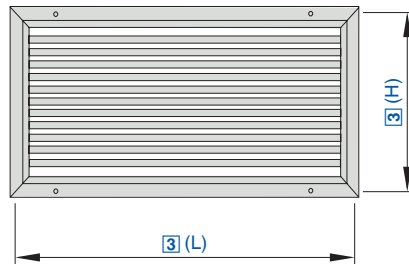
H	Section	
	E	M
mm	kg/m	kg
125	2.0	4.0
225	3.0	6.0
325	4.0	8.0

Middle section M: 2000 mm

End section E: 950 - 2025 mm in increments of 1 mm

Weights apply to sections without attachments





Ventilation grilles, made of sheet steel, with individually adjustable, horizontal blades



Order code

TR – AG / 825x225 / A1 / C11 / P1 – RAL ...

1 2 3 4 5 6

1 Type TR Single grille	3 Nominal size [mm] L x H	6 Exposed surface No entry: powder-coated RAL 9010, pure white
2 Attachments A Without (grille face only) AG Damper unit, opposed action blades AS Hit and miss damper D Air direction control, blades installed at 90° to the front blades, independently adjustable DG D combined with AG	4 Installation subframe A1 No entry: none With	P1 Powder-coated, specify RAL CLASSIC colour S7 Grille face made of galvanised sheet steel, without powder coating
	5 Fixing C11 No entry: countersunk holes With concealed screw fixing	Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %



Order code

TR – EF – AS / 825x225 / P1 – RAL ...

1 2 3 4 5

1 Type TR Single grille	3 Attachments A Without AS Hit and miss damper	P1 RAL 9010, pure white Powder-coated, specify RAL CLASSIC colour
2 Construction EF Installation subframe with filter element and spring clip fixing	4 Nominal size [mm] L x H	Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %
	5 Exposed surface No entry: powder-coated	



Features

- Ventilation grille with droplet shaped blades
 - ▶ Nominal sizes 225 x 125 - 1225 x 525 mm
 - ▶ Volume flow rate range 23 - 2000 l/s or 83 - 7200 m³/h
 - ▶ Grille face made of sheet steel, powder-coated
 - ▶ Front border with countersunk holes, 27 mm wide
- Optional equipment and accessories
 - ▶ Grille face in RAL CLASSIC colours
 - ▶ Grille face made of galvanised sheet steel, without powder coating
 - ▶ Installation subframe
 - ▶ Installation subframe for fitting filter media
 - ▶ Attachments for volume flow rate balancing and air direction control
 - ▶ Concealed screw fixing



Application

- ▶ Ventilation grille of Type TR as supply air or extract air variant for comfort zones and industrial zones
- ▶ Directed supply air discharge for mixed flow ventilation
- ▶ Blades are adjustable to meet different local requirements
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +4 K
- ▶ For installation in walls, sills and rectangular ducts



Variants

- Fixing
 - ▶ Countersunk holes
 - ▶ C11: Concealed screw fixing



Attachments

- ▶ AG, AS, D, DG: For volume flow rate balancing and for air direction control



Accessories

- ▶ Installation subframe: For the fast and simple installation of ventilation grilles
- ▶ Filter casing: Frame with filter element and spring clip fixing



Special characteristics

- ▶ Individually adjustable blades
- ▶ Countersunk holes or concealed screw fixing
- ▶ Optional installation subframe and casing for the fitting of filter media



ISO Standards and guidelines

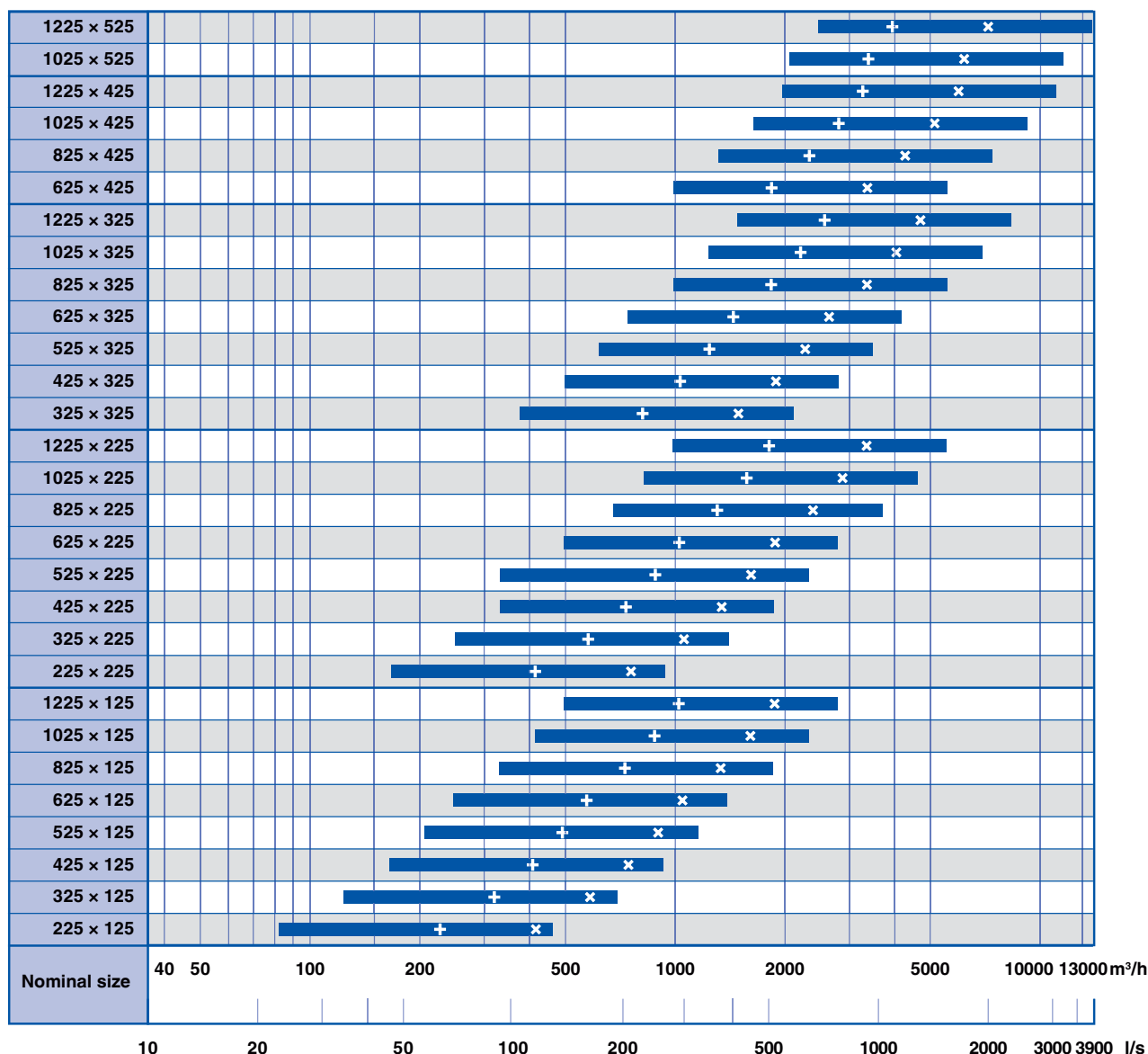
- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	225 × 125 to 1225 × 525 mm
Minimum volume flow rate	23 - 685 l/s or 83 - 2466 m ³ /h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	115 - 2000 l/s or 414 - 7200 m ³ /h
Supply air to room air temperature difference	-12 to +4 K

Volume flow rates apply to supply air

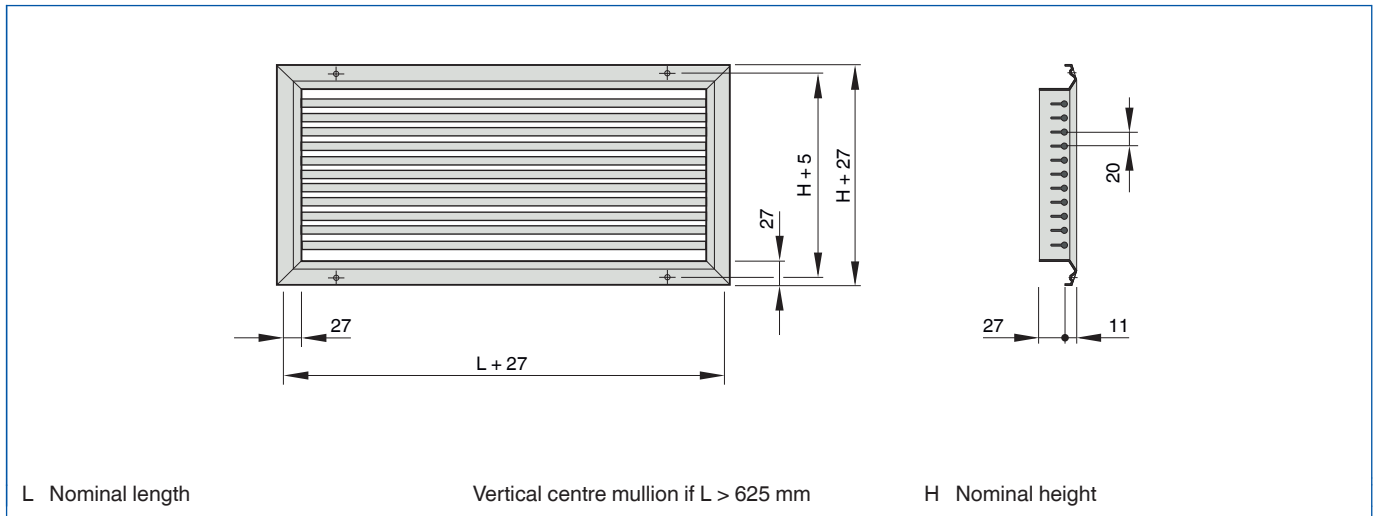
TR, volume flow rate ranges



× LWA = 40 dB(A) with unrestricted airflow+ LWA = 40 dB(A) with airflow restricted by 50 %



TR, 27 mm wide front border

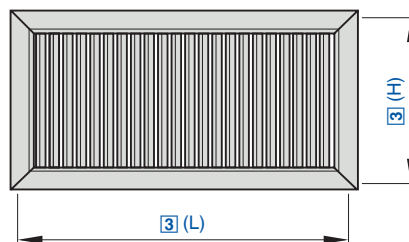


TR

H	L [mm]							
	225	325	425	525	625	825	1025	1225
	m							
mm	kg							
125	0.5	0.6	0.8	1.0	1.1	1.4	1.8	2.1
225	0.8	1.0	1.3	1.5	1.8	2.2	2.7	3.2
325		1.4	1.7	2.0	2.4	3.0	3.7	4.4
425					3.0	3.8	4.6	5.5
525							5.6	6.6

Weights apply to ventilation grilles without attachments





Ventilation grilles, made of sheet steel, with individually adjustable, vertical blades

Order code

TRS – AG / 825x225 / A1 / C11 / P1 – RAL ...

1 2 3 4 5 6

1 Type	L x H	P1	Powder-coated, specify RAL CLASSIC colour
TRS Single grille		S7	Grille face made of galvanised sheet steel, without powder coating
2 Attachments	4 Installation subframe		Gloss level
A Without (grille face only)	No entry: none		RAL 9010 50 %
AG Damper unit, opposed action blades	A1 With		RAL 9006 30 %
AS Hit and miss damper	5 Fixing		All other RAL colours 70 %
D Air direction control, blades installed at 90° to the front blades, independently adjustable	No entry: countersunk holes		
DG D combined with AG	C11 With concealed screw fixing		
	6 Exposed surface		
	No entry: powder-coated		
	RAL 9010, pure white		
3 Nominal size [mm]			

Order code

TRS – EF – AS / 825x225 / P1 – RAL ...

1 2 3 4 5

1 Type	3 Attachments	P1	RAL 9010, pure white
TRS Single grille	A Without		Powder-coated, specify RAL CLASSIC colour
2 Construction	AS Hit and miss damper		
EF Installation subframe with filter element and spring clip fixing	4 Nominal size [mm]		Gloss level
	L x H		RAL 9010 50 %
	5 Exposed surface		RAL 9006 30 %
	No entry: powder-coated		All other RAL colours 70 %

- + Features**
- Ventilation grille with droplet shaped blades
 - ▶ Nominal sizes 225 x 75 to 1225 x 325 mm
 - ▶ Volume flow rate range 11 - 1305 l/s or 40 - 4698 m³/h
 - ▶ Grille face made of sheet steel, powder-coated
 - ▶ Front border with countersunk holes, 27 mm wide
- Optional equipment and accessories
- ▶ Grille face in RAL CLASSIC colours
 - ▶ Grille face made of galvanised sheet steel, without powder coating
 - ▶ Installation subframe
 - ▶ Installation subframe for fitting filter media
 - ▶ Attachments for volume flow rate balancing and air direction control
 - ▶ Concealed screw fixing

- X Application**
- ▶ Ventilation grille of Type TRS as supply air or extract air variant for comfort zones and industrial zones
 - ▶ Directed supply air discharge for mixed flow ventilation
 - ▶ Blades are adjustable to meet different local requirements
 - ▶ For variable and constant volume flows
 - ▶ For supply air to room air temperature differences from -12 to +4 K
 - ▶ For installation in walls, sills and rectangular ducts

- ◊ Variants**
- Fixing
- ▶ Countersunk holes
 - ▶ C11: Concealed screw fixing

- ⬡ Attachments**
- ▶ AG, AS, D, DG: For volume flow rate balancing and for air direction control

- & Accessories**
- ▶ Installation subframe: For the fast and simple installation of ventilation grilles
 - ▶ Filter casing: Frame with filter element and spring clip fixing





Special characteristics

- ▶ Individually adjustable blades
- ▶ Countersunk holes or concealed screw fixing

- ▶ Optional installation subframe and casing for the fitting of filter media



Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

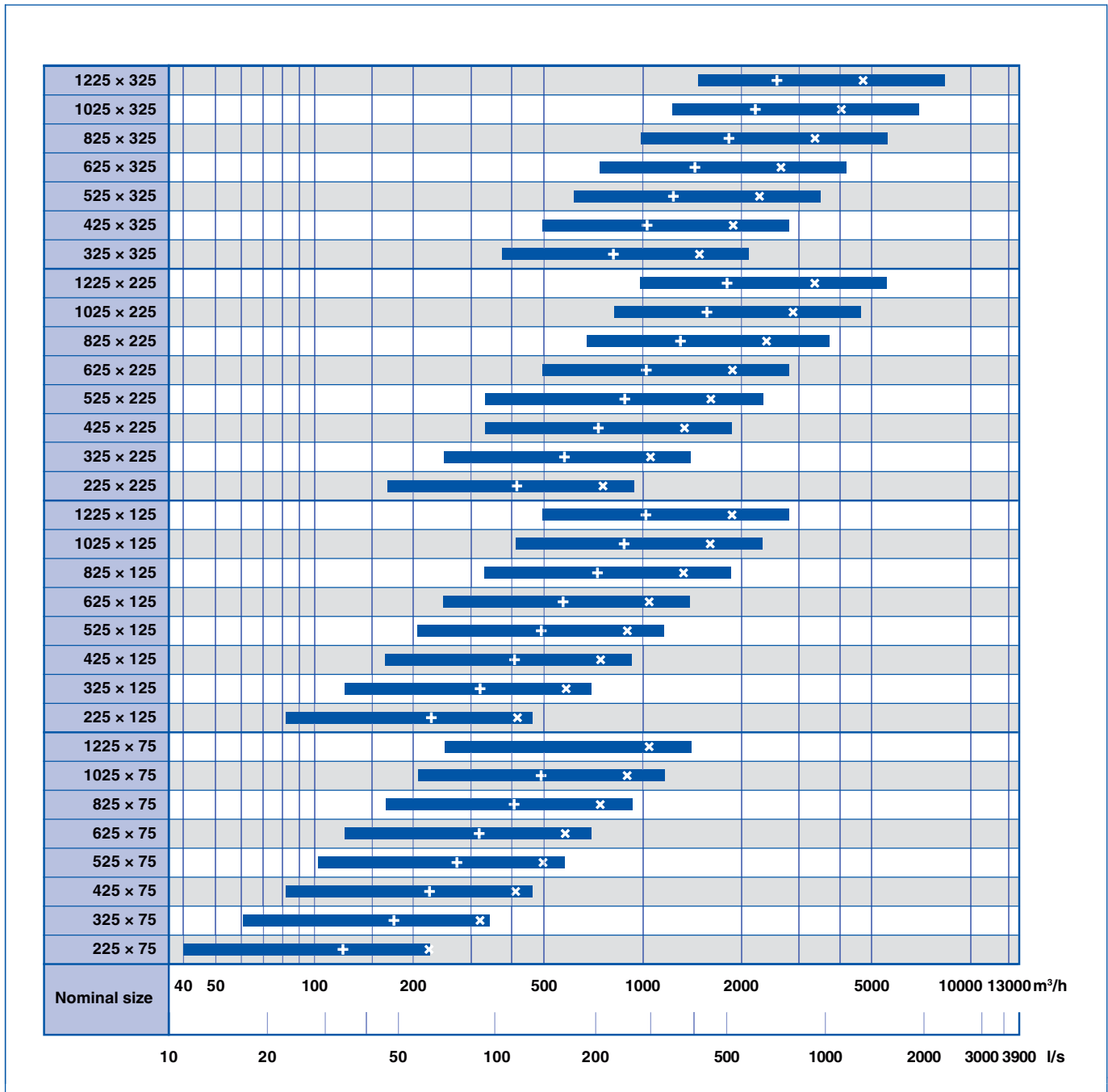


Technical data

Nominal sizes	225 x 75 to 1225 x 325 mm
Minimum volume flow rate	11 - 410 l/s or 40 - 1476 m ³ /h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	62 - 1305 l/s or 223 - 4698 m ³ /h
Supply air to room air temperature difference	-12 to +4 K

Volume flow rates apply to supply air

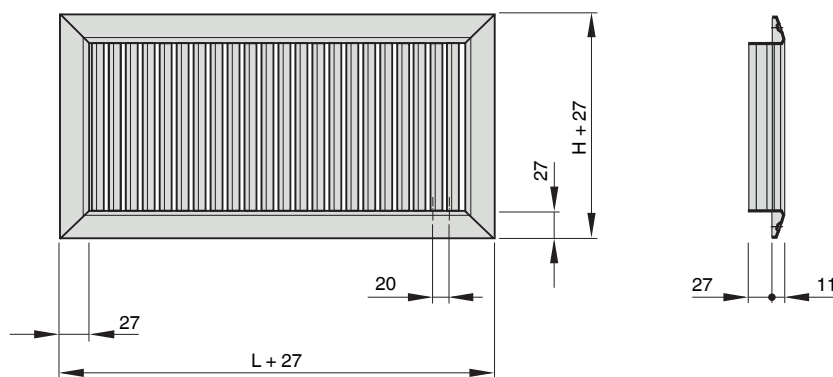
TRS, volume flow rate ranges



× LWA = 40 dB(A) with unrestricted airflow + LWA = 40 dB(A) with airflow restricted by 50 %



TRS, 27 mm wide front border



L Nominal length

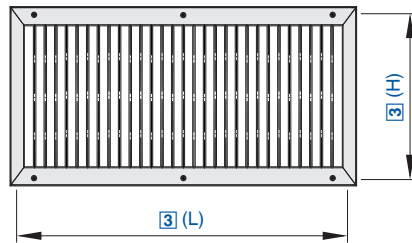
H Nominal height

TRS

H	L [mm]							
	225	325	425	525	625	825	1025	1225
	m							
mm	kg							
75	0.4	0.5	0.7	0.8	0.9	1.2	1.5	1.8
125	0.5	0.7	0.8	1.0	1.2	1.6	1.9	2.3
225	0.7	1.0	1.2	1.5	1.8	2.3	2.8	3.3
325		1.3	1.6	2.0	2.3	3.0	3.7	4.4

Weights apply to ventilation grilles without attachments





Ventilation grilles, made of galvanised sheet steel, with individually adjustable, vertical blades, for installation into rectangular ducts

Order code

TRS-K – K5 / 825x225 / A1 / P1 – RAL ...

1 2 3 4 5

1 Type

TRS-K Single grille

2 Variants and attachments

Variants

- KA** Grille face with vertical blades
- KD** Grille face with individually adjustable vertical and horizontal blades for air direction control

Attachments

- KS** Hit and miss damper for TRS-K-KA
- K5** Slanting hit and miss damper for TRS-K-KD

3 Nominal size [mm]

L x H

4 Installation subframe

- A1** No entry: none
- With

5 Surface

- P1** No entry: galvanised grille face
- Powder-coated, specify RAL CLASSIC colour

- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %

+ Features

- Ventilation grille with droplet shaped blades
- ▶ Nominal sizes 225 x 75 to 1225 x 325 mm
- ▶ Volume flow rate range 11 - 1305 l/s or 40 - 4698 m³/h
- ▶ Grille face made of galvanised sheet steel
- ▶ Front border with countersunk holes, 27 mm wide

Optional equipment and accessories

- ▶ Grille face in RAL CLASSIC colours
- ▶ Installation subframe
- ▶ Attachments for volume flow rate balancing and air direction control

Application

- ▶ Ventilation grille of Type TRS-K as supply air or extract air variant for comfort zones and industrial zones
- ▶ Directed supply air discharge for mixed flow ventilation
- ▶ Blades are adjustable to meet different local requirements
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +4 K
- ▶ For installation into rectangular ducts

Variants

- ▶ TRS-K-KA: Grille face with vertical blades
- ▶ TRS-K-KD: Grille face with vertical and horizontal blades, individually adjustable

Attachments

- ▶ KS, K5: For volume flow rate balancing

& Accessories

- ▶ Installation subframe: For the fast and simple installation of ventilation grilles

★ Special characteristics

- ▶ Individually adjustable blades

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

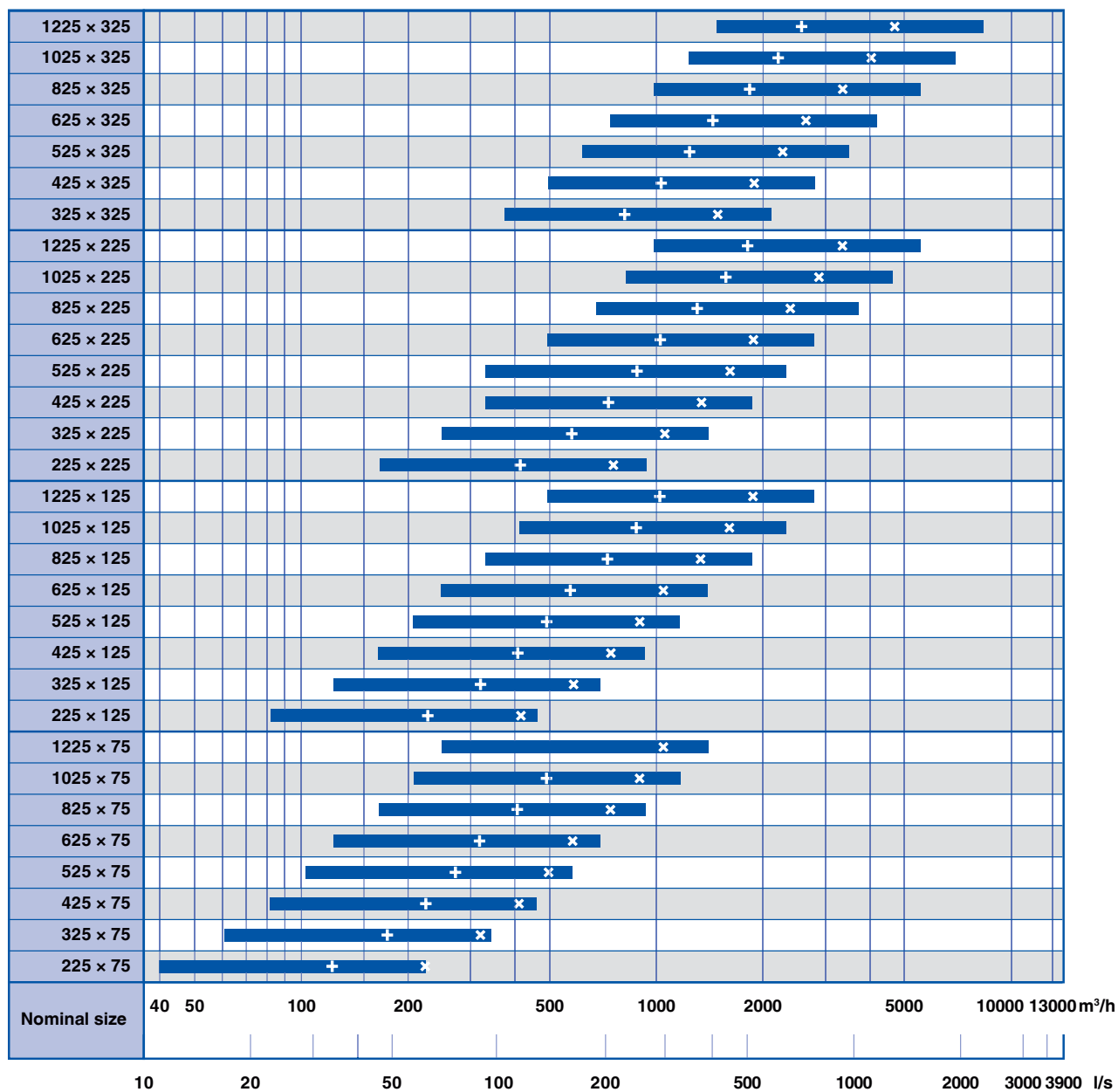
Technical data

Nominal sizes	225 x 75 to 1225 x 325 mm
Minimum volume flow rate	11 - 410 l/s or 40 - 1476 m ³ /h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	62 - 1305 l/s or 223 - 4698 m ³ /h
Supply air to room air temperature difference	-12 to +4 K

Volume flow rates apply to supply air



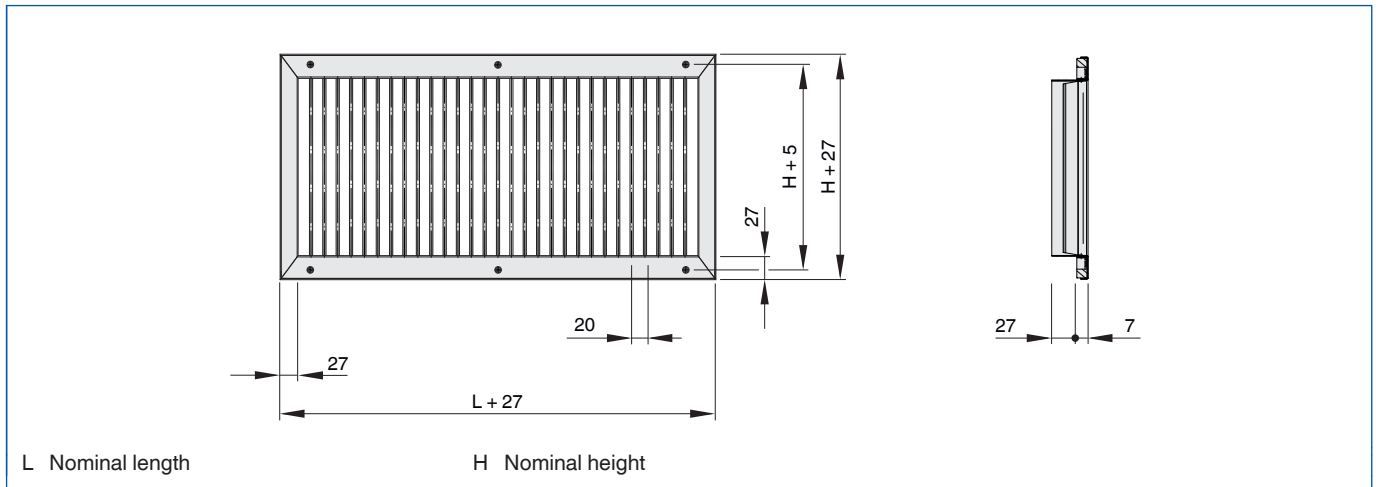
TRS-K, volume flow rate ranges



x LWA = 40 dB(A) with unrestricted airflow+ LWA = 40 dB(A) with airflow restricted by 50 %



TRSK-KA, 27 mm wide front border

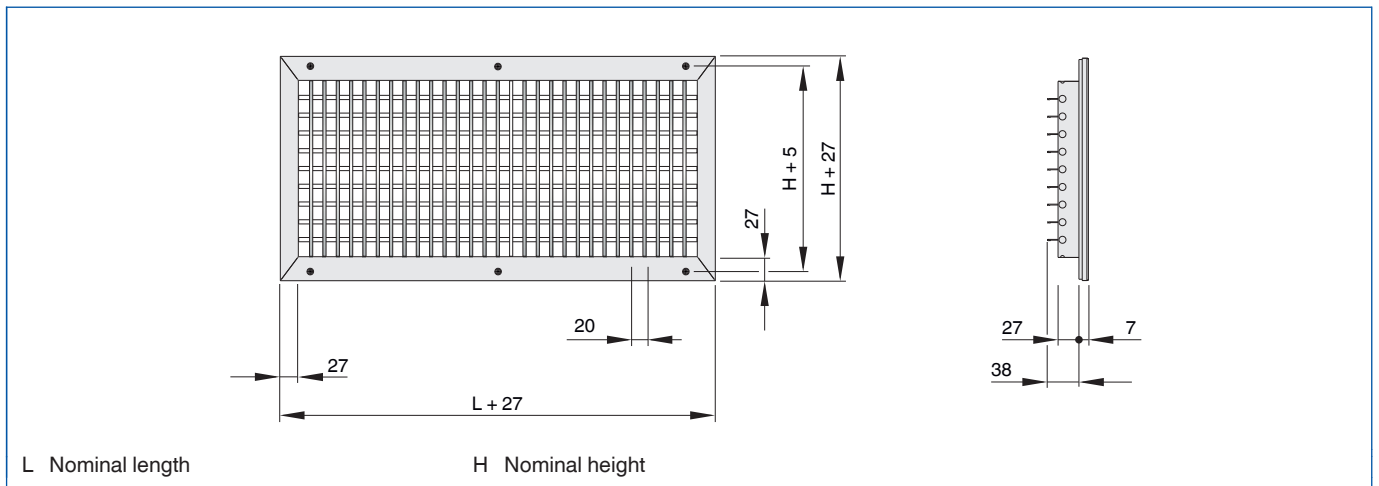


TRSK-KA

H	L [mm]							
	225	325	425	525	625	825	1025	1225
mm	m							
mm	kg							
75	0.4	0.5	0.7	0.8	0.9	1.2	1.5	1.8
125	0.5	0.7	0.8	1.0	1.2	1.6	1.9	2.3
225	0.7	1.0	1.2	1.5	1.8	2.3	2.8	3.3
325		1.3	1.6	2.0	2.3	3.0	3.7	4.4

Weights apply to ventilation grilles without attachments

TRSK-KD, 27 mm wide front border



TRSK-KA

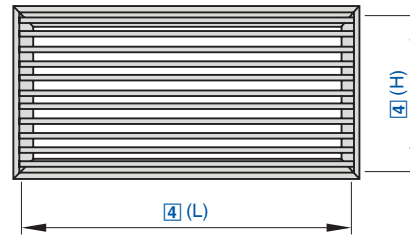
H	L [mm]							
	225	325	425	525	625	825	1025	1225
mm	m							
mm	kg							
75	0.4	0.5	0.7	0.8	0.9	1.2	1.5	1.8
125	0.5	0.7	0.8	1.0	1.2	1.6	1.9	2.3
225	0.7	1.0	1.2	1.5	1.8	2.3	2.8	3.3
325		1.3	1.6	2.0	2.3	3.0	3.7	4.4

Weights apply to ventilation grilles without attachments



Ventilation grilles for floor installation

	Grille cores	Floor installation	Door and wall installation	Installation into circular ducts
	EF	AF	AGS	TRS-R
Blades				
Longitudinal	●	●	●	
Transverse				●
Fixed	●	●	●	
Adjustable				●
Aluminium	●	●	●	
Galvanised sheet steel				●
Discharge angle	0°, 15°	0°, 15°		var.
Blade pitch [mm]	12.5, 16.7	12.5	20	20
Front border				
Width of longitudinal section [mm]		5.5	30	24
Width of transverse section [mm]		5.5	30	24
Galvanised sheet steel				●
Aluminium		●	●	
Screw fixing			●	●
Attachments				
AG, AS, D,DG		●		
*S, *5				●
Accessories				
Installation subframe		●	●	●
Nominal sizes				
Length [mm]	225 - 1225	225 - 1225	225 - 1225	225 - 1225
Horizontal run section	●	●		
Height [mm]	75 - 425	75 - 425	125 - 525	75 - 225
Technical data				
Volume flow rate range [l/s]		10 - 1234	4 - 533	11 - 1999
Volume flow rate range [m³/h]		36 - 4442	14 - 1918	40 - 7197
Explanation				
● - Standard				



Ventilation grilles, made of aluminium, with fixed longitudinal blades, for floor installation - also for horizontal runs

Order code

AF - 0 - AG / 825x225 / P1 - RAL ...

1 Type	D Air direction control, blades installed at 90° to the front blades, independently adjustable	5 Exposed surface
AF Single grille		No entry: anodised, E6-C-0, natural colour
2 Blade construction style	DG D combined with AG	P1 Powder-coated, specify RAL CLASSIC colour
0 0° blades (straight)		Gloss level
15 15° blades (angled)	4 Nominal size [mm] L x H	RAL 9010 50 %
3 Attachments		RAL 9006 30 %
A Without (grille face only)		All other RAL colours 70 %
AG Damper unit, opposed action blades		

Order code

E - AF - 15 - AG / 950x225 / P1 - RAL ...

1 Type	15 15° blades (angled)	6 Exposed surface
AF Horizontal run section		No entry: anodised, E6-C-0, natural colour
2 Section	4 Attachments	P1 Powder-coated, specify RAL CLASSIC colour
E End section	A Without (grille face only)	Gloss level
EL Left end section, blade construction style 15	AG Damper unit, opposed action blades	RAL 9010 50 %
ER Right end section, blade construction style 15	D Air direction control, blades installed at 90° to the front blades, independently adjustable	RAL 9006 30 %
M Middle section	DG D combined with AG	All other RAL colours 70 %
3 Blade construction style	5 Nominal size	
0 0° blade (straight)	E (end section) x H	
	M (middle section) x H	

Features

- Single ventilation grilles and horizontal run sections with special profiled blades
- Nominal sizes 225 x 75 - 1225 x 425 mm and horizontal run sections
- Volume flow rate range 10 - 1235 l/s or 36 - 4446 m³/h
- Grille face made of aluminium with anodised finish
- Front border suitable for floor installation without an installation subframe
- Removable grille core with special spring clip fixing

- Optional equipment and accessories
- Grille face in RAL CLASSIC colours

- Attachments for volume flow rate balancing and air direction control

Application

- Ventilation grille of Type AF as supply air or extract air variant for comfort zones and industrial zones
- Directed supply air discharge for mixed flow ventilation
- Blades for straight (0°) or angled (15°) air discharge to meet different local requirements
- For variable and constant volume flows
- For supply air to room air temperature differences from -12 to +4 K
- Preferably for floor installation

Variants

- AF: Single grille
- E-AF, M-AF: Horizontal run section

Blade construction style

- 0: 0° discharge
- 15: 15° discharge

Attachments

- AG, AS, D, DG: For volume flow rate balancing and for air direction control



★ Special characteristics

- ▶ Blades for straight (0°) or angled (15°) air discharge to meet different local requirements

- ▶ requirements
- ▶ Spring clip fixing

ISO Standards and guidelines

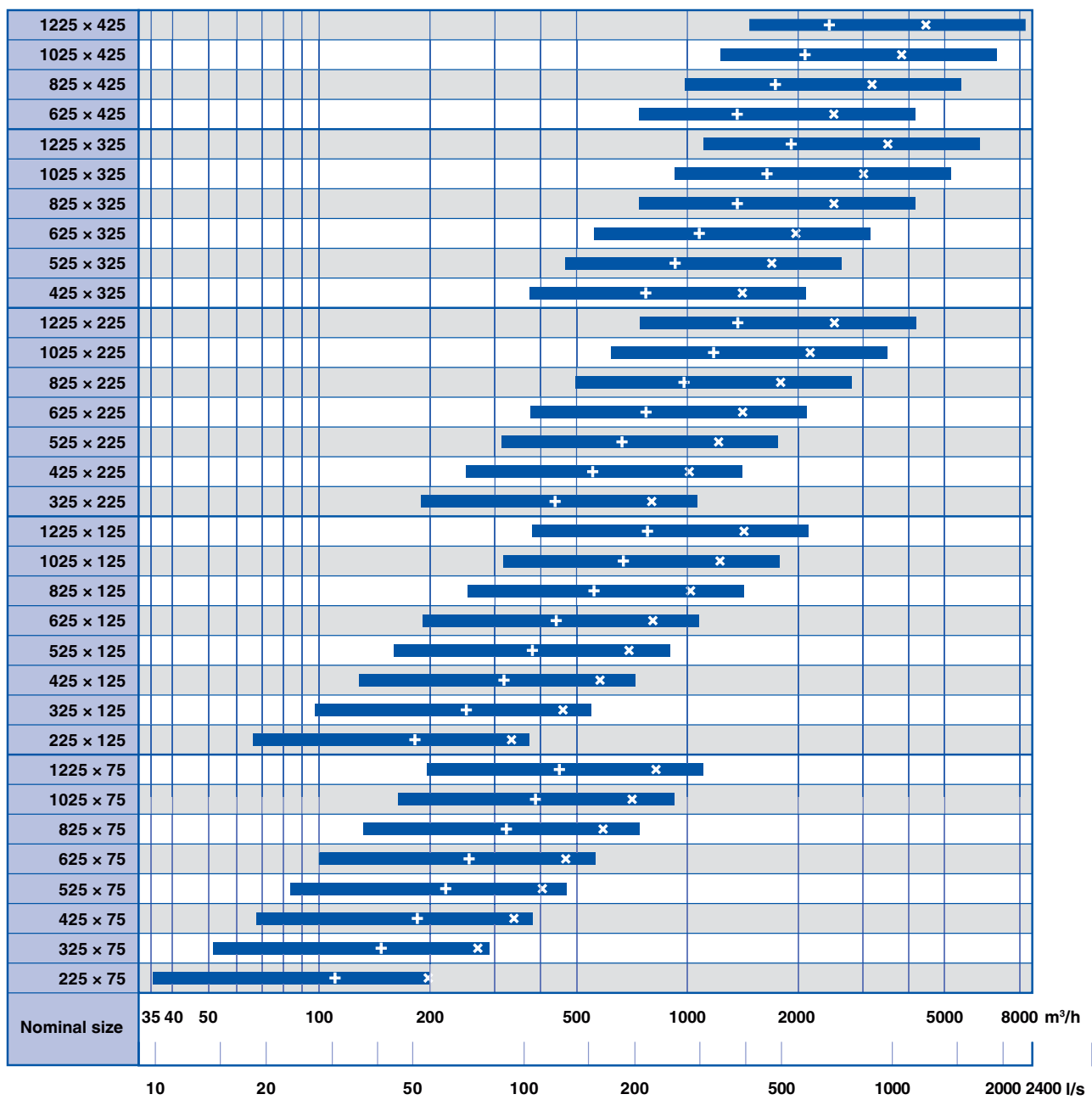
- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	225 × 75 to 1225 × 425 mm
Horizontal run section	H: 75, 125, 225, 325 mm
Minimum volume flow rate	10 - 410 l/s or 36 - 1476 m ³ /h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	55 - 1235 l/s or 198 - 4446 m ³ /h
Supply air to room air temperature difference	-12 to +4 K

Volumen flow rates for single grille for supply air.

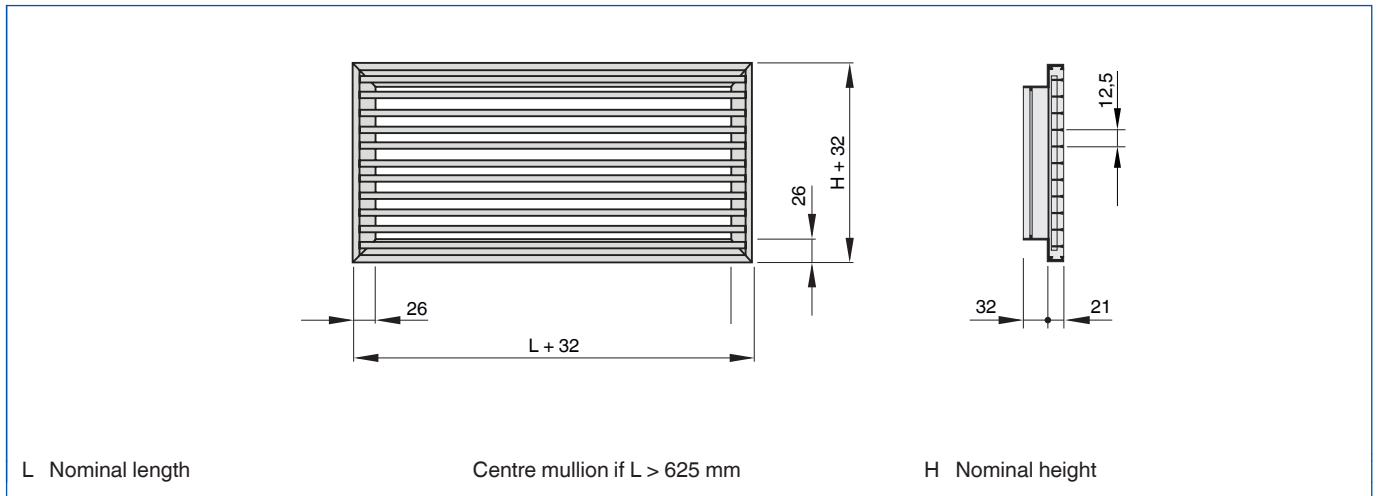
AF, volume flow rate ranges



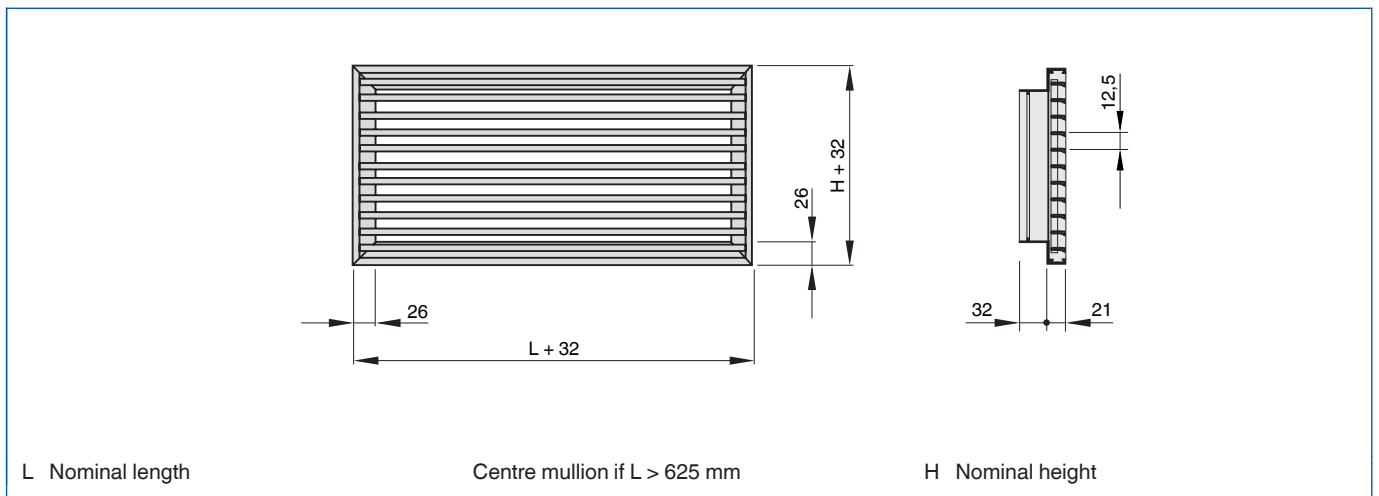
× LWA = 40 dB(A) with unrestricted airflow+ LWA = 40 dB(A) with airflow restricted by 50 %



AF0



AF-15



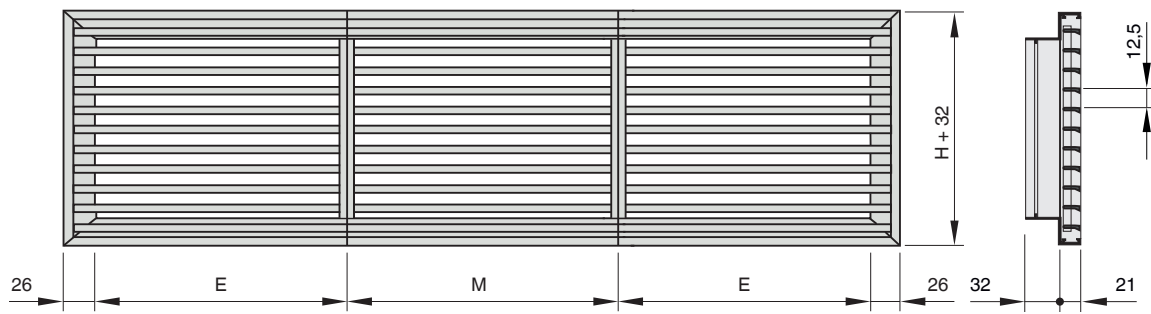
AF, single grille

H	L [mm]							
	225	325	425	525	625	825	1025	1225
	m							
mm	kg							
75	0.8	1.1	1.4	1.7	2.0	2.6	3.2	3.8
125	1.1	1.5	1.9	2.3	2.7	3.4	4.2	5.0
225		2.2	2.8	3.4	4.0	5.1	6.3	7.5
325			3.7	4.5	5.3	6.9	8.4	10.0
425					6.6	8.6	10.5	12.5

Weights apply to ventilation grilles without attachments



AF, Horizontal run section



E End section

M Middle section

H Nominal height

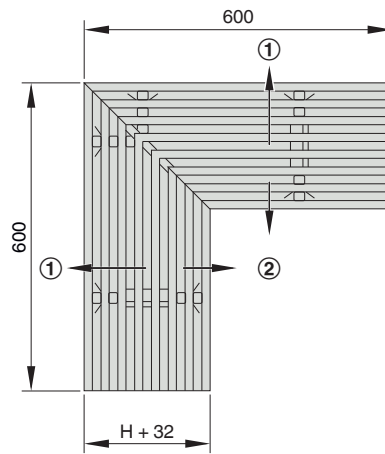
AF, Horizontal run section

Section	L [mm]		H [mm]			
	2000	75	125	225	325	
M	2000	6.4	8.4	12.6	16.8	
E	950	3.0	4.0	6.0	8.0	
	1010	3.2	4.2	6.4	8.5	
	1070	3.4	4.5	6.7	9.0	
	1130	3.6	4.7	7.1	9.5	
	1190	3.8	5.0	7.5	10.0	
	1250	4.0	5.3	7.9	10.5	
	1310	4.2	5.5	8.3	11.0	
	1370	4.4	5.8	8.6	11.5	
	1430	4.6	6.0	9.0	12.0	
	1490	4.8	6.3	9.4	12.5	
	1550	5.0	6.5	9.8	13.0	
	1610	5.2	6.8	10.1	13.5	
	1670	5.3	7.0	10.5	14.0	
	1730	5.5	7.3	10.9	14.5	
1790	5.7	7.5	11.3	15.0		
1850	5.9	7.8	11.7	15.5		
1910	6.1	8.0	12.0	16.0		
1970	6.3	8.3	12.4	16.5		

Weights apply to sections without attachments



90° corner section

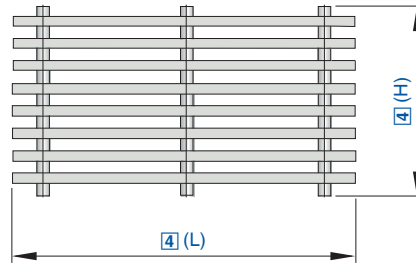
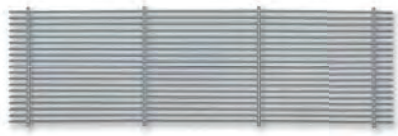


Only AF-15, discharge angle less than 15°

① Outward

② Inward





Grille cores made of aluminium, with fixed horizontal blades

Order code

EF - G - 0 / 845x245 / P1 - RAL ...

1 2 3 4 5

1 Type EF Grille core	15 15° blades (angled)	P1 Powder-coated, specify RAL CLASSIC colour
2 Blade pitch No entry: 12.5 mm G 16.7 mm	4 Nominal size [mm] L x H	Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %
3 Blade construction style 0 0° blades (straight)	5 Exposed surface No entry: anodised, E6-C-0, natural colour	

+ Features

- Grille cores with special profiled blades
- Nominal sizes 245 x 95 - 1245 x 445 mm
- Volume flow rate range 10 - 1235 l/s or 36 - 4446 m³/h
- Grille core made of aluminium with anodised finish
- Straight (0°) or angled (15°) air discharge

- Directed supply air discharge for mixed flow ventilation
- Blades for straight (0°) or angled (15°) air discharge to meet different local requirements
- For variable and constant volume flows
- For supply air to room air temperature differences from -12 to +4 K
- For covering all types of openings

- Blade construction style
- 0: 0° discharge
 - 15: 15° discharge

★ Special characteristics

- Fixed blades
- 0° or 15° air discharge
- Blade pitch 12.5 mm or 16.7 mm

Application

- Ventilation grille cores of Type EF as supply air or extract air variant for comfort zones and industrial zones

◊ Variants

- Blade pitch 12.5 mm
- G: Blade pitch 16.7 mm

ISO Standards and guidelines

- Sound power level of the air-regenerated noise measured according to EN ISO 5135

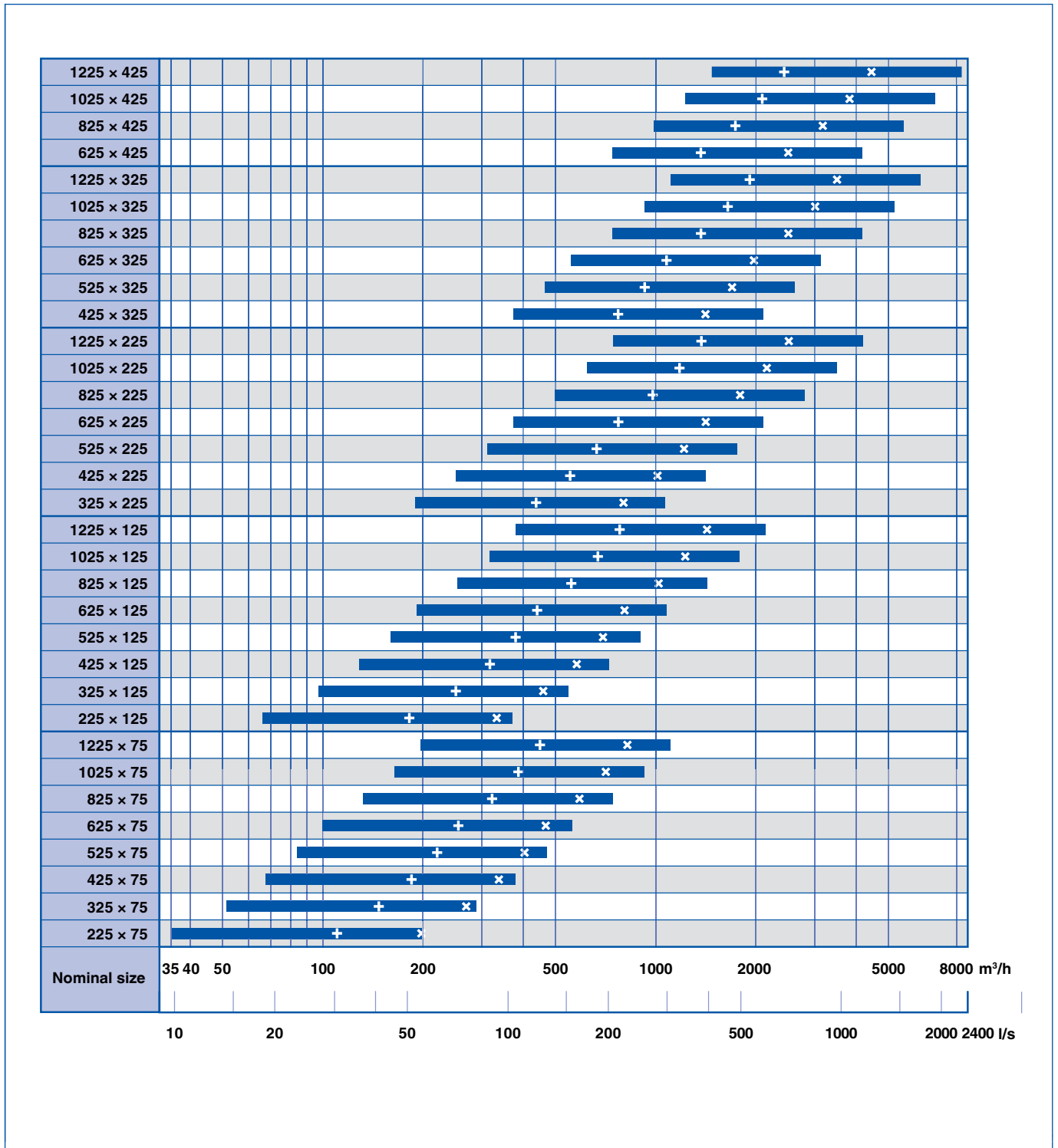
Technical data

Nominal sizes	245 x 95 to 1245 x 445 mm
Minimum volume flow rate	10 - 410 l/s or 36 - 1476 m ³ /h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	55 - 1235 l/s or 198 - 4446 m ³ /h
Supply air to room air temperature difference	-12 to +4 K

Volume flow rates apply to supply air



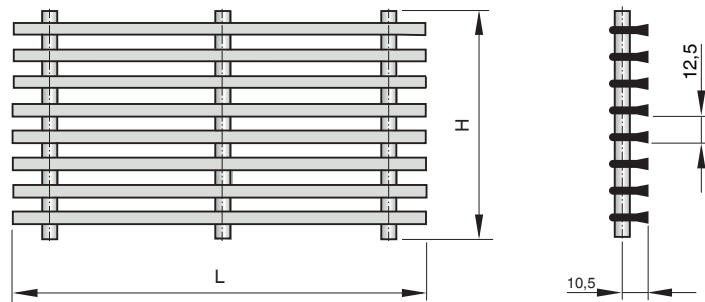
EF, volume flow rate ranges



x LWA = 40 dB(A) with unrestricted airflow + LWA = 40 dB(A) with airflow restricted by 50 %



EF-0

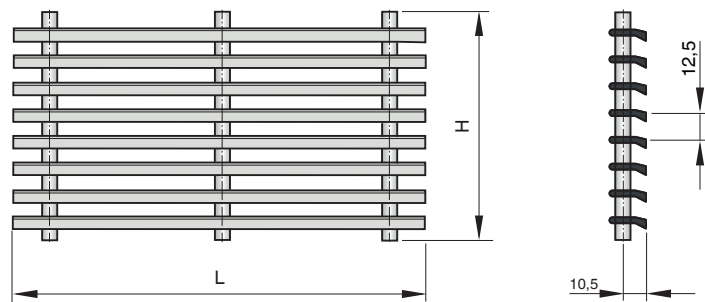


L Nominal length

Vertical centre mullion if L > 625 mm

H Nominal height

EF-15



L Nominal length

Vertical centre mullion if L > 625 mm

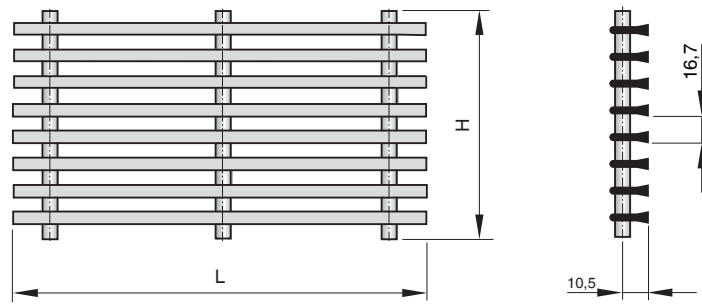
H Nominal height

EF

H	L [mm]							
	245	345	445	545	645	845	1045	1245
	m							
mm	kg							
95	0.3	0.5	0.6	0.7	0.9	1.2	1.4	1.7
145	0.5	0.7	1.0	1.2	1.4	1.8	2.3	2.7
245	0.9	1.3	1.7	2.0	2.4	3.1	3.9	4.6
345	1.3	1.8	2.4	2.9	3.4	4.5	5.5	6.6
445	1.7	2.4	3.1	3.7	4.4	5.8	7.2	8.5



EF-G-0

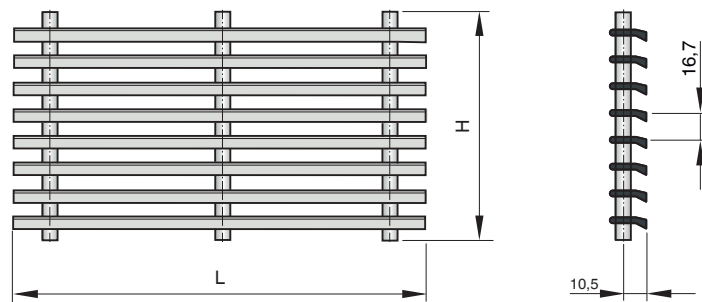


L Nominal length

Vertical centre mullion if L > 625 mm

H Nominal height

EF-G-15



L Nominal length

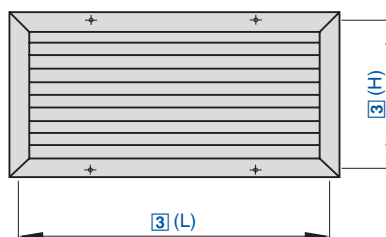
Vertical centre mullion if L > 625 mm

H Nominal height

EF

H	L [mm]							
	245	345	445	545	645	845	1045	1245
	m							
mm	kg							
95	0.3	0.5	0.6	0.7	0.9	1.2	1.4	1.7
145	0.5	0.7	1.0	1.2	1.4	1.8	2.3	2.7
245	0.9	1.3	1.7	2.0	2.4	3.1	3.9	4.6
345	1.3	1.8	2.4	2.9	3.4	4.5	5.5	6.6
445	1.7	2.4	3.1	3.7	4.4	5.8	7.2	8.5





Non-vision air transfer grilles, made of aluminium, with fixed horizontal blades

 **Order code**

AGS – T / 825x225 / / P1 – RAL ...

1 **2** **3** (L) **4** **5**

1 Type

AGS Single grille

2 Attachments

T No entry: without (grille face only)
Matching rear frame for door installation

3 Nominal size [mm]

L x H

4 Installation subframe

A1 No entry: without (grille face only)
With (not with matching rear frame T)

5 Exposed surface

P1 No entry: anodised, E6-C-0, natural colour
Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

+ **Features**

- Ventilation grille with angled blades
- ▶ Nominal sizes 225 x 125 - 1225 x 525 mm
- ▶ Volume flow rate range 4 - 535 l/s or 14 - 1926 m³/h
- ▶ Grille face made of aluminium with anodised finish
- ▶ 30 mm wide front border
- ▶ Countersunk holes

Optional equipment and accessories

- ▶ Grille face in RAL CLASSIC colours
- ▶ Installation subframe
- ▶ Matching rear frame for door installation

X **Application**

- ▶ Type AGS ventilation grille for air transfer applications
- ▶ For wall and door installation
- ▶ Non-vision grille for the covering of various types of openings

◊ **Variants**

- ▶ Single grille
- ▶ T: Single grille with matching rear frame for door installation

& **Accessories**

- ▶ Installation subframe: For the fast and simple installation of ventilation grilles

★ **Special characteristics**

- ▶ Fixed blades
- ▶ Front border with countersunk holes
- ▶ Optional matching rear frame for door installation

ISO **Standards and guidelines**

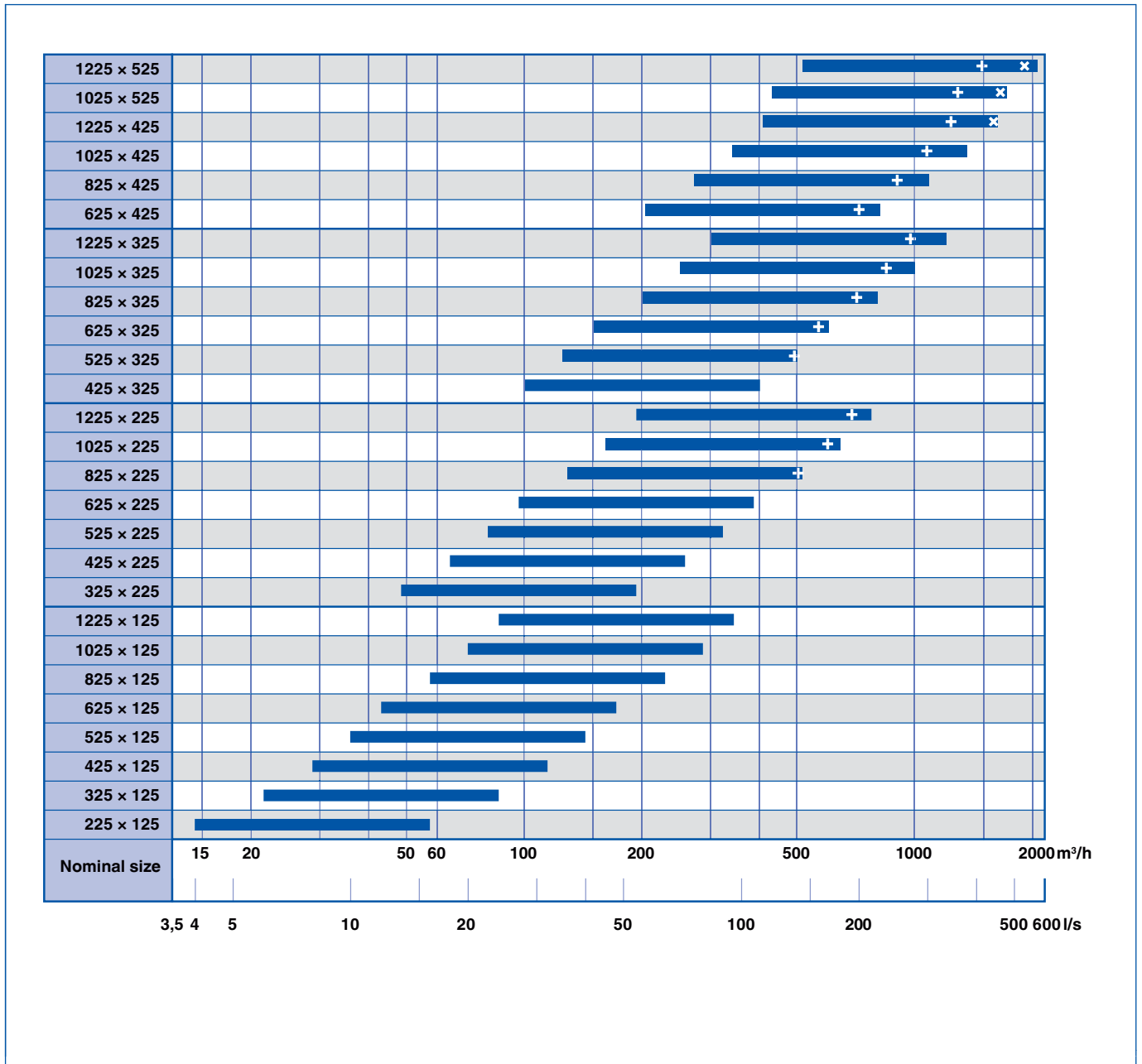
- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

📈 **Technical data**

Nominal sizes	225 x 125 to 1225 x 525 mm
Minimum volume flow rate	4 - 145 l/s or 14 - 522 m ³ /h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	16 - 535 l/s or 58 - 1926 m ³ /h

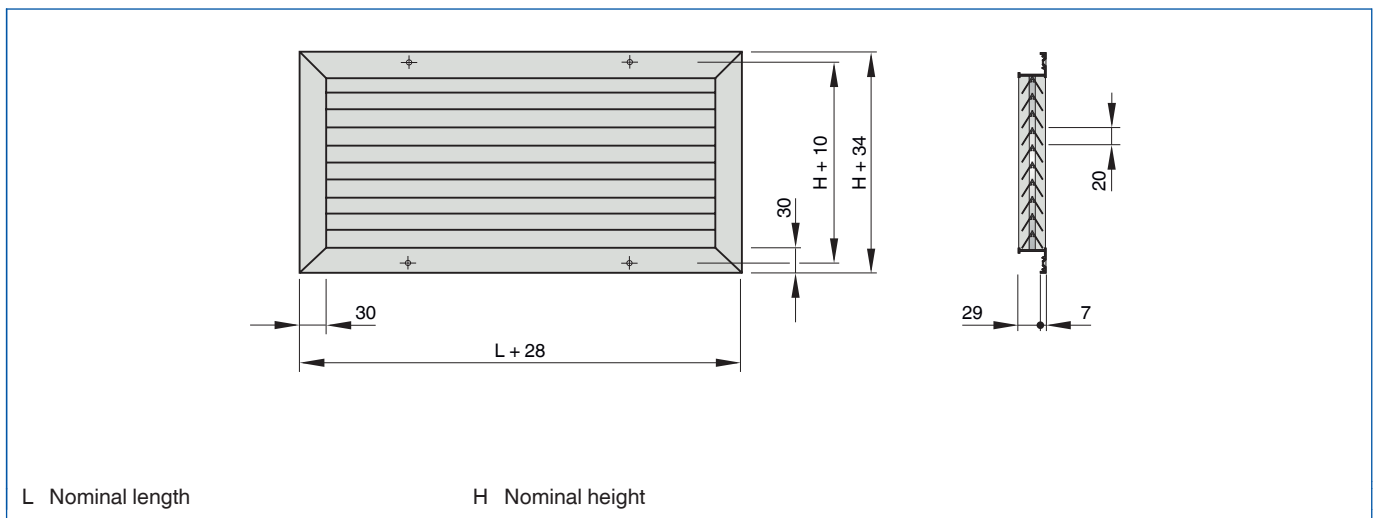


AGS, volume flow rate ranges



× LWA = 40 dB(A) with unrestricted airflow + LWA = 40 dB(A) with airflow restricted by 50 %

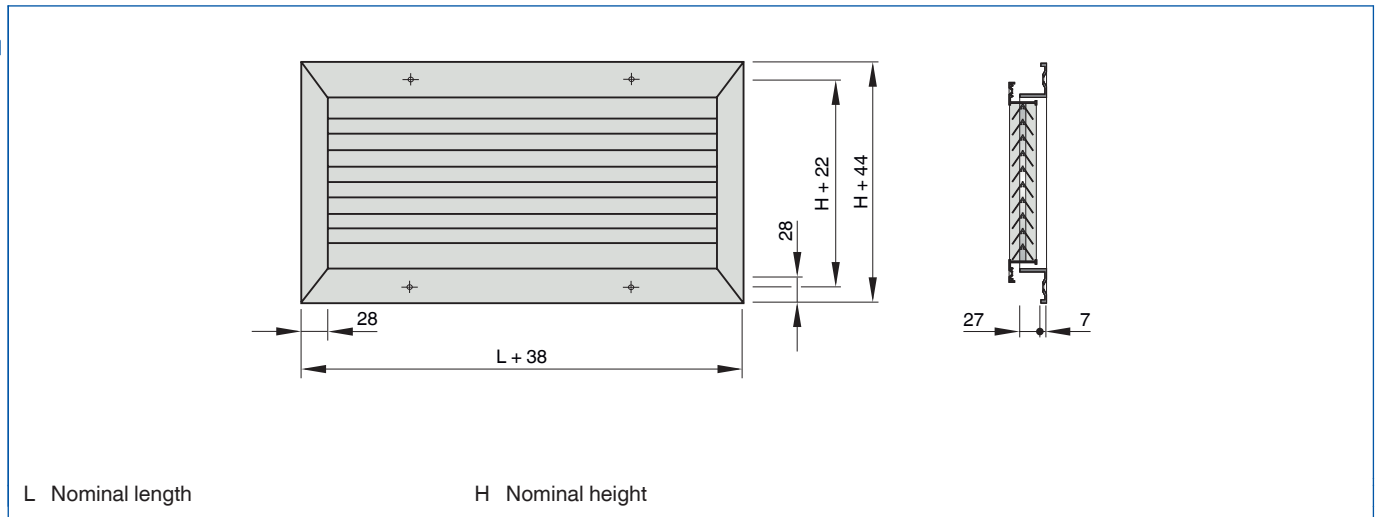
AGS, 30 mm wide front border



AGS

H	L [mm]							
	225	325	425	525	625	825	1025	1225
	m							
mm	kg							
125	0.5	0.6	0.8	1.0	1.1	1.4	1.7	2.1
225		1.0	1.2	1.5	1.7	2.2	2.8	3.3
325			1.7	2.0	2.4	3.1	3.8	4.4
425					3.0	3.9	4.8	5.6
525							5.8	6.8

AGS-T, 28 mm wide matching rear frame

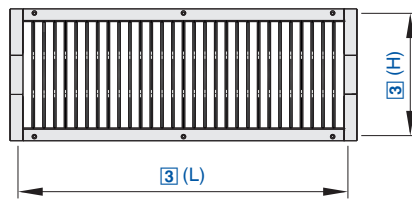


Matching rear frame

AGS

H	L [mm]							
	225	325	425	525	625	825	1025	1225
	m							
mm	kg							
125	0.5	0.6	0.8	1.0	1.1	1.4	1.7	2.1
225		1.0	1.2	1.5	1.7	2.2	2.8	3.3
325			1.7	2.0	2.4	3.1	3.8	4.4
425					3.0	3.9	4.8	5.6
525							5.8	6.8





Ventilation grilles, made of galvanised sheet steel, with individually adjustable, vertical blades, for installation into circular ducts

Order code

TRS-R – R5 / 825x125 / P1 – RAL ...

1 **2** **3** **4**

1 Type

TRS-R Single grille

2 Variants and attachments

Variants

- RA** Grille face with vertical blades
- RD** Grille face with individually adjustable vertical and horizontal blades for air direction control

Attachments

- RS** Hit and miss damper for TRS-R-RA
- R5** Slanting hit and miss damper for TRS-R-RD

3 Nominal size [mm]

L x H

4 Surface

- P1** No entry: galvanised grille face
- Powder-coated, specify RAL CLASSIC colour
- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %

+ **Features**

- Ventilation grille with droplet shaped blades
- ▶ Nominal sizes 225 × 75 - 1225 × 225 mm
- ▶ Volume flow rate range 11 - 930 l/s or 40 - 3348 m³/h
- ▶ Grille face made of galvanised sheet steel
- ▶ Front border with countersunk holes, 27 mm wide

Optional equipment and accessories

- ▶ Grille face in RAL CLASSIC colours
- ▶ Attachments for volume flow rate balancing and air direction control

X **Application**

- ▶ Ventilation grille of Type TRS-R as supply air or extract air variant for comfort zones and industrial zones
- ▶ Directed supply air discharge for mixed flow ventilation
- ▶ Blades are adjustable to meet different local requirements
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -12 to +4 K
- ▶ For installation into circular ducts

D **Variants**

- ▶ TRS-R-RA: Grille face with vertical blades

- ▶ TRS-R-RD: Grille face with vertical and horizontal blades, individually adjustable

⬡ **Attachments**

- ▶ RS, R5: For volume flow rate balancing

★ **Special characteristics**

- ▶ Individually adjustable blades

ISO **Standards and guidelines**

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

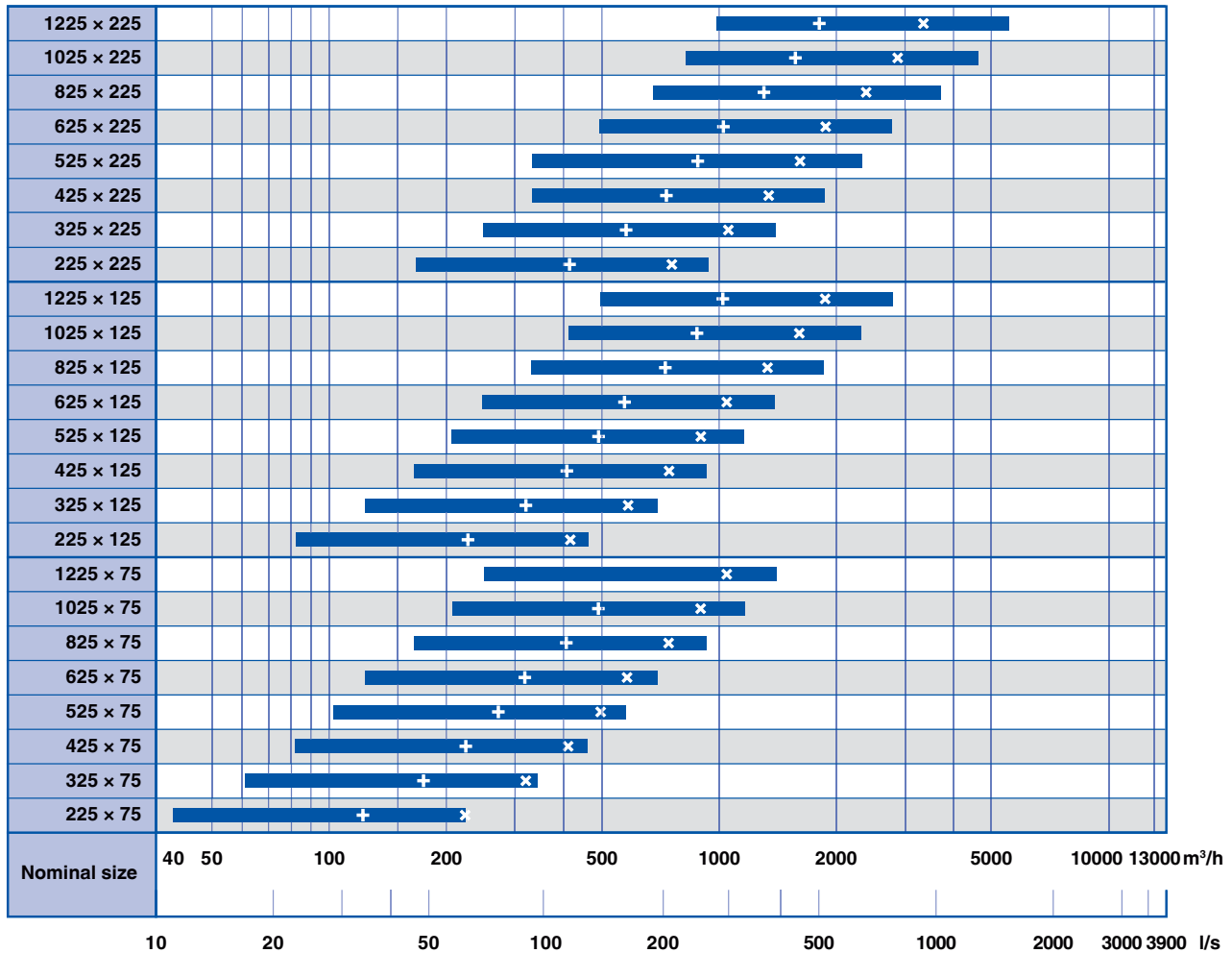
📊 **Technical data**

Nominal sizes	225 × 75 to 1225 × 225 mm
Minimum volume flow rate	11 - 275 l/s or 40 - 990 m ³ /h
Maximum volume flow rate, with L _{WA} max. 40 dB(A) without attachments	62 - 930 l/s or 223 - 3348 m ³ /h
Supply air to room air temperature difference	-12 to +4 K

Volume flow rates apply to supply air

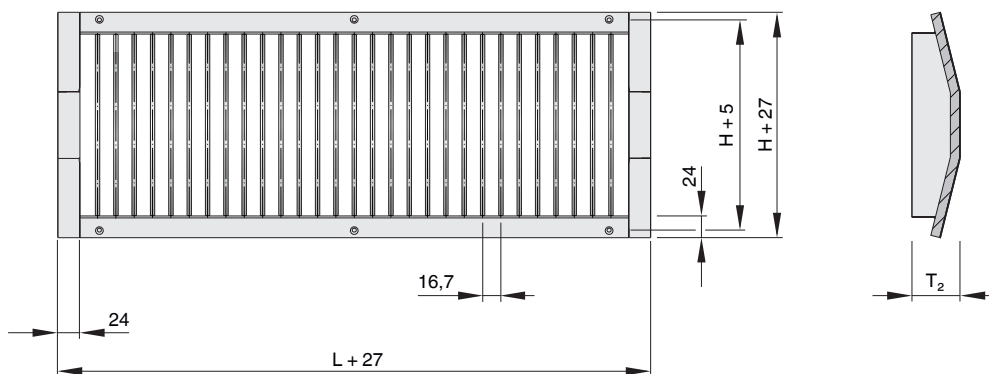


TRS-R, volume flow rate ranges



x LWA = 40 dB(A) with unrestricted airflow+ LWA = 40 dB(A) with airflow restricted by 50 %

TRS-R, 27 mm wide front border



L Nominal length

H Nominal height



Dimensions [mm]

Nominal height	T_2
	mm
75	37
125	41
225	52

TRS-R-RA

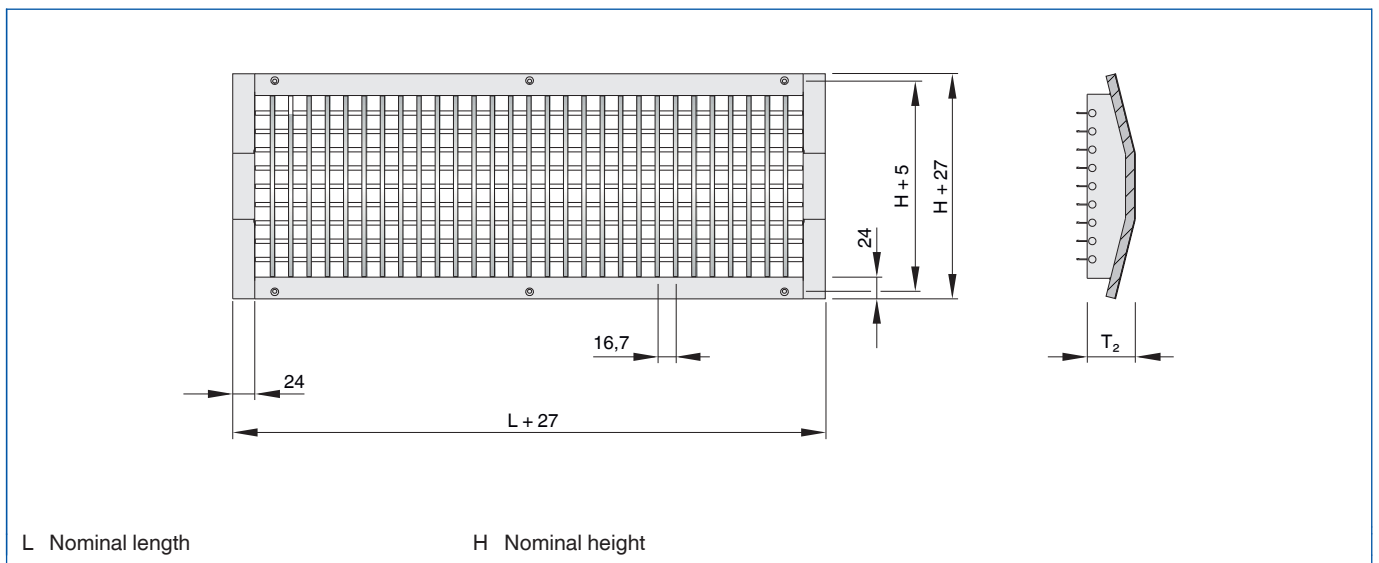
H	L [mm]							
	225	325	425	525	625	825	1025	1225
mm	m							
mm	kg							
75	0.4	0.5	0.7	0.8	0.9	1.2	1.5	1.8
125	0.5	0.7	0.8	1.0	1.2	1.6	1.9	2.3
225		1.0	1.2	1.5	1.8	2.3	2.8	3.3

Weights apply to ventilation grilles without attachments

Circular duct dimensions

Nominal height	Variant	Minimum	Maximum
		mm	
75	TRSR	150	400
	TRSR-5 from L = 825 mm	224	400
125	All	300	900
225	All	600	2400

TRS-R-RD, 27 mm wide front border



Dimensions [mm]

Nominal height	T_2
	mm
75	45
125	49
225	60



TRS-R-RD

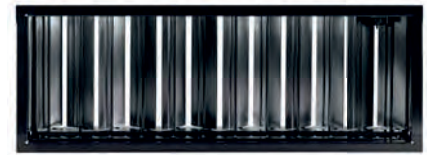
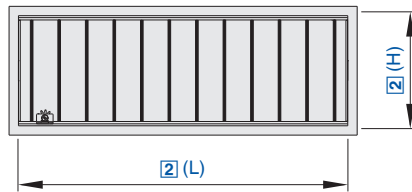
H	L [mm]							
	225	325	425	525	625	825	1025	1225
	m							
mm	kg							
75	0.5	0.6	0.8	1.0	1.1	1.4	1.8	2.2
125	0.6	0.9	1.0	1.3	1.6	2.1	2.5	3.0
225		1.4	1.8	2.2	2.6	3.4	4.2	5.0

Weights apply to ventilation grilles without attachments

Circular duct dimensions

Nominal height mm	Variant	Minimum	Maximum
		mm	
75	TRSR	150	400
	TRSR-5 from L = 825 mm	224	400
125	All	300	900
225	All	600	2400





Damper units, made of dip coated sheet steel, for installation into rectangular ducts

Order code

AGW / 825x125

1 2

1 Type
AGW Damper unit

2 Nominal size [mm]
L x H

- +** Features
- Damper units with opposed action blades
 - Nominal sizes 225 x 75 - 1225 x 525 mm
 - Perimeter angle section frame

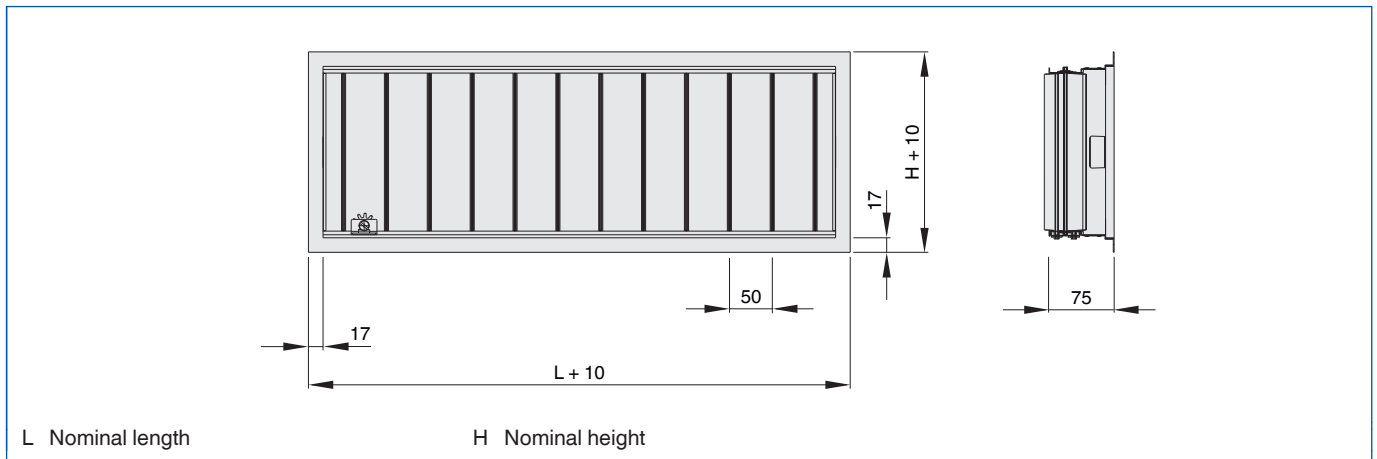
- X** Application
- Type AGW damper units for supply air and extract air
 - Adjustable blades for volume flow rate

balancing
▶ For installation into rectangular ducts

Technical data

Nominal sizes	225 x 75 to 1225 x 525 mm
---------------	---------------------------

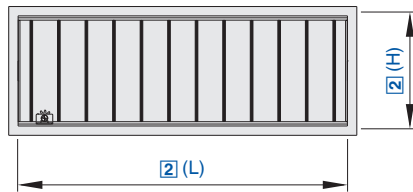
AGW



AGW

H	L [mm]							
	225	325	425	525	625	825	1025	1225
	m							
mm	kg							
75	0.5	0.6	0.8	1.0	1.2	1.5	1.9	2.3
125	0.6	0.8	1.0	1.2	1.4	1.8	2.3	2.7
225		1.1	1.3	1.6	1.9	2.4	2.9	3.5
325			1.7	2.0	2.3	3.0	3.6	4.3
425					2.8	3.5	4.3	5.1
525							5.0	5.9





Hit and miss dampers, made of sheet steel, for installation into rectangular ducts

Order code

ASW / 825x125

1

2

1 Type
ASW Hit and miss damper

2 Nominal size [mm]
L x H

Features

Hit and miss damper with airflow straighteners
 ▶ Nominal sizes 225 x 75 to 1225 x 325 mm
 ▶ Perimeter angle section frame

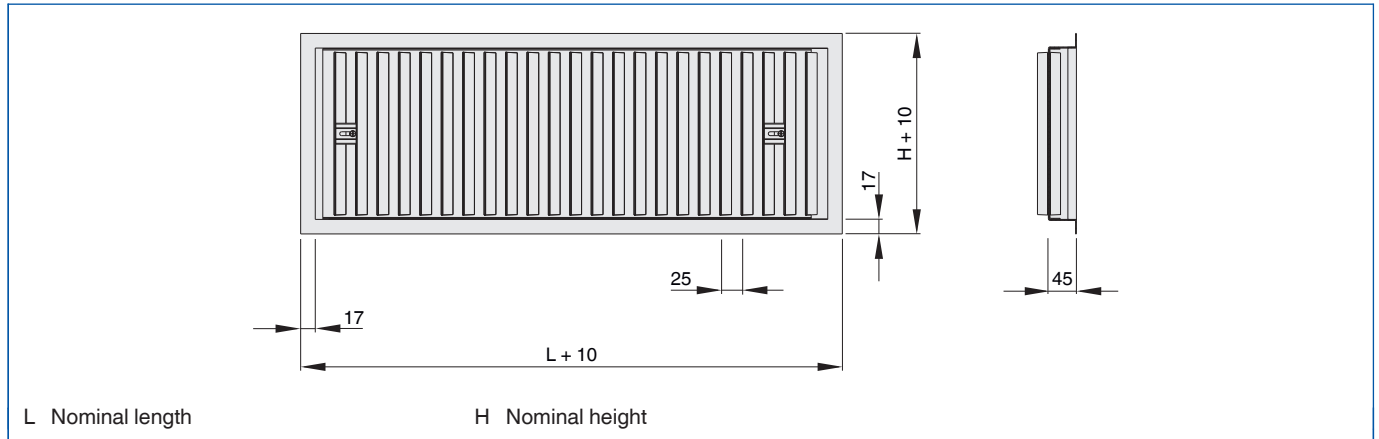
- ▶ Type ASW hit and miss damper for supply air and extract air
- ▶ Adjustable segments for volume flow rate balancing
- ▶ Airflow straighteners create a homogeneous and uniform airflow
- ▶ For installation into rectangular ducts

Application

Technical data

Nominal sizes 225 x 75 to 1225 x 525 mm

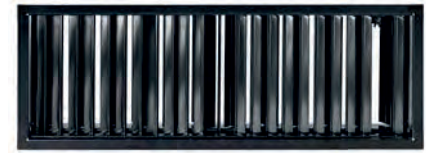
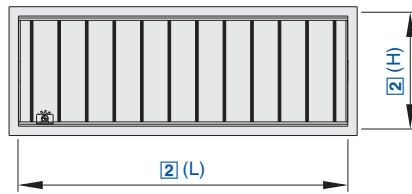
ASW



ASW

H	L [mm]							
	225	325	425	525	625	825	1025	1225
mm	m							
	kg							
75	0.4	0.5	0.6	0.8	0.9	1.2	1.4	1.7
125	0.5	0.7	0.9	1.1	1.3	1.7	2.1	2.5
225		1.2	1.5	1.8	2.2	2.8	3.4	4.1
325			2.1	2.6	3.0	3.9	4.7	5.6





Damper units, made of dip coated sheet steel, with air control blades, for installation into rectangular ducts

Order code

DGW / 825x125

1
2

1 Type
DGW Damper unit

2 Nominal size [mm]
L x H

+ **Features**

Damper units with opposed action blades and blades for air direction control

- ▶ Nominal sizes 225 x 75 - 1225 x 525 mm
- ▶ Perimeter angle section frame

X **Application**

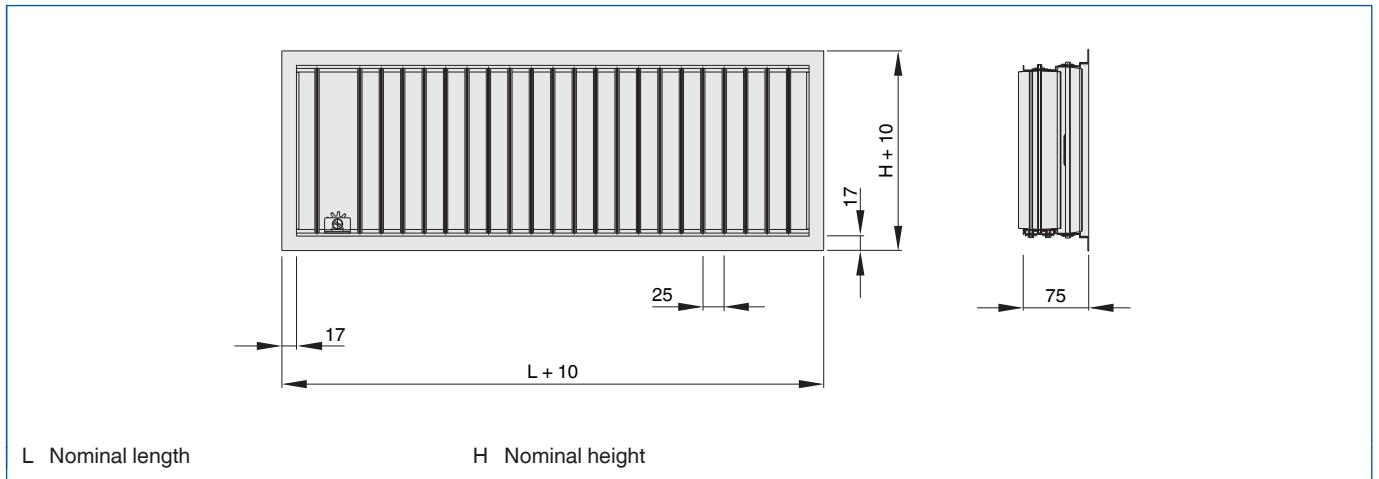
- ▶ Type DGW damper units for supply air and extract air
- ▶ Adjustable blades for volume flow rate balancing

- ▶ Adjustable blades for air direction control
- ▶ For installation into rectangular ducts

Technical data

Nominal sizes	225 x 75 to 1225 x 525 mm
---------------	---------------------------

DGW



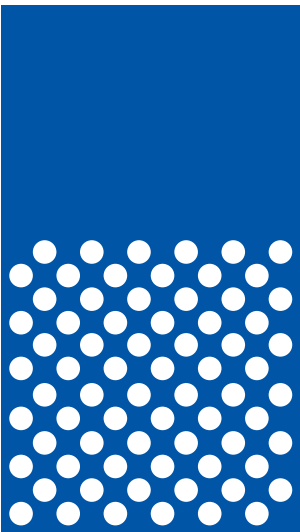
DGW

H	L [mm]							
	225	325	425	525	625	825	1025	1225
	m							
mm	kg							
75	0.5	0.7	0.9	1.1	1.3	1.7	2.1	2.5
125	0.7	0.9	1.2	1.4	1.7	2.2	2.7	3.2
225		1.3	1.7	2.1	2.4	3.1	3.9	4.6
325			2.2	2.7	3.2	4.1	5.0	5.9
425					3.9	5.0	6.2	7.3
525							7.3	8.7





DISPLACEMENT FLOW DIFFUSERS



4 DISPLACEMENT FLOW DIFFUSERS

4.1 Displacement flow diffusers for installation on a wall

	Rectangular casing, one-way air discharge, for comfort zones	QLE	262
	Rectangular casing, one-way or three-way air discharge, for industrial and comfort zones	QLF	266
	Rectangular casing, one-way air discharge, for comfort zones	QL-WF	272
	Rectangular casing, one-way, two-way or three-way air discharge, for comfort and industrial zones	QL-WFM	279
	Rectangular casing, one-way air discharge, for industrial zones	QL-WFT	283
	Square casing, two-way or three-way air discharge, for large rooms and industrial zones	QL-WQT	286
	Semi-circular casing, radial air discharge, for comfort and industrial zones	QL-WH	289
	Quadrant casing, radial air discharge, for comfort zones	QL-WV	294
	Segment-shaped casing, radial air discharge, for comfort zones	QL-WS	299
	Polygon casing, 90° or 180° air discharge, for comfort and industrial zones	QLV	302

4.2 Displacement flow diffusers for installation into a wall



Supply and extract air combination for installation into walls and bulkheads, one-way air discharge, for comfort zones

QLW-AZ

311



Rectangular casing, one-way air discharge, for comfort and industrial zones

QL-WE

315

4.3 Free-standing displacement flow diffusers



Square casing, four-way air discharge, for large rooms and industrial zones

QL-WQT-RO-4

324



Circular casing, omni directional air discharge, for large rooms and industrial zones

QL-WR

326

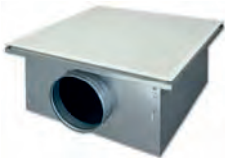


Polygon casing, 360° air discharge, for comfort and industrial zones

QLV-360

330

4.4 Displacement flow diffusers for floor installation



Square casing, upward air discharge, for comfort zones

QL-BE

336

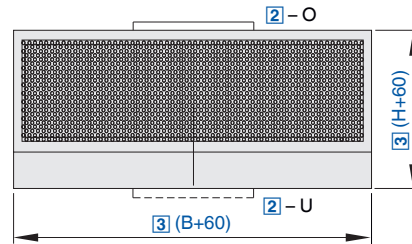
Displacement flow diffusers for installation on a wall

	Displacement flow diffusers for installation on a wall									
	QLE	QLF	QL-WF	QL-WFM	QL-WFT	QL-WQT	QL-WH	QL-WV	QL-WS	QLV
Casing cross-section										
Rectangular	●	●	●	●	●			●		
Square						●				
Semi-circular							●			
Quadrant								●		
Segment-shaped									●	
Polygon										●
Air patterns										
One-way	●	●	●	●	●					
Several sides		3 / 180°		2 / 90° 3 / 180°		2 / 90° 3 / 180°	1 / 180°	1 / 90°	1 / 140°	3 / 90° 5 / 180°
Diffuser face style										
Perforated plate, square pitch	●	●	●	●			●	●	●	●
Patterned			●	●			●	●	●	
Box profile diffuser face					●	●				
Duct connection										
Circular			●		●	●	●	●	●	●
Rectangular	●	●	●	●	●					
Top	●	●	●	●	●	●	●	●	●	●
Bottom	●	●	●	●			●	●		●
Attachments										
Damper blade										●
Volume flow rate measuring unit			▲		▲	●	▲	▲	▲	
Adapter			●	●			●	●	●	
Accessories										
Lip seal										●
Duct cover							●	●	●	
Nominal sizes										
Width	1000 - 1500	300 - 1250	600 - 1200	600 - 1200	600 - 1200	800 - 1200	320 - 600	190 - 450	400 - 750	250 - 750
Height	150 - 750	450 - 2000	300 - 2000	2000	1200 - 2000	2000	600 - 2000	600 - 1500	1000	500 - 1750
Depth	166	185 - 287	75 - 300	270 - 350	220 - 350	800 - 1200	190 - 500	190 - 450	155 - 255	250 - 750
Nominal diameter of spigot			125, 160, 200, 250		250, 315	630, 800	125, 160, 200, 250, 315, 400	125, 160, 200, 250, 315	100, 125, 160, 200	160, 200, 250, 315, 400, 500, 630
Technical data										
Volume flow rate range [l/s]	15 - 340	15 - 865	13 - 895	112 - 144 3	65 - 908	301 - 272 4	26 - 990	14 - 412	43 - 254	17 - 915
Volume flow rate range [m³/h]	54 - 1224	54 - 3114	47 - 3222	405 - 519 6	235 - 326 9	1084 - 98 08	94 - 3563	49 - 1484	157 - 916	62 - 3295
Supply air to room air temperature difference [K]	-6 - -1	-6 - -1	-6 - -1	-6 - -1	-6 - -1	-6 - -1	-6 - -1	-6 - -1	-6 - -1	-6 - -1
Explanation										
● - Standard										
▲ - Optional	Only for variants with circular spigot and square pitch perforated plate									


List of abbreviations

L_{WA} [dB(A)]	A-weighted sound power level of air-regenerated noise
\dot{V} [m ³ /h] and [l/s]	Volume flow rate
m [kg]	Weight
Δp_t [Pa]	Total differential pressure
l_s [m]	Distance from single grille or horizontal run section (throw distance)
B_1 [mm]	Width of diffuser face
B_2 [mm]	Width of a rectangular spigot
\varnothing [mm]	Outer diameter of the spigot
$\varnothing D_1$ [mm]	Casing diameter
H_1 [mm]	Height of diffuser face
T_1 [mm]	Casing depth
T_2 [mm]	Depth of a rectangular spigot
v_0 [m/s]	Theoretical airflow velocity across the diffuser area, at a distance of 0 m from the diffuser face
L_{nz} [m]	Near zone of the displacement flow diffuser, where the comfort criteria may not be achieved
Δt_z [K]	Supply air to room air temperature difference, i.e. supply air temperature minus room temperature





Rectangular casing, one-way air discharge, for comfort zones

 **Order code**

QLE - U / 1000 x 450 / P1 - RAL ...			
1	2	3	4

<p>1 Type QLE Displacement flow diffuser</p> <p>2 Connection Rectangular spigot</p> <p>O Top U Bottom</p>	<p>3 Nominal size [mm] B x H Nominal width B 1000, 1250, 1500</p> <p>Nominal height H 150, 300, 450, 600, 750 All sizes can be combined</p>	<p>4 Exposed surface No entry: powder-coated RAL 9010, pure white</p> <p>P1 Powder-coated, specify RAL CLASSIC colour</p> <p>Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p>
--	--	---

 **Features**

- ▶ Compact height, space saving displacement flow diffusers
- ▶ Nominal widths 1000 - 1500 mm, nominal heights 150 - 750 mm
- ▶ Volume flow rate range 15 - 340 l/s or 54 - 1224 m³/h
- ▶ Perforated plate, square pitch
- ▶ Rectangular duct connection
- ▶ Duct connection at the top or bottom
- ▶ Equalising element (perforated sheet metal basket)
- ▶ Removable diffuser face

- Optional equipment and accessories
- ▶ Exposed surface in RAL CLASSIC colours

- ▶ Type QLE displacement flow diffusers are used for comfort conditioning applications
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Floor-standing installation on walls, either individually or several units arranged in a row
- ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
- ▶ Excellent air quality in the occupied zone
- ▶ Draught-free and economical air conditioning also of larger internal spaces with several displacement flow diffusers in a regular arrangement
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -6 to -1 K

 **Variants**

- ▶ QLE-O: Spigot at the top
- ▶ QLE-U: Spigot at the bottom

 **Special characteristics**

- ▶ One-way air discharge
- ▶ Diffuser face hooks onto the casing, hence easy to remove
- ▶ Duct connection at the top or bottom

 **Standards and guidelines**

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

 **Application**

 **Technical data**

Nominal sizes (B x H)	1000 x 150 to 1500 x 750 mm
Minimum volume flow rate, at 0.1 m/s	15 - 115 l/s or 54 - 414 m ³ /h
Maximum volume flow rate, at 0.3 m/s	45 - 340 l/s or 162 - 1224 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3 m/s	42 dB(A) max.



QLE, sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
1000 x 150	15	54	0.10	<3	<15	<
	25	90	0.17	<3	<15	<
	30	108	0.20	<3	<15	<
	45	162	0.30	3	20	<
1250 x 150	20	72	0.11	<3	<15	<
	30	108	0.16	<3	<15	<
	40	144	0.21	<3	16	<
	55	198	0.29	4	26	<
1500 x 150	25	90	0.11	<3	<15	<
	40	144	0.18	<3	16	<
	55	198	0.24	4	26	<
	70	252	0.31	7	33	<
1000 x 300	30	108	0.10	<3	<15	<
	45	162	0.15	<3	<15	<
	70	252	0.23	5	19	<
	90	324	0.30	9	27	<
1250 x 300	40	144	0.11	<3	<15	<
	65	234	0.17	5	17	<
	90	324	0.24	9	27	<
	115	414	0.31	14	35	<
1500 x 300	45	162	0.10	<3	<15	<
	75	270	0.17	6	21	<
	105	378	0.23	12	32	<
	135	486	0.30	20	40	<
1000 x 450	45	162	0.10	<3	<15	<
	75	270	0.17	3	<15	<
	105	378	0.23	5	21	<
	135	486	0.30	9	29	<
1250 x 450	55	198	0.10	<3	<15	<
	95	342	0.17	4	17	<
	135	486	0.24	9	29	<
	170	612	0.30	14	36	<
1500 x 450	70	252	0.10	<3	<15	<
	115	414	0.17	7	23	<
	160	576	0.24	13	34	<
	205	738	0.30	21	42	<
1000 x 600	60	216	0.10	<3	<15	<
	100	360	0.17	<3	<15	<
	140	504	0.23	4	20	<
	180	648	0.30	7	28	<
1250 x 600	75	270	0.10	<3	<15	<
	125	450	0.17	3	17	<
	175	630	0.23	7	27	<
	225	810	0.30	11	35	<
1500 x 600	90	324	0.10	<3	<15	<
	150	540	0.17	5	22	<
	210	756	0.23	10	33	1.37
	270	972	0.30	16	41	1.84
1000 x 750	75	270	0.10	<3	<15	<
	125	450	0.17	3	<15	1.25
	175	630	0.23	5	21	1.88
	225	810	0.30	9	29	2.57

<: 0.2 m/s are not achieved

The near zone values are based on a supply air to room air temperature difference of -3 K

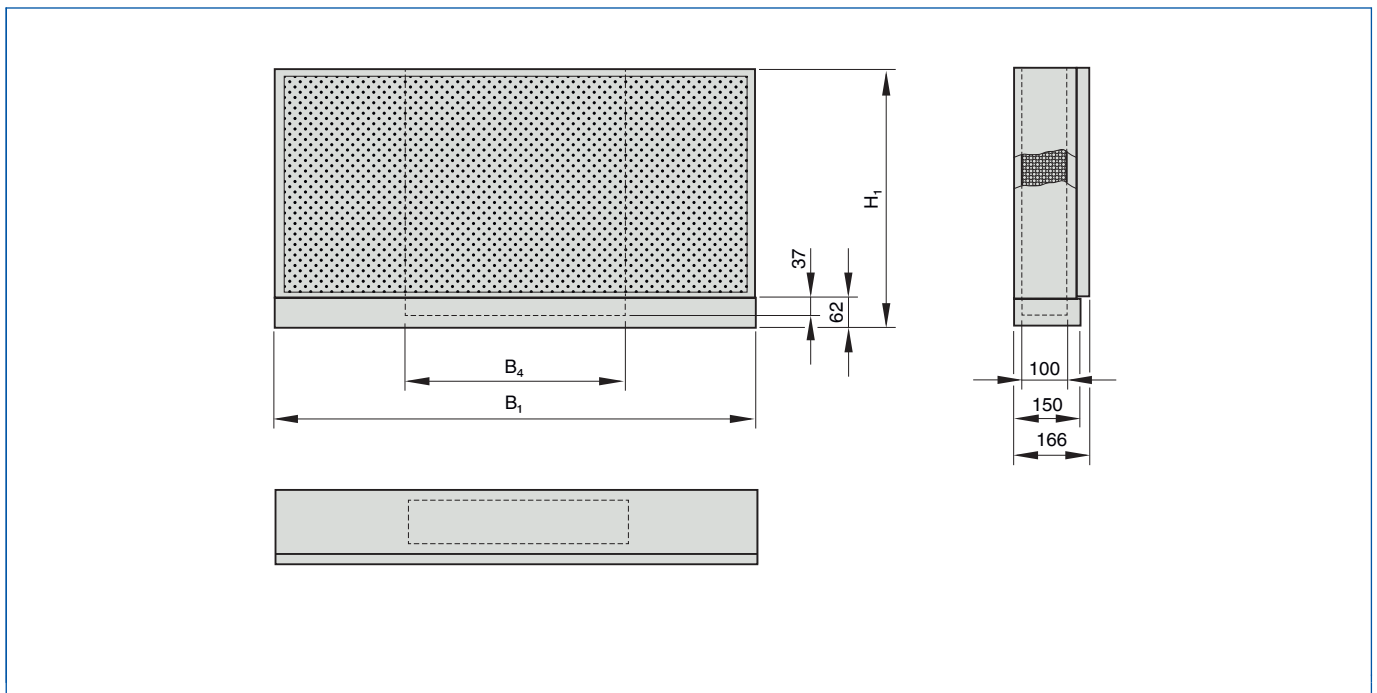


Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
1250 × 750	95	342	0.10	<3	<15	0.65
	155	558	0.17	4	17	1.15
	220	792	0.23	8	28	1.71
	280	1008	0.30	14	35	2.26
1500 × 750	115	414	0.10	<3	<15	0.64
	190	684	0.17	6	23	1.09
	265	954	0.24	12	33	1.56
	340	1224	0.30	20	41	2.04

<: 0.2 m/s are not achieved

The near zone values are based on a supply air to room air temperature difference of -3 K

QLE-U

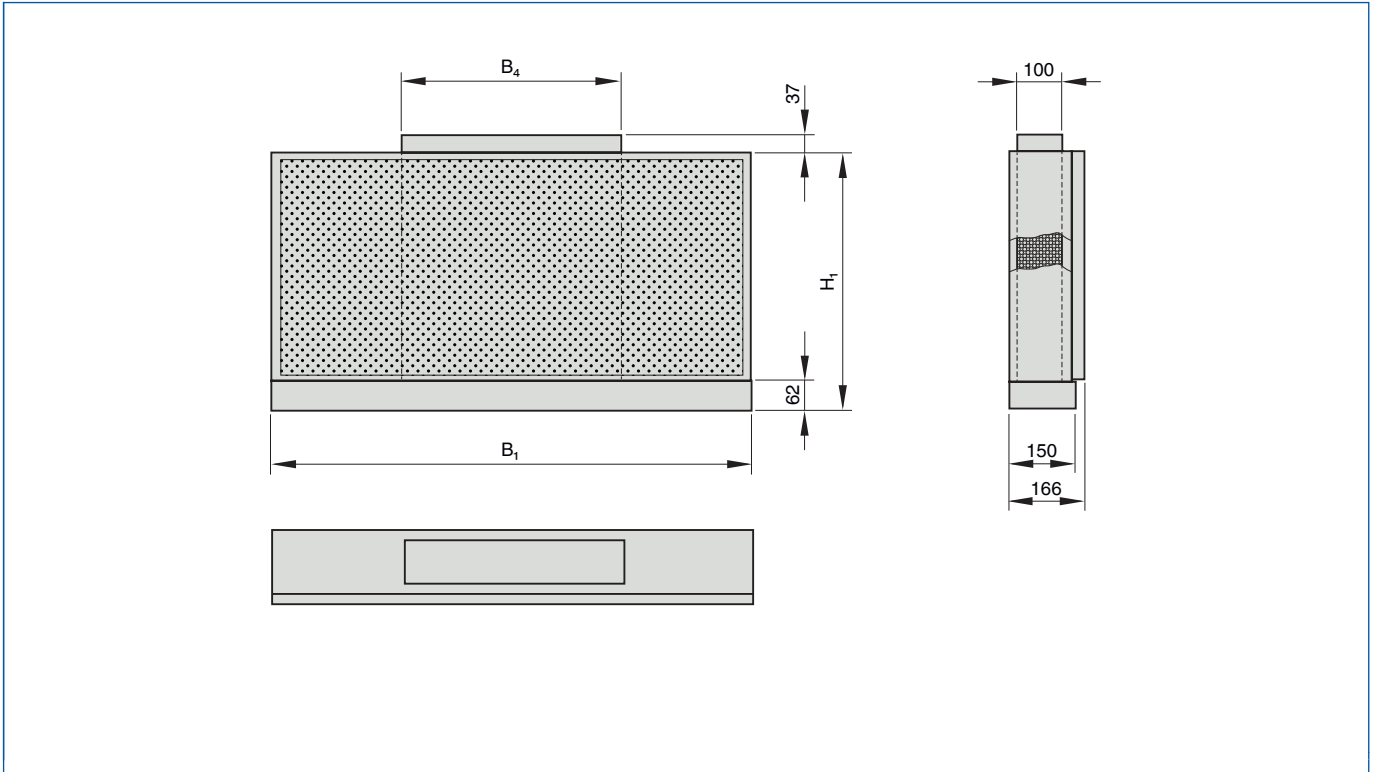


Dimensions [mm] and weight [kg]

Nominal size	B_1	H_1	B_4	m
	mm	mm	mm	
1000×150	1060	272	350	10
1250×150	1310	272	350	12
1500×150	1560	272	350	14
1000×300	1060	422	350	13
1250×300	1310	422	350	15
1500×300	1560	422	350	17
1000×450	1060	572	485	16
1250×450	1310	572	485	19
1500×450	1560	572	485	22
1000×600	1060	722	700	21
1250×600	1310	722	700	24
1500×600	1560	722	700	27
1000×750	1060	872	770	24
1250×750	1310	872	770	28
1500×750	1560	872	770	32



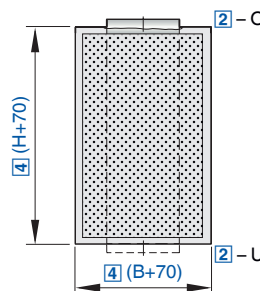
QLE-O



Dimensions [mm] and weight [kg]

Nominal size	B ₁	H ₁	B ₄	m kg
	mm	mm	mm	
1000×150	1060	272	350	10
1250×150	1310	272	350	12
1500×150	1560	272	350	14
1000×300	1060	422	350	13
1250×300	1310	422	350	15
1500×300	1560	422	350	17
1000×450	1060	572	485	16
1250×450	1310	572	485	19
1500×450	1560	572	485	22
1000×600	1060	722	700	21
1250×600	1310	722	700	24
1500×600	1560	722	700	27
1000×750	1060	872	770	24
1250×750	1310	872	770	28
1500×750	1560	872	770	32





Rectangular casing, one-way or three-way air discharge, for industrial and comfort zones

 **Order code**

QLF - O - 1 / 600 x 750 / P1 - RAL ...

1 **2** **3** **4** **5**

1 Type

QLF Displacement flow diffuser

3 Air discharge

1 One-way
3 Three-way

P1 RAL 9010, pure white
Powder-coated, specify RAL CLASSIC colour

2 Connection

Rectangular spigot
O Top
U Bottom

4 Nominal size [mm]

B x H

Gloss level
RAL 9010 50 %
RAL 9006 30 %

5 Exposed surface

No entry: powder-coated

All other RAL colours 70 %

+ Features

Slender, space saving displacement flow diffusers in an unusual design with chamfered front edges

- ▶ Nominal widths 300 - 1250 mm, nominal heights 450 - 2000 mm
- ▶ Volume flow rate range 15 - 865 l/s or 54 - 3114 m³/h
- ▶ Perforated plate, square pitch
- ▶ Rectangular duct connection
- ▶ Duct connection at the top or bottom
- ▶ Equalising element (perforated sheet metal basket)

Optional equipment and accessories

- ▶ Exposed surface in RAL CLASSIC colours
- ▶ Fixing material

X Application

- ▶ Type QLF displacement flow diffusers are used as supply air units for industrial and comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Floor-standing installation on walls, either individually or several units arranged in a row
- ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
- ▶ Excellent air quality in the occupied zone
- ▶ Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -6 to -1 K

◊ Variants

- ▶ QLE-F: Spigot at the top
- ▶ QLF-U: Spigot at the bottom
- ▶ QLF-* -1: One-way air discharge
- ▶ QLF-* -3: Three-way air discharge

H Useful additions

- ▶ Fixing brackets and screws

★ Special characteristics

- ▶ One-way or three-way air discharge
- ▶ Duct connection at the top or bottom

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes (B x H)	300 x 450 to 1250 x 2000 mm
Minimum volume flow rate, at 0.1 m/s	15 - 355 l/s or 54 - 1278 m ³ /h
Maximum volume flow rate, at 0.3 m/s	40 - 865 l/s or 144 - 3114 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3 m/s	42 dB(A) max.



QLE*-1, sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
300 x 450	15	54	0.11	<3	<15	<
	25	90	0.19	4	<15	<
	35	126	0.26	9	<15	<
	40	144	0.30	11	<15	<
450 x 450	20	72	0.10	<3	<15	<
	35	126	0.17	3	<15	<
	40	144	0.20	3	<15	<
	60	216	0.30	8	<15	<
300 x 600	20	72	0.11	3	<15	<
	30	108	0.17	6	<15	<
	40	144	0.22	11	<15	<
	55	198	0.31	20	15	<
450 x 600	30	108	0.11	<3	<15	<
	45	162	0.17	4	<15	<
	65	234	0.24	8	<15	<
	80	288	0.30	12	<15	<
600 x 600	35	126	0.10	<3	<15	<
	60	216	0.17	<3	<15	<
	90	324	0.25	3	<15	<
	110	396	0.31	5	<15	<
450 x 750	35	126	0.10	<3	<15	<
	60	216	0.18	6	<15	<
	80	288	0.24	12	<15	<
	100	360	0.30	18	19	3.33
600 x 750	45	162	0.10	<3	<15	<
	75	270	0.17	<3	<15	<
	105	378	0.23	4	<15	2.23
	135	486	0.30	7	<15	3.14
750 x 750	55	198	0.10	<3	<15	<
	90	324	0.16	<3	<15	1.28
	135	486	0.24	<3	<15	2.17
	170	612	0.30	4	<15	2.93
600 x 1000	60	216	0.10	<3	<15	0.91
	100	360	0.17	3	<15	1.76
	140	504	0.23	7	<15	2.71
	180	648	0.30	11	<15	3.76
750 x 1000	75	270	0.10	<3	<15	0.89
	125	450	0.17	<3	<15	1.67
	175	630	0.23	4	<15	2.53
	225	810	0.30	6	<15	3.45
600 x 1250	75	270	0.10	<3	<15	1.12
	125	450	0.17	5	<15	2.10
	175	630	0.23	10	<15	3.18
	225	810	0.30	16	21	4.33
750 x 1250	95	342	0.10	<3	<15	1.13
	140	504	0.15	<3	<15	1.77
	220	792	0.23	5	<15	2.98
	285	1026	0.30	9	<15	4.01
750 x 1500	110	396	0.10	<3	<15	1.34
	185	666	0.16	3	<15	2.33
	260	936	0.23	7	<15	3.36
	340	1224	0.30	12	17	4.48

<: 0.2 m/s are not achieved

The near zone values are based on a supply air to room air temperature difference of -3 K

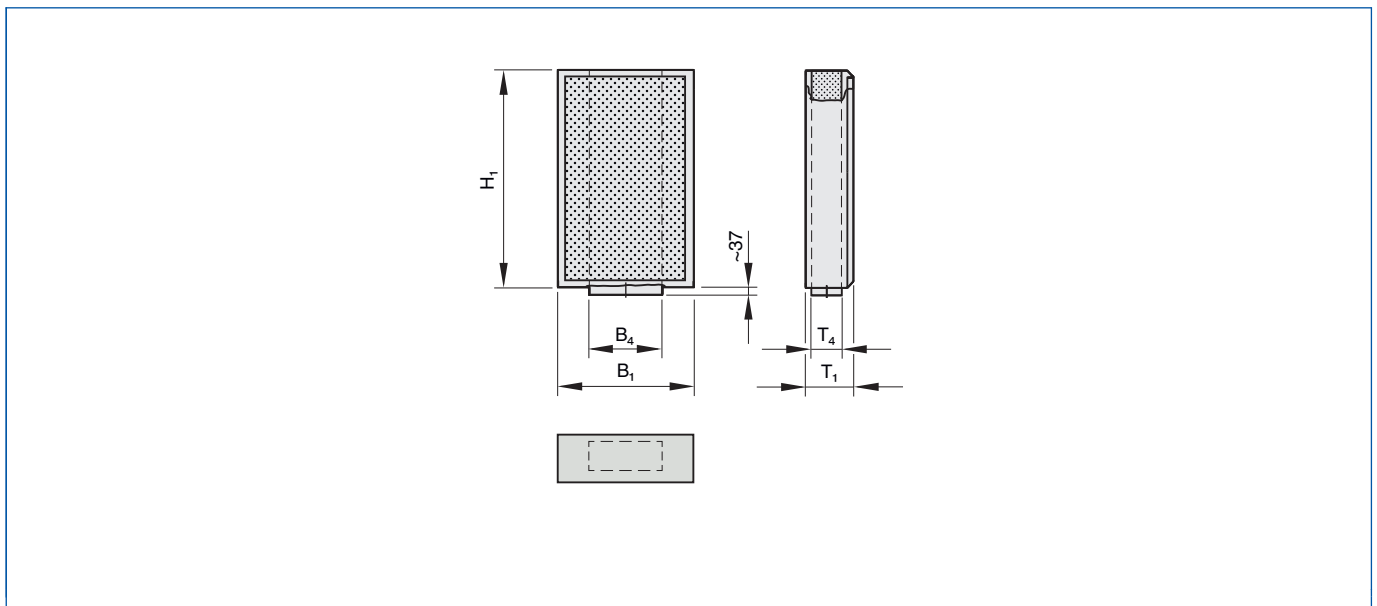


Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
1000 × 1500	145	522	0.10	<3	<15	1.36
	250	900	0.17	3	<15	2.24
	360	1296	0.24	6	<15	3.14
	455	1638	0.30	10	18	3.90
750 × 1750	125	450	0.10	<3	<15	1.58
	215	774	0.16	5	<15	2.72
	305	1098	0.23	9	<15	3.85
	400	1440	0.30	16	22	5.04
1000 × 1750	170	612	0.10	<3	<15	1.72
	295	1062	0.17	4	<15	2.70
	415	1494	0.24	7	<15	3.58
	530	1908	0.30	12	23	4.38
1250 × 1750	210	756	0.10	<3	<15	1.85
	360	1296	0.16	4	<15	2.64
	510	1836	0.23	7	17	3.33
	665	2394	0.30	13	26	3.97
1000 × 2000	190	684	0.10	<3	<15	2.13
	330	1188	0.17	5	<15	3.19
	470	1692	0.24	9	18	4.13
	605	2178	0.30	15	27	4.96
1250 × 2000	240	864	0.10	<3	<15	2.45
	415	1494	0.17	5	<15	3.32
	590	2124	0.24	10	21	4.04
	760	2736	0.30	16	31	4.65

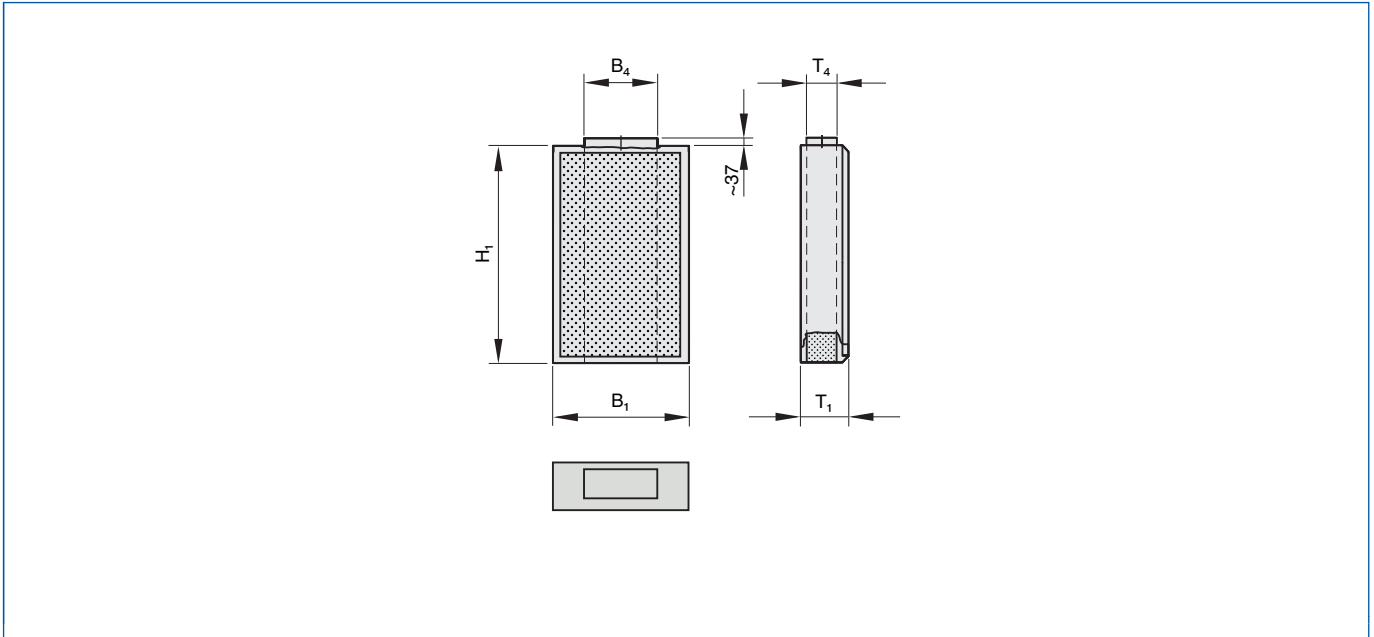
<: 0.2 m/s are not achieved

The near zone values are based on a supply air to room air temperature difference of -3 K

QLF-U-1



QLF-O-1

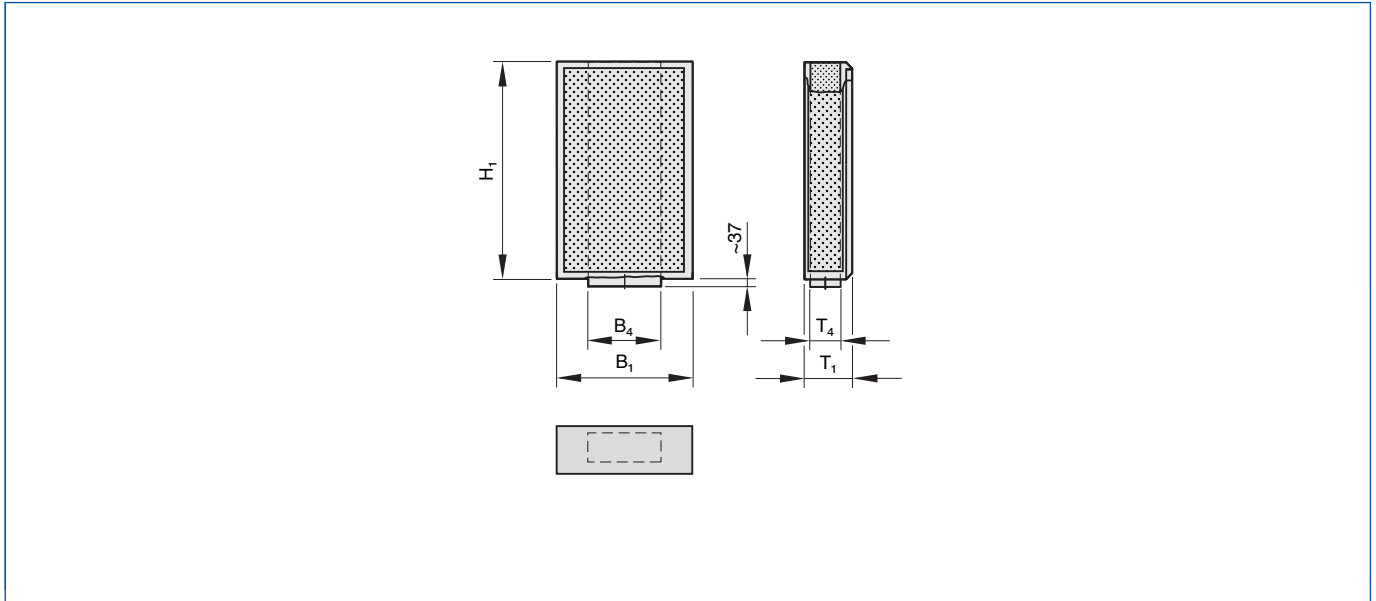


Dimensions [mm] and weight [kg]

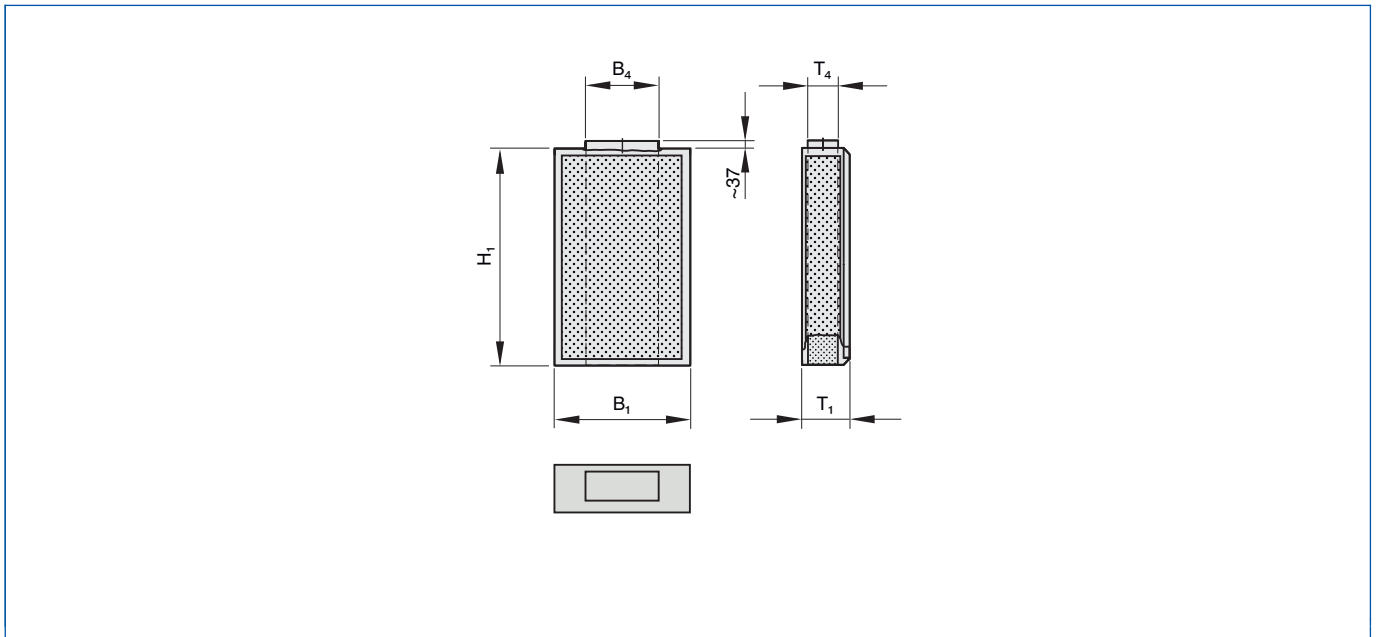
Nominal size	B ₁ mm	H ₁ mm	T ₁ mm	B ₄ mm	T ₄ mm	m kg
300×450	370	520	185	160	80	9
450×450	520	520	185	300	80	11
300×600	370	670	185	160	80	10
450×600	520	670	185	300	80	14
600×600	670	670	235	360	150	17
450×750	520	820	185	300	80	16
600×750	670	820	235	360	150	18
750×750	820	820	235	625	150	25
600×1000	670	1070	235	360	150	20
750×1000	820	1070	235	625	150	31
600×1250	670	1320	235	360	150	25
750×1250	820	1320	235	625	150	37
750×1500	820	1570	235	625	150	43
1000×1500	1070	1570	287	715	200	54
750×1750	820	1820	235	625	150	49
1000×1750	1070	1820	287	715	200	62
1250×1750	1320	1820	287	890	200	72
1000×2000	1070	2070	287	715	200	69
1250×2000	1320	2070	287	890	200	81



QLF-U-3



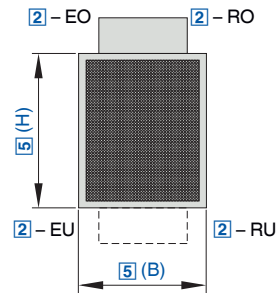
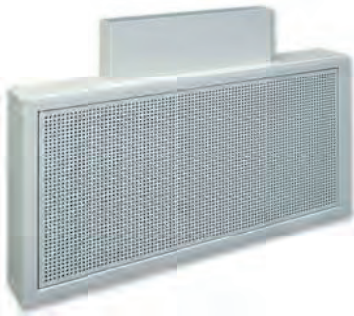
QLF-O-3



Dimensions [mm] and weight [kg]

Nominal size	B ₁ mm	H ₁ mm	T ₁ mm	B ₄ mm	T ₄ mm	m kg
300x450	370	520	185	160	80	9
450x450	520	520	185	300	80	11
300x600	370	670	185	160	80	10
450x600	520	670	185	300	80	14
600x600	670	670	235	360	150	17
450x750	520	820	185	300	80	16
600x750	670	820	235	360	150	18
750x750	820	820	235	625	150	25
600x1000	670	1070	235	360	150	20
750x1000	820	1070	235	625	150	31
600x1250	670	1320	235	360	150	25
750x1250	820	1320	235	625	150	37
750x1500	820	1570	235	625	150	43
1000x1500	1070	1570	287	715	200	54
750x1750	820	1820	235	625	150	49
1000x1750	1070	1820	287	715	200	62
1250x1750	1320	1820	287	890	200	72
1000x2000	1070	2070	287	715	200	69
1250x2000	1320	2070	287	890	200	81





Rectangular casing, one-way air discharge, for comfort zones

 **Order code**

QL - WF - RO - ... - M / 600 x 1000 x 300 - 1 x 250 / S70 / P1 - RAL ...

1
2
3
4
5
6
7

<p>1 Type QL-WF Displacement flow diffuser</p> <p>2 Connection Circular spigot RO Top RU Bottom Rectangular spigot EO Top EU Bottom</p> <p>3 Design of diffuser face No entry: perforated plate, square pitch K Patterned</p> <p>4 Volume flow rate measuring unit No entry: none M With measuring unit (only for variants)</p>	<p>5 Nominal size [mm] Circular spigot B x H x T - number x spigot diameter Rectangular spigot B x H x T - spigot width x spigot depth</p> <p>6 Plinth height [mm] No entry: without plinth S50 50 mm S60 60 mm S70 70 mm S100 100 mm S150 150 mm S200 200 mm</p>	<p>7 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour PS Powder-coated, specify NCS colour</p> <p>Gloss level 25 % 50 % 60 % Specify together with colour</p>
--	---	---

 **Features**

- Displacement flow diffusers in many nominal sizes
- ▶ Nominal widths 600 - 1200 mm, nominal heights 300 - 2000 mm
 - ▶ Volume flow rate range 13 - 895 l/s or 47 - 3222 m³/h
 - ▶ Perforated plate, square pitch; patterned as an option
 - ▶ Rectangular or circular duct connection
 - ▶ Duct connection at the top or bottom
 - ▶ Equalising sheet metal plate with nozzles, each with a deflector scoop
- Optional equipment and accessories
- ▶ Exposed surface in RAL CLASSIC or NCS colours
 - ▶ Plinth in heights 50, 60, 70, 100, 150, 200 mm
 - ▶ Volume flow rate measuring unit for circular duct connections
 - ▶ All surfaces powder-coated for free-standing installation

 **Application**

- ▶ Type QL-WF displacement flow diffusers are used as supply air units for comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Floor-standing installation on walls, either individually or several units arranged in a row
- ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
- ▶ Excellent air quality in the occupied zone
- ▶ Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -6 to -1 K

 **Variants**

- ▶ QL-WF-E*: Rectangular spigot
- ▶ QL-WF-R*: Circular spigot
- ▶ QL-WF-*O: Spigot at the top
- ▶ QL-WF-*U: Spigot at the bottom
- ▶ QL-WF-...-K: Patterned perforated plate

 **Attachments**

- ▶ M: Volume flow rate measuring unit, only for QL-WF-R* with square pitch perforated plate
- ▶ S: Plinth

 **Special characteristics**

- ▶ One-way air discharge
- ▶ Perforated plate, square pitch or patterned
- ▶ Rectangular or circular duct connection
- ▶ Duct connection at the top or bottom
- ▶ Equalising sheet metal plate with nozzles

 **Standards and guidelines**

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135





Technical data

Nominal sizes	Perforated plate, square pitch 600 × 300 - 1200 × 2000 mm Patterned 580 x 316 - 1240 × 1996 mm
Minimum volume flow rate, at 0.1 m/s	13 - 225 l/s or 47 - 810 m ³ /h
Maximum volume flow rate, at 0.4 m/s	51 - 895 l/s or 184 - 3222 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3/0.4 m/s	45/54 dB(A) max.

QL-WF-E*

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
600 × 300 × 75 - 300 × 45	13	47	0.1	3	<15	0.5
	25	90	0.2	12	29	1.0
	38	137	0.3	27	41	1.6
	51	184	0.4	48	51	2.1
600 × 500 × 75 - 450 × 45	23	83	0.1	3	<15	0.6
	47	169	0.2	12	27	1.3
	70	252	0.3	27	39	1.9
	93	335	0.4	49	48	2.6
600 × 700 × 115 - 400 × 90	34	122	0.1	<3	<15	0.7
	68	245	0.2	9	24	1.5
	102	367	0.3	20	35	2.2
	136	490	0.4	35	44	2.9
600 × 1000 × 115 - 450 × 90	50	180	0.1	3	<15	0.8
	100	360	0.2	12	27	1.7
	150	540	0.3	28	39	2.5
	200	720	0.4	50	48	3.4
900 × 1200 × 125 - 650 × 100	95	342	0.1	4	<15	1.0
	190	684	0.2	16	31	2.1
	285	1026	0.3	35	43	3.1
	380	1368	0.4	62	53	4.1
1200 × 1200 × 125 - 900 × 100	130	468	0.1	4	<15	1.1
	260	936	0.2	15	30	2.2
	385	1386	0.3	33	42	3.4
	515	1854	0.4	58	51	4.5
900 × 1500 × 150 - 800 × 125	120	432	0.1	3	<15	1.1
	240	864	0.2	10	24	2.2
	360	1296	0.3	23	36	3.4
	480	1728	0.4	41	45	4.5
1200 × 1500 × 150 - 900 × 125	165	594	0.1	4	<15	1.2
	325	1170	0.2	15	30	2.4
	490	1764	0.3	33	42	3.7
	655	2358	0.4	59	52	4.9
1200 × 2000 × 200 - 900 × 160	220	792	0.1	4	<15	1.4
	440	1584	0.2	16	31	2.7
	660	2376	0.3	36	43	4.1
	880	3168	0.4	63	53	5.5

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WF-E*-K

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
580 × 316 × 75 - 300 × 45	13	47	0.1	3	<15	0.5
	26	94	0.2	11	26	1.1
	39	140	0.3	25	38	1.6
	52	187	0.4	45	48	2.1



Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
580 × 514 × 75 - 450 × 45	23	83	0.1	3	<15	0.6
	46	166	0.2	13	28	1.3
	70	252	0.3	28	40	1.9
	93	335	0.4	50	49	2.6
580 × 712 × 115 - 400 × 90	33	119	0.1	<3	<15	0.7
	67	241	0.2	8	24	1.5
	100	360	0.3	19	35	2.2
	135	486	0.4	34	44	2.9
580 × 976 × 115 - 450 × 90	47	169	0.1	3	<15	0.8
	94	338	0.2	11	26	1.7
	140	504	0.3	26	38	2.5
	190	684	0.4	45	47	3.3
910 × 1240 × 125 - 650 × 100	100	360	0.1	4	<15	1.0
	200	720	0.2	17	32	2.1
	300	1080	0.3	39	44	3.1
	400	1440	0.4	69	54	4.2
1240 × 1240 × 125 - 900 × 100	140	504	0.1	4	<15	1.1
	275	990	0.2	17	32	2.3
	415	1494	0.3	38	44	3.4
	555	1998	0.4	68	54	4.6
910 × 1570 × 150 - 800 × 125	125	450	0.1	3	<15	1.1
	255	918	0.2	11	26	2.3
	380	1368	0.3	25	37	3.4
	510	1836	0.4	45	46	4.6
1240 × 1570 × 150 - 900 × 125	175	630	0.1	4	<15	1.3
	355	1278	0.2	17	32	2.5
	530	1908	0.3	39	45	3.8
	710	2556	0.4	69	55	5.0
1240 × 1966 × 200 - 900 × 160	225	810	0.1	4	<15	1.4
	445	1602	0.2	17	32	2.8
	670	2412	0.3	38	44	4.1
	895	3222	0.4	67	54	5.5

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WF-R*

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
600 × 300 × 160 - 1 × 125	13	47	0.1	4	<15	0.5
	25	90	0.2	17	32	1.0
	38	137	0.3	39	44	1.6
	51	184	0.4	69	54	2.1
600 × 500 × 200 - 1 × 160	23	83	0.1	4	<15	0.6
	47	169	0.2	17	31	1.3
	70	252	0.3	38	44	1.9
	93	335	0.4	68	54	2.6
600 × 700 × 250 - 1 × 200	34	122	0.1	3	<15	0.7
	68	245	0.2	14	28	1.5
	102	367	0.3	31	40	2.2
	135	486	0.4	54	49	2.9
600 × 1000 × 300 - 1 × 250	50	180	0.1	3	<15	0.8
	100	360	0.2	11	26	1.7
	150	540	0.3	25	38	2.5
	200	720	0.4	45	47	3.4

The near zone values are based on a supply air to room air temperature difference of -6 K



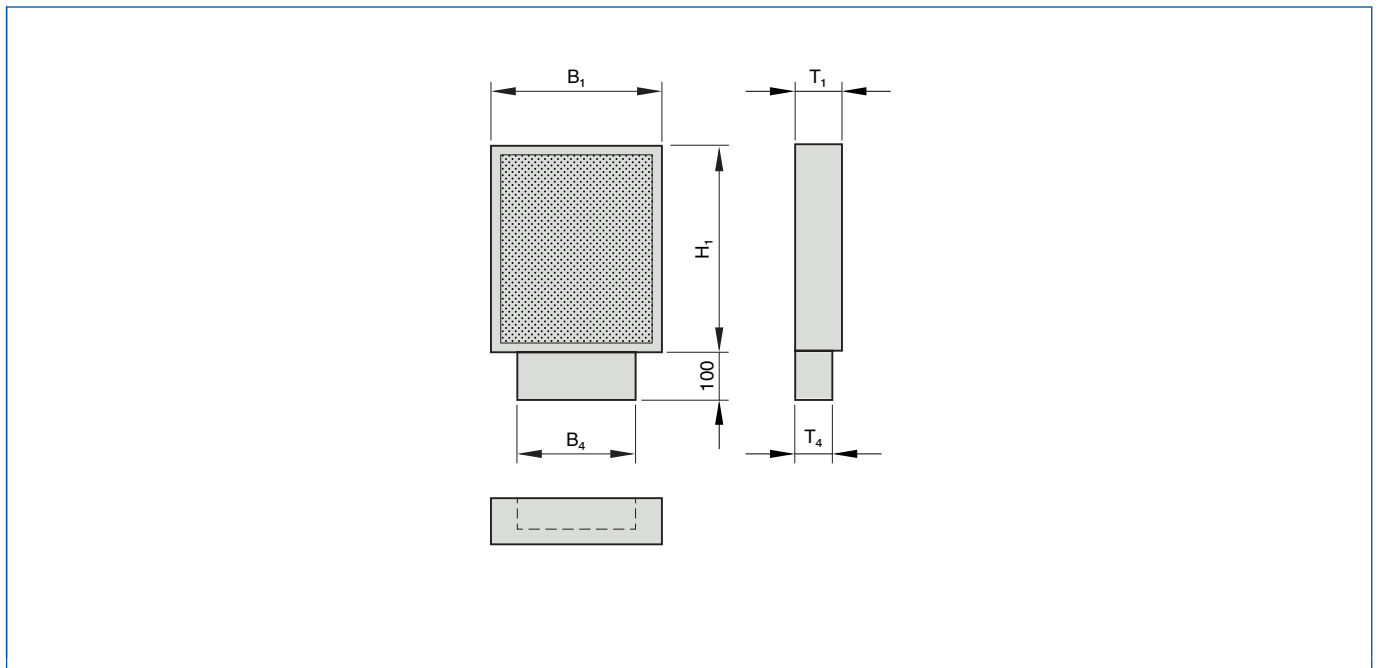
QL-WF-R*-K

Sound power level, total differential pressure and near zone

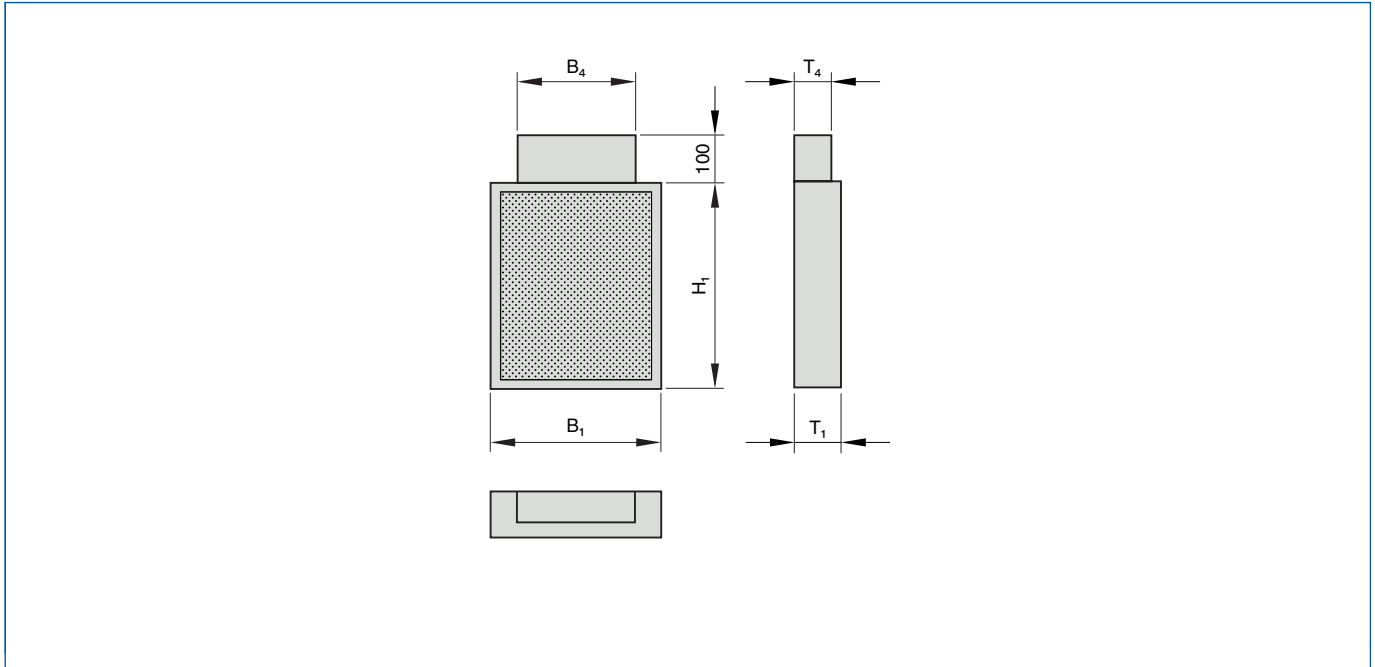
Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
580 × 316 × 160 - 1 × 125	13	47	0.1	4	<15	0.5
	26	94	0.2	17	31	1.1
	39	140	0.3	38	44	1.6
	52	187	0.4	67	53	2.1
580 × 514 × 200 - 1 × 160	23	83	0.1	4	<15	0.6
	46	166	0.2	17	32	1.3
	70	252	0.3	39	44	1.9
	93	335	0.4	68	54	2.6
580 × 712 × 250 - 1 × 200	33	119	0.1	3	<15	0.7
	67	241	0.2	13	28	1.5
	100	360	0.3	29	40	2.2
	135	486	0.4	52	49	2.9
580 × 976 × 300 - 1 × 250	47	169	0.1	3	<15	0.8
	94	338	0.2	10	25	1.7
	140	504	0.3	23	37	2.5
	190	684	0.4	41	46	3.3

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WF-EU



QL-WF-EO



Dimensions [mm] and weight [kg] for variants with perforated plate

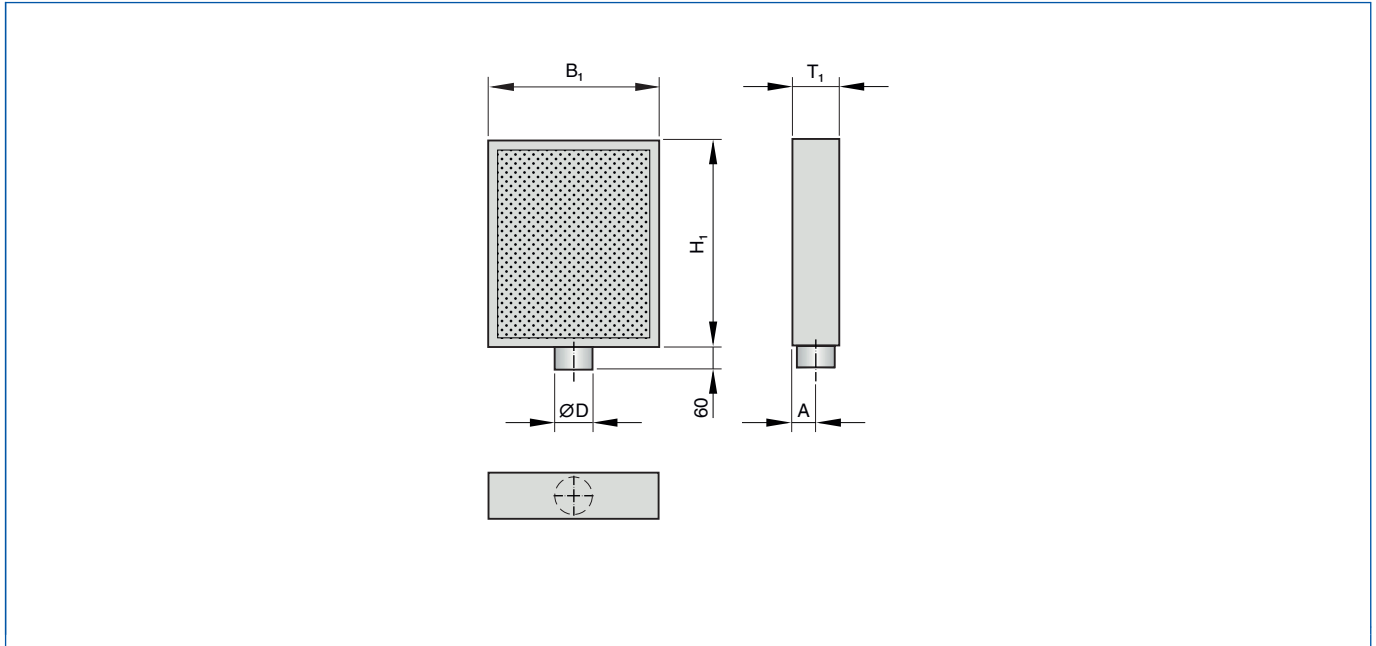
Nominal size	B ₁	H ₁	T ₁	B ₄	T ₄	m
	mm	mm	mm	mm	mm	kg
600x300x75-300x45	602	302	75	298	43	6
600x500x75-450x45	602	502	75	448	43	9
600x700x115-400x90	602	702	115	398	88	13
600x1000x115-450x90	602	1002	115	448	88	18
900x1200x125-650x100	902	1202	125	648	98	31
1200x1200x125-900x100	1202	1202	125	898	98	41
900x1500x150-800x125	902	1502	150	798	123	39
1200x1500x150-900x125	1202	1502	150	898	123	51
1200x2000x200-900x160	1202	2002	200	898	158	67

Dimensions [mm] and weight [kg] for patterned variants

Nominal size	B ₁	H ₁	T ₁	B ₄	T ₄	m
	mm	mm	mm	mm	mm	kg
580x316x75-300x45	582	318	75	298	43	6
580x514x75-450x45	582	516	75	448	43	9
580x712x115-400x90	582	714	115	398	88	13
580x976x115-450x90	582	978	115	448	88	18
910x1240x125-650x100	912	1242	125	648	98	31
1240x1240x125-900x100	1242	1242	125	898	98	41
910x1570x150-800x125	912	1572	150	798	123	39
1240x1570x150-900x125	1242	1572	150	898	123	51
1240x1996x200-900x160	1242	1968	200	898	158	67



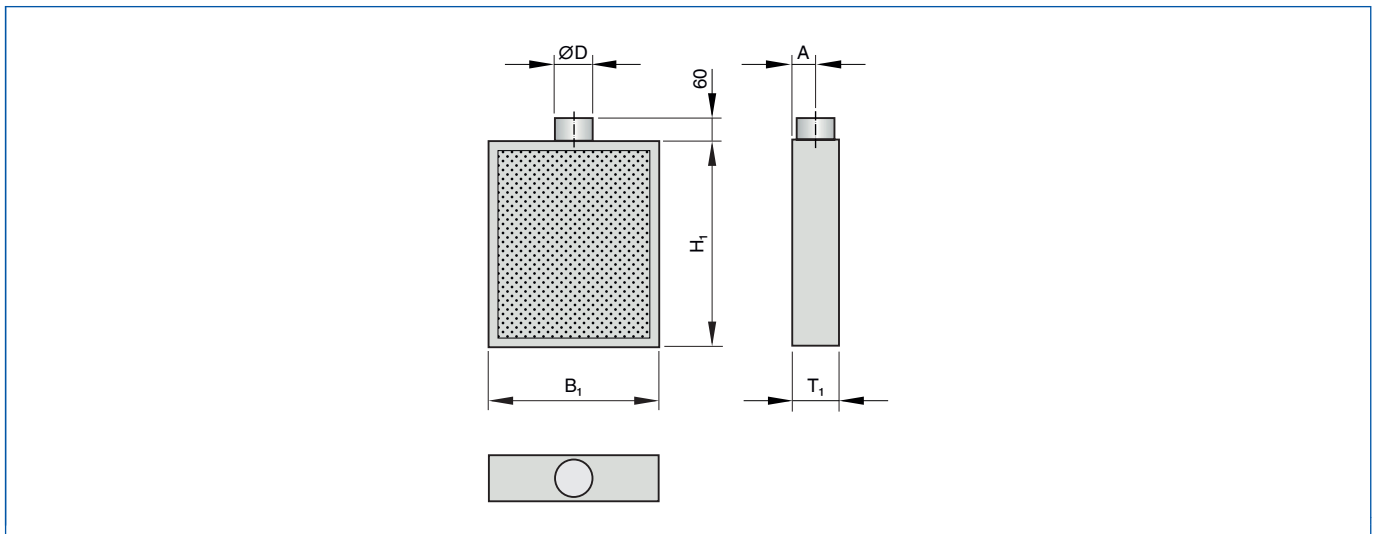
QL-WF-RU



Dimensions [mm] and weight [kg]

Nominal size	B ₁	H ₁	T ₁	ØD	A	m
	mm	mm	mm	mm	mm	kg
600×300×160-1×125	602	302	160	123	80	8
600×500×200-1×160	602	502	200	158	100	12
600×700×250-1×200	602	702	250	198	125	16
600×1000×300-1×250	602	1002	300	248	150	24

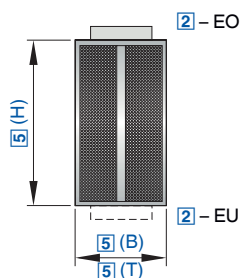
QL-WF-RO



Dimensions [mm] and weight [kg]

Nominal size	B ₁	H ₁	T ₁	ØD	A	m
	mm	mm	mm	mm	mm	kg
580×316×160-1×125	582	318	160	123	80	8
580×514×200-1×160	582	516	200	158	100	12
580×712×250-1×200	582	714	250	198	125	16
580×976×300-1×250	582	978	300	248	150	24





Rectangular casing, one-way, two-way or three-way air discharge, for comfort and industrial zones

 **Order code**

QL - WFM - EO - 2R - K / 1222 x 1994 x 288 - 900 x 220 / S70 / P1 - RAL ...

1 2 3 4 5 6 7

<p>1 Type QL-WFM Displacement flow diffuser</p> <p>2 Connection Rectangular spigot EO Top EU Bottom</p> <p>3 Air discharge No entry: front 2L Front and left side 2R Front and right side 3 Three-way</p>	<p>4 Design of diffuser face No entry: perforated plate, square pitch K Patterned</p> <p>5 Nominal size [mm] B x H x T - spigot width x spigot depth</p> <p>6 Plinth height [mm] No entry: without plinth S50 50 mm S60 60 mm S70 70 mm S100 100 mm S150 150 mm S200 200 mm</p>	<p>7 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour PS Powder-coated, specify NCS colour</p> <p>Gloss level 25 % 50 % 60 % Specify together with colour</p>
--	---	---

 **Features**

Displacement flow diffusers with a rectangular spigot

- ▶ Nominal widths 600 mm and 1200 mm; nominal height 2000 mm
- ▶ Volume flow rate range 112 - 1443 l/s or 405 - 5196 m³/h
- ▶ Perforated plate, square pitch; patterned as an option
- ▶ Rectangular duct connection
- ▶ Duct connection at the top or bottom
- ▶ Equalising sheet metal plate with nozzles, each with a deflector scoop

Optional equipment and accessories

- ▶ Exposed surface in RAL CLASSIC or NCS colours

 **Application**

- ▶ Type QL-WFM displacement flow diffusers are used as supply air units for industrial and comfort zones

- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
 - ▶ Floor-standing installation on walls or in corners, either individually or several units arranged in a row
 - ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
 - ▶ Excellent air quality in the occupied zone
 - ▶ Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
 - ▶ For variable and constant volume flows
 - ▶ For supply air to room air temperature differences from -6 to -1 K
- ▶ QL-WFM-...-K: Patterned perforated plate

 **Attachments**

- ▶ S: Plinth

 **Special characteristics**

- ▶ One-way, two-way or three-way air discharge
- ▶ Perforated plate, square pitch or patterned
- ▶ Rectangular duct connection
- ▶ Duct connection at the top or bottom
- ▶ Equalising sheet metal plate with nozzles

 **Standards and guidelines**

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

 **Variants**

- ▶ QL-WFM-E*: Rectangular spigot
- ▶ QL-WFM-*O: Spigot at the top
- ▶ QL-WFM-*U: Spigot at the bottom

 **Technical data**

Nominal sizes	Perforated plate, square pitch 600 x 2000, 1200 x 2000 mm Patterned 628 x 1994, 1222 x 1994 mm
Minimum volume flow rate, at 0.1 m/s	112 - 361 l/s or 405 - 1299 m ³ /h
Maximum volume flow rate, at 0.4 m/s	449 - 1443 l/s or 1618 - 5196 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3/0.4 m/s	65/77 dB(A) max.



QL-WFM-E*-0

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
600 × 2000 × 270 - 420 × 220	112	405	0.10	4	<15	1.1
	225	809	0.20	14	29	2.2
	337	1214	0.30	32	41	3.3
	449	1618	0.40	57	50	4.5
1200 × 2000 × 270 - 900 × 220	227	817	0.10	3	<15	1.4
	454	1635	0.20	11	26	2.7
	681	2452	0.30	25	37	4.1
	908	3269	0.40	45	46	5.5
1200 × 2000 × 350 - 900 × 300	227	817	0.10	<3	<15	1.4
	454	1635	0.20	7	19	2.7
	681	2452	0.30	15	30	4.1
	908	3269	0.40	27	39	5.5

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WFM-E*-2*

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
600 × 2000 × 270 - 420 × 220	162	582	0.10	7	19	0.9
	323	1164	0.20	28	39	1.8
	485	1746	0.30	62	52	2.7
	647	2328	0.40	110	63	3.6
1200 × 2000 × 270 - 900 × 220	276	995	0.10	4	<15	1.1
	553	1990	0.20	16	31	2.2
	829	2984	0.30	36	43	3.3
	1105	3979	0.40	64	53	4.5
1200 × 2000 × 350 - 900 × 300	292	1050	0.10	3	<15	1.1
	583	2100	0.20	10	24	2.2
	875	3149	0.30	23	36	3.3
	1166	4199	0.40	41	45	4.5

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WFM-E*-3

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
600 × 2000 × 270 - 420 × 220	211	760	0.10	11	26	0.8
	422	1519	0.20	45	47	1.6
	633	2279	0.30	101	62	2.4
	844	3038	0.40	180	74	3.2
1200 × 2000 × 270 - 900 × 220	326	1172	0.10	5	16	1.0
	651	2345	0.20	22	36	2.0
	977	3517	0.30	49	49	3.0
	1303	4689	0.40	87	59	3.9
1200 × 2000 × 350 - 900 × 300	356	1282	0.10	4	<15	1.0
	712	2565	0.20	14	29	2.0
	1069	3847	0.30	33	41	3.0
	1425	5129	0.40	58	51	3.9

The near zone values are based on a supply air to room air temperature difference of -6 K



QL-WFM-E*-0-K

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
628 × 1994 × 288 - 420 × 220	117	422	0.10	4	<15	1.1
	235	845	0.20	15	30	2.3
	352	1267	0.30	34	43	3.4
	469	1690	0.40	61	52	4.5
1222 × 1994 × 288 - 900 × 220	231	830	0.10	3	<15	1.4
	461	1660	0.20	11	26	2.8
	692	2489	0.30	26	38	4.1
	922	3319	0.40	45	47	5.5
1222 × 1994 × 354 - 900 × 300	231	830	0.10	<3	<15	1.4
	461	1660	0.20	7	19	2.8
	692	2489	0.30	15	30	4.1
	922	3319	0.40	27	38	5.5

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WFM-E*-2*-K

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
628 × 1994 × 288 - 420 × 220	170	612	0.10	8	21	0.9
	340	1223	0.20	31	41	1.8
	510	1835	0.30	69	55	2.7
	680	2447	0.40	123	66	3.7
1222 × 1994 × 288 - 900 × 220	283	1019	0.10	4	<15	1.1
	566	2038	0.20	17	32	2.2
	849	3057	0.30	38	44	3.4
	1132	4076	0.40	67	54	4.5
1222 × 1994 × 354 - 900 × 300	296	1064	0.10	3	<15	1.1
	591	2129	0.20	10	25	2.2
	887	3193	0.30	23	36	3.4
	1183	4257	0.40	42	45	4.5

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WFM-E*-3-K

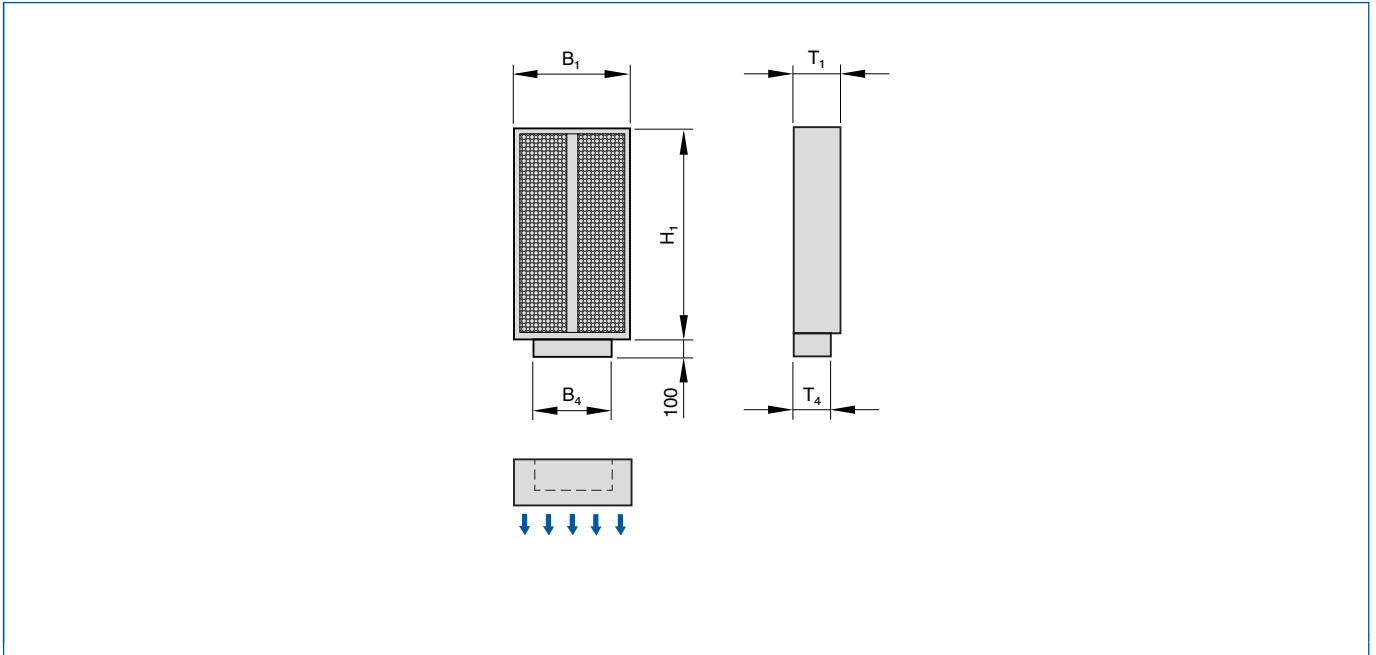
Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
628 × 1994 × 288 - 420 × 220	223	801	0.10	13	29	0.8
	445	1602	0.20	51	50	1.6
	668	2403	0.30	116	65	2.4
	890	3204	0.40	205	77	3.2
1222 × 1994 × 288 - 900 × 220	336	1208	0.10	6	17	1.0
	671	2417	0.20	23	37	2.0
	1007	3625	0.30	52	50	3.0
	1343	4834	0.40	93	60	4.0
1222 × 1994 × 354 - 900 × 300	361	1299	0.10	4	<15	1.0
	722	2598	0.20	15	30	2.0
	1082	3897	0.30	33	42	3.0
	1443	5196	0.40	59	52	4.0

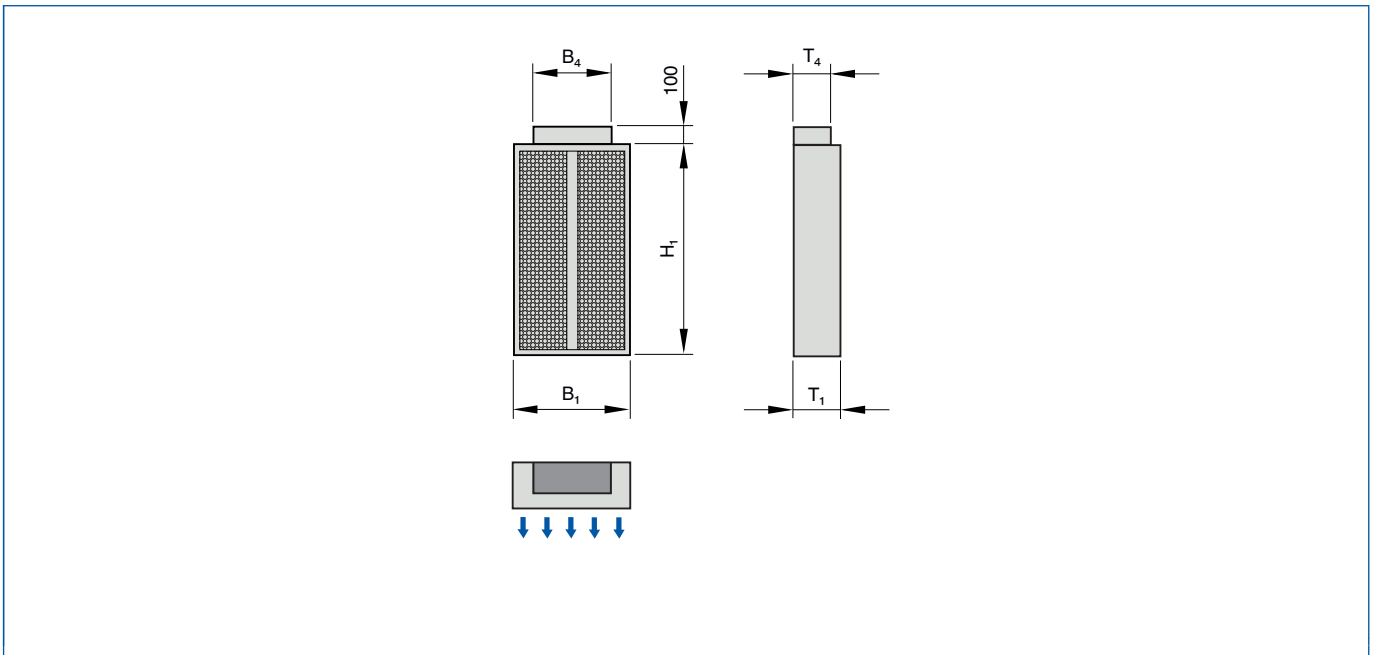
The near zone values are based on a supply air to room air temperature difference of -6 K



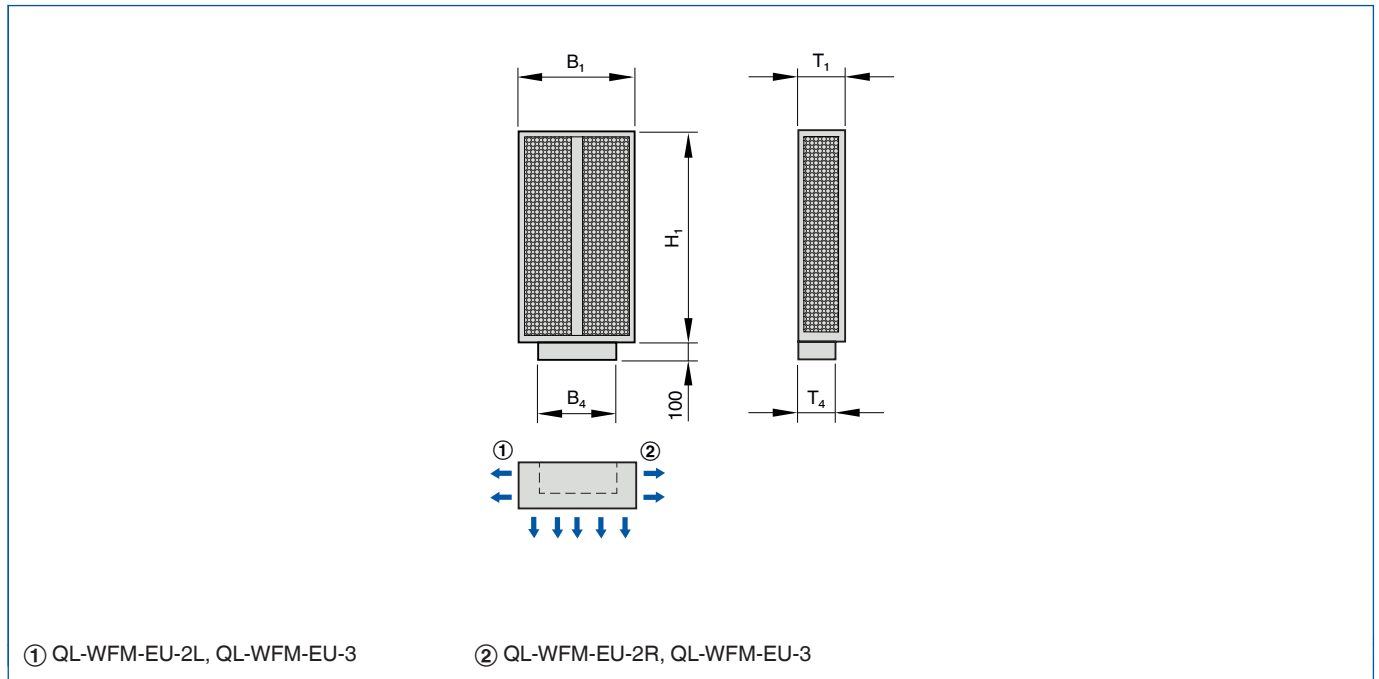
QL-WFM-EU-0



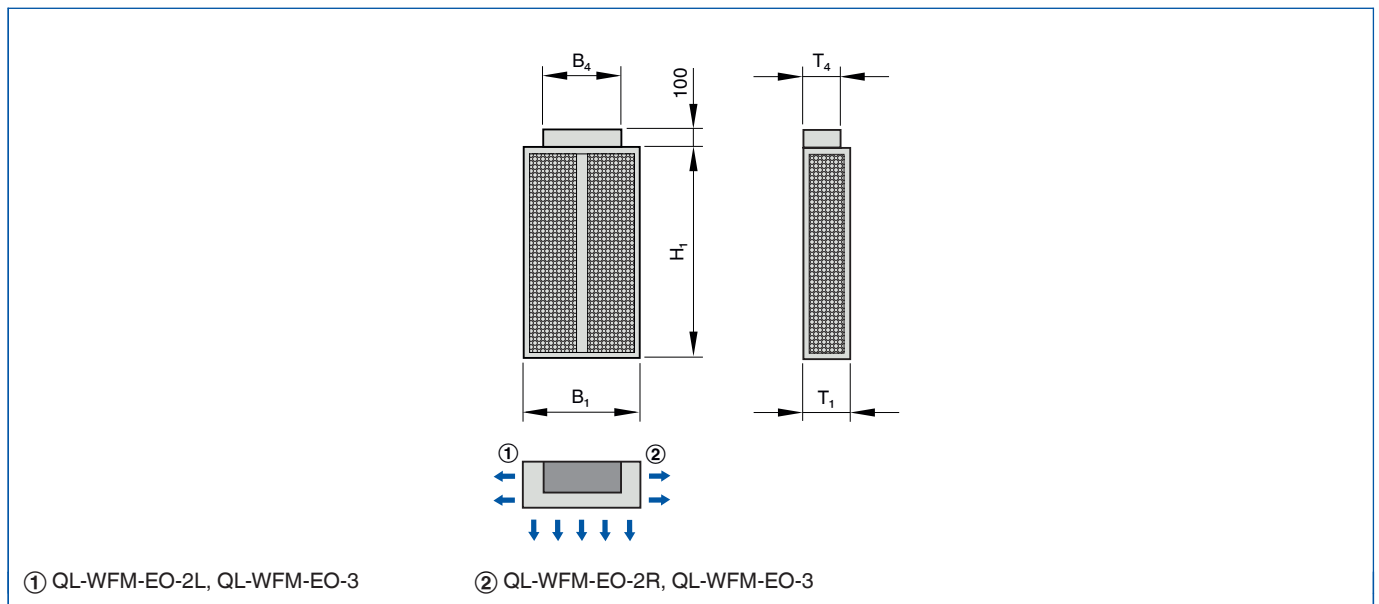
QL-WFM-EO-0



QL-WFM-EU...



QL-WFM-EO...



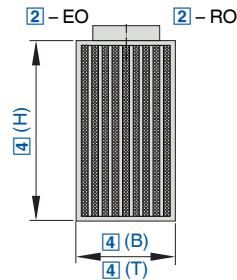
Dimensions [mm] and weight [kg] for variants with perforated plate

Nominal size	B ₁	H ₁	T ₁	B ₄	T ₄	m
	mm	mm	mm	mm	mm	kg
600×2000×270-420×220	600	2000	270	418	218	50
1200×2000×270-900×220	1200	2000	270	898	218	75
1200×2000×350-900×300	1200	2000	350	898	298	85

Dimensions [mm] and weight [kg] for patterned variants

Nominal size	B ₁	H ₁	T ₁	B ₄	T ₄	m
	mm	mm	mm	mm	mm	kg
628×1994×288-420×220	628	1994	288	418	218	50
1222×1994×288-900×220	1222	1994	288	898	218	75
1222×1994×354-900×300	1222	1994	354	898	298	85





Rectangular casing, one-way air discharge, for industrial zones

Order code

QL - WFT - RO - M / 600 × 2000 × 350 - 1 × 315 / P1 - RAL ...

1 Type	with circular spigot)	PS colour	colour
QL-WFT Displacement flow diffuser			Powder-coated, specify NCS colour
2 Connection	4 Nominal size [mm]		Gloss level
Circular spigot	Circular spigot		25 %
RO Top	B × H × T - number × spigot diameter		50 %
Rectangular spigot	Rectangular spigot		60 %
EO Top	B × H × T - spigot width × spigot depth		Specify together with colour
3 Volume flow rate measuring unit	5 Exposed surface		
No entry: none	No entry: powder-coated		
M With measuring unit (only for variants	RAL 9010, pure white		
	P1 Powder-coated, specify RAL CLASSIC		

+ **Features**

Displacement flow diffusers for large volume flow rates

- ▶ Nominal widths 600 mm and 1200 mm, nominal heights 1200 and 2000 mm
- ▶ Volume flow rate range 65 - 908 l/s or 235 - 3269 m³/h
- ▶ Diffuser face is box profile sheet metal
- ▶ Rectangular or circular duct connection
- ▶ Duct connection at the top or bottom
- ▶ Equalising sheet metal plate with nozzles, each with a deflector scoop

Optional equipment and accessories

- ▶ Exposed surface in RAL CLASSIC or NCS colours
- ▶ Volume flow rate measuring unit for circular duct connections

- are used as supply air units for industrial zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Floor-standing installation on walls, either individually or several units arranged in a row
- ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
- ▶ Excellent air quality in the occupied zone
- ▶ Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -6 to -1 K

- ▶ QL-WFT-R*: Circular spigot
- ▶ QL-WFT-E*: Rectangular spigot
- ▶ QL-WFT-U: Spigot at the bottom
- ▶ QL-WFT-O: Spigot at the top

⬡ **Attachments**

- ▶ M: Volume flow rate measuring unit, only for QL-WFT-RO

★ **Special characteristics**

- ▶ One-way air discharge
- ▶ Box profile diffuser face
- ▶ Rectangular or circular duct connection
- ▶ Duct connection at the top
- ▶ Equalising sheet metal plate with nozzles

ISO **Standards and guidelines**

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

✈ **Application**

- ▶ Type QL-WFT displacement flow diffusers

◻ **Variants**

📈 **Technical data**

Nominal sizes	600 × 1200 to 1200 × 2000 mm
Minimum volume flow rate, at 0.1 m/s	65 - 227 l/s or 235 - 817 m ³ /h
Maximum volume flow rate, at 0.4 m/s	261 - 908 l/s or 941 - 3269 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3/0.4 m/s	54/65 dB(A) max.



QL-WFT-E*

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
1200 × 2000 × 220 - 800 × 170	227	817	0.10	7	20	1.4
	454	1635	0.20	30	41	2.7
	681	2452	0.30	67	54	4.1
	908	3269	0.40	120	65	5.5
1200 × 2000 × 350 - 800 × 300	227	817	0.10	3	<15	1.4
	454	1635	0.20	12	27	2.7
	681	2452	0.30	26	39	4.1
	908	3269	0.40	46	48	5.5

The near zone values are based on a supply air to room air temperature difference of -6 K

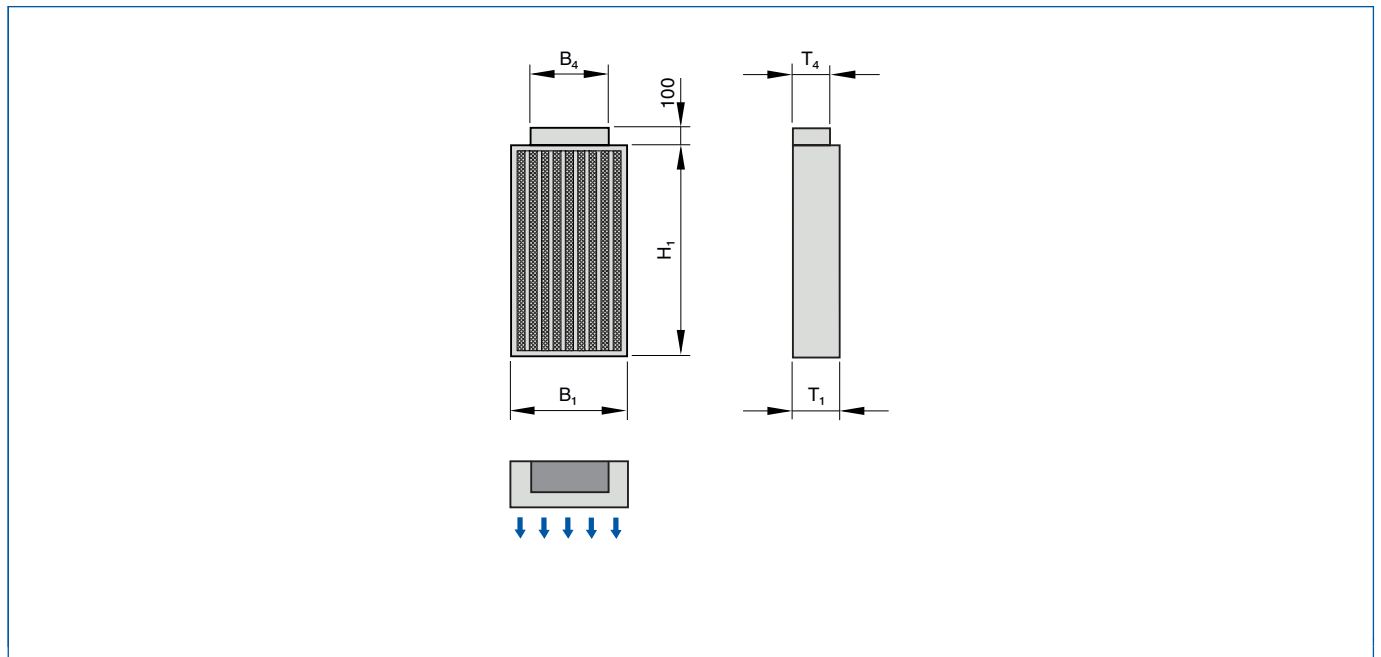
QL-WFT-R*

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
600 × 1200 × 350 - 1 × 250	65	235	0.10	5	<15	0.9
	131	470	0.20	19	33	1.8
	196	706	0.30	43	46	2.7
	261	941	0.40	76	56	3.6
600 × 2000 × 350 - 1 × 315	112	405	0.10	5	<15	1.1
	225	809	0.20	19	33	2.2
	337	1214	0.30	42	45	3.3
	449	1618	0.40	74	55	4.5

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WFT-EO

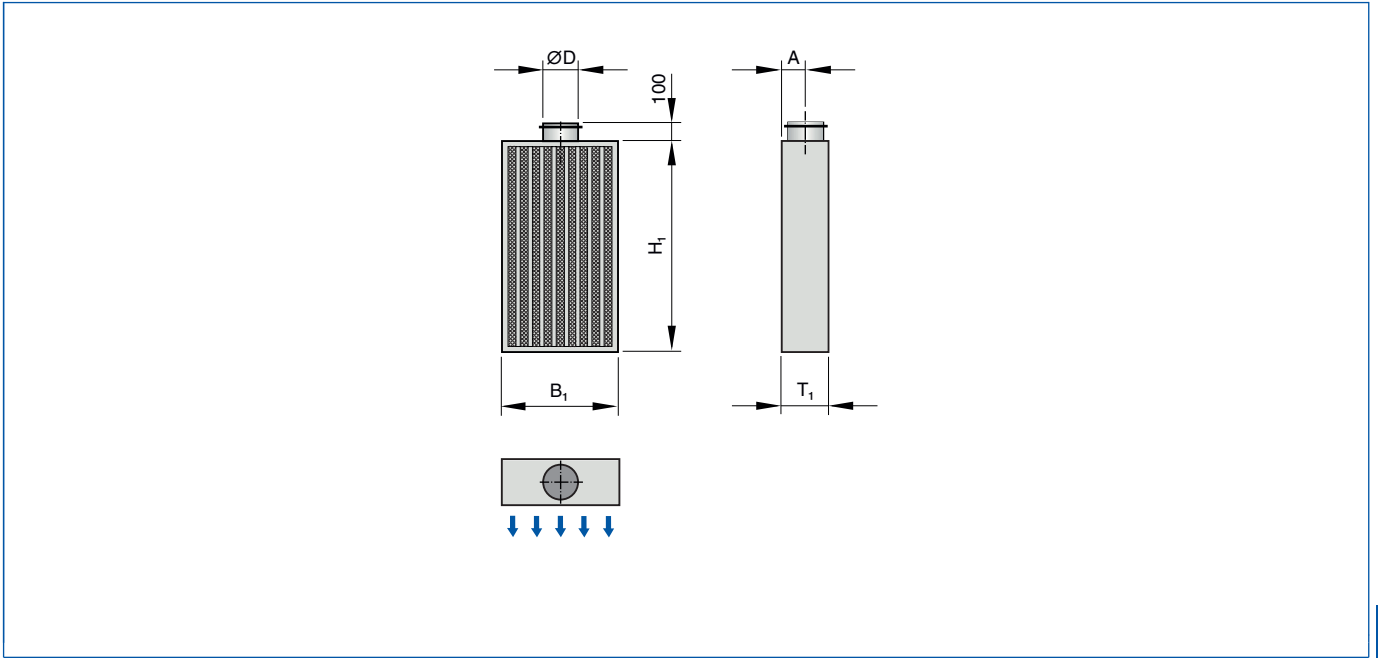


Dimensions [mm] and weight [kg]

Nominal size	B_1	H_1	T_1	B_4	T_4	m
	mm	mm	mm	mm	mm	kg
1200×2000×220-800×170	1200	2000	220	798	168	55
1200×2000×350-800×300	1200	2000	350	798	298	66



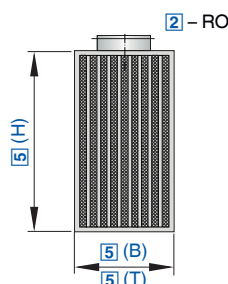
QL-WFT-RO



Dimensions [mm] and weight [kg]

Nominal size	B_1	H_1	T_1	$\varnothing D$	A	m
	mm	mm	mm	mm	mm	kg
600x1200x350-1x250	600	1200	350	248	175	33
600x2000x350-1x315	600	2000	350	313	175	53





Square casing, two-way or three-way air discharge, for large rooms and industrial zones

 **Order code**

QL - WQT - RO - 3 - M / 1200 x 2000 x 1200 - 1 x 800 / P1 - RAL ...

1 **2** **3** **4** **5** **6**

<p>1 Type QL-WQT Displacement flow diffuser</p> <p>2 Connection Circular spigot RO Top</p> <p>3 Air discharge 2 Two-way 3 Three-way</p>	<p>4 Volume flow rate measuring unit No entry: none M With</p> <p>5 Nominal size [mm] B x H x T - number x spigot diameter</p> <p>6 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour</p>	<p>PS Powder-coated, specify NCS colour</p> <p>Gloss level 25 % 50 % 60 % Specify together with colour</p>
---	---	---

+ Features

- Square displacement flow diffusers for large volume flow rates
- ▶ Nominal widths 800 mm and 1200 mm; nominal height 2000 mm
 - ▶ Volume flow rate range 301 - 2724 l/s or 1084 - 9808 m³/h
 - ▶ Diffuser face is box profile sheet metal
 - ▶ Circular duct connection
 - ▶ Duct connection at the top or bottom
 - ▶ Equalising sheet metal plate with nozzles, each with a deflector scoop

- Optional equipment and accessories
- ▶ Exposed surface in RAL CLASSIC or NCS colours
 - ▶ Volume flow rate measuring unit
 - ▶ All surfaces powder-coated for free-standing installation

Application

- ▶ Type QL-WQT displacement flow diffusers are used as supply air units for large internal spaces and industrial zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Floor-standing installation on walls or in corners, either individually or several units arranged in a row
- ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
- ▶ Excellent air quality in the occupied zone
- ▶ Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -6 to -1 K

◊ Variants

- ▶ QL-WQT-R*: Circular spigot
- ▶ QL-WQT-RU: Spigot at the bottom
- ▶ QL-WQT-RO: Spigot at the top

◻ Attachments

- ▶ M: Volume flow rate measuring unit

★ Special characteristics

- ▶ Two-way or three-way air discharge
- ▶ Box profile diffuser face
- ▶ Circular duct connection
- ▶ Duct connection at the top
- ▶ Equalising sheet metal plate with nozzles

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	800 x 2000, 1200 x 2000 mm
Minimum volume flow rate, at 0.1 m/s	301 - 681 l/s or 1084 - 2452 m ³ /h
Maximum volume flow rate, at 0.4 m/s	1205 - 2724 l/s or 4337 - 9808 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3/0.4 m/s	44/54 dB(A) max.



QL-WQT-R*-2

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
800 × 2000 × 800 - 1 × 630	301	1084	0.10	<3	<15	1.0
	602	2168	0.20	10	29	2.0
	904	3253	0.30	22	42	3.0
	1205	4337	0.40	39	52	3.9
1200 × 2000 × 1200 - 1 × 800	454	1635	0.10	<3	<15	1.1
	908	3269	0.20	8	25	2.2
	1362	4904	0.30	18	36	3.3
	1816	6538	0.40	32	46	4.5

The near zone values are based on a supply air to room air temperature difference of -6 K

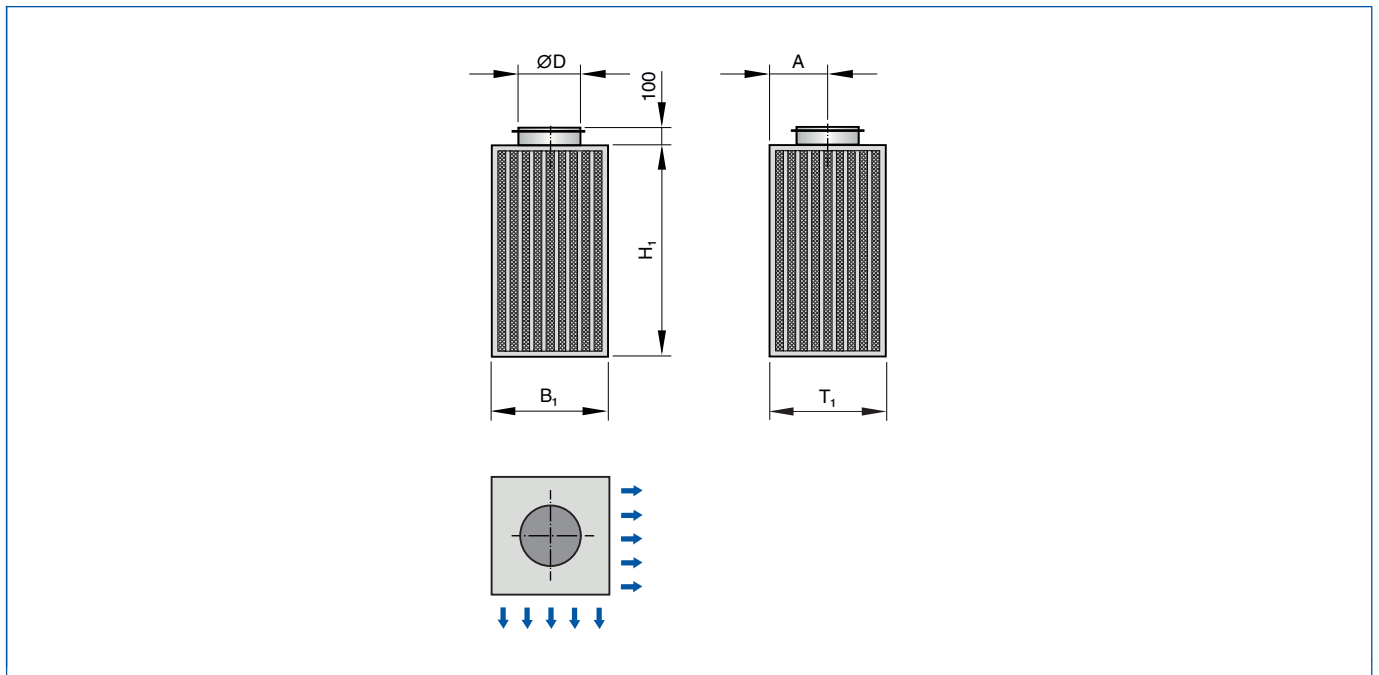
QL-WQT-R*-3

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
800 × 2000 × 800 - 1 × 630	452	1626	0.10	4	<15	0.9
	904	3253	0.20	16	32	1.7
	1355	4879	0.30	36	44	2.6
	1807	6505	0.40	65	54	3.5
1200 × 2000 × 1200 - 1 × 800	681	2452	0.10	4	<15	1.0
	1362	4904	0.20	14	29	2.0
	2043	7356	0.30	32	41	3.0
	2724	9808	0.40	57	50	3.9

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WQT-RO-2

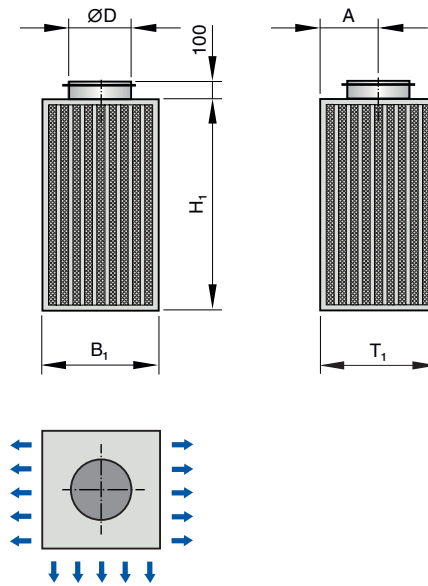


Dimensions [mm] and weight [kg]

Nominal size	B_1	H_1	T_1	$\varnothing D$	A	m
	mm	mm	mm	mm	mm	kg
800×2000×800-1×630	800	2000	800	628	400	100
1200×2000×1200-1×800	1200	2000	1200	798	600	157



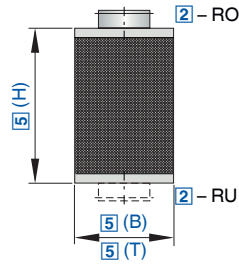
QL-WQT-RO-3



Dimensions [mm] and weight [kg]

Nominal size	B ₁	H ₁	T ₁	ØD	A	m
	mm	mm	mm	mm	mm	kg
800×2000×800-1×630	800	2000	800	628	400	108
1200×2000×1200-1×800	1200	2000	1200	798	600	167





Semi-circular casing, radial air discharge, for comfort and industrial zones

Order code

QL - WH - RO - ... - M / 500 x 1000 x 450 - 1 x 315 / K1 / S60 / P1 - RAL ...

<p>1 Type QL-WH Displacement flow diffuser</p> <p>2 Connection Circular spigot RO Top RU Bottom</p> <p>3 Design of diffuser face No entry: perforated plate, square pitch K Patterned</p> <p>4 Volume flow rate measuring unit No entry: none M With measuring unit (only for variants with square pitch perforated plate)</p> <p>5 Nominal size [mm] B x H x T - number x spigot diameter</p>	<p>6 Duct cover No entry: none K0 With duct cover, 2000 mm high With duct cover for rooms of the following heights (plinth height not included) K1 2300 - 2600 mm K2 2600 - 2900 mm K3 2900 - 3200 mm K4 3200 - 3500 mm</p> <p>7 Plinth height [mm] No entry: without plinth S50 50 mm S60 60 mm S70 70 mm S100 100 mm S150 150 mm S200 200 mm</p>	<p>8 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour PS Powder-coated, specify NCS colour</p> <p>Gloss level 25 % 50 % 60 % Specify together with colour</p>
--	---	---

- + Features**
Displacement flow diffusers in many nominal sizes
- ▶ Nominal widths 320 - 600 mm, nominal heights 600 - 2000 mm
 - ▶ Volume flow rate range 26 - 990 l/s or 94 - 3563 m³/h
 - ▶ Perforated plate, square pitch; patterned as an option
 - ▶ Circular duct connection
 - ▶ Duct connection at the top or bottom
 - ▶ Equalising sheet metal plate with nozzles, each with a deflector scoop
- Optional equipment and accessories
- ▶ Exposed surface in RAL CLASSIC or NCS colours
 - ▶ Plinth in heights 50, 60, 70, 100, 150, 200 mm
 - ▶ Duct cover
 - ▶ Volume flow rate measuring unit

- Application**
- ▶ Type QL-WH displacement flow diffusers are used as supply air units for industrial and comfort zones
 - ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
 - ▶ Floor-standing installation on walls, either individually or several units arranged in a row
 - ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
 - ▶ Excellent air quality in the occupied zone
 - ▶ Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
 - ▶ For variable and constant volume flows
 - ▶ For supply air to room air temperature differences from -6 to -1 K

- Variants**
- ▶ QL-WH-R*: Circular spigot
 - ▶ QL-WH-*U: Spigot at the bottom
 - ▶ QL-WH-*O: Spigot at the top
 - ▶ QL-WH-...-K: Patterned perforated plate

- Attachments**
- ▶ M: Volume flow rate measuring unit
 - ▶ S: Plinth
 - ▶ K: Duct cover

- Special characteristics**
- ▶ Radial air discharge
 - ▶ Perforated plate, square pitch or patterned
 - ▶ Circular duct connection
 - ▶ Duct connection at the top or bottom
 - ▶ Equalising sheet metal plate with nozzles
 - ▶ Optional duct cover

- ISO Standards and guidelines**
- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135





Technical data

Nominal sizes	Perforated plate, square pitch 320 × 600 - 600 × 2000 mm Patterned 320 x 580 - 600 × 1966 mm
Minimum volume flow rate, at 0.1 m/s	26 - 247 l/s or 94 - 891 m ³ /h
Maximum volume flow rate, at 0.4 m/s	104 - 990 l/s or 375 - 3563 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3/0.4 m/s	55/66 dB(A) max.

QL-WH-R*

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
320 × 600 × 190 - 1 × 125	27	97	0.10	8	21	0.4
	54	195	0.20	32	41	0.8
	81	292	0.30	72	55	1.2
	108	389	0.40	127	66	1.6
400 × 600 × 230 - 1 × 160	34	123	0.10	5	<15	0.4
	68	245	0.20	20	34	0.9
	102	368	0.30	45	46	1.3
	136	491	0.40	80	56	1.8
350 × 1000 × 300 - 1 × 200	69	249	0.10	8	20	0.5
	138	498	0.20	30	40	1.0
	207	746	0.30	68	54	1.5
	276	995	0.40	120	65	2.1
400 × 1000 × 350 - 1 × 250	81	293	0.10	5	<15	0.5
	163	586	0.20	18	33	1.1
	244	880	0.30	42	45	1.6
	326	1173	0.40	74	55	2.2
500 × 1000 × 450 - 1 × 315	106	382	0.10	3	<15	0.6
	212	764	0.20	13	29	1.1
	318	1146	0.30	30	42	1.7
	424	1528	0.40	54	51	2.3
500 × 1500 × 450 - 1 × 315	161	581	0.10	6	18	0.7
	323	1162	0.20	25	38	1.4
	484	1743	0.30	56	51	2.0
	646	2324	0.40	100	61	2.7
600 × 1500 × 500 - 1 × 400	184	664	0.10	3	<15	0.7
	369	1327	0.20	13	28	1.4
	553	1991	0.30	30	40	2.1
	737	2654	0.40	54	49	2.9
600 × 2000 × 500 - 1 × 400	247	891	0.10	6	16	0.8
	495	1782	0.20	22	36	1.6
	742	2672	0.30	50	49	2.4
	990	3563	0.40	89	59	3.2

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WH-R*-K

Sound power level, total differential pressure and near zone

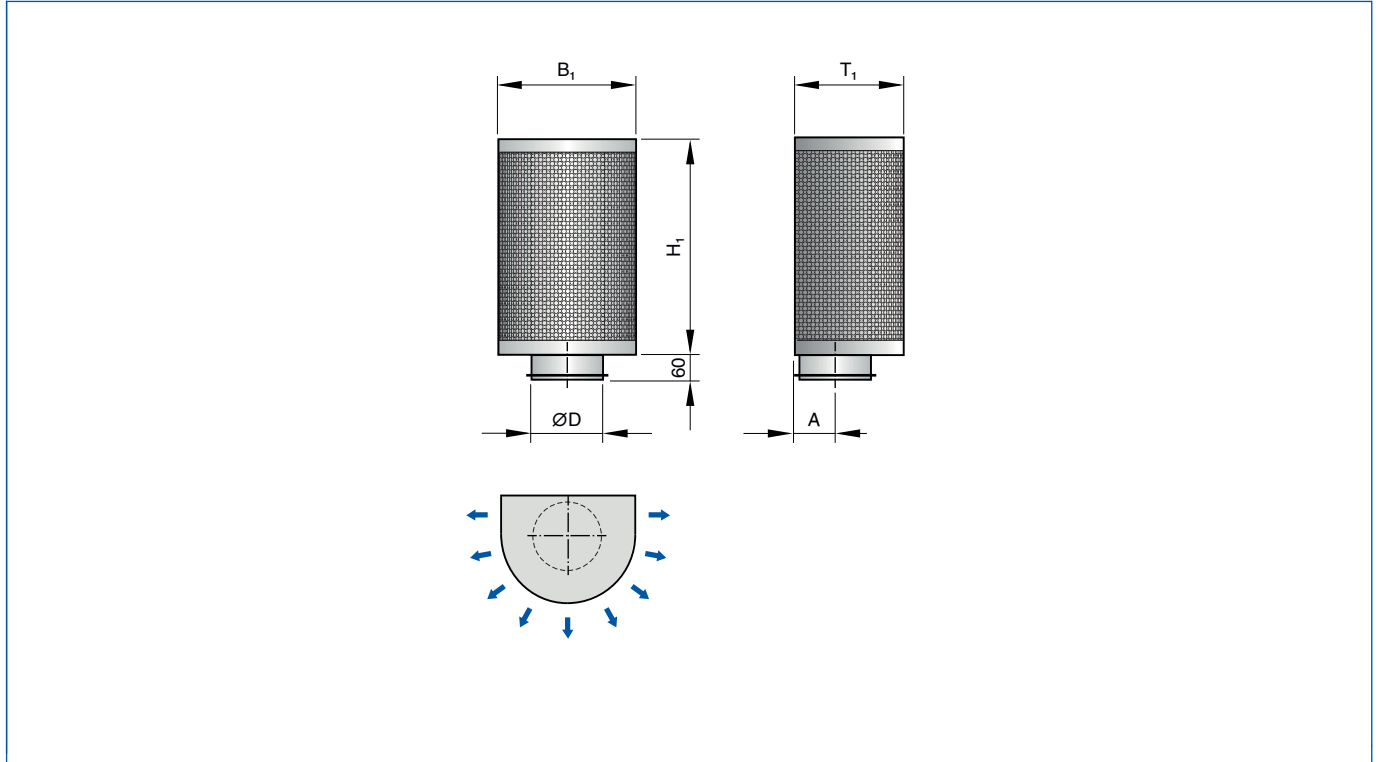
Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
320 × 580 × 190 - 1 × 125	26	94	0.10	7	20	0.4
	52	188	0.20	30	40	0.8
	78	281	0.30	67	54	1.2
	104	375	0.40	118	64	1.6
400 × 580 × 230 - 1 × 160	33	118	0.10	5	<15	0.4
	66	237	0.20	19	33	0.9
	99	355	0.30	42	45	1.3
	131	473	0.40	74	55	1.7



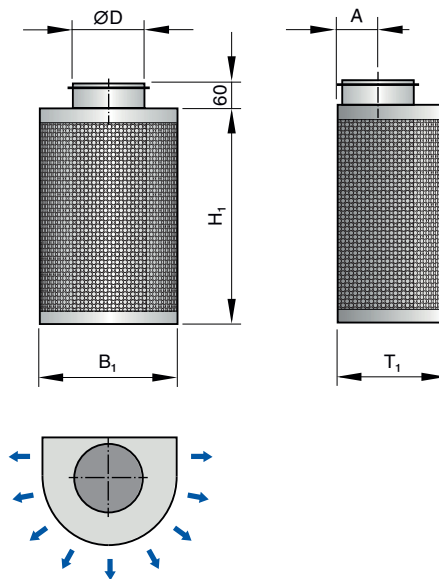
Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
350 × 976 × 300 - 1 × 200	67	243	0.10	7	19	0.5
	135	485	0.20	29	40	1.0
	202	728	0.30	65	53	1.5
	269	970	0.40	115	64	2.0
400 × 976 × 350 - 1 × 250	79	286	0.10	4	<15	0.5
	159	572	0.20	18	32	1.1
	238	858	0.30	40	45	1.6
	318	1143	0.40	71	55	2.1
500 × 976 × 450 - 1 × 315	103	372	0.10	3	<15	0.6
	207	745	0.20	13	29	1.1
	310	1117	0.30	29	41	1.7
	414	1490	0.40	52	51	2.3
500 × 1504 × 450 - 1 × 315	162	583	0.10	6	18	0.7
	324	1165	0.20	25	38	1.4
	485	1748	0.30	57	51	2.0
	647	2330	0.40	101	62	2.7
600 × 1504 × 500 - 1 × 400	185	665	0.10	3	<15	0.7
	370	1331	0.20	14	28	1.4
	554	1996	0.30	30	40	2.1
	739	2662	0.40	54	49	2.9
600 × 1966 × 500 - 1 × 400	243	875	0.10	5	16	0.8
	486	1751	0.20	22	35	1.6
	729	2626	0.30	49	48	2.4
	973	3501	0.40	87	59	3.2

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WH-RU



QL-WH-RO



Dimensions [mm] and weight [kg] for variants with perforated plate

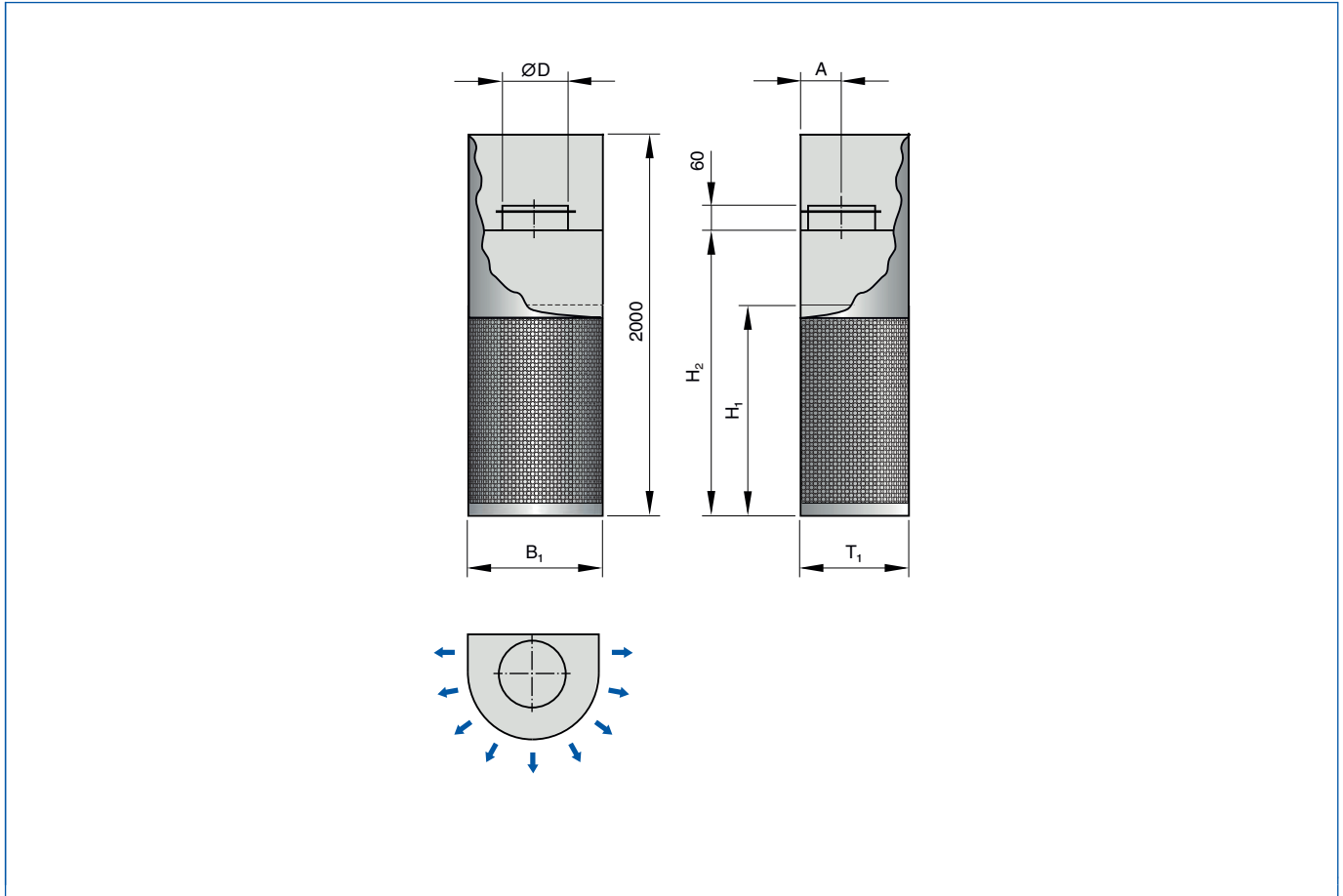
Nominal size	B ₁	H ₁	T ₁	ØD	A	m
	mm	mm	mm	mm	mm	kg
320×600×190-1×125	320	600	190	123	83	7
400×600×230-1×160	400	600	230	158	100	10
350×1000×300-1×200	350	1000	300	198	120	15
400×1000×350-1×250	400	1000	350	248	145	17
500×1000×450-1×315	500	1000	450	313	178	20
500×1500×450-1×315	500	1500	450	313	178	27
600×1500×500-1×400	600	1500	500	398	220	40
600×2000×500-1×400	600	2000	500	398	220	50

Dimensions [mm] and weight [kg] for patterned variants

Nominal size	B ₁	H ₁	T ₁	ØD	A	m
	mm	mm	mm	mm	mm	kg
320×580×190-1×125	320	580	190	123	83	7
400×580×230-1×160	400	580	230	158	100	10
350×976×300-1×200	350	976	300	198	120	15
400×976×350-1×250	400	976	350	248	145	17
500×976×450-1×315	500	976	450	313	178	20
500×1504×450-1×315	500	1504	450	313	178	27
600×1504×500-1×400	600	1504	500	398	220	40
600×1966×500-1×400	600	1966	500	398	220	50



QL-WH-RO/.../K* with duct cover



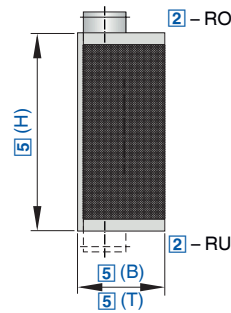
Dimensions [mm] and weight [kg] for variants with perforated plate

Nominal size	B ₁	H ₁	T ₁	H ₂	ØD	A	m
	mm	mm	mm	mm	mm	mm	kg
320x600x190-1x125	320	600	190	1500	123	83	14
400x600x230-1x160	400	600	230	1500	158	100	20
350x1000x300-1x200	350	1000	300	1500	198	120	22
400x1000x350-1x250	400	1000	350	1500	248	145	25
500x1000x450-1x315	500	1000	450	1500	313	178	29
500x1500x450-1x315	500	1500	450	1500	313	178	39
600x1500x500-1x400	600	1500	500	1500	398	220	58

Dimensions [mm] and weight [kg] for patterned variants

Nominal size	B ₁	H ₁	T ₁	H ₂	ØD	A	m
	mm	mm	mm	mm	mm	mm	kg
320x580x190-1x125	320	580	190	1504	123	83	14
400x580x230-1x160	400	580	230	1504	158	100	20
350x976x300-1x200	350	976	300	1504	198	120	22
400x976x350-1x250	400	976	350	1504	248	145	25
500x976x450-1x315	500	976	450	1504	313	178	29
500x1504x450-1x315	500	1504	450	1504	313	178	39
600x1504x500-1x400	600	1504	500	1504	398	220	58





Quadrant casing, radial air discharge, for comfort zones

 **Order code**

QL - WV - RO - ... - M / 300 x 1000 x 300 - 1 x 200 / K3 / S150 / P1 - RAL ...

1
2
3
4
5
6
7
8

<p>1 Type QL-WV Displacement flow diffuser</p> <p>2 Connection Circular spigot RO Top RU Bottom</p> <p>3 Design of diffuser face K No entry: perforated plate, square pitch K Patterned</p> <p>4 Volume flow rate measuring unit M No entry: none M With measuring unit (only for variants with square pitch perforated plate)</p>	<p>5 Nominal size [mm] B x H x T - number x spigot diameter</p> <p>6 Duct cover K0 No entry: none K0 With duct cover, 2000 mm high K0 With duct cover for rooms of the following heights (plinth height not included) K1 2300 - 2600 mm K2 2600 - 2900 mm K3 2900 - 3200 mm K4 3200 - 3500 mm</p> <p>7 Plinth height [mm] S50 No entry: without plinth S50 50 mm S60 60 mm</p>	<p>S70 70 mm S100 100 mm S150 150 mm S200 200 mm</p> <p>8 Exposed surface P1 No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour PS Powder-coated, specify NCS colour</p> <p>Gloss level 25 % 50 % 60 % Specify together with colour</p>
---	---	--

- + Features**
Displacement flow diffusers for installation in corners
- ▶ Nominal widths 190 - 450 mm, nominal heights 600 - 1500 mm
 - ▶ Volume flow rate range 14 - 412 l/s or 49 - 1484 m³/h
 - ▶ Perforated plate, square pitch; patterned as an option
 - ▶ Circular duct connection
 - ▶ Duct connection at the top or bottom
 - ▶ Equalising sheet metal plate with nozzles, each with a deflector scoop
- Optional equipment and accessories
- ▶ Exposed surface in RAL CLASSIC or NCS colours
 - ▶ Plinth in heights 50, 60, 70, 100, 150, 200 mm
 - ▶ Duct cover
 - ▶ Volume flow rate measuring unit

- Application**
- ▶ Type QL-WV displacement flow diffusers are used as supply air units for comfort zones
 - ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
 - ▶ Floor-standing installation in corners
 - ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
 - ▶ Excellent air quality in the occupied zone
 - ▶ Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
 - ▶ For variable and constant volume flows
 - ▶ For supply air to room air temperature differences from -6 to -1 K

- Attachments**
- ▶ M: Volume flow rate measuring unit
 - ▶ S: Plinth
 - ▶ K: Duct cover
- Special characteristics**
- ▶ Radial air discharge
 - ▶ Perforated plate, square pitch or patterned
 - ▶ Circular duct connection
 - ▶ Duct connection at the top or bottom
 - ▶ Equalising sheet metal plate with nozzles
 - ▶ Optional duct cover
- ISO Standards and guidelines**
- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

- Variants**
- ▶ QL-WV-R*: Circular spigot
 - ▶ QL-WV-*O: Spigot at the top
 - ▶ QL-WV-*U: Spigot at the bottom
 - ▶ QL-WV-...-K: Patterned perforated plate





Technical data

Nominal sizes	Perforated plate, square pitch 190 × 600 - 450 × 1500 mm Patterned 190 x 580 - 450 × 1504 mm
Minimum volume flow rate, at 0.1 m/s	14 - 103 l/s or 49 - 371 m ³ /h
Maximum volume flow rate, at 0.4 m/s	54 - 412 l/s or 195 - 1484 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3/0.4 m/s	41/51 dB(A) max.

QL-WV-R*

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
190 × 600 × 190 - 1 × 125	14	51	0.10	3	<15	0.4
	28	101	0.20	12	27	0.8
	42	152	0.30	27	39	1.2
	56	202	0.40	48	48	1.6
225 × 600 × 225 - 1 × 160	17	63	0.10	<3	<15	0.4
	35	126	0.20	8	23	0.8
	52	189	0.30	17	35	1.2
	70	252	0.40	31	44	1.7
300 × 1000 × 300 - 1 × 200	43	153	0.10	4	<15	0.6
	85	306	0.20	15	29	1.1
	128	459	0.30	33	41	1.7
	170	612	0.40	59	51	2.2
340 × 1000 × 340 - 1 × 250	49	177	0.10	<3	<15	0.6
	98	354	0.20	9	23	1.2
	148	531	0.30	20	35	1.7
	197	708	0.40	35	44	2.3
450 × 1500 × 450 - 1 × 315	103	370	0.10	3	<15	0.7
	206	740	0.20	13	28	1.5
	308	1110	0.30	29	39	2.2
	411	1480	0.40	52	49	3.0

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WV-R*-K

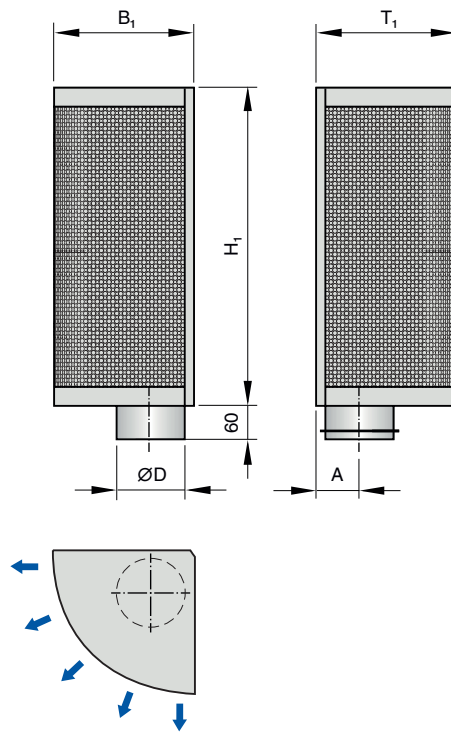
Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
190 × 580 × 190 - 1 × 125	14	49	0.10	3	<15	0.4
	27	98	0.20	11	26	0.8
	41	146	0.30	25	38	1.2
	54	195	0.40	45	47	1.6
225 × 580 × 225 - 1 × 160	17	61	0.10	<3	<15	0.4
	34	121	0.20	7	22	0.8
	51	182	0.30	16	34	1.2
	67	243	0.40	29	43	1.6
300 × 976 × 300 - 1 × 200	41	149	0.10	4	<15	0.6
	83	298	0.20	14	29	1.1
	124	448	0.30	32	41	1.7
	166	597	0.40	57	50	2.2
340 × 976 × 340 - 1 × 250	48	173	0.10	<3	<15	0.6
	96	345	0.20	9	25	1.1
	144	518	0.30	20	36	1.7
	192	691	0.40	35	46	2.3
450 × 1504 × 450 - 1 × 315	103	371	0.10	3	<15	0.7
	206	742	0.20	13	28	1.5
	309	1113	0.30	29	40	2.2
	412	1484	0.40	52	49	3.0

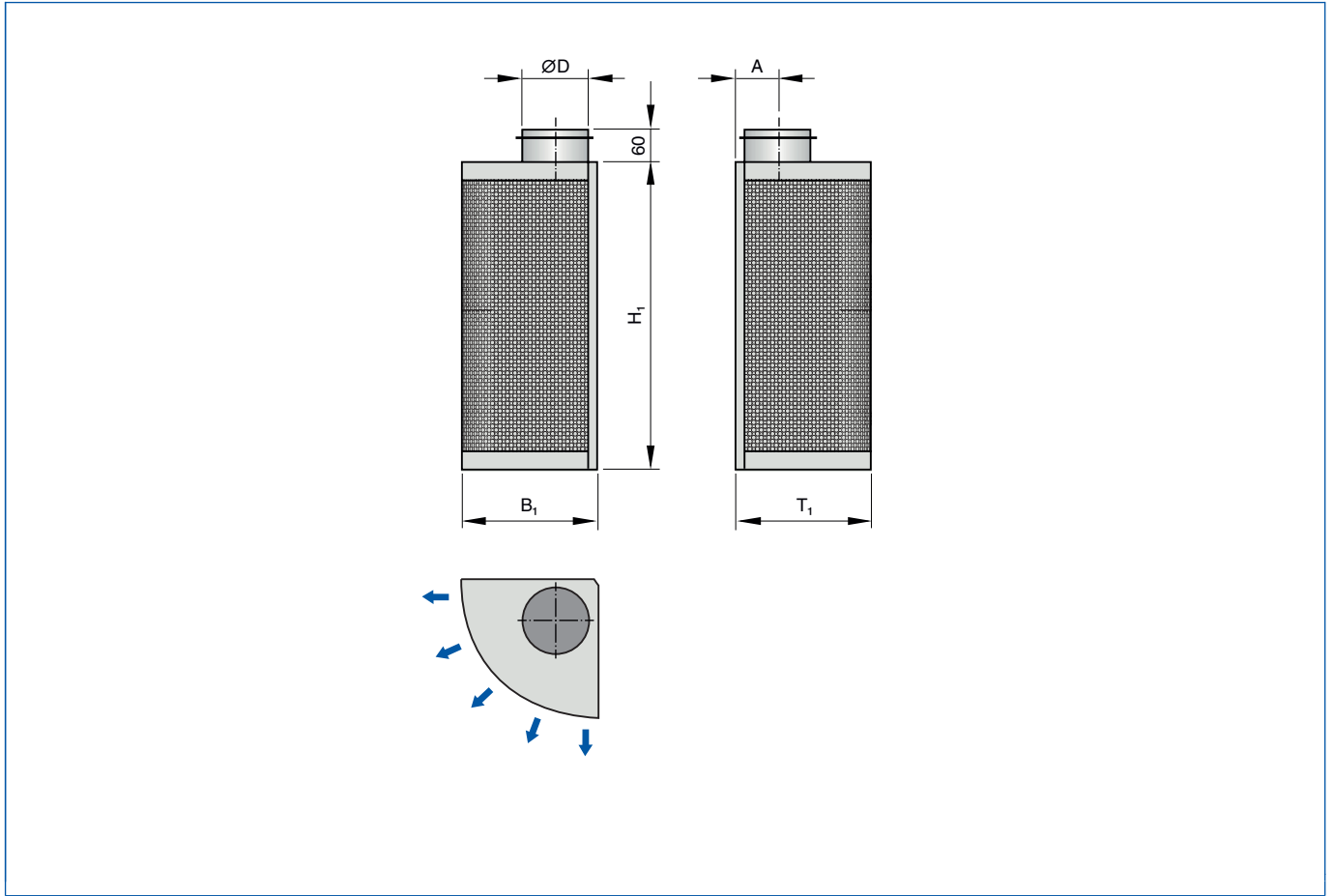
The near zone values are based on a supply air to room air temperature difference of -6 K



QL-WV-RU



QL-WV-RO



Dimensions [mm] and weight [kg] for variants with perforated plate

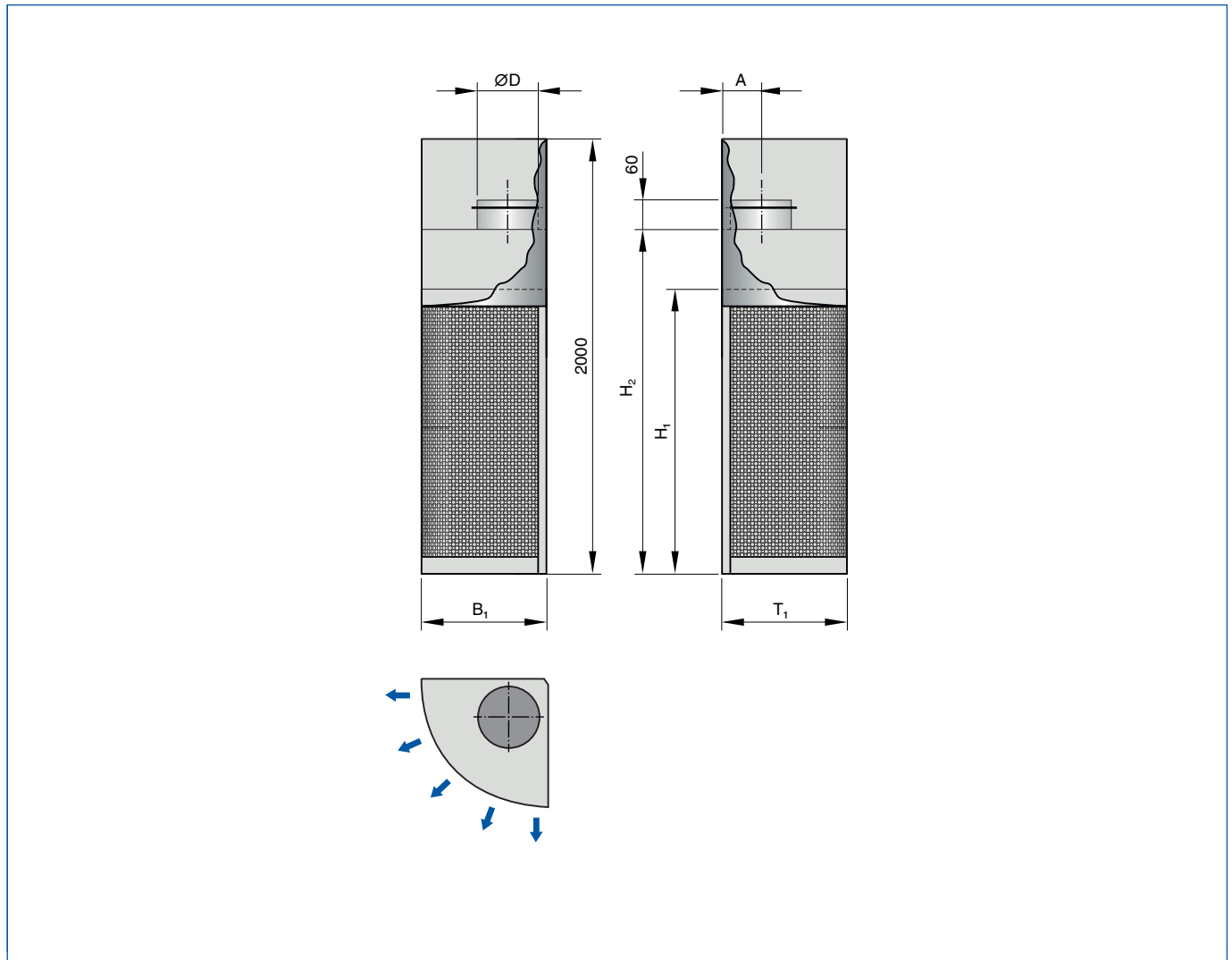
Nominal size	B ₁	H ₁	T ₁	ØD	A	m
	mm	mm	mm	mm	mm	kg
190×600×190-1×125	190	600	190	123	75	6
225×600×225-1×160	225	600	225	158	90	9
300×1000×300-1×200	300	1000	300	198	125	12
340×1000×340-1×250	340	1000	340	248	137	14
450×1500×450-1×315	450	1500	450	313	180	18

Dimensions [mm] and weight [kg] for patterned variants

Nominal size	B ₁	H ₁	T ₁	ØD	A	m
	mm	mm	mm	mm	mm	kg
190×580×190-1×125	190	580	190	123	75	6
225×580×225-1×160	225	580	225	158	90	9
300×976×300-1×200	300	976	300	198	125	12
340×976×340-1×250	340	976	340	248	137	14
450×1504×450-1×315	450	1504	450	313	180	18



QL-WV-RO/.../K with duct cover



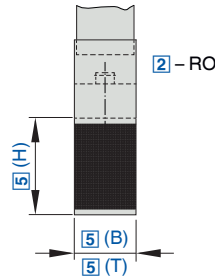
Dimensions [mm] and weight [kg] for variants with perforated plate

Nominal size	B_1	H_1	T_1	H_2	$\varnothing D$	A	m
	mm	mm	mm	mm	mm	mm	kg
190×600×190-1×125	190	600	190	1500	123	75	16
225×600×225-1×160	225	600	225	1500	158	90	18
300×1000×300-1×200	300	1000	300	1500	198	125	19
340×1000×340-1×250	340	1000	340	1500	248	137	21
450×1500×450-1×315	450	1500	450	1500	313	180	22

Dimensions [mm] and weight [kg] for patterned variants

Nominal size	B_1	H_1	T_1	H_2	$\varnothing D$	A	m
	mm	mm	mm	mm	mm	mm	kg
190×580×190-1×125	190	580	190	1504	123	75	16
225×580×225-1×160	225	580	225	1504	158	90	18
300×976×300-1×200	300	976	300	1504	198	125	19
340×976×340-1×250	340	976	340	1504	248	137	21
450×1504×450-1×315	450	1504	450	1504	313	180	22





Segment-shaped casing, radial air discharge, for comfort zones

Order code

1	2	3	4	5	6	7	8
QL - WS - RO - K - ... / 600 x 976 x 215 - 1 x 160 / K1 / S50 / P1 - RAL ...							

<p>1 Type QL-WS Displacement flow diffuser</p> <p>2 Connection Circular spigot</p> <p>RO Top</p> <p>3 Design of diffuser face No entry: perforated plate, square pitch</p> <p>K Patterned</p> <p>4 Volume flow rate measuring unit No entry: none</p> <p>M With measuring unit (only for variants with square pitch perforated plate)</p> <p>5 Nominal size [mm] B x H x T - number x spigot diameter</p>	<p>6 Duct cover No entry: none</p> <p>K0 With duct cover, 2000 mm high With duct cover for rooms of the following heights (plinth height not included)</p> <p>K1 2300 - 2600 mm</p> <p>K2 2600 - 2900 mm</p> <p>K3 2900 - 3200 mm</p> <p>K4 3200 - 3500 mm</p> <p>7 Plinth height [mm] No entry: without plinth</p> <p>S50 50 mm</p> <p>S60 60 mm</p> <p>S70 70 mm</p> <p>S100 100 mm</p> <p>S150 150 mm</p>	<p>S200 200 mm</p> <p>8 Exposed surface No entry: powder-coated RAL 9010, pure white</p> <p>P1 Powder-coated, specify RAL CLASSIC colour</p> <p>PS Powder-coated, specify NCS colour</p> <p>Gloss level 25 % 50 % 60 % Specify together with colour</p>
--	--	---

- + Features**
Displacement flow diffusers in an attractive design
- Nominal widths 400 mm and 750 mm; nominal height 1000 mm
 - Volume flow rate range 43 - 254 l/s or 157 - 916 m³/h
 - Perforated plate, square pitch; patterned as an option
 - Circular duct connection
 - Duct connection at the top
 - Equalising sheet metal plate with nozzles, each with a deflector scoop
- Optional equipment and accessories
- Exposed surface in RAL CLASSIC or NCS colours
 - Plinth in heights 50, 60, 70, 100, 150, 200 mm
 - Duct cover
 - Volume flow rate measuring unit

- Application**
- Type QL-WS displacement flow diffusers are used as supply air units for comfort zones
 - Attractive design element for building owners and architects with demanding aesthetic requirements
 - Floor-standing installation on walls, either individually or several units arranged in a row
 - Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
 - Excellent air quality in the occupied zone
 - Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
 - For variable and constant volume flows
 - For supply air to room air temperature differences from -6 to -1 K

- Variants**
- QL-WS-R*: Circular spigot
 - QL-WS-*O: Spigot at the top
 - QL-WS-...-K: Patterned perforated plate

- Attachments**
- M: Volume flow rate measuring unit
 - S: Plinth
 - K: Duct cover

- Special characteristics**
- Radial air discharge
 - Perforated plate, square pitch or patterned
 - Circular duct connection
 - Duct connection at the top
 - Equalising sheet metal plate with nozzles
 - With duct cover

- ISO Standards and guidelines**
- Sound power level of the air-regenerated noise measured according to EN ISO 5135





Technical data

Nominal sizes	Perforated plate, square pitch 400 × 1000 - 750 × 1000 mm Patterned 400 × 976 - 750 × 976 mm
Minimum volume flow rate, at 0.1 m/s	43 - 85 l/s or 157 - 305 m ³ /h
Maximum volume flow rate, at 0.4 m/s	130 - 254 l/s or 470 - 916 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3 m/s	66 dB(A) max.

QL-WS-RO/.../K

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
400 × 1000 × 155 - 1 × 100	45	161	0.10	13	29	0.6
	89	321	0.20	53	51	1.2
	134	482	0.30	119	66	1.8
500 × 1000 × 175 - 1 × 125	55	197	0.10	11	26	0.6
	109	394	0.20	42	47	1.3
	164	591	0.30	95	61	1.9
600 × 1000 × 215 - 1 × 160	68	245	0.10	8	21	0.7
	136	489	0.20	31	41	1.4
	204	734	0.30	69	55	2.1
750 × 1000 × 255 - 1 × 200	85	305	0.10	6	16	0.7
	170	610	0.20	22	36	1.5
	254	916	0.30	51	49	2.2

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WS-RO-K/.../K

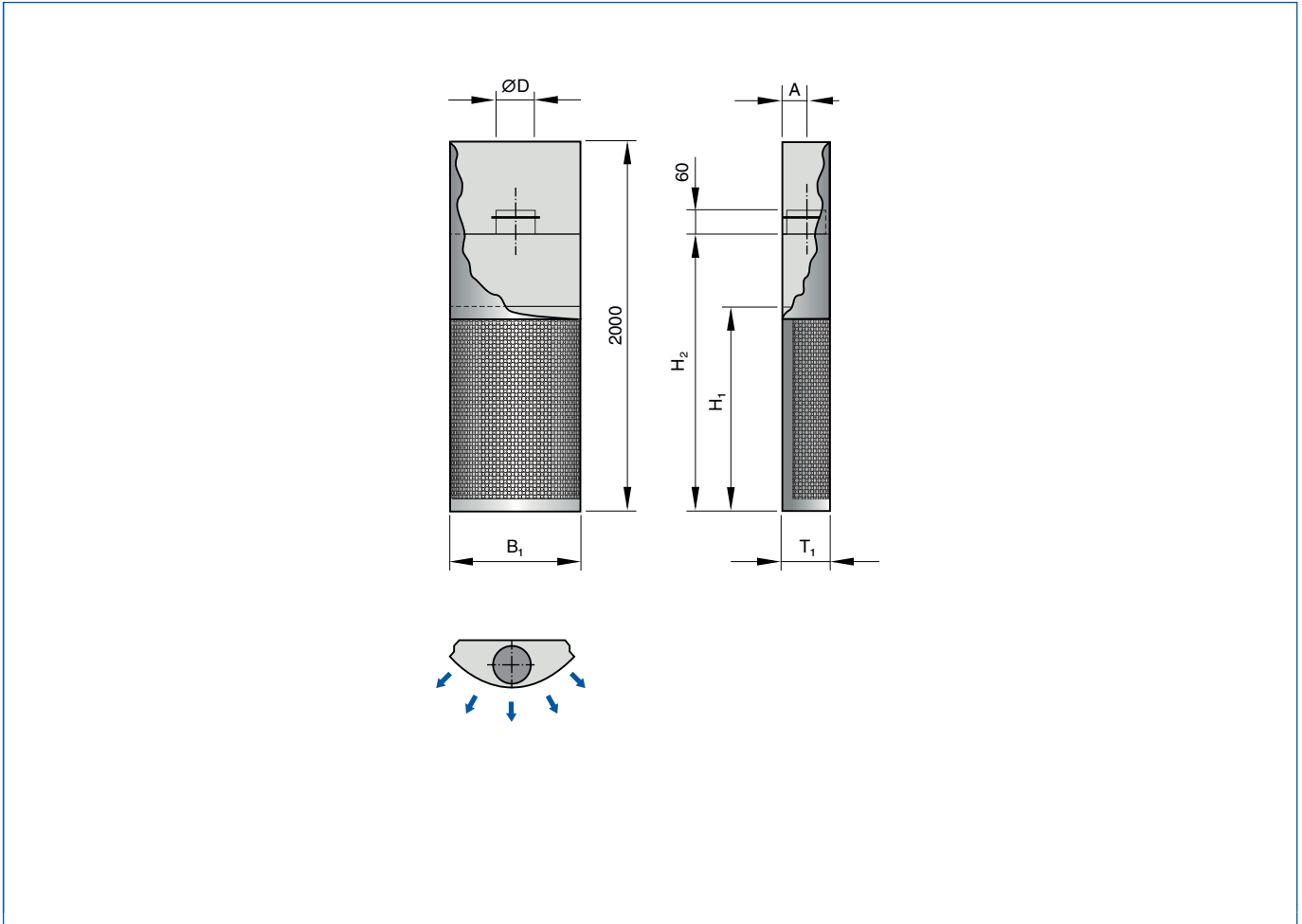
Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
400 × 976 × 155 - 1 × 100	43	157	0.10	13	29	0.6
	87	313	0.20	52	50	1.2
	130	470	0.30	116	65	1.8
500 × 976 × 175 - 1 × 125	53	192	0.10	10	25	0.6
	107	384	0.20	41	46	1.3
	160	576	0.30	92	61	1.9
600 × 976 × 215 - 1 × 160	66	239	0.10	7	20	0.7
	133	477	0.20	29	40	1.4
	199	716	0.30	66	54	2.0
750 × 976 × 255 - 1 × 200	83	298	0.10	5	16	0.7
	165	595	0.20	22	36	1.5
	248	893	0.30	49	48	2.2

The near zone values are based on a supply air to room air temperature difference of -6 K



QL-WS-RO/.../K with duct cover



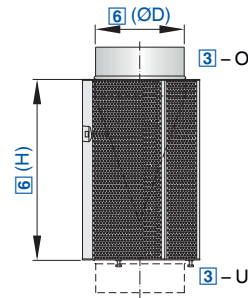
Dimensions [mm] and weight [kg] for variants with perforated plate

Nominal size	B ₁	H ₁	T ₁	H ₂	ØD	A	m
	mm	mm	mm	mm	mm	mm	kg
400×1000×155-1×100	400	1000	155	1500	98	70	17
500×1000×175-1×125	500	1000	175	1500	123	85	20
600×1000×215-1×160	600	1000	215	1500	158	105	24
750×1000×255-1×200	750	1000	255	1500	198	125	32

Dimensions [mm] and weight [kg] for patterned variants

Nominal size	B ₁	H ₁	T ₁	H ₂	ØD	A	m
	mm	mm	mm	mm	mm	mm	kg
400×976×155-1×100	400	976	155	1504	98	70	17
500×976×175-1×125	500	976	175	1504	123	85	20
600×976×215-1×160	600	976	215	1504	158	105	24
750×976×255-1×200	750	976	255	1504	198	125	32





Polygon casing, 90° or 180° air discharge, for comfort and industrial zones

 **Order code**

QLV – 180 – O – M – L / 250 × 600 / W0 / P1 – RAL ...

1
2
3
4
5
6
7
8

<p>1 Type QLV Displacement flow diffuser</p> <p>2 Air discharge 90 Three-way 180 Five-way</p> <p>3 Connection Circular spigot O Top U Bottom</p> <p>4 Damper blade for volume flow rate balancing No entry: none</p>	<p>M With</p> <p>5 Lip seal L No entry: none With (only for top spigot) Bottom spigots always have a lip seal</p> <p>6 Nominal size [mm] ØD × H Spigot diameter × nominal height</p> <p>7 Fixing W0 No entry: none With material for wall fixing</p>	<p>8 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour S7 Uncoated (galvanised steel, untreated aluminium)</p> <p>Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p>
---	--	---

- + Features**
Polygon displacement flow diffusers
- ▶ Spigot diameter 160 - 630 mm, nominal height 500 - 1750 mm
 - ▶ Volume flow rate range 17 - 915 l/s or 62 - 3295 m³/h
 - ▶ Perforated plate, square pitch
 - ▶ Circular duct connection
 - ▶ Duct connection at the top or bottom
 - ▶ Integral airflow straightener and conical equalising element
- Optional equipment and accessories
- ▶ Wall mount
 - ▶ Damper blade for volume flow rate balancing
 - ▶ Exposed surface in RAL CLASSIC colours

- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ Floor-standing installation on walls or in corners
- ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
- ▶ Excellent air quality in the occupied zone
- ▶ Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -6 to -1 K

- ⬡ Attachments**
- ▶ Damper blade for volume flow rate balancing

- & Accessories**
- ▶ Lip seal
 - ▶ Wall mount

- ★ Special characteristics**
- ▶ Three-way or five-way air discharge
 - ▶ Duct connection at the top or bottom
 - ▶ Optional damper blade for volume flow rate balancing

- 📄 Application**
- ▶ Type QLV displacement flow diffusers are used as supply air units for industrial and comfort zones

- ◊ Variants**
- ▶ QLV-90: 90° air discharge
 - ▶ QLV-180: 180° air discharge
 - ▶ QLV-...-O: Spigot at the top
 - ▶ QLV-...-U: Spigot at the bottom

- ISO Standards and guidelines**
- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

 **Technical data**

Nominal sizes	160 × 500 to 630 × 1750 mm
Minimum volume flow rate, at 0.1 m/s	17 - 305 l/s or 62 - 1098 m³/h
Maximum volume flow rate, at 0.3 m/s	52 - 915 l/s or 185 - 3295 m³/h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3 m/s	43 dB(A) max.



QLV-90, sound power level, total differential pressure and near zone

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	v_0 m/s	Damper blade position						L_{nz} m
				0°		45°		90°		
				Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	
				Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	
160 x 500	17	62	0.10	<3	<15	3	<15	5	<15	<
	26	93	0.15	4	<15	6	<15	11	<15	<
	34	124	0.20	7	<15	11	<15	20	16	<
	52	185	0.30	16	<15	25	21	45	28	<
200 x 500	21	75	0.10	<3	<15	<3	<15	3	<15	<
	31	113	0.15	3	<15	4	<15	7	<15	<
	42	151	0.20	4	<15	7	<15	13	<15	<
	63	226	0.30	10	<15	17	16	28	23	<
250 x 500	26	92	0.10	<3	<15	<3	<15	<3	<15	<
	39	139	0.15	<3	<15	3	<15	5	<15	<
	51	185	0.20	3	<15	5	<15	8	<15	<
	77	277	0.30	7	<15	11	<15	18	19	<
160 x 600	21	74	0.10	<3	<15	4	<15	7	<15	<
	31	111	0.15	5	<15	9	<15	16	<15	<
	41	149	0.20	9	<15	16	<15	28	21	<
	62	223	0.30	20	19	35	26	62	32	<
200 x 600	25	91	0.10	<3	<15	<3	<15	4	<15	<
	38	136	0.15	3	<15	6	<15	10	<15	<
	50	181	0.20	6	<15	10	<15	17	16	<
	75	272	0.30	13	<15	22	21	39	28	<
250 x 600	31	111	0.10	<3	<15	<3	<15	3	<15	<
	46	167	0.15	<3	<15	4	<15	6	<15	<
	62	222	0.20	4	<15	7	<15	11	<15	<
	93	333	0.30	9	<15	15	16	25	23	<
315 x 600	38	138	0.10	<3	<15	<3	<15	<3	<15	<
	57	206	0.15	<3	<15	<3	<15	4	<15	<
	76	275	0.20	3	<15	4	<15	7	<15	<
	115	413	0.30	6	<15	10	<15	16	19	<
160 x 800	28	99	0.10	4	<15	7	<15	12	<15	<
	41	149	0.15	8	<15	15	<15	27	20	<
	55	198	0.20	14	<15	26	23	47	28	<
	83	298	0.30	32	26	59	34	107	40	<
200 x 800	34	121	0.10	<3	<15	4	<15	7	<15	<
	50	181	0.15	5	<15	9	<15	17	16	<
	67	242	0.20	9	<15	17	17	30	24	<
	101	363	0.30	20	21	38	29	66	35	<
250 x 800	41	148	0.10	<3	<15	3	<15	5	<15	<
	62	223	0.15	3	<15	6	<15	11	<15	<
	82	297	0.20	6	<15	11	<15	19	20	<
	124	445	0.30	13	16	24	24	42	31	<
315 x 800	51	184	0.10	<3	<15	<3	<15	3	<15	<
	77	276	0.15	<3	<15	4	<15	7	<15	<
	102	367	0.20	4	<15	7	<15	12	15	<
	153	551	0.30	9	<15	16	18	27	27	<
400 x 800	64	230	0.10	<3	<15	<3	<15	<3	<15	<
	96	344	0.15	<3	<15	3	<15	4	<15	<
	128	459	0.20	<3	<15	5	<15	7	<15	<
	191	689	0.30	6	<15	10	<15	17	22	<
160 x 1000	34	124	0.10	5	<15	10	<15	18	<15	0.8
	52	186	0.15	11	<15	22	21	40	26	1.0
	69	248	0.20	20	21	40	29	72	34	<
	103	373	0.30	46	32	89	40	162	45	<



Nominal size	\dot{V} l/s	\dot{V} m ³ /h	v_0 m/s	Damper blade position						L_{nz} m
				0°		45°		90°		
				Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	
				Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	
200 x 1000	42	151	0.10	3	<15	6	<15	11	<15	0.8
	63	227	0.15	7	<15	14	15	25	22	1.0
	84	303	0.20	13	15	25	23	45	30	<
	126	454	0.30	29	27	56	35	100	41	<
250 x 1000	52	186	0.10	<3	<15	4	<15	7	<15	0.8
	77	279	0.15	5	<15	9	<15	16	17	1.0
	103	372	0.20	8	<15	16	18	28	25	<
	155	557	0.30	18	21	36	30	63	37	<
315 x 1000	64	230	0.10	<3	<15	3	<15	4	<15	0.8
	96	345	0.15	3	<15	6	<15	10	<15	1.0
	128	460	0.20	5	<15	10	<15	18	21	<
	192	690	0.30	12	16	23	24	40	32	<
400 x 1000	80	287	0.10	<3	<15	<3	<15	3	<15	0.8
	120	431	0.15	<3	<15	4	<15	6	<15	1.0
	160	574	0.20	3	<15	7	<15	11	17	<
	239	862	0.30	8	<15	15	19	25	28	<
500 x 1000	98	354	0.10	<3	<15	<3	<15	<3	<15	0.8
	147	531	0.15	<3	<15	3	<15	4	<15	1.0
	197	708	0.20	<3	<15	4	<15	7	<15	<
	295	1062	0.30	5	<15	10	<15	16	24	<
315 x 1250	80	288	0.10	<3	<15	4	<15	7	<15	1.1
	120	431	0.15	4	<15	9	<15	15	19	1.4
	160	575	0.20	7	<15	15	19	26	27	1.6
	240	863	0.30	16	22	34	30	60	38	2.0
400 x 1250	100	359	0.10	<3	<15	<3	<15	4	<15	1.1
	150	539	0.15	3	<15	5	<15	9	<15	1.4
	200	719	0.20	5	<15	10	<15	16	22	1.6
	299	1078	0.30	10	16	22	25	37	34	2.0
500 x 1250	123	443	0.10	<3	<15	<3	<15	3	<15	1.1
	184	664	0.15	<3	<15	4	<15	6	<15	1.4
	246	886	0.20	3	<15	6	<15	11	18	1.6
	369	1328	0.30	7	<15	15	20	24	30	2.0
630 x 1250	153	551	0.10	<3	<15	<3	<15	<3	<15	1.1
	230	827	0.15	<3	<15	<3	<15	4	<15	1.4
	306	1103	0.20	<3	<15	4	<15	7	<15	1.6
	459	1654	0.30	5	<15	10	15	15	25	2.0
400 x 1500	120	432	0.10	<3	<15	3	<15	6	<15	1.5
	180	647	0.15	3	<15	8	<15	13	19	1.8
	240	863	0.20	6	<15	13	19	23	27	2.1
	360	1295	0.30	14	21	30	30	51	38	2.7
500 x 1500	148	532	0.10	<3	<15	<3	<15	4	<15	1.5
	222	797	0.15	<3	<15	5	<15	8	<15	1.8
	295	1063	0.20	4	<15	9	<15	15	23	2.1
	443	1595	0.30	9	15	20	25	33	34	2.7
630 x 1500	184	662	0.10	<3	<15	<3	<15	<3	<15	1.5
	276	993	0.15	<3	<15	3	<15	5	<15	1.8
	368	1324	0.20	3	<15	6	<15	9	19	2.1
	552	1986	0.30	6	<15	13	20	21	30	2.7
630 x 1750	215	773	0.10	<3	<15	<3	<15	3	<15	1.9
	322	1159	0.15	<3	<15	4	<15	7	<15	2.4
	429	1545	0.20	3	<15	8	<15	12	23	2.8
	644	2318	0.30	7	<15	17	24	28	34	3.6

<: 0.2 m/s are not achieved

The near zone values are based on a supply air to room air temperature difference of -3 K



QLV-180, sound power level, total differential pressure and near zone

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	v_0 m/s	Damper blade position						L_{nz} m
				0°		45°		90°		
				Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	
				Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	
160 x 500	25	89	0.10	3	<15	5	<15	10	<15	<
	37	134	0.15	8	<15	12	<15	23	20	<
	49	178	0.20	13	<15	22	21	40	28	<
	74	267	0.30	30	25	49	32	91	39	<
200 x 500	30	108	0.10	<3	<15	3	<15	6	<15	<
	45	162	0.15	5	<15	8	<15	14	15	<
	60	217	0.20	9	<15	14	15	25	23	<
	90	325	0.30	19	19	31	27	57	35	<
250 x 500	37	132	0.10	<3	<15	<3	<15	4	<15	<
	55	198	0.15	3	<15	5	<15	9	<15	<
	73	263	0.20	6	<15	9	<15	16	19	<
	110	395	0.30	13	<15	20	21	36	30	<
160 x 600	30	107	0.10	4	<15	8	<15	14	<15	<
	45	160	0.15	10	<15	17	17	32	24	<
	59	214	0.20	17	18	30	26	56	32	<
	89	320	0.30	39	29	68	37	126	44	<
200 x 600	36	130	0.10	3	<15	5	<15	9	<15	<
	54	195	0.15	6	<15	11	<15	20	20	<
	72	260	0.20	11	<15	19	20	35	28	<
	108	390	0.30	25	24	43	32	79	39	<
250 x 600	44	158	0.10	<3	<15	3	<15	5	<15	<
	66	237	0.15	4	<15	7	<15	12	15	<
	88	316	0.20	7	<15	12	<15	22	23	<
	132	474	0.30	16	18	27	26	49	35	<
315 x 600	54	196	0.10	<3	<15	<3	<15	3	<15	<
	82	294	0.15	3	<15	4	<15	8	<15	<
	109	391	0.20	5	<15	8	<15	14	19	<
	163	587	0.30	11	<15	18	21	31	30	<
160 x 800	40	142	0.10	7	<15	13	<15	24	21	<
	59	214	0.15	16	17	29	25	54	32	<
	79	285	0.20	28	25	51	33	96	40	<
	119	427	0.30	63	37	116	45	216	51	<
200 x 800	48	173	0.10	4	<15	8	<15	15	16	<
	72	260	0.15	10	<15	18	20	33	27	<
	96	346	0.20	18	20	32	28	59	36	<
	144	520	0.30	39	31	72	39	134	47	<
250 x 800	59	211	0.10	3	<15	5	<15	9	<15	<
	88	316	0.15	6	<15	11	<15	21	23	<
	117	421	0.20	11	<15	20	23	37	31	<
	176	632	0.30	25	26	46	34	83	42	<
315 x 800	72	261	0.10	<3	<15	3	<15	6	<15	<
	109	391	0.15	4	<15	7	<15	13	19	<
	145	522	0.20	7	<15	13	18	23	27	<
	217	783	0.30	16	20	29	29	52	38	<
400 x 800	91	326	0.10	<3	<15	<3	<15	4	<15	<
	136	489	0.15	3	<15	5	<15	8	<15	<
	181	652	0.20	5	<15	8	<15	15	22	<
	272	978	0.30	10	<15	19	24	33	33	<
160 x 1000	49	178	0.10	10	<15	20	20	37	26	0.8
	74	267	0.15	22	23	44	31	82	38	1.0
	99	356	0.20	40	31	78	39	146	46	<
	148	534	0.30	90	43	176	51	329	57	<



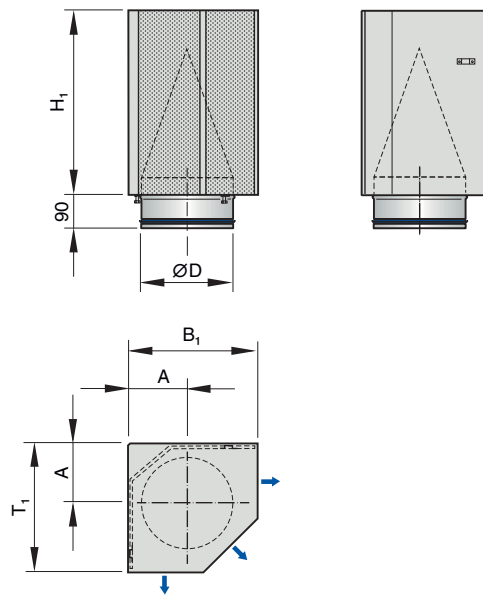
Nominal size	\dot{V} l/s	\dot{V} m ³ /h	v_0 m/s	Damper blade position						L_{nz} m
				0°		45°		90°		
				Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	
				Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	
200 × 1000	60	217	0.10	6	<15	12	<15	22	22	0.8
	90	325	0.15	14	17	27	26	51	33	1.0
	120	433	0.20	25	25	49	34	90	41	<
	180	650	0.30	56	37	109	45	202	53	<
250 × 1000	73	263	0.10	4	<15	8	<15	14	17	0.8
	110	395	0.15	9	<15	17	21	31	29	1.0
	146	527	0.20	16	20	30	29	55	37	<
	219	790	0.30	35	31	68	40	125	48	<
315 × 1000	91	326	0.10	<3	<15	5	<15	9	<15	0.8
	136	489	0.15	6	<15	11	15	19	24	1.0
	181	652	0.20	10	<15	19	23	35	32	<
	272	978	0.30	22	26	43	35	78	44	<
400 × 1000	113	408	0.10	<3	<15	3	<15	5	<15	0.8
	170	611	0.15	4	<15	7	<15	12	20	1.0
	226	815	0.20	6	<15	12	18	22	28	<
	340	1223	0.30	14	20	27	29	48	39	<
500 × 1000	140	503	0.10	<3	<15	<3	<15	3	<15	0.8
	210	755	0.15	<3	<15	5	<15	8	16	1.0
	280	1006	0.20	4	<15	8	<15	14	24	<
	419	1509	0.30	9	<15	18	25	31	35	<
315 × 1250	113	408	0.10	3	<15	7	<15	13	19	1.1
	170	612	0.15	8	<15	16	21	29	30	1.4
	227	815	0.20	14	20	29	29	52	38	1.6
	340	1223	0.30	31	32	65	41	117	49	1.9
400 × 1250	142	509	0.10	<3	<15	5	<15	8	<15	1.1
	212	764	0.15	5	<15	10	16	18	25	1.4
	283	1019	0.20	9	<15	18	24	32	34	1.6
	425	1528	0.30	20	26	41	35	72	45	2.0
500 × 1250	175	629	0.10	<3	<15	3	<15	5	<15	1.1
	262	943	0.15	3	<15	7	<15	12	21	1.4
	349	1258	0.20	6	<15	12	19	21	29	1.7
	524	1887	0.30	13	21	27	31	47	41	2.1
630 × 1250	218	785	0.10	<3	<15	<3	<15	3	<15	1.1
	327	1177	0.15	<3	<15	4	<15	7	17	1.4
	436	1569	0.20	4	<15	8	<15	13	25	1.7
	654	2354	0.30	9	15	18	26	30	37	2.1
400 × 1500	170	611	0.10	3	<15	6	<15	11	19	1.5
	255	917	0.15	6	<15	14	21	25	30	1.8
	340	1223	0.20	12	19	25	29	45	38	2.2
	509	1834	0.30	26	31	57	40	101	50	2.7
500 × 1500	210	755	0.10	<3	<15	4	<15	7	<15	1.5
	314	1132	0.15	4	<15	9	16	16	26	1.9
	419	1509	0.20	8	<15	16	24	29	34	2.2
	629	2264	0.30	17	25	37	36	65	46	2.8
630 × 1500	262	941	0.10	<3	<15	3	<15	5	<15	1.5
	392	1412	0.15	3	<15	6	<15	10	22	1.9
	523	1883	0.20	5	<15	11	19	18	30	2.3
	785	2824	0.30	11	20	24	31	41	41	2.9
630 × 1750	305	1098	0.10	<3	<15	3	<15	6	<15	1.9
	458	1648	0.15	3	<15	8	15	14	26	2.5
	610	2197	0.20	6	<15	14	23	24	34	3.0
	915	3295	0.30	14	24	31	35	54	45	4.0

<: 0.2 m/s are not achieved

The near zone values are based on a supply air to room air temperature difference of -3 K

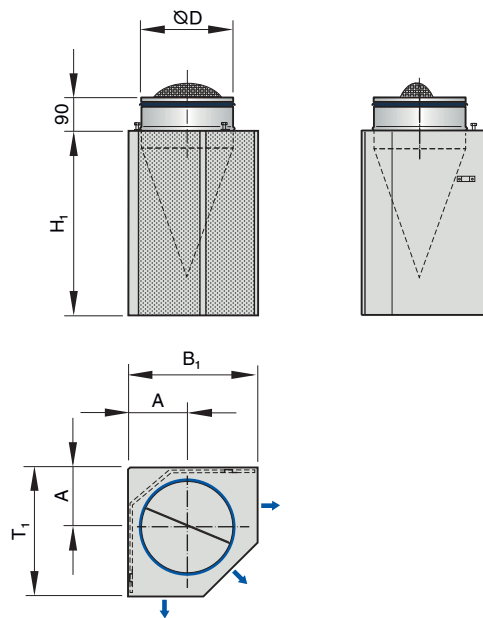


QLV-90-U



QLV-90-U always with lip seal

QLV-90-O

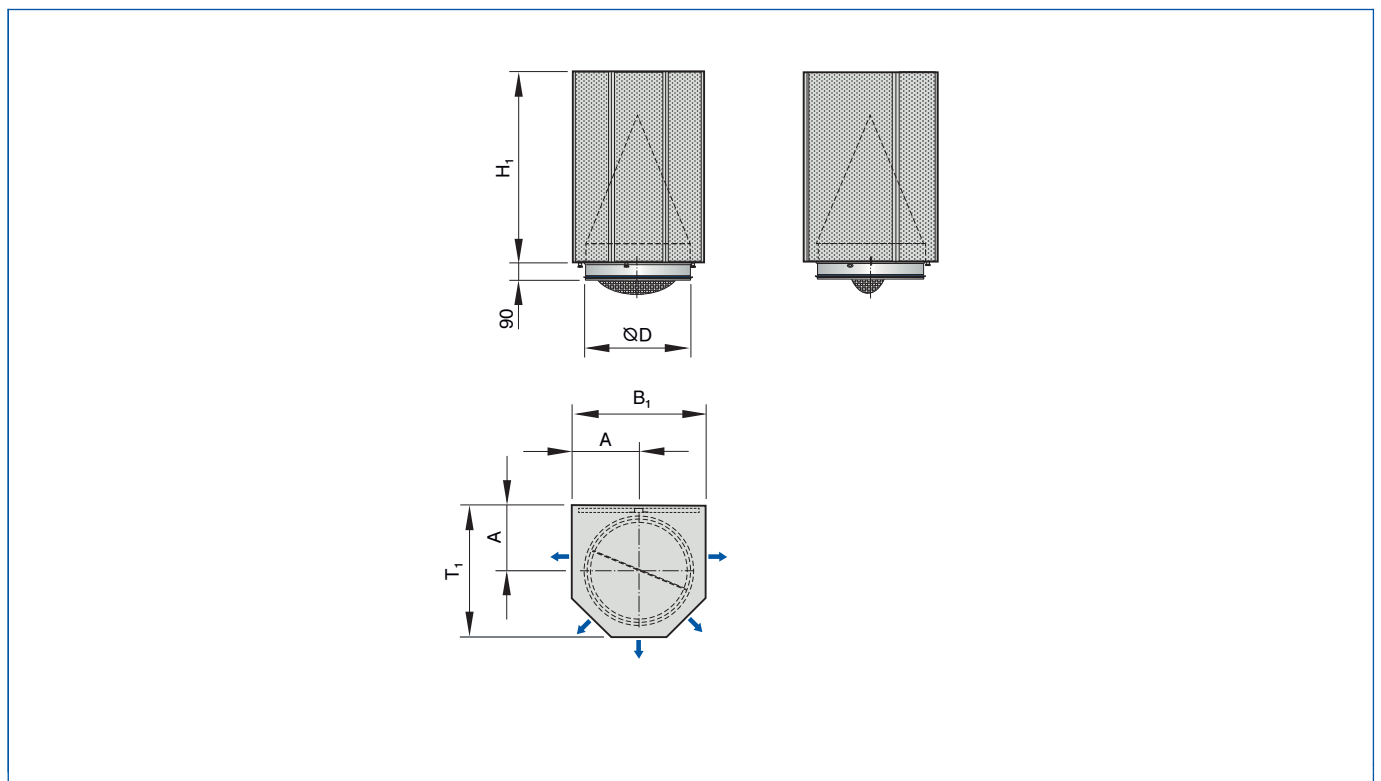


Dimensions [mm] and weight [kg]

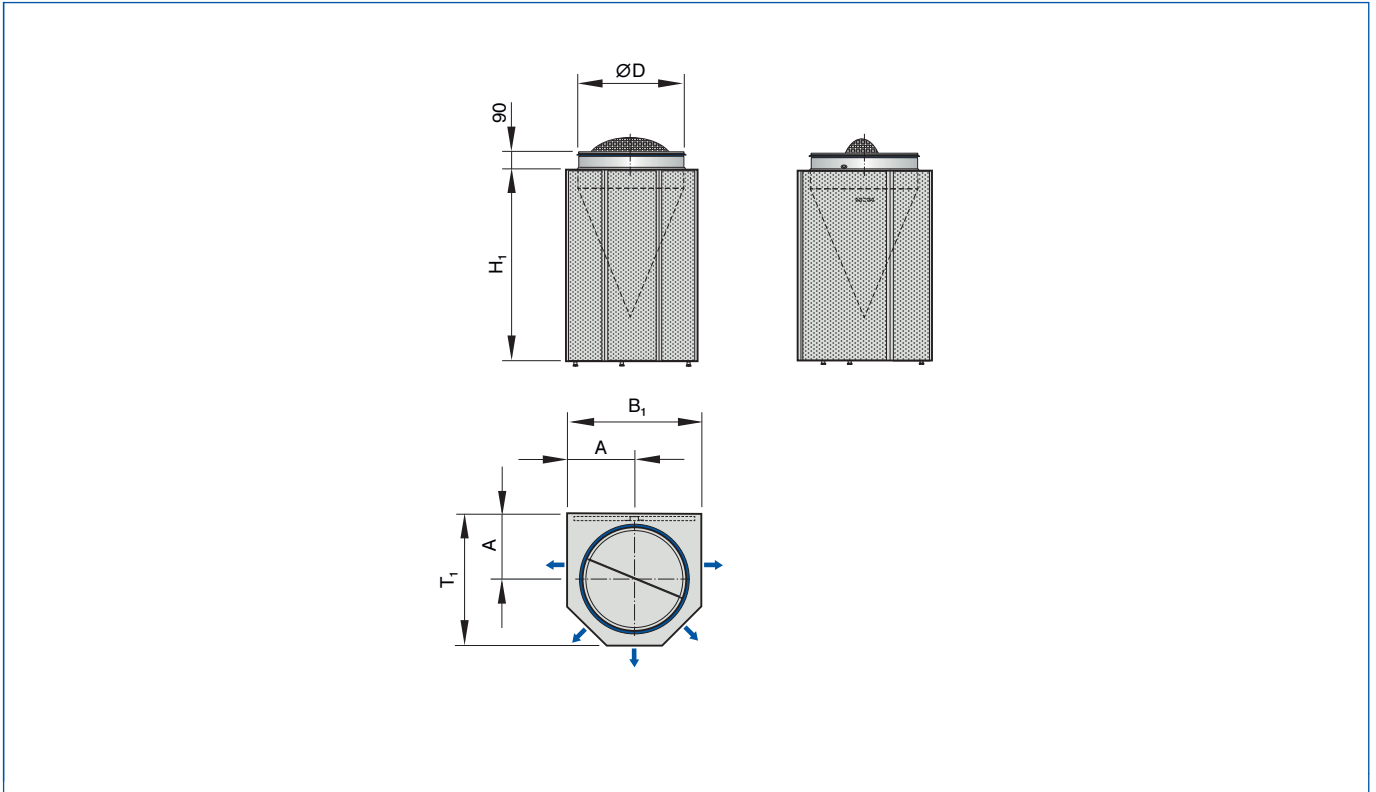
Nominal size	B ₁ mm	H ₁ mm	T ₁ mm	ØD mm	A mm	m kg
160x500	250	500	250	158	115	6
200x500	295	500	295	198	135	6
250x500	350	500	350	248	160	8
160x600	250	600	250	158	115	9
200x600	295	600	295	198	135	7
250x600	350	600	350	248	160	8
315x600	420	600	420	313	193	9
160x800	250	800	250	158	115	11
200x800	295	800	295	198	135	8
250x800	350	800	350	248	160	9
315x800	420	800	420	313	193	11
400x800	510	800	510	398	235	13
160x1000	250	1000	250	158	115	12
200x1000	295	1000	295	198	135	14
250x1000	350	1000	350	248	160	16
315x1000	420	1000	420	313	193	21
400x1000	510	1000	510	398	235	18
500x1000	615	1000	615	498	285	20
315x1250	420	1250	420	313	193	26
400x1250	510	1250	510	398	235	29
500x1250	615	1250	615	498	285	25
630x1250	750	1250	750	628	350	32
400x1500	510	1500	510	398	235	37
500x1500	615	1500	615	498	285	41
630x1500	750	1500	750	628	350	46
630x1750	750	1750	750	628	350	51



QLV-180-U



QLV-180-O



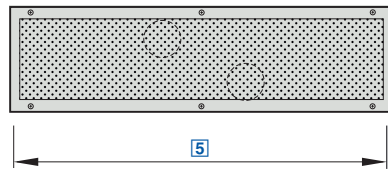
Dimensions [mm] and weight [kg]

Nominal size	B ₁ mm	H ₁ mm	T ₁ mm	ØD mm	A mm	m kg
160x500	240	500	235	158	115	6
200x500	280	500	275	198	135	7
250x500	330	500	325	248	160	8
160x600	240	600	235	158	115	10
200x600	280	600	275	198	135	7
250x600	330	600	325	248	160	8
315x600	395	600	390	313	193	9
160x800	240	800	235	158	115	11
200x800	280	800	275	198	135	8
250x800	330	800	325	248	160	9
315x800	395	800	390	313	193	11
400x800	480	800	475	398	235	13
160x1000	240	1000	235	158	115	12
200x1000	280	1000	275	198	135	14
250x1000	330	1000	325	248	160	16
315x1000	395	1000	390	313	193	20
400x1000	480	1000	475	398	235	17
500x1000	580	1000	575	498	285	20
315x1250	395	1250	390	313	193	25
400x1250	480	1250	475	398	235	28
500x1250	580	1250	575	498	285	25
630x1250	710	1250	705	628	350	31
400x1500	480	1500	475	398	235	35
500x1500	580	1500	575	498	285	39
630x1500	710	1500	705	628	350	44
630x1750	710	1750	705	628	350	49



Displacement flow diffusers for installation into a wall

	Displacement flow diffusers for installation into a wall		Free-standing displacement flow diffusers			Displacement flow diffusers for floor installation
	QLW-AZ	QL-WE	QL-WQT ⁺ -4	QL-WR	QLV-360	QL-BE
Casing cross-section						
Rectangular	●	●				
Square			●			●
Circular				●		
Polygon					●	
Air patterns						
One-way	●	●				●
Several sides			4 / 360°	360°	8 / 360°	
Diffuser face style						
Perforated plate, square pitch	●	●		●	●	●
Patterned		●		●		
Box profile diffuser face			●			
Duct connection						
Circular	●	●	●	●	●	●
Rectangular		●				
Top		●	●	●	●	
Bottom				●	●	
Horizontal	●					●
Attachments						
Damper blade	●					
Volume flow rate measuring unit		▲	●	▲		
Adapter				●		
Accessories						
Lip seal					●	
Nominal sizes						
Width	600 - 1200	600 - 1200	800 - 1200	Ø200 - 630	240 - 710	800 - 1200
Height	260	300 - 2000	2000	600 - 2000	500 - 1750	2000
Depth	245, 335	75 - 300	800 - 1200		240 - 710	800 - 1200
Nominal diameter of spigot	100	125, 160, 200, 250	630, 800		160, 200, 250, 315, 400, 500, 630	630, 800
Technical data						
Volume flow rate range [l/s]	12 - 45	13 - 895	602 - 3632	32 - 1529	32 - 1157	31 - 125
Volume flow rate range [m ³ /h]	43 - 162	47 - 3222	2168 - 13077	116 - 5504	116 - 4166	113 - 452
Supply air to room air temperature difference [K]	-6 - -1	-6 - -1	-6 - -1	-6 - -1	-6 - -1	-6 - -1
Explanation						
● - Standard						
▲ - Optional	Only for variants with circular spigot and square pitch perforated plate					



Supply and extract air combination for installation into walls and bulkheads, one-way air discharge, for comfort zones

Order code

QLW – AZ – ZT – M – L / 750 / W00 / P1 – RAL ...						
1	2	3	4	5	6	7

<p>1 Type QLW-AZ Displacement flow diffuser</p> <p>2 Cross-talk attenuator No entry: none ZT With cross-talk attenuator</p> <p>3 Damper blade for volume flow rate balancing No entry: none M With</p>	<p>4 Lip seal No entry: none L With</p> <p>5 Nominal size [mm] 600, 750, 900, 1050, 1200</p> <p>6 Fixing No entry: none W00 With mounting bracket for wall mounting (supplied separately)</p>	<p>7 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour</p> <p>Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p>
--	---	--

+ Features

- Displacement flow diffusers with supply and extract air functions combined in one casing
- ▶ Nominal lengths 600 - 1200 mm
 - ▶ Volume flow rate range 12 - 45 l/s or 43 - 162 m³/h
 - ▶ Variant with cross-talk attenuator ensures very good transmission loss
 - ▶ Perforated plate, square pitch
 - ▶ Circular duct connections
 - ▶ Horizontal duct connection

- Optional equipment and accessories
- ▶ Exposed surface in RAL CLASSIC colours
 - ▶ Damper blade for volume flow rate balancing
 - ▶ Cross-talk attenuator
 - ▶ Fixing brackets

X Application

- ▶ Type QLW-AZ displacement flow diffusers are supply and extract air combinations for

- use in comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ For installation into walls or bulkheads, either individually or several diffusers arranged in a row
- ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
- ▶ Excellent air quality in the occupied zone
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -6 to -1 K

◊ Variants

- ▶ QLW-AZ-ZT: Displacement flow diffuser with cross-talk attenuator

◻ Attachments

- ▶ Damper blade for volume flow rate

balancing

& Accessories

- ▶ Lip seal
- ▶ Wall fixing bracket

+ Useful additions

- ▶ Retrofit cross-talk attenuator

★ Special characteristics

- ▶ One-way air discharge
- ▶ Diffuser face screw-fixed to casing, hence easy to remove
- ▶ Horizontal duct connection

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	600, 750, 900, 1050, 1200 mm
Minimum volume flow rate, at approx. 0.2 m/s	12 - 25 l/s or 43 - 90 m ³ /h
Maximum volume flow rate, at approx. 0.4 m/s	25 - 45 l/s or 90 - 162 m ³ /h
Supply air to room air temperature difference	-6 to -1 K



QLW-AZ, sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	v_0 m/s	Damper blade position								
				0°			45°			90°		
				Δp_t ①	Δp_t ②	L_{WA}	Δp_t ①	Δp_t ②	L_{WA}	Δp_t ①	Δp_t ②	L_{WA}
				Pa		dB(A)	Pa		dB(A)	Pa		dB(A)
600	12	43	0.18	7	<3	<15	9	3	<15	16	10	17
	15	54	0.23	11	3	19	13	5	21	26	15	24
	20	72	0.30	19	5	31	24	10	32	46	27	34
	25	90	0.38	30	7	40	37	15	41	72	42	42
750	15	54	0.18	8	<3	16	10	6	19	24	16	21
	20	72	0.24	14	4	26	18	10	29	42	28	31
	25	90	0.30	21	6	34	28	16	37	65	43	39
	30	108	0.36	31	9	41	41	24	43	94	63	45
900	20	72	0.20	11	4	24	16	9	27	38	28	29
	25	90	0.25	17	6	31	25	15	35	59	44	36
	30	108	0.30	24	9	37	36	21	41	85	63	43
	35	126	0.35	33	12	42	49	29	46	116	86	48
1050	20	72	0.17	10	4	23	16	10	28	37	29	31
	25	90	0.22	15	6	30	25	15	36	58	45	38
	30	108	0.26	22	8	36	36	22	41	84	65	43
	40	144	0.35	39	15	45	64	39	51	149	116	52
1200	25	90	0.19	13	5	29	20	15	34	58	43	39
	30	108	0.23	19	8	35	29	22	40	84	61	44
	35	126	0.27	25	10	39	40	30	45	114	83	48
	45	162	0.34	42	17	46	66	49	52	189	138	55

- ① Supply air
- ② Extract air

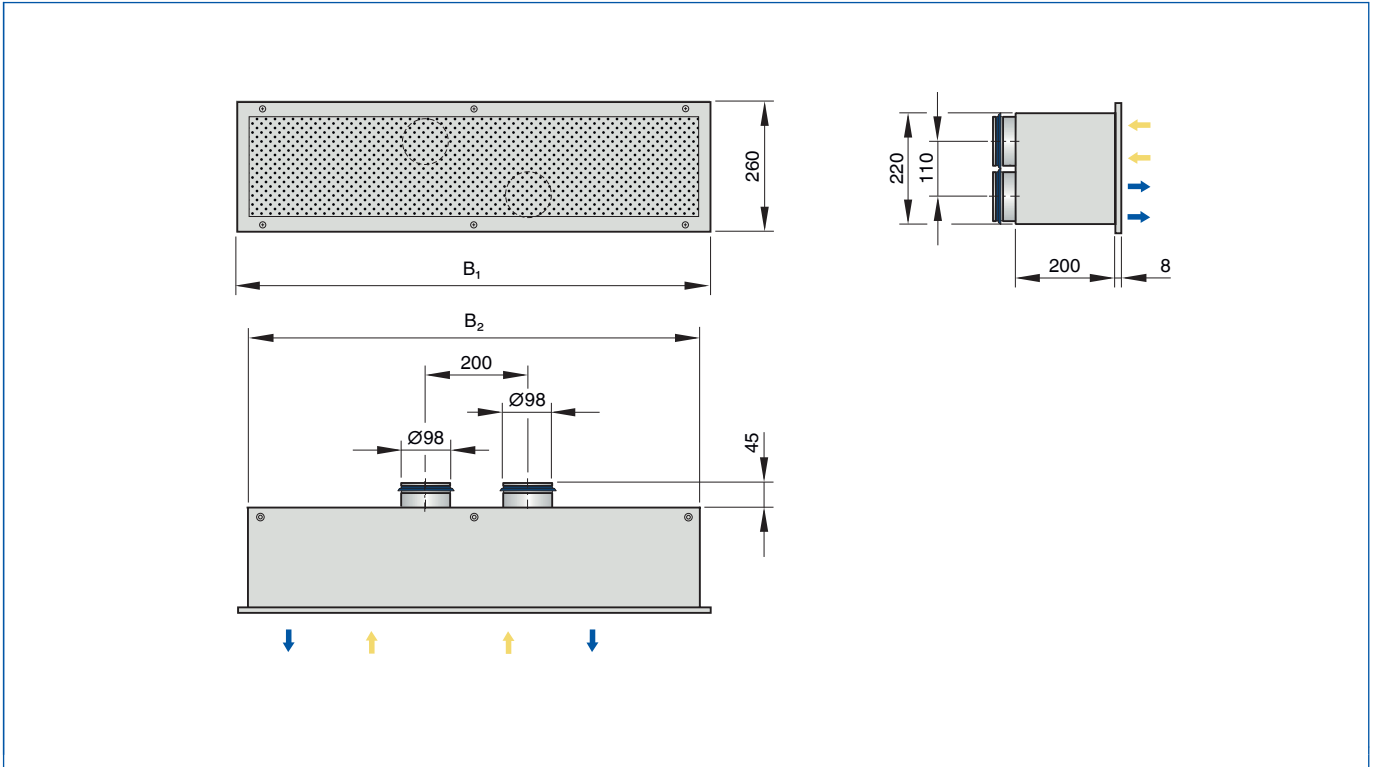
QLW-AZ-ZT, sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	v_0 m/s	Damper blade position								
				0°			45°			90°		
				Δp_t ①	Δp_t ②	L_{WA}	Δp_t ①	Δp_t ②	L_{WA}	Δp_t ①	Δp_t ②	L_{WA}
				Pa		dB(A)	Pa		dB(A)	Pa		dB(A)
600	7	25	0.11	5	3	<15	5	4	<15	7	6	<15
	10	36	0.15	10	7	15	10	8	17	14	11	19
	15	54	0.23	22	15	28	22	17	30	31	26	31
	20	72	0.30	40	27	38	40	31	39	54	46	40
750	10	36	0.12	9	6	15	9	7	15	13	10	20
	15	54	0.18	20	15	28	20	15	28	29	22	32
	20	72	0.24	35	26	36	35	27	37	51	39	40
	25	90	0.30	55	41	43	55	42	44	79	61	47
900	15	54	0.15	18	14	26	19	16	28	26	16	30
	20	72	0.20	32	25	35	33	29	37	47	29	38
	25	90	0.25	50	40	41	52	46	43	73	46	44
	30	108	0.30	73	57	46	75	66	49	106	66	49
1050	20	72	0.17	32	25	35	33	31	38	47	46	40
	25	90	0.22	50	39	42	52	49	44	74	72	46
	30	108	0.26	73	56	47	74	70	50	106	103	51
	35	126	0.30	99	77	52	101	95	54	145	141	55
1200	25	90	0.19	50	37	42	51	46	43	76	68	45
	30	108	0.23	73	54	47	74	66	48	109	98	50
	35	126	0.27	99	73	51	101	90	53	149	134	55
	40	144	0.30	129	96	55	132	117	57	194	175	59

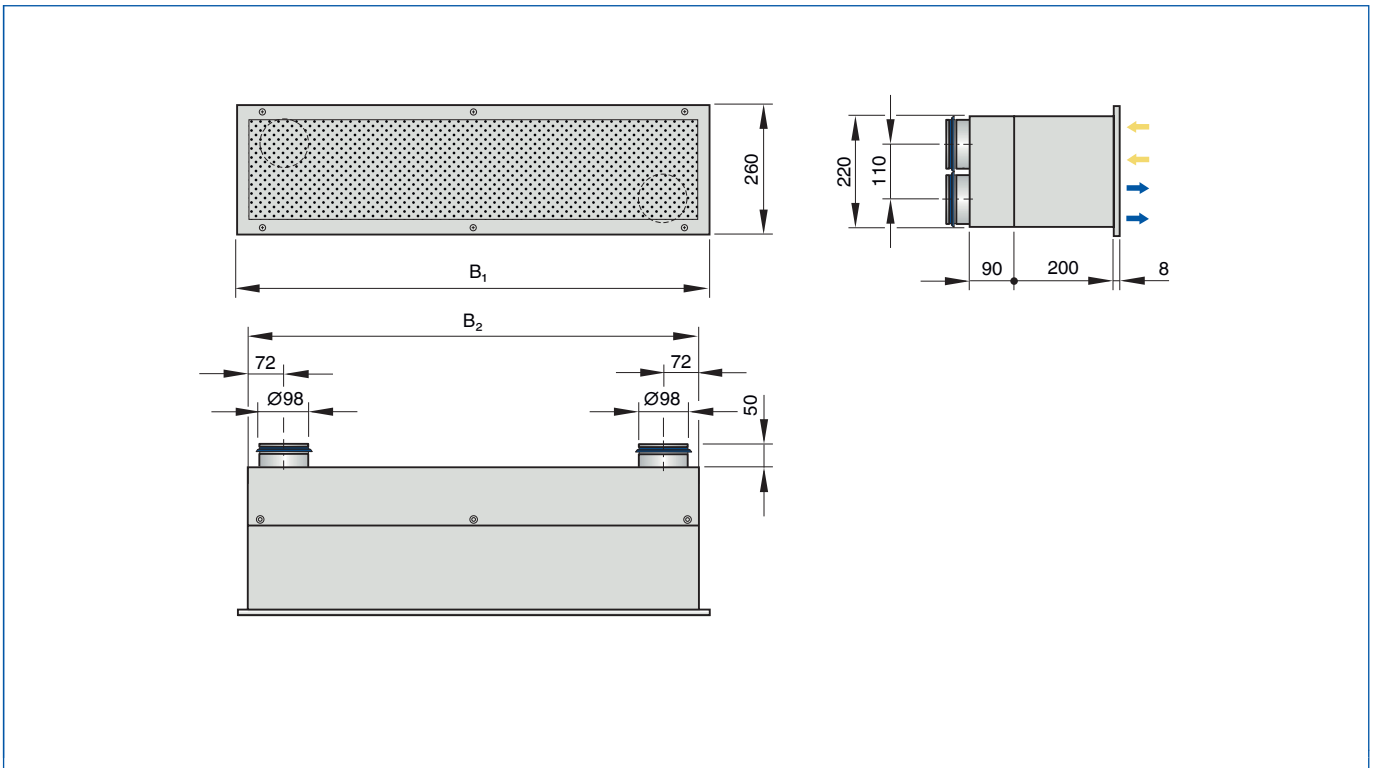
- ① Supply air
- ② Extract air



QLW-AZ



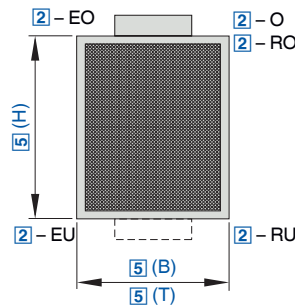
QLW-AZ-ZT



Dimensions [mm] and weight [kg]

	QLW-AZ	QLW-AZ-ZT		
Nominal length	m		B ₁	B ₂
	kg	kg	mm	mm
600	5.5	7.5	640	600
750	6.5	9.5	790	750
900	7.5	11.0	940	900
1050	8.5	12.5	1090	1050
1200	10.0	14.0	1240	1200





Rectangular casing, one-way air discharge, for comfort and industrial zones

Order code

QL - WE - RO - K - ... / 910 × 1240 × 300 - 2 × 250 / P1 - RAL ...

1 Type

QL-WE Displacement flow diffuser

2 Connection

- O** Without rear assembly
- RO** Top
- RU** Bottom
- EO** Top
- EU** Bottom

3 Design of diffuser face

- K** No entry: perforated plate, square pitch
- K** Patterned

4 Volume flow rate measuring unit

- M** No entry: none
- M** With measuring unit (only for variants with circular spigot and square pitch perforated plate)

5 Nominal size [mm]

- Circular spigot
- B × H × T - number × spigot diameter
- Rectangular spigot
- B × H × T - spigot width × spigot depth
- Without rear assembly
- B × H × T

6 Exposed surface

- P1** No entry: powder-coated RAL 9010, pure white
- P1** Powder-coated, specify RAL CLASSIC colour
- PS** Powder-coated, specify NCS colour
- Gloss level
- 25 %
- 50 %
- 60 %
- Specify together with colour

+ Features

Displacement flow diffusers in many nominal sizes

- ▶ Nominal widths 600 - 1200 mm, nominal heights 300 - 2000 mm
- ▶ Volume flow rate range 13 - 895 l/s or 47 - 3222 m³/h
- ▶ Perforated plate, square pitch; patterned as an option
- ▶ Rectangular or circular duct connection
- ▶ Duct connection at the top or bottom
- ▶ Equalising sheet metal plate with nozzles, each with a deflector scoop

Optional equipment and accessories

- ▶ Volume flow rate measuring unit for circular duct connections
- ▶ Exposed surface in RAL CLASSIC or NCS colours

- are used as supply air units for industrial and comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ For installation into walls, either individually or several diffusers arranged in a row
- ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
- ▶ Excellent air quality in the occupied zone
- ▶ Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -6 to -1 K

- ▶ QL-WE-*O: Spigot at the top
- ▶ QL-WE-*U: Spigot at the bottom
- ▶ QL-WE-O: Without rear assembly
- ▶ QL-WE-...-K: Patterned perforated plate

Attachments

- ▶ M: Volume flow rate measuring unit, only for QL-WE-R* with square pitch perforated plate

Special characteristics

- ▶ One-way air discharge
- ▶ Perforated plate, square pitch or patterned
- ▶ Rectangular or circular duct connection
- ▶ Duct connection at the top or bottom
- ▶ Equalising sheet metal plate with nozzles

Application

- ▶ Type QL-WE displacement flow diffusers

Variants

- ▶ QL-WE-E*: Rectangular spigot
- ▶ QL-WE-R*: Circular spigot

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	Perforated plate, square pitch 600 × 300 - 1200 × 2000 mm Patterned 580 × 316 - 1240 × 1996 mm
Minimum volume flow rate, at 0.1 m/s	13 - 225 l/s or 47 - 810 m ³ /h
Maximum volume flow rate, at 0.4 m/s	51 - 895 l/s or 184 - 3222 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3/0.4 m/s	45/54 dB(A) max.



QL-WE-EO, QL-WE-O

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
600 × 300 × 75 - 300 × 45	13	46	0.10	3	<15	0.5
	25	91	0.20	12	29	1.0
	38	137	0.30	27	41	1.6
	51	182	0.40	48	51	2.1
600 × 500 × 75 - 450 × 45	23	84	0.10	3	<15	0.6
	47	168	0.20	12	27	1.3
	70	252	0.30	27	39	1.9
	93	337	0.40	49	48	2.6
600 × 700 × 115 - 400 × 90	34	123	0.10	<3	<15	0.7
	68	245	0.20	9	24	1.5
	102	368	0.30	20	35	2.2
	136	491	0.40	35	44	2.9
600 × 1000 × 115 - 450 × 90	50	181	0.10	3	<15	0.8
	100	361	0.20	12	27	1.7
	151	542	0.30	28	39	2.5
	201	722	0.40	50	48	3.4
900 × 1200 × 125 - 650 × 100	95	342	0.10	4	<15	1.0
	190	684	0.20	16	31	2.1
	285	1026	0.30	35	43	3.1
	380	1368	0.40	62	53	4.1
1200 × 1200 × 125 - 900 × 100	129	465	0.10	4	<15	1.1
	258	929	0.20	15	30	2.2
	387	1394	0.30	33	42	3.4
	516	1858	0.40	58	51	4.5
900 × 1500 × 150 - 800 × 125	120	432	0.10	3	<15	1.1
	240	864	0.20	10	24	2.2
	360	1297	0.30	23	36	3.4
	480	1729	0.40	41	45	4.5
1200 × 1500 × 150 - 900 × 125	163	587	0.10	4	<15	1.2
	326	1175	0.20	15	30	2.4
	489	1762	0.30	33	42	3.7
	653	2349	0.40	59	52	4.9
1200 × 2000 × 200 - 900 × 160	220	792	0.10	4	<15	1.4
	440	1583	0.20	16	31	2.7
	660	2375	0.30	36	43	4.1
	880	3167	0.40	63	53	5.5

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WE-EO-K, QL-WE-O-K

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
580 × 316 × 75 - 300 × 45	13	47	0.10	3	<15	0.5
	26	94	0.20	11	26	1.1
	39	140	0.30	25	38	1.6
	52	187	0.40	45	48	2.1
580 × 514 × 75 - 450 × 45	23	84	0.10	3	<15	0.6
	46	167	0.20	13	28	1.3
	70	251	0.30	28	40	1.9
	93	334	0.40	50	49	2.6
580 × 712 × 115 - 400 × 90	33	120	0.10	<3	<15	0.7
	67	241	0.20	8	24	1.5
	100	361	0.30	19	35	2.2
	134	481	0.40	34	44	2.9



Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
580 × 976 × 115 - 450 × 90	47	169	0.10	3	<15	0.8
	94	339	0.20	11	26	1.7
	141	508	0.30	26	38	2.5
	188	678	0.40	45	47	3.3
910 × 1240 × 125 - 650 × 100	99	358	0.10	4	<15	1.0
	199	716	0.20	17	32	2.1
	298	1074	0.30	39	44	3.1
	398	1433	0.40	69	54	4.2
1240 × 1240 × 125 - 900 × 100	138	498	0.10	4	<15	1.1
	277	996	0.20	17	32	2.3
	415	1494	0.30	38	44	3.4
	553	1991	0.40	68	54	4.6
910 × 1570 × 150 - 800 × 125	127	459	0.10	3	<15	1.1
	255	917	0.20	11	26	2.3
	382	1376	0.30	25	37	3.4
	510	1835	0.40	45	46	4.6
1240 × 1570 × 150 - 900 × 125	177	638	0.10	4	<15	1.3
	354	1275	0.20	17	32	2.5
	531	1913	0.30	39	45	3.8
	708	2550	0.40	69	55	5.0
1240 × 1966 × 200 - 900 × 160	224	805	0.10	4	<15	1.4
	447	1610	0.20	17	32	2.8
	671	2416	0.30	38	44	4.1
	13	47	0.40	67	54	5.5

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WE-RO
Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
600 × 300 × 160 - 1 × 125	13	46	0.10	4	<15	0.5
	25	91	0.20	17	32	1.0
	38	137	0.30	39	44	1.6
	51	182	0.40	69	54	2.1
600 × 500 × 200 - 1 × 160	23	84	0.10	4	<15	0.6
	47	168	0.20	17	31	1.3
	70	252	0.30	38	44	1.9
	93	337	0.40	68	54	2.6
600 × 700 × 250 - 1 × 200	34	123	0.10	3	<15	0.7
	68	245	0.20	14	28	1.5
	102	368	0.30	31	40	2.2
	136	491	0.40	54	49	2.9
600 × 1000 × 300 - 1 × 250	50	181	0.10	3	<15	0.8
	100	361	0.20	11	26	1.7
	151	542	0.30	25	38	2.5
	201	722	0.40	45	47	3.4
900 × 1200 × 300 - 2 × 250	95	342	0.10	<3	<15	1.0
	190	684	0.20	9	22	2.1
	285	1026	0.30	19	34	3.1
	380	1368	0.40	34	42	4.1
1200 × 1200 × 300 - 2 × 250	129	465	0.10	4	<15	1.1
	258	929	0.20	16	31	2.2
	387	1394	0.30	35	43	3.4
	516	1858	0.40	63	53	4.5



Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
900 × 1500 × 300 - 2 × 250	120	432	0.10	3	<15	1.1
	240	864	0.20	13	27	2.2
	360	1297	0.30	29	39	3.4
	480	1729	0.40	51	48	4.5
1200 × 1500 × 350 - 2 × 315	163	587	0.10	<3	<15	1.2
	326	1175	0.20	10	24	2.4
	489	1762	0.30	22	35	3.7
	653	2349	0.40	39	44	4.9
1200 × 2000 × 350 - 2 × 315	220	792	0.10	4	<15	1.4
	440	1583	0.20	16	31	2.7
	660	2375	0.30	36	43	4.1
	880	3167	0.40	64	53	5.5

The near zone values are based on a supply air to room air temperature difference of -6 K

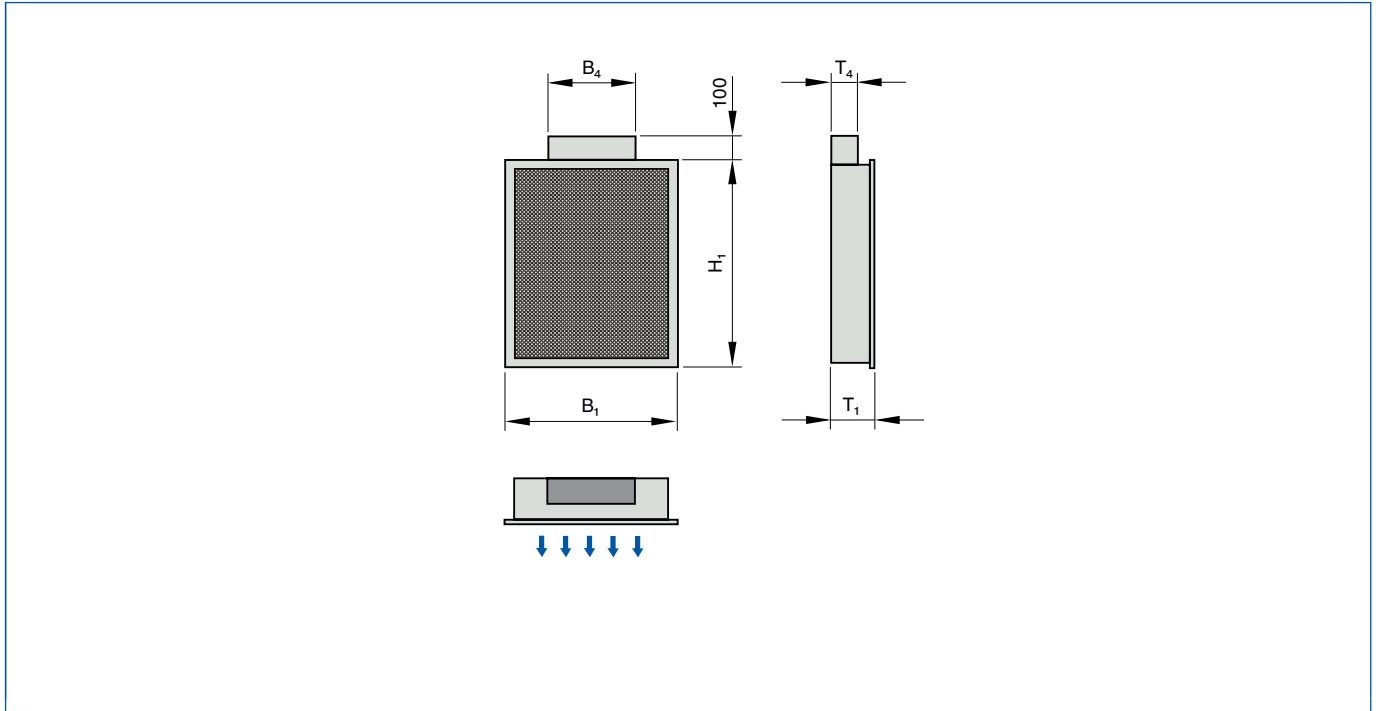
QL-WE-RO-K
Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
580 × 316 × 160 - 1 × 125	13	47	0.10	4	<15	0.5
	26	94	0.20	17	31	1.1
	39	140	0.30	38	44	1.6
	52	187	0.40	67	53	2.1
580 × 514 × 200 - 1 × 160	23	84	0.10	4	<15	0.6
	46	167	0.20	17	32	1.3
	70	251	0.30	39	44	1.9
	93	334	0.40	68	54	2.6
580 × 712 × 250 - 1 × 200	33	120	0.10	3	<15	0.7
	67	241	0.20	13	28	1.5
	100	361	0.30	29	40	2.2
	134	481	0.40	52	49	2.9
580 × 976 × 300 - 1 × 250	47	169	0.10	3	<15	0.8
	94	339	0.20	10	25	1.7
	141	508	0.30	23	37	2.5
	188	678	0.40	41	46	3.3
910 × 1240 × 300 - 2 × 250	99	358	0.10	<3	<15	1.0
	199	716	0.20	9	23	2.1
	298	1074	0.30	21	35	3.1
	398	1433	0.40	38	44	4.2
1240 × 1240 × 300 - 2 × 250	138	498	0.10	5	<15	1.1
	277	996	0.20	18	33	2.3
	415	1494	0.30	41	46	3.4
	553	1991	0.40	74	56	4.6
910 × 1570 × 300 - 2 × 250	127	459	0.10	3	<15	1.1
	255	917	0.20	14	29	2.3
	382	1376	0.30	31	41	3.4
	510	1835	0.40	56	50	4.6
1240 × 1570 × 350 - 2 × 315	177	638	0.10	3	<15	1.3
	354	1275	0.20	11	26	2.5
	531	1913	0.30	25	37	3.8
	708	2550	0.40	45	46	5.0
1240 × 1966 × 350 - 2 × 315	224	805	0.10	4	<15	1.4
	447	1610	0.20	17	32	2.8
	671	2416	0.30	38	44	4.1
	895	3221	0.40	68	54	5.5

The near zone values are based on a supply air to room air temperature difference of -6 K



QL-WE-EO



Dimensions [mm] and weight [kg] for variants with perforated plate

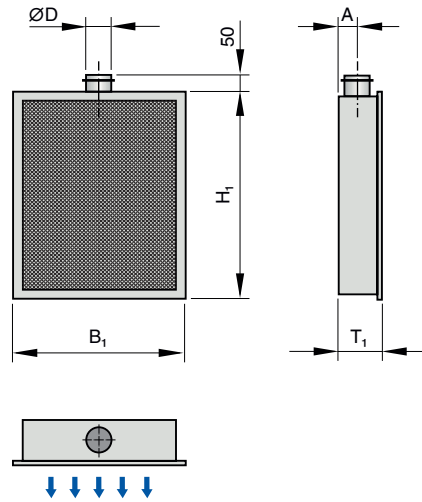
Nominal size	B ₁	H ₁	T ₁	B ₄	T ₄	m
	mm	mm	mm	mm	mm	kg
600×300×75-300×45	600	300	75	298	43	6
600×500×75-450×45	600	500	75	448	43	9
600×700×115-400×90	600	700	115	398	88	13
600×1000×115-450×90	600	1000	115	448	88	18
900×1200×125-650×100	900	1200	125	648	98	31
1200×1200×125-900×100	1200	1200	125	898	98	41
900×1500×150-800×125	900	1500	150	798	123	39
1200×1500×150-900×125	1200	1500	150	898	123	51
1200×2000×200-900×160	1200	2000	200	898	158	67

Dimensions [mm] and weight [kg] for patterned variants

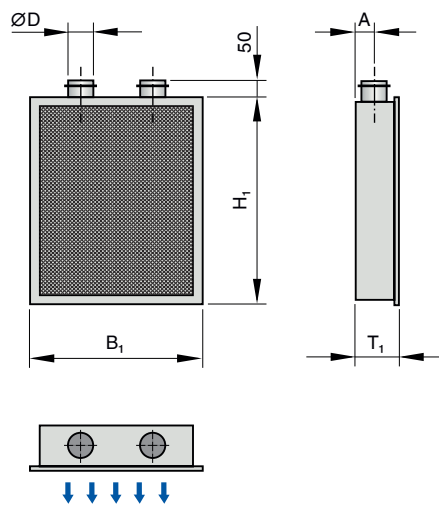
Nominal size	B ₁	H ₁	T ₁	B ₄	T ₄	m
	mm	mm	mm	mm	mm	kg
580×316×75-300×45	580	316	75	298	43	6
580×514×75-450×45	580	514	75	448	43	9
580×712×115-400×90	580	712	115	398	88	13
580×976×115-450×90	580	976	115	448	88	18
910×1240×125-650×100	910	1240	125	648	98	31
1240×1240×125-900×100	1240	1240	125	898	98	41
910×1570×150-800×125	910	1570	150	798	123	39
1240×1570×150-900×125	1240	1570	150	898	123	51
1240×1966×200-900×160	1240	1966	200	898	158	67



QL-WE-RO/...-1x...



QL-WE-RO/...-2x...



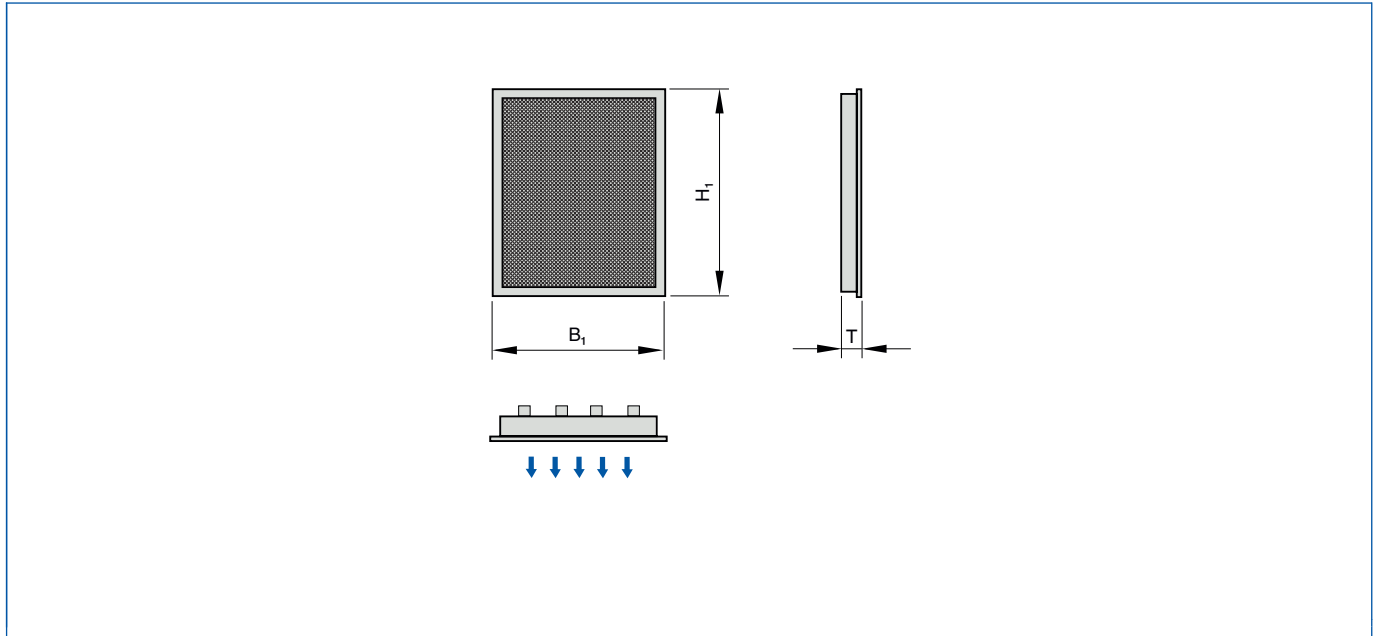
Dimensions [mm] and weight [kg] for variants with perforated plate

Nominal size	B ₁ mm	H ₁ mm	T ₁ mm	ØD mm	A mm	m kg
600x300x160-1x125	600	300	160	123	80	7
600x500x200-1x160	600	500	200	158	100	11
600x700x250-1x200	600	700	250	198	125	15
600x1000x300-1x250	600	1000	300	248	150	22
900x1200x300-2x250	900	1200	300	248	150	37
1200x1200x300-2x250	1200	1200	300	248	150	50
900x1500x300-2x250	900	1500	300	248	150	48
1200x1500x350-2x315	1200	1500	350	313	175	60
1200x2000x350-2x315	1200	2000	350	313	175	80

Dimensions [mm] and weight [kg] for patterned variants

Nominal size	B ₁ mm	H ₁ mm	T ₁ mm	ØD mm	A mm	m kg
580x316x160-1x125	580	316	160	123	80	7
580x514x200-1x160	580	514	200	158	100	11
580x712x250-1x200	580	712	250	198	125	15
580x976x300-1x250	580	976	300	248	150	22
910x1240x300-2x250	910	1240	300	248	150	37
1240x1240x300-2x250	1240	1240	300	248	150	50
910x1570x300-2x250	910	1570	300	248	150	48
1240x1570x350-2x315	1240	1570	350	313	175	60
1240x1966x350-2x315	1240	1966	350	313	175	80

QL-WE-O



Dimensions [mm] and weight [kg] for variants with perforated plate

Nominal size	B ₁	H ₁	T ₁	m kg
	mm	mm	mm	
600×300×35	600	300	37	4
600×500×35	600	500	37	6
600×700×35	600	700	37	8
600×1000×35	600	1000	37	11
900×1200×35	900	1200	37	13
1200×1200×35	1200	1200	37	25
900×1500×35	900	1500	37	24
1200×1500×35	1200	1500	37	31
1200×2000×35	1200	2000	37	41

Dimensions [mm] and weight [kg] for patterned variants

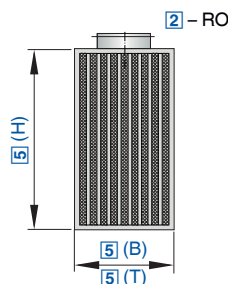
Nominal size	B ₁	H ₁	T ₁	m kg
	mm	mm	mm	
580×316×35	580	316	37	4
580×514×35	580	514	37	6
580×712×35	580	712	37	8
580×976×35	580	976	37	11
910×1240×35	910	1240	37	13
1240×1240×35	1240	1240	37	25
910×1570×35	910	1570	37	24
1240×1570×35	1240	1570	37	31
1240×1966×35	1240	1966	37	41



Free-standing displacement flow diffusers

	Displacement flow diffusers for installation into a wall		Free-standing displacement flow diffusers			Displacement flow diffusers for floor installation
	QLW-AZ	QL-WE	QL-WQT*-4	QL-WR	QLV-360	QL-BE
Casing cross-section						
Rectangular	●	●				
Square			●			●
Circular				●		
Polygon					●	
Air patterns						
One-way	●	●				●
Several sides			4 / 360°	360°	8 / 360°	
Diffuser face style						
Perforated plate, square pitch	●	●		●	●	●
Patterned		●		●		
Box profile diffuser face			●			
Duct connection						
Circular	●	●	●	●	●	●
Rectangular		●				
Top		●	●	●	●	
Bottom				●	●	
Horizontal	●					●
Attachments						
Damper blade	●					
Volume flow rate measuring unit		▲	●	▲		
Adapter				●		
Accessories						
Lip seal					●	
Nominal sizes						
Width	600 - 1200	600 - 1200	800 - 1200	Ø200 - 630	240 - 710	800 - 1200
Height	260	300 - 2000	2000	600 - 2000	500 - 1750	2000
Depth	245, 335	75 - 300	800 - 1200		240 - 710	800 - 1200
Nominal diameter of spigot	100	125, 160, 200, 250	630, 800		160, 200, 250, 315, 400, 500, 630	630, 800
Technical data						
Volume flow rate range [l/s]	12 - 45	13 - 895	602 - 3632	32 - 1529	32 - 1157	31 - 125
Volume flow rate range [m³/h]	43 - 162	47 - 3222	2168 - 13077	116 - 5504	116 - 4166	113 - 452
Supply air to room air temperature difference [K]	-6 - -1	-6 - -1	-6 - -1	-6 - -1	-6 - -1	-6 - -1
Explanation						
● - Standard						
▲ - Optional	Only for variants with circular spigot and square pitch perforated plate					





Square casing, four-way air discharge, for large rooms and industrial zones

Order code

QL - WQT - RO - 4 - M / 1200 x 2000 x 1200 - 1 x 800 / P1 - RAL ...

<p>1 Type QL-WQT Displacement flow diffuser</p> <p>2 Connection Circular spigot RO Top</p> <p>3 Air discharge 4 Four-way</p>	<p>4 Volume flow rate measuring unit No entry: none M With</p> <p>5 Nominal size [mm] B x H x T - number x spigot diameter</p> <p>6 Exposed surface No entry: powder-coated RAL 9010, pure white</p>	<p>P1 Powder-coated, specify RAL CLASSIC colour</p> <p>PS Powder-coated, specify NCS colour</p> <p>Gloss level 25 % 50 % 60 % Specify together with colour</p>
--	--	--

Features

Square displacement flow diffusers for large volume flow rates

- ▶ Nominal widths 800 mm and 1200 mm; nominal height 2000 mm
- ▶ Volume flow rate range 602 - 3632 l/s or 2168 - 13077 m³/h
- ▶ Diffuser face is box profile sheet metal
- ▶ Circular duct connection
- ▶ Duct connection at the top or bottom
- ▶ Equalising sheet metal plate with nozzles, each with a deflector scoop

Optional equipment and accessories

- ▶ Exposed surface in RAL CLASSIC or NCS colours
- ▶ Volume flow rate measuring unit

Application

- ▶ Type QL-WQT-*4 displacement flow diffusers are used as supply air units for large internal spaces and industrial zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ For free-standing installation
- ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
- ▶ Excellent air quality in the occupied zone
- ▶ Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -6 to -1 K

Variants

- ▶ QL-WQT-R*-4: Circular spigot
- ▶ QL-WQT-RU-4: Spigot at the bottom
- ▶ QL-WQT-RO-4: Spigot at the top

Attachments

- ▶ M: Volume flow rate measuring unit

Special characteristics

- ▶ Four-way air discharge
- ▶ Box profile diffuser face
- ▶ Circular duct connection
- ▶ Duct connection at the top
- ▶ Equalising sheet metal plate with nozzles

Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	800 x 2000, 1200 x 2000 mm
Minimum volume flow rate, at 0.1 m/s	602, 908 l/s or 2168, 3269 m ³ /h
Maximum volume flow rate, at 0.4 m/s	2409, 3632 l/s or 8674, 13077 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3/0.4 m/s	50/61 dB(A) max.

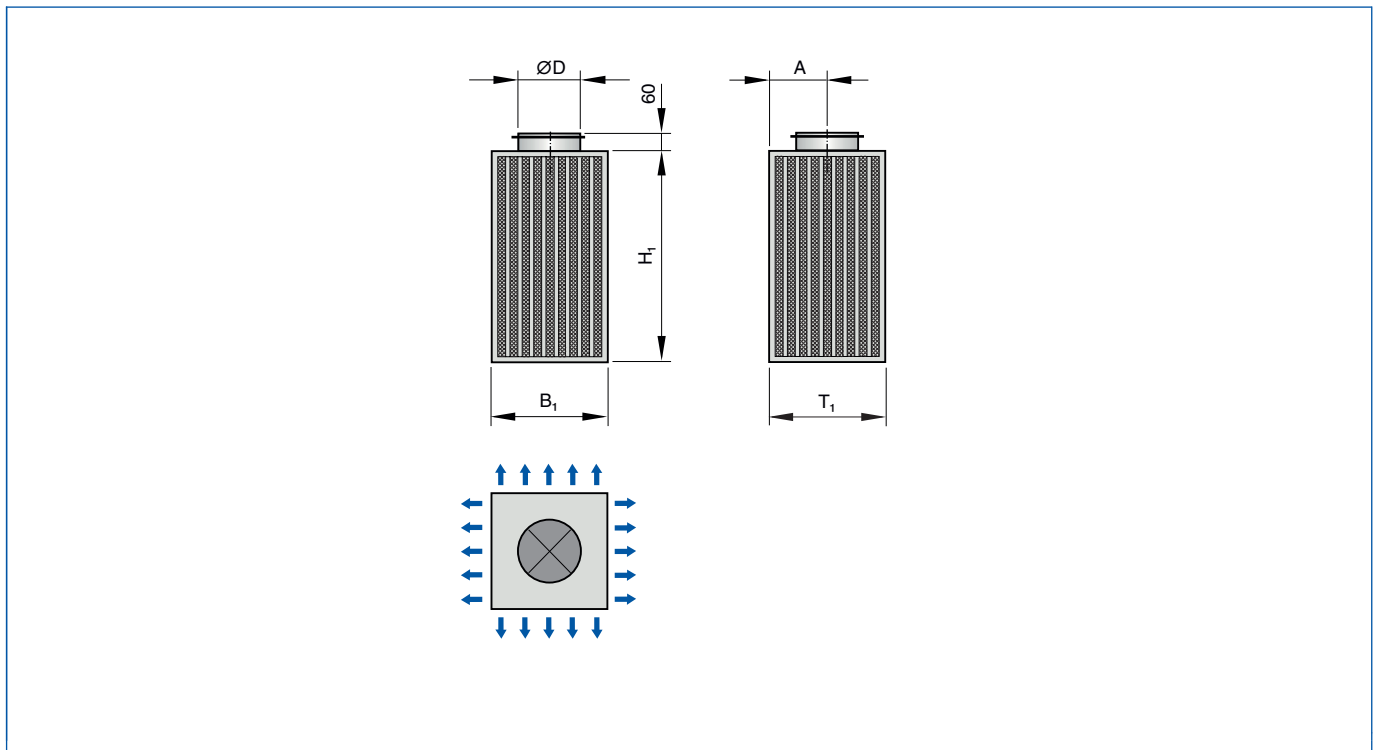
QL-WQT-RO-4

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
800 × 2000 × 800 - 1 × 630	602	2168	0.10	6	18	0.8
	1205	4337	0.20	25	37	1.6
	1807	6505	0.30	57	50	2.4
	2409	8674	0.40	101	61	3.2
1200 × 2000 × 1200 - 1 × 800	908	3269	0.10	6	16	0.9
	1816	6538	0.20	23	36	1.8
	2724	9808	0.30	51	49	2.7
	3632	13077	0.40	91	59	3.6

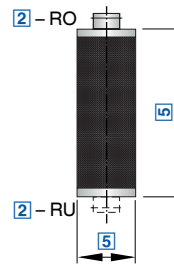
The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WQT-RO-4



Dimensions [mm] and weight [kg]

Nominal size	B_1	H_1	T_1	$\varnothing D$	A	m
	mm	mm	mm	mm	mm	kg
800×2000×800-1×630	800	2000	800	628	400	116
1200×2000×1200-1×800	1200	2000	1200	798	600	184



Circular casing, omni directional air discharge, for large rooms and industrial zones

Order code

QL - WR - RU - ... - M / 400 × 1500 - 1 × 315 / S50 / P1 - RAL ...

1
 2
 3
 4
 5
 6
 7

<p>1 Type QL-WR Displacement flow diffuser</p> <p>2 Connection Circular spigot RO Top RU Bottom</p> <p>3 Design of diffuser face K No entry: perforated plate, square pitch K Patterned</p> <p>4 Volume flow rate measuring unit M No entry: none M With measuring unit (only for variants)</p>	<p>with square pitch perforated plate)</p> <p>5 Nominal size [mm] ØD × H - number × spigot diameter</p> <p>6 Plinth height [mm] No entry: without plinth S50 50 mm S60 60 mm S70 70 mm S100 100 mm S150 150 mm S200 200 mm</p>	<p>7 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour PS Powder-coated, specify NCS colour</p> <p>Gloss level 25 % 50 % 60 % Specify together with colour</p>
---	--	---

- + Features**
- Circular displacement flow diffusers
- ▶ Nominal diameter 200 - 630 mm, nominal height 600 - 2000 mm
 - ▶ Volume flow rate range 32 - 1529 l/s or 116 - 5504 m³/h
 - ▶ Perforated plate, square pitch; patterned as an option
 - ▶ Circular duct connection
 - ▶ Duct connection at the top or bottom
 - ▶ Equalising sheet metal plate with nozzles, each with a deflector scoop
- Optional equipment and accessories
- ▶ Exposed surface in RAL CLASSIC or NCS colours
 - ▶ Volume flow rate measuring unit

- Application**
- ▶ Type QL-WR displacement flow diffusers are used as supply air units for large internal spaces and industrial zones
 - ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
 - ▶ For free-standing installation
 - ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
 - ▶ Excellent air quality in the occupied zone
 - ▶ Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
 - ▶ For variable and constant volume flows
 - ▶ For supply air to room air temperature differences from -6 to -1 K

- ◊ Variants**
- ▶ QL-WR-R*: Circular spigot
 - ▶ QL-WR-RU: Spigot at the bottom
 - ▶ QL-WR-RO: Spigot at the top
- ⬡ Attachments**
- ▶ M: Volume flow rate measuring unit, only for variants with square pitch perforated plate
- ★ Special characteristics**
- ▶ Omni directional air discharge
 - ▶ Circular duct connection
 - ▶ Duct connection at the top or bottom
 - ▶ Equalising sheet metal plate with nozzles
- ISO Standards and guidelines**
- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	200 × 600 to 630 × 2000 mm
Minimum volume flow rate, at 0.1 m/s	32 - 382 l/s or 116 - 1376 m ³ /h
Maximum volume flow rate, at 0.4 m/s	129 - 1529 l/s or 465 - 5504 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3/0.4 m/s	58/69 dB(A) max.



QL-WR-R*

Sound power level, total differential pressure and near zone

Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
200 x 600 - 1 x 160	33	121	0.10	5	15	0.3
	67	241	0.20	21	35	0.7
	100	362	0.30	47	47	1.0
	134	482	0.40	84	57	1.3
250 x 1000 - 1 x 200	73	262	0.10	9	23	0.4
	146	525	0.20	36	43	0.9
	219	787	0.30	80	58	1.3
	292	1049	0.40	143	69	1.7
315 x 1000 - 1 x 250	92	332	0.10	6	17	0.5
	184	664	0.20	24	37	0.9
	277	996	0.30	53	50	1.4
	369	1328	0.40	94	60	1.8
400 x 1000 - 1 x 315	117	423	0.10	4	<15	0.5
	235	846	0.20	16	31	1.0
	352	1269	0.30	36	43	1.5
	470	1691	0.40	64	52	2.0
400 x 1500 - 1 x 315	180	646	0.10	8	22	0.6
	359	1293	0.20	34	43	1.2
	539	1939	0.30	76	57	1.7
	718	2585	0.40	135	68	2.3
500 x 1500 - 1 x 400	225	810	0.10	5	15	0.6
	450	1620	0.20	21	35	1.2
	675	2430	0.30	48	48	1.9
	900	3240	0.40	85	58	2.5
500 x 2000 - 1 x 400	303	1090	0.10	9	23	0.7
	606	2180	0.20	36	44	1.4
	908	3270	0.30	80	58	2.1
	1211	4360	0.40	143	69	2.8
630 x 2000 - 1 x 500	382	1376	0.10	6	17	0.7
	764	2752	0.20	24	37	1.5
	1147	4128	0.30	54	50	2.2
	1529	5504	0.40	96	61	3.0

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WR-R*-K

Sound power level, total differential pressure and near zone

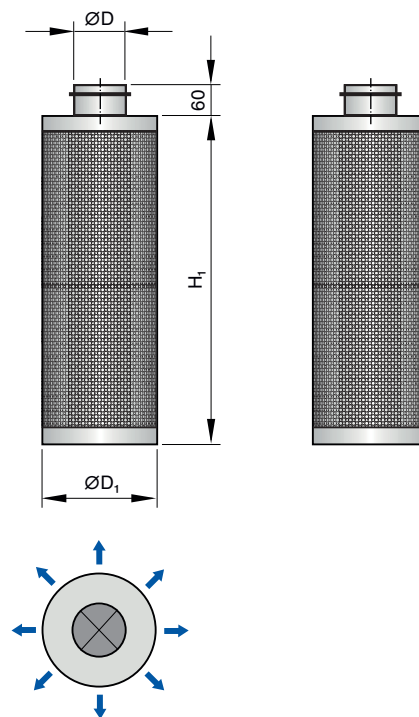
Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
200 x 580 - 1 x 160	32	116	0.10	5	<15	0.3
	65	232	0.20	20	33	0.6
	97	348	0.30	44	46	1.0
	129	465	0.40	78	56	1.3
250 x 976 - 1 x 200	71	256	0.10	8	22	0.4
	142	511	0.20	34	43	0.8
	213	767	0.30	76	57	1.3
	284	1023	0.40	136	68	1.7
315 x 976 - 1 x 250	90	323	0.10	6	16	0.5
	180	647	0.20	23	36	0.9
	270	970	0.30	52	49	1.4
	359	1294	0.40	92	59	1.8
400 x 976 - 1 x 315	114	412	0.10	4	<15	0.5
	229	824	0.20	16	31	1.0
	343	1236	0.30	36	43	1.5
	458	1648	0.40	63	52	2.0



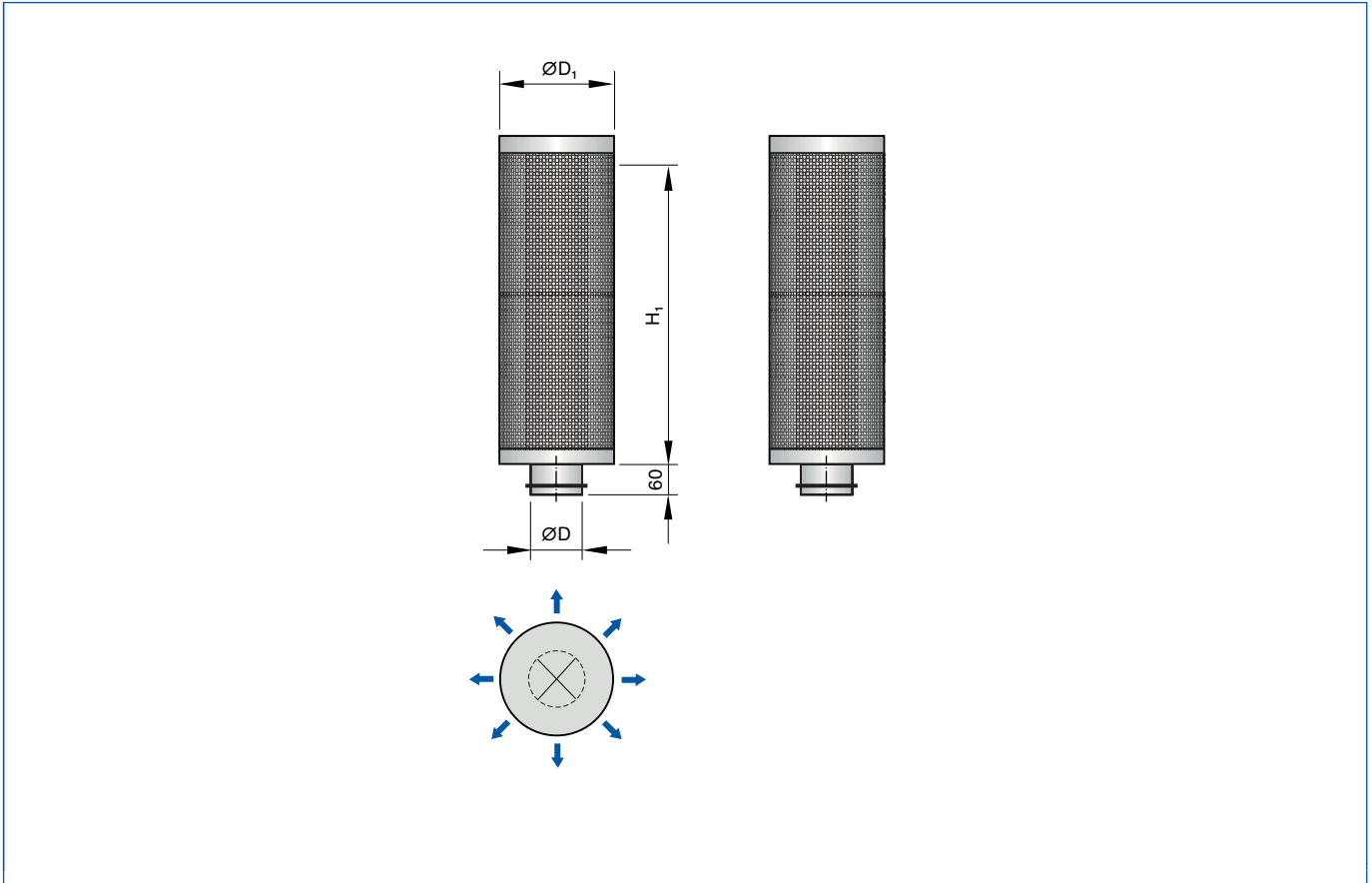
Nominal size	\dot{V}		v_0	Δp_t	L_{WA}	L_{nz}
	l/s	m ³ /h	m/s	Pa	dB(A)	m
400 x 1504 - 1 x 315	180	648	0.10	8	22	0.6
	360	1296	0.20	34	43	1.2
	54	1944	0.30	76	57	1.7
	720	2593	0.40	135	68	2.3
500 x 1504 - 1 x 400	226	812	0.10	5	15	0.6
	451	1624	0.20	21	35	1.2
	677	2436	0.30	48	48	1.9
	902	3249	0.40	86	58	2.5
500 x 1966 - 1 x 400	297	1071	0.10	9	23	0.7
	595	2142	0.20	34	43	1.4
	892	3213	0.30	77	57	2.1
	1190	4284	0.40	138	69	2.8
630 x 1966 - 1 x 500	376	1352	0.10	6	17	0.7
	751	2704	0.20	23	37	1.5
	1127	4056	0.30	52	50	2.2
	1502	5408	0.40	93	60	3.0

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-WR-RO



QL-WR-RU



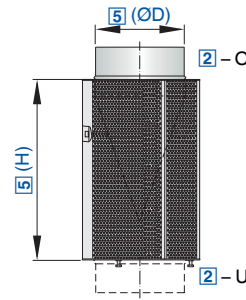
Dimensions [mm] and weight [kg] for variants with perforated plate

Nominal size	ØD	ØD ₁	H ₁	m
	mm	mm	mm	kg
200x600-1x160	158	200	600	8
250x1000-1x200	198	250	1000	11
315x1000-1x250	248	315	1000	15
400x1000-1x315	313	400	1000	22
400x1500-1x315	313	400	1500	27
500x1500-1x400	398	500	1500	32
500x2000-1x400	398	500	2000	45
630x2000-1x500	498	630	2000	60

Dimensions [mm] and weight [kg] for patterned variants

Nominal size	ØD	ØD ₁	H ₁	m
	mm	mm	mm	kg
200x580-1x160	158	200	580	8
250x976-1x200	198	250	976	11
315x976-1x250	248	315	976	15
400x976-1x315	313	400	976	22
400x1504-1x315	313	400	1504	27
500x1504-1x400	398	500	1504	32
500x1966-1x400	398	500	1966	45
630x1966-1x500	498	630	1966	60





Polygon casing, 360° air discharge, for comfort and industrial zones

Order code

QLV - 360 - O - M - L / 250 × 600 / B0 / P1 - RAL ...

1 2 3 4 5 6 7

<p>1 Type QLV-360 Displacement flow diffuser</p> <p>2 Connection Circular spigot O Top U Bottom</p> <p>3 Damper blade for volume flow rate balancing M No entry: none M With</p>	<p>4 Lip seal L No entry: none With (only for top spigot) Bottom spigots always have a lip seal</p> <p>5 Nominal size [mm] ØD × H Spigot diameter × nominal height</p> <p>6 Fixing B0 No entry: none With base plate</p>	<p>7 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour S7 Uncoated (galvanised steel, untreated aluminium)</p> <p>Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p>
---	---	---

+ Features

Polygon displacement flow diffusers with omni directional air discharge

- ▶ Spigot diameter 160 - 630 mm, nominal height 500 - 1750 mm
- ▶ Volume flow rate range 32 - 1157 l/s or 116 - 4166 m³/h
- ▶ Circular duct connection
- ▶ Duct connection at the top or bottom
- ▶ Integral airflow straightener and conical equalising element

Optional equipment and accessories

- ▶ Floor mounting plate
- ▶ Damper blade for volume flow rate balancing
- ▶ Exposed surface in RAL CLASSIC colours

X Application

- ▶ Type QLV-360 displacement flow diffusers are used as supply air units for industrial

Technical data

Nominal sizes	160 × 500 to 630 × 1750 mm
Minimum volume flow rate, at 0.1 m/s	32 -386 l/s or 116 - 1389 m³/h
Maximum volume flow rate, at 0.3 m/s	97 - 1157 l/s or 348 - 4166 m³/h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3 m/s	50 dB(A) max.

- and comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ For free-standing installation
- ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
- ▶ Excellent air quality in the occupied zone
- ▶ Draught-free and economical ventilation and air conditioning also of larger internal spaces such as shop floors or auditoriums, with several displacement flow diffusers in a regular arrangement
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -6 to -1 K

◊ Variants

- ▶ QLV-...-O: Spigot at the top
- ▶ QLV-...-U: Spigot at the bottom

⬡ Attachments

- ▶ Damper blade for volume flow rate balancing

& Accessories

- ▶ Lip seal
- ▶ Floor mounting plate

★ Special characteristics

- ▶ Eight-way air discharge
- ▶ Duct connection at the top or bottom
- ▶ Optional damper blade for volume flow rate balancing

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



QLV-360, sound power level, total differential pressure and near zone

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	v_0 m/s	Damper blade position						L_{nz} m
				0°		45°		90°		
				Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	
				Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	
160 x 500	32	116	0.10	6	<15	9	<15	17	17	<
	48	174	0.15	12	<15	20	20	38	28	<
	64	232	0.20	22	21	35	28	68	36	<
	97	348	0.30	50	32	79	40	152	48	<
200 x 500	39	140	0.10	4	<15	6	<15	10	<15	<
	59	211	0.15	8	<15	12	15	24	24	<
	78	281	0.20	14	<15	22	23	42	32	<
	117	421	0.30	32	26	50	34	94	43	<
250 x 500	47	169	0.10	<3	<15	3	<15	6	<15	<
	71	254	0.15	5	<15	8	<15	15	19	<
	94	338	0.20	9	<15	14	17	26	27	<
	141	508	0.30	20	20	31	29	58	38	<
160 x 600	39	139	0.10	7	<15	12	<15	24	21	<
	58	209	0.15	16	17	28	25	53	33	<
	77	278	0.20	29	25	49	33	94	41	<
	116	417	0.30	65	37	111	45	212	52	<
200 x 600	47	168	0.10	5	<15	8	<15	15	17	<
	70	253	0.15	10	<15	17	20	33	28	<
	94	337	0.20	18	19	31	28	58	36	<
	140	505	0.30	41	31	69	39	131	48	<
250 x 600	56	203	0.10	3	<15	5	<15	9	<15	<
	85	305	0.15	6	<15	11	<15	20	23	<
	113	406	0.20	11	<15	19	22	36	31	<
	169	609	0.30	26	25	43	34	80	43	<
315 x 600	70	251	0.10	<3	<15	3	<15	6	<15	<
	104	376	0.15	4	<15	7	<15	13	19	<
	139	501	0.20	7	<15	12	17	22	27	<
	209	752	0.30	17	19	28	28	50	38	<
160 x 800	52	185	0.10	12	<15	21	22	40	29	<
	77	278	0.15	26	25	48	33	91	40	<
	103	371	0.20	46	33	85	41	162	49	<
	155	556	0.30	104	44	190	52	364	60	<
200 x 800	62	225	0.10	7	<15	13	16	25	24	<
	94	337	0.15	16	19	29	28	56	36	<
	125	449	0.20	29	27	52	36	99	44	<
	187	674	0.30	64	39	117	47	223	55	<
250 x 800	75	271	0.10	4	<15	8	<15	15	20	<
	113	406	0.15	10	<15	18	22	34	31	<
	150	541	0.20	18	21	32	30	60	39	<
	226	812	0.30	40	33	72	41	136	50	<
315 x 800	93	334	0.10	3	<15	5	<15	9	15	<
	139	501	0.15	6	<15	11	17	21	26	<
	186	668	0.20	11	15	20	25	38	35	<
	278	1002	0.30	26	27	46	36	84	46	<
400 x 800	115	415	0.10	<3	<15	3	<15	6	<15	<
	173	622	0.15	4	<15	7	<15	13	22	<
	230	829	0.20	7	<15	13	19	23	30	<
	346	1244	0.30	16	21	29	31	52	41	<
160 x 1000	64	232	0.10	17	19	32	28	62	35	0.8
	97	348	0.15	37	30	73	39	138	46	1.0
	129	464	0.20	66	39	129	47	246	54	<
	193	696	0.30	149	50	291	58	554	66	<



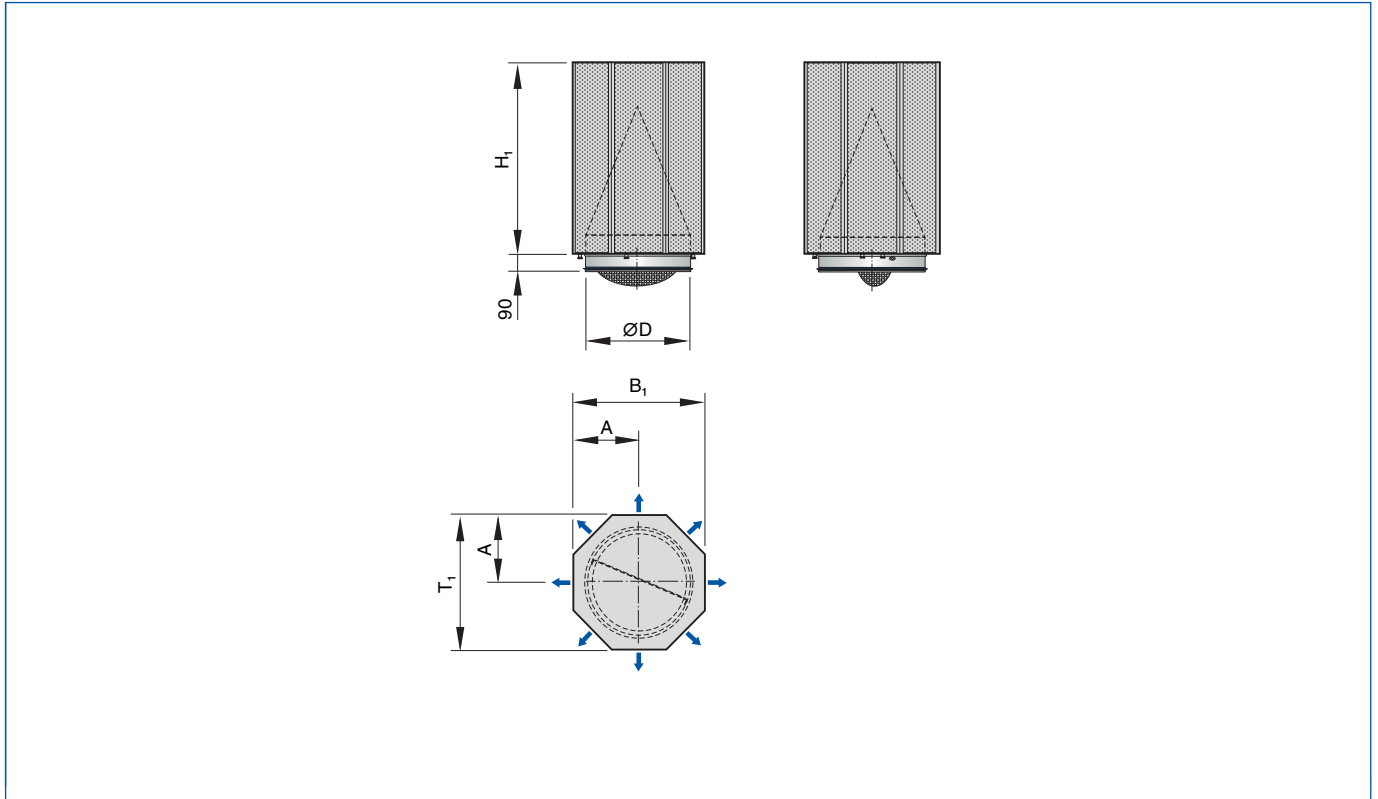
Nominal size	\dot{V} l/s	\dot{V} m ³ /h	v_0 m/s	Damper blade position						L_{nz} m
				0°		45°		90°		
				Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	
				Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	
200 x 1000	78	281	0.10	10	<15	20	22	37	30	0.8
	117	421	0.15	23	25	45	34	84	41	1.0
	156	562	0.20	40	33	79	42	150	49	<
	234	842	0.30	91	44	178	53	337	61	<
250 x 1000	94	338	0.10	6	<15	12	17	23	25	0.8
	141	508	0.15	14	19	27	28	51	37	1.0
	188	677	0.20	25	27	48	36	91	45	<
	282	1015	0.30	56	38	109	47	204	56	<
315 x 1000	116	418	0.10	4	<15	8	<15	14	21	0.8
	174	626	0.15	9	<15	17	23	32	32	1.0
	232	835	0.20	16	21	30	31	56	40	<
	348	1253	0.30	35	33	68	42	126	52	<
400 x 1000	144	518	0.10	<3	<15	5	<15	9	16	0.8
	216	778	0.15	6	<15	11	17	19	27	1.0
	288	1037	0.20	10	15	19	25	34	36	<
	432	1555	0.30	22	27	42	37	77	47	<
500 x 1000	177	638	0.10	<3	<15	3	<15	6	<15	0.8
	266	957	0.15	4	<15	7	<15	12	23	1.0
	354	1276	0.20	6	<15	12	20	22	31	<
	532	1914	0.30	15	22	28	32	50	43	<
315 x 1250	145	522	0.10	6	<15	11	17	21	26	1.1
	218	783	0.15	12	19	26	29	48	38	1.4
	290	1044	0.20	22	27	46	37	85	46	1.6
	435	1566	0.30	50	39	103	48	190	57	2.0
400 x 1250	180	648	0.10	3	<15	7	<15	13	22	1.1
	270	972	0.15	8	<15	16	23	29	33	1.4
	360	1296	0.20	14	21	28	31	51	41	1.7
	540	1944	0.30	31	33	63	43	116	53	2.1
500 x 1250	222	797	0.10	<3	<15	5	<15	8	18	1.1
	332	1196	0.15	5	<15	10	18	18	29	1.4
	443	1595	0.20	9	16	18	26	33	37	1.7
	665	2392	0.30	20	27	41	38	74	48	2.1
630 x 1250	276	992	0.10	<3	<15	3	<15	5	<15	1.0
	413	1488	0.15	3	<15	7	<15	12	25	1.4
	551	1984	0.20	6	<15	12	21	21	33	1.6
	827	2975	0.30	13	22	27	33	47	44	2.1
400 x 1500	216	778	0.10	5	<15	10	17	18	27	1.5
	324	1166	0.15	10	18	22	28	40	38	1.9
	432	1555	0.20	18	26	39	36	72	46	2.2
	648	2333	0.30	41	37	88	47	162	57	2.8
500 x 1500	266	957	0.10	3	<15	6	<15	11	22	1.5
	399	1435	0.15	7	<15	14	23	26	34	1.9
	532	1914	0.20	12	21	25	31	46	42	2.3
	797	2871	0.30	26	32	57	43	103	53	2.9
630 x 1500	331	1190	0.10	<3	<15	4	<15	7	18	1.4
	496	1785	0.15	4	<15	9	18	16	29	1.8
	661	2380	0.20	8	15	16	26	29	38	2.3
	992	3570	0.30	17	27	36	37	65	49	3.0
630 x 1750	386	1389	0.10	<3	<15	5	<15	10	22	1.8
	579	2083	0.15	5	<15	12	22	21	34	2.5
	771	2777	0.20	10	19	21	30	38	42	3.2
	1157	4166	0.30	21	31	48	42	86	53	4.4

<: 0.2 m/s are not achieved

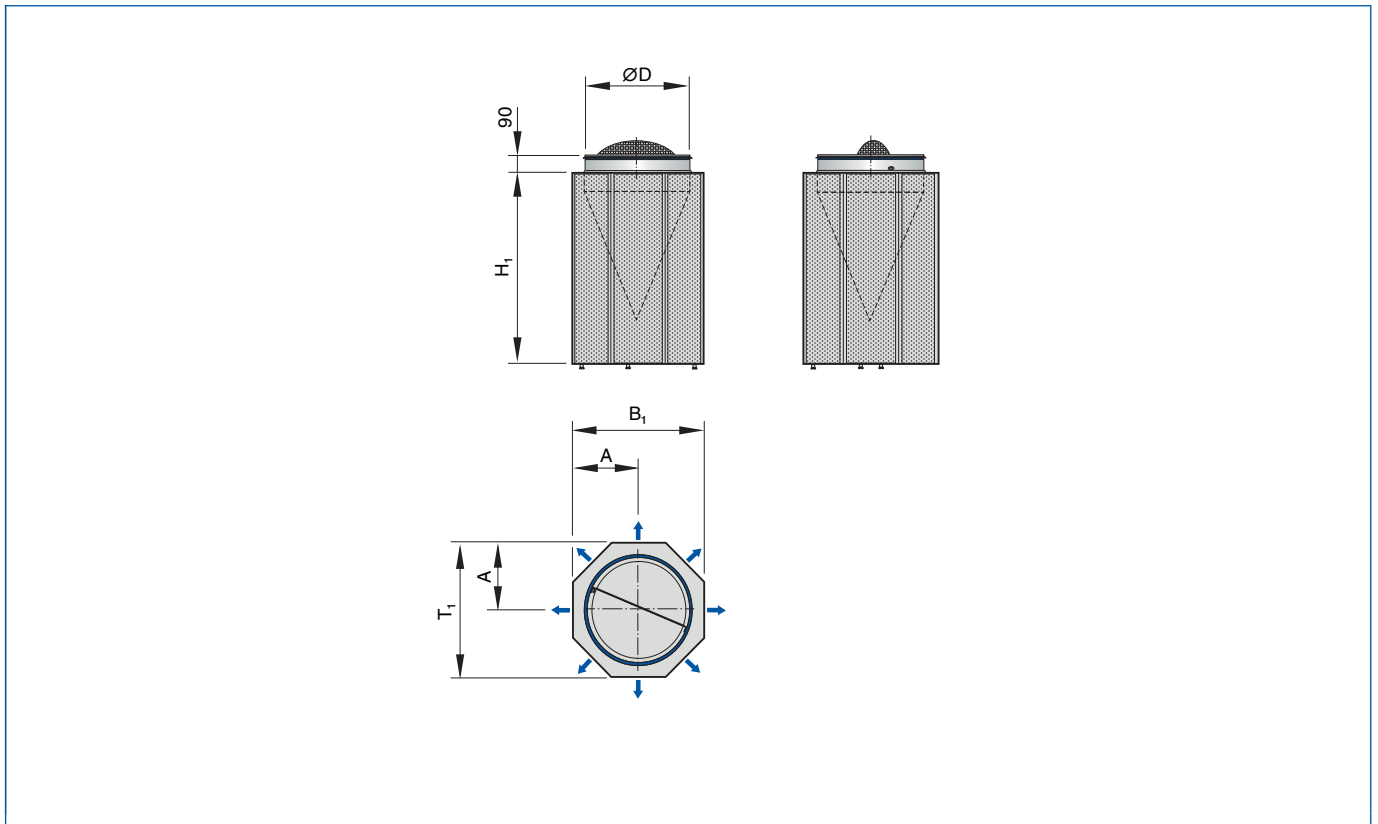
The near zone values are based on a supply air to room air temperature difference of -3 K



QLV-360-U



QLV-360-O



Dimensions [mm] and weight [kg]

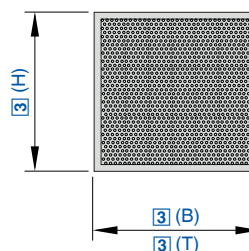
Nominal size	B ₁	H ₁	T ₁	ØD	A	m
	mm	mm	mm	mm	mm	kg
160x500	240	500	240	158	120	6
200x500	280	500	280	198	140	7
250x500	330	500	330	248	165	8
160x600	240	600	240	158	120	7
200x600	280	600	280	198	140	8
250x600	330	600	330	248	165	10
315x600	395	600	395	313	197	11
160x800	240	800	240	158	120	8
200x800	280	800	280	198	140	10
250x800	330	800	330	248	165	11
315x800	395	800	395	313	197	14
400x800	480	800	480	398	240	17
160x1000	240	1000	240	158	120	10
200x1000	280	1000	280	198	140	11
250x1000	330	1000	330	248	165	13
315x1000	395	1000	395	313	197	16
400x1000	480	1000	480	398	240	20
500x1000	580	1000	580	498	290	25
315x1250	395	1250	395	313	197	19
400x1250	480	1250	480	398	240	23
500x1250	580	1250	580	498	290	28
630x1250	710	1250	710	628	355	36
400x1500	480	1500	480	398	240	26
500x1500	580	1500	580	498	290	32
630x1500	710	1500	710	628	355	40
630x1750	710	1750	710	628	355	44



Displacement flow diffusers for floor installation

	Displacement flow diffusers for installation into a wall		Free-standing displacement flow diffusers			Displacement flow diffusers for floor installation
	QLW-AZ	QL-WE	QL-WQT*-4	QL-WR	QLV-360	QL-BE
Casing cross-section						
Rectangular	●	●				
Square			●			●
Circular				●		
Polygon					●	
Air patterns						
One-way	●	●				●
Several sides			4 / 360°	360°	8 / 360°	
Diffuser face style						
Perforated plate, square pitch	●	●		●	●	●
Patterned		●		●		
Box profile diffuser face			●			
Duct connection						
Circular	●	●	●	●	●	●
Rectangular		●				
Top		●	●	●	●	
Bottom				●	●	
Horizontal	●					●
Attachments						
Damper blade	●					
Volume flow rate measuring unit		▲	●	▲		
Adapter				●		
Accessories						
Lip seal					●	
Nominal sizes						
Width	600 - 1200	600 - 1200	800 - 1200	Ø200 - 630	240 - 710	800 - 1200
Height	260	300 - 2000	2000	600 - 2000	500 - 1750	2000
Depth	245, 335	75 - 300	800 - 1200		240 - 710	800 - 1200
Nominal diameter of spigot	100	125, 160, 200, 250	630, 800		160, 200, 250, 315, 400, 500, 630	630, 800
Technical data						
Volume flow rate range [l/s]	12 - 45	13 - 895	602 - 3632	32 - 1529	32 - 1157	31 - 125
Volume flow rate range [m ³ /h]	43 - 162	47 - 3222	2168 - 13077	116 - 5504	116 - 4166	113 - 452
Supply air to room air temperature difference [K]	-6 - -1	-6 - -1	-6 - -1	-6 - -1	-6 - -1	-6 - -1
Explanation						
● - Standard						
▲ - Optional	Only for variants with circular spigot and square pitch perforated plate					





Square casing, upward air discharge, for comfort zones

 **Order code**

QL - BE - RO / 600 × 600 × 40 - 1 × 200 / P1 - RAL ...

1 **2** **3** **4**

1 **Type**

QL-BE Displacement flow diffuser

2 **Connection**

RO No entry: without plenum box
With plenum box

3 **Nominal size [mm]**

B × H × T - number × spigot diameter

4 **Exposed surface**

P1 No entry: powder-coated,
RAL 9011, graphite black
Powder-coated, specify RAL CLASSIC
colour

PS

Powder-coated, specify NCS colour
Gloss level
25 %
50 %
60 %
Specify together with colour

+ **Features**

Displacement flow diffusers with a circular spigot

- ▶ Nominal size 600×600 mm
- ▶ Volume flow rate range 31 - 125 l/s or 113 - 452 m³/h
- ▶ Robust base plate, perforated
- ▶ Circular duct connection
- ▶ Horizontal duct connection
- ▶ Perforated sheet metal cylinder as equalising element

Optional equipment and accessories

- ▶ Displacement flow diffuser without plenum box for use in positive pressure plenums
- ▶ Exposed surface in RAL CLASSIC or NCS colours

X **Application**

- ▶ Type QL-BE displacement flow diffusers are used as supply air units for comfort zones
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ For installation into false floors
- ▶ Low-velocity airflow, causing only low levels of induction and resulting in low-turbulence displacement ventilation.
- ▶ Excellent air quality in the occupied zone
- ▶ Draught-free and economical air conditioning also of larger internal spaces with several displacement flow diffusers in a regular arrangement
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -6 to -1 K

◊ **Variants**

- ▶ QL-BE-RO: Displacement flow diffuser with plenum box and circular spigot
- ▶ QL-BE: Displacement flow diffuser without plenum box

★ **Special characteristics**

- ▶ Vertical air discharge
- ▶ Robust base plate, perforated
- ▶ Circular duct connection
- ▶ Horizontal duct connection
- ▶ Perforated sheet metal cylinder as equalising element

ISO **Standards and guidelines**

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

 **Technical data**

Nominal sizes	600 × 600 mm
Minimum volume flow rate, at 0.1 m/s	31 l/s or 113 m ³ /h
Maximum volume flow rate, at 0.4 m/s	125 l/s or 452 m ³ /h
Supply air to room air temperature difference	-6 to -1 K
Sound power level, at 0.3/0.4 m/s	30/39 dB(A) max.



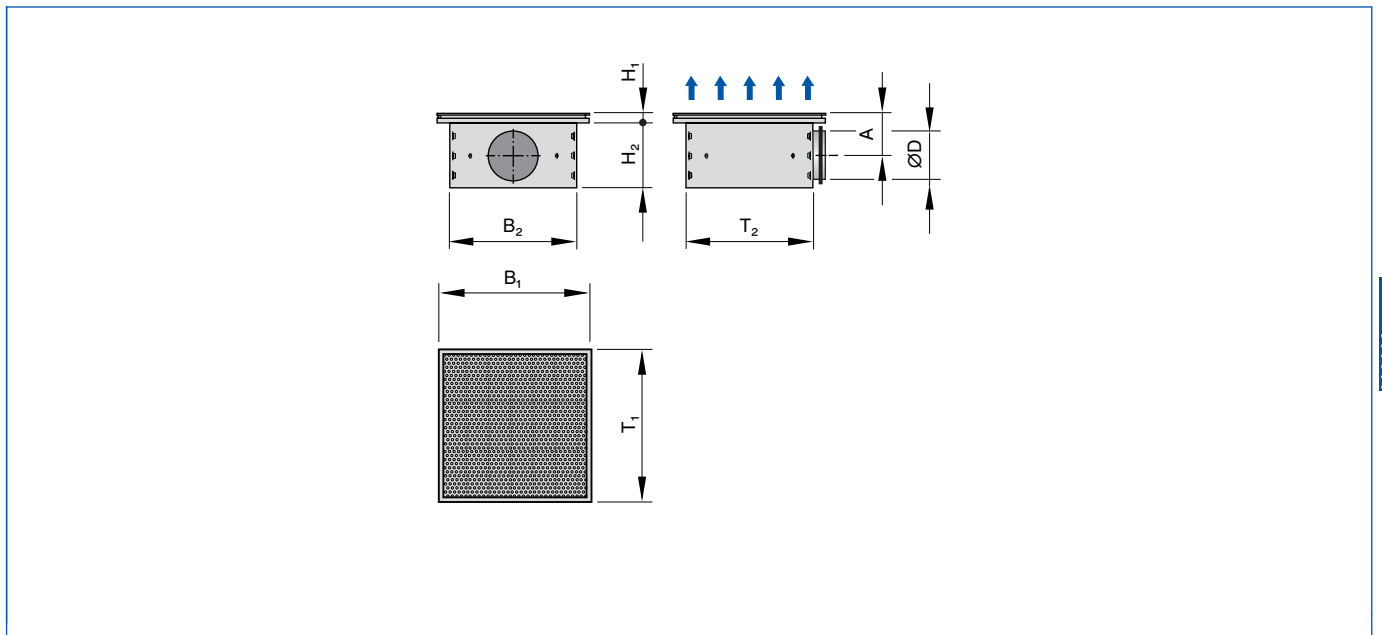
QL-BE

Sound power level, total differential pressure and near zone

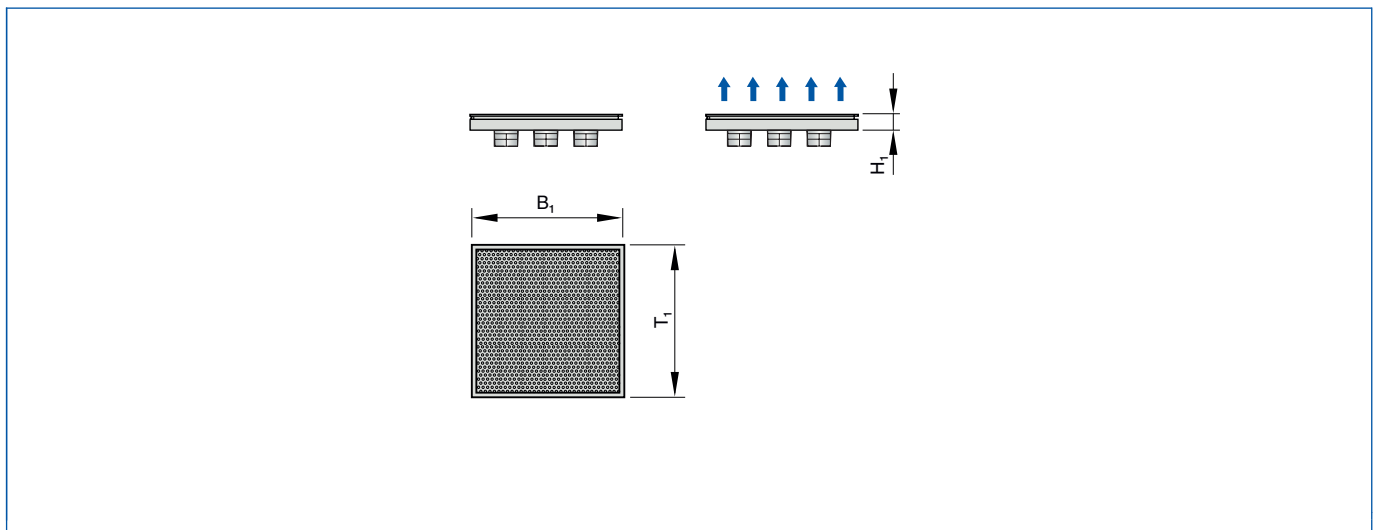
Nominal size	\dot{V}		v_0 m/s	Δp_t Pa	L_{WA} dB(A)	L_{nz} m
	l/s	m ³ /h				
600 x 600 x 80 - 1 x 200	31	113	0.10	<3	<15	0.7
	63	226	0.20	7	19	1.4
	94	339	0.30	15	30	2.1
	125	452	0.40	27	39	2.8

The near zone values are based on a supply air to room air temperature difference of -6 K

QL-BE-RO



QL-BE



Dimensions [mm] and weight [kg]

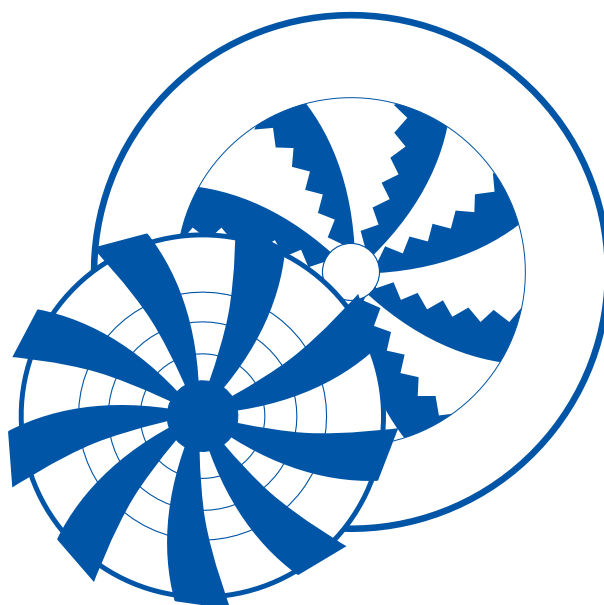
Nominal size	ØD	B ₁	T ₁	H ₁	B ₂	T ₂	H ₂	A	m
	mm	mm	mm	mm	mm	mm	mm	mm	kg
600×600×30-1×200	198	599	599	30	500	500	255	127	26
600×600×31-1×200	198	599	599	31	500	500	255	127	26
600×600×32-1×200	198	599	599	32	500	500	255	127	26
600×600×33-1×200	198	599	599	33	500	500	255	127	26
600×600×34-1×200	198	599	599	34	500	500	255	127	26
600×600×35-1×200	198	599	599	35	500	500	255	127	26
600×600×36-1×200	198	599	599	36	500	500	255	127	26
600×600×37-1×200	198	599	599	37	500	500	255	127	26
600×600×38-1×200	198	599	599	38	500	500	255	127	26
600×600×39-1×200	198	599	599	39	500	500	255	127	26
600×600×40-1×200	198	599	599	40	500	500	255	127	26

Dimensions [mm] and weight [kg]

Nominal size	B ₁	T ₁	H ₁	m
	mm	mm	mm	kg
600×600×30	599	599	30	26
600×600×31	599	599	31	26
600×600×32	599	599	32	26
600×600×33	599	599	33	26
600×600×34	599	599	34	26
600×600×35	599	599	35	26
600×600×36	599	599	36	26
600×600×37	599	599	37	26
600×600×38	599	599	38	26
600×600×39	599	599	39	26
600×600×40	599	599	40	26



SPECIAL AIR TERMINAL DEVICES



5 SPECIAL AIR TERMINAL DEVICES

5.1 Displacement flow diffusers



For industrial zones with air polluting processes

QSH

344

5.2 Impulse diffusers



For industrial zones without air polluting processes

ISH

348

5.3 Jet nozzles



Acoustically and technically optimised, for installation in walls and on rectangular and circular ducts, adjustable - made of plastic

TJN

353



For installation into walls and onto rectangular and circular ducts, adjustable and fixed - made of aluminium

DUK

359

5.4 Disc valves



For extract air

LVS

369



For supply air

Z-LVS

372

5.5 Floor diffusers



Made of aluminium

FBA

375



Made of plastic

FBK

378

5.6 Staircase swirl diffusers



For installation into steps and floor areas with no foot traffic

SD

383



Compact height, ideal for steps

SDRF

386

5.7 Control modules



For the temperature-based control of adjustable air terminal devices, for heating or cooling mode

LON-WA TDC

391

5.8 Actuators



For switching between the heating and cooling modes of adjustable air terminal devices

Heating/Cooling

392



For modulating operation and for switching between the heating and cooling modes of adjustable air terminal devices

Modulating actuators

396



For switching between the heating and cooling modes of adjustable air terminal devices

Thermal actuators

399

Displacement flow diffusers

	Displacement flow diffusers	Impulse diffusers
	QSH	ISH
Face style		
Circular	●	●
Perforated diffuser face	●	
Perforated diffuser face with additional rectangular air outlets		●
Air control blades		
Air control disc	●	●
Duct connection		
Vertical	●	●
Attachments		
Chain pull for manual adjustment	●	●
Bowden cable for manual adjustment	●	●
Electric actuator	●	●
Thermal actuator	●	●
Accessories		
Wall mount	●	●
Chain fixing	●	●
Nominal sizes		
Diffuser	250, 355, 450, 560	250, 355, 450, 560
Technical data		
Volume flow rate range [l/s]	205 - 1570	205 - 1585
Volume flow rate range [m ³ /h]	738 - 5652	738 - 5706
Supply air to room air temperature difference [K]	-8 - +12	-8 - +12
Explanation		
● - Standard		

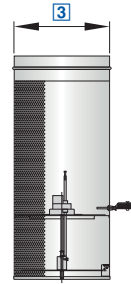



List of abbreviations

L_{WA} [dB(A)]	A-weighted sound power level of air-regenerated noise
\dot{V} [m ³ /h] and [l/s]	Volume flow rate
Δt_z [K]	Supply air to room air temperature difference, i.e. supply air temperature minus room temperature
Δp_t [Pa]	Total differential pressure
A_{eff} [m ²]	Effective air discharge area
$\varnothing D$ [mm]	Outer diameter of the spigot
$\varnothing D_1$ [mm]	Outer diameter of a circular diffuser face
$\varnothing D_2$ [mm]	Diameter of a circular diffuser face style
$\varnothing D_3$ [mm]	Diameter of a circular plenum box
Q_1 [mm]	Outer diameter of a square diffuser face
Q_2 [mm]	Dimensions of a square diffuser face style
Q_3 [mm]	Dimensions of a square plenum box
H_1 [mm]	Distance (height) from the lower edge of the suspended ceiling to the lower edge of the diffuser face
H_2 [mm]	Height of a ceiling diffuser, from the lower edge of the suspended ceiling to the upper edge of the spigot
H_3 [mm]	Height of a ceiling diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box or of the spigot
A [mm]	Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling
C [mm]	Length of the spigot
m [kg]	Weight

All sound power levels are based on 1 pW.





For industrial zones with air polluting processes

Order code

QSH – E4 / 450 / W00 / P0 – RAL ...

1 2 3 4 5

1 Type

QSH Displacement flow diffuser

2 Actuator

No entry: chain pull for manual adjustment

- B** Bowden cable for manual adjustment
- E4** 230 V AC, 3-point
- E5** 24 V AC/DC, 3-point
- E6** 24 V AC/DC, modulating 0 - 10 V DC
- T** Thermal actuator

3 Nominal size [mm]

250, 355, 450, 560

4 Fixing

- No entry: none
- W00** With wall mount
- K00** With chain fixing (only for variants with chain pull)
- WKO** With wall mount and chain fixing (only for variants with chain pull)

5 Exposed surface

- No entry: galvanised
- P0** Powder-coated RAL 9010, pure white
- P1** Powder-coated, specify RAL CLASSIC colour
- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %

+ Features

- Displacement flow diffusers with bell-shaped, low turbulence air discharge in cooling mode
 - ▶ Nominal sizes 250, 355, 450, 560 mm
 - ▶ Volume flow rate range 205 - 1570 l/s or 738 - 5652 m³/h
 - ▶ Casing made of galvanised sheet steel
 - ▶ For variable and constant volume flows
 - ▶ Installation either free hanging or on walls or pillars
 - ▶ Low-turbulence displacement ventilation
 - ▶ Discharge direction can be adjusted manually or with an actuator
 - ▶ Chain pull for adjusting the discharge direction manually

Optional equipment and accessories

- ▶ Exposed diffuser parts in RAL CLASSIC colours
- ▶ Electric and thermal actuators for adjusting the air discharge direction
- ▶ Bowden cable for adjusting the discharge direction manually
- ▶ Wall mount

Application

- ▶ Type QSH displacement flow diffusers are used primarily for industrial zones with air polluting work processes
- ▶ Bell-shaped air discharge in cooling mode, vertical air discharge in heating mode
- ▶ Low-turbulence displacement of polluted or contaminated air in the occupied zone
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -8 to +12 K
- ▶ Installation at heights between 3.5 m and 10 m, either free hanging or on walls or pillars
- ▶ Installation preferably outside of occupied zones, e.g. in corridors
- ▶ Ideal for use with TDC temperature difference control module

Attachments

- ▶ Chain pull for manual adjustment, approx. 2.0 m

- ▶ **B**: Bowden cable for manual adjustment, approx. 2.8 m
- ▶ **E***: Electric actuator
- ▶ **T**: Thermal actuator

& Accessories

- ▶ **W00**: Wall mount
- ▶ **K00**: Chain fixing
- ▶ **WKO**: Wall mount and chain fixing

★ Special characteristics

- ▶ Bell-shaped, low-turbulence air discharge in cooling mode
- ▶ Air discharge direction is adjusted manually or with an electric or thermal actuator

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	250, 355, 450, 560 mm
Minimum volume flow rate	205 - 785 l/s or 738 - 2826 m ³ /h
Maximum volume flow rate, with L _{WA} ≈ 55 dB(A)	410 - 1570 l/s or 1476 - 5652 m ³ /h
Supply air to room air temperature difference	-8 to +12 K



QSH supply air, horizontal air discharge, sound power level and total differential pressure

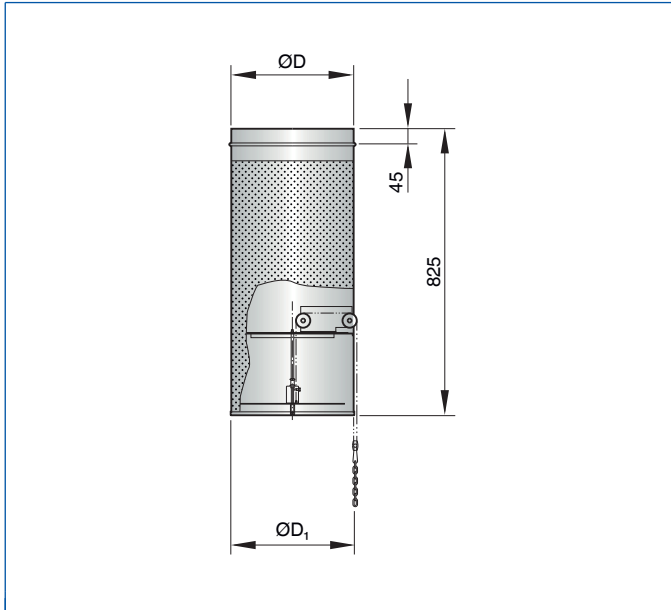
Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
250	205	738	12	31
	270	972	20	41
	340	1224	32	48
	410	1476	47	55
355	335	1206	11	34
	435	1566	18	43
	535	1926	27	50
	635	2286	39	55
450	470	1692	9	27
	625	2250	16	39
	780	2808	25	48
	940	3384	36	55
560	785	2826	14	29
	1050	3780	25	40
	1310	4716	39	49
	1570	5662	56	55

QSH supply air, vertical air discharge, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
250	205	738	12	36
	265	954	21	44
	335	1206	33	51
	385	1386	44	55
355	335	1206	11	38
	420	1512	17	45
	505	1818	25	51
	590	2124	34	55
450	470	1692	10	33
	595	2142	16	42
	725	2610	24	49
	855	3078	33	55
560	785	2826	15	36
	990	3564	24	45
	1180	4248	34	51
	1370	4932	46	55

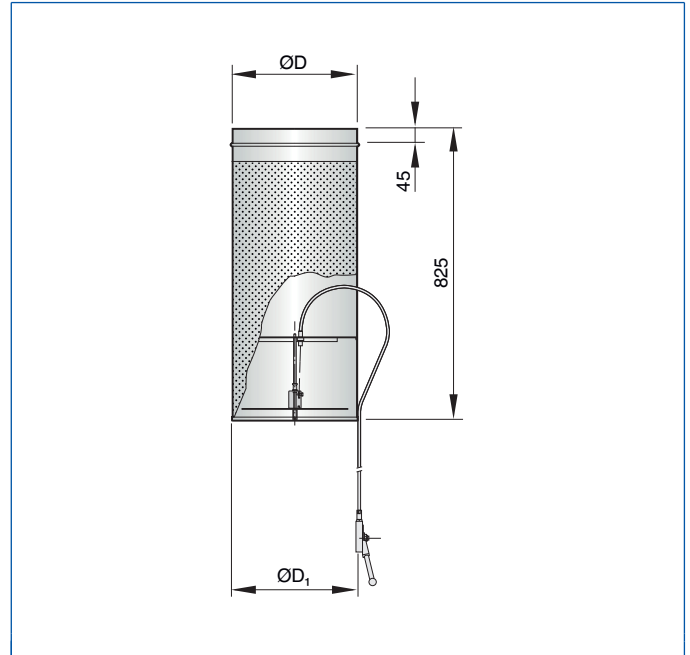


QSH



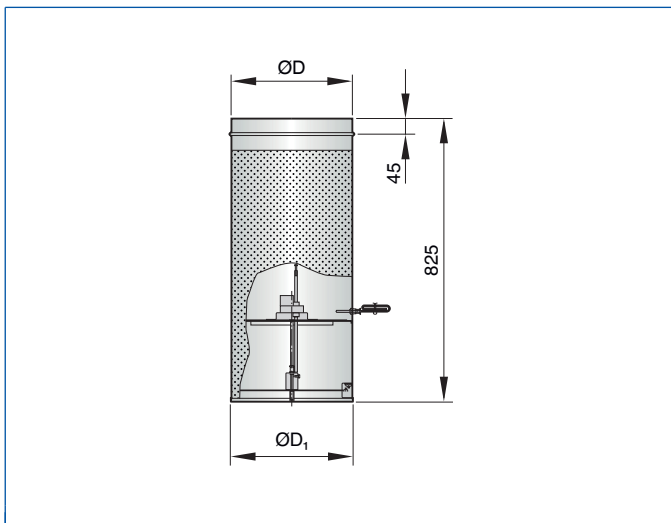
Chain pull for manual adjustment

QSH-B



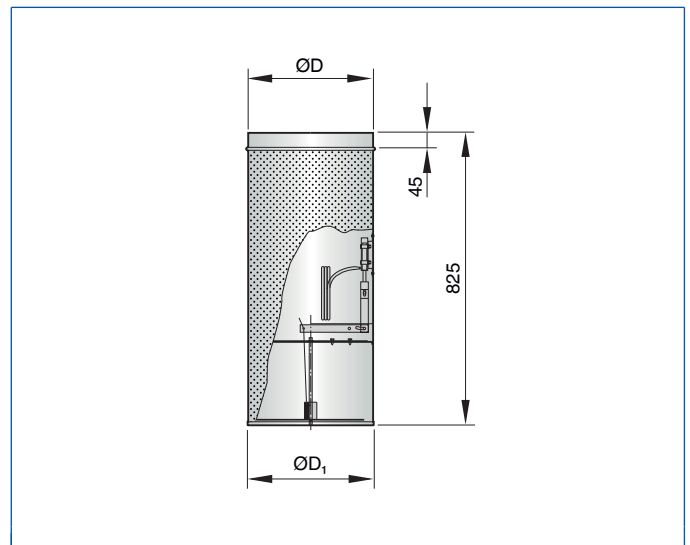
Bowden cable for manual adjustment

QSH-E*



Electric actuator

QSH-T



Thermal actuator

Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	ØD	m
	mm	mm	kg
250	252	248	4.8
355	357	353	7.2
450	452	448	9.9
560	562	558	12.8

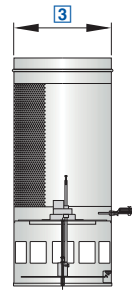
Weight without attachments



Impulse diffusers

	Displacement flow diffusers	Impulse diffusers
	QSH	ISH
Face style		
Circular	●	●
Perforated diffuser face	●	
Perforated diffuser face with additional rectangular air outlets		●
Air control blades		
Air control disc	●	●
Duct connection		
Vertical	●	●
Attachments		
Chain pull for manual adjustment	●	●
Bowden cable for manual adjustment	●	●
Electric actuator	●	●
Thermal actuator	●	●
Accessories		
Wall mount	●	●
Chain fixing	●	●
Nominal sizes		
Diffuser	250, 355, 450, 560	250, 355, 450, 560
Technical data		
Volume flow rate range [l/s]	205 - 1570	205 - 1585
Volume flow rate range [m ³ /h]	738 - 5652	738 - 5706
Supply air to room air temperature difference [K]	-8 - +12	-8 - +12
Explanation		
● - Standard		





For industrial zones without air polluting processes

Order code

ISH – E4 / 450 / W00 / P0 – RAL ...

1 2 3 4 5

1 Type

ISH Impulse diffuser

2 Actuator

No entry: chain pull for manual adjustment

- B** Bowden cable for manual adjustment
- E4** 230 V AC, 3-point
- E5** 24 V AC/DC, 3-point
- E6** 24 V AC/DC, modulating 0 - 10 V DC
- T** Thermal actuator

3 Nominal size [mm]

250, 355, 450, 560

4 Fixing

- No entry: none
- W00** With wall mount
- K00** With chain fixing (only for variants with chain pull)
- WK0** With wall mount and chain fixing (only for variants with chain pull)

5 Exposed surface

- No entry: galvanised
- P0** Powder-coated RAL 9010, pure white
- P1** Powder-coated, specify RAL CLASSIC colour
- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %

+ Features

- Impulse diffusers with horizontal air discharge in cooling mode
 - ▶ Nominal sizes 250, 355, 450, 560 mm
 - ▶ Volume flow rate range 205 - 1585 l/s or 738 - 5706 m³/h
 - ▶ Casing made of galvanised sheet steel
 - ▶ For variable and constant volume flows
 - ▶ Installation either free hanging or on walls or pillars
 - ▶ Large throw distance due to high discharge momentum
 - ▶ Discharge direction can be adjusted manually or with an actuator
 - ▶ Chain pull for adjusting the discharge direction manually

Optional equipment and accessories

- ▶ Exposed diffuser parts in RAL CLASSIC colours
- ▶ Electric and thermal actuators for adjusting the air discharge direction
- ▶ Bowden cable for adjusting the discharge direction manually
- ▶ Wall mount

X Application

- ▶ Type ISH impulse diffusers are used primarily for industrial zones without air polluting work processes
- ▶ Horizontal air discharge in cooling mode, vertical air discharge in heating mode
- ▶ Ventilation of large occupied zones due to high discharge momentum
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -8 to +12 K
- ▶ Installation at heights between 3.5 m and 10 m, either free hanging or on walls or pillars
- ▶ Installation preferably above occupied zones
- ▶ Ideal for use with TDC temperature difference control module

⬡ Attachments

- ▶ Chain pull for manual adjustment, approx. 2.0 m
- ▶ B: Bowden cable for manual adjustment, approx. 2.8 m

- ▶ E*: Electric actuator
- ▶ T: Thermal actuator

& Accessories

- ▶ W00: Wall mount
- ▶ K00: Chain fixing
- ▶ WK0: Wall mount and chain fixing

★ Special characteristics

- ▶ Large throw distance due to high discharge momentum
- ▶ Horizontal or vertical air discharge
- ▶ Free hanging installation above the occupied zone
- ▶ Air discharge direction is adjusted manually or with an electric or thermal actuator

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

📊 Technical data

Nominal sizes	250, 355, 450, 560 mm
Minimum volume flow rate	205 - 785 l/s or 738 - 2826 m ³ /h
Maximum volume flow rate, with L _{WA} ≈ 55 dB(A)	400 - 1585 l/s or 1440 - 5706 m ³ /h
Supply air to room air temperature difference	-8 to +12 K



ISH supply air, horizontal air discharge, sound power level and total differential pressure

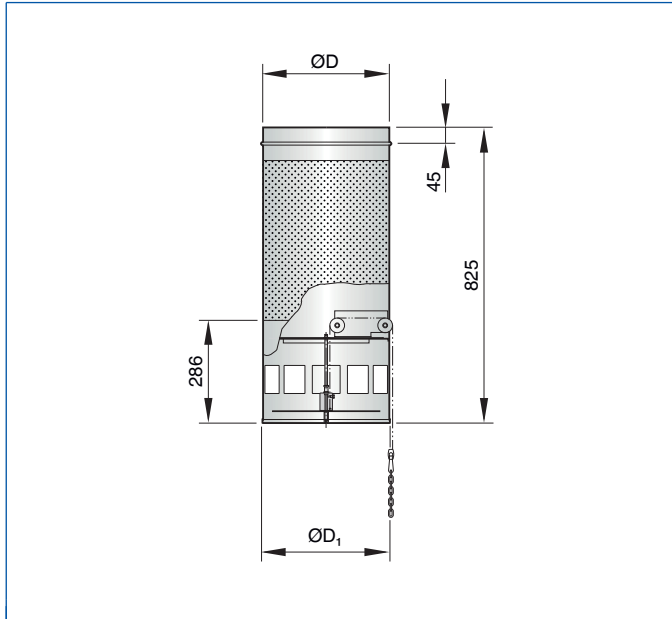
Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
250	205	738	12	34
	270	972	21	43
	340	1224	33	50
	400	1440	46	55
355	335	1206	11	39
	435	1566	18	47
	535	1926	27	54
	565	2034	30	55
450	470	1692	9	30
	625	2250	15	39
	780	2808	24	47
	950	3420	35	55
560	785	2826	14	30
	1050	3780	24	40
	1310	4716	38	48
	1585	5706	55	55

ISH supply air, vertical air discharge, sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
250	205	738	12	39
	255	918	20	46
	300	1080	27	51
	350	1260	37	55
355	315	1134	10	40
	370	1332	14	45
	435	1566	19	50
	515	1854	27	55
450	430	1548	9	36
	530	1908	13	43
	630	2268	19	49
	730	2628	25	55
560	600	2160	9	34
	795	2862	16	43
	985	3546	24	50
	1180	4248	35	55

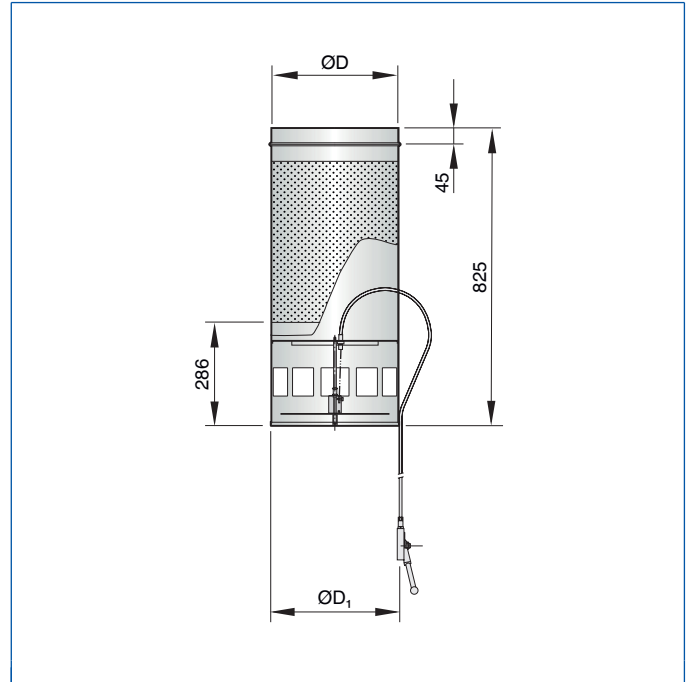


ISH



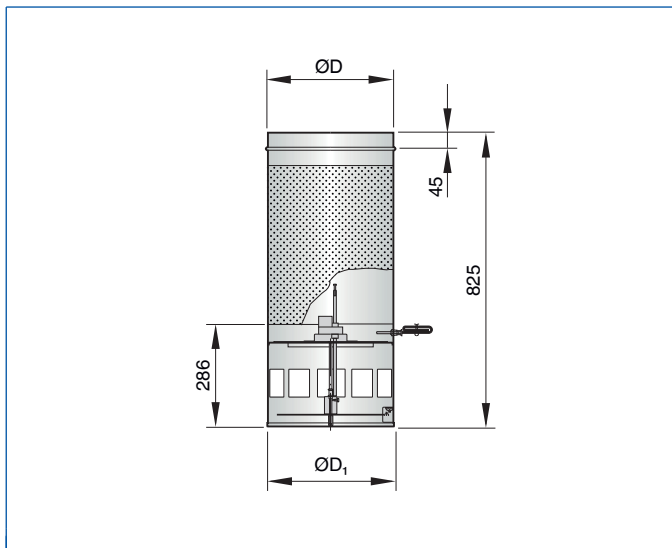
Chain pull for manual adjustment

ISH-B



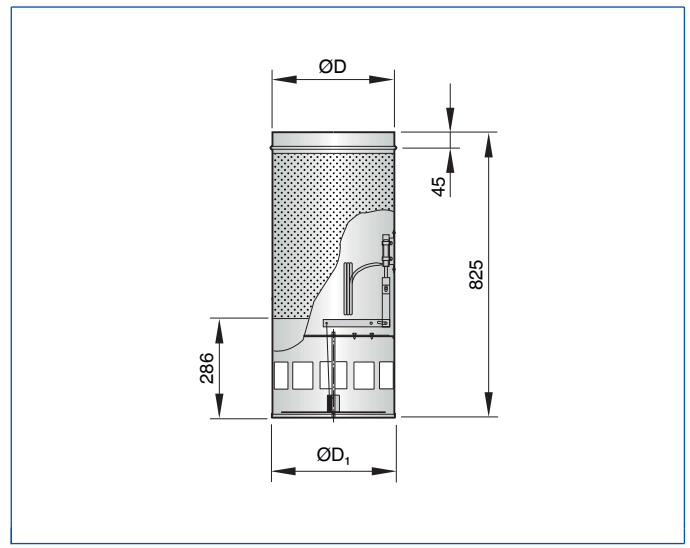
Bowden cable for manual adjustment

ISH-E*



Electric actuator

ISH-T



Thermal actuator

Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	ØD	m
	mm	mm	kg
250	252	248	5.0
355	357	353	7.4
450	452	448	10.1
560	562	558	13.1



Nozzles

	Nozzles	
	TJN	DUK
Nozzle		
Adjustable	●	●
Fixed		●
Plastic	●	
Aluminium		●
Connection		
Installation in circular ducts	●	●
Installation on rectangular ducts	●	●
Installation on circular ducts	●	●
Installation in plain surfaces (without duct)	●	●
Adjustment		
Manually	●	●
Electric actuator	●	●
Thermal actuator	●	
Attachments		
Outer casing	●	
Accessories		
Throw distance reduction	●	
Nominal sizes		
[mm]	160, 200, 250, 315, 400	100, 125, 160, 200, 250, 315, 400
Technical data		
Volume flow rate range [l/s]	20 - 1000	15 - 1000
Volume flow rate range [m ³ /h]	72 - 3600	54 - 3600
Supply air to room air temperature difference [K]	-12 - +20	-12 - +20
Explanation		
● - Standard		



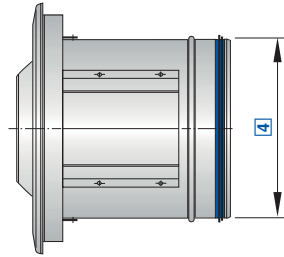


List of abbreviations

L_{WA} [dB(A)]	A-weighted sound power level of air-regenerated noise
\dot{V} [m ³ /h] and [l/s]	Volume flow rate
Δt_z [K]	Supply air to room air temperature difference, i.e. supply air temperature minus room temperature
Δp_t [Pa]	Total differential pressure
A_{eff} [m ²]	Effective air discharge area
$\varnothing D$ [mm]	Outer diameter of the spigot
$\varnothing D_1$ [mm]	Outer diameter of a circular diffuser face
$\varnothing D_2$ [mm]	Diameter of a circular diffuser face style
$\varnothing D_3$ [mm]	Diameter of a circular plenum box
Q_1 [mm]	Outer diameter of a square diffuser face
Q_2 [mm]	Dimensions of a square diffuser face style
Q_3 [mm]	Dimensions of a square plenum box
H_1 [mm]	Distance (height) from the lower edge of the suspended ceiling to the lower edge of the diffuser face
H_2 [mm]	Height of a ceiling diffuser, from the lower edge of the suspended ceiling to the upper edge of the spigot
H_3 [mm]	Height of a ceiling diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box or of the spigot
A [mm]	Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling
C [mm]	Length of the spigot
m [kg]	Weight

All sound power levels are based on 1 pW.





Acoustically and technically optimised, for installation in walls and on rectangular and circular ducts, adjustable - made of plastic

Order code

TJN - R - E7 / 160 - 315 / C / D / S1

1 2 3 4 5 6 7 8

1 Type

TJN Adjustable jet nozzle

2 Connection piece

No entry: none

K For rectangular ducts

R For circular ducts (saddle connector), specify duct diameter under **5**

3 Actuator

No entry: manual adjustment

E7 230 V AC, 3-point

E8 24 V AC/DC, 3-point

E9 24 V AC/DC, modulating 2 - 10 V DC

T1 Thermal actuator

4 Nominal size [mm]

160, 200, 250, 315, 400

5 Circular duct diameter [mm]

Specify only for variant -R

315 Only for nominal size 160

500 Only up to nominal size 315

630, 800

6 Attachments

No entry: none

C Outer casing

7 Accessories

No entry: none

D Swirl unit and cap for throw distance reduction

8 Exposed surface

No entry: RAL 9010, pure white

S1 Similar to RAL 9006, white aluminium



+ Features

The new TJN jet nozzle offers improved acoustic properties and is also more energy-efficient

- ▶ Nominal sizes: 160, 200, 250, 315 and 400 mm
- ▶ Volume flow rate range 20 - 1000 l/s or 72 - 3600 m³/h
- ▶ Visible parts made of high-grade polymer in RAL white aluminium or pure white
- ▶ Optimised nozzle contours
- ▶ Discharge angle indication, discharge angle limiting and setting from -30 to +30° on a concealed scale
- ▶ Easy to remove face cover ring with bayonet fixing

Optional equipment and accessories

- ▶ 5 nominal sizes, each with a circular spigot or, as an option, with a connection piece for circular or rectangular ducts
- ▶ Swirl unit with acoustically optimised air control blades with unique saw tooth edges and cap for two-step reduction of the throw distance
- ▶ External electric actuator of compact height
- ▶ Electric actuator allows for integration with the central BMS
- ▶ Internal thermal actuator with shape memory alloy for the self-powered adjustment of the discharge angle
- ▶ All variants also available with outer casing

X Application

- ▶ Type TJN jet nozzles for supply air discharge, with a long throw distance
- ▶ For production halls, gymnasiums, theatres and conference rooms as well as for large internal spaces in airports, railway stations and shopping centres
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ For supply air to room air temperature differences from -12 to +20 K
- ▶ Adjustable discharge angle, from -30 to +30°, for switching between heating and cooling mode
- ▶ For push fitting directly onto circular ducts or as a branch off circular or rectangular ducts

◊ Variants

Connection

- ▶ For circular ducts (direct connection)
- ▶ **K**: For rectangular ducts
- ▶ **R**: For circular ducts

Actuator

- ▶ Manual adjustment
- ▶ **E***: Electric actuator
- ▶ **T1**: Thermal actuator

⬡ Attachments

- ▶ **C**: Outer casing

& Accessories

- ▶ Swirl unit and cap for throw distance reduction

⊕ Useful additions

- ▶ TDC temperature difference control module

★ Special characteristics

- ▶ Easy to remove face cover ring with bayonet fixing
- ▶ Swirl unit with acoustically optimised air control blades with unique saw tooth edges and cap for two-step reduction of the throw distance
- ▶ Discharge angle indication, discharge angle limiting and setting from -30 to +30° on a concealed scale
- ▶ Electric or thermal actuator as options

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135





Technical data

Nominal sizes	160, 200, 250, 315, 400 mm
Volume flow rate range	20 - 1000 l/s or 72 - 3600 m ³ /h
Adjustable discharge angle	-30 to +30°
Supply air to room air temperature difference	-12 to +20 K

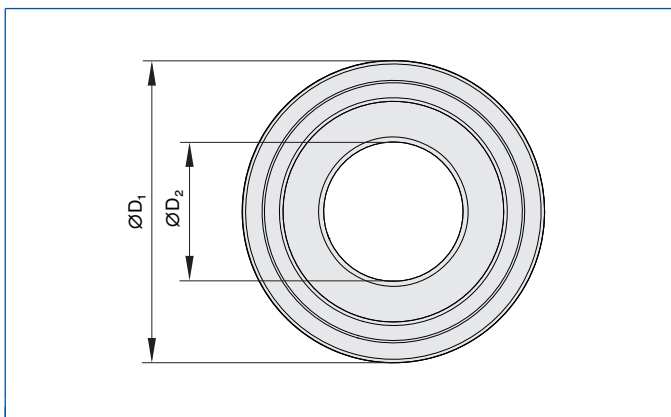
TJN, sound power level and total differential pressure

Nominal size	Volume flow rate l/s	Volume flow rate m ³ /h	Δp_t Pa	L_{WA} dB(A)	v_L	
					0.5 m/s	1.0 m/s
					L m	
160	20	72	9	<15	<5	<5
	40	144	34	<15	8	<5
	60	216	76	15	13	6
	80	288	135	26	17	8
200	35	126	9	<15	6	<5
	70	252	35	<15	11	6
	105	378	78	19	17	9
	140	504	138	30	23	11
250	55	198	8		7	<5
	110	396	33	<15	14	7
	165	594	75	21	21	11
	220	792	132	33	28	14
315	90	324	8	<15	9	<5
	185	666	35	<15	18	9
	265	954	71	24	26	13
	360	1296	132	36	>30	18
400	155	558	8	<15	12	6
	310	1116	33	<15	24	12
	465	1674	75	27	>30	18
	620	2232	133	38	>30	24

All values apply to discharge angle 0°

L: Throw distance with isothermal operation, no throw distance reduction

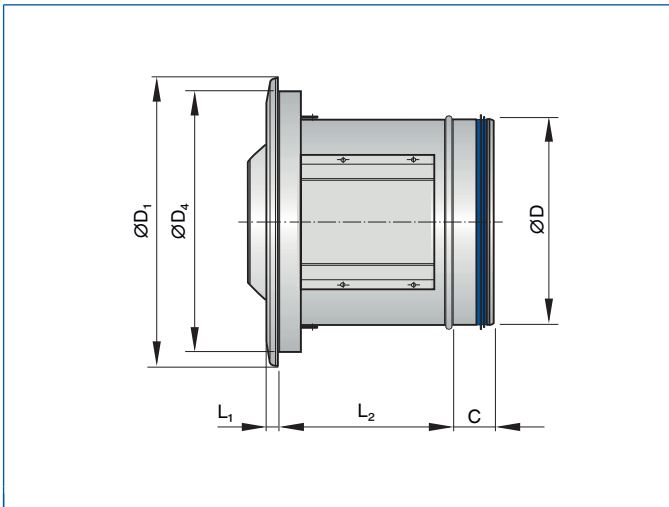
TJN front view



Dimensions [mm]

Nominal size	$\varnothing D_1$	$\varnothing D_2$	A_{eff} m ²
	mm	mm	
160	258	82	0.00500
200	298	108	0.00850
250	348	136	0.01350
315	413	174	0.02250
400	501	231	0.03850

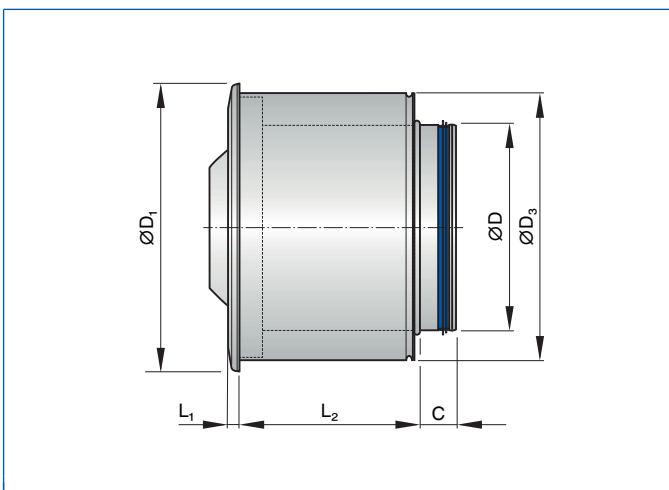
TJN



Dimensions [mm] and weight [kg]

Nominal size	TJN		TJN-E*		TJN-T1		$\varnothing D_1$ mm	L_1 mm	$\varnothing D_4$ mm	$\varnothing D$ mm	C mm
	L_2	m	L_2	m	L_2	m					
	mm	kg	mm	kg	mm	kg					
160	192	1.9	192	2.1	252	2.3	258	15	227	158	50
200	200	2.3	200	2.5	260	2.8	298	14	263	198	50
250	210	3.1	210	3.3	270	3.7	348	14	315	248	50
315	225	4.0	225	4.2	285	4.8	413	15	379	313	50
400	235	4.6	235	4.8	295	5.5	501	16	468	398	50

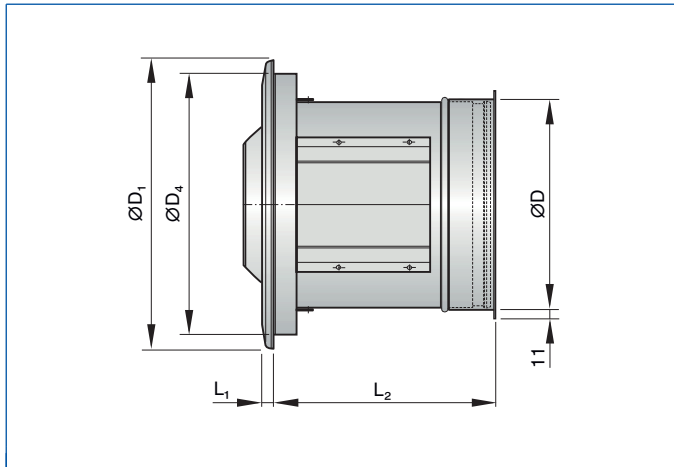
TJN.../C



Dimensions [mm] and weight [kg]

Nominal size	TJN/.../C		TJN-E*/.../C		TJN-T1/.../C		ØD ₁ mm	L ₁ mm	ØD ₃ mm	ØD mm	C mm
	L ₂ mm	m kg	L ₂ mm	m kg	L ₂ mm	m kg					
160	192	2.7	192	2.9	252	3.4	258	15	228	158	50
200	200	3.4	200	3.6	260	4.2	298	14	265	198	50
250	210	4.4	210	4.6	270	5.3	348	14	316	248	50
315	225	5.8	225	6.0	285	7.0	413	15	381	313	50
400	235	8.0	235	8.2	295	9.5	501	16	469	398	50

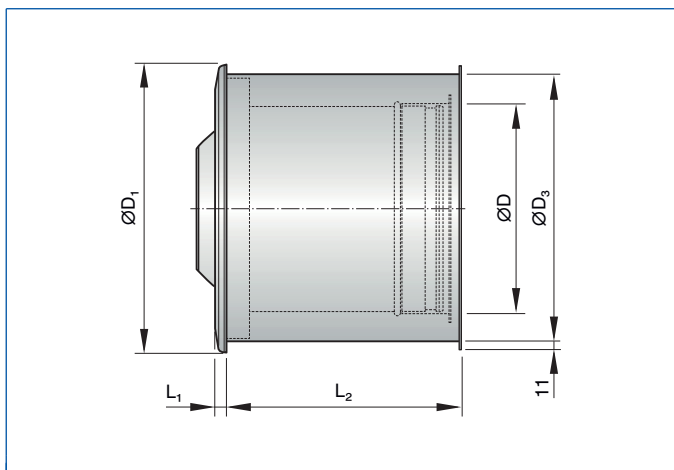
TJN-K



Dimensions [mm]

Nominal size	TJN-K		TJN-K-T1		TJN-E*/.../C		ØD ₁ mm	L ₁ mm	ØD ₄ mm	ØD mm	C mm
	L ₂ mm	m kg	L ₂ mm	m kg	L ₂ mm	m kg					
160	248	2.1	308	2.5	248	2.3	258	15	227	158	50
200	257	3.2	317	3.7	257	3.4	298	14	263	198	50
250	265	3.4	325	4.0	265	3.6	348	14	315	248	50
315	281	4.6	341	5.4	281	4.8	413	15	379	313	50
400	292	6.5	352	7.4	292	6.7	501	16	468	398	50

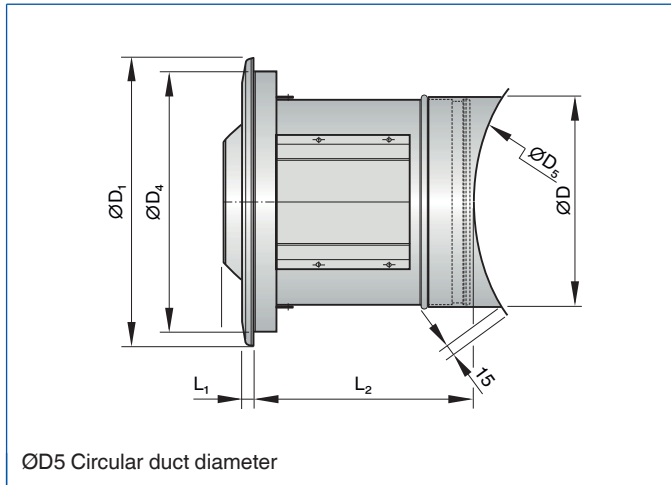
TJN-K/.../C



Dimensions [mm]

Nominal size	TJN-K-.../C		TJN-K-E*.../C		TJN-K-T1.../C		ØD ₁ mm	L ₁ mm	ØD ₃ mm	ØD mm	C mm
	L ₂ mm	m kg	L ₂ mm	m kg	L ₂ mm	m kg					
160	258	3.5	258	3.7	318	4.2	258	15	228	158	50
200	267	4.3	267	4.5	327	5.1	298	14	265	198	50
250	276	5.5	276	5.7	336	6.4	348	14	316	248	50
315	291	7.2	291	7.4	351	8.4	413	15	381	313	50
400	302	9.9	302	10.1	362	11.4	501	16	469	398	50

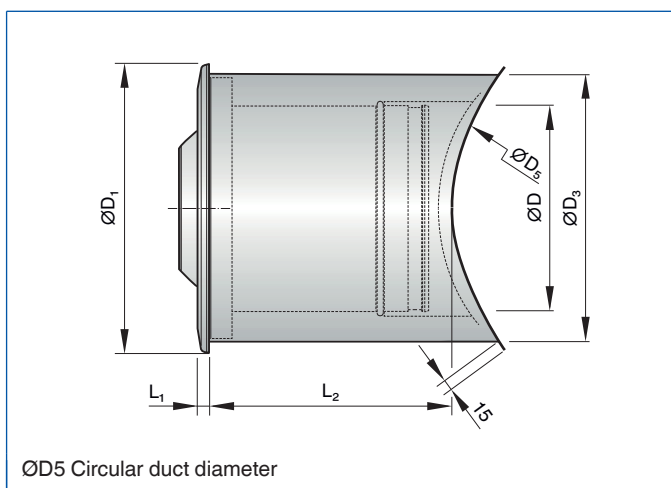
TJN-R



Dimensions [mm]

Nominal size	TJN-R		TJN-R-E*		TJN-R-T1		ØD ₁ mm	L ₁ mm	ØD ₄ mm	ØD mm	C mm
	L ₂ mm	m kg	L ₂ mm	m kg	L ₂ mm	m kg					
160	248	2.1	248	2.3	308	2.5	258	15	227	158	50
200	257	3.2	257	3.4	317	3.7	298	14	263	198	50
250	265	3.4	265	3.6	325	4.0	348	14	315	248	50
315	281	4.6	281	4.8	341	5.4	413	15	379	313	50
400	292	6.5	292	6.7	352	7.4	501	16	468	398	50

TJN-R-.../C



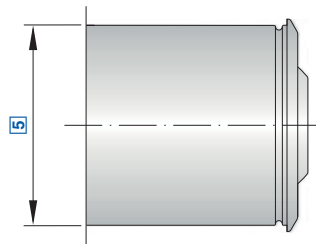
Dimensions [mm]

Nominal size	TJN-R/.../C		TJN-R-E*/.../C		TJN-R-T1/.../C		ØD ₁ mm	L ₁ mm	ØD ₃ mm	ØD mm	C mm
	L ₂ mm	m kg	L ₂ mm	m kg	L ₂ mm	m kg					
160	261	3.5	261	3.7	321	4.2	258	15	228	158	50
200	270	4.3	270	4.5	330	5.1	298	14	265	198	50
250	279	5.5	279	5.7	339	6.4	348	14	316	248	50
315	294	7.2	294	7.4	354	8.4	413	15	381	313	50
400	305	9.9	305	10.1	365	11.4	501	16	469	398	50

Circular duct diameter ØD5 [mm]

Nominal size	315	500	630	800
160		+	+	+
200			+	+
250			+	+
315			+	+
400				+





For installation into walls and onto rectangular and circular ducts, adjustable and fixed - made of aluminium

Order code

DUK - V - R - E1 / 250 - 630 / P1 - RAL ...

1 2 3 4 5 6 7

1 Type

DUK Jet nozzle

2 Discharge direction

F Fixed
V Adjustable

3 Connection

Only for variant V

A No entry: without spigot
Spigot to fit onto the end of circular ducts
K Spigot to fit onto rectangular ducts
R Saddle connector, specify duct diameter under **6**

4 Adjustment

No entry: manual adjustment

From nominal size 160
External electric actuator

E1 230 V AC, 3-point
E2 24 V AC/DC, 3-point
E3 24 V AC/DC, modulating 2 - 10 V DC

5 Nominal size [mm]

100, 125, 160, 200, 250, 315, 400

6 Circular duct diameter [mm]

Specify only for variant -R

200 Only for nominal size 100
250 Only for nominal size 125
315 Only for nominal size 160

500 Only for nominal sizes 160 -315
630 From nominal size 160
800 From nominal size 160

7 Exposed surface

No entry: untreated
P0 Powder-coated RAL 9010, pure white
P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %



+ Features

Adjustable and fixed jet nozzles achieve long throw distances and have excellent acoustic properties

- ▶ Nominal sizes: 100, 125, 160, 200, 250, 315 and 400 mm
- ▶ Volume flow rate range: 15 to 400 l/s or 54 to 1440 m³/h
- ▶ Visible parts made of aluminium
- ▶ For variable and constant volume flows
- ▶ Low sound power levels due to aerodynamically optimised nozzle contours
- ▶ Discharge angle can be adjusted manually or with an actuator
- ▶ Quick and easy to fix, concealed fixing

Optional equipment and accessories

- ▶ Exposed surface in RAL CLASSIC colours
- ▶ Circular spigot
- ▶ Connection pieces for circular and rectangular ducts
- ▶ Internal or external actuators for adjusting the discharge angle

Application

- ▶ Type DUK jet nozzles for supply air discharge, with a long throw distance
- ▶ For production halls, gymnasiums, theatres and conference rooms as well as for large internal spaces in airports, railway stations and shopping centres
- ▶ Attractive design element for building owners and architects with demanding aesthetic requirements
- ▶ For supply air to room air temperature differences from -12 to +20 K
- ▶ Adjustable discharge angle, from -30 to +30°, for switching between heating and cooling mode
- ▶ For push fitting directly onto circular ducts or as a branch off circular or rectangular ducts; also for installation into walls and bulkheads

Variants

- ▶ **F**: Fixed jet nozzle
- ▶ **V**: Adjustable jet nozzle

Connection

- ▶ **V-A**: For circular ducts (direct connection)

- ▶ **V-K**: For rectangular ducts
- ▶ **V-R**: For circular ducts

Actuator

- ▶ Manual adjustment
- ▶ **E***: External electric actuator

+ Useful additions

- ▶ TDC temperature difference control module

★ Special characteristics

- ▶ High discharge momentum, hence large penetration depth in heating mode
- ▶ Optimised nozzle contours
- ▶ Fixed and adjustable variants
- ▶ Discharge angle can be adjusted from -30° to +30°, either manually or with an actuator
- ▶ Electric actuator as an option

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135





Technical data

Nominal sizes	100, 125, 160, 200, 250, 315, 400 mm
Volume flow rate range	15 - 400 l/s or 54 - 1440 m ³ /h
Adjustable discharge angle	-30 to +30°
Supply air to room air temperature difference	-12 to +20 K

DUK-V, DUK-V-A, DUK-V-A-(E1, E2, E3), DUK-V-K, DUK-V-K-(E1, E2, E3), DUK-V-R, DUK-V-R-(E1, E2, E3), sound power level and total differential pressure

Nominal size	Volume flow rate		Δp_t	L_{WA}	v_L	
	l/s	m ³ /h			0.5 m/s	1.0 m/s
					L	
				m		
100	8	28	11	<15	<5	<5
	15	54	38	<15	5	<5
	20	72	68	<15	7	<5
	30	108	152	30	10	5
125	15	54	13	<15	<5	<5
	30	108	49	<15	8	<5
	45	162	110	31	12	6
	60	216	196	42	16	8
160	20	72	9	<15	<5	<5
	40	144	36	<15	8	<5
	60	216	81	19	13	6
	80	288	144	30	17	8
200	35	126	10	<15	6	<5
	70	252	37	<15	11	6
	105	378	82	23	17	9
	140	504	145	35	23	11
250	55	198	9	<15	7	<5
	110	396	35	<15	14	7
	165	594	77	22	21	11
	220	792	137	34	28	14
315	90	324	9	<15	9	<5
	185	666	37	<15	18	9
	265	954	75	23	26	13
	360	1296	137	35	>30	18
400	155	558	6	<15	12	6
	310	1116	34	<15	24	12
	465	1674	75	29	>30	18
	620	2232	133	40	>30	24

All values apply to discharge angle 0°

L: Throw distance with isothermal operation

DUK-F, sound power level and total differential pressure

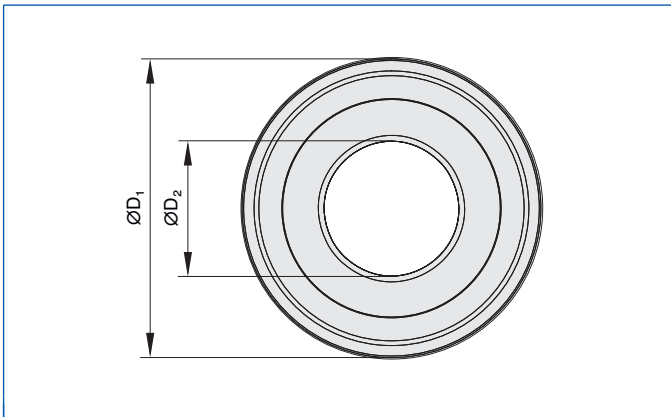
Nominal size	Volume flow rate		Δp_t	L_{WA}	v_L	
	l/s	m ³ /h			0.5 m/s	1.0 m/s
					L	
				m		
100	8	28	6	<15	3	<5
	15	54	33	<15	5	<5
	20	72	61	<15	7	4
	30	108	142	19	11	5
125	15	54	10	<15	4	<5
	30	108	52	<15	9	<5
	45	162	122	16	13	6
	60	216	220	26	17	9



Nominal size	Volume flow rate		Δp_t	L_{WA}	v_L		
	I/s	m ³ /h			0.5 m/s	1.0 m/s	
			Pa	dB(A)	L		
						m	
160	20	72	5	<15	4	<5	
	40	144	31	<15	9	<5	
	60	216	74	<15	13	7	
	80	288	134	20	17	9	
200	35	126	6	<15	6	<5	
	70	252	33	<15	12	6	
	105	378	79	<15	17	9	
	140	504	143	24	23	12	
250	55	198	6	<15	7	<5	
	110	396	34	<15	14	<5	
	165	594	80	18	22	11	
	220	792	145	28	29	14	
315	90	324	6	<15	9	5	
	185	666	36	<15	19	10	
	265	954	77	22	27	14	
	360	1296	145	33	37	19	
400	155	558	6	<15	12	6	
	310	1116	34	17	24	12	
	465	1674	81	30	35	18	
	620	2232	148	40	>30	24	

L: Throw distance with isothermal operation

DUK-V front view

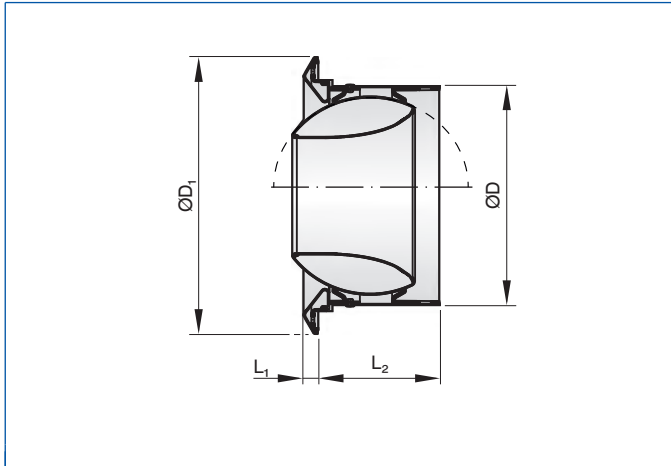


Dimensions [mm]

Nominal size	ØD_1	ØD_2	A_{eff}
	mm	mm	
100	146	50	0.00190
125	169	64	0.00310
160	200	82	0.00500
200	257	108	0.00850
250	302	136	0.01350
315	384	174	0.02250
400	467	230	0.03850



DUK-V

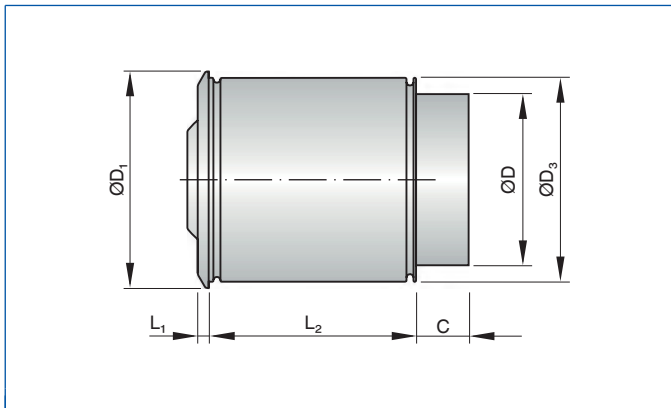


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁ mm	L ₁ mm	L ₂ mm	ØD mm	m kg
100	146	11	76	98	0.4
125	169	11	85	123	0.5
160	200	11	94	158	0.8
200	257	16	110	198	1.4
250	302	16	146	248	2.5
315	384	23	153	313	4.0
400	467	24	177	398	6.0



DUK-V-A

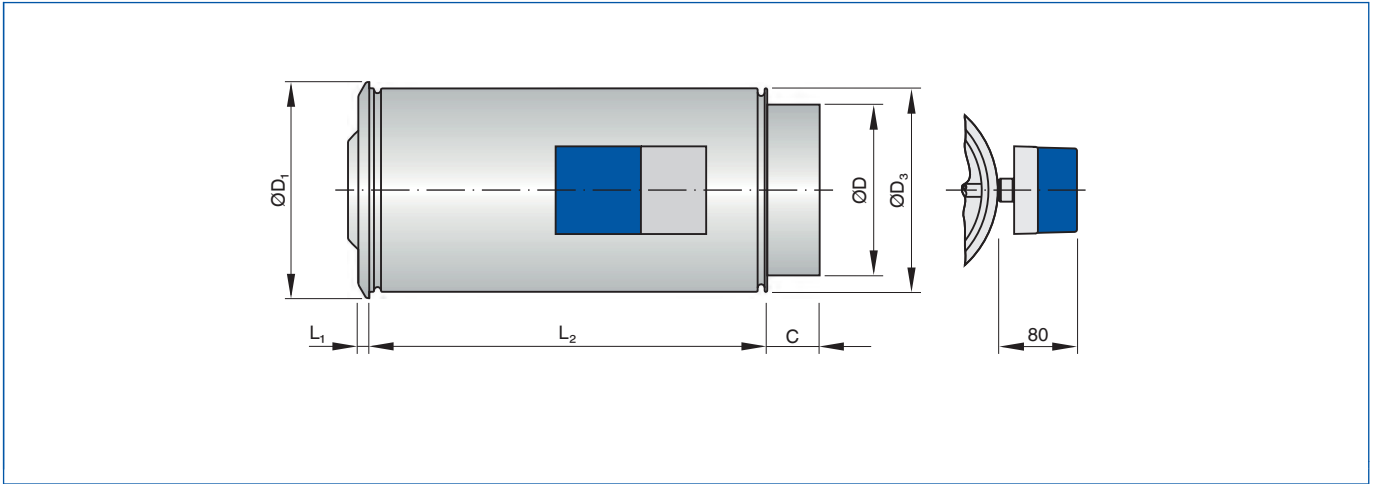


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁ mm	L ₁ mm	L ₂ mm	ØD ₃ mm	ØD mm	C mm	m kg
100	146	11	84	134	98	50	0.8
125	169	11	94	157	123	50	1.0
160	200	11	114	188	158	50	1.6
200	257	16	143	242	198	50	2.5
250	302	16	172	287	248	50	4.0
315	384	23	223	358	313	50	6.0
400	467	24	262	441	398	50	9.0



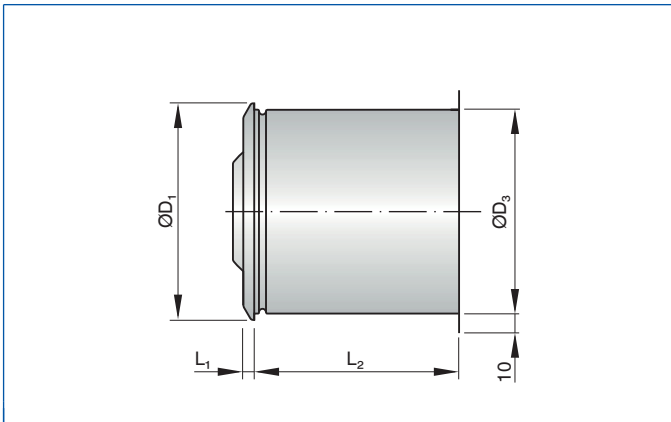
DUK-V-A-E1, DUK-V-A-E2, DUK-V-A-E3



Dimensions [mm] and weight [kg]

Nominal size	$\text{Ø}D_1$ mm	L_1 mm	L_2 mm	$\text{Ø}D_3$ mm	$\text{Ø}D$ mm	C mm	m kg
160	200	11	365	188	158	50	3.0
200	257	16	365	242	198	50	4.0
250	302	16	365	287	248	50	5.5
315	384	23	365	358	313	50	7.5
400	467	24	365	441	398	50	10.2

DUK-V-K

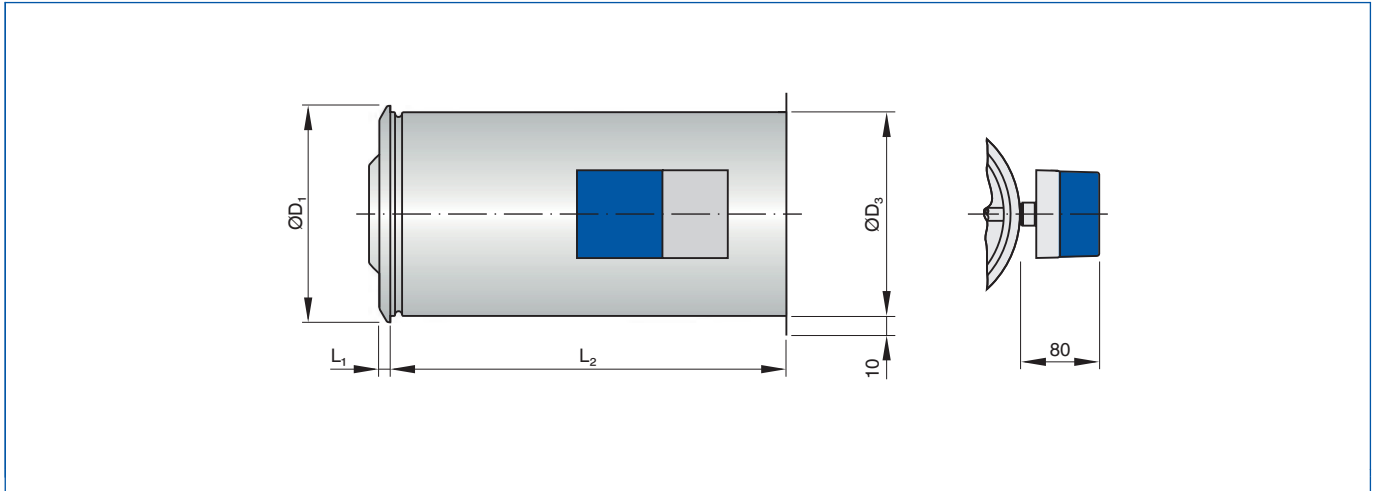


Dimensions [mm] and weight [kg]

Nominal size	$\text{Ø}D_1$ mm	L_1 mm	L_2 mm	$\text{Ø}D_3$ mm	C mm	m kg
100	146	11	84	134	50	0.8
125	169	11	94	157	50	1.0
160	200	11	114	188	50	1.5
200	257	16	143	242	50	2.3
250	302	16	172	287	50	4.0
315	384	23	223	358	50	6.0
400	467	24	262	441	50	9.0



DUK-V-K-E1, DUK-V-K-E2, DUK-V-K-E3

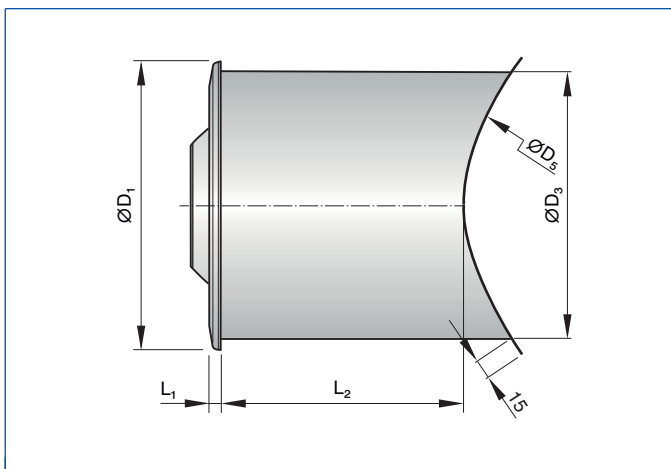


Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	L ₁	L ₂	ØD ₃	C	m
	mm	mm	mm	mm	mm	kg
160	200	11	365	188	50	3.0
200	257	16	365	242	50	4.0
250	302	16	365	287	50	5.5
315	384	23	365	358	50	7.5
400	467	24	365	441	50	10.0



DUK-V-R



Dimensions [mm] and weight [kg]

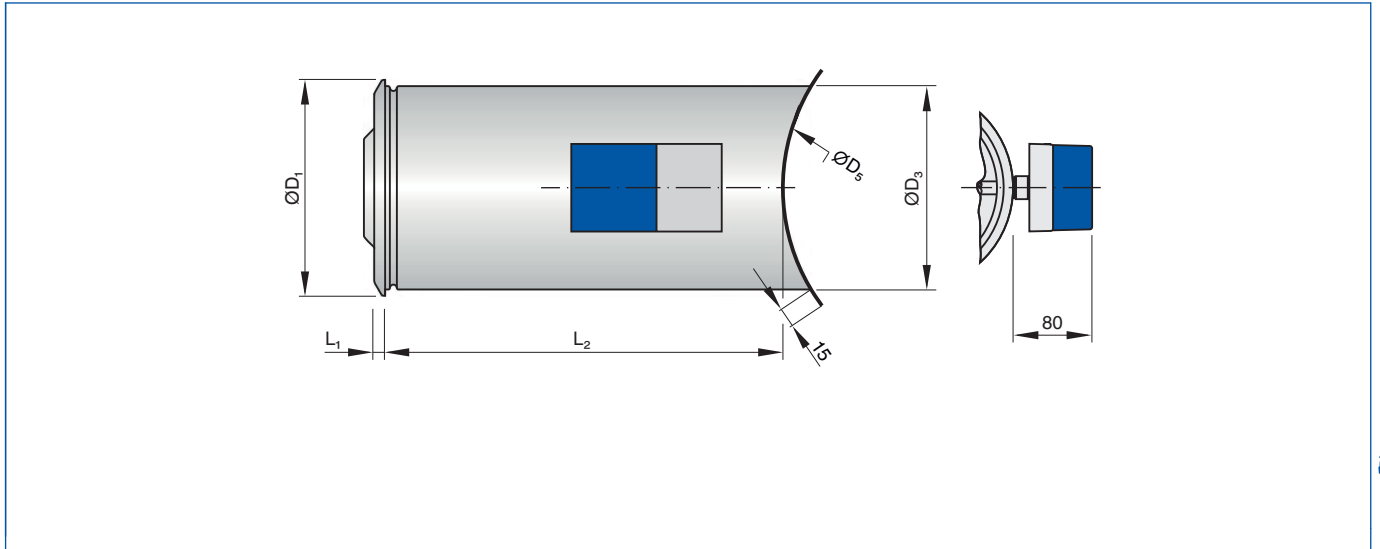
Nominal size	ØD ₁	L ₁	L ₂	ØD ₃	C	m
	mm	mm	mm	mm	mm	kg
100	146	11	84	134	50	0.7
125	169	11	94	157	50	0.9
160	200	11	114	188	50	1.3
200	257	16	143	242	50	2.2
250	302	16	172	287	50	3.7
315	384	23	223	358	50	5.9
400	467	24	262	441	50	8.7



Circular duct diameter ØD5 [mm]

	200	250	315	500	630	800
Nominal size						
100	+					
125		+				
160			+	+	+	+
200				+	+	+
250				+	+	+
315				+	+	+
400					+	+

DUK-V-R-E1, DUK-V-R-E2, DUK-V-R-E3



Dimensions [mm] and weight [kg]

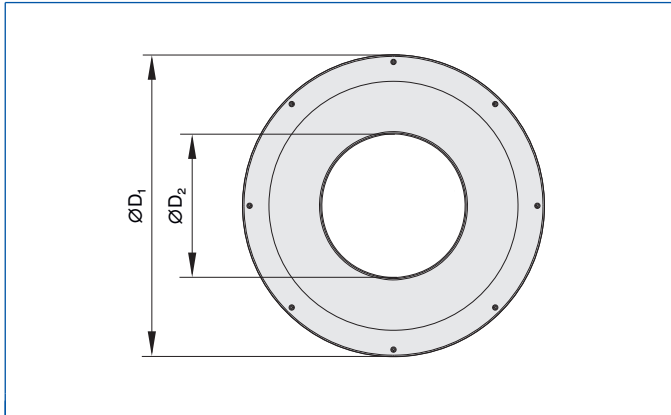
Nominal size	ØD ₁	L ₁	L ₂	ØD ₃	C	m
	mm	mm	mm	mm	mm	kg
160	200	11	365	188	50	3.2
200	257	16	365	242	50	4.4
250	302	16	365	287	50	5.7
315	384	23	365	358	50	8.0
400	467	24	365	441	50	11.5

Circular duct diameter ØD5 [mm]

	200	250	315	500	630	800
Nominal size						
100	+					
125		+				
160			+	+	+	+
200				+	+	+
250				+	+	+
315				+	+	+
400					+	+



DUK-F front view

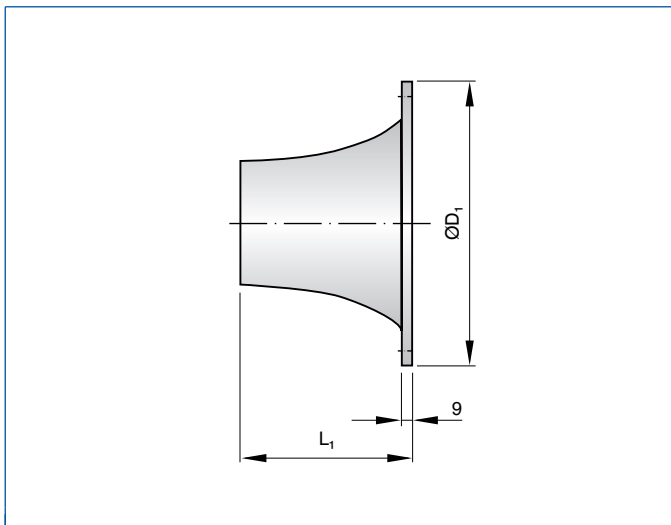


Dimensions [mm]

Nominal size	ØD ₁	ØD ₂	A _{eff}
	mm	mm	m ²
100	138	50	0.00174
125	161	64	0.00277
160	225	82	0.00469
200	265	108	0.00813
250	315	136	0.01289
315	400	174	0.02110
400	485	230	0.03683



DUK-F



Dimensions [mm] and weight [kg]

Nominal size	ØD ₁	L ₁	m
	mm	mm	kg
100	138	94	0.1
125	161	112	0.1
160	225	122	0.2
200	265	153	0.3
250	315	187	0.4
315	400	224	0.6
400	485	287	0.9



Disc valves

	Disc valves	
	LVS	Z-LVS
Face style		
Circular	●	●
Air control blades		
Air control disc		●
Nominal sizes		
Diffuser	100, 125, 160, 200	100, 125, 160, 200
Technical data		
Volume flow rate range [l/s]	10 - 50	10 - 90
Volume flow rate range [m ³ /h]	36 - 180	36 - 324
Supply air to room air temperature difference [K]		-8 - +12
Explanation		
● - Standard		



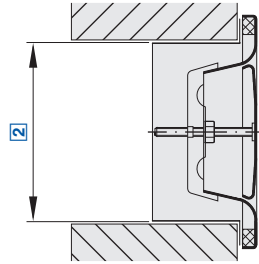


List of abbreviations

L_{WA} [dB(A)]	A-weighted sound power level of air-regenerated noise
\dot{V} [m ³ /h] and [l/s]	Volume flow rate
Δt_z [K]	Supply air to room air temperature difference, i.e. supply air temperature minus room temperature
Δp_t [Pa]	Total differential pressure
A_{eff} [m ²]	Effective air discharge area
$\varnothing D$ [mm]	Outer diameter of the spigot
$\varnothing D_1$ [mm]	Outer diameter of a circular diffuser face
$\varnothing D_2$ [mm]	Diameter of a circular diffuser face style
$\varnothing D_3$ [mm]	Diameter of a circular plenum box
Q_1 [mm]	Outer diameter of a square diffuser face
Q_2 [mm]	Dimensions of a square diffuser face style
Q_3 [mm]	Dimensions of a square plenum box
H_1 [mm]	Distance (height) from the lower edge of the suspended ceiling to the lower edge of the diffuser face
H_2 [mm]	Height of a ceiling diffuser, from the lower edge of the suspended ceiling to the upper edge of the spigot
H_3 [mm]	Height of a ceiling diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box or of the spigot
A [mm]	Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling
C [mm]	Length of the spigot
m [kg]	Weight

All sound power levels are based on 1 pW.





For extract air



Order code

LVS / 160

1 2

1 Type

LVS Extract air valve

2 Nominal size [mm]

100, 125, 160, 200



Features

Circular disc valves with manually adjustable annular gap

- ▶ Nominal sizes 100, 125, 160, 200 mm
- ▶ Volume flow rate range 10 - 50 l/s or 36 - 180 m³/h
- ▶ Diffuser face made of formed sheet steel, powder-coated
- ▶ For variable and constant volume flows
- ▶ For ceiling and wall installation

▶ Easy to install

▶ Volume flow rate balancing by simply turning the valve disc

▶ Inexpensive solution for small rooms



Application

- ▶ Type LVS disc valves are used as extract air devices in small rooms
- ▶ For variable and constant volume flows
- ▶ For walls and suspended ceilings



Special characteristics

- ▶ Continuous volume flow rate balancing by turning the valve disc
- ▶ Easy to install



Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135



Technical data

Nominal sizes	100, 125, 160, 200 mm
Minimum volume flow rate	10 - 25 l/s or 36 - 90 m ³ /h
Maximum volume flow rate	25 - 50 l/s or 90 - 180 m ³ /h

LVS/100, LVS/125, sound power level and total differential pressure

Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Gap width					
			5 mm		0 mm		-5 mm	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
100	10	36	8	<15	14	<15	30	16
	15	54	19	<15	32	19	67	26
	20	72	33	22	56	27	119	33
	25	90	52	28	88	32	186	39
125	15	54	9	<15	13	<15	22	<15
	20	72	15	<15	23	<15	40	19
	25	90	24	<15	36	18	62	24
	30	108	35	18	52	23	90	29



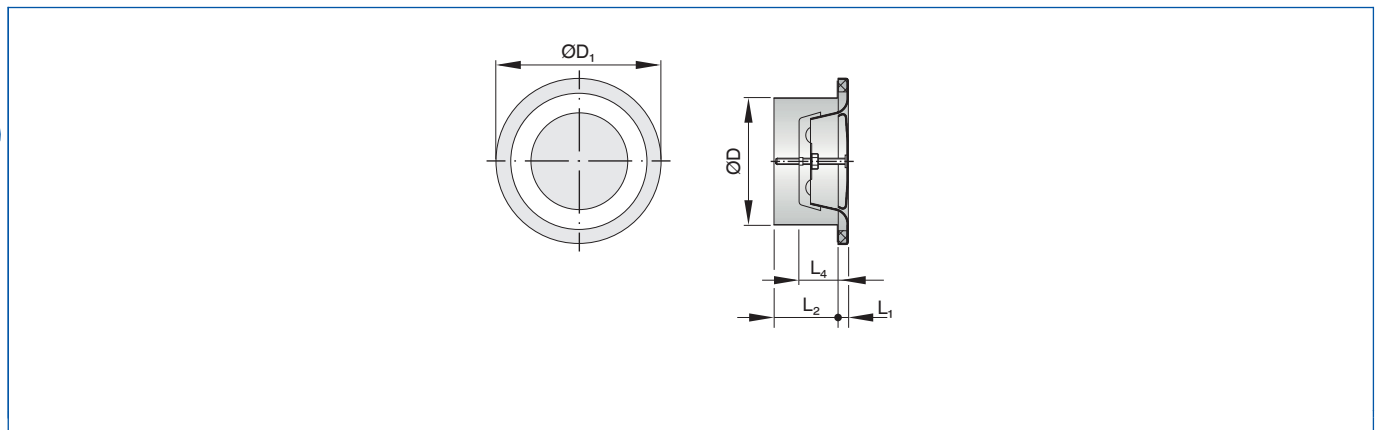
LVS/160, sound power level and total differential pressure

Nominal size	\dot{V}	\dot{V}	Gap width					
			5 mm		-5 mm		-10 mm	
	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}		
	l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
160	20	100	9	<15	24	<15	43	17
	25	90	14	<15	38	18	67	24
	30	108	20	<15	55	23	96	29
	35	126	27	16	75	27	131	34

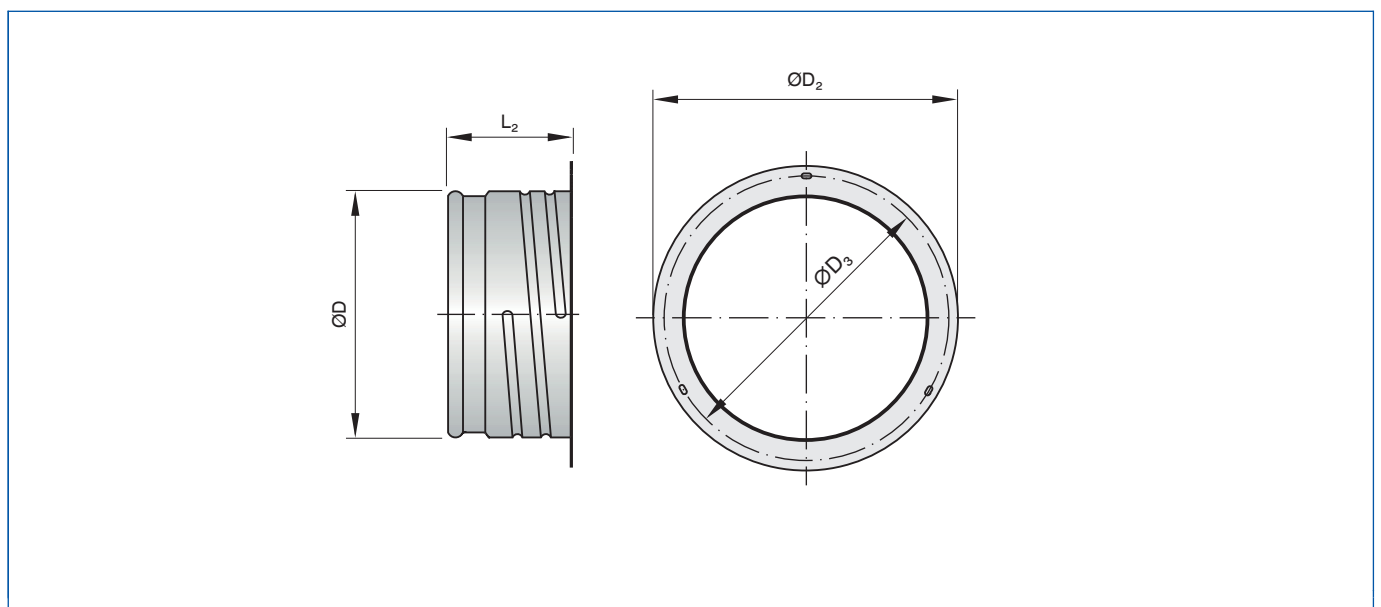
LVS/200, sound power level and total differential pressure

Nominal size	\dot{V}	\dot{V}	Gap width					
			5 mm		-5 mm		-15 mm	
	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}		
	l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
200	25	90	4	<15	9	<15	21	<15
	35	126	9	<15	17	<15	41	20
	45	162	14	<15	28	16	68	27
	50	180	18	<15	34	19	84	30

LVS



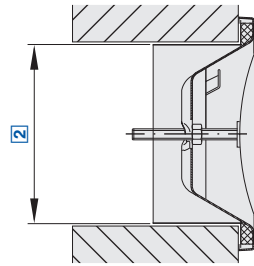
Installation subframe for LVS and Z-LVS



Dimensions [mm] and weight [kg]

Nominal size	ØD_1	L_1	L_2	L_4	ØD	ØD_2	ØD_3	m
	mm	mm	mm	mm	mm	mm	mm	kg
100	132	8	50	32	99	122	114	0.20
125	162	9	50	38	124	148	140	0.29
160	192	10	50	43	159	184	176	0.44
200	245	11	50	52	199	225	217	0.59





For supply air

Order code

Z-LVS / 160

1 2

1 Type
Z-LVS Extract air valve

2 Nominal size [mm]
100, 125, 160, 200

+ Features

Circular disc valves with manually adjustable annular gap

- ▶ Nominal sizes 100, 125, 160, 200 mm
- ▶ Volume flow rate range 10 - 90 l/s or 36 - 324 m³/h
- ▶ Diffuser face made of galvanised sheet steel, powder-coated
- ▶ For variable and constant volume flows
- ▶ For ceiling and wall installation
- ▶ Easy to install
- ▶ Volume flow rate balancing by simply

- ▶ turning the valve disc
- ▶ Inexpensive solution for small rooms

★ Special characteristics

- ▶ Continuous volume flow rate balancing by turning the valve disc
- ▶ Easy to install

7 Application

- ▶ Type Z-LVS disc valves are used as supply air devices in small rooms
- ▶ Horizontal radial supply air discharge
- ▶ For variable and constant volume flows
- ▶ For room heights up to 4 m (lower edge of suspended ceiling)
- ▶ For walls and suspended ceilings

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

📈 Technical data

Nominal sizes	100, 125, 160, 200 mm
Minimum volume flow rate	10 - 30 l/s or 36 - 108 m ³ /h
Maximum volume flow rate	25 - 90 l/s or 90 - 324 m ³ /h

Z-LVS/100, Z-LVS/125, sound power level and total differential pressure

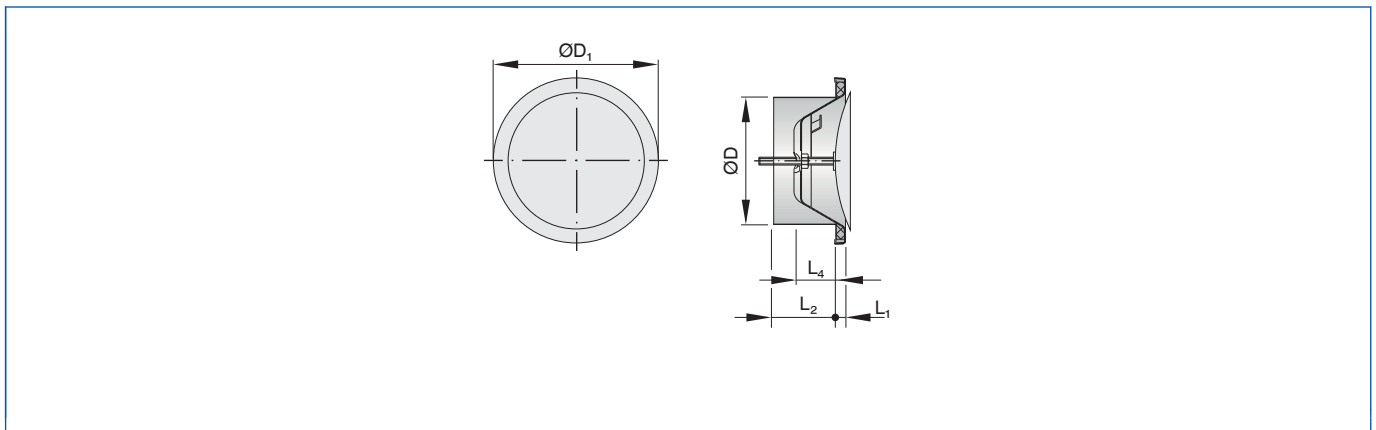
Nominal size	\dot{V} l/s	\dot{V} m ³ /h	Gap width					
			12 mm		10 mm		8 mm	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
			Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
100	10	36	9	<15	11	<15	14	<15
	15	54	20	23	24	24	32	27
	20	72	35	31	42	33	57	36
	25	90	54	38	66	40	89	43
125	10	36	5	<15	7	<15	11	<15
	15	54	10	<15	15	<15	24	17
	20	72	18	17	27	21	43	26
	25	90	28	23	43	28	67	33



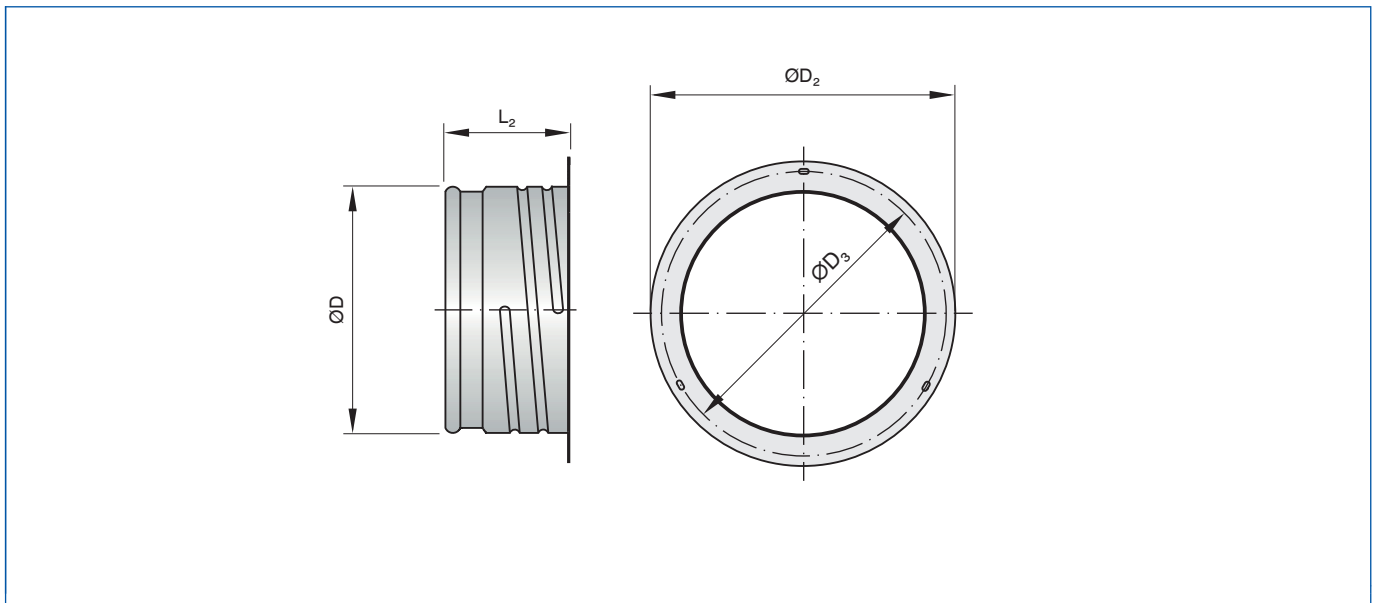
Z-LVS/160, Z-LVS/200, sound power level and total differential pressure

Nominal size	\dot{V}	\dot{V}	Gap width					
			20 mm		15 mm		10 mm	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
160	20	72	5	<15	8	<15	22	19
	30	108	11	<15	19	21	49	32
	40	144	20	24	34	30	87	42
	50	180	31	31	53	38	135	49
200	30	108	4	<15	8	<15	14	<15
	50	180	12	<15	21	19	40	26
	70	252	24	25	41	30	78	36
	90	324	40	33	68	38	129	44

Z-LVS



Installation subframe for LVS and Z-LVS



Dimensions [mm] and weight [kg]

Nominal size	ØD ₁ mm	L ₁ mm	L ₂ mm	L ₄ mm	ØD mm	ØD ₂ mm	ØD ₃ mm	m kg
100	132	8	50	32	99	122	114	0.23
125	162	9	50	38	124	148	140	0.32
160	192	10	50	43	159	184	176	0.50
200	245	11	50	52	199	225	217	0.67



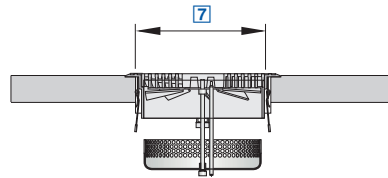


List of abbreviations

L_{WA} [dB(A)]	A-weighted sound power level of air-regenerated noise
\dot{V} [m ³ /h] and [l/s]	Volume flow rate
Δt_z [K]	Supply air to room air temperature difference, i.e. supply air temperature minus room temperature
Δp_t [Pa]	Total differential pressure
A_{eff} [m ²]	Effective air discharge area
$\varnothing D$ [mm]	Outer diameter of the spigot
$\varnothing D_1$ [mm]	Outer diameter of a circular diffuser face
$\varnothing D_2$ [mm]	Diameter of a circular diffuser face style
$\varnothing D_3$ [mm]	Diameter of a circular plenum box
Q_1 [mm]	Outer diameter of a square diffuser face
Q_2 [mm]	Dimensions of a square diffuser face style
Q_3 [mm]	Dimensions of a square plenum box
H_1 [mm]	Distance (height) from the lower edge of the suspended ceiling to the lower edge of the diffuser face
H_2 [mm]	Height of a ceiling diffuser, from the lower edge of the suspended ceiling to the upper edge of the spigot
H_3 [mm]	Height of a ceiling diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box or of the spigot
A [mm]	Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling
C [mm]	Length of the spigot
m [kg]	Weight

All sound power levels are based on 1 pW.





Made of aluminium

Order code

FBA – 3 – V – KF – SM – A / 150



1 Type

FBA Floor diffuser

2 Surface of diffuser core and trim ring

- 1** Deburred
- 3** Deburred, painted black, exposed surface skimmed
- 4** Deburred, exposed surface skimmed

3 Swirl unit (for air direction control)

No entry: none (vertical air discharge, no swirl)

- V** Adjustable, set to vertical discharge
- H** Adjustable, set to horizontal discharge
- VF** Fixed, vertical discharge (only available for nominal size 200)

4 Installation

- No entry: spacing ring for stepped holes
- KF** Trim ring and spring clips

5 Dirt trap

- No entry: none
- SM** Flow rate adjustment from rear
- SV** Flow rate adjustment from diffuser face

6 Plenum box

- No entry: none
- A** With

7 Nominal size [mm]
150, 200



+ **Features**

Circular floor diffusers with low sound power levels as a consequence of optimum air distribution in the diffuser

- ▶ Nominal sizes: 150, 200 mm
- ▶ Volume flow rate range .. - .. l/s or .. - .. m³/h
- ▶ Circular diffuser face style
- ▶ Diffuser core made of aluminium
- ▶ For variable and constant volume flows
- ▶ For all types of false floors
- ▶ Horizontal or vertical air discharge
- ▶ The damper element can be adjusted from the diffuser face or from the underside
- ▶ Installation with or without trim ring
- ▶ High mechanical strength
- ▶ Ideal for comfort zones

Optional equipment and accessories

- ▶ Dirt trap, can also serve as a damper element
- ▶ Plenum box
- ▶ Multiple diffuser plenum box, also with damper element
- ▶ Swirl unit allows for ideal air direction control
- ▶ Trim ring with spring clips

X **Application**

- ▶ Type FBA floor diffusers are used for comfort conditioning applications
- ▶ Attractive design element with various types of surfaces, for building owners and architects with demanding aesthetic requirements
- ▶ Swirling, vertical or horizontal air discharge to achieve mixed flow ventilation or low-turbulence displacement ventilation
- ▶ Comfortable and energy-efficient air distribution since the air pattern complements existing upward convection streams in the occupied zone
- ▶ Thermal loads are effectively dissipated
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -.. to +.. K
- ▶ For all types of false floors

◇ **Variants**

- ▶ FBA: Floor diffuser without trim ring
- ▶ FBA-KF: Floor diffuser with trim ring

+ **Construction**

- ▶ 1: Deburred diffuser core
- ▶ 3: Deburred diffuser core, painted black, exposed surface skimmed
- ▶ 4: Deburred diffuser core, exposed surface skimmed

⬡ **Attachments**

- ▶ Trim ring with spring clip
- ▶ Swirl unit
- ▶ Height-adjustable dirt trap

& **Accessories**

- ▶ A: Plenum box

+ **Useful additions**

- ▶ Multiple diffuser plenum boxes Type GA

★ **Special characteristics**

- ▶ Floor diffusers with or without trim ring
- ▶ High crushing strength
- ▶ Quick and easy installation of floor diffusers with trim ring and spring clip fixing
- ▶ Anti-twist facility on the variant with trim ring
- ▶ With or without swirl unit to allow for different air patterns
- ▶ An dirt trap (optional) prevents contamination of the false floor and facilitates flow rate balancing

ISO **Standards and guidelines**

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

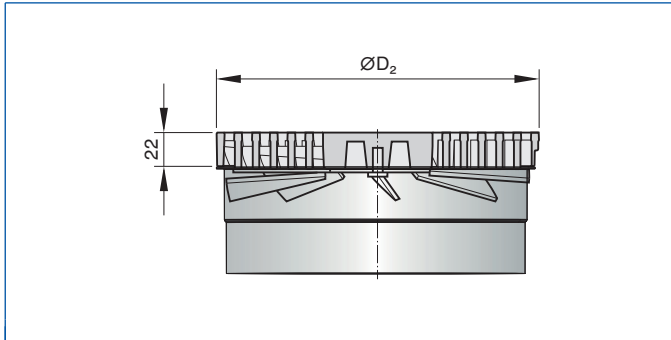




Technical data

Nominal sizes	150, 200 mm
Volume flow rate range	.. - .. l/s or .. - .. m³/h
Supply air to room air temperature difference	-12 to +20 K

FB*

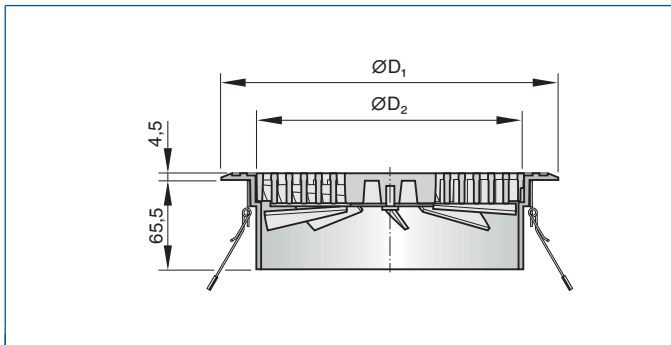


Dimensions [mm] and weight [kg]

Nominal size	ØD ₂		m
	mm		
150	149		0.5
200	199		1.0



FB*...-KF



Dimensions [mm]

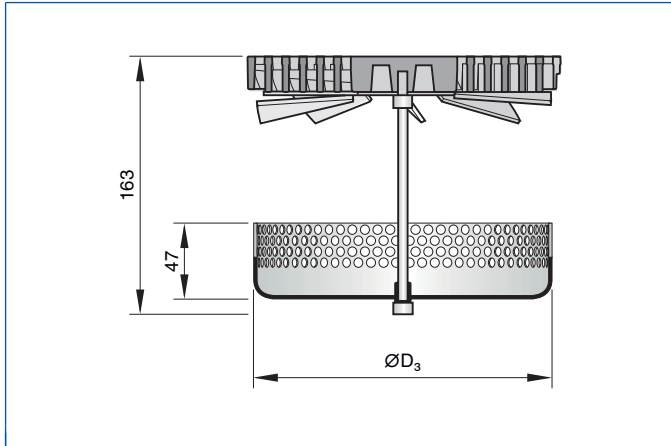
Nominal size	ØD ₁		ØD ₂
	mm		
150	200		149
200	250		199

Dimensions [mm] and weight [kg]

Nominal size	ØD ₁		ØD ₂		m
	mm		mm		
150	200		149		1.0
200	250		199		1.6



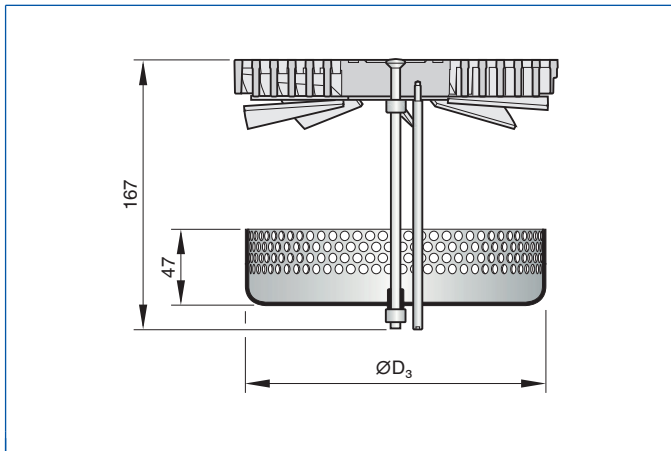
FB*...-SM



Dimensions [mm] and weight [kg]

Nominal size	FBA*...-SM		FBA*...-KF-SM		ØD ₃ mm
	m		kg		
150		0.6		1.1	137
200		1.1		1.7	187

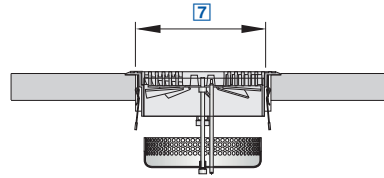
FB*...-SV



Dimensions [mm] and weight [kg]

Nominal size	FBA*...-SV		FBA*...-KF-SV		ØD ₃ mm
	m		kg		
150		0.6		1.1	137
200		1.1		1.7	187





Made of plastic

Order code

FBK - 2 - V - KF - SM - A / 150

1 2 3 4 5 6 7

1 Type

FBK Floor diffuser

2 Surface of diffuser core and trim ring

- 1 Similar to RAL 7037, grey
- 2 Similar to RAL 9005, black

3 Swirl unit (for air direction control)

No entry: none (vertical air discharge, no swirl)

V

Adjustable, set to vertical discharge

H

Adjustable, set to horizontal discharge

VF

Fixed, vertical discharge (only available for nominal size 200)

4 Installation

No entry: spacing ring for stepped holes

KF

Trim ring and spring clips

5 Dirt trap

No entry: none

SM

Flow rate adjustment from rear

SV

Flow rate adjustment from diffuser face

6 Plenum box

No entry: none

A

With

7 Nominal size [mm]

150, 200

+ Features

Circular floor diffusers with low sound power levels as a consequence of optimum air distribution in the diffuser

- ▶ Nominal sizes: 150, 200 mm
- ▶ Volume flow rate range .. - .. l/s or .. - .. m³/h
- ▶ Circular diffuser face style
- ▶ Diffuser core made of plastic
- ▶ For variable and constant volume flows
- ▶ For all types of false floors
- ▶ Horizontal or vertical air discharge
- ▶ The damper element can be adjusted from the diffuser face or from the underside
- ▶ Installation with or without trim ring
- ▶ High mechanical strength
- ▶ Ideal for comfort zones

Optional equipment and accessories

- ▶ Dirt trap, can also serve as a damper element
- ▶ Plenum box
- ▶ Multiple diffuser plenum box, also with damper element
- ▶ Swirl unit allows for ideal air direction control
- ▶ Trim ring with spring clips

Application

- ▶ Type FBK floor diffusers are used for comfort conditioning applications
- ▶ Attractive design element with various types of surfaces, for building owners and

architects with demanding aesthetic requirements

- ▶ Swirling, vertical or horizontal air discharge to achieve mixed flow ventilation or low-turbulence displacement ventilation
- ▶ Comfortable and energy-efficient air distribution since the air pattern complements existing upward convection streams in the occupied zone
- ▶ Thermal loads are effectively dissipated
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -.. to +.. K
- ▶ For all types of false floors

◊ Variants

- ▶ FBK: Floor diffuser without trim ring
- ▶ FBK-KF: Floor diffuser with trim ring

+ Construction

- ▶ 1: Diffuser core similar to RAL 7037, grey
- ▶ 2: Diffuser core similar to RAL 9005, black

⬡ Attachments

- ▶ V: Adjustable swirl unit, set to vertical air discharge
- ▶ H: Adjustable swirl unit, set to horizontal air discharge
- ▶ VF: Fixed swirl unit for vertical air discharge,

only for nominal size 200

- ▶ SM: Dirt trap, can be adjusted from the underside
- ▶ SV: Dirt trap, can be adjusted from the diffuser face

& Accessories

- ▶ A: Plenum box

🔧 Useful additions

- ▶ Multiple diffuser plenum boxes Type GA

★ Special characteristics

- ▶ Floor diffusers with or without trim ring
- ▶ High crushing strength
- ▶ Quick and easy installation of floor diffusers with trim ring and spring clip fixing
- ▶ Anti-twist facility on the variant with trim ring
- ▶ With or without swirl unit to allow for different air patterns
- ▶ A dirt trap (optional) prevents contamination of the false floor and facilitates flow rate balancing

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

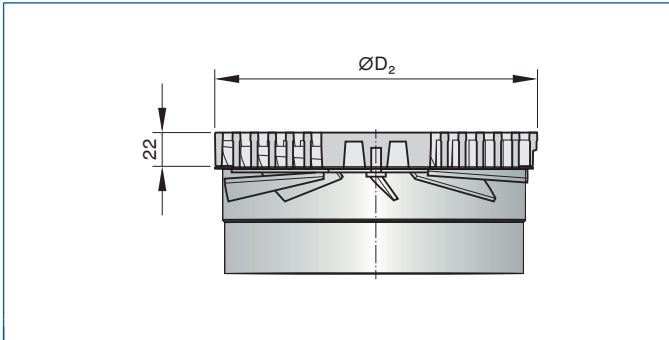




Technical data

Nominal sizes	150, 200 mm
Volume flow rate range	.. - .. l/s or .. - .. m ³ /h
Supply air to room air temperature difference	-12 to +20 K

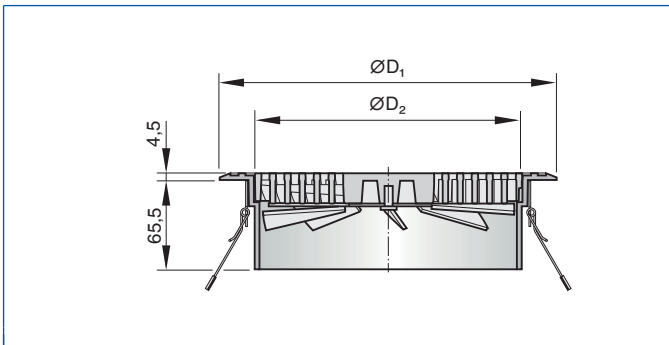
FB*



Dimensions [mm]

Nominal size	ØD ₂	
	mm	
150		149
200		199

FB*...-KF



Dimensions [mm]

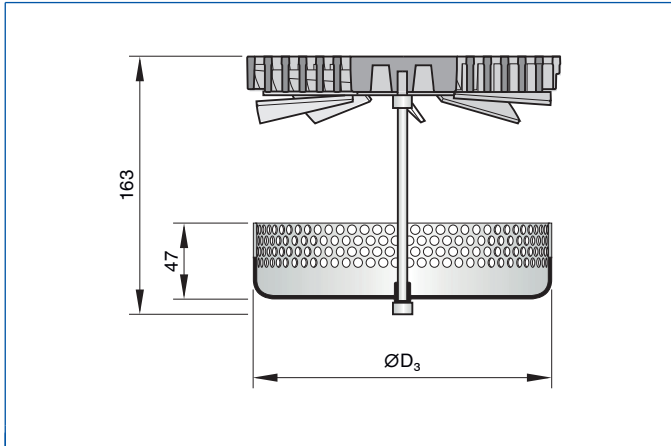
Nominal size	ØD ₁		ØD ₂	
	mm		mm	
150		200		149
200		250		199

Dimensions [mm]

Nominal size	ØD ₁		ØD ₂	
	mm		mm	
150		200		149
200		250		199



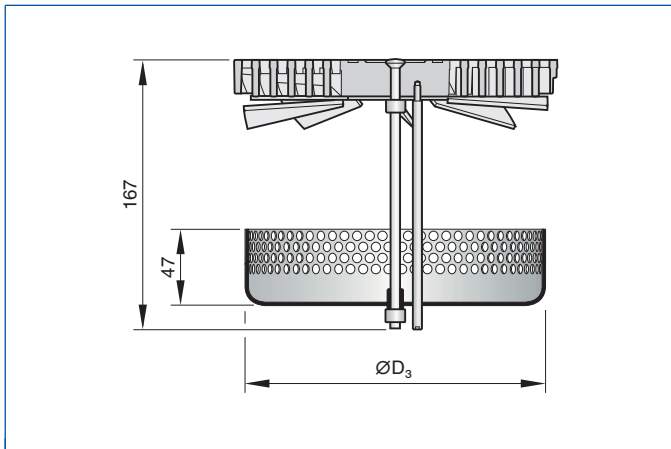
FB*-...-SM



Dimensions [mm]

Nominal size	FBK*-KF-SM	
	ØD_3	mm
150		137
200		187

FB*-...-SV



Dimensions [mm]

Nominal size	FBK*-KF-SV	
	ØD_3	mm
150		137
200		187



Staircase swirl diffusers

	Staircase swirl diffusers	
	SD	SDRF
Diffuser face style		
Circular	●	●
Square	●	
Diffuser face		
Circular	●	●
Square	●	
Rectangular		●
Fixing		
Screw fixing	●	●
Spring clip fixing		●
Accessories		
Spigot	●	
Cross bar	●	
Nominal sizes		
No. of outlets	1	1 - 6
Technical data		
Volume flow rate range [l/s]	10 - 25	2 - 25
Volume flow rate range [m ³ /h]	36 - 90	7 - 90
Supply air to room air temperature difference [K]	-6 - -1	-6 - -1
Explanation		
● - Standard		



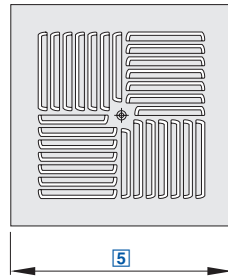


List of abbreviations

L_{WA} [dB(A)]	A-weighted sound power level of air-regenerated noise
\dot{V} [m ³ /h] and [l/s]	Volume flow rate
Δt_z [K]	Supply air to room air temperature difference, i.e. supply air temperature minus room temperature
Δp_t [Pa]	Total differential pressure
A_{eff} [m ²]	Effective air discharge area
$\varnothing D$ [mm]	Outer diameter of the spigot
$\varnothing D_1$ [mm]	Outer diameter of a circular diffuser face
$\varnothing D_2$ [mm]	Diameter of a circular diffuser face style
$\varnothing D_3$ [mm]	Diameter of a circular plenum box
Q_1 [mm]	Outer diameter of a square diffuser face
Q_2 [mm]	Dimensions of a square diffuser face style
Q_3 [mm]	Dimensions of a square plenum box
H_1 [mm]	Distance (height) from the lower edge of the suspended ceiling to the lower edge of the diffuser face
H_2 [mm]	Height of a ceiling diffuser, from the lower edge of the suspended ceiling to the upper edge of the spigot
H_3 [mm]	Height of a ceiling diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box or of the spigot
A [mm]	Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling
C [mm]	Length of the spigot
m [kg]	Weight

All sound power levels are based on 1 pW.





For installation into steps and floor areas with no foot traffic

Order code

SD - Q - LQ - S / 180 / P1 - RAL ...

1 2 3 4 5 6

1 Type

SD Staircase swirl diffuser

2 Construction style

Q Square diffuser face
R Circular diffuser face

3 Diffuser face style

LQ Square (only available with square diffuser face)

LR Circular

4 Fixing

S to spigot
T to cross bar

5 Nominal size [mm]
180

6 Exposed surface

No entry: powder-coated RAL 9010, pure white
P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

+ Features

- Circular and square staircase swirl diffusers
- ▶ Nominal size 180 mm
- ▶ Volume flow rate range 10 - 25 l/s or 36 - 90 m³/h
- ▶ Diffuser face made of sheet steel, powder-coated
- ▶ For variable and constant volume flows
- ▶ For false floors and positive pressure plenums
- ▶ Installation into the risers of steps or into horizontal or sloping floor areas which do not carry foot traffic
- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
- ▶ Low sound power level due to optimised air distribution inside the diffuser

Optional equipment and accessories

- ▶ Exposed diffuser face available in RAL CLASSIC colours
- ▶ Spigot
- ▶ Cross bar

Application

- ▶ Type SD staircase swirl diffusers are primarily used as supply air diffusers for comfort conditioning applications
- ▶ For auditoriums in theatres, cinemas or concert halls
- ▶ Supply air discharge directly to the occupied zone
- ▶ Swirling air discharge, either parallel to the installation surface or angled, for mixed flow ventilation
- ▶ The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity (supply air variant)
- ▶ For variable and constant volume flows
- ▶ For supply air to room air temperature differences from -6 to +6 K
- ▶ For false floors and positive pressure plenums
- ▶ Installation into the risers of steps or into horizontal or sloping floor areas which do not carry foot traffic

Variants

- ▶ SD-Q-LQ: Square diffuser face, square face style

- ▶ SD-Q-LR: Square diffuser face, circular face style
- ▶ SD-R-LR: Circular diffuser face, circular face style

Attachments

- ▶ S: Spigot
- ▶ T: Cross bar

Special characteristics

- ▶ High induction results in a rapid reduction of the temperature difference and airflow velocity
- ▶ Air discharge either parallel to the installation surface or angled
- ▶ Excellent air quality since the supply air is discharged directly to the occupied zone
- ▶ Installation into the risers of steps and into floor areas which do not carry foot traffic

ISO Standards and guidelines

- ▶ Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	180 mm
Minimum volume flow rate	10 l/s or 36 m ³ /h
Maximum volume flow rate	25 l/s or 90 m ³ /h
Supply air to room air temperature difference	-6 to +6 K



SD-Q-LQ-S (supply air), sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
180	10	36	8	<15
	15	54	18	24
	20	72	33	32
	25	90	51	39

SD-Q-LQ-T (supply air), sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
180	10	36	3	<15
	15	54	7	21
	20	72	12	32
	25	90	19	40

SD-Q-LR-S, SD-R-LR-S (supply air), sound power level and total differential pressure

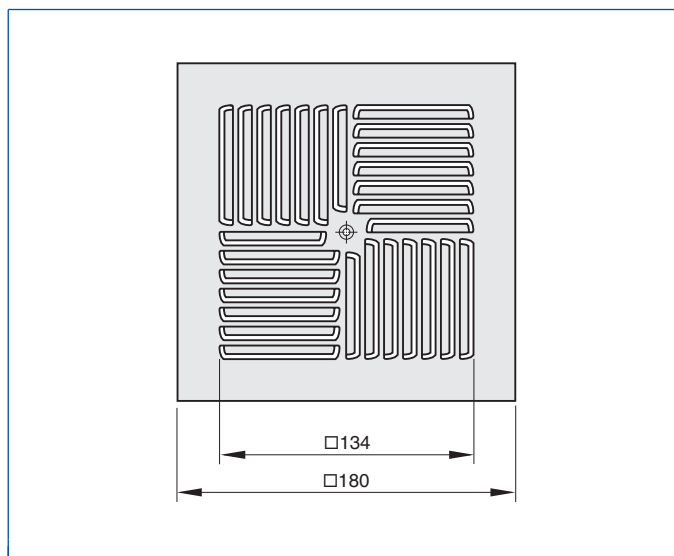
Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
180	10	36	9	<15
	15	54	21	25
	20	72	38	34
	25	90	59	41

SD-Q-LR-T, SD-R-LR-T (supply air), sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
180	10	36	4	<15
	15	54	10	25
	20	72	18	35
	25	90	27	43



SD-Q-LQ

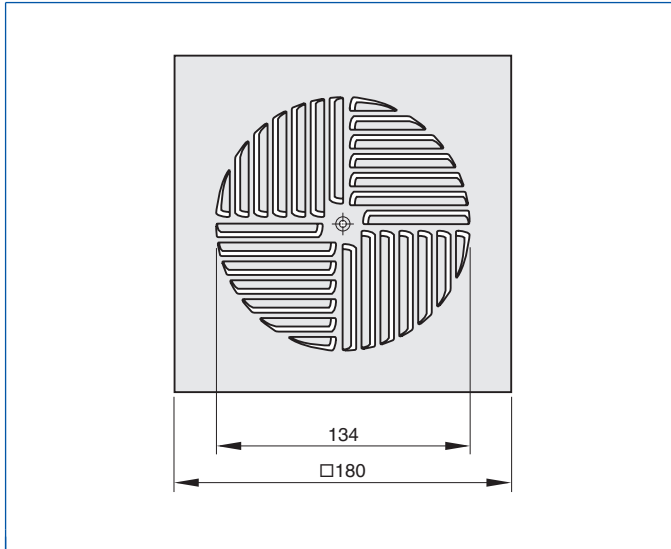


Dimensions [mm] and weight [kg]

Variant	A_{eff}	m
	m ²	kg
SD-Q-LQ	0.00445	0.3



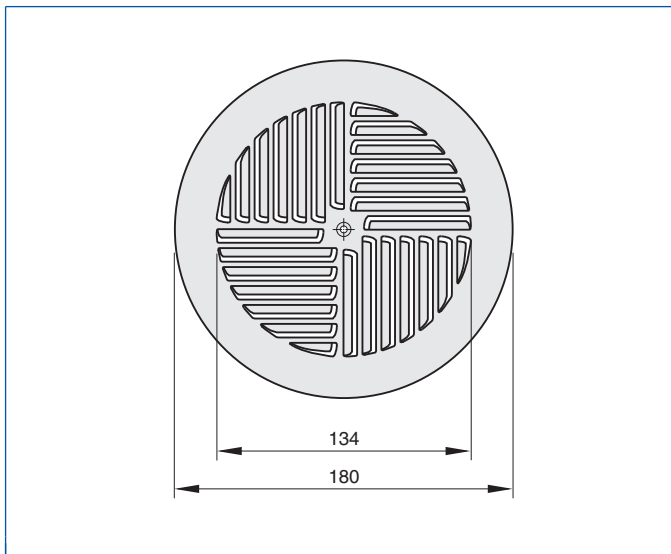
SD-Q-LR



Dimensions [mm] and weight [kg]

Variant	A_{eff}	m
	m^2	kg
SD-Q-LR	0.00354	0.3

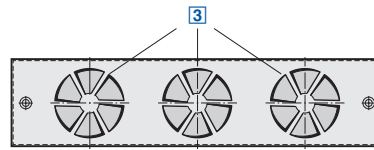
SD-R-LR



Dimensions [mm] and weight [kg]

Variant	A_{eff}	m
	m^2	kg
SD-R-LR	0.00354	0.3





Compact height, ideal for steps

Order code

SDRF - K / 3 / P1 - RAL ...

1 2 3 4

1 Type

SDRF Staircase swirl diffuser

2 Fixing

K Spring clips
S Screws

3 Number of discharge elements

1, 2, 3, 4, 5, 6

4 Exposed surface

No entry: powder-coated,
RAL 9005 70%, black
P1 Powder-coated, specify RAL CLASSIC
colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

Features

- Circular and rectangular staircase swirl diffusers
- Various nominal sizes with 1 - 6 outlets
 - Volume flow rate range 2 - 25 l/s or 7 - 90 m³/h
 - Diffuser face made of sheet steel, powder-coated
 - For variable and constant volume flows
 - For false floors designed as positive pressure plenums
 - Installation into the risers of steps
 - Visible screw fixing
 - High induction results in a rapid reduction of the temperature difference and airflow velocity
 - Low sound power level due to optimised air distribution inside the diffuser

Optional equipment and accessories

- Exposed diffuser face available in RAL CLASSIC colours
- Spring clip fixing (concealed)

Application

- Type SDRF staircase swirl diffusers are primarily used as supply air diffusers for comfort conditioning applications
- For auditoriums in theatres, cinemas or concert halls
- Supply air discharge directly to the occupied zone
- Swirling air discharge for mixed flow ventilation
- The efficient swirl creates high induction levels, thereby rapidly reducing the temperature difference and airflow velocity (supply air variant)
- For variable and constant volume flows
- For supply air to room air temperature differences from -6 to +6 K
- For false floors designed as positive pressure plenums
- Installation into the risers of steps

Variants

- SDRF-K: Spring clip fixing
- SDRF-S: Screw fixing

Special characteristics

- High induction results in a rapid reduction of the temperature difference and airflow velocity
- Air discharge parallel to the installation surface
- Excellent air quality since the supply air is discharged directly to the occupied zone
- Vertical installation into steps

Standards and guidelines

- Sound power level of the air-regenerated noise measured according to EN ISO 5135

Technical data

Nominal sizes	1, 2, 3, 4, 5, 6 outlets
Minimum volume flow rate	2 - 12 l/s or 7 - 43 m ³ /h
Maximum volume flow rate	5 - 25 l/s or 18 - 90 m ³ /h
Supply air to room air temperature difference	-6 to +6 K

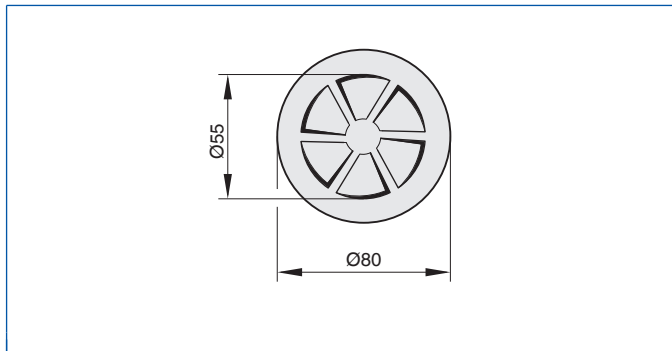


SDRF, sound power level and total differential pressure

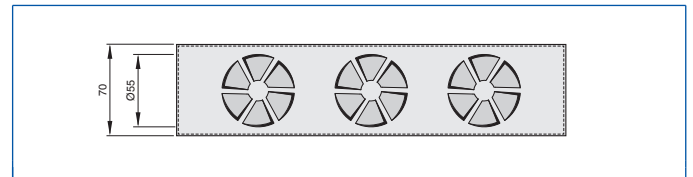
Nominal size	\dot{V}		Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)
1	2	7	6	<15
	3	11	14	24
	4	14	25	33
	5	18	39	39
2	5	18	9	22
	7	25	18	31
	9	32	30	38
	10	36	37	41
3	6	22	7	19
	8	29	12	26
	12	43	27	37
	14	50	37	41
4	8	29	7	<15
	12	43	15	29
	14	50	20	33
	18	65	33	41
5	10	36	6	17
	12	43	9	22
	16	58	16	31
	20	72	25	38
6	12	43	6	<15
	16	58	10	23
	20	72	16	31
	25	90	25	38



Diffuser face of SDRF-*/1



Diffuser face of SDRF-* (nominal sizes 2 to 6)

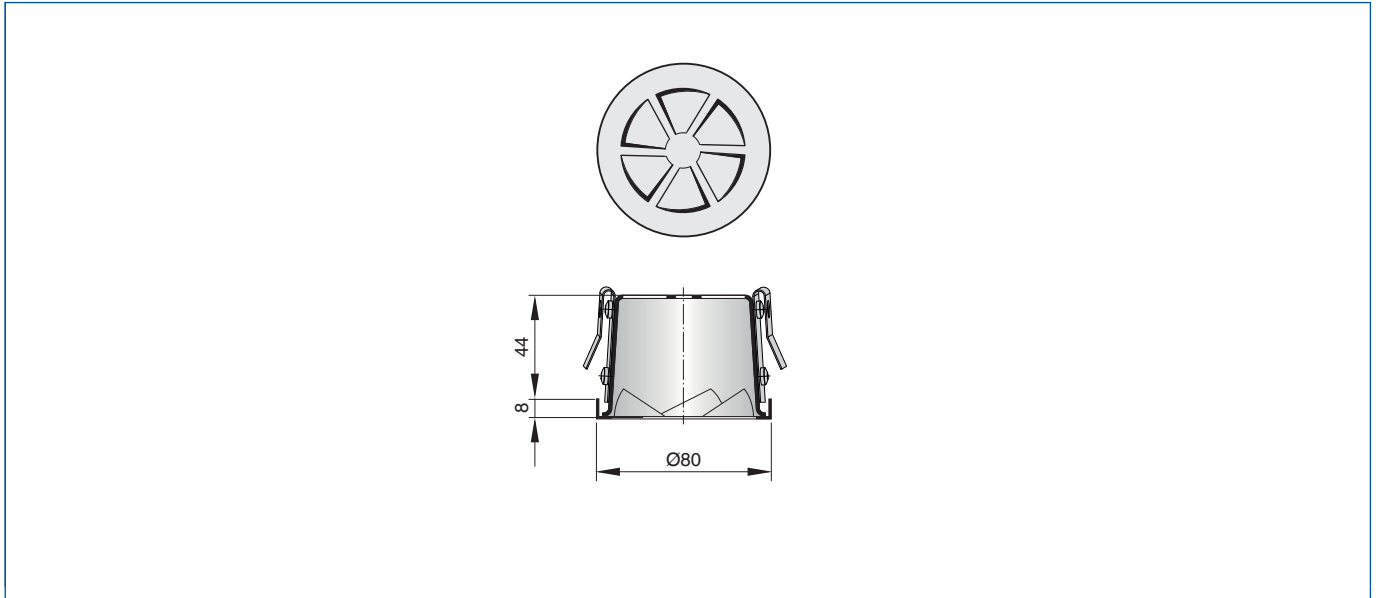


Dimensions [mm] and weight [kg]

Nominal size	A_{eff} m ²
1	0.000626
2	0.001252
3	0.001878
4	0.002504
5	0.003130
6	0.003756



SDRF-K/1



Weight [kg]

Nominal size	m	
	kg	
1		0.10



SDRF-K (nominal sizes 2 to 6)

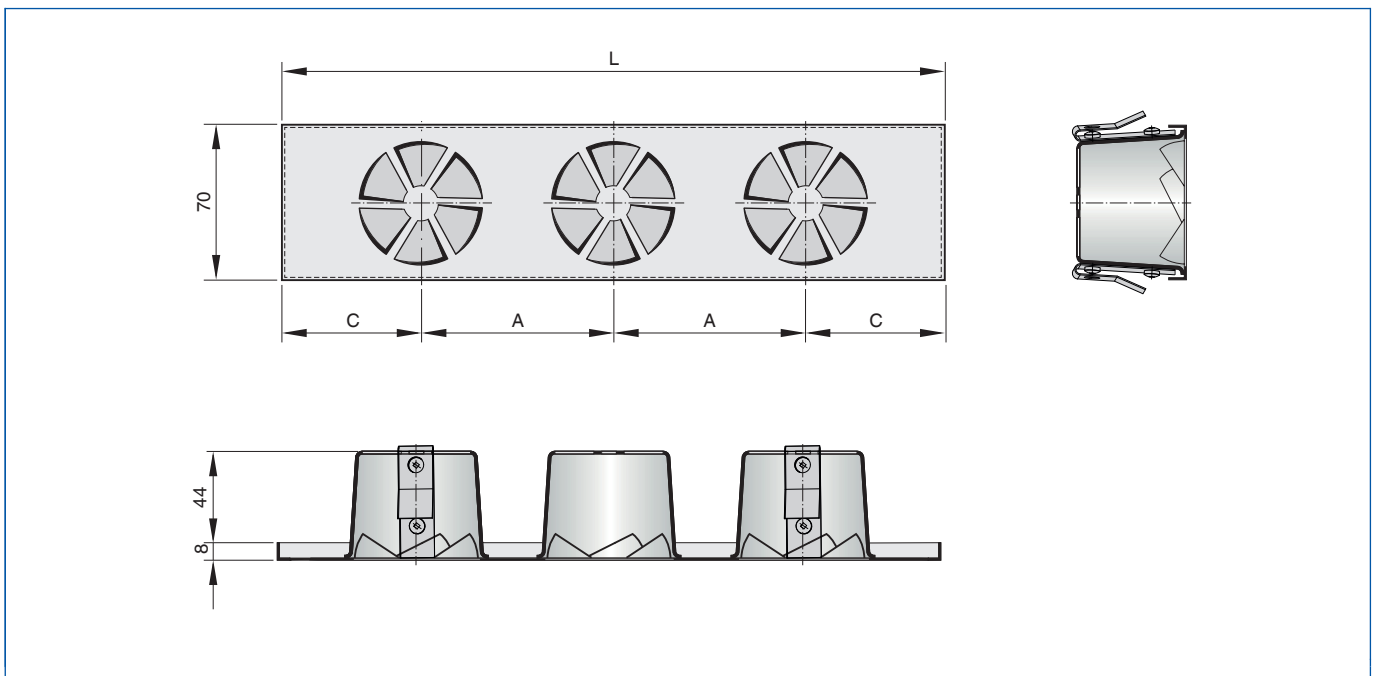


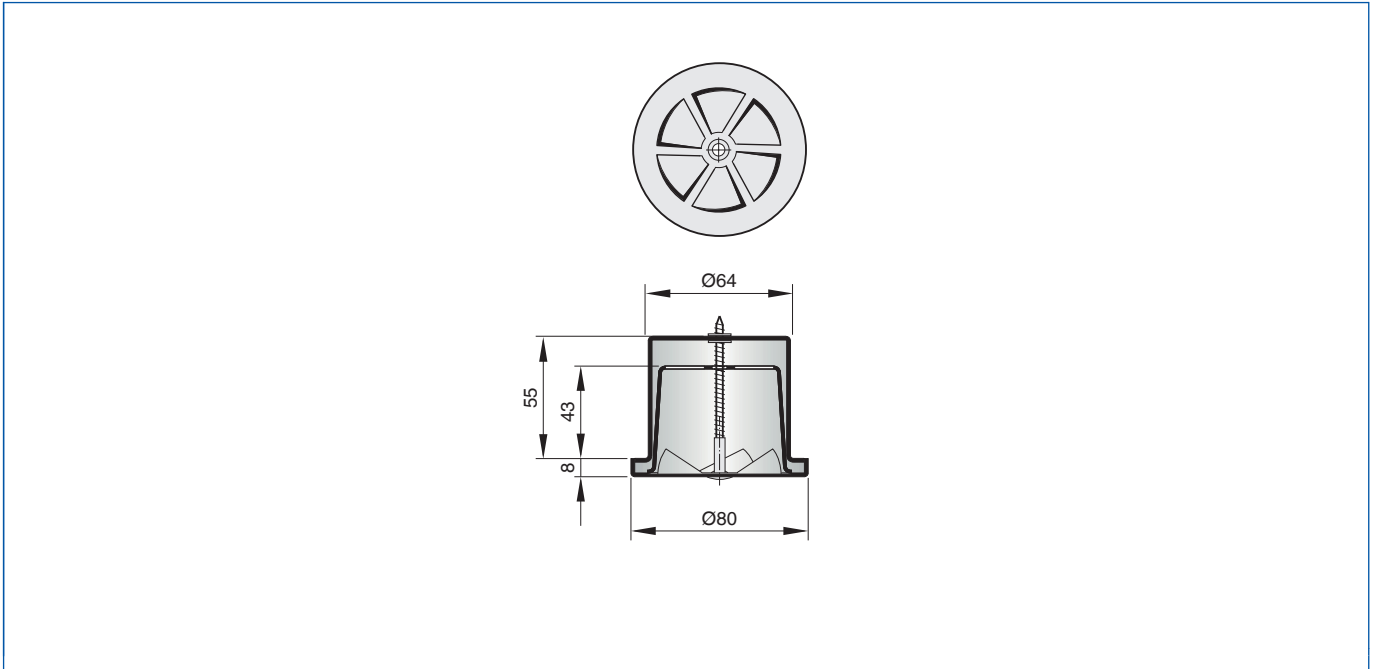
Illustration shows SDRF-K/3

Dimensions [mm] and weight [kg]

Nominal size	L		A		C		m	
	mm		mm		mm		kg	
2		200		74		63		0.15
3		300		87		63		0.25
4		400		86		71		0.35
5		500		92		66		0.45
6		500		74		65		0.50



SDRF-S/1



Weight [kg]

Nominal size	m	
	kg	
1		0.10



SDRF-S (nominal sizes 2 to 6)

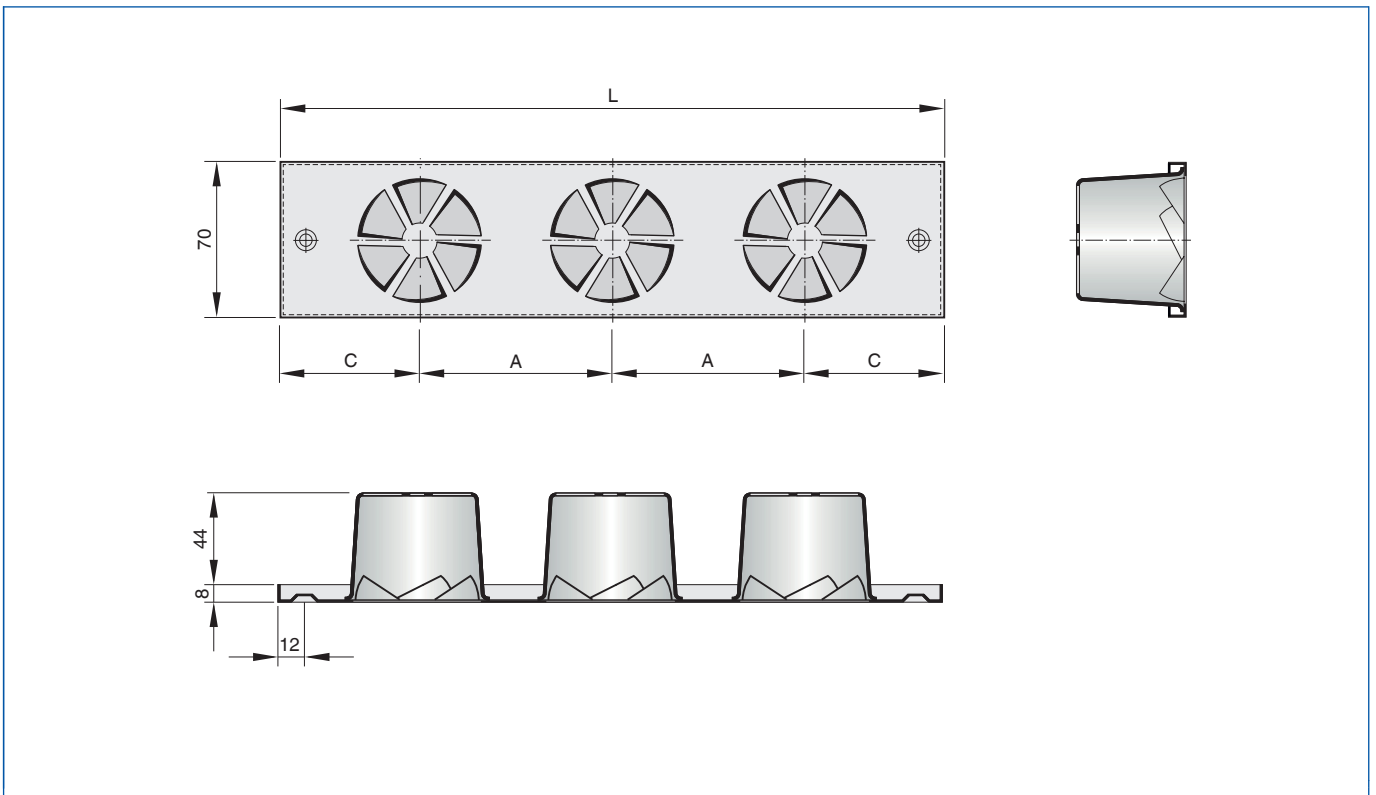


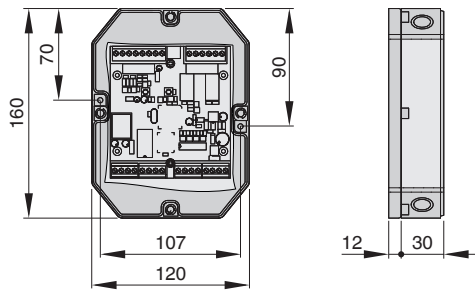
Illustration shows SDRF-S/3



Dimensions [mm] and weight [kg]

Nominal size	L	A	C	m
	mm	mm	mm	kg
2	200	74	63	0.15
3	300	87	63	0.25
4	400	86	71	0.35
5	500	92	66	0.45
6	500	74	65	0.50





For the temperature-based control of adjustable air terminal devices, for heating or cooling mode

Order code

LON - WA TDC

1

Type

LON-WA TDC Module for the control of supply air based on the supply air to room air difference

Features

- ▶ Ideal adjustment of the discharge angle to varying loads
- ▶ For adjustable air terminal devices
- ▶ Heating, cooling, isothermal operation
- ▶ Adjustment of the discharge direction based on the supply air to room air temperature
- ▶ Bespoke solutions, adjustment of the characteristic
- ▶ For up to 20 heating/cooling actuators (3-point)
- ▶ For up to 10 modulating rotary actuators or 5 modulating spindle actuators
- ▶ Override controls

Application

- ▶ Type LON-WA TDC control modules for the temperature-based control of adjustable air terminal devices, for heating or cooling mode
- ▶ For air terminal devices Types VD, VDL, VDR, QSH, ISH, TJN, DUK and DG-VAR
- ▶ Heating, cooling, isothermal operation
- ▶ Analogue output for modulating actuators
- ▶ Digital output for 3-point actuators
- ▶ LonWorks interface for the transmission of standard network variables
- ▶ A plug-in for all LNS-based network integration tools (LNS version 3.3 and higher) is available for configuration

Special characteristics

- ▶ Bespoke solutions since the characteristic can be adjusted
- ▶ Temperature values are transmitted as voltage signals or network variables
- ▶ Control input for actuators with a modulating signal (0 - 10 V DC) or 3-point (24 V AC)
- ▶ Override control functions for heating up, variable operation, heating, cooling and isothermal operation



Technical data

Supply voltage	24 V AC ± 15 %, 50/60 Hz
Power rating	3.5 VA
Communication interface	LonWorks transceiver FTT-10A (free topology, twisted pair)
Connection to LonWorks network	4 terminals for cables with a cross section between 0.08 and 2.5 mm ² , with reverse polarity protection
Operating temperature	0 - 50 °C
IEC protection class	III (protective extra-low voltage)
Protection level	IP 65
EC conformity	EMC to 2004/108/EU, low voltage to 2006/95/EU
Dimensions (B × H × T)	160 × 120 × 42 mm





For switching between the heating and cooling modes of adjustable air terminal devices

+ Features

- Actuators for air terminal devices Types VD, VDL, VDR, QSH, ISH, TJN and DUK
- Change of the discharge direction for two different operating situations
 - Supply voltage 24 V AC/DC or 230 V AC

- Control input signal: 1-wire control or 2-wire control (3-point)

- and cooling modes of air terminal devices
- Adjustment of the air discharge direction

X Application

- Actuators for switching between the heating

+ Useful additions

- TDC temperature difference control module

Actuators for air terminal devices

E1	M466EM8	NM230A	230 V AC	VD, VDL, VDR, DUK
E2	M466EM9	NM24A	24 V AC/DC	VD, VDL, VDR, DUK
E4	M466CF0	223E-230-150-003	230 V AC	QSH, ISH, DUK
E5	M466CF1	223E-024-150-002	24 V AC	QSH, ISH, DUK
E7	M466EP5	CM230-F	230 V AC	TJN
E8	M466EP4	CM-24-F	24 V AC/DC	TJN



+ Features

- Actuators for air terminal devices Types VD, VDL, VDR, QSH, ISH, TJN and DUK
- Change of the discharge direction for two different operating situations

- Supply voltage 24 V AC/DC or 230 V AC
- Control input signal: 1-wire control or 2-wire control (3-point)

X Application

- Actuator NM230A
- For switching between the heating and cooling modes of air terminal devices, suitable for Types VD, VDL, VDR and DUK

Actuator NM230A

Supply voltage	100 - 240 V AC -15 % +10 %, 50/60 Hz
Power rating	5.5 VA max.
Torque	10 Nm
Running time for 90°	150 s
Control input signal	1-wire control or 2-wire control (3-point)
Connecting cable	3 × 0.75 mm ² , 1 m long
IEC protection class	II (protective insulation)
Protection level	IP 54
EC conformity	EMC to 2014/30/EU, low voltage to 2014/35/EU, RoHS to 2011/65/EU
Operating temperature	-30 to 50 °C
Weight	0.75 kg





Features

Actuators for air terminal devices Types VD, VDL, VDR, QSH, ISH, TJN and DUK
 ▶ Change of the discharge direction for two different operating situations

- ▶ Supply voltage 24 V AC/DC or 230 V AC
- ▶ Control input signal: 1-wire control or 2-wire control (3-point)



Application

- ▶ Actuator NM24A
- ▶ For switching between the heating and cooling modes of air terminal devices, suitable for Types VD, VDL, VDR and DUK



Actuator NM24A

Supply voltage (AC)	24 V AC ± 20 %, 50/60 Hz
Supply voltage (DC)	24 V DC ±20 %
Power rating (AC)	3.5 VA max.
Power rating (DC)	1.5 W max.
Torque	10 Nm
Running time for 90°	150 s
Control input signal	1-wire control or 2-wire control (3-point)
Connecting cable	3 × 0.75 mm ² , 1 m long
IEC protection class	III (protective extra-low voltage)
Protection level	IP 54
EC conformity	EMC to 2014/30/EU, RoHS to 2011/65/EU
Operating temperature	-30 to 50 °C
Weight	0.75 kg



Features

Actuators for air terminal devices Types VD, VDL, VDR, QSH, ISH, TJN and DUK
 ▶ Change of the discharge direction for two different operating situations
 ▶ Supply voltage 24 V AC/DC or 230 V AC

- ▶ Control input signal: 1-wire control or 2-wire control (3-point)



Application

- ▶ Actuator Type 223E-230-150-003

- ▶ For switching between the heating and cooling modes of air terminal devices, suitable for Types QSH, ISH and DUK
- ▶ Linear actuator for concealed installation inside air terminal devices; preferred solution for air terminal devices installed exposed





Actuator 223E-230-150-003

Supply voltage	195 - 265 V AC, 50/60 Hz
Power rating	3.5 VA
Lifting force and thrust	150 N
Running time	26.9 mm/min
Control input signal	2-wire control (3-point)
Connecting cable	3 × 0.75 mm ² , 1.8 m long
IEC protection class	II (protective insulation)
Protection level	IP 42
EC conformity	EMC to 2014/30/EU, low voltage to 2014/35/EU
Operating temperature	-20 to 60 °C
Weight	0.230 kg



+ Features

Actuators for air terminal devices Types VD, VDL, VDR, QSH, ISH, TJN and DUK

- Change of the discharge direction for two different operating situations
- Supply voltage 24 V AC/DC or 230 V AC

- Control input signal: 1-wire control or 2-wire control (3-point)



Application

- Actuator Type 223E-24-150-002

- For switching between the heating and cooling modes of air terminal devices, suitable for Types QSH, ISH and DUK
- Linear actuator for concealed installation inside air terminal devices; preferred solution for air terminal devices installed exposed



Actuator 223E-024-150-002

Supply voltage	24 V AC ± 10 %, 50/60 Hz
Power rating	3 VA
Lifting force and thrust	150 N
Running time	26.9 mm/min
Control input signal	2-wire control (3-point)
Connecting cable	3 × 0.75 mm ² , 1.8 m long
IEC protection class	III (protective extra-low voltage)
Protection level	IP 42
EC conformity	EMC according to 2014/30/EU
Operating temperature	-20 to 60 °C
Weight	0.230 kg





+ Features

Actuators for air terminal devices Types VD, VDL, VDR, QSH, ISH, TJN and DUK

- ▶ Change of the discharge direction for two different operating situations
- ▶ Supply voltage 24 V AC/DC or 230 V AC
- ▶ Control input signal: 1-wire control or 2-wire control (3-point)

X Application

- ▶ Actuator Type CM230-F
- ▶ For switching between the heating and cooling modes of air terminal devices, suitable for Type TJN

Actuator CM230-F

Supply voltage	100 to 240 V AC -15 % +10 %, 50/60 Hz
Power rating	3 VA
Torque	2 Nm
Running time for 90°	75 s
Control input signal	1-wire control or 2-wire control (3-point)
Connecting cable	3 × 0.75 mm ² , 1 m long
IEC protection class	II (protective insulation)
Protection level	IP 54
EC conformity	EMC to 2014/30/EU, low voltage to 2014/35/EU, RoHS to 2011/65/EU
Operating temperature	-30 to 50 °C
Weight	0.185 kg



+ Features

Actuators for air terminal devices Types VD, VDL, VDR, QSH, ISH, TJN and DUK

- ▶ Change of the discharge direction for two different operating situations
- ▶ Supply voltage 24 V AC/DC or 230 V AC
- ▶ Control input signal: 1-wire control or 2-wire control (3-point)

X Application

- ▶ Actuator Type CM24-F
- ▶ For switching between the heating and cooling modes of air terminal devices, suitable for Type TJN

Actuator CM24-F

Supply voltage (AC)	24 V AC ± 20 %, 50/60 Hz
Supply voltage (DC)	24 V DC ± 20 %
Power rating (AC)	1 VA max.
Power rating (DC)	0.5 W max.
Torque	2 Nm
Running time for 90°	75 s
Control input signal	1-wire control or 2-wire control (3-point)
Connecting cable	3 × 0.75 mm ² , 1 m long
IEC protection class	III (protective extra-low voltage)
Protection level	IP 54
EC conformity	EMC to 2014/30/EU, RoHS to 2011/65/EU
Operating temperature	-30 to 50 °C
Weight	0.185 kg





For modulating operation and for switching between the heating and cooling modes of adjustable air terminal devices

+ **Features**

Modulating actuators for air terminal devices
Types VD, VDL, VDR, QSH, ISH, TJN and DUK

- ▶ Modulating operation and change of the discharge direction for two different operating situations
- ▶ Supply voltage 24 V AC/DC

- ▶ Control input signal: Control signal voltage, modulating, 0 (2) - 10 V

- ▶ terminal devices
- ▶ Adjustment of the air discharge direction

X **Application**

- ▶ Actuators for variable adjustment
- ▶ Modulating operation of adjustable air

+ **Useful additions**

- ▶ TDC temperature difference control module

+ **Actuators for air terminal devices**

E3	M466EN0	NM24A-SR	24 V AC/DC	VD, VDL, VDR, DUK
E6	M466CF2	223F-024-150-001	24 V AC/DC	QSH, ISH, DUK
E9	A00000030324	CM24-SX-F	24 V AC/DC	TJN



+ **Actuator NM24A-SR**

Supply voltage (AC)	24 V AC ± 20 %, 50/60 Hz
Supply voltage (DC)	24 V DC ± 20 %
Power rating (AC)	4 VA max.
Power rating (DC)	2 W max.
Torque	10 Nm
Running time for 90°	150 s
Control signal	2 - 10 V DC, $R_a > 100 \text{ k}\Omega$
Connecting cable	4 × 0.75 mm ² , 1 m long
IEC protection class	III (protective extra-low voltage)
Protection level	IP 54
EC conformity	EMC to 2014/30/EU, RoHS to 2011/65/EU
Operating temperature	-30 to 50 °C
Weight	0.8 kg





Features

Modulating actuators for air terminal devices Types VD, VDL, VDR, QSH, ISH, TJN and DUK

- ▶ Modulating operation and change of the discharge direction for two different operating situations
- ▶ Supply voltage 24 V AC/DC

- ▶ Control input signal: Control signal voltage, modulating, 0 (2) - 10 V



Application

- ▶ Actuator Type 223F-024-150-001
- ▶ For modulating operation and for switching

between the heating and cooling modes of air terminal devices, suitable for Types QSH, ISH and DUK

- ▶ Linear actuator for concealed installation inside air terminal devices; preferred solution for air terminal devices installed exposed



Actuator 223F-24-150-001

Supply voltage (AC)	24 V AC ± 20 %, 50/60 Hz
Supply voltage (DC)	24 V DC ±20 %
Power rating (AC)	8.5 VA
Power rating (DC)	5 W
Lifting force and thrust	150 N
Running time	28 mm/min
Control signal	0 - 10 V DC, R _a > 100 kΩ
Connecting cable	3 × 0.75 mm ² , 1.8 m long
IEC protection class	III (protective extra-low voltage)
Protection level	IP 30
EC conformity	EMC according to 2014/30/EU
Operating temperature	-20 to 60 °C
Weight	0.650 kg



Features

Modulating actuators for air terminal devices Types VD, VDL, VDR, QSH, ISH, TJN and DUK

- ▶ Modulating operation and change of the discharge direction for two different operating situations

- ▶ Supply voltage 24 V AC/DC
- ▶ Control input signal: Control signal voltage, modulating, 0 (2) - 10 V



Application

- ▶ Actuator Type CM24-SX-F for changing the discharge direction of air terminal devices Type TJN





Actuator CM24-SX-F

Supply voltage (AC)	24 V AC \pm 20 %, 50/60 Hz
Supply voltage (DC)	24 V DC \pm 20 %
Power rating (AC)	1.5 VA max.
Power rating (DC)	1 W max.
Torque	2 Nm
Running time for 90°	75 s
Control signal	2 - 10 V DC, $R_a > 100 \text{ k}\Omega$
Connecting cable	4 \times 0.75 mm ² , 1 m long
IEC protection class	III (protective extra-low voltage)
Protection level	IP 20
EC conformity	EMC according to 2014/30/EU
Operating temperature	-30 to 50 °C
Weight	0.200 kg





For switching between the heating and cooling modes of adjustable air terminal devices

+ Features

Thermal actuators for air terminal devices
Types QSH, ISH and TJN
 ▶ Modulating change of the discharge direction for different operating situations
 ▶ Mechanical self-powered

▶ Shape memory alloy or wax as actuation material

Application

▶ Actuators for self-powered variable

adjustment
 ▶ Modulating operation of adjustable air terminal devices
 ▶ Adjustment of the air discharge direction

Thermal actuators for air terminal devices

T	M456BE0	QSH, ISH
T1	A00000039387	TJN

Thermal actuator T

Work areas	15 - 35 °C
Travel	10 mm



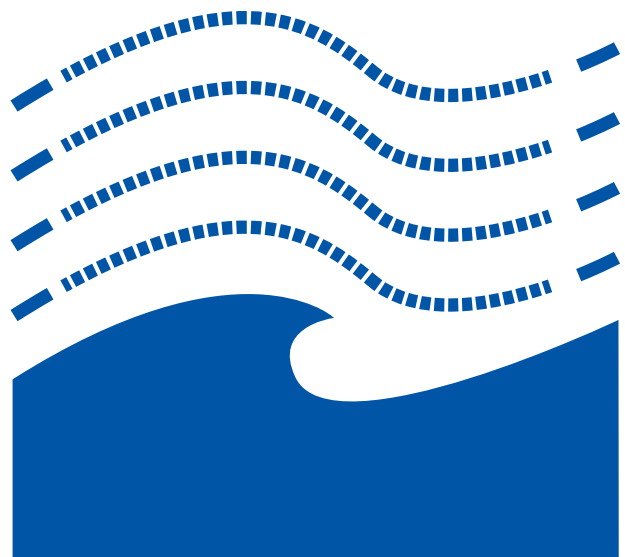
Thermal actuator T1

Work areas	18 - 32 °C
Travel	10 mm
Weight	0.15 kg





Air-water systems




6 Air-water systems


6.1 Induction units for suspended ceilings


	Active chilled beam with two-way air discharge, 300 mm nominal width, vertical heat exchanger and condensate drip tray	DID312	408
	Active chilled beam with two-way air discharge, 300 mm nominal width, with horizontal heat exchanger	DID300B	414
	Active chilled beam with two-way air discharge and horizontal heat exchanger, suitable for grid ceilings with grid size 600 or 625	DID632	422
	Super flat active chilled beam with two-way air discharge and horizontal heat exchanger, suitable for grid ceilings with grid size 600 or 625	DID642	429
	Active chilled beam with two-way air discharge, horizontal heat exchangers and integral lighting, suitable for grid ceilings with grid size 600	Type DID600B-L	435
	Active chilled beam with four-way air discharge, vertical heat exchanger and condensate drip tray, for grid ceilings with grid size 600 or 625	DID604	445
	Active chilled beam with four-way air discharge and horizontal heat exchanger, suitable for grid ceilings with grid size 600 or 625	DID614	449
	Active chilled diffuser with radial air discharge, 600 or 625 mm nominal width, vertical heat exchanger and condensate drip tray	DID-R	453

6.2 Active chilled beams for bulkhead or wall installation


	Active chilled beam with one-way air discharge and horizontal heat exchanger, in nominal lengths of 900, 1200 and 1500 mm	DID-E	456
---	---	-------	-----

6.3 Freely suspended units


	Multi-service active chilled beam with two-way air discharge and horizontal heat exchanger	SMART BEAM	460
---	--	------------	-----

	Induction unit for ceiling installation, with one-way or two-way air discharge, vertical heat exchanger and condensate drip tray	IDH	463
---	--	-----	-----


6.4 Wall and under sill induction units

	Induction-type displacement flow diffuser in nominal lengths of 900, 1200 and 1500 mm, with vertical heat exchanger and condensate drip tray	QLI	466
---	--	-----	-----


6.5 Under sill induction units

	Under sill induction unit in nominal lengths of 600, 900, and 1200 mm, with vertical heat exchanger and condensate drip tray	IDB	469
--	--	-----	-----


6.6 Under floor induction units


	Under floor induction unit in nominal lengths of 900 to 1500 mm, with horizontal heat exchanger	BID	472
---	---	-----	-----

6.7 Passive chilled beams

	Passive chilled beam in nominal lengths of up to 3000 mm and with a horizontal heat exchanger	PKV	476
---	---	-----	-----

6.8 Control equipment for air-water systems

	Stand-alone single room control equipment to control the water-side components in air-water systems	LWS control equipment	479
---	---	-----------------------	-----

	Stand-alone single room control equipment to control the water-side components in air-water systems	LWS control equipment - VS	480
---	---	----------------------------	-----

6.9 Connecting hoses



Connecting hoses for the water-side connection of air-water systems and decentralised ventilation units

FS

481

	Air-water systems			
	Passive chilled beams	Induction units for ceiling installation	Under sill induction units	Underfloor induction units
Type of building				
Office, administration	●	●	●	●
Hotel		●	●	●
School, university		●	●	
Airport, train station	●	●		
Hall	●	●		
Installation location				
Flush with the ceiling		●		
Freely suspended	●	●		
Internal wall			●	
External wall / façade			●	
Floor				●
Airflow				
Mixed flow		●		
Inducing displacement flow			●	●
Displacement flow ventilation			○	○
Basic functions				
Heating		●	●	●
Cooling	●	●	●	●
Ventilation		●	●	●
Extract ventilation		○	●	●
Explanation				
● - Standard				
○ - Optional	Possible under certain conditions: Robust unit variant and/or specific actuator or a useful additional product			



Induction units for suspended ceilings

	Active chilled beams							
	DID312	DID300B	DID632	DID642	DID600B-L	DID614	DID604	DID-R
Installation details								
Grid ceilings	300 mm	300 mm	600 and 625 mm	600 and 625 mm	600 and 625 mm	600 and 625 mm	600 and 625 mm	600 and 625 mm
T-Bar ceilings	●	●	●	●	●	●	●	●
Continuous ceilings	●	●	●	●	●	●	●	●
Ceiling bulkheads								
Freely suspended	with extended border	with extended border	with extended border	with extended border	with extended border	with extended border	with extended border	with extended border
Heat exchanger								
2-pipe	●	●	●	●	●	●	●	●
4-pipe	●	●	●	●	●	●	●	●
Condensate drip tray	●						●	●
Explanation								
● - Standard								

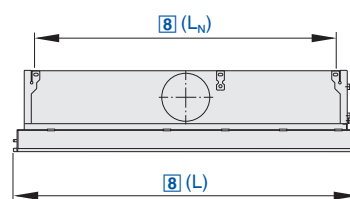



List of abbreviations

L_{WA} [dB(A)]	A-weighted sound power level of air-regenerated noise
t_{Pr} [°C]	Primary air temperature
t_{WV} [C°]	Water flow temperature - cooling/heating
t_R [C°]	Room temperature
t_{AN} [C°]	Secondary air intake temperature
Q_{Pr} [W]	Thermal output - primary air
Q_{tot} [W]	Thermal output - total
Q_W [W]	Thermal output - water side, cooling/heating
\dot{V}_{Pr} [l/s/m ³ /h]	Primary air volume flow rate
\dot{V}_W [l/h]	Water flow rate - cooling/heating
\dot{V} [l/h]	Volume flow rate
Δt_W [K]	Temperature difference - water
Δp_W [kPa]	Water-side pressure loss
Δp_t [Pa]	Total pressure drop, air side
$\Delta t_{Pr} = t_{Pr} - t_R$ [K]	Difference between primary air temperature and room temperature
$\Delta t_{RWV} = t_{WV} - t_R$ [K]	Difference between water flow temperature and room temperature
Δt_{Wm-Ref} [K]	Difference between mean water temperature and reference temperature
L_N [mm]	Nominal length

The maximum water-side operating pressure for all heat exchangers is 6 bar.





Active chilled beam with two-way air discharge, 300 mm nominal width, vertical heat exchanger and condensate drip tray

Order code

DID312 – LR – 2 – Z – LL – AV – A1 / 1800 × 1200 × 293 / P1 – RAL ... / G3 / VS

1 2 3 4 5 6 7 8 9 10 11 12

<p>1 Type DID312 Active chilled beam</p> <p>2 Induced air grille GL Longitudinal blades GQ Transverse blades LR Perforated metal, circular holes LQ Perforated metal, square holes</p> <p>3 Heat exchanger 2 2-pipe 4 4-pipe</p> <p>4 Nozzle variant Z Small plus M Medium G Large</p> <p>5 Arrangement of casings and connections LL (also available as supply and extract air combination)</p> <p>LR ML MR RL RR (also available as supply and extract air combination)</p> <p>Note L = left side, R = right side, M = centre</p>	<p>6 Additional casing for extract air, with spigot No entry: none AV Front AH Rear</p> <p>7 Water connections No entry: Ø12 mm pipe with plain tails A1 With G½" external thread and flat seal A2 With G½" union nut and flat seal</p> <p>8 Total length (diffuser face) × nominal size [mm] L × L_N Supply air 893 - 1500 × 900 1193 - 1800 × 1200 1493 - 2100 × 1500 1793 - 2400 × 1800 2093 - 2700 × 2100 2393 - 3000 × 2400 2693 - 3000 × 2700 2993 - 3000 × 3000</p> <p>Supply and extract air combination 1090 - 1500 × 900 1390 - 1800 × 1200 1690 - 2100 × 1500 1990 - 2400 × 1800</p>	<p>2290 - 2700 × 2100 2590 - 3000 × 2400 2890 - 3000 × 2700</p> <p>9 Width of front frame [mm] B 293 300 312</p> <p>10 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p> <p>11 Surface of heat exchanger No entry: untreated G3 RAL 9005, black</p> <p>12 Valves and actuators No entry: none VS With</p>
--	--	---

+ Features

Active chilled beam for heating and cooling, with 2-pipe or 4-pipe heat exchanger, for integration with various ceiling systems. The condensate drip tray is useful if the temperature temporarily falls below the dew point.

- ▶ Preferably for room heights up to 4.00 m
- ▶ High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
- ▶ High comfort levels due to low airflow velocity in the occupied zone
- ▶ Three nozzle variants to optimise induction based on demand
- ▶ Hinged, removable induced air grille in four designs

Optional equipment and accessories

- ▶ Control system
- ▶ Additional casing for extract air

- ▶ Heat exchanger powder-coated black
- ▶ Powder coating in many different colours, e.g. RAL CLASSIC

Application

- ▶ Active chilled beams of Type DID312 for the integration into various ceiling systems, preferably for room heights up to 4.00 m
- ▶ The vertical heat exchangers and the condensate drip tray are useful if the temperature temporarily falls below the dew point.
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate
- ▶ Energy-efficient solution since water is used for heating and cooling

◻ Variants

- ▶ DID312-LR: With induced air grille - perforated sheet metal, circular holes
- ▶ DID312-LQ: With induced air grille - perforated sheet metal, square holes
- ▶ DID312-GL: With induced air grille - longitudinal blades
- ▶ DID312-GQ: With induced air grille - transverse blades

Heat exchanger

- ▶ 2: 2-pipe systems
- ▶ 4: 4-pipe systems

Nozzle variants

- ▶ Z: Small plus
- ▶ M: Medium
- ▶ G: Large





Construction

- ▶ Powder-coated RAL 9010, pure white, gloss level 50 %
- ▶ P1: Powder-coated in any other RAL colour, gloss level 70 %
- ▶ P1: Powder-coated RAL 9006, white aluminium, gloss level 30 %



Attachments

- ▶ Additional casing for extract air, with side spigot
- ▶ Water connection A1: G½" external thread and flat seal
- ▶ Water connection A2: G½" union nut and flat seal



Useful additions

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields
- ▶ X-AIRCONTROL control system



Special characteristics

- ▶ The vertical heat exchanger with condensate drip tray is useful if the temperature temporarily falls below the dew point
- ▶ Hinged, removable induced air grille in four designs

- ▶ Heat exchanger as 2-pipe or 4-pipe system
- ▶ Internal nozzle plate with punched nozzles (non-combustible)
- ▶ Water connection at the narrow side, Ø12 mm Cu pipe, either with plain tails or with G½" external thread and flat seal



Standards and guidelines

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022



Technical data

Nominal length	900, 1200, 1500, 1800, 2100, 2400, 2700, 3000 mm
Length	893 - 3000 mm
Height	210/241 mm
Width	293, 300, 312 mm
Primary air spigot, diameter	123/158 mm
Primary air volume flow rate	5 - 70 l/s or 18 - 252 m³/h
Cooling capacity	Up to 1830 W
Heating capacity	Up to 1240 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C

Quick sizing

L _N	①	Primary air			②	Cooling				Heating			
		V _{Pr}	m³/h	Δp _t		L _{WA}	2-pipe and 4-pipe systems				4-pipe system		
							Q _{tot}	Q _{WK}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w	Δp _w
900	Z	5	18	55	23	267	207	1.2	1.6	327	4.7	0.3	
		7	25	108	31	342	258	1.5	1.6	372	5.3	0.3	
		10	36	220	41	431	311	1.8	1.6	418	6.0	0.3	
	M	7	25	44	21	289	205	1.2	1.6	304	4.4	0.3	
		11	40	109	33	413	281	1.6	1.6	361	5.2	0.3	
		16	58	231	43	534	341	2.0	1.6	407	5.8	0.3	
	G	13	47	45	23	398	241	1.4	1.6	334	4.8	0.3	
		21	76	116	36	569	316	1.8	1.6	396	5.7	0.3	
		25	90	165	40	644	342	2.0	1.6	418	6.0	0.3	
1200	Z	6	22	47	21	322	250	1.4	1.8	416	6.0	0.3	
		10	36	129	35	475	354	2.0	1.8	504	7.2	0.3	
		15	54	240	45	613	433	2.5	1.8	571	8.2	0.3	
	M	9	32	43	22	369	260	1.5	1.8	397	5.7	0.3	
		15	54	120	35	556	375	2.1	1.8	482	6.9	0.3	
		21	76	235	44	699	446	2.6	1.8	536	7.7	0.3	
	G	16	58	42	23	494	301	1.7	1.8	429	6.2	0.3	
		23	83	86	33	654	377	2.2	1.8	491	7.0	0.3	
		30	108	146	40	792	430	2.5	1.8	535	7.7	0.3	
1500	Z	8	29	48	23	421	324	1.9	2.1	526	7.5	0.4	
		11	40	91	31	537	405	2.3	2.1	593	8.5	0.4	
		16	58	193	41	687	494	2.8	2.1	668	9.6	0.4	
	M	11	40	39	21	446	313	1.8	2.1	485	7.0	0.4	
		18	65	103	34	666	449	2.6	2.1	585	8.4	0.4	
		26	94	215	43	857	543	3.1	2.1	655	9.4	0.4	



L _N	①	Primary air			②	Cooling				Heating		
		V _{Pr}	m ³ /h	Δp _t		L _{WA}	2-pipe and 4-pipe systems				4-pipe system	
				Pa	Q _{tot}		Q _{WK}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w	Δp _w
		l/s	W	K	kPa	W	K	kPa				
1500	G	21	76	45	25	636	383	2.2	2.1	539	7.7	0.4
		29	104	86	34	814	465	2.7	2.1	605	8.7	0.4
		38	137	148	41	989	530	3.0	2.1	658	9.4	0.4
1800	Z	9	32	42	21	472	363	2.1	2.3	603	8.6	0.5
		16	58	131	36	724	531	3.0	2.3	740	10.6	0.5
		19	68	185	41	807	577	3.3	2.3	779	11.2	0.5
	M	14	50	43	23	557	389	2.2	2.3	587	8.4	0.5
		23	83	117	36	824	547	3.1	2.3	701	10.0	0.5
		35	126	>200	47	1090	668	3.8	2.3	791	11.3	0.5
	G	25	94	52	27	774	460	2.6	2.3	642	9.2	0.5
		34	122	88	34	950	540	3.1	2.3	705	10.1	0.5
		41	148	128	39	1087	592	3.4	2.3	747	10.7	0.5
2100	Z	11	40	44	25	583	451	1.8	5.2	747	7.1	1.1
		17	61	104	36	814	509	2.4	5.2	880	8.4	1.1
		21	76	159	42	935	682	2.7	5.2	942	9.0	1.1
	M	16	58	39	25	648	455	1.8	5.2	706	6.7	1.1
		26	94	102	37	963	649	2.5	5.2	848	8.1	1.1
		36	130	195	46	1205	770	3.0	5.2	939	9.0	1.1
	G	31	112	45	29	935	562	2.2	5.2	788	7.5	1.1
		42	151	83	37	1180	673	2.6	5.2	878	8.4	1.1
		58	209	158	45	1485	786	3.1	5.2	971	9.3	1.1
2400	Z	12	43	41	25	634	489	1.9	5.6	826	7.9	1.3
		18	65	93	35	873	656	2.6	5.6	964	9.2	1.3
		23	83	152	42	1029	751	2.9	5.6	1043	10.0	1.3
	M	19	68	44	27	761	532	2.1	5.6	809	7.7	1.3
		28	101	95	37	1043	705	2.8	5.6	935	8.9	1.3
		36	130	156	43	1245	811	3.2	5.6	1013	9.7	1.3
	G	35	126	48	30	1050	628	2.5	5.6	884	8.4	1.3
		48	173	90	38	1338	757	3.0	5.6	987	9.4	1.3
		60	216	140	44	1568	844	3.3	5.6	1058	10.1	1.3
2700	Z	13	47	39	24	683	526	2.1	6.1	907	8.7	1.4
		20	72	92	35	964	722	2.8	6.1	1070	10.2	1.4
		25	90	143	41	1119	818	3.2	6.1	1147	11.0	1.4
	M	20	72	39	26	798	556	2.2	6.1	876	8.4	1.4
		29	104	82	35	1082	742	2.9	6.1	1009	9.6	1.4
		39	140	148	43	1350	879	3.4	6.1	1114	10.6	1.4
	G	38	137	47	30	1138	680	2.7	6.1	972	9.3	1.4
		52	187	88	38	1449	822	3.2	6.1	1085	10.4	1.4
		63	227	129	43	1664	904	3.5	6.1	1149	11.0	1.4
3000	Z	15	54	42	26	778	597	2.3	6.5	1002	9.6	1.5
		21	76	83	34	1018	764	3.0	6.5	1137	10.9	1.5
		27	97	136	41	1207	881	3.4	6.5	1233	11.8	1.5
	M	20	72	32	24	791	550	2.2	6.5	914	8.7	1.5
		32	115	82	36	1195	809	3.2	6.5	1097	10.5	1.5
		41	148	135	42	1428	934	3.6	6.5	1188	11.4	1.5
	G	45	152	56	33	1320	777	3.0	6.5	1081	10.3	1.5
		58	209	94	39	1600	901	3.5	6.5	1179	11.3	1.5
		70	252	136	44	1831	987	3.9	6.5	1248	11.9	1.5

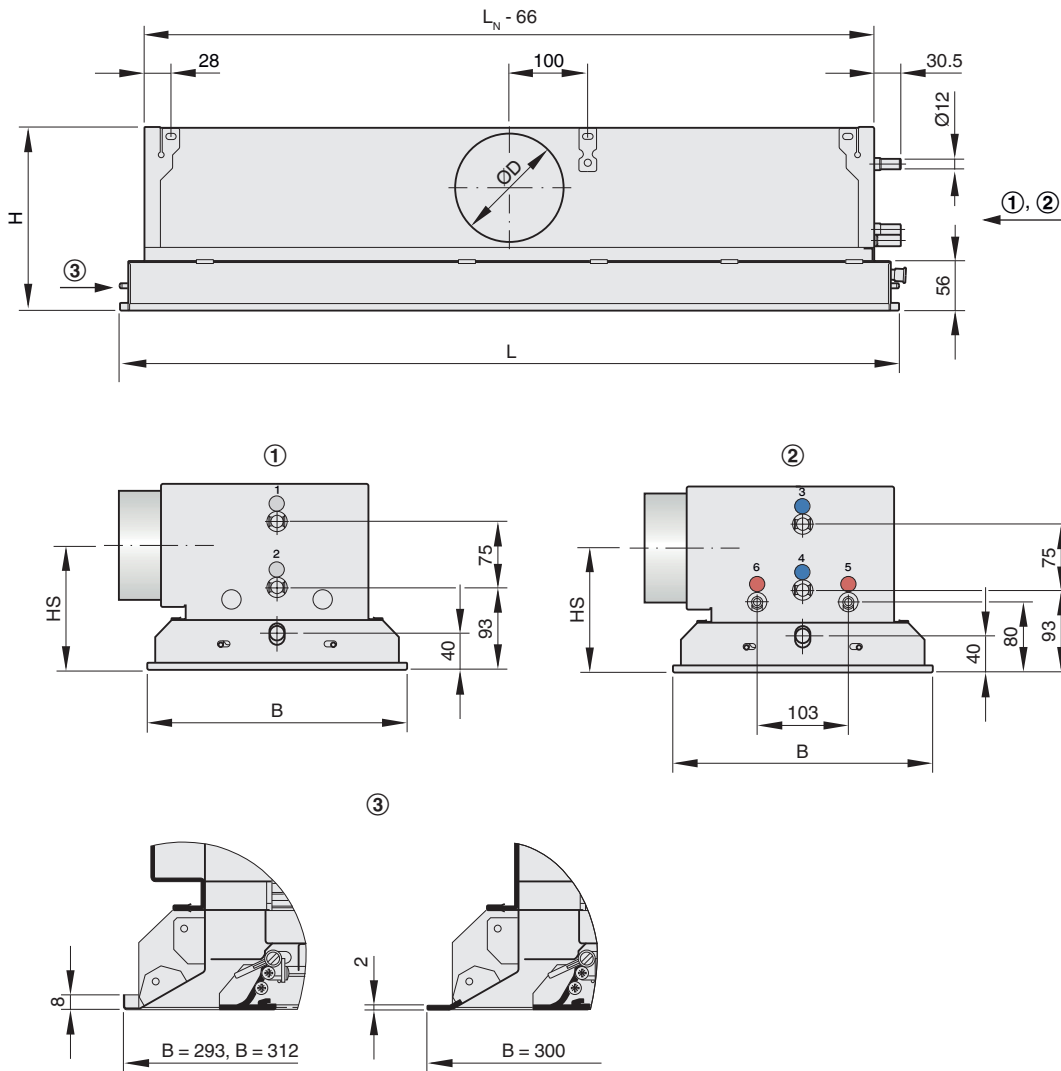
① Nozzle variant ② Air-regenerated noise



Reference values

Parameter	Cooling	Heating
t_R	26 °C	22 °C
t_{Pr}	16 °C	22 °C (isothermal)
t_{wV}	16 °C	50 °C
\dot{V}_W (L _N 900 - 1800)	150 l/h	60 l/h
\dot{V}_W (L _N 2100 - 3000)	220 l/h	90 l/h

DID312



Condensate drain, Ø12 mm
Water connection, Ø12 mm pipe, either with plain tails or with G½" external thread
① 2-pipe system
② 4-pipe system
③ Widths 293, 300 and 312 mm

1 Water flow
2 Water return
3 Chilled water flow
4 Chilled water return
5 Hot water return

6 Hot water flow

L = Total length (diffuser face)
LN = Nominal length
B = Width of front frame

Dimensions [mm]

B	293	293
	300	300
	312	312

B = Width of front frame



Dimensions [mm]

L_N	Available sizes	$\varnothing D$	H	HS
	L			
900	893 - 1500	123	210	140
1200	1193 - 1800	123	210	140
1500	1493 - 2100	123	210	140
1800	1793 - 2400	123	210	140
2100	2093 - 2700	158	241	155
2400	2393 - 3000	158	241	155
2700	2693 - 3000	158	241	155
3000	2993 - 3000	158	241	155

L = Total length (diffuser face)

L_N = Nominal length

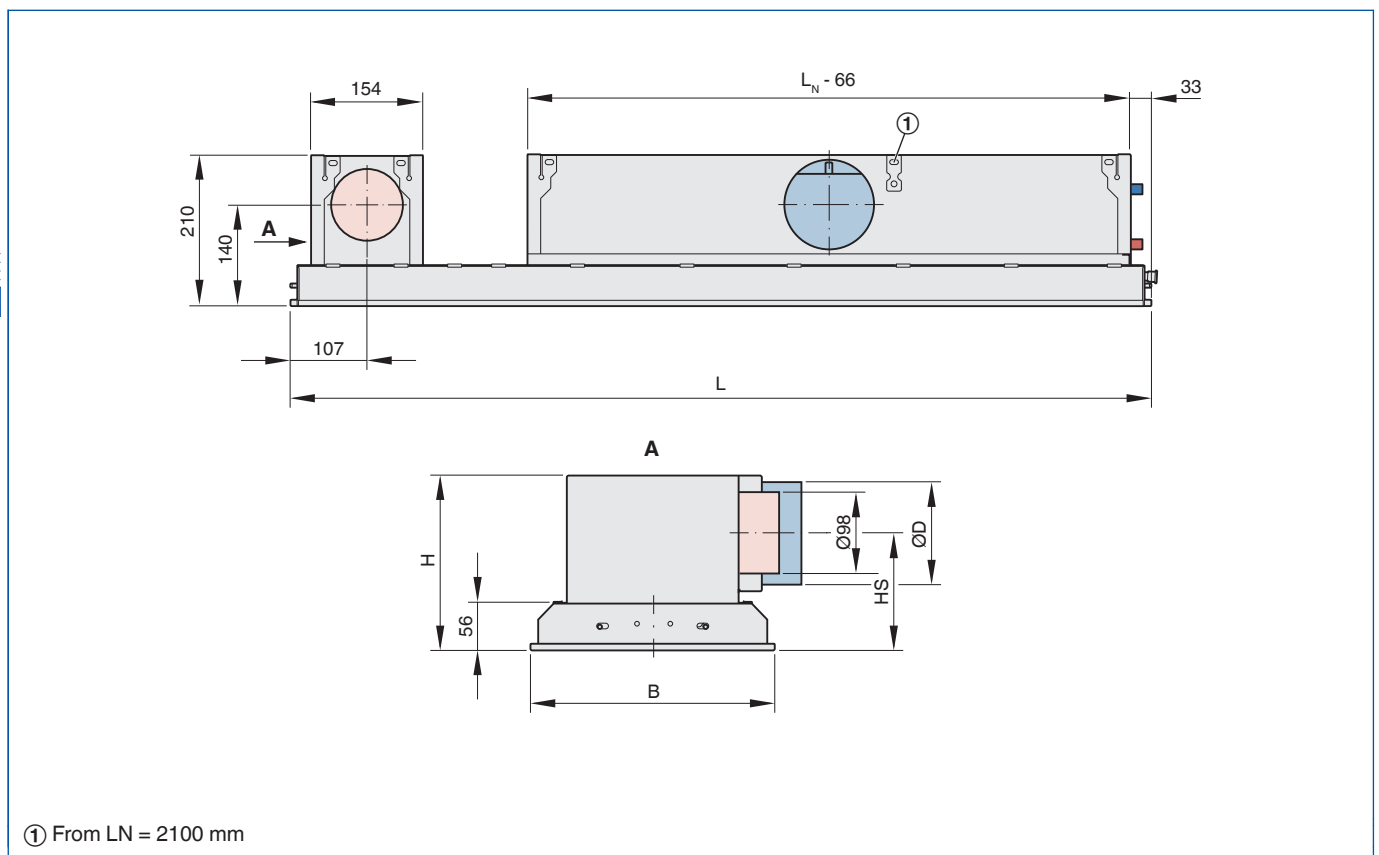
Weights

Nominal length (L_N)	mm	900	1200	1500	1800	2100	2400	2700	3000
DID312-LR	kg/piece	15	19	23	27	31	35	39	43
DID312-LQ		15	19	23	27	31	35	39	43
DID312-GL		16	20	25	29	33	38	42	46
DID312-GQ		16	20	25	29	33	38	42	46
Contained water (max.)	kg	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8

Non-active section as extension: 10 kg/m

Differences in width can be neglected

DID312, with additional casing for extract air



Dimensions [mm]

B	
	293
	300
	312

B = Width of front frame



Dimensions [mm]

L _N	Available sizes	ØD	H	HS
	L			
900	1090 - 1500	123	210	140
1200	1390 - 1800	123	210	140
1500	1690 - 2100	123	210	140
1800	1990 - 2400	123	210	140
2100	2290 - 2700	158	241	155
2400	2590 - 3000	158	241	155
2700	2890 - 3000	158	241	155

L = Total length (diffuser face)

L_N = Nominal length

Weights

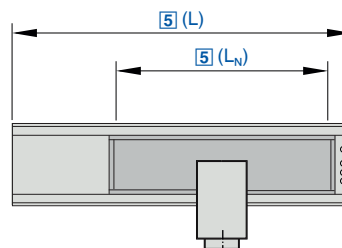
Nominal length (L _N)	mm	900	1200	1500	1800	2100	2400	2700
DID312-LR	kg/piece	15	19	23	27	31	35	39
DID312-LQ		15	19	23	27	31	35	39
DID312-GL		16	20	25	29	33	38	42
DID312-GQ		16	20	25	29	33	38	42
Contained water (max.)	kg	0.7	1.0	1.3	1.6	1.9	2.2	2.5

Non-active section as extension: 10 kg/m

Extract air spigot Ø98 mm, 3 kg/piece

Differences in width can be neglected





Active chilled beam with two-way air discharge, 300 mm nominal width, with horizontal heat exchanger

 Order code

DID300B - 2 - K - H - LV - ARV / 1800 x 1500 / A1 / P1 - RAL ... / G3 / VS

1 2 3 4 5 6 7 8 9

1 Type

DID300B Active chilled beam

2 Heat exchanger

2 2-pipe
4 4-pipe

3 Nozzle variant

K Small
M Medium
G Large

4 Arrangement of casings and connections

Top entry primary air spigot (V)
Supply air

V-S
V-M
V-L
V-R

Supply and extract air combination (A)

V-L-AR
V-R-AL

Side entry primary air spigot (H)
Supply air

H-SV
H-SH
H-LV
H-LH
H-MV

H-MH
H-RV
H-RH

Supply and extract air combination (A)

H-LV-ARV
H-RV-ALV
H-LH-ARH
H-RH-ALH
H-LV-ARH
H-RV-ALH
H-LH-ARV
H-RH-ALV

Note
S = L = L_N
L left side, V front, M centre, R right side, H rear

5 Total length (diffuser face) × nominal size [mm]

L × L_N
Supply air
893 - 1500 × 900
1193 - 1800 × 1200
1493 - 2100 × 1500
1793 - 2400 × 1800
2093 - 2700 × 2100
2393 - 3000 × 2400
2693 - 3000 × 2700
2993 - 3000 × 3000

L is up to 7 mm shorter than L_N

Supply and extract air combination

1150 - 1500 × 900
1450 - 1800 × 1200
1750 - 2100 × 1500
2050 - 2400 × 1800
2350 - 2700 × 2100
2650 - 3000 × 2400
2950 - 3000 × 2700

6 Water connections

No entry: Ø12 mm pipe with plain tails
A1 With G½" external thread and flat seal
A2 With G½" union nut and flat seal

7 Exposed surface

No entry: powder-coated
RAL 9010, pure white
P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

8 Surface of heat exchanger

No entry: untreated
G3 RAL 9005, black

9 Valves and actuators

No entry: none
VS With

+ Features

- Active chilled beam for heating and cooling, with 2-pipe or 4-pipe heat exchanger, for integration with various ceiling systems
- ▶ Preferably for room heights up to 4.00 m
 - ▶ High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
 - ▶ High comfort levels due to low airflow velocity in the occupied zone
 - ▶ Three nozzle variants to optimise induction based on demand
 - ▶ Side entry or top entry primary air spigot
 - ▶ Removable induced air grille

Optional equipment and accessories

- ▶ Control system
- ▶ Additional casing for extract air
- ▶ Heat exchanger powder-coated black
- ▶ Powder coating in many different colours, e.g. RAL CLASSIC

 Application

- ▶ Active chilled beams of Type DID300 B for the integration into various ceiling systems, preferably for room heights up to 4.00 m
- ▶ Shallow construction of only 210 mm, hence suitable for low ceiling void spaces, e.g. in refurbishment projects

- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate
- ▶ Energy-efficient solution since water is used for heating and cooling

 Variants

- Heat exchanger
- ▶ 2: 2-pipe systems
 - ▶ 4: 4-pipe systems
- Nozzle variants
- ▶ K: Small
 - ▶ M: Medium
 - ▶ G: Large





Construction

- ▶ Powder-coated RAL 9010, pure white, gloss level 50 %
- ▶ P1: Powder-coated in any other RAL colour, gloss level 70 %
- ▶ P1: Powder-coated RAL 9006, white aluminium, gloss level 30 %



Attachments

- ▶ Additional casing for extract air, with side or top spigot
- ▶ Water connection A1: G½" external thread and flat seal
- ▶ Water connection A2: G½" union nut and flat seal



Accessories

- ▶ Support angles for installation into linear beam grid ceilings



Useful additions

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields
- ▶ X-AIRCONTROL control system



Special characteristics

- ▶ Side entry or top entry primary air spigot
- ▶ Horizontal heat exchanger as 2-pipe or 4-pipe system
- ▶ Internal nozzle plate with punched nozzles (non-combustible)
- ▶ Water connections at the narrow side, Ø12 mm Cu pipe, either with plain tails or with external thread or union nut, G½", flat seal



Standards and guidelines

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022



Technical data

Nominal length	900, 1200, 1500, 1800, 2100, 2400, 2700, 3000 mm
Length	893 - 3000 mm
Height	210 mm
Width	293 mm
Primary air spigot, diameter	123/158 mm
Primary air volume flow rate	3 - 43 l/s or 11 - 155 m³/h
Cooling capacity	Up to 1345 W
Heating capacity	Up to 1480 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C

Quick sizing

L _N	①	Primary air		②	③	Cooling mode				Heating mode		
		V _{Pr}				Δp _t	L _{WA}	2-pipe and 4-pipe systems				4-pipe system
		l/s	m³/h	Pa	dB(A)			Q _{tot}	Q _{WK}	Δt _w	Δp _w	Q _{WH} = Q _{tot}
						W		K	kPa	W	K	kPa
900	K	3	11	55	<15	156	120	0.9	1.3	189	3.2	0.12
		5	16	116	20	237	183	1.4	1.3	287	4.9	0.12
		6	21	200	27	298	227	1.8	1.3	355	6.1	0.12
	M	7	25	46	18	267	183	1.4	1.3	287	4.9	0.12
		11	38	106	29	383	256	2.0	1.3	399	6.9	0.12
		14	51	191	37	476	305	2.4	1.3	473	8.1	0.12
	G	13	46	47	25	382	228	1.8	1.3	356	6.1	0.12
		18	63	79	34	492	281	2.2	1.3	437	7.5	0.12
1200	K	22	80	128	40	588	320	2.5	1.3	796	8.5	0.12
		4	15	55	<15	209	159	1.2	1.7	249	4.3	0.14
		6	22	117	24	319	245	1.9	1.7	383	6.6	0.14
	M	8	29	204	32	401	304	2.4	1.7	471	8.1	0.14
		9	33	43	20	346	235	1.8	1.7	367	6.3	0.14
		13	46	83	30	466	312	2.4	1.7	483	8.3	0.14
	G	18	65	166	39	605	387	3.0	1.7	595	10.2	0.14
		17	62	41	30	507	299	2.3	1.7	464	8.0	0.14
		21	75	60	36	593	341	2.7	1.7	527	9.1	0.14
		25	88	83	40	671	376	2.9	1.7	579	10.0	0.14



L _N	①	Primary air		②	③	Cooling mode				Heating mode		
		V _{Pr}				Δp _t	L _{WA}	2-pipe and 4-pipe systems				4-pipe system
		l/s	m ³ /h	Pa	dB(A)			Q _{tot}	Q _{WK}	Δt _w	Δp _w	Q _{WH} = Q _{tot}
						W		K	kPa		W	K
1500	K	5	18	49	<15	241	181	1.4	2.0	283	4.9	0.17
		8	27	110	26	385	295	2.3	2.0	457	7.9	0.17
		10	36	196	34	490	369	2.9	2.0	569	9.8	0.17
	M	12	42	43	23	432	292	2.3	2.0	453	7.8	0.17
		16	59	85	33	584	387	3.0	2.0	595	10.2	0.17
		21	76	141	40	707	453	3.5	2.0	692	11.9	0.17
	G	22	79	42	35	634	369	2.9	2.0	569	9.8	0.17
		24	88	52	38	693	399	3.1	2.0	612	10.5	0.17
		27	97	63	41	749	424	3.3	2.0	650	11.2	0.17
1800	K	6	21	46	16	272	201	1.6	2.3	315	5.4	0.20
		9	32	106	27	449	342	2.7	2.3	528	9.1	0.20
		12	43	192	36	574	430	3.4	2.3	659	11.3	0.20
	M	14	50	42	25	506	339	2.6	2.3	523	9.0	0.20
		19	68	78	34	667	439	3.4	2.3	672	11.6	0.20
		24	86	124	40	798	510	4.0	2.3	775	13.3	0.20
	G	26	95	41	38	751	432	3.4	2.3	662	11.4	0.20
		29	105	50	41	815	463	3.6	2.3	707	12.2	0.20
		22	80	30	33	645	377	2.9	2.3	580	10.0	0.20
2100	K	7	24	44	17	330	250	1.1	7.6	475	3.7	0.90
		11	38	109	30	588	460	2.0	7.6	865	6.8	0.90
		14	52	205	38	767	593	2.5	7.6	1105	8.6	0.90
	M	16	58	41	27	640	445	1.9	7.6	837	6.5	0.90
		22	79	76	35	853	588	2.5	7.6	1098	8.6	0.90
		28	100	122	42	1026	691	3.0	7.6	1282	10.0	0.90
	G	31	112	42	40	960	585	2.5	7.6	1092	8.5	0.90
		34	123	50	43	1039	627	2.7	7.6	1167	9.1	0.90
		37	134	60	45	1113	664	2.9	7.6	1234	9.6	0.90
2400	K	8	27	42	18	363	273	1.2	8.5	517	4.0	0.95
		12	43	107	31	658	514	2.2	8.5	962	7.5	0.95
		16	59	201	40	860	663	2.9	8.5	1232	9.6	0.95
	M	19	67	42	28	732	507	2.2	8.5	950	7.4	0.95
		24	87	71	36	934	642	2.8	8.5	1195	9.3	0.95
		30	107	107	41	1102	744	3.2	8.5	1376	10.8	0.95
	G	36	128	42	43	1086	657	2.8	8.5	1222	9.6	0.95
		30	108	30	39	933	571	2.5	8.5	1066	8.3	0.95
		9	31	44	20	419	315	1.4	9.4	596	4.7	1.00
2700	K	13	48	105	32	726	566	2.4	9.4	1056	8.3	1.00
		18	65	193	40	941	723	3.1	9.4	1340	10.5	1.00
		21	75	41	29	811	559	2.4	9.4	1045	8.2	1.00
	M	26	93	64	35	994	683	2.9	9.4	1267	9.9	1.00
		31	112	93	41	1159	783	3.4	9.4	1447	11.3	1.00
		40	145	42	45	1217	731	3.1	9.4	1354	10.6	1.00
G	34	122	30	41	1044	635	2.7	9.4	1182	9.2	1.00	
	K	10	34	43	20	451	337	1.4	10.2	637	5.0	1.10
		14	51	96	32	764	593	2.6	10.2	1107	8.7	1.10
19		68	171	40	985	758	3.3	10.2	1401	11.0	1.10	
3000	M	23	83	41	30	888	610	2.6	10.2	1137	8.9	1.10
		29	103	63	36	1090	745	3.2	10.2	1378	10.8	1.10
		34	123	90	41	1260	849	3.6	10.2	1562	12.2	1.10
	G	45	162	43	47	1345	802	3.4	10.2	1480	11.6	1.10
		38	136	30	43	1152	697	3.0	10.2	1293	10.1	1.10

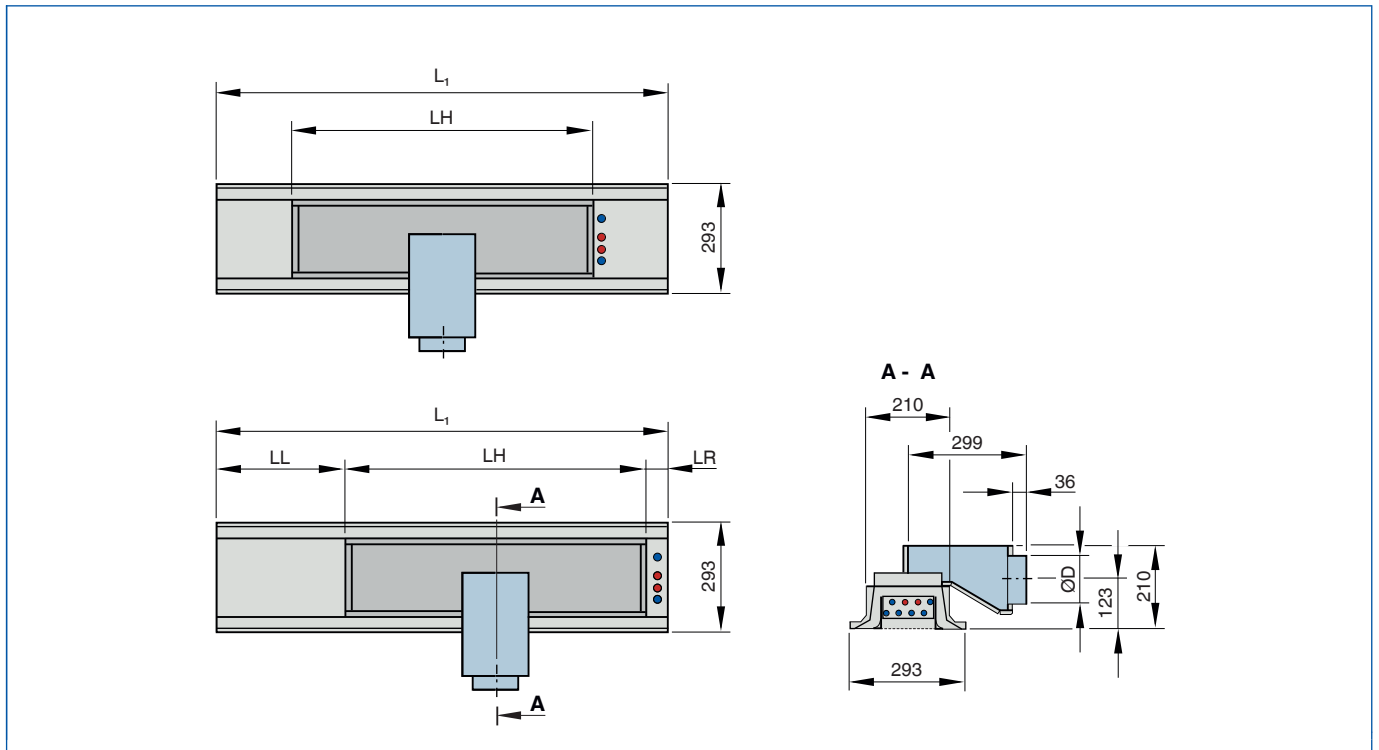
① Nozzle variant ② Pressure drop ③ Air-regenerated noise



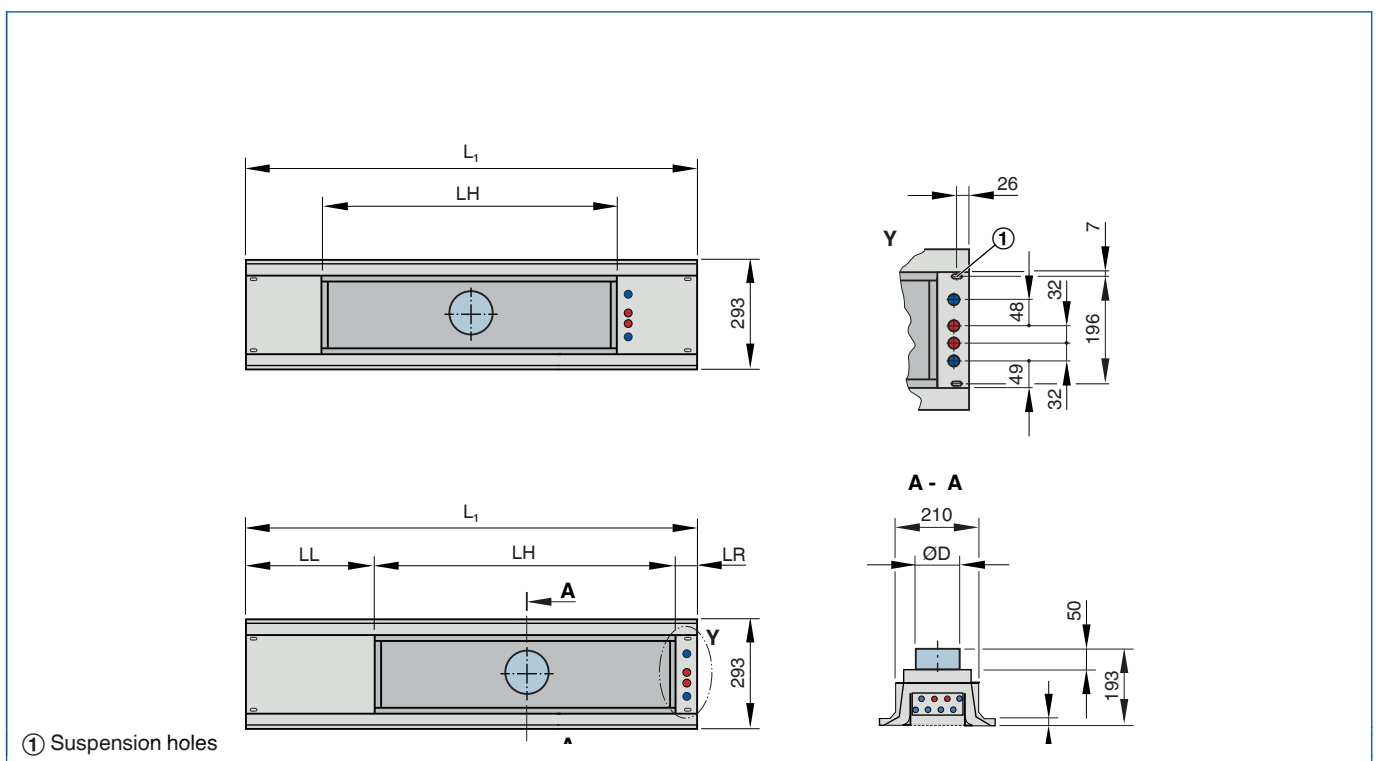
Reference values

Parameter	Cooling	Heating
t_R	26 °C	22 °C
t_{Pr}	16 °C	22 °C (isothermal)
t_{WV}	16 °C	50 °C
\dot{V}_W (up to 1800 mm)	110 l/h	50 l/h
\dot{V}_W (from 2100 mm)	200 l/h	110 l/h

Construction with side entry primary air spigot



Construction with top entry primary air spigot



Supply air

Variant	L _N	L ₁		LH	LL		LR	
		min	max		min	max	min	max
V-S, H-SV, H-SH	900	893	900	800	40	43	54	58
	1200	1193	1200	1100	40	43	54	58
	1500	1493	1500	1400	40	43	54	58
	1800	1793	1800	1700	40	43	54	58
	2100	2093	2100	2000	40	43	54	58
	2400	2393	2400	2300	40	43	54	58
	2700	2693	2700	2600	40	43	54	58
	3000	2993	3000	2900	40	43	54	58
V-L, H-LV, H-LH	900	901	1500	800	43	43	58	658
	1200	1201	1800	1100	43	43	58	658
	1500	1501	2100	1400	43	43	58	658
	1800	1801	2400	1700	43	43	58	658
	2100	2101	2700	2000	43	43	58	658
	2400	2401	3000	2300	43	43	58	658
	2700	2701	3000	2600	43	43	58	658
V-M, H-MV, H-MH	900	901	1500	800	-	-	-	-
	1200	1201	1800	1100	-	-	-	-
	1500	1501	2100	1400	-	-	-	-
	1800	1801	2400	1700	-	-	-	-
	2100	2101	2700	2000	-	-	-	-
	2400	2401	3000	2300	-	-	-	-
	2700	2701	3000	2600	-	-	-	-
V-R, H-RV, H-RH	900	901	1500	800	43	643	58	58
	1200	1201	1800	1100	43	643	58	58
	1500	1501	2100	1400	43	643	58	58
	1800	1801	2400	1700	43	643	58	58
	2100	2101	2700	2000	43	643	58	58
	2400	2401	3000	2300	43	643	58	58
	2700	2701	3000	2600	43	643	58	58

Weights

Nominal length (L _N)	mm	900	1200	1500	1800	2100	2400	2700	3000
DID300B	kg/piece	11	14	18	21	25	28	32	35
Contained water (max.)	kg	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3.0

Non-active section as extension: 8 kg/m

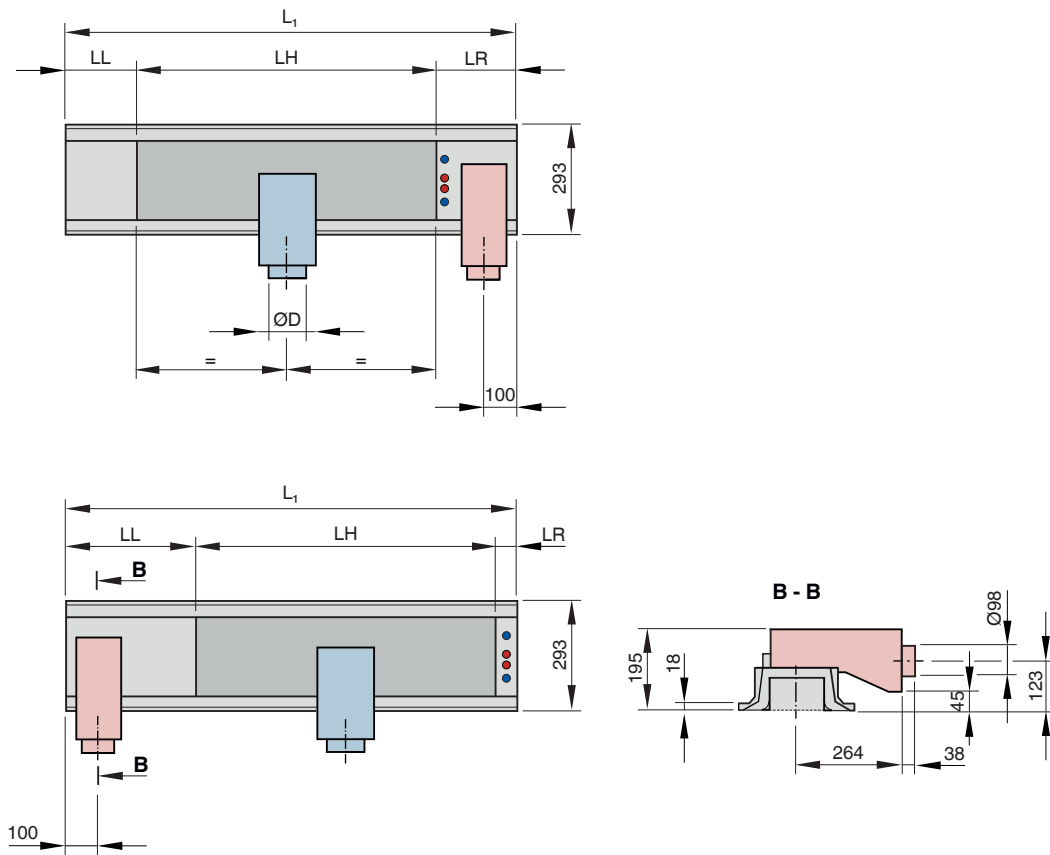
Top entry primary air spigot -1 kg/piece

Dimensions [mm]

L _N	ØD
900 - 1800	123
2100 - 3000	158



Construction with side entry primary air spigot and additional casing with side extract air spigot

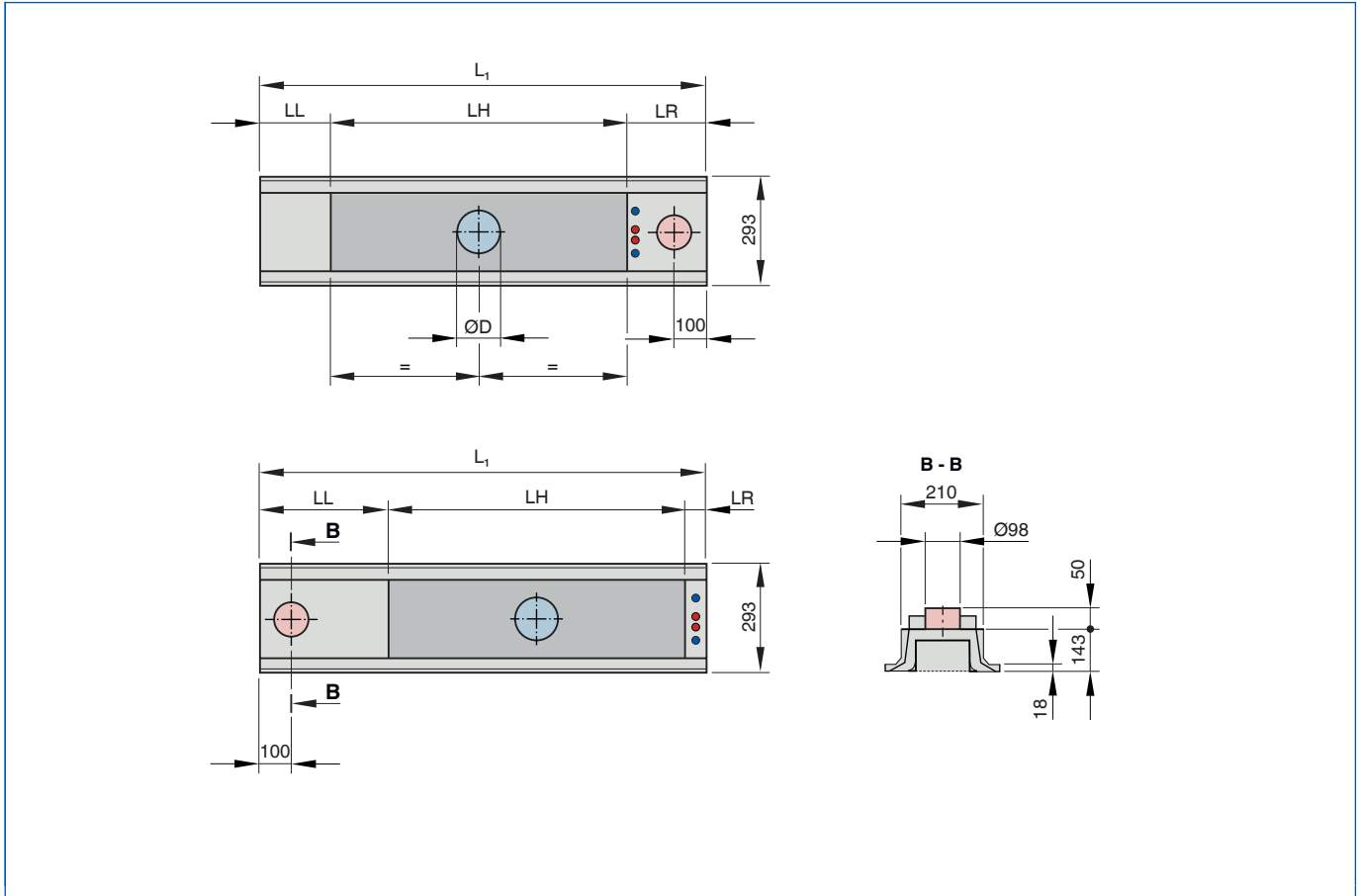


Water connection, $\varnothing 12$ mm

Water connections A1 and A2



Construction with top entry primary air spigot and additional casing with spigot at the top



Supply air and extract air

Variant	L _N	L ₁		LH	LL		LR	
		min	max		min	max	min	max
V-L-AR,	900	1096	1500	800	43	43	253	658
H-LV-ARV,	1200	1396	1800	1100	43	43	253	658
H-LH-ARV,	1500	1696	2100	1400	43	43	253	658
H-LV-ARH,	1800	1996	2400	1700	43	43	253	658
H-LH-ARH	2100	2296	2700	2000	43	43	253	658
	2400	2596	3000	2300	43	43	253	658
	2700	2896	3300	2600	43	43	253	358
V-R-AL,	900	1095	1500	800	238	643	58	58
H-RV-ALV,	1200	1395	1800	1100	238	643	58	58
H-RH-ALV,	1500	1695	2100	1400	238	643	58	58
H-RV-ALH,	1800	1995	2400	1700	238	643	58	58
H-RH-ALH	2100	2295	2700	2000	238	643	58	58
	2400	2595	3000	2300	238	643	58	58
	2700	2895	3000	2600	238	343	58	58

Weights

Nominal length (L _N)	mm	900	1200	1500	1800	2100	2400	2700	3000
DID300B	kg/piece	11	14	18	21	25	28	32	35
Contained water (max.)	kg	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3.0

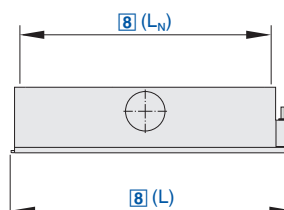
Non-active section as extension: 8 kg/m
Side extract air spigot - 3 kg/piece
Top entry primary air spigot -1 kg/piece
Top extract air spigot - 1 kg/piece



Dimensions [mm]

L_N	$\varnothing D$
900 - 1800	123
2100 - 3000	158





Active chilled beam with two-way air discharge and horizontal heat exchanger, suitable for grid ceilings with grid size 600 or 625

Order code

DID632 – LR – 2 – M – LL – AV – A1 / 1800 × 1500 × 593 / P1 – RAL... / G3 / LE / VS

1 2 3 4 5 6 7 8 9 10 11 12 13

1 Type

DID632 Active chilled beam

2 Induced air grille

GL Longitudinal blades
GQ Transverse blades
LR Perforated metal, circular holes
LQ Perforated metal, square holes

3 Heat exchanger

2 2-pipe
4 4-pipe

4 Nozzle variant

Z Small plus
M Medium
G Large
U Extra large

5 Arrangement of casings and connections

LL (also available as supply and extract air combination)
LR
ML
MR
RL
RR (also available as supply and extract air combination)

Note

L = left side, R = right side, M = centre

6 Additional casing with extract air spigot

No entry: none

AV Front
AH Rear

Available from $L = L_N + 250$ mm

7 Water connections

No entry: Ø12 mm pipe with plain tails
A1 With G½" external thread and flat seal
A2 With G½" union nut and flat seal

8 Total length (diffuser face) × nominal size [mm]

$L \times L_N$
Supply air

893 - 1500 × 900
1193 - 1800 × 1200
1493 - 2100 × 1500
1793 - 2400 × 1800
2093 - 2700 × 2100
2393 - 3000 × 2400
2693 - 3000 × 2700
2993 - 3000 × 3000

L is up to 7 mm shorter than L_N

Supply and extract air combination
1150 - 1500 × 900
1450 - 1800 × 1200
1750 - 2100 × 1500

2050 - 2400 × 1800

2350 - 2700 × 2100

2650 - 3000 × 2400

2950 - 3000 × 2700

9 Width of front frame [mm]

B
593, 598, 618, 623

10 Exposed surface

No entry: powder-coated RAL 9010, pure white

P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

11 Surface of heat exchanger

No entry: untreated
G3 RAL 9005, black

12 Air control blades

No entry: none
LE With

13 Valves and actuators

No entry: none
VS With

+ Features

Active chilled beam for heating and cooling, with 2-pipe or 4-pipe heat exchanger, for integration with various ceiling systems

- ▶ Preferably for room heights up to 4.0 m
- ▶ High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
- ▶ Four nozzle variants to optimise induction based on demand
- ▶ Hinged, removable induced air grille in four designs

Optional equipment and accessories

- ▶ Control system
- ▶ Additional casing for extract air
- ▶ Heat exchanger powder-coated black
- ▶ Powder coating in many different colours,

e.g. RAL CLASSIC

- ▶ Adjustable air control blades for air direction control
- ▶ With an extended border also suitable for freely suspended installation

X Application

- ▶ Active chilled beams of Type DID632 for the integration into various ceiling systems, preferably for room heights up to 4.0 m
- ▶ Particularly suitable for grid ceilings with grid size 600 or 625
- ▶ Adjustable air control blades (optional) allow for the manual adjustment of the air discharge direction
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned

primary air volume flow rate

- ▶ Energy-efficient solution since water is used for heating and cooling

◊ Variants

- ▶ DID632-LR: With induced air grille - perforated sheet metal, circular holes
- ▶ DID632-LQ: With induced air grille - perforated sheet metal, square holes
- ▶ DID632-GL: With induced air grille - longitudinal blades
- ▶ DID632-GQ: With induced air grille - transverse blades

Heat exchanger

- ▶ 2: 2-pipe systems
- ▶ 4: 4-pipe systems



- Nozzle variants
- ▶ Z: Small plus
 - ▶ M: Medium
 - ▶ G: Large
 - ▶ U: Extra large

- (45° connection)
- ▶ Water connection A1: G½" external thread and flat seal
 - ▶ Water connection A2: G½" union nut and flat seal
 - ▶ Adjustable air control blades for air direction control

- ▶ Adjustable air control blades for air direction control
- ▶ Hinged, removable induced air grille in four designs
- ▶ Horizontal heat exchanger as 2-pipe or 4-pipe system
- ▶ Internal nozzle plate with punched nozzles (non-combustible)
- ▶ Water connections at the narrow side, Ø12 mm Cu pipe, either with plain tails or with G½" external thread and flat seal

+ **Construction**

- ▶ Powder-coated RAL 9010, pure white, gloss level 50 %
- ▶ P1: Powder-coated in any other RAL colour, gloss level 70 %
- ▶ P1: Powder-coated RAL 9006, white aluminium, gloss level 30 %

+ **Useful additions**

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields
- ▶ X-AIRCONTROL control system

ISO **Standards and guidelines**

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022

+ **Attachments**

- ▶ Additional casing with extract air spigot

★ **Special characteristics**

Technical data

Nominal length	900, 1200, 1500, 1800, 2100, 2400, 2700, 3000 mm
Length	893 - 3000 mm
Height	210 mm
Width	593, 598, 618, 623 mm
Primary air spigot, diameter	123/158 mm
Primary air volume flow rate	6 - 85 l/s or 22 - 306 m³/h
Cooling capacity	Up to 2450 W
Heating capacity	Up to 2970 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C

Quick sizing

L _N	①	Primary air		②	③	Cooling mode				Heating mode		
		Ḃ _{Pr} l/s	Ḃ _{Pr} m³/h			Δp _t Pa	L _{WA} dB(A)	2-pipe and 4-pipe systems				4-pipe system
				Q _{tot} W	Q _{WK} W			Δt _w K	Δp _w kPa	Q _{WH} = Q _{tot} W	Δt _w K	Δp _w kPa
900	Z	6	22	67	<20	411	339	2.6	2.4	495	8.5	0.2
		9	32	151	<20	573	464	3.6	2.4	673	11.6	0.2
		12	43	268	22	690	545	4.3	2.4	786	13.5	0.2
	M	9	32	65	<20	459	350	2.7	2.4	512	8.8	0.2
		13	47	136	<20	628	472	3.7	2.4	683	11.7	0.2
		18	65	260	28	785	568	4.4	2.4	818	14.1	0.2
	G	16	58	58	<20	590	397	3.1	2.4	577	9.9	0.2
		24	86	129	29	815	526	4.1	2.4	759	13.1	0.2
		34	122	259	38	1035	625	4.9	2.4	897	15.4	0.2
	U	30	108	65	30	847	485	3.8	2.4	702	12.1	0.2
36		130	94	35	964	530	4.1	2.4	764	13.1	0.2	
44		158	140	40	1107	577	4.5	2.4	829	14.3	0.2	
1200	Z	8	29	64	<20	529	433	3.4	3.1	628	10.8	0.3
		12	43	145	<20	728	584	4.6	3.1	839	14.4	0.3
		16	58	257	26	871	679	5.3	3.1	970	16.7	0.3
	M	12	43	63	<20	592	447	3.5	3.1	648	11.2	0.3
		17	61	126	23	790	585	4.6	3.1	841	14.5	0.3
		24	86	250	32	995	705	5.5	3.1	1006	17.3	0.3
	G	21	76	59	22	750	496	3.9	3.1	718	12.3	0.3
		32	115	126	34	1042	656	5.1	3.1	939	16.2	0.3
		44	158	238	42	1292	762	6.0	3.1	1083	18.6	0.3
	U	36	130	54	33	1011	577	4.5	3.1	830	14.3	0.3
		42	151	73	37	1129	623	4.9	3.1	893	15.4	0.3
		48	173	95	41	1240	661	5.2	3.1	945	16.3	0.3



L _N	①	Primary air		②	③	Cooling mode				Heating mode		
		V _{Pr} l/s	V _{Pr} m ³ /h	Δp _t Pa	L _{WA} dB(A)	2-pipe and 4-pipe systems				4-pipe system		
						Q _{tot} W	Q _{WK} W	Δt _w K	Δp _w kPa	Q _{WH} = Q _{tot} W	Δt _w K	Δp _w kPa
1500	Z	10	36	63	<20	639	519	4.1	3.7	749	12.9	0.3
		15	54	141	21	871	690	5.4	3.7	986	17.0	0.3
		20	72	251	29	1037	795	6.2	3.7	1128	19.4	0.3
	M	15	54	62	<20	716	535	4.2	3.7	772	13.3	0.3
		20	72	109	25	908	666	5.2	3.7	953	16.4	0.3
		30	108	243	36	1187	825	6.4	3.7	1168	20.1	0.3
	G	30	108	71	30	1014	652	5.1	3.7	934	16.1	0.3
		38	137	114	36	1209	751	5.9	3.7	1068	18.4	0.3
		44	158	153	40	1338	807	6.3	3.7	1144	19.7	0.3
	U	42	151	49	37	1166	659	5.2	3.7	943	16.2	0.3
		46	166	59	40	1245	691	5.4	3.7	986	17.0	0.3
		50	180	70	42	1321	718	5.6	3.7	1024	17.6	0.3
1800	Z	12	43	62	<20	743	598	4.7	4.3	859	14.8	0.3
		18	65	139	24	1003	786	6.1	4.3	1115	19.2	0.3
		24	86	247	32	1188	899	7.0	4.3	1266	21.8	0.3
	M	18	65	61	<20	834	617	4.8	4.3	884	15.2	0.3
		24	86	108	28	1050	760	5.9	4.3	1080	18.6	0.3
		36	130	243	39	1364	930	7.3	4.3	1307	22.5	0.3
	G	30	108	50	29	1015	653	5.1	4.3	935	16.1	0.3
		40	144	89	37	1276	794	6.2	4.3	1126	19.4	0.3
		44	158	107	39	1367	836	6.5	4.3	1182	20.3	0.3
	U	40	144	33	37	1143	661	5.2	4.3	945	16.3	0.3
		44	158	40	40	1230	700	5.5	4.3	998	17.2	0.3
		50	180	52	43	1352	749	5.9	4.3	1066	18.3	0.3
2100	Z	14	50	61	<20	994	825	3.5	14.2	1506	11.8	1.6
		21	76	137	22	1363	1110	4.8	14.2	1997	15.6	1.6
		28	101	243	30	1625	1287	5.5	14.2	2297	18.0	1.6
	M	21	76	59	<20	1106	852	3.7	14.2	1553	12.1	1.6
		28	101	105	25	1408	1070	4.6	14.2	1929	15.1	1.6
		42	151	237	36	1844	1337	5.8	14.2	2381	18.6	1.6
	G	36	130	50	26	1364	930	4.0	14.2	1688	13.2	1.6
		56	202	120	38	1921	1246	5.4	14.2	2228	17.4	1.6
		70	252	188	44	2230	1386	6.0	14.2	2462	19.2	1.6
	U	60	216	47	37	1793	1070	4.6	14.2	1929	15.1	1.6
		70	252	64	41	2001	1157	5.0	14.2	2077	16.2	1.6
		80	288	84	45	2193	1229	5.3	14.2	2199	17.2	1.6
2400	Z	16	58	61	< 20	1113	920	4.0	15.9	1671	13.1	1.8
		24	86	136	24	1516	1226	5.3	15.9	2195	17.2	1.8
		32	115	241	32	1801	1415	6.1	15.9	2510	19.6	1.8
	M	24	86	59	<20	1239	949	4.1	15.9	1722	13.5	1.8
		32	115	105	27	1570	1184	5.1	15.9	2123	16.6	1.8
		48	173	236	38	2047	1468	6.3	15.9	2598	20.3	1.8
	G	40	144	48	28	1491	1009	4.3	15.9	1825	14.3	1.8
		60	216	107	39	2049	1326	5.7	15.9	2362	18.5	1.8
		70	252	145	43	2276	1432	6.2	15.9	2539	19.9	1.8
	U	60	216	38	37	1823	1099	4.7	15.9	1979	15.5	1.8
		70	252	51	41	2040	1196	5.1	15.9	2144	16.8	1.8
		80	288	67	45	2241	1277	5.5	15.9	2279	17.8	1.8

¹ If the air discharge is not straight, the water-side capacity will be slightly affected; blades set at 45° may cause a loss of up to 5 %.

① Nozzle variant ② Pressure drop ③ Air-regenerated noise



L _N	①	Primary air		②	③	Cooling mode				Heating mode		
		Ḃ _{Pr}	Ḃ _{Pr}	Δp _t	L _{WA}	2-pipe and 4-pipe systems				4-pipe system		
						Q _{tot}	Q _{WK}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w	Δp _w
		l/s	m ³ /h	Pa	dB(A)	W		K	kPa	W	K	kPa
2700	Z	18	65	60	<20	1227	1010	4.3	17.7	1826	14.3	2.0
		27	97	135	26	1661	1336	5.7	17.7	2378	18.6	2.0
		36	130	240	34	1968	1534	6.6	17.7	2706	21.2	2.0
	M	27	97	59	22	1367	1041	4.5	17.7	1880	14.7	2.0
		36	130	105	30	1725	1291	5.6	17.7	2303	18.0	2.0
		54	194	235	40	2240	1589	6.8	17.7	2796	21.9	2.0
	G	45	162	48	29	1648	1105	4.8	17.7	1989	15.6	2.0
		60	216	85	38	2073	1350	5.8	17.7	2402	18.8	2.0
		70	252	116	42	2311	1467	6.3	17.7	2597	20.3	2.0
	U	62	223	33	38	1889	1141	4.9	17.7	2051	16.0	2.0
		73	263	46	43	2134	1254	5.4	17.7	2242	17.5	2.0
		84	302	61	46	2358	1345	5.8	17.7	2395	18.7	2.0
3000	Z	20	72	60	<20	1337	1096	4.7	19.4	1973	15.4	2.1
		30	108	135	28	1800	1438	6.2	19.4	2549	19.9	2.1
		40	144	239	36	2126	1644	7.1	19.4	2885	22.6	2.1
	M	30	108	59	23	1491	1129	4.9	19.4	2030	15.9	2.1
		40	144	105	31	1874	1391	6.0	19.4	2471	19.3	2.1
		60	216	235	42	2424	1701	7.3	19.4	2977	23.3	2.1
	G	50	180	49	32	1799	1196	5.1	19.4	2144	16.8	2.1
		65	234	82	39	2216	1432	6.2	19.4	2538	19.8	2.1
		75	270	109	43	2451	1547	6.7	19.4	2728	21.3	2.1
	U	65	234	31	40	1974	1190	5.1	19.4	2134	16.7	2.1
		75	270	41	44	2202	1297	5.6	19.4	2314	18.1	2.1
		85	306	53	47	2410	1385	6.0	19.4	2461	19.2	2.1

¹ If the air discharge is not straight, the water-side capacity will be slightly affected; blades set at 45° may cause a loss of up to 5 %.

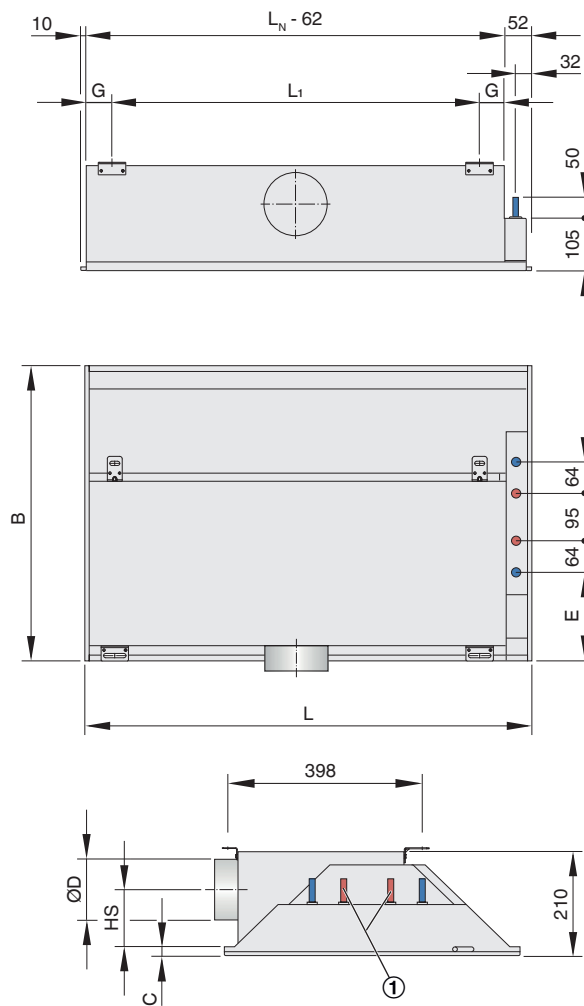
① Nozzle variant ② Pressure drop ③ Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t _R	26 °C	22 °C
t _{Pr}	16 °C	22 °C (isothermal)
t _{WV}	16 °C	50 °C
Ḃ _W (L _N 900 - 1800 mm)	110 l/h	50 l/h
Ḃ _W (L _N from 2100 mm)	200 l/h	110 l/h



DID632-...-LR



Water connection, Ø12 mm pipe, either with plain tails or with G $\frac{1}{2}$ " external thread ① Only with 4-pipe system

Dimensions [mm]

B	C	E
593	18	178
598	8	180
618	18	190
623	8	193

B = Width of front frame

Dimensions [mm]

L _N	L	ØD	HS	G
900	893 - 1500	123	134	51.5
1200	1193 - 1800	123	134	51.5
1500	1493 - 2100	123	134	51.5
1800	1793 - 2400	123	134	351.5
2100	2093 - 2700	158	116	361.5
2400	2393 - 3000	158	116	451.5
2700	2693 - 3000	158	116	561.5
3000	2993 - 3000	158	116	651.5

L = Total length (diffuser face)
 L_N = Nominal length

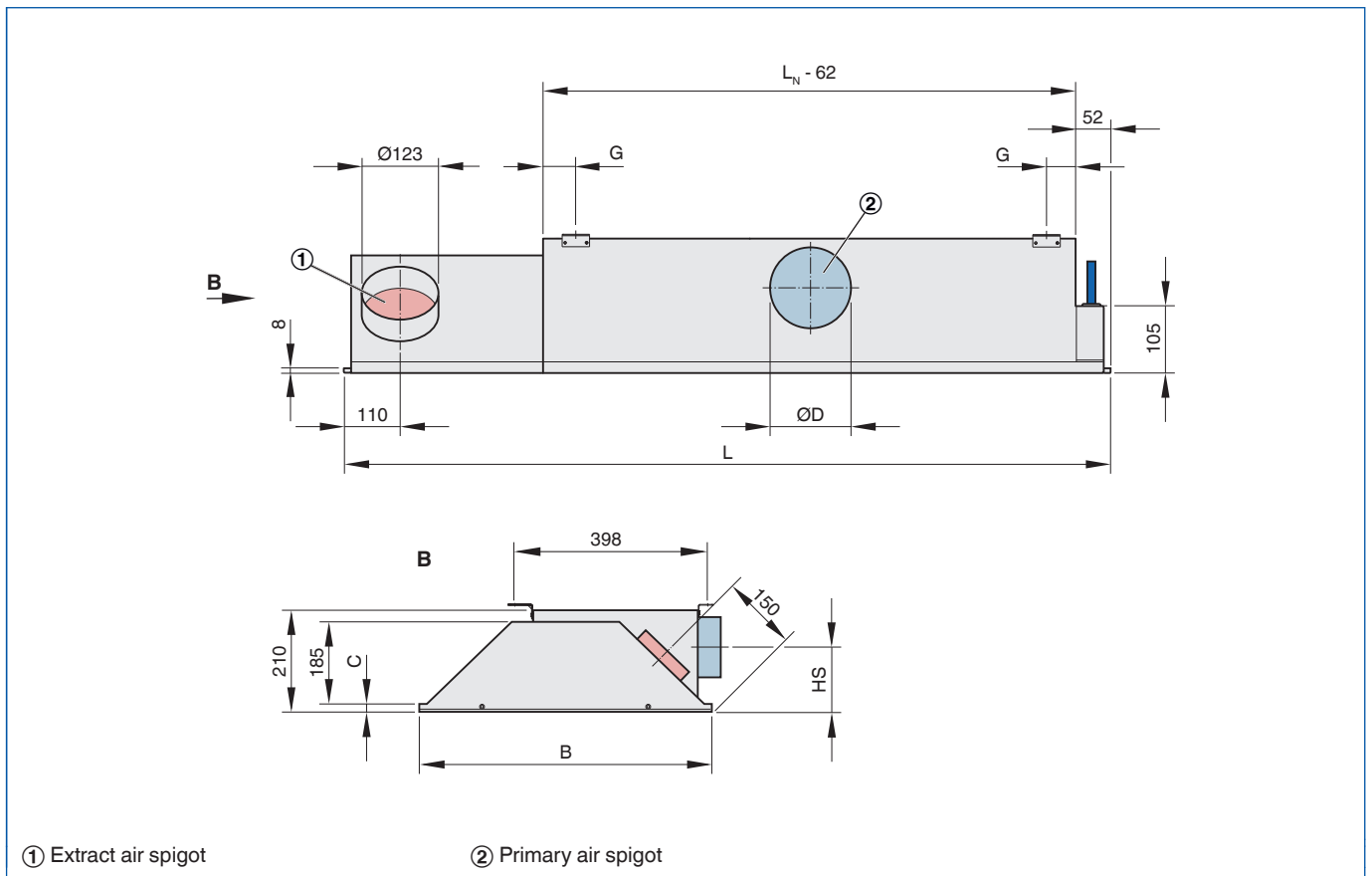


Weight per unit [kg]

Nominal length (L _N)	900	1200	1500	1800	2100	2400	2700	3000
DID632-LR	18	22	27	32	39	47	54	61
DID632-LQ	17	21	26	31	38	46	53	60
DID632-GL	20	25	31	36	43	52	59	67
DID632-GQ	20	25	31	36	43	52	59	67
Contained water (max.)	1.8	2.4	3	3.6	4.2	4.8	5.4	6

Non-active section as extension: 10 kg/m
Differences in width can be neglected

Type DID632-...-RR-AV



Dimensions [mm]

B	C
593	18
598	8
618	18
623	8

B = Width of front frame

Dimensions [mm]

L _N	L	ØD	HS	G
900	1150 - 1500	123	134	51.5
1200	1450 - 1800	123	134	51.5
1500	1750 - 2100	123	134	51.5
1800	2050 - 2400	123	134	351.5
2100	2350 - 2700	158	116	361.5
2400	2650 - 3000	158	116	451.5
2700	2950 - 3000	158	116	561.5

L = Total length (diffuser face)

L_N = Nominal length

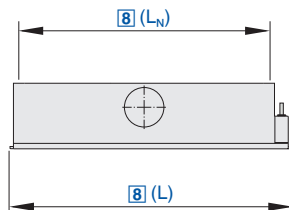


Weight per unit [kg]

Nominal length (L _N) in mm	900	1200	1500	1800	2100	2400	2700	3000
DID632-LR	18	22	27	32	39	47	54	61
DID632-LQ	17	21	26	31	38	46	53	60
DID632-GL	20	25	31	36	43	52	59	67
DID632-GQ	20	25	31	36	43	52	59	67
Contained water (max.)	1.8	2.4	3	3.6	4.2	4.8	5.4	6

Non-active section as extension: 10 kg/m
 Extract air spigot Ø123 mm (min. length 250 mm) 3 kg/piece
 Differences in width and LE can be neglected





Super flat active chilled beam with two-way air discharge and horizontal heat exchanger, suitable for grid ceilings with grid size 600 or 625

Order code

DID642 - D1 - 2 - HE - RR - AV - A1 / 1200 x 900 - 593 / 123 / 158 / P1 - RAL ... / LE / VS / KV - 0,63 / HV - 0,4 / R

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

<p>[1] Type DID642 Active chilled beam</p> <p>[2] Induced air grille No entry: Perforated metal facing, decreasing apertures towards the edges D1 Perforated metal facing</p> <p>[3] Heat exchanger 2 For 2-pipe systems 4 For 4-pipe systems</p> <p>[4] Nozzle variant HE Small S1 Medium S2 Large HP Extra large DA Adjustable twin nozzles, all nozzles are open (factory setting) Sizing options: Adjustable twin nozzles, all nozzles are open (factory setting), adjustment during commissioning by others DB Larger nozzles are open DS Smaller nozzles are open</p> <p>[5] Arrangement of casings and connections LL Casing left side, Water connections left side LR Casing left side, Water connections right side RL Casing right side, Water connections left side</p>	<p>RR Casing right side, Water connections right side</p> <p>[6] Additional casing - function and arrangement No entry: none Constructions LL, RR, are only available from $L = L_N + 250$ mm</p> <p>AV Extract air, spigot at the front AH Extract air, spigot at the rear ZV Supply air, spigot at the front ZH Supply air, spigot at the rear</p> <p>[7] Water connections No entry: Pipe with plain tails $\varnothing 12$ mm A1 With $G\frac{1}{2}$" external thread and flat seal A2 With $G\frac{1}{2}$" union nut and flat seal</p> <p>[8] Unit size [mm] $L \times L_N - B$ Total length (diffuser face) \times nominal size - width of front frame L is up to 7 mm shorter than L_N</p> <p>[9] Primary air spigot - diameter 123, 158, 2x123, 2x158</p> <p>[10] Additional casing - spigot diameter Only for AV, AH, ZV, ZH 123, 158</p> <p>[11] Exposed surface No entry: powder-coated RAL 9010, pure white</p>	<p>P1 Powder-coated, specify RAL Classic colour Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p> <p>[12] Air control blades No entry: none LE With air control blades</p> <p>[13] Valves and actuators No entry: no control components VS With control components (supplied separately)</p> <p>[14] Cooling valve No entry: none KV Cooling valve with actuator</p> <p>[15] kVS value - cooling valve 0.25, 0.40, 0.63, 1.00</p> <p>[16] Heating valve No entry: none HV Heating valve with actuator</p> <p>[17] kVS value - heating valve 0.25, 0.40, 0.63, 1.00</p> <p>[18] Lockshield No entry: none R With lockshield(s)</p>
---	---	---



+ Features

- Active chilled beam for heating and cooling, with 2-pipe or 4-pipe heat exchanger, for integration with various ceiling systems
- ▶ Preferably for room heights up to 4.0 m
 - ▶ High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
 - ▶ Five nozzle variants to optimise induction based on demand, including adjustable twin nozzles, i.e. one pair of nozzles with different diameters
 - ▶ Hinged, removable induced air grille in two designs

Optional equipment and accessories

- ▶ Control package
- ▶ Additional casing for both supply air and extract air, or for additional supply air
- ▶ Supply air and extract air units upon request
- ▶ Adjustable air control blades for air direction control
- ▶ Heat exchanger powder-coated black
- ▶ Powder coating in many different colours, e.g. RAL CLASSIC
- ▶ With an extended border also suitable for freely suspended installation

X Application

- ▶ Active chilled beams of Type DID642 for the integration into various ceiling systems, preferably for room heights up to 4.0 m
- ▶ Particularly suitable for grid ceilings with grid size 600 or 625
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate
- ▶ Energy-efficient solution since water is used for heating and cooling
- ▶ Adjustable air control blades (optional) allow for the manual adjustment of the air discharge direction



Variants

Induced air grille

- ▶ Perforated metal facing, decreasing apertures towards the edges
- ▶ D1: Perforated metal facing

Heat exchanger

- ▶ 2: For 2-pipe systems
- ▶ 4: For 4-pipe systems

Nozzle variants

- ▶ HE: Small
- ▶ S1: Medium
- ▶ S2: Large
- ▶ HP: Extra large
- ▶ DA: Adjustable twin nozzles, all nozzles are open (factory setting)
- ▶ DS: Adjustable twin nozzles, smaller nozzles are open
- ▶ DS: Adjustable twin nozzles, larger nozzles are open

DS and DB can be set according to local requirements. You should order DA and have DS or DB set by others.

Construction

- ▶ Powder-coated RAL 9010, pure white, gloss level 50 %

Technical data

Nominal length	900, 1200, 1500, 1800, 2100, 2400, 2700, 3000 mm
Length	893 - 3000 mm
Height	170/205 mm
Width	593, 598, 618, 623 mm
Primary air spigot, diameter	123/158 mm
Primary air volume flow rate	10 - 125 l/s or 36 - 450 m ³ /h
Cooling capacity	Up to 3100 W
Heating capacity	Up to 2330 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C

- ▶ P1: Powder-coated in any other RAL colour, gloss level 70 %
- ▶ P1: Powder-coated RAL 9006, white aluminium, gloss level 30 %

Attachments

- ▶ Additional casing for extract air or additional supply air
- ▶ Adjustable air control blades
- ▶ Water connection A1: G $\frac{1}{2}$ " external thread and flat seal
- ▶ Water connection A2: G $\frac{1}{2}$ " union nut and flat seal

Accessories

Control components

- ▶ KV: Cooling valve with actuator
 - ▶ HV: Heating valve with actuator
- Each valve with kVS value 0.25, 0.40, 0.63 or 1.00

Water connection

- ▶ R: Lockshield (2-pipe system: 1; 4-pipe system: 2), kVS value 1.32

Useful additions

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields

Special characteristics

- ▶ Adjustable air control blades for air direction control
- ▶ Hinged, removable induced air grille in two designs
- ▶ Horizontal heat exchanger as 2-pipe or 4-pipe system
- ▶ Water connections at the narrow side, Ø12 mm Cu pipe, either with plain tails or with external thread or union nut, G $\frac{1}{2}$ ", flat seal
- ▶ Internal nozzle plate with punched nozzles (non-combustible)

Standards and guidelines

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Hygiene certificate to VDI 6022

Quick sizing

L _N	①	Primary air		② Δp _t	③ L _{WA}	Cooling mode				Heating mode		
		V̇ _{Pr} l/s	V̇ _{Pr} m ³ /h			2-pipe and 4-pipe systems				4-pipe system		
				Q̇ _{tot}	Q̇ _{WK}	Δt _w	Δp _w	Q̇ _{WH} = Q̇ _{tot}	Δt _w	Δp _w		
				W	K	kPa	W	K	kPa			
900	HE	10	36	67	<15	483	362	2.8	1.4	491	8.4	0.1
		17	62	200	29	729	522	4.1	1.4	649	11.2	0.1
	S1	16	58	66	15	616	422	3.3	1.4	544	9.4	0.1
		28	100	197	32	905	570	4.5	1.4	697	12.0	0.1
	S2	16	58	28	<15	545	351	2.7	1.4	463	8.0	0.1
		42	151	190	37	1111	606	4.7	1.4	719	12.4	0.1
	HP	25	90	32	<15	701	400	3.1	1.4	530	9.1	0.1
		62	223	197	42	1391	645	5.0	1.4	769	13.2	0.1
	DS	10	36	65	<15	467	346	2.7	1.4	481	8.3	0.1
		17	32	193	30	723	515	4.0	1.4	644	11.1	0.1
	DB	14	50	30	<15	494	326	2.6	1.4	460	7.9	0.1
		35	126	192	36	1023	601	4.7	1.4	728	12.5	0.1
DA	20	72	31	<15	581	340	2.7	1.4	477	8.2	0.1	
	50	180	196	41	1197	595	4.7	1.4	711	12.2	0.1	



L _N	①	Primary air		②	③	Cooling mode				Heating mode			
		V̇ _{Pr}	V̇ _{Pr}			Δp _t	L _{WA}	2-pipe and 4-pipe systems				4-pipe system	
				Q̇ _{tot}	Q̇ _{WK}			Δt _w	Δp _w	Q̇ _{WH} = Q̇ _{tot}	Δt _w	Δp _w	
		l/s	m ³ /h	Pa	dB(A)	W	K	kPa	W	K	kPa		
1200	HE	13	47	62	<15	610	453	3.5	1.8	615	10.6	0.1	
		23	83	195	30	930	653	5.1	1.8	812	14.0	0.1	
	S1	22	79	67	19	805	541	4.2	1.8	694	11.9	0.1	
		37	133	191	35	1152	707	5.5	1.8	866	14.9	0.1	
	S2	22	79	28	<15	720	455	3.6	1.8	597	10.3	0.1	
		58	209	198	42	1458	758	5.9	1.8	903	15.5	0.1	
	HP	33	119	31	<15	902	504	3.9	1.8	668	11.5	0.1	
		84	302	199	44	1808	797	6.2	1.8	955	16.4	0.1	
	DS	14	50	67	<15	626	459	3.6	1.8	627	10.8	0.1	
		24	86	198	30	945	657	5.1	1.8	819	14.1	0.1	
	DB	18	65	27	<15	624	407	3.2	1.8	576	9.9	0.1	
		48	173	194	37	1331	752	5.9	1.8	912	15.7	0.1	
	DA	27	97	31	<15	763	438	3.4	1.8	610	10.5	0.1	
		69	248	200	43	1575	745	5.8	1.8	893	15.4	0.1	
	1500	HE	17	61	66	<15	763	559	4.4	2.3	750	12.9	0.1
			29	105	197	31	1122	771	6.0	2.3	960	16.5	0.1
S1		28	101	70	23	989	651	5.1	2.3	833	14.3	0.1	
		47	169	197	38	1397	832	6.5	2.3	1021	17.6	0.1	
S2		28	101	28	15	869	542	4.2	2.3	710	12.2	0.1	
		71	256	181	45	1733	877	6.9	2.3	1049	18.1	0.1	
HP		42	151	32	17	1112	607	4.7	2.3	800	13.8	0.1	
		99	356	178	45	2099	908	7.1	2.3	1094	18.8	0.1	
DS		17	61	63	<15	742	537	4.2	2.3	737	12.7	0.1	
		30	108	197	31	1135	774	6.0	2.3	965	16.6	0.1	
DB		23	83	29	<15	777	499	3.9	2.3	699	12.0	0.1	
		61	220	200	38	1617	881	6.9	2.3	1071	18.4	0.1	
DA		34	122	31	<15	937	528	4.1	2.3	731	12.6	0.1	
		85	306	196	44	1889	865	6.8	2.3	1041	17.9	0.1	
1800		HE	20	72	64	<15	875	634	5.0	2.7	853	14.7	0.2
			35	126	197	32	1294	873	6.8	2.7	1088	18.7	0.2
	S1	33	119	69	24	1133	735	5.7	2.7	943	16.2	0.2	
		56	202	198	40	1612	936	7.3	2.7	1151	19.8	0.2	
	S2	33	119	29	<15	1027	629	4.9	2.7	822	14.1	0.2	
		87	313	199	41	2038	990	7.7	2.7	1189	20.5	0.2	
	HP	50	180	32	19	1295	692	5.4	2.7	912	15.7	0.2	
		111	400	159	45	2335	996	7.8	2.7	1209	20.8	0.2	
	DS	21	76	66	<15	892	638	5.0	2.7	864	14.9	0.2	
		36	130	194	31	1312	877	6.9	2.7	1094	18.8	0.2	
	DB	28	101	29	<15	922	584	4.6	2.7	811	13.9	0.2	
		73	263	197	39	1868	988	7.7	2.7	1205	20.7	0.2	
	DA	41	148	32	17	1109	614	4.8	2.7	844	14.5	0.2	
		98	353	182	45	2140	959	7.5	2.7	1161	20.0	0.2	
	2100	HE	24	86	68	16	1199	912	3.9	9.2	1422	11.1	1.0
			40	144	190	33	1735	1253	5.4	9.2	1819	14.2	1.0
S1		39	140	71	27	1523	1054	4.5	9.2	1572	12.3	1.0	
		64	230	193	42	2124	1354	5.8	9.2	1938	15.1	1.0	
S2		40	144	31	<15	1393	911	3.9	9.2	1376	10.8	1.0	
		100	360	196	42	2654	1449	6.2	9.2	2018	15.8	1.0	
HP		61	220	37	24	1751	1015	4.4	9.2	1545	12.1	1.0	
		119	428	138	45	2852	1420	6.1	9.2	2010	15.7	1.0	
DS		25	90	67	<15	1213	911	3.9	9.2	1213	11.2	1.0	
		43	155	200	32	1804	1285	5.5	9.2	1861	14.6	1.0	



Q̇_{tot}: If the air discharge is not straight, the water-side capacity will be slightly affected; blades set at 45° may cause a loss of up to 5 %.

① Nozzle variant ② Pressure drop ③ Air-regenerated noise



L _N	①	Primary air		②	③	Cooling mode				Heating mode			
		V _{Pr} l/s	V _{Pr} m ³ /h	Δp _t Pa	L _{WA} dB(A)	2-pipe and 4-pipe systems				4-pipe system			
						Q _{tot} W	Q _{WK} W	Δt _w K	Δp _w kPa	Q _{WH} = Q _{tot} W	Δt _w K	Δp _w kPa	
2100	DB	33	119	30	<15	1225	827	3.6	9.2	1336	10.4	1.0	
		85	306	196	40	2475	1451	6.2	9.2	2055	16.1	1.0	
	DA	49	176	34	19	1466	877	3.8	9.2	1401	11.0	1.0	
		109	392	167	45	2691	1379	5.9	9.2	1943	15.2	1.0	
2400	HE	27	97	67	17	1328	1003	4.3	10.5	1568	12.3	1.1	
		46	166	196	35	1940	1384	6.0	10.5	2013	15.7	1.1	
	S1	45	162	75	30	1718	1176	5.1	10.5	1752	13.7	1.1	
		73	263	199	44	2366	1486	6.4	10.5	2132	16.7	1.1	
	S2	45	162	31	<15	1543	1001	4.3	10.5	1517	11.9	1.1	
		112	403	192	44	2923	1575	6.8	10.5	2203	17.2	1.1	
	HP	69	248	37	26	1944	1114	4.8	10.5	1701	13.3	1.1	
		124	446	120	45	2994	1502	6.5	10.5	2146	16.8	1.1	
	DS	28	101	65	<15	1336	998	4.3	10.5	1578	12.3	1.1	
		49	176	196	33	1998	1409	6.1	10.5	2046	16.0	1.1	
	DB	38	137	30	<15	1386	928	4.0	10.5	1494	11.7	1.1	
		97	350	198	42	2759	1588	6.8	10.5	2257	17.6	1.1	
	DA	56	202	35	22	1656	980	4.2	10.5	1561	12.2	1.1	
		116	418	148	45	2870	1471	6.3	10.5	2093	16.4	1.1	
	2700	HE	31	112	72	19	1495	1121	4.8	11.8	1742	13.6	1.3
			52	187	200	36	2128	1503	6.5	11.8	2189	17.1	1.3
S1		51	184	79	32	1905	1289	5.5	11.8	1921	15	1.3	
		78	281	185	45	2516	1576	6.8	11.8	2273	17.8	1.3	
S2		51	184	32	18	1720	1104	4.7	11.8	1672	13.1	1.3	
		117	421	150	45	3067	1658	7.1	11.8	2335	18.3	1.3	
HP		77	277	38	29	2139	1212	5.2	11.8	1852	14.5	1.3	
		125	450	101	45	3062	1556	6.7	11.8	2246	17.6	1.3	
DS		31	112	63	15	1455	1081	4.6	11.8	1713	13.4	1.3	
		55	198	197	33	2190	1527	6.6	11.8	2222	17.4	1.3	
DB		43	155	31	<15	1542	1023	4.4	11.8	1644	12.9	1.3	
		109	392	200	44	3023	1711	7.4	11.8	2439	19.1	1.3	
DA		63	227	36	24	1833	1073	4.6	11.8	1709	13.4	1.3	
		120	432	130	45	2986	1540	6.6	11.8	2212	17.3	1.3	
3000		HE	35	126	69	16	1695	1224	5.3	13	1897	14.8	1.4
			59	212	200	34	2355	1635	7.0	13	2380	18.6	1.4
	S1	56	202	69	28	2056	1380	5.9	13	2062	16.1	1.4	
		96	345	187	44	2905	1750	7.5	13	2519	19.7	1.4	
	S2	58	209	35	22	1913	1214	5.2	13	1832	14.3	1.4	
		116	418	139	44	3105	1706	7.3	13	2421	18.9	1.4	
	HP	89	320	43	34	2399	1335	5.7	13	2031	15.9	1.4	
		125	450	86	45	3102	1596	6.9	13	2328	18.2	1.4	
	DS	35	126	65	16	1604	1182	5.1	13.0	1867	14.6	1.4	
		61	220	197	34	2373	1637	7.0	13.0	2387	18.7	1.4	
	DB	47	170	31	15	1666	1097	4.7	13.0	1767	13.8	1.4	
		117	421	190	45	3214	1805	7.8	13.0	2586	20.2	1.4	
	DA	73	263	40	28	2079	1199	5.2	13	1888	14.8	1.4	
		122	440	113	45	3065	1592	6.8	13	2311	18.1	1.4	

Q_{tot}: If the air discharge is not straight, the water-side capacity will be slightly affected; blades set at 45° may cause a loss of up to 5 %.

① Nozzle variant ② Pressure drop ③ Air-regenerated noise



Reference values

Parameters	Cooling	Heating
t_R	26 °C	22 °C
t_{Pr}	16 °C	22 °C (isothermal)
t_{WV}	16 °C	50 °C
\dot{V}_W (L_N 900 - 1800 mm)	110 l/h	50 l/h
\dot{V}_W (L_N from 2100 mm)	200 l/h	110 l/h

DID642

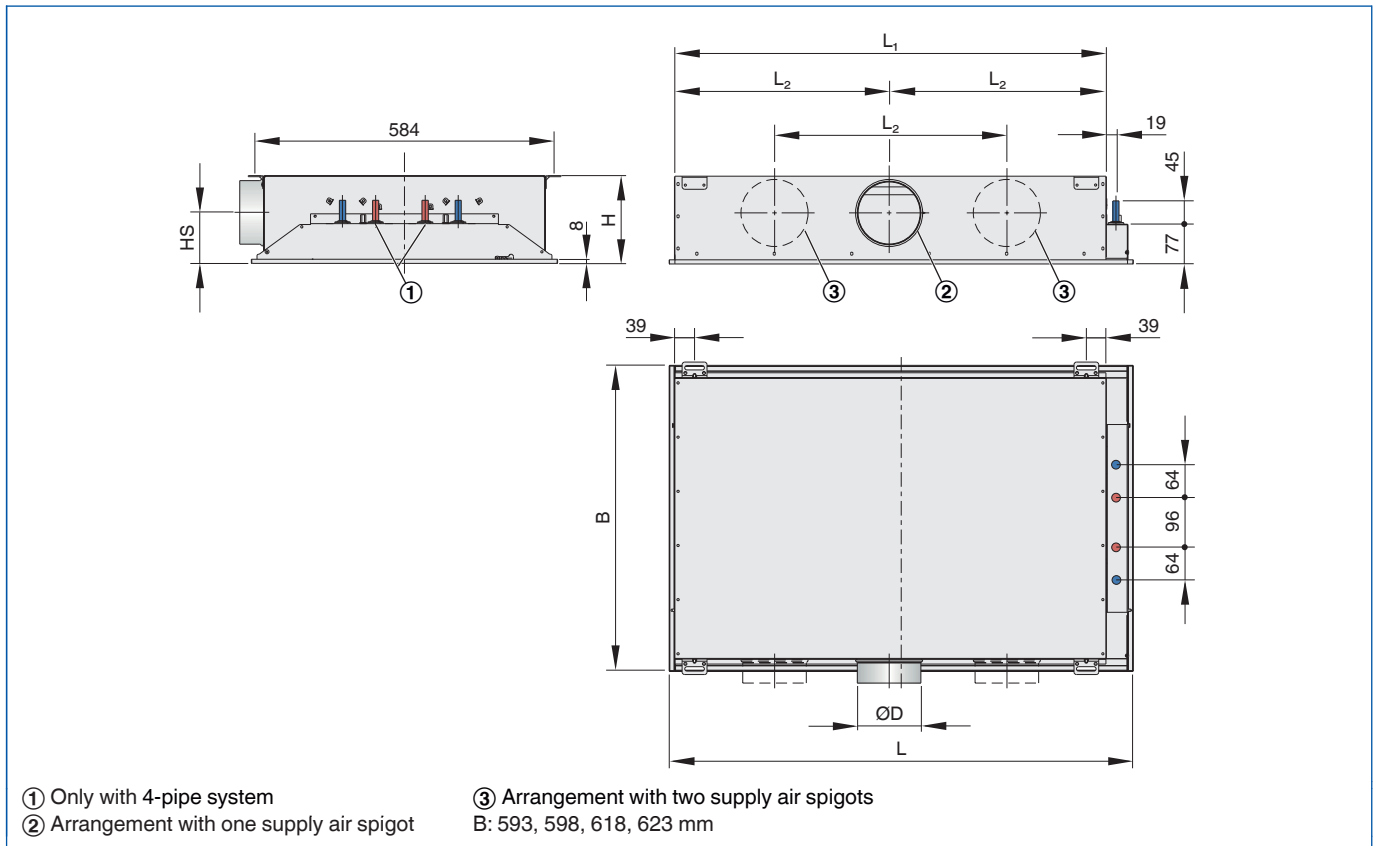


Illustration shows DID642-4-...-LR

- ▶ $L1 = L_N - 62$
- ▶ $L2 = (L_N - 62)/2$
- ▶ $L3 = L - L_N + 10$
- ▶ $L4 = L - L_N + 52$

Dimensions [mm]

ØD	H	HS
123	170	99
158	205	116.5

Weight

L_N	L_{min}	L_{max}	m	kg	①
	mm				
900	893	1500	20 - 33	1.8	
1200	1193	1800	26 - 40	2.4	
1500	1493	2100	33 - 46	3.0	
1800	1793	2400	39 - 53	3.6	
2100	2093	2700	46 - 59	4.2	
2400	2393	3000	53 - 66	4.8	
2700	2693	3000	59 - 66	5.4	
3000	2993	3000	66	6.0	

L = Total length (diffuser face), L_N = Nominal length

① Contained water

Non-active section as extension: 10 kg/m

Differences in weight for the various widths can be neglected



DID642 with additional casing

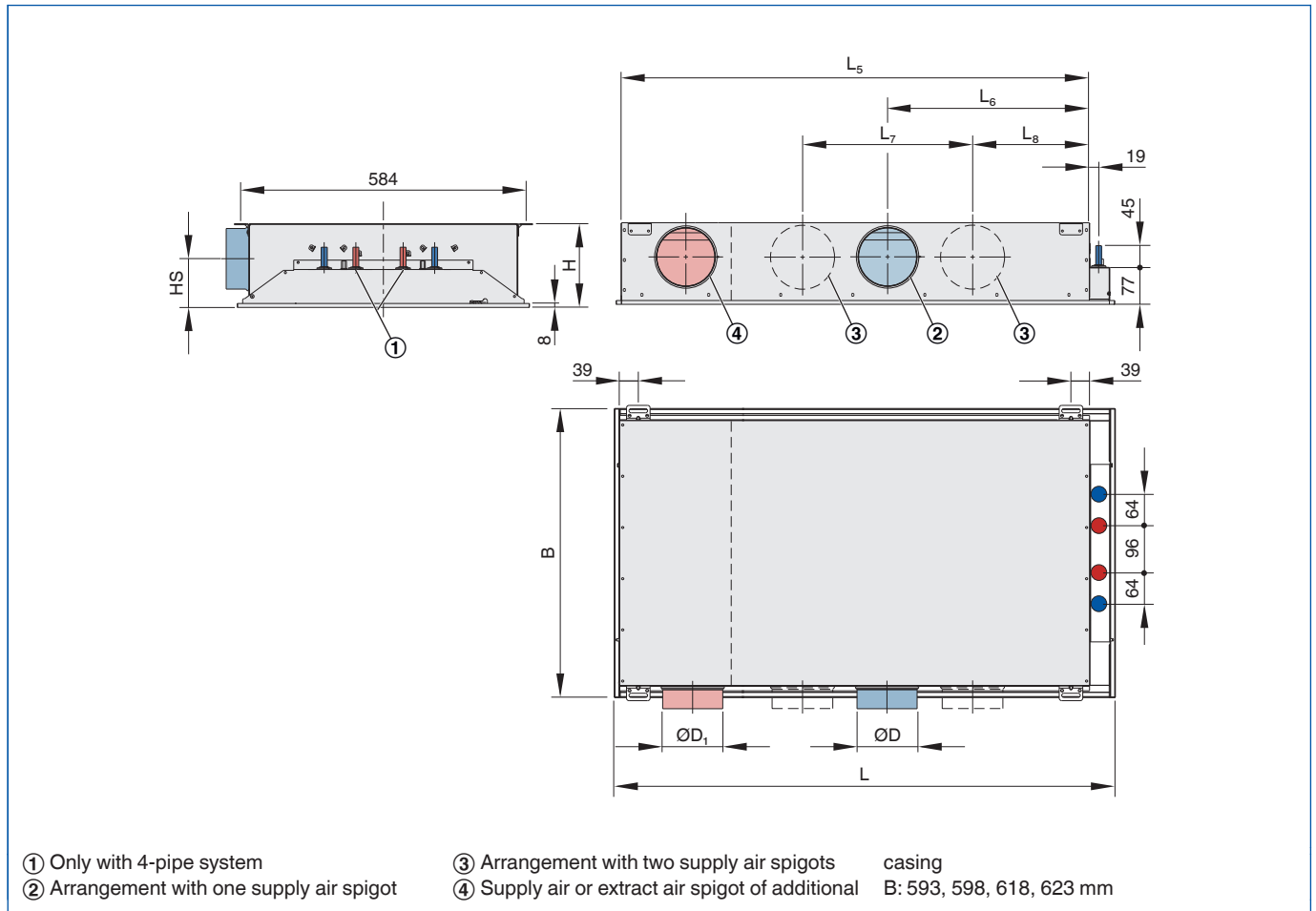


Illustration shows DID642-4-...-RR-AV

Dimensions [mm]

ØD	ØD ₁	H	HS
123	123	170	99
	158	205	116.5
158	123	205	116.5
	158	205	116.5

Weight

L _N	ØD ₁ [mm]		L _{max}	m	①
	123	158			
	L _{min}				
mm			kg		
900	1150	1185	1500	20 - 33	1.8
1200	1450	1485	1800	26 - 40	2.4
1500	1750	1785	2100	33 - 46	3.0
1800	2050	2085	2400	39 - 53	3.6
2100	2350	2385	2700	46 - 59	4.2
2400	2650	2685	3000	53 - 66	4.8
2700	2950	2985	3000	59 - 66	5.4

L = Total length (diffuser face)

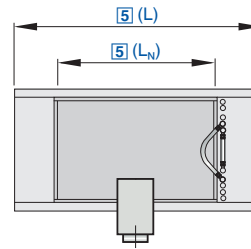
L_N = Nominal length

① Contained water

Non-active section as extension: 10 kg/m

Differences in weight for the various widths can be neglected





Active chilled beam with two-way air discharge, horizontal heat exchangers and integral lighting, suitable for grid ceilings with grid size 600

Order code

DID600B - L - 2 - K - H - LV - ARV / 1800 x 1500 / A1 / P1 - RAL ... / G3							
1	2	3	4	5	6	7	8

<p>1 Type DID600B-L Active chilled beam</p> <p>2 Heat exchanger 2 2-pipe 4 4-pipe</p> <p>3 Nozzle variant K Small M Medium G Large</p> <p>4 Arrangement of casings and connections Top entry primary air spigot (V) Supply air</p> <p>V-S V-M V-L V-R</p> <p>Supply and extract air combination (A)</p> <p>V-L-AR V-R-AL</p> <p>Side entry primary air spigot (H) Supply air</p> <p>H-SV H-SH H-LV</p>	<p>H-LH H-MV H-MH H-RV H-RH</p> <p>Supply and extract air combination (A)</p> <p>H-LV-ARV H-RV-ALV H-LH-ARH H-RH-ALH H-LV-ARH H-RV-ALH H-LH-ARV H-RH-ALV</p> <p>Note L left side, V front, M centre, R right side, H rear</p> <p>5 Total length (diffuser face) x nominal size [mm] L x L_N Supply air</p> <p>1493 - 1500 x 900 1493 - 1800 x 1200 1493 - 2100 x 1500 1793 - 2400 x 1800 2393 - 3000 x 2400 2693 - 3000 x 2700 2993 - 3000 x 3000</p>	<p>L is up to 7 mm shorter than L_N</p> <p>Supply and extract air combination</p> <p>1493 - 1500 x 900 1450 - 1800 x 1200 2050 - 2400 x 1800 2350 - 2700 x 2100 2650 - 3000 x 2400 2950 - 3000 x 2700</p> <p>6 Water connections A1 No entry: Ø12 mm pipe with plain tails A2 With G½" external thread and flat seal With G½" union nut and flat seal</p> <p>7 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour</p> <p>Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p> <p>8 Surface of heat exchanger No entry: untreated G3 RAL 9005, black</p>
---	--	---

- + Features**
Active chilled beam for heating and cooling, with 2-pipe or 4-pipe heat exchanger, for integration with various ceiling systems
- ▶ Preferably for room heights up to 4.00 m
 - ▶ High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
 - ▶ High comfort levels due to low airflow velocity in the occupied zone
 - ▶ Three nozzle variants to optimise induction based on demand
 - ▶ Side entry or top entry primary air spigot
 - ▶ Removable induced air grille
- Optional equipment and accessories
- ▶ Control system
 - ▶ Additional casing for extract air
 - ▶ Heat exchanger powder-coated black

- ▶ Powder coating in many different colours, e.g. RAL CLASSIC
 - ▶ Choice of two types of light fitting, or installation opening for light fitting to be installed by others
- + Application**
- ▶ Active chilled beams of Type DID600B-L for the integration into various ceiling systems, preferably for room heights up to 4.00 m
 - ▶ Particularly suitable for grid ceilings with grid size 600
 - ▶ Air conditioning and lighting combined in one unit
 - ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate
 - ▶ Energy-efficient solution since water is used for heating and cooling

- + Variants**
- Heat exchanger
- ▶ 2: 2-pipe systems
 - ▶ 4: 4-pipe systems
- Nozzle variants
- ▶ K: Small
 - ▶ M: Medium
 - ▶ G: Large
- + Construction**
- ▶ Powder-coated RAL 9010, pure white, gloss level 50 %
 - ▶ P1: Powder-coated in any other RAL colour, gloss level 70 %
 - ▶ P1: Powder-coated RAL 9006, white aluminium, gloss level 30 %



 **Attachments**

- ▶ 1 or 2 strip light fittings, with 1 tube, Zumtobel brand (Zumtobel light fitting is also available with 2 tubes as an option)
- ▶ Additional extract air casing with side or top extract air spigot
- ▶ Water connection A1: G½" external thread and flat seal
- ▶ Water connection A2: G½" union nut and flat seal

 **Accessories**

- ▶ Support angles for installation into linear beam grid ceilings

 **Useful additions**

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields (no lighting control)
- ▶ X-AIRCONTROL control system

 **Special characteristics**

- ▶ 2 horizontal heat exchangers, factory connected as 2-pipe or 4-pipe system
- ▶ 1 or 2 integral strip light fittings
- ▶ Side entry or top entry primary air spigots

- ▶ Internal nozzle plate with punched nozzles (non-combustible)
- ▶ Water connections at the narrow side, Ø12 mm Cu pipe, with plain tails or with G½" external thread, or with a G½" union nut; with flat seal

 **Standards and guidelines**

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022

 **Technical data**

Nominal length	900, 1200, 1500, 1800, 2100, 2400, 2700, 3000 mm
Length	1493 - 3000 mm
Height	210 mm
Width	593 mm
Primary air spigot, diameter	123/158 mm
Primary air volume flow rate	3 - 43 l/s or 11 - 155 m³/h
Cooling capacity	Up to 1515 W
Heating capacity	Up to 1780 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C

Quick sizing

L _N	①	Primary air		②	③	Cooling mode				Heating mode		
		Primary air				2-pipe and 4-pipe systems				4-pipe system		
		V _{Pr}		Δp _t	L _{WA}	Q _{tot}	Q _{WK}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w	Δp _w
		l/s	m³/h									
900	K	3	11	53	<20	185	149	1.2	2.5	251	4.3	0.20
		4	15	94	<20	265	217	1.7	2.5	340	5.8	0.20
		5	18	177	23	327	267	2.1	2.5	405	7	0.20
	M	7	25	47	<20	323	238	1.9	2.5	367	6.3	0.20
		10	36	95	28	437	317	2.5	2.5	476	8.2	0.20
		13	47	161	35	528	371	2.9	2.5	551	9.5	0.20
	G	12	43	37	23	414	269	2.1	2.5	414	7.1	0.20
16		58	66	31	519	326	2.6	2.5	495	8.5	0.20	
20		72	104	37	610	369	2.9	2.5	554	9.5	0.20	
1200		K	4	14	50	<20	237	188	1.5	3.2	322	5.5
	6		22	113	23	387	314	2.5	3.2	483	8.3	0.24
	8		29	201	31	492	396	3.1	3.2	586	10.1	0.24
	M	9	32	41	20	405	297	2.3	3.2	457	7.9	0.24
		14	50	100	37	590	422	3.3	3.2	629	10.8	0.24
		19	68	184	41	729	500	3.9	3.2	736	12.7	0.24
	G	17	61	40	30	570	365	2.9	3.2	555	9.6	0.24
21		76	61	36	671	418	3.3	3.2	630	10.8	0.24	
25		90	86	41	762	460	3.6	3.2	688	11.8	0.24	
1500		K	5	18	49	<20	287	227	1.8	3.8	388	6.7
	8		29	126	28	500	403	3.2	3.8	611	10.5	0.30
	11		40	237	36	641	509	4	3.8	743	12.8	0.30
	M	11	40	38	22	483	351	2.7	3.8	539	9.3	0.30
		16	58	81	32	673	480	3.8	3.8	715	12.3	0.30
		21	76	140	40	818	564	4.4	3.8	829	14.3	0.30
	G	22	79	42	35	717	452	3.5	3.8	683	11.8	0.30
24		86	50	37	768	478	3.7	3.8	719	12.4	0.30	
26		94	58	40	816	502	3.9	3.8	752	12.9	0.30	



L _N	①	Primary air	Primary air	②	③	Cooling mode				Heating mode		
						2-pipe and 4-pipe systems				4-pipe system		
		V _{Pr}		Δp _t	L _{WA}	Q _{tot}	Q _{WK}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w	Δp _w
		l/s	m ³ /h	Pa	dB(A)	W	K	kPa	W	K	kPa	
1800	K	5	18	34	<20	233	172	1.3	4.4	339	5.8	0.33
		9	32	109	28	552	443	3.5	4.4	675	11.6	0.33
		13	47	227	38	740	583	4.6	4.4	849	14.6	0.33
	M	13	47	37	23	559	402	3.1	4.4	617	10.6	0.33
		19	68	79	34	781	557	4.3	4.4	819	14.1	0.33
		25	90	136	41	950	649	5.1	4.4	947	16.3	0.33
	G	26	94	40	38	823	520	4.1	4.4	782	13.4	0.33
		28	101	46	40	883	545	4.3	4.4	816	14	0.33
		30	108	53	42	930	569	4.4	4.4	848	14.6	0.33
2100	K	6	22	35	<20	310	238	1	14.7	567	4.4	1.60
		10	36	98	28	685	565	2.4	14.7	1074	8.4	1.60
		14	50	193	37	924	755	3.2	14.7	1368	10.7	1.60
	M	16	58	41	26	760	567	2.4	14.7	1067	8.3	1.60
		21	76	70	34	976	722	3.1	14.7	1327	10.4	1.60
		26	94	107	40	1150	836	3.6	14.7	1517	11.9	1.60
G	31	112	42	40	1090	716	3.1	14.7	1328	10.4	1.60	
2400	K	7	25	37	<20	366	282	1.2	16.5	660	5.2	1.70
		11	40	91	28	741	608	2.6	16.5	1163	9.1	1.70
		15	54	169	37	986	805	3.5	16.5	1465	11.5	1.70
	M	18	65	39	27	843	626	2.7	16.5	1176	9.2	1.70
		23	83	64	34	1060	782	3.4	16.5	1436	11.2	1.70
		28	101	95	40	1237	900	3.9	16.5	1630	12.7	1.70
G	35	126	40	42	1217	795	3.4	16.5	1469	11.5	1.70	
2700	K	8	29	38	<20	421	324	1.4	18.3	751	5.9	1.90
		13	47	100	31	865	708	3	18.3	1336	10.4	1.90
		18	65	192	40	1146	929	4	18.3	1672	13.1	1.90
	M	20	72	38	28	923	682	2.9	18.3	1280	10	1.90
		25	90	60	34	1141	839	3.6	18.3	1539	12	1.90
		30	108	86	40	1320	958	4.1	18.3	1735	13.6	1.90
G	40	144	42	45	1368	886	3.8	18.3	1629	12.7	1.90	
3000	K	9	32	39	<20	475	366	1.6	20	839	6.6	2.10
		14	50	94	31	917	748	3.2	20	1417	11.1	2.10
		19	68	173	40	1204	975	4.2	20	1759	13.8	2.10
	M	23	83	41	30	1049	772	3.3	20	1439	11.2	2.10
		28	101	61	36	1257	920	4	20	1680	13.1	2.10
		33	119	84	40	1331	696	4.2	20	1761	13.8	2.10
G	45	167	43	47	1515	972	4.2	20	1780	13.9	2.10	

① Nozzle variant ② Pressure drop ③ Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t _R	26 °C	22 °C
t _{Pr}	16 °C	22 °C (isothermal)
t _{WV}	16 °C	50 °C
V _W (L _N 900 - 1800)	150 l/h	60 l/h
V _W (L _N 2100 - 3000)	220 l/h	90 l/h



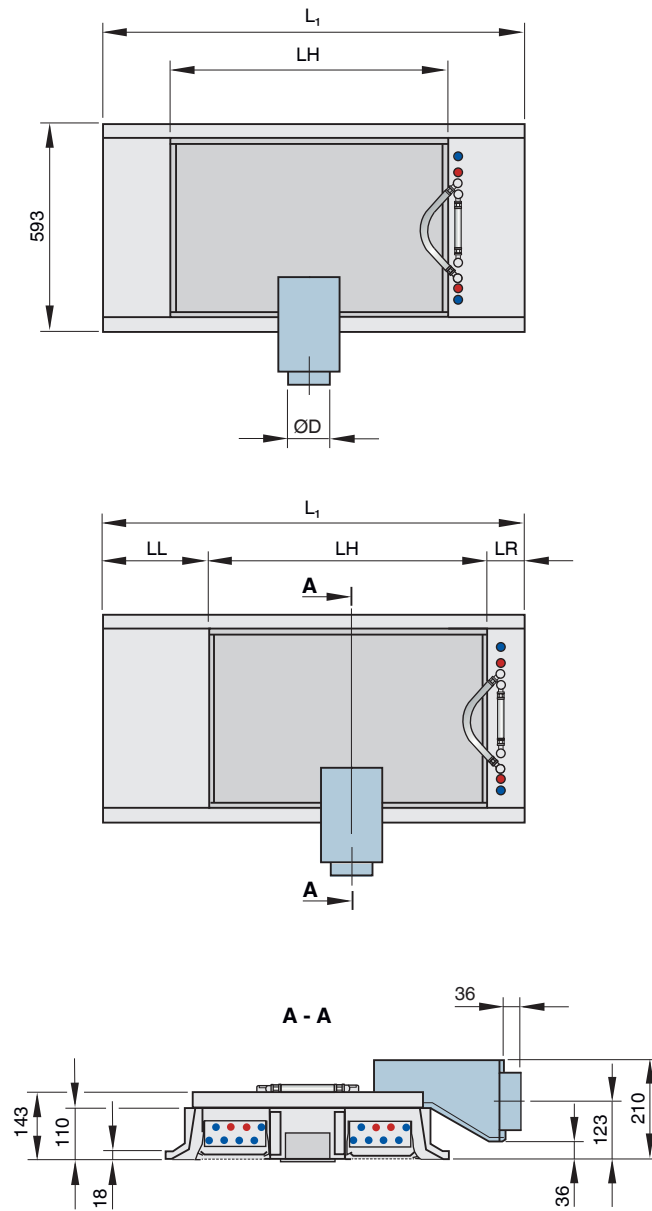
Supply air

Variant	L _N	L ₁				LH	LL				LR			
		①	②	③			①	②	③		①	②	③	
		min			max		min		max	min		max		
V-S, H-SV, H-SH	1500	1493	-	-	1500	1400	40	40	40	43	54	54	54	58
	1800	1793	1800	-	1800	1700	40	40	40	43	54	54	54	58
	2100	2093	2100	-	2100	2000	40	40	40	43	54	54	54	58
	2400	2393	2400	-	2400	2300	40	40	40	43	54	54	54	58
	2700	2693	2700	2700	2700	2600	40	40	40	43	54	54	54	58
	3000	2993	3000	3000	3000	2900	40	40	40	43	54	54	54	58
V-L, H-LV, H-LH	900	901	-	-	1500	800	43	43	43	43	650.5	-	-	657.5
	1200	1201	1727	-	1800	1100	43	43	43	43	350.5	584.5	-	657.5
	1500	1501	1727	-	2100	1400	43	43	43	43	58.5	284.5	-	657.5
	1800	1801	1801	-	2400	1700	43	43	43	43	58.5	58.5	-	657.5
	2100	2101	2101	2693	2700	2000	43	43	43	43	58.5	58.5	650.5	657.5
	2400	2401	2401	2693	3000	2300	43	43	43	43	58.5	58.5	350.5	657.5
	2700	2701	2701	2701	3000	2600	43	43	43	43	58.5	58.5	58.5	357.5
V-M, H-MV, H-MH	900	901	1727	-	1500	800	-	-	-	-	-	-	-	-
	1200	1201	1727	-	1800	1100	-	-	-	-	-	-	-	-
	1500	1501	1727	-	2100	1400	-	-	-	-	-	-	-	-
	1800	1801	1801	-	2400	1700	-	-	-	-	-	-	-	-
	2100	2101	2101	2693	2700	2000	-	-	-	-	-	-	-	-
	2400	2401	2401	2693	3000	2300	-	-	-	-	-	-	-	-
2700	2701	2701	2701	3000	2600	-	-	-	-	-	-	-	-	
V-R, H-RV, H-RH	900	901	-	-	1500	800	636	-	-	643	58	58	58	58
	1200	1201	1727	-	1800	1100	336	570	-	643	58	58	58	58
	1500	1501	1727	-	2100	1400	43	270	-	643	58	58	58	58
	1800	1801	1801	-	2400	1700	43	43	-	643	58	58	58	58
	2100	2101	2101	2693	2700	2000	43	43	636	643	58	58	58	58
	2400	2401	2401	2693	3000	2300	43	43	336	643	58	58	58	58
2700	2701	2701	2701	3000	2600	43	43	43	343	58	58	58	58	

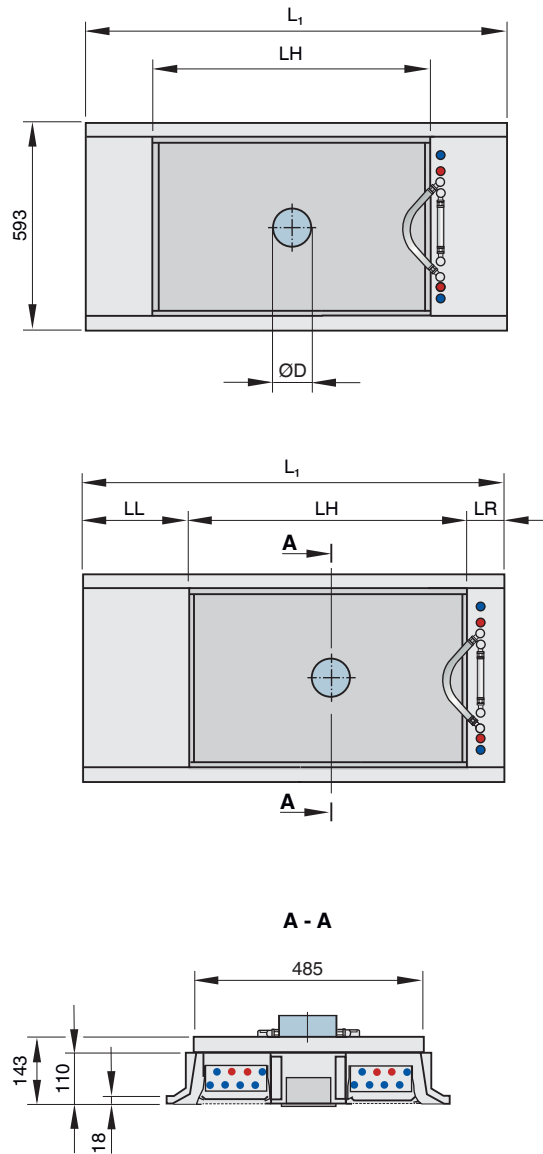
- ① 1 light fitting, 28 or 54 W
- ② 1 light fitting, 35 W
- ③ 2 light fittings, 28 or 54 W



DID600B-L, Construction with side entry primary air spigot



DID600B-L, Construction with top entry primary air spigot



Supply air

Variant	L _N	L ₁				LH	LL				LR			
		①	②	③			①	②	③		①	②	③	
		min			max		min			max	min			max
V-S, H-SV, H-SH	1500	1493	-	-	1500	1400	40	40	40	43	54	54	54	58
	1800	1793	1800	-	1800	1700	40	40	40	43	54	54	54	58
	2100	2093	2100	-	2100	2000	40	40	40	43	54	54	54	58
	2400	2393	2400	-	2400	2300	40	40	40	43	54	54	54	58
	2700	2693	2700	2700	2700	2600	40	40	40	43	54	54	54	58
	3000	2993	3000	3000	3000	2900	40	40	40	43	54	54	54	58
V-L, H-LV, H-LH	900	901	-	-	1500	800	43	43	43	43	650.5	-	-	657.5
	1200	1201	1727	-	1800	1100	43	43	43	43	350.5	584.5	-	657.5
	1500	1501	1727	-	2100	1400	43	43	43	43	58.5	284.5	-	657.5
	1800	1801	1801	-	2400	1700	43	43	43	43	58.5	58.5	-	657.5
	2100	2101	2101	2693	2700	2000	43	43	43	43	58.5	58.5	650.5	657.5
	2400	2401	2401	2693	3000	2300	43	43	43	43	58.5	58.5	350.5	657.5
	2700	2701	2701	2701	3000	2600	43	43	43	43	58.5	58.5	58.5	357.5
V-M, H-MV, H-MH	900	901	1727	-	1500	800	-	-	-	-	-	-	-	-
	1200	1201	1727	-	1800	1100	-	-	-	-	-	-	-	-
	1500	1501	1727	-	2100	1400	-	-	-	-	-	-	-	-
	1800	1801	1801	-	2400	1700	-	-	-	-	-	-	-	-
	2100	2101	2101	2693	2700	2000	-	-	-	-	-	-	-	-
	2400	2401	2401	2693	3000	2300	-	-	-	-	-	-	-	-
	2700	2701	2701	2701	3000	2600	-	-	-	-	-	-	-	-
V-R, H-RV, H-RH	900	901	-	-	1500	800	636	-	-	643	58	58	58	58
	1200	1201	1727	-	1800	1100	336	570	-	643	58	58	58	58
	1500	1501	1727	-	2100	1400	43	270	-	643	58	58	58	58
	1800	1801	1801	-	2400	1700	43	43	-	643	58	58	58	58
	2100	2101	2101	2693	2700	2000	43	43	636	643	58	58	58	58
	2400	2401	2401	2693	3000	2300	43	43	336	643	58	58	58	58
	2700	2701	2701	2701	3000	2600	43	43	43	343	58	58	58	58

- ① 1 light fitting, 28 or 54 W
- ② 1 light fitting, 35 W
- ③ 2 light fittings, 28 or 54 W



Dimensions [mm]

L _N	ØD
900 - 1800	123
2100 - 3000	158

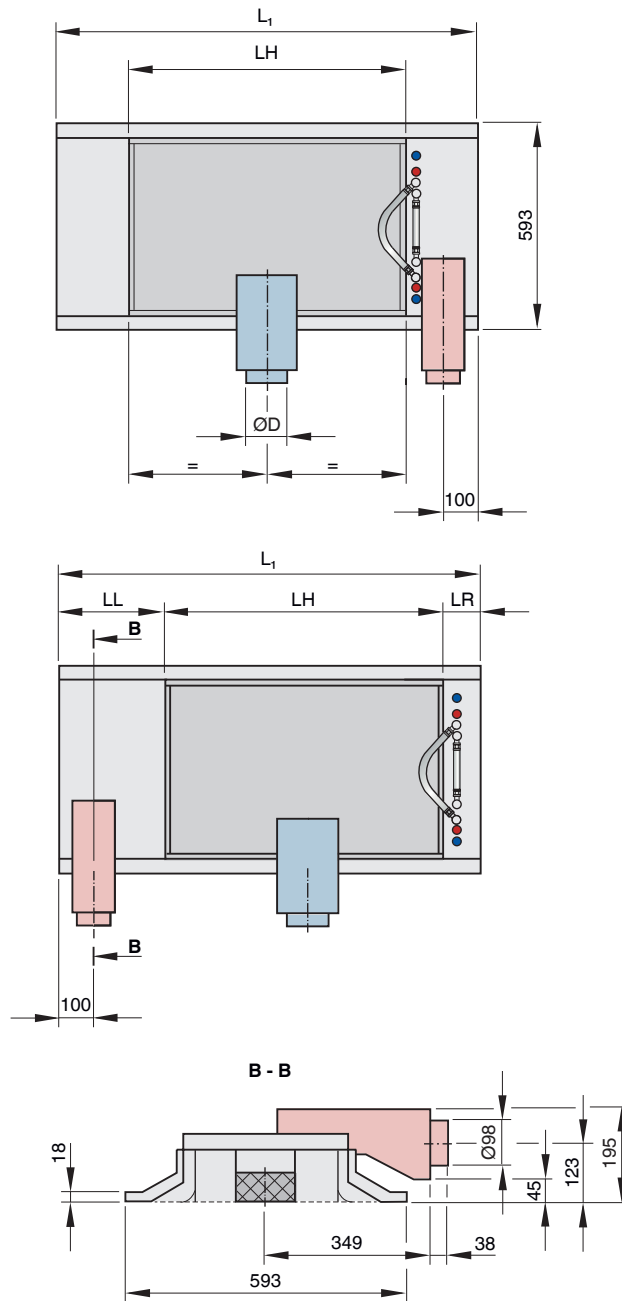
Weight per unit [kg]

Unit length L [mm]	Nominal length L _N [mm]							
	900	1200	1500	1800	2100	2400	2700	3000
1500	27	31	35	-	-	-	-	-
1800	30	34	38	42	-	-	-	-
2100	-	-	41	45	49	-	-	-
2400	-	-	-	49	53	56	-	-
2700	-	-	-	-	57	60	63	-
3000	-	-	-	-	-	64	67	70
Contained water (max.)	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0

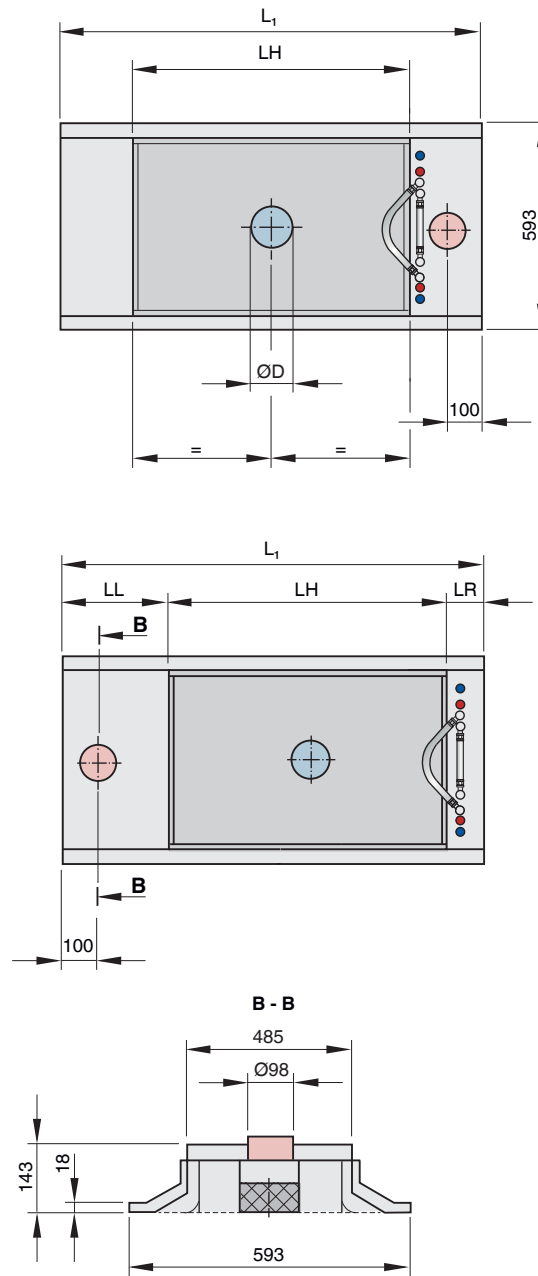
28/54 W light fittings: 3 kg/piece
35 W light fittings: 4 kg/piece



DID600B-L, Construction with side entry primary air and side extract air spigots



DID600B-L, Construction with top entry primary air and top extract air spigots



Supply air and extract air

Variant	L _N	L ₁				LH	LL				LR			
		①	②	③			①	②	③		①	②	③	
		min			max		min			max	min			max
V-L-AR, H-LV-ARV, H-LH-ARV, H-LV-ARH, H-LH-ARH	900	1493	-	-	1500	800	43	43	43	43	650.5	-	-	657.5
	1200	1493	1727	-	1800	1100	43	43	43	43	350.5	584.5	-	657.5
	1500	1695	1727	-	2100	1400	43	43	43	43	252.5	284.5	-	657.5
	1800	1995	1995	-	2400	1700	43	43	43	43	252.5	252.5	-	657.5
	2100	2295	2295	2693	2700	2000	43	43	43	43	252.5	252.5	650.5	657.5
	2400	2595	2595	2693	3000	2300	43	43	43	43	252.5	252.5	350.5	657.5
	2700	2895	2895	2895	3000	2600	43	43	43	43	252.5	252.5	252.5	357.5
V-R-AL, H-RV-ALV, H-RH-ALV, H-RV-ALH, H-RH-ALH	900	1493	-	-	1500	800	636	-	-	643	58	58	58	58
	1200	1493	1727	-	1800	1100	336	570	-	643	58	58	58	58
	1500	1695	1727	-	2100	1400	43	270	-	643	58	58	58	58
	1800	1995	1995	-	2400	1700	43	238	-	643	58	58	58	58
	2100	2295	2295	2693	2700	2000	43	238	636	643	58	58	58	58
	2400	2595	2595	2693	3000	2300	43	238	336	643	58	58	58	58
	2700	2895	2895	2895	3000	2600	43	238	238	243	-	-	-	-

- ① 1 light fitting, 28 or 54 W
- ② 1 light fitting, 35 W
- ③ 2 light fittings, 28 or 54 W

Dimensions [mm]

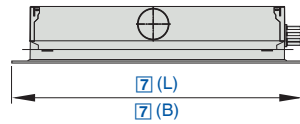
L _N	ØD
900 - 1800	123
2100 - 3000	158

Weight per unit [kg]

Unit length L [mm]	Nominal length L _N [mm]							
	900	1200	1500	1800	2100	2400	2700	3000
1500	27	31	35	-	-	-	-	-
1800	30	34	38	42	-	-	-	-
2100	-	-	41	45	49	-	-	-
2400	-	-	-	49	53	56	-	-
2700	-	-	-	-	57	60	63	-
3000	-	-	-	-	-	64	67	70
Contained water (max.)	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0

Extract air casing: 3 kg/m/piece
28/54 W light fittings: 3 kg/piece
35 W light fittings: 4 kg/piece





Active chilled beam with four-way air discharge, vertical heat exchanger and condensate drip tray, for grid ceilings with grid size 600 or 625

Order code

DID604 – LR – 4 – M – VR – A1 / 1193 × 593 / P1 - RAL ... / G3 / LE / VS



1 Type

DID604 Active chilled beam

2 Induced air grille

LR Perforated metal, circular holes

3 Heat exchanger

2 2-pipe
4 4-pipe

4 Nozzle variant

Z Small plus
M Medium
G Large

5 Arrangement of water connections

VR Front right
HL Rear left

6 Water connections

No entry: Ø12 mm pipe with plain tails
A1 With G½" external thread and flat seal
A2 With G½" union nut and flat seal

7 Overall dimensions [mm]

L × B, nominal size 600 × 600
593 × 593
598 × 598

L × B, nominal size 625 × 625
618 × 618
623 × 623

L × B, nominal size 1200 × 600
1193 × 593
1198 × 598

L × B, nominal size 1250 × 625
1243 × 618
1248 × 623

8 Exposed surface

No entry: powder-coated RAL 9010, pure white
P1 Powder-coated, specify RAL CLASSIC colour

Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

9 Surface of casing and heat exchanger

No entry: untreated
G1 RAL 9005, black

10 Air control blades

No entry: none
LE With

11 Valves and actuators

No entry: none
VS With

+ Features

Active chilled beam for heating and cooling, with 2-pipe or 4-pipe heat exchanger, for integration with various ceiling systems. The condensate drip tray is useful if the temperature temporarily falls below the dew point.

- ▶ Preferably for room heights up to 4.00 m
- ▶ High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
- ▶ High comfort levels due to low airflow velocity in the occupied zone
- ▶ Three nozzle variants to optimise induction based on demand
- ▶ Removable induced air grille, fixed with magnets

Optional equipment and accessories

- ▶ Control system
- ▶ Adjustable air control blades for air direction control
- ▶ Heat exchanger powder-coated black
- ▶ Powder coating in many different colours, e.g. RAL CLASSIC

Application

- ▶ Active chilled beams of Type DID604 for the integration into various ceiling systems, preferably for room heights up to 4.00 m
- ▶ Particularly suitable for grid ceilings with grid size 600 or 625
- ▶ The condensate drip tray is useful if the temperature temporarily falls below the dew point
- ▶ Adjustable air control blades (optional) allow for the manual adjustment of the four-way air discharge
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate
- ▶ Energy-efficient solution since water is used for heating and cooling

Variants

- Heat exchanger
- ▶ 2: 2-pipe systems
 - ▶ 4: 4-pipe systems
- Nozzle variants
- ▶ Z: Small plus
 - ▶ M: Medium
 - ▶ G: Large

+ Construction

- ▶ Powder-coated RAL 9010, pure white, gloss level 50 %
- ▶ P1: Powder-coated in any other RAL colour, gloss level 70 %
- ▶ P1: Powder-coated RAL 9006, white aluminium, gloss level 30 %

Attachments

- ▶ Adjustable air control blades
- ▶ Water connection A1: G½" external thread and flat seal
- ▶ Water connection A2: G½" union nut and flat seal

+ Useful additions

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields
- ▶ X-AIRCONTROL



 **Special characteristics**

- ▶ The vertical heat exchanger with condensate drip tray is useful if the temperature temporarily falls below the dew point
- ▶ Heat exchanger as 2-pipe or 4-pipe system
- ▶ Water connections at the narrow side,

Ø12 mm Cu pipe, with plain tails or with G½" external thread, or with a G½" union nut; with flat seal

- ▶ Adjustable air control blades for air direction control
- ▶ Internal nozzle plate with punched nozzles (non-combustible)

ISO Standards and guidelines

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022

 **Technical data**

Nominal length	600, 1200 mm
Length	593, 598, 618, 623 mm (one tile), or 1193, 1198, 1243, 1248 mm (two tiles)
Height	230 mm
Width	593, 598, 618, 623 mm
Primary air spigot, diameter	123 mm
Primary air volume flow rate	6 - 50 l/s or 22 - 180 m³/h
Cooling capacity	Up to 1330 W
Heating capacity	Up to 1250 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C

Quick sizing

2-pipe system

Nominal size	①	Primary air		②	Cooling				Heating			
		\dot{V}_{Pr}			L_{WA}	\dot{Q}_{tot}	\dot{Q}_{WK}^1	Δt_w	Δp_w	$\dot{W}_H = \dot{Q}_{tot}$	Δt_w	Δp_w
		l/s	m³/h									
600 × 600	Z	6	22	49	<15	283	211	1.1	2.4	448	7.7	0.3
		10	36	137	20	434	313	1.6	2.4	665	11.4	0.3
		14	50	269	30	575	407	2.1	2.4	863	14.8	0.3
	M	12	43	85	16	464	320	1.6	2.4	634	10.9	0.3
		18	65	192	29	654	437	2.2	2.4	805	13.8	0.3
		22	79	287	35	772	507	2.6	2.4	895	15.4	0.3
	G	20	72	68	20	616	375	1.9	2.4	612	10.5	0.3
		29	104	143	32	838	488	2.5	2.4	683	11.7	0.3
		38	137	245	40	1031	573	2.9	2.4	724	12.5	0.3
1200 × 600	Z	12	43	75	15	561	416	2.1	3.2	805	13.8	0.4
		18	65	169	28	789	573	2.9	3.2	985	16.9	0.4
		22	79	252	34	927	662	3.4	3.2	1072	18.4	0.4
	M	20	72	91	23	776	535	2.7	3.2	986	17.0	0.4
		27	97	167	32	994	668	3.4	3.2	1146	19.7	0.4
		33	119	249	38	1167	769	3.9	3.2	1253	21.6	0.4
	G	30	108	62	26	871	509	2.6	3.2	896	15.4	0.4
		40	144	111	35	1109	627	3.2	3.2	1017	17.5	0.4
		50	180	174	42	1331	728	3.7	3.2	1108	19.0	0.4

¹ If the air discharge is not straight, the water-side capacity will be slightly affected; blades set at 45° may cause a loss of up to 5 %.

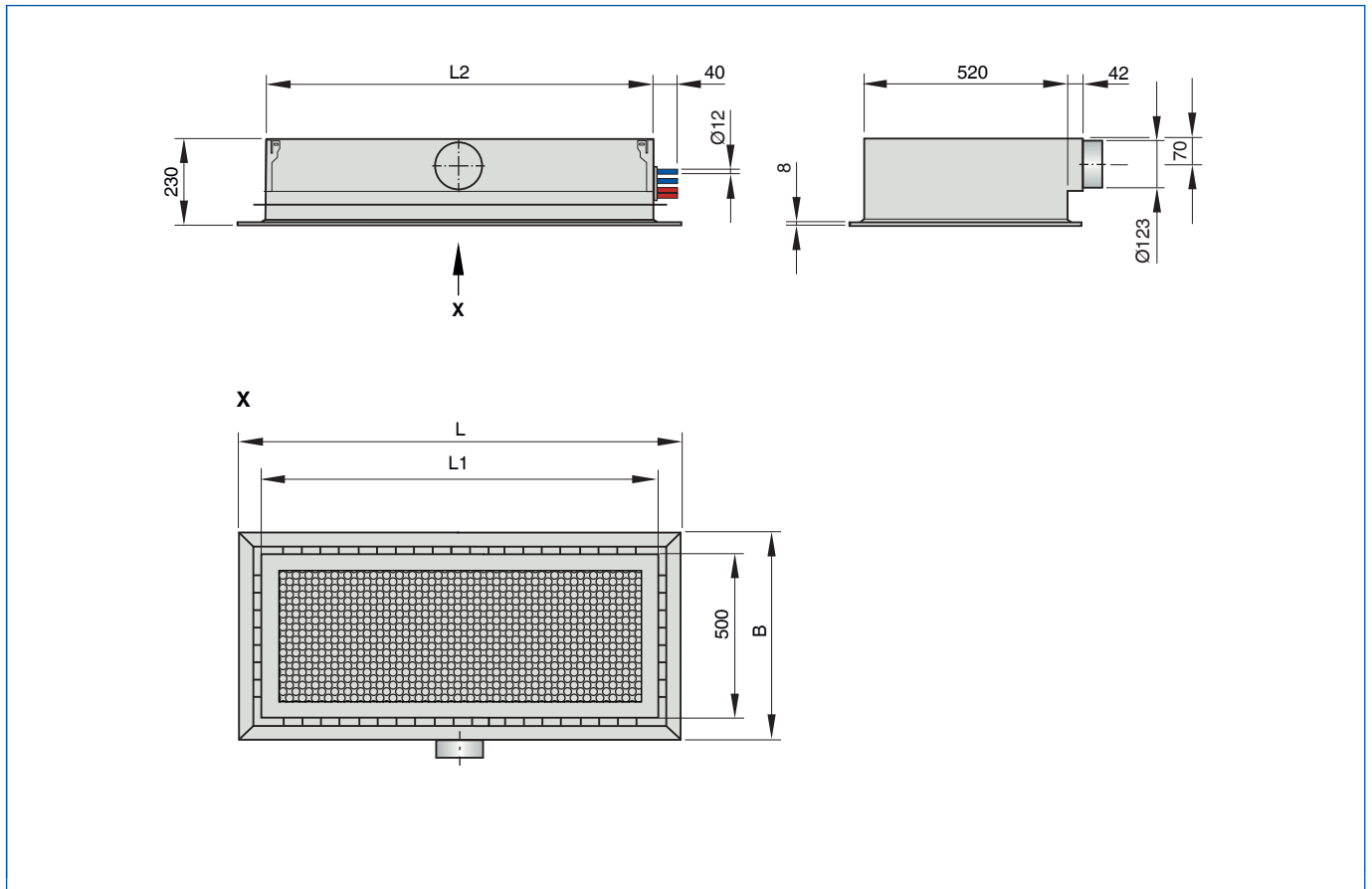
① Nozzle variant ② Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t_R	26 °C	22 °C
t_{Pr}	16 °C	22 °C
t_{wV}	16 °C	50 °C
\dot{V}_W	170 l/h	50 l/h



DID604 / 1200 × 600



Dimensions [mm]

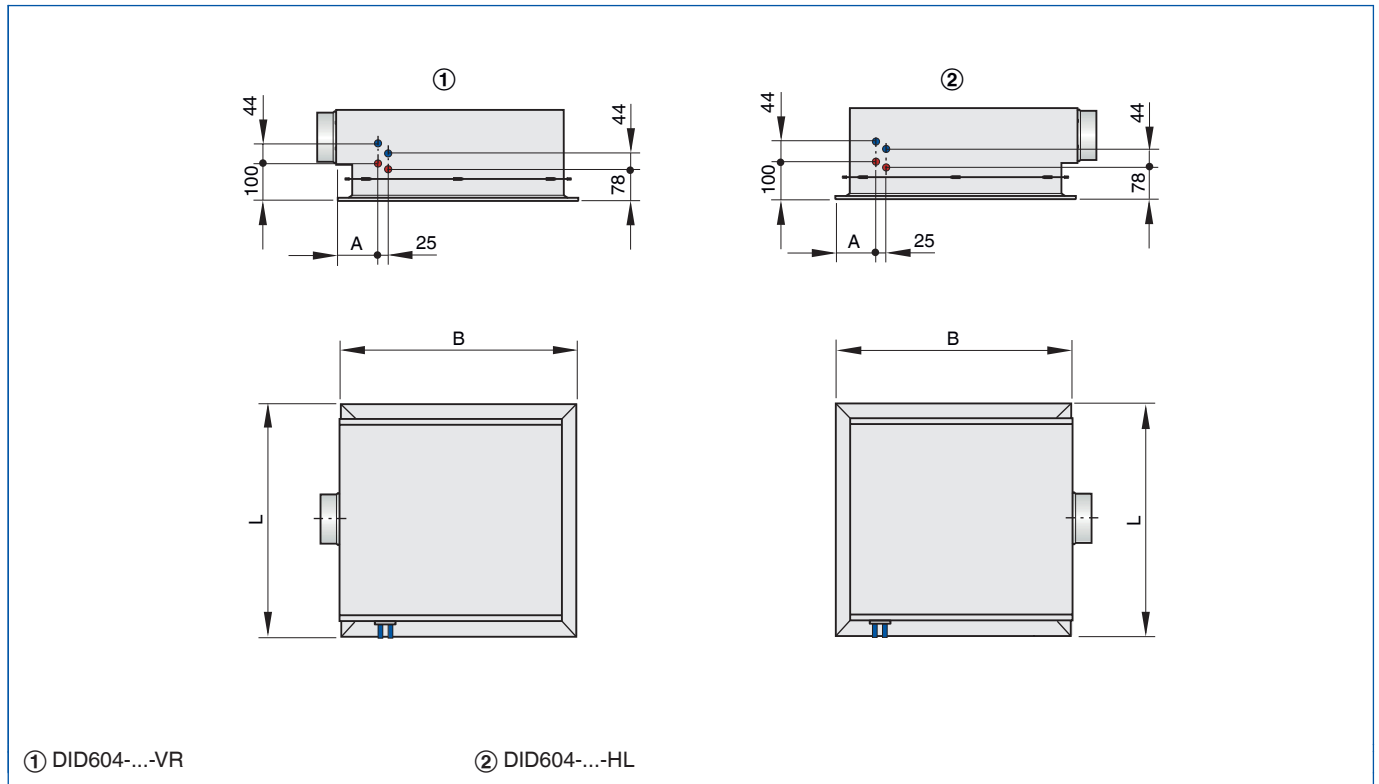
Weight [kg]

Nominal size	kg/piece	Contained water (max.)
600 × 600	15	1
1200 × 600	22	2

Differences in width can be neglected



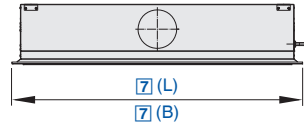
DID604, water connections



Dimensions [mm]

B	A
593	99
598	102
618	112
623	114





Active chilled beam with four-way air discharge and horizontal heat exchanger, suitable for grid ceilings with grid size 600 or 625

Order code

DID614 – D2 – 4 – S1 – R – A2 / 593 × 593 – 123 / P1 – RAL 9016 / LE / VS / KV – 0,63 / HV – 0,4 / R

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

<p>1 Type DID614 Active chilled beam</p> <p>2 Design variant No entry: perforated metal facing with circular holes, encased D2 Perforated metal facing with circular holes, not encased</p> <p>3 Heat exchanger 2 2-pipe 4 4-pipe</p> <p>4 Nozzle variants HE High Efficiency S1 Standard, small S2 Standard, large HP High Performance DA Twin nozzles (factory setting: all nozzles are open)</p> <p>5 Position of water connection R Right side L Left side</p> <p>6 Water connections (without control package) No entry: plain pipe tails, Ø12 mm A1 With G½" external thread and flat seal A2 With G½" union nut and flat seal</p>	<p>7 Overall dimensions [mm] L × B, nominal size 600 × 600 593 × 593 598 × 598 L × B, nominal size 625 × 625 618 × 618 623 × 623 L × B, nominal size 1200 × 600 1193 × 593 1198 × 598 L × B, nominal size 1250 × 625 1243 × 618 1248 × 623</p> <p>8 Primary air spigot 123 123 mm 158 158 mm</p> <p>9 Exposed surface No entry: powder-coated RAL 9010, pure white P1 Powder-coated, specify RAL CLASSIC colour Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p>	<p>10 Adjustable air control blades No entry: without air control blades LE With air control blades</p> <p>11 Valves and actuators No entry: without control components VS With control components</p> <p>12 Cooling valve No entry: none KV Cooling valve including actuator</p> <p>13 kVS value - cooling valve 0.25, 0.40, 0.63, 1.00</p> <p>14 Heating valve No entry: none HV Heating valve including actuator</p> <p>15 kVS value - heating valve 0.25, 0.40, 0.63, 1.00</p> <p>16 Lockshield No entry: none R With lockshield(s)</p>
---	--	---

+ **Features**

- Active chilled beam for heating and cooling, with 2-pipe or 4-pipe heat exchanger, for integration with various ceiling systems.
- ▶ Preferably for room heights up to 4.00 m
 - ▶ High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
 - ▶ High comfort levels due to low airflow velocity in the occupied zone
 - ▶ Five nozzle variants to optimise induction based on demand, including adjustable twin nozzles, i.e. one pair of nozzles with different diameters
 - ▶ Removable induced air grille, fixed with magnets, with decreasing apertures towards the edges

Optional equipment and accessories

- ▶ Control system
- ▶ Adjustable air control blades for air direction

- control
- ▶ Powder coating in many different colours, e.g. RAL CLASSIC
 - ▶ With an extended border also suitable for freely suspended installation

X **Application**

- ▶ Active chilled beams of Type DID614 for the integration into various ceiling systems, preferably for room heights up to 4.00 m
- ▶ Particularly suitable for grid ceilings with grid size 600 or 625
- ▶ Adjustable air control blades (optional) allow for the manual adjustment of the four-way air discharge
- ▶ Large volume flow rate range due to the adjustable twin nozzles (optional)
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate
- ▶ Energy-efficient solution since water is used

for heating and cooling

◊ **Variants**

- Heat exchanger
- ▶ 2: 2-pipe systems
 - ▶ 4: 4-pipe systems

Nozzle variants

- ▶ HE: Small
- ▶ S1: Medium
- ▶ S2: Large
- ▶ HP: Extra large
- ▶ DA: Adjustable twin nozzles, all nozzles are open (factory setting)
- ▶ DS: Adjustable twin nozzles, smaller nozzles are open
- ▶ DB: Adjustable twin nozzles, large nozzles are open. DS and DB can be set according to local requirements. You should order DA and have DS or DB set by others.



+ **Construction**

- ▶ Powder-coated RAL 9010, pure white, gloss level 50 %
- ▶ P1: Powder-coated in any other RAL colour, gloss level 70 %
- ▶ P1: Powder-coated RAL 9006, white aluminium, gloss level 30 %

⊕ **Attachments**

- ▶ Adjustable air control blades
- ▶ Water connection A1: G½" external thread and flat seal
- ▶ Water connection A2: G½" union nut and flat seal

& **Accessories**

- Control components
- ▶ KV: Cooling valve with actuator

- ▶ HV: Heating valve with actuator
Each valve with kVS value 0.25, 0.40, 0.63 or 1.0

Water connection

- ▶ R: Lockshield (2-pipe system: 1; 4-pipe system: 2), kVS value 1.32

+ **Useful additions**

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields
- ▶ X-AIRCONTROL control system

★ **Special characteristics**

- ▶ Four-way air discharge
- ▶ Horizontal heat exchanger as 2-pipe or

- 4-pipe system
- ▶ Induced air grille with parallel drilled apertures, decreasing towards the edges
- ▶ Optional twin nozzles, adjustable, for a large volume flow rate range
- ▶ Water connection, Ø12 mm Cu pipe or coupling with G1/2" external thread and flat seal or G1/2" union nut and flat seal
- ▶ Internal nozzle plate with punched nozzles (non-combustible)
- ▶ Adjustable air control blades for air direction control as an option

ISO **Standards and guidelines**

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022

 **Technical data**

Nominal length	600, 1200 mm
Length	593, 598, 618, 623 mm (one tile), or 1193, 1198, 1243, 1248 mm (two tiles)
Height	230/245 mm
Width	593, 598, 618, 623 mm
Primary air spigot, diameter	123/158 mm
Primary air volume flow rate	14 - 87 l/s or 50 - 310 m³/h
Cooling capacity	Up to 2170 W
Heating capacity	Up to 2990 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C



Quick sizing

L _N	①	Primary air			②	Cooling				Heating			
		V _{Pr}	m ³ /h	Δp _t		L _{WA}	2-pipe and 4-pipe systems				4-pipe system		
				Pa	Q _{tot}		Q _{WK}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w	Δp _w	
		l/s	W	K	kPa	W	K	kPa					
600 × 600/ 625 × 625	HE	13	47	90	24	524	368	2.9	1.2	375	6.5	0.1	
		16	58	136	30	612	419	3.3	1.2	412	7.1	0.1	
		19	68	191	35	688	459	3.6	1.2	443	7.6	0.1	
	S1	16	58	50	21	536	343	2.7	1.2	358	6.2	0.1	
		24	86	113	33	737	448	3.5	1.2	433	7.5	0.1	
		31	112	189	41	883	509	4	1.2	479	8.3	0.1	
	S2	20	72	34	21	564	323	2.5	1.2	351	6.1	0.1	
		34	122	97	36	881	472	3.7	1.2	451	7.8	0.1	
		48	173	194	46	1136	558	4.4	1.2	513	8.9	0.1	
	HP	31	112	36	26	728	355	2.8	1.2	378	6.5	0.1	
		45	162	77	38	998	456	3.6	1.2	444	7.7	0.1	
		60	216	137	47	1251	528	4.1	1.2	493	8.5	0.1	
	DA	23	83	33	18	591	314	2.5	1.2	351	6.1	0.1	
		40	144	99	35	946	464	3.6	1.2	453	7.8	0.1	
		56	202	195	46	1221	546	4.3	1.2	512	8.8	0.1	
	DS	13	47	92	27	522	366	2.9	1.2	379	6.5	0.1	
		16	58	139	33	611	419	3.3	1.2	419	7.2	0.1	
		19	68	197	38	690	461	3.6	1.2	451	7.8	0.1	
	DB	16	58	32	17	491	298	2.3	1.2	331	5.7	0.1	
		28	101	99	33	792	455	3.6	1.2	445	7.7	0.1	
		39	140	192	43	1008	538	4.2	1.2	508	8.8	0.1	
	1200 × 600/ 1250 × 625	HE	21	76	93	26	822	569	4.5	2.9	579	10	0.1
			25	90	132	31	937	636	5	2.9	636	11	0.1
			30	108	189	37	1062	701	5.5	2.9	692	12	0.1
S1		26	94	56	24	829	518	4.1	2.9	551	9.5	0.1	
		37	133	115	35	1134	689	5.4	2.9	674	11.6	0.1	
		48	173	194	43	1373	795	6.2	2.9	756	13.1	0.1	
S2		34	122	41	24	951	542	4.3	2.9	570	9.9	0.1	
		54	194	104	38	1407	757	5.9	2.9	728	12.6	0.1	
		74	266	196	48	1770	879	6.9	2.9	825	14.3	0.1	
HP		51	184	46	33	1204	589	4.6	2.9	602	10.4	0.1	
		65	234	75	41	1475	691	5.4	2.9	678	11.7	0.1	
		80	288	114	47	1735	771	6.1	2.9	739	12.8	0.1	
DA		39	140	40	24	940	470	3.7	2.9	536	9.3	0.1	
		60	216	95	37	1399	676	5.3	2.9	670	11.6	0.1	
		85	306	190	48	1839	815	6.4	2.9	769	13.3	0.1	
DS		21	76	82	27	812	559	4.4	2.9	548	10.1	0.1	
		27	97	135	34	991	666	5.2	2.9	658	11.4	0.1	
		32	115	190	39	1117	732	5.7	2.9	705	12.2	0.1	
DB		26	94	34	21	739	426	3.3	2.9	501	8.6	0.1	
		45	162	101	36	1224	682	5.4	2.9	686	11.8	0.1	
		63	227	198	45	1570	811	6.4	2.9	735	13.1	0.1	

① Nozzle variant ② Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t _R	26 °C	22 °C
t _{Pr}	16 °C	22 °C (isothermal)
t _{wV}	16 °C	50 °C
V _w	110 l/h	50 l/h



DID614

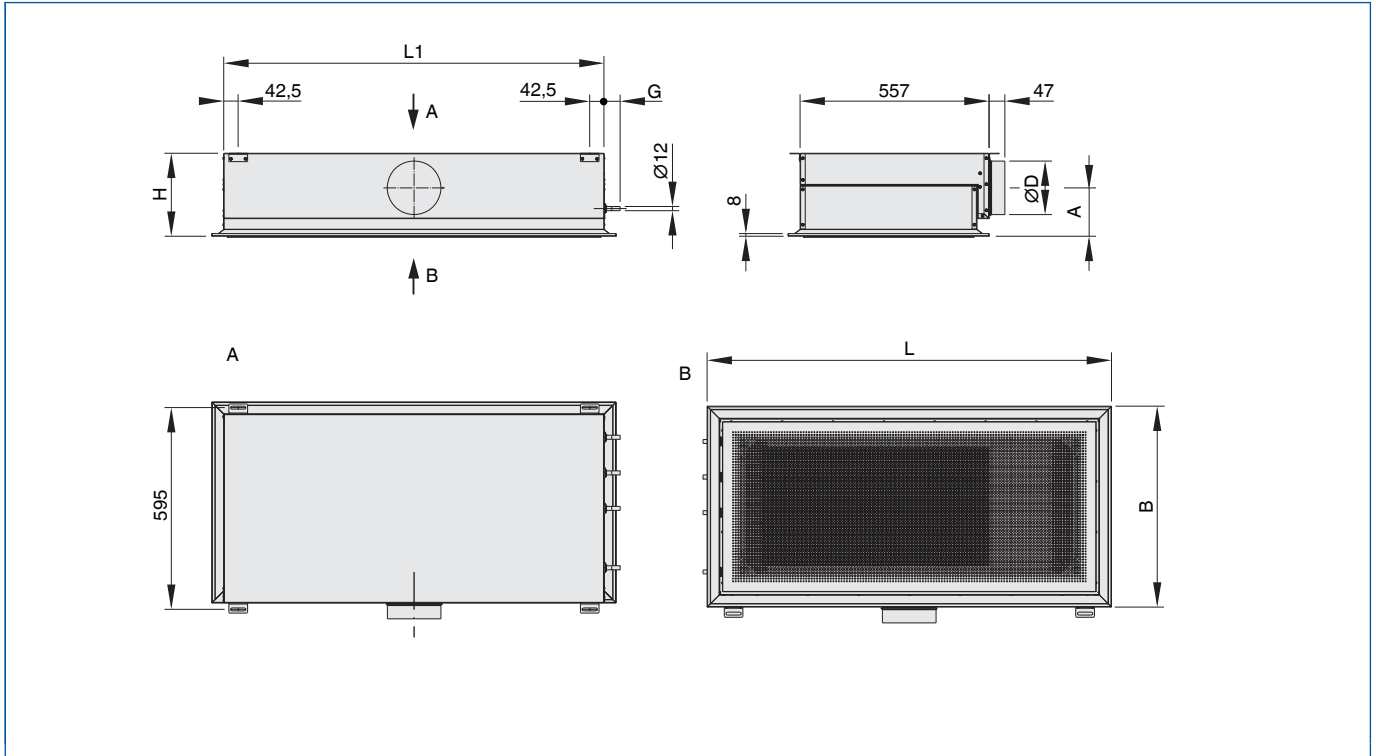


Illustration shows construction with water connections on the right.
 In constructions with the water connections on the left, the water connections are on the opposite side.

Dimensions [mm]

Nominal size	L	B	L1	G
600 × 600	593	593	522	47.5
	598	598	522	47.5
	618	618	522	47.5
	623	623	522	47.5
1200 × 600	1193	593	1122	47.5
	1198	598	1122	47.5
	1243	618	1147	35
	1248	623	1147	35

Dimensions [mm]

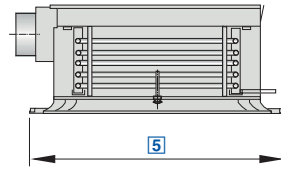
D	H	A
123	230	125
158	245	143

Weight [kg]

Nominal size	kg/piece	Contained water (max.)
600 × 600	16	2
1200 × 600	30	3

Differences in width can be neglected





Active chilled diffuser with radial air discharge, 600 or 625 mm nominal width, vertical heat exchanger and condensate drip tray

Order code

DID - R - Q - 2 - A / 593 / P1 - RAL ... / G1 / VS

1 2 3 4 5 6 7 8

1 Type

DID-R Active chilled diffuser, circular

2 Square diffuser face

No entry: none

Q With square diffuser face

3 Heat exchanger

2 2-pipe

4 4-pipe

4 Nozzle variant

A Small

B Medium

C Large

5 Nominal size [mm]

Circular diffuser face

598

Square diffuser face

593, 598, 618, 623

6 Exposed surface

No entry: powder-coated RAL 9010, pure white

P1 Powder-coated, specify RAL CLASSIC colour

Gloss level

RAL 9010 50 %

RAL 9006 30 %

All other RAL colours 70 %

7 Surface of casing and heat exchanger

No entry: untreated

G1

RAL 9005, black

G2

RAL 9005, black, only casing

8 Valves and actuators

No entry: none

VS

With

+ **Features**

Active chilled beam for heating and cooling, with 2-pipe or 4-pipe heat exchanger, for integration with various ceiling systems. The condensate drip tray is useful if the temperature temporarily falls below the dew point.

- ▶ Preferably for room heights up to 4.00 m
- ▶ High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
- ▶ High comfort levels due to low airflow velocity in the occupied zone
- ▶ Three nozzle variants to optimise induction based on demand
- ▶ Circular or square diffuser face

Optional equipment and accessories

- ▶ Control system
- ▶ Casing coated black
- ▶ Heat exchanger powder-coated black
- ▶ Powder coating in many different colours, e.g. RAL CLASSIC

X **Application**

- ▶ Active chilled diffusers of Type DID-R for the integration into various ceiling systems, preferably for room heights up to 4.00 m
- ▶ Particularly suitable for continuous ceilings and for grid ceilings with grid size 600 or 625

- ▶ Active chilled diffuser with radial air discharge
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate
- ▶ Energy-efficient solution since water is used for heating and cooling

◊ **Variants**

- ▶ DID-R: Circular construction, Ø598 mm
- ▶ DID-R-Q: With square diffuser face (593, 618, 598, or 623 mm)

Heat exchanger

- ▶ 2: 2-pipe systems
- ▶ 4: 4-pipe systems

Plastic nozzle variants

- ▶ A: Small
- ▶ B: Medium
- ▶ C: Large

+ **Construction**

- ▶ Powder-coated RAL 9010, pure white, gloss level 50 %
- ▶ P1: Powder-coated in any other RAL colour, gloss level 70 %
- ▶ P1: Powder-coated RAL 9006, white aluminium, gloss level 30 %

+ **Useful additions**

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields
- ▶ X-AIRCONTROL control system

★ **Special characteristics**

- ▶ Radial air discharge
- ▶ Vertical heat exchanger as 2-pipe or 4-pipe system, with condensate drip tray that is useful if the temperature temporarily falls below the dew point
- ▶ Water connections at the side, Ø10 mm Cu pipe with plain tails

ISO **Standards and guidelines**

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022





Technical data

Nominal size	600, 625 mm
Circular diffuser face	Ø598 mm
Square diffuser face	593, 598, 618, 623 mm
Height	250 mm
Primary air spigot, diameter	98 mm
Primary air volume flow rate	12 - 25 l/s or 43 - 90 m ³ /h
Cooling capacity	Up to 550 W
Heating capacity	Up to 500 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C

Quick sizing

L _N	①	Primary air			②	Cooling				Heating		
		V̇ _{Pr}	V̇ _{Pr}	Δp _t	L _{WA}	2-pipe and 4-pipe systems				4-pipe system		
						Q̇ _{tot}	Q̇ _{WK}	Δt _w	Δp _w	Q̇ _{WH} = Q̇ _{tot}	Δt _w	Δp _w
		l/s	m ³ /h	Pa	dB(A)	W	K	kPa	W	K	kPa	
600	A	6	22	37	24	253	181	1.9	1.9	339	5.8	0.4
		10	36	103	33	344	223	2.4	1.9	384	6.6	0.4
		13	47	174	39	405	248	2.7	1.9	409	7.0	0.4
	B	10	36	43	28	308	187	2.0	1.9	350	6.0	0.4
		14	50	85	35	384	215	2.3	1.9	380	6.5	0.4
		18	65	141	41	454	237	2.5	1.9	403	6.9	0.4
	C	16	58	39	30	397	204	2.2	1.9	367	6.3	0.4
		21	76	68	36	480	227	2.4	1.9	492	6.7	0.4
		26	94	104	41	562	248	2.7	1.9	413	7.1	0.4

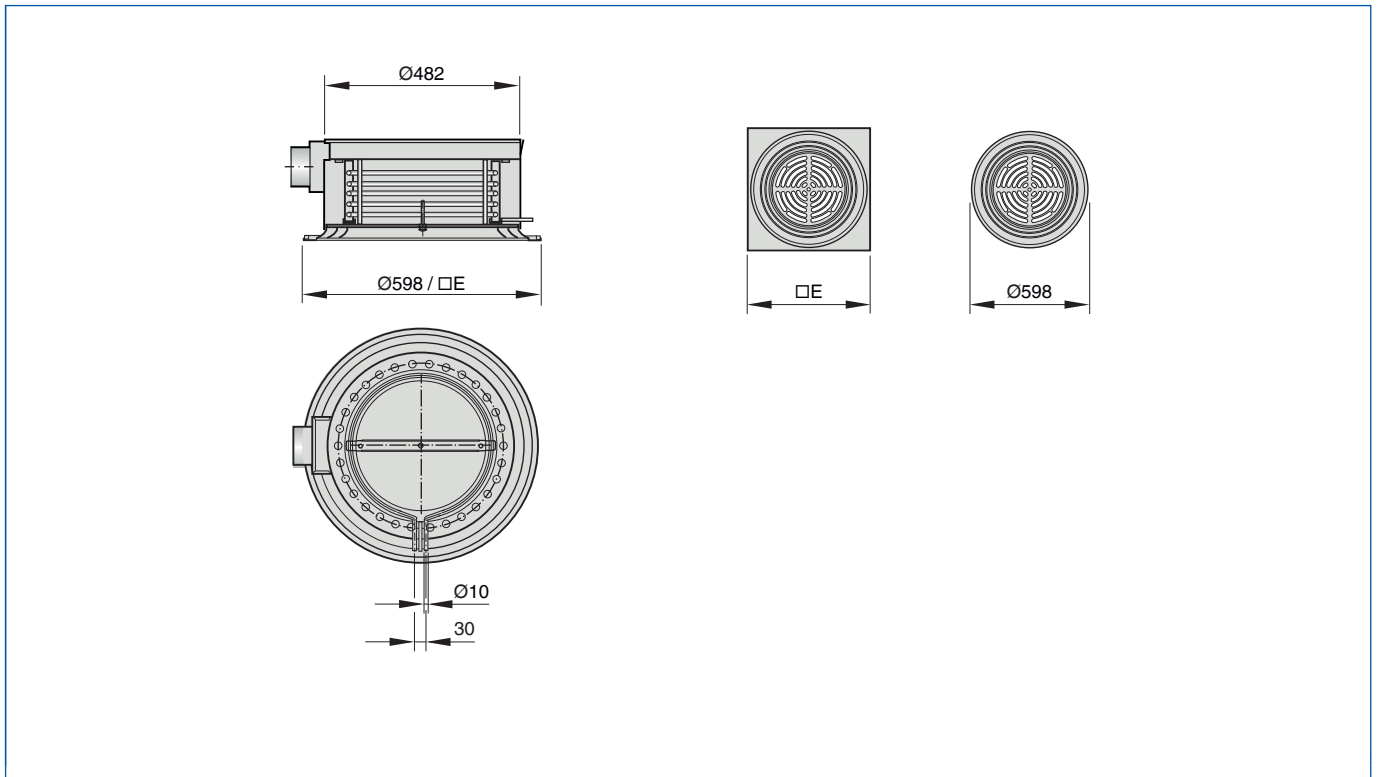
① Nozzle variant ② Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t _{Pr}	16 °C	22 °C
t _{WV}	16 °C	50 °C
t _R	26 °C	22 °C
V̇	80 l/h	50 l/h



DID-R

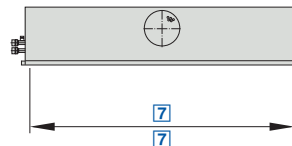


Dimensions [mm]

Weights

Nominal size	kg/piece
DID-R	10
DID-R-Q	11
Contained water (max.)	1





Active chilled beam with one-way air discharge and horizontal heat exchanger, in nominal lengths of 900, 1200 and 1500 mm

Order code

DID - E - 2 - U - RE - A1 - E / 1200 x 256 / G1 / VS

1 2 3 4 5 6 7 8 9

1 Type

DID-E Active chilled beam

2 Heat exchanger

2 2-pipe
4 4-pipe

3 Nozzle variant

G Large
U Extra large
2U Two rows, extra large

4 Arrangement of water connections

RE Right side
LI Left side

5 Water connections

No entry: Ø12 mm pipe with plain tails
A1 With G½" external thread and flat seal
A2 With G½" union nut and flat seal

6 Vent

No entry: none
E With

7 Nominal length x width of heat exchanger [mm]

$L_N \times B_{WT}$
900 x 256
900 x 320

1200 x 256

1200 x 320

1500 x 256

1500 x 320

8 Surface of casing and heat exchanger

No entry: untreated
G1 RAL 9005, black

9 Valves and actuators

No entry: none
VS With valves and actuators

+ Features

- Active chilled beam for heating and cooling, with 2-pipe or 4-pipe heat exchanger, for installation into bulkheads, e.g. in hotel rooms
- ▶ Preferably for room heights up to 4.00 m
 - ▶ High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
 - ▶ High comfort levels due to low airflow velocity in the occupied zone
 - ▶ Three nozzle variants to optimise induction based on demand
 - ▶ Fixing points for various types of suspension

Optional equipment and accessories

- ▶ Control system
- ▶ Induced air spigot and supply air spigot (to facilitate attaching the grilles)
- ▶ Heat exchanger powder-coated black
- ▶ Powder coating in many different colours, e.g. RAL CLASSIC

X Application

- ▶ Active chilled beams of Type DID-E for installation into ceiling bulkheads, preferably for room heights up to 4.00 m
- ▶ Particularly suitable for hotel bedrooms and rooms on hospital wards
- ▶ 2-pipe or 4-pipe heat exchangers enable

good comfort levels with a low conditioned primary air volume flow rate

- ▶ Energy-efficient solution since water is used for heating and cooling

◊ Variants

- ▶ Heat exchanger width is 256 or 320 mm

Heat exchanger

- ▶ 2: 2-pipe systems
- ▶ 4: 4-pipe systems

Nozzle variants

- ▶ G: Large
- ▶ U: Extra large
- ▶ 2U: Two nozzle rows, extra large nozzles

⬡ Attachments

- ▶ Water connection A1: G½" external thread and flat seal
- ▶ Water connection A2: G½" union nut and flat seal

& Accessories

- ▶ IS: Induced air spigot
- ▶ AS: Supply air spigot
- ▶ IA: Induced and supply air spigots

⚙ Useful additions

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields
- ▶ Ventilation grille
- ▶ X-AIRCONTROL control system

★ Special characteristics

- ▶ Choice of any induced air grille and supply air grille from our portfolio
- ▶ One-way air discharge
- ▶ Horizontal heat exchanger as 2-pipe or 4-pipe system
- ▶ Internal nozzle plate with punched nozzles (non-combustible)
- ▶ Water connections at the narrow side, Ø12 mm Cu pipe, with plain tails or with G½" external thread, or with a G½" union nut; with flat seal

ISO Standards and guidelines

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022





Technical data

Nominal length	900, 1200, 1500 mm
Length	948, 1248, 1548 mm
Width	550, 614 mm
Height	200 mm (plus induced air grille)
Primary air spigot, diameter	158 mm
Primary air volume flow rate	10 - 78 l/s or 36 - 281 m ³ /h
Cooling capacity	Up to 1730 W
Heating capacity	Up to 1480 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C

Quick sizing - heat exchanger width 256 mm

L _N	①	Primary air			② L _{WA} dB(A)	Cooling				Heating		
		V _{Pr} l/s	V _{Pr} m ³ /h	Δp _t Pa		2-pipe and 4-pipe systems				4-pipe system		
						Q _{tot} W	Q _{WK} W	Δt _w K	Δp _w kPa	Q _{WH} = Q _{tot} W	Δt _w K	Δp _w kPa
900	G	7	25	38	<20	262	178	1.4	1.4	313	2.4	0.5
		12	43	111	<20	507	363	2.8	1.4	658	5.1	0.5
		17	61	224	29	673	468	3.7	1.4	863	6.7	0.5
	U	13	47	40	<20	470	314	2.5	1.4	565	4.4	0.5
		21	76	105	20	692	439	3.4	1.4	805	6.3	0.5
		29	104	200	30	865	515	4.0	1.4	958	7.5	0.5
	2U	25	90	38	<20	622	320	2.5	1.4	577	4.5	0.5
		41	148	103	26	957	457	3.6	1.4	842	6.6	0.5
		57	205	200	36	1227	540	4.2	1.4	1007	7.9	0.5
1200	G	9	32	35	<20	323	214	1.7	1.7	380	3.0	0.6
		15	54	98	<20	617	437	3.4	1.7	801	6.3	0.6
		21	76	192	28	815	561	4.4	1.7	1052	8.7	0.6
	U	17	61	39	<20	600	395	3.1	1.7	721	5.6	0.6
		28	101	106	22	891	553	4.3	1.7	1035	8.1	0.6
		39	140	206	32	1116	646	5.1	1.7	1227	9.6	0.6
	2U	33	119	39	<20	804	406	3.7	1.7	742	5.8	0.6
		54	194	104	30	1273	572	4.5	1.7	1073	8.4	0.6
		75	270	200	40	1573	668	5.2	1.7	1275	10.0	0.6
1500	G	12	43	40	<20	444	299	2.3	2.1	537	4.2	0.7
		20	72	117	21	793	552	4.3	2.1	1033	8.1	0.7
		28	101	220	31	1028	690	5.4	2.1	1321	10.3	0.7
	U	21	76	38	<20	724	471	3.7	2.1	869	6.8	0.7
		35	126	107	24	1078	656	5.1	2.1	1249	9.8	0.7
		49	176	210	34	1352	761	5.9	2.1	1474	11.5	0.7
	2U	41	144	40	21	981	486	3.8	2.1	900	7.0	0.7
		60	216	85	32	1358	635	5.0	2.1	1204	9.4	0.7
		80	288	152	41	1699	734	5.7	2.1	1416	11.1	0.7

① Nozzle variant ② Air-regenerated noise



Quick sizing - heat exchanger width 320 mm

L _N	①	Primary air				②	Cooling				Heating		
		V̇ _{Pr}	V̇ _{Pr}	Δp _t	L _{WA}		2-pipe and 4-pipe systems				4-pipe system		
							Q̇ _{tot}	Q̇ _{WK}	Δt _w	Δp _w	Q̇ _{WH} = Q̇ _{tot}	Δt _w	Δp _w
		l/s	m ³ /h	Pa	dB(A)		W	K	kPa	W	kPa		
900	G	7	25	38	<20	284	199	1.6	1.6	337	2.6	0.5	
		12	43	111	<20	548	403	3.2	1.6	705	5.5	0.5	
		17	61	224	29	722	517	4.0	1.6	923	7.2	0.5	
	U	13	47	40	<20	506	349	2.7	1.6	606	4.7	0.5	
		21	76	105	20	739	485	3.8	1.6	862	6.7	0.5	
		29	104	200	30	918	568	4.4	1.6	1073	8.0	0.5	
	2U	25	90	38	<20	658	357	2.8	1.6	619	4.8	0.5	
		41	148	103	26	1000	506	4.0	1.6	901	7.0	0.5	
		57	205	200	36	1281	594	4.6	1.6	1076	8.4	0.5	
1200	G	9	32	35	<20	349	240	1.9	2.2	409	3.2	0.6	
		15	54	98	<20	664	483	3.8	2.2	858	6.7	0.6	
		21	76	192	28	871	617	4.8	2.2	1123	8.8	0.6	
	U	17	61	39	<20	643	438	3.4	2.2	772	6.0	0.6	
		28	101	106	22	946	609	4.8	2.2	1105	8.6	0.6	
		39	140	206	32	1178	707	5.5	2.2	1308	10.2	0.6	
	2U	33	119	39	<20	849	451	3.5	2.2	795	6.2	0.6	
		54	194	104	30	1780	628	4.9	2.2	1145	9.0	0.6	
		75	270	200	40	1636	731	5.7	2.2	1358	10.6	0.6	
1500	G	12	43	40	<20	478	333	2.6	2.7	577	4.5	0.7	
		20	72	117	21	849	608	4.8	2.7	1103	8.6	0.7	
		28	101	220	31	1092	754	5.9	2.7	1406	11.0	0.7	
	U	21	76	38	<20	774	520	4.1	2.7	930	7.3	0.7	
		35	126	107	24	1140	718	5.6	2.7	1330	10.4	0.7	
		49	176	210	34	1420	829	6.5	2.7	1567	12.2	0.7	
	2U	41	144	40	21	1031	537	4.2	2.7	962	7.5	0.7	
		60	216	85	32	1419	696	5.4	2.7	1283	10.0	0.7	
		80	288	152	41	1765	800	6.3	2.7	1505	11.8	0.7	

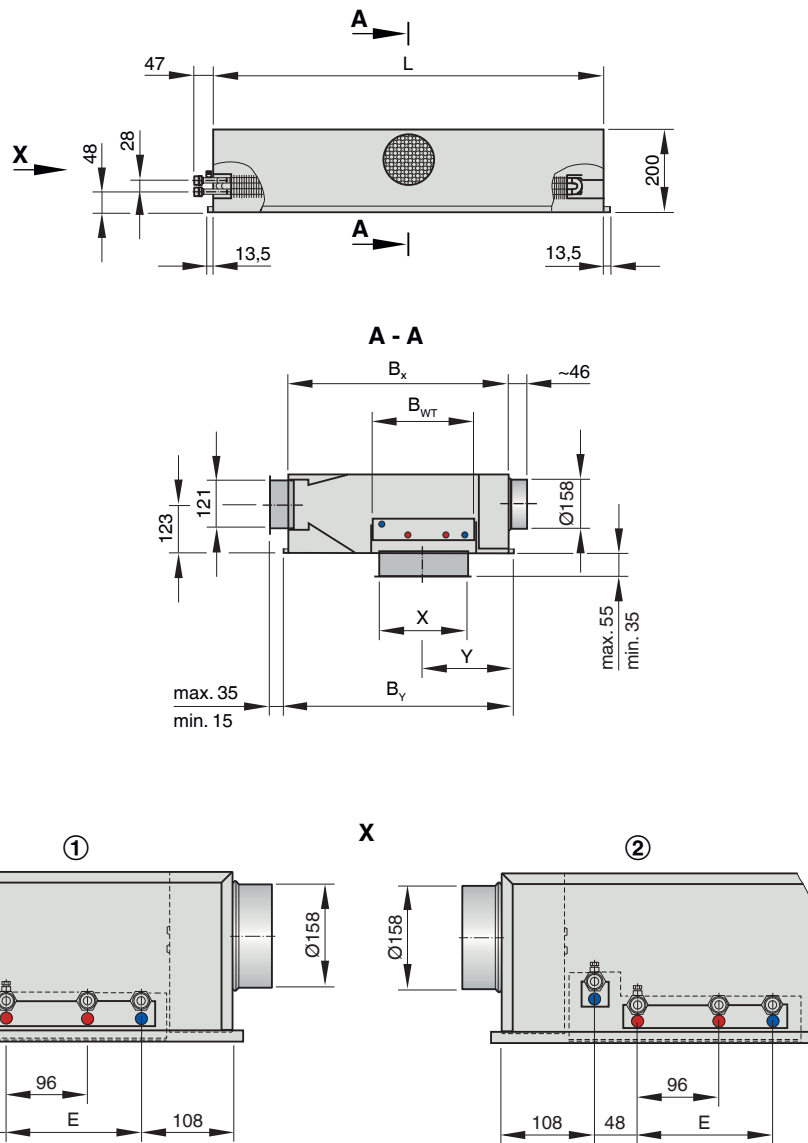
① Nozzle variant ② Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t _R	26 °C	22 °C
t _{Pr}	16 °C	22 °C
t _{WV}	16 °C	50 °C
V̇ _W	110 l/h	110 l/h



DID-E



- ① Water connections on the left (LI) ¹min.
- ② Water connections on the right (RE) ²max.

Dimensions [mm]

L_N	B_{WT}	L	B_x	B_y	E	X	Y
900	256	948	550	576	160	221	225
	320	948	614	640	224	318	257
1200	256	1248	550	576	160	221	225
	320	1248	614	640	224	318	257
1500	256	1548	550	576	160	221	225
	320	1548	614	640	224	318	257

Weight [kg]

Nominal length (L_N)	900 × 256	900 × 320	1200 × 256	1200 × 320	1500 × 256	1500 × 320
DID-E	18	22	21	26	25	31
Contained water (max.)	1.8	2.3	2.4	3.0	3.0	3.8
Induced air spigot	1.8	2.0	2.3	2.5	2.8	3.0
Supply air spigot	1.7	1.7	2.2	2.2	2.7	2.7





Multi-service active chilled beam with two-way air discharge and horizontal heat exchanger

Order code

DID-SB - 4 - M - A1 / 3000 x 750 / 123 / P1 - RAL... / G4 / T16 / Z1 - Z2 - Z4 - Z5 - Z6 - Z7 / D1 / S / VS

1 Type

DID-SB Active chilled beam

2 Heat exchanger

- 2 2-pipe
- 4 4-pipe

3 Nozzle variant

- K Small
- Z Small plus
- M Medium
- G Large

4 Water connections

- A1 No entry: Ø12 mm pipe with plain tails
- With G½" external thread and flat seal
- A2 With G½" union nut and flat seal

5 Nominal size (active section x wall end) [mm]

- 3000 x 500
- 3000 x 750
- 3000 x 1000

6 Spigot diameter [mm]

123

7 Exposed surface

- No entry: powder-coated RAL 9010, pure white
- P1 Powder-coated, specify RAL CLASSIC colour
- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %

8 Surface of heat exchanger

- No entry: untreated
- G4 White aluminium, RAL 9006, gloss level 30 %

9 Light fitting

- T16 Direct light MPO-D 2x2/28 T16 LDE;
- indirect light MPO-D 2x1/28 T16 LDE

LED Direct light MPO-D LED 96W; indirect light EBL-ID LED, electronic ballast

10 Accessories

- Z1 Sprinkler bushing, pos. 1
- Z2 Sprinkler bushing, pos. 2
- Z3 One loudspeaker
- Z4 Two loudspeakers
- Z5 Smoke detector
- Z6 Emergency lighting
- Z7 PIR sensor

11 Surface design

- D1 Hadi Teherani perforation

12 Front end

- No entry: circular
- G Straight
- S Slanted (45° angle)

13 Valves and actuators

- VS No entry: none
- With

+ Features

Active chilled beam for heating and cooling, with 2-pipe or 4-pipe heat exchanger, for freely suspended installation; additional functions or services (e.g. lighting, loudspeakers, sprinklers, smoke detectors, or PIR sensors) can be integrated

- Preferably for room heights up to 4.00 m
- High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
- High comfort levels as a result of low airflow velocities in the occupied zone
- Unit consists of three parts: wall end, active section, and front end
- Four nozzle variants to optimise induction based on demand

Optional equipment and accessories

- Control system
- 3 different front ends
- Various services, e.g. lighting, sprinklers, smoke detectors, PIR sensors, and loudspeakers
- Powder coating in many different colours, e.g. RAL CLASSIC

Application

- Active chilled beams of Type DID-SB (SMART BEAM) for freely suspended installation, preferably for room heights up to 4.00 m
- Project-specific integration of functions or services such as lighting, loudspeakers, sprinklers, smoke detectors, or PIR sensors
- Integral strip light fittings use innovative microprism optics to provide uniform illumination of rooms
- Each section can be individually designed
- 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate
- Energy-efficient solution since water is used for heating and cooling

Variants

- Induced air grille with various perforation patterns

Heat exchanger

- 2: 2-pipe systems
- 4: 4-pipe systems

Nozzle variants

- K: Small
- Z: Small plus
- M: Medium
- G: Large

Front end

- Circular
- Straight
- Slanted

+ Construction

- Powder-coated RAL 9010, pure white, gloss level 50 %
- P1: Powder-coated in any other RAL colour, gloss level 70 %
- P1: Powder-coated RAL 9006, white aluminium, gloss level 30 %

Attachments

- Water connection A1: G½" external thread and flat seal
- Water connection A2: G½" union nut and flat seal



& Accessories

- ▶ Sprinkler
- ▶ Smoke detector
- ▶ PIR sensor
- ▶ Loudspeaker
- ▶ Indirect and/or direct lighting
- ▶ Volume flow controller

+ Useful additions

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields (no lighting control)
- ▶ X-AIRCONTROL control system

★ Special characteristics

- ▶ Freely suspended active chilled beam with choice of different face plate perforations
- ▶ Heat exchanger as 2-pipe or 4-pipe system
- ▶ Wide range of additional services such as lighting, sprinklers, loudspeakers and sensors (accessories)
- ▶ Water connections at the narrow side, Ø12 mm Cu pipe, with plain tails or with G½" external thread, or with a G½" union nut; with flat seal

Wall end

- ▶ Cover for air and water connections at the end facing the wall
- ▶ Connection of project-specific services

Active section

- ▶ Air discharge and heat exchanger
- ▶ Integration of different functions, e.g. acoustic fleece, lighting or sensors

Front end

- ▶ Available in three designs
- ▶ Integration of project-specific functions, e.g. loudspeakers

ISO Standards and guidelines

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022

Technical data

Length	4500 - 5200 mm
Width	750 mm
Height	291 mm (plus services)
Primary air spigot, diameter	123 mm
Primary air volume flow rate	8 - 33 l/s or 30 - 120 m³/h
Cooling capacity	Up to 1000 W
Heating capacity	Up to 750 W
Max. operating pressure, water side	6 bar
Max. operating temperature, water side	75 °C

Quick sizing

L _N	①	Primary air			②	Cooling				Heating			
		V _{Pr}	V _{Pr}	Δp _t		L _{WA}	2-pipe and 4-pipe systems				4-pipe system		
							Q _{tot}	Q _{WK}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w	Δp _w
		l/s	m³/h	Pa		dB(A)	W	K	kPa	W	kPa		
3000	K	13	47	88	<20	524	366	1.6	4.0	190	2.7	0.21	
		16	58	133	23	655	461	2.0	4.0	455	6.5	0.21	
		21	76	228	31	830	576	2.5	4.0	744	10.7	0.21	
	Z	17	61	51	<20	483	279	1.2	4.0	400	5.7	0.21	
		21	76	79	<20	664	409	1.8	4.0	626	9.0	0.21	
		25	90	111	24	806	505	2.2	4.0	780	11.2	0.21	
	ZM	20	72	45	<20	521	280	1.2	4.0	508	7.3	0.21	
		24	86	64	<20	686	398	1.7	4.0	673	9.6	0.21	
		28	101	89	23	837	499	2.1	4.0	809	11.6	0.21	
	M	22	80	39	<20	535	267	1.2	4.0	545	7.8	0.21	
		27	97	57	<20	732	407	1.8	4.0	710	10.2	0.21	
		31	112	76	23	881	506	2.2	4.0	824	11.8	0.21	
	G	35	126	33	21	815	393	1.7	4.0	637	9.1	0.21	
		40	144	43	25	969	486	2.1	4.0	726	10.4	0.21	
		45	162	54	28	1108	565	2.4	4.0	801	11.5	0.21	

① Nozzle variant ② Air-regenerated noise

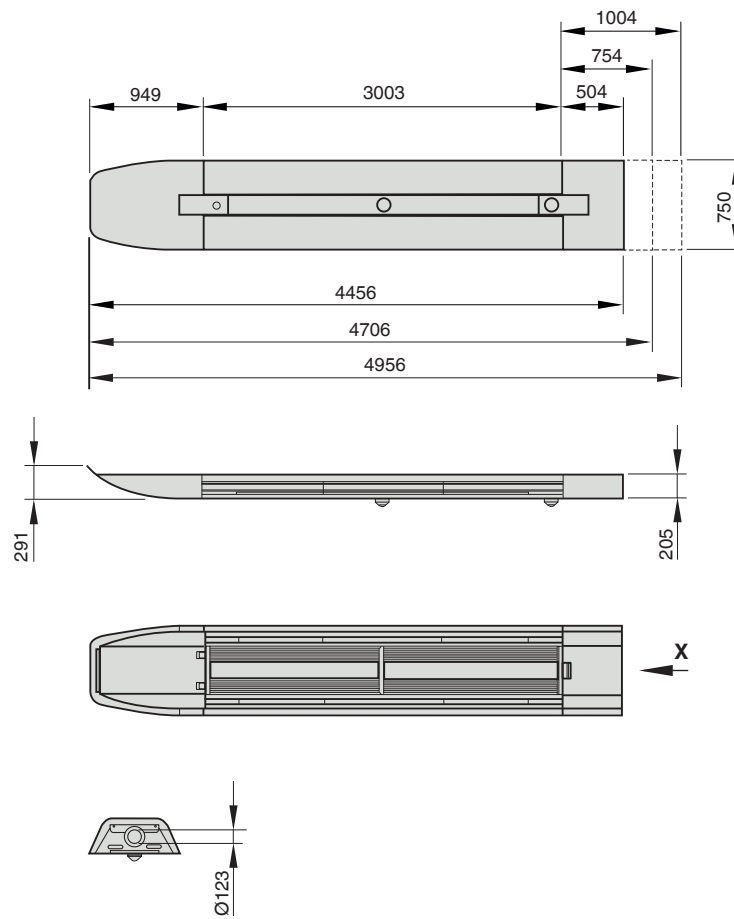
Reference values

Parameter	Cooling	Heating
t _R	26 °C	22 °C
t _Z	16 °C	22 °C
t _{WV}	16 °C	50 °C
V _W	200 l/h	60 l/h

L_N = 3000 mm
X = 1.5 m
R_H = 3.2 m
A = 3.0 m



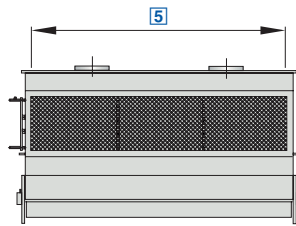
Dimensions



Weight [kg]

Length	3000/500	3000/750	3000/1000
Contained water (max.)	6	6	6
Unit with rounded front end, without accessories	140	145	150
All accessories + cable	10	10	10
Straight or slanted front end	5	5	5





Induction unit for ceiling installation, with one-way or two-way air discharge, vertical heat exchanger and condensate drip tray

Order code

IDH - 2 - WT - E3 / 2000 / P1 - RAL ...

1 2 3 4 5 6

1 Type

IDH Active induction unit

2 Air discharge

- 1 One-way
- 2 Two-way

3 Heat exchanger

No entry: none
WT With 2-pipe heat exchanger

4 Electric actuator

- E1** 230 V AC
- E2** 24 V AC
- E3** 24 V AC, 0 - 10 V DC

5 Nominal length [mm]

- 1500**
- 2000**
- 2500**

6 Exposed surface

- No entry: Untreated - galvanised sheet steel
- P0** Powder-coated RAL 9010, pure white
- P1** Powder-coated, specify RAL CLASSIC colour
- Gloss level
- RAL 9010 50 %
- RAL 9006 30 %
- All other RAL colours 70 %

+ Features

Induction unit for heating and cooling, with 2-pipe heat exchanger, for freely suspended installation in large internal spaces, e.g. exhibition or production halls. The condensate drip tray is useful if the temperature temporarily falls below the dew point.

- ▶ Very high heating capacity and cooling capacity (up to 27 kW) when installed at a height of 8 to 25 m
- ▶ High comfort levels due to low airflow velocity in the occupied zone
- ▶ Non-combustible nozzles made of aluminium
- ▶ Motorised damper blade allows for precise setting of air discharge direction
- ▶ Heat exchanger with plain Cu pipe (Ø22 mm) for the water connection

Optional equipment and accessories

- ▶ Control system
- ▶ One-way or two-way air discharge
- ▶ Powder coating in many different colours, e.g. RAL CLASSIC

Application

- ▶ Induction units of Type IDH for freely suspended installation, preferably for very large internal spaces with a height of 8 to 25 m

- ▶ Dissipation of very high heating and cooling loads (up to 27 kW) due to the 2-pipe heat exchanger and motorised damper blades that allow for setting the airflow direction precisely
- ▶ Energy-efficient solution since water is used for heating and cooling

◊ Variants

- ▶ IDH-1: Induction unit with a primary air volume flow rate of 280 l/s or 1000 m³/h; cooling load up to about 13.5 kW, heating load up to about 8.5 kW
- ▶ IDH-2: Induction unit with a primary air volume flow rate of 555 l/s or 2000 m³/h; cooling load up to about 27 kW, heating load up to about 17 kW

+ Construction

- ▶ Galvanised
- ▶ Powder-coated RAL 9010, pure white, gloss level 50 %
- ▶ P1: Powder-coated in any other RAL colour, gloss level 70 %

⬡ Attachments

- ▶ E1: Electric actuator (3-point) 230 V AC
- ▶ E2: Electric actuator (3-point) 24 V AC
- ▶ E3: Electric actuator (modulating) 24 V AC, 0 - 10 V DC

★ Special characteristics

- ▶ Active induction unit for high volume flow rates and with high thermal output, ideal for industrial applications
- ▶ One-way or two-way air discharge
- ▶ 1 or 2 electric actuators allow for the precise control of the discharge direction and of the airflow in the occupied zone; in cooling mode, air is supplied to the occupied zone either horizontally or downwards at an angle; in heating mode, the air is supplied vertically to the occupied zone
- ▶ Vertical heat exchanger with condensate drip tray including condensate drain that can be connected to a condensate pipe (to be provided by others), Ø12 mm both sides
- ▶ Water connections at the narrow side, Ø22 mm Cu pipe, with plain tails

ISO Standards and guidelines

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022





Technical data

Nominal length	1500, 2000, 2500 mm	1500, 2000, 2500 mm
Length	1530, 2030, 2530 mm	1530, 2030, 2530 mm
Height	1840 mm	1840 mm
Depth	327 mm	651 mm
Primary air spigot, diameter	198 mm	313 mm
Primary air volume flow rate	280 l/s or 1000 m ³ /h	555 l/s or 2000 m ³ /h
Cooling capacity	Up to approx. 13.5 W	Up to approx. 27 W
Heating capacity	Up to approx. 8.5 W	Up to approx. 17 W
Max. operating pressure, water side	6 bar	6 bar
Max. operating temperature, water side	75 °C	75 °C

Quick sizing - IDH-1

L _N	Primary air			① L _{WA} dB(A)	Cooling				Heating		
	V _{Pr}		Δp _t		Q _{tot}	Q _{WH}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w	Δp _w
	l/s	m ³ /h	Pa		W		K	kPa	W	K	kPa
1500	250	900	305	56	6541	3527	3.0	12.6	7227	12.4	3.2
2000	333	1200	319	61	8455	4439	3.8	15.7	9016	15.5	4.1
2500	417	1500	356	63	10291	5263	4.5	18.9	10602	18.2	4.9

① Air-regenerated noise

Quick sizing - IDH-2

L _N	①	Primary air			② L _{WA} dB(A)	Cooling				Heating		
		V _{Pr}		Δp _t		Q _{tot}	Q _{WH}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w	Δp _w
		l/s	m ³ /h	Pa		W		K	kPa	W	K	kPa
1500	G	500	1800	291	59	13083	7054	3.0	12.6	14455	12.4	3.2
2000	G	666	2400	312	64	16910	8879	3.8	15.7	18032	15.5	4.1
2500	G	834	3000	346	66	20582	10526	4.5	18.9	21205	18.2	4.9

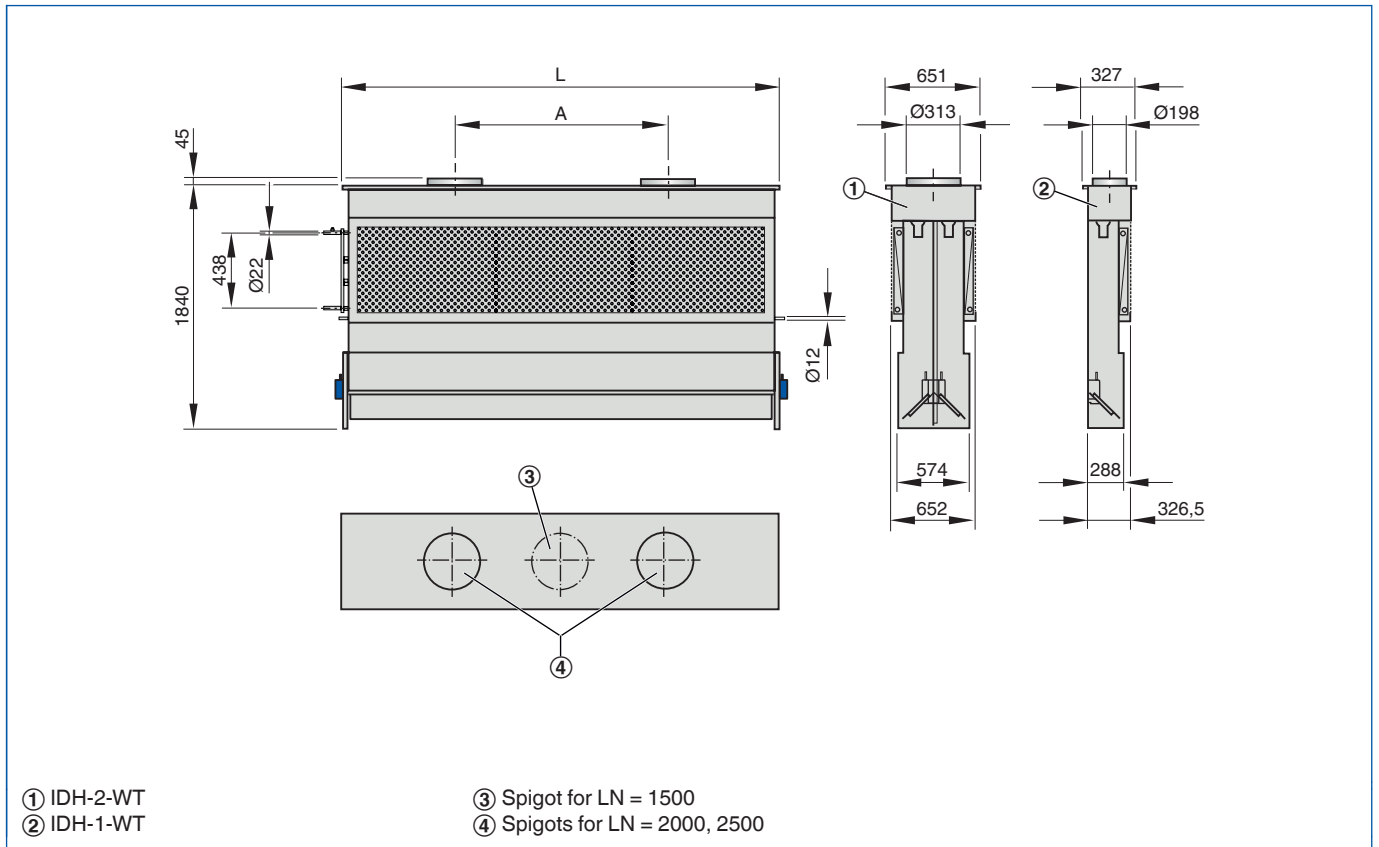
① Nozzle variant ② Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t _R	26 °C	22 °C
t _{Pr}	16 °C	22 °C
t _{WV}	16 °C	50 °C
V _W	2000 l/h	1000 l/h



IDH



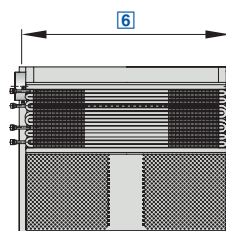
Dimensions [mm]

L_N	L	A	No. of spigots
1500	1530	-	1
2000	2030	835	2
2500	2530	1235	2

Weight [kg]

L_N	IDH-1-WT-E...			IDH-2-WT-E...		
	1500	2000	2500	1500	2000	2500
Unit	70	90	110	120	155	190
Contained water	5	6	8	9	12	15





Induction-type displacement flow diffuser in nominal lengths of 900, 1200 and 1500 mm, with vertical heat exchanger and condensate drip tray

Order code

QLI – 2 – M – WVR – KW / 900 / W0 / G1

1 2 3 4 5 6 7 8

1 Type

QLI Under sill induction unit

2 Heat exchanger

2 2-pipe
4 4-pipe

3 Nozzle variants

M Medium
G Large
U Extra large

4 Arrangement of heat exchanger and water connections

WVL Heat exchanger at the front, water connections on the left
WVR Heat exchanger at the front, water connections on the right
WHL Heat exchanger at the rear, water connections on the left
WHR Heat exchanger at the rear, water connections on the right

5 Condensate drip tray

KW With
No entry: none

6 Nominal length [mm]

900, 1200, 1500

7 Fixing material (supplied separately)

No entry: none
W0 Wall fixing
B0 Floor fixing
WB Wall and floor fixing

8 Surface of casing and heat exchanger

No entry: untreated
G1 Casing powder-coated, heat exchanger coated RAL 9005, jet black
G2 Heat exchanger coated RAL 9005, jet black

Features

Induction-type displacement flow diffuser with 2-pipe or 4-pipe heat exchanger, for installation under a sill. The condensate drip tray is useful if the temperature temporarily falls below the dew point.

- ▶ High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
- ▶ High comfort levels due to low airflow velocity in the occupied zone
- ▶ Three nozzle variants to optimise induction based on demand
- ▶ Two different heat exchanger positions

Optional equipment and accessories

- ▶ Control equipment
- ▶ Fixing systems for wall or floor fixing, fixing systems for both wall and floor fixing
- ▶ Powder coating in many different colours, e.g. RAL CLASSIC

Application

- ▶ Induction-type displacement flow diffusers of Type QLI for installation under a sill
- ▶ High comfort levels due to low-turbulence airflow and low airflow velocity in the occupied zone
- ▶ Displacement flow
- ▶ Choice of location for primary air spigot at a narrow side; end cap may have to be changed accordingly

- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate
- ▶ Energy-efficient solution since water is used for heating and cooling

Variants

- ▶ **WVL**: Heat exchanger at the front, water connections on the left
- ▶ **WVR**: Heat exchanger at the front, water connections on the right
- ▶ **WHL**: Heat exchanger at the rear, water connections on the left
- ▶ **WHR**: Heat exchanger at the rear, water connections on the right

Heat exchanger

- ▶ 2: 2-pipe systems
- ▶ 4: 4-pipe systems

Nozzle variants

- ▶ **M**: Medium
- ▶ **G**: Large
- ▶ **U**: Extra large

Construction

- ▶ Galvanised
- ▶ **P1**: Powder-coated RAL 9005, black, gloss level 70 %

Attachments

- ▶ Water connection A1: G½" external thread and flat seal
- ▶ Water connection A2: G½" union nut and flat seal
- ▶ Condensate drip tray

Accessories

- ▶ **W0**: Wall fixing
- ▶ **B0**: Floor fixing
- ▶ **WB**: Wall and floor fixing

Useful additions

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields
- ▶ **X-AIRCONTROL** control system
- ▶ Choice of ventilation grille from our portfolio

Special characteristics

- ▶ Low-turbulence supply air discharge as displacement flow
- ▶ Vertical heat exchanger as 2-pipe or 4-pipe system, optional condensate drip tray including condensate drain that can be connected to a condensate pipe (to be provided by others)



- Water connections at the narrow side, Ø12 mm Cu pipe, either with plain tails or with external thread or union nut, G½", flat seal

ISO Standards and guidelines

- Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website

- Declaration of hygiene conformity to VDI 6022

Technical data

Nominal length	900, 1200, 1500 mm
Length	975, 1275, 1575 mm
Height	729 mm
Width	195 mm
Primary air volume flow rate	4 - 50 l/s or 14 - 180 m³/h
Cooling capacity	Up to 1000 W
Heating capacity	Up to 750 W
Max. operating pressure, water side	6 bar
Max. operating temperature, water side	75 °C

Quick sizing

L _N	①	Primary air			② L _{WA} dB(A)	Cooling				Heating		
		V̇ _{Pr} l/s	V̇ _{Pr} m³/h	Δp _t Pa		2-pipe and 4-pipe systems				4-pipe system		
						Q̇ _{tot} W	Q̇ _{WK} W	Δt _w K	Δp _w kPa	Q̇ _{WH} = Q̇ _{tot} W	Δt _w K	Δp _w kPa
						W	K	kPa	W	K	kPa	
900	M	4	14	53	<20	237	188	1.5	3.1	228	3.9	0.2
		6	22	121	24	332	260	2.0	3.1	314	5.4	0.2
		8	29	217	32	415	318	2.5	3.1	386	6.6	0.2
	G	7	25	40	<20	317	233	1.8	3.1	281	4.8	0.2
		11	40	102	22	456	323	2.5	3.1	392	6.7	0.2
		15	54	191	31	571	391	3.1	3.1	474	8.2	0.2
	U	17	43	42	<20	387	242	1.9	3.1	293	5.0	0.2
		19	68	108	28	550	321	2.5	3.1	389	6.7	0.2
		26	94	204	37	677	364	2.8	3.1	441	7.6	0.2
1200	M	5	18	45	<20	293	233	1.8	3.8	281	4.8	0.3
		8	29	117	23	431	335	2.6	3.8	406	7.0	0.3
		11	40	222	32	548	416	3.3	3.8	505	8.7	0.3
	G	9	32	37	<20	401	293	2.3	3.8	355	6.1	0.3
		15	54	106	23	601	420	3.3	3.8	510	8.8	0.3
		21	46	208	33	761	508	4.0	3.8	618	10.6	0.3
	U	16	58	45	<20	506	313	2.4	3.8	379	6.5	0.3
		25	90	112	31	709	408	3.2	3.8	495	8.5	0.3
		34	122	207	40	871	461	3.6	3.8	560	9.6	0.3
1500	M	6	22	41	<20	347	275	2.2	4.5	333	5.7	0.4
		10	36	115	23	526	405	3.2	4.5	492	8.5	0.4
		14	50	228	33	674	505	3.9	4.5	614	10.6	0.4
	G	11	40	36	<20	483	350	2.7	4.5	424	7.3	0.4
		19	68	111	25	737	508	4.0	4.5	618	10.6	0.4
		27	97	225	35	939	613	4.8	4.5	747	12.9	0.4
	U	20	72	49	23	621	380	3.0	4.5	461	7.9	0.4
		28	101	98	33	802	464	3.6	4.5	564	9.7	0.4
		36	130	163	41	956	521	4.1	4.5	634	10.9	0.4

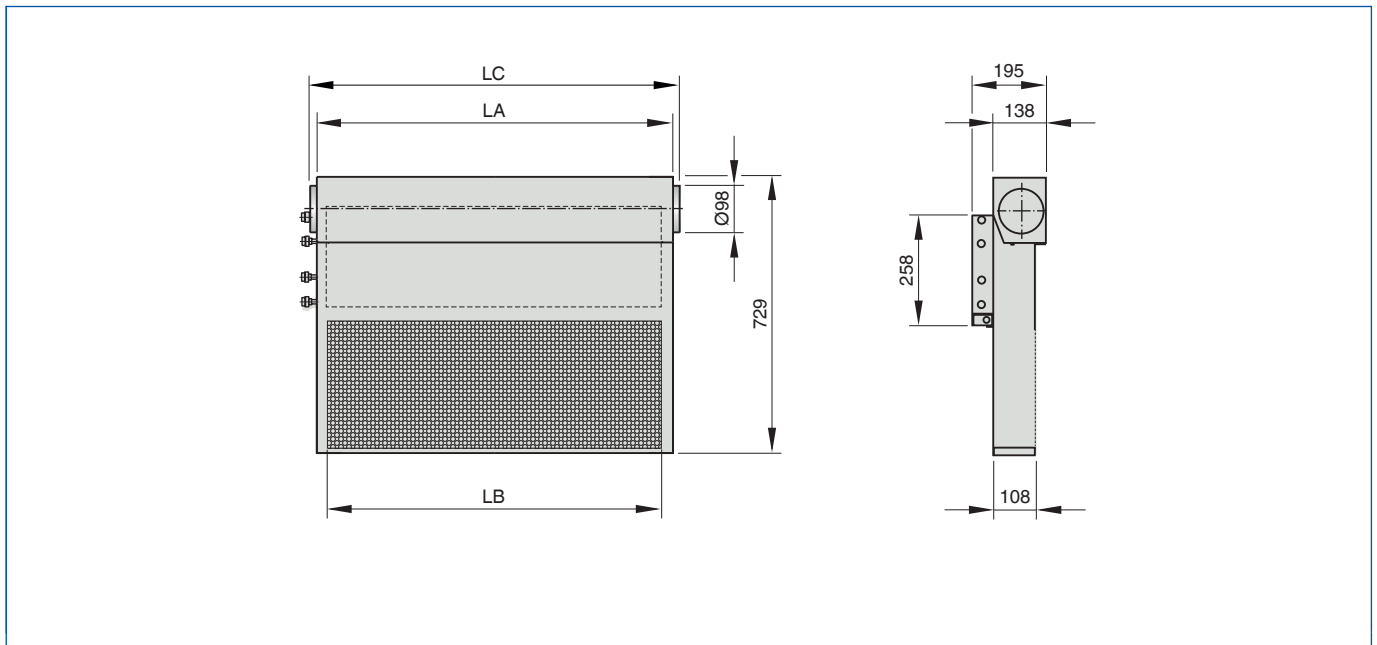
① Nozzle variant ② Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t _R	16 °C	22 °C
t _{Pr}	16 °C	50 °C
t _{WV}	26 °C	22 °C
V̇ _W	110 l/h	50 l/h



QLI-WHL



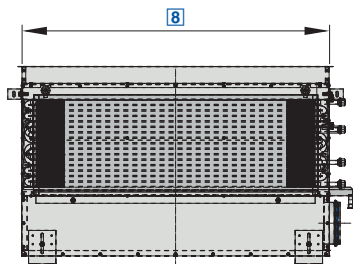
Dimensions [mm]

L_N	LA	LB	LC
900	940	883	975
1200	1240	1183	1275
1500	1540	1483	1575

Weights

L_N	mm	900	1200	1500
Unit	kg/piece	18	24	30
Contained water (max.)	kg	1.8	2.4	3





Under sill induction unit in nominal lengths of 600, 900, and 1200 mm, with vertical heat exchanger and condensate drip tray

Order code

IDB - 2 - G - RE - A1 - SL - KW / 1200x123 / WB / G3 / FS / VS

1 2 3 4 5 6 7 8 9 10 11 12 13

1 Type

IDB Under sill induction units

2 Heat exchanger

2 2-pipe
4 4-pipe

3 Nozzle variants

M Medium
G Large
U Extra large
2U 2 rows, extra large

4 Arrangement of the water connection

RE Right side
LI Left side

5 Water connections

No entry: Ø12 mm pipe with plain tails
A1 With G½" external thread and flat seal
A2 With G½" union nut and flat seal

6 Arrangement of air connections

SL Left side
SR Right side
VM Front, centre

7 Condensate drip tray

No entry: none
KW With

8 Nominal length [mm]

600, 900, 1200, 1350

9 Spigot diameter [mm]

98, 123

10 Fixing material (supplied separately)

No entry: none
W0 Wall fixing
B0 Floor fixing
WB Wall and floor fixing

11 Surface of casing and heat exchanger

No entry: untreated
G1 RAL 9005, black
G3 RAL 9005, black, heat exchanger only

12 Lint screen

No entry: none
FS With

13 Valves and actuators

No entry: none
VS With

+ Features

Under sill induction unit with 2-pipe or 4-pipe heat exchanger, of compact height, for installation under a sill or on a wall. The condensate drip tray is useful if the temperature temporarily falls below the dew point.

- ▶ High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
- ▶ High comfort levels due to low airflow velocity in the occupied zone
- ▶ Four nozzle variants to optimise induction based on demand

Optional equipment and accessories

- ▶ Control equipment
- ▶ Lint screen to protect the heat exchanger from contamination
- ▶ Powder coating in many different colours, e.g. RAL CLASSIC

Application

- ▶ Type IDB under sill induction units of compact height, for installation on an external wall, e.g. under a sill.
- ▶ Inducing displacement flow
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate
- ▶ Energy-efficient solution since water is used

for heating and cooling

▣ Variants

Heat exchanger
▶ 2: 2-pipe systems
▶ 4: 4-pipe systems

Nozzle variants

- ▶ M: Medium
- ▶ G: Large
- ▶ U: Extra large
- ▶ 2U: Two nozzle rows, extra large nozzles

+ Construction

- ▶ Galvanised
- ▶ P1: Powder-coated RAL 9005, black, gloss level 70 %

⬡ Attachments

- ▶ Water connection A1: G½" external thread and flat seal
- ▶ Water connection A2: G½" union nut and flat seal
- ▶ Condensate drip tray
- ▶ Lint screen

& Accessories

- ▶ Wall and floor fixing

+ Useful additions

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields
- ▶ X-AIRCONTROL control system

★ Special characteristics

- ▶ Supply air discharge as inducing displacement flow
- ▶ Vertical heat exchanger as 2-pipe or 4-pipe system, optional condensate drip tray including condensate drain that can be connected to a condensate pipe (to be provided by others)
- ▶ Water connections at the narrow side, Ø12 mm Cu pipe, with plain tails or with G½" external thread, or with a G½" union nut; with flat seal

ISO Standards and guidelines

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022





Technical data

Nominal length	600, 900, 1200 mm
Length	643, 943, 1243 mm
Height	Min. 555 mm, max. 605 mm
Width	155 mm
Primary air volume flow rate	4 - 40 l/s or 14 - 144 m³/h
Cooling capacity	Up to 950 W
Heating capacity	Up to 470 W
Max. operating pressure, water side	6 bar
Max. operating temperature, water side	75 °C

Quick sizing - spigot diameter 100 mm

L _N	①	Primary air			②	Cooling				Heating		
		V̇ _{Pr}	V̇ _{Pr}	Δp _t		L _{WA}	2-pipe and 4-pipe systems				4-pipe system	
					Q̇ _{tot}		Q̇ _{WK}	Δt _w	Δp _w	Q̇ _{WH} = Q̇ _{tot}	Δt _w	Δp _w
		l/s	m³/h	Pa	dB(A)	W	K	kPa	W	K	kPa	
600	M	3	10.8	71	<20	193	157	-1.2	2.44	180	3.1	0.19
		5	18.0	199	22	275	214	-1.7	2.44	246	4.2	0.19
		7	25.2	389	32	346	262	-2.0	2.44	301	5.2	0.19
	G	5	18.0	51	<20	238	178	-1.4	2.44	203	3.5	0.19
		9	32.4	166	23.5	365	256	-2.0	2.44	294	5.1	0.19
		12	43.2	295	32	450	305	-2.4	2.44	351	6.0	0.19
	U	10	36.0	67	<20	346	226	-1.8	2.44	259	4.5	0.19
		15	54.0	152	27	473	292	-2.3	2.44	336	5.8	0.19
		20	72.0	270	35	590	349	-2.7	2.44	403	6.9	0.19
		900	M	5	18.0	83	<20	304	243	-1.9	3.13	279
7.5	27.0			187	24	399	308	-2.4	3.13	355	6.1	0.24
10	36.0			333	32	484	362	-4.8	3.13	420	7.2	0.24
G	10		36.0	86	<20	427	307	-2.4	3.13	353	6.1	0.24
	15		54.0	194	29	570	389	-3.0	3.13	449	7.7	0.24
	20		72.0	345	38	699	458	-3.6	3.13	531	9.1	0.24
U	15		54.0	64	<20	505	324	-2.5	3.13	374	6.4	0.24
	20		72.0	115	28	628	386	-3.0	3.13	446	7.7	0.24
	25		90.0	180	35	743	441	-3.4	3.13	511	8.8	0.24
	1200		M	5	18.0	45	<20	326	266	-2.1	3.83	306
10		36.0		182	25	516	395	-3.1	3.83	457	7.9	0.29
15		54.0		410	37	674	493	-3.9	3.83	572	9.8	0.29
G		10	36.0	47	<20	453	332	-2.6	3.83	383	6.6	0.29
		15	54.0	107	23	601	320	-3.3	3.83	486	8.4	0.29
		20	72.0	190	32	735	494	-3.9	3.83	573	9.9	0.29
U		20	72.0	64	25	656	415	-3.2	3.83	480	8.3	0.29
		30	108.0	145	37	886	524	-4.1	3.83	609	10.5	0.29
		40	144.0	257	46	1097	614	-4.8	3.83	717	12.3	0.29

① Nozzle variant ② Air-regenerated noise



Quick sizing - spigot diameter 125 mm

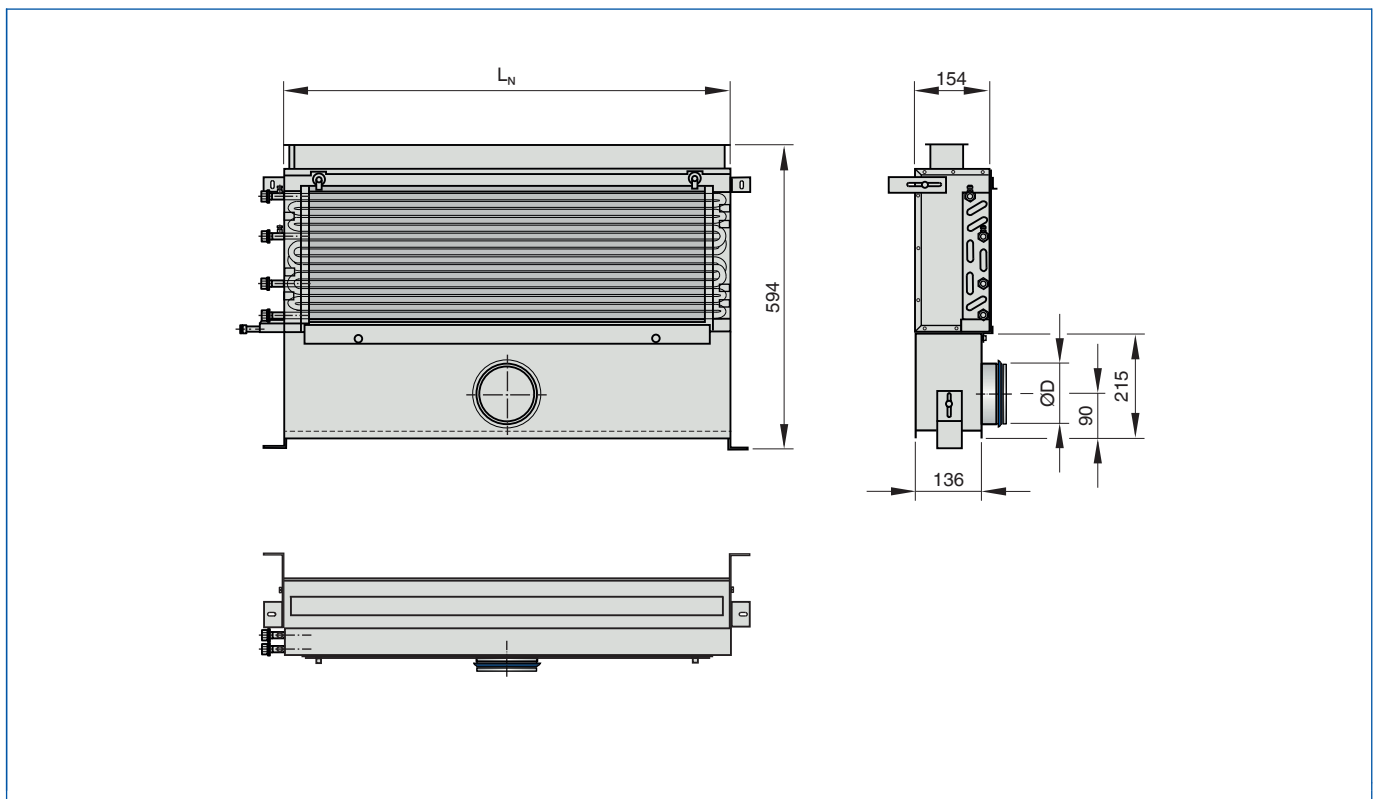
L _N	①	Primary air			②	Cooling				Heating		
		V̇ _{Pr} l/s	V̇ _{Pr} m ³ /h	Δp _t Pa		L _{WA} dB(A)	2-pipe and 4-pipe systems				4-pipe system	
					Q̇ _{tot}		Q̇ _{WK}	Δt _w	Δp _w	Q̇ _{WH} = Q̇ _{tot}	Δt _w	Δp _w
					W		K	kPa	W	K	kPa	
600	2U	20	72.0	71	<20	496	255	-2.0	2.44	254	4.4	0.19
		28	100.8	139	30	652	315	-2.5	2.44	316	5.4	0.19
		35	126.0	218	36	783	361	-2.8	2.44	364	6.3	0.19
900	2U	20	72.0	30	<20	525	283	-2.2	3.13	283	4.9	0.24
		30	108.0	67	26	726	364	-2.8	3.13	367	6.3	0.24
		40	144.0	120	35	915	432	-3.4	3.13	439	7.5	0.24
1200	2U	26	93.6	28	20	674	360	-2.8	3.83	362	6.2	0.29
		30	108.0	38	25	753	391	-3.1	3.83	395	6.8	0.29
		40	144.0	67	34	946	463	-3.6	3.83	472	8.1	0.29

① Nozzle variant ② Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t _R	16 °C	22 °C
t _{Pr}	26 °C	22 °C
t _{WV}	16 °C	50 °C
V̇ _W	110 l/h	50 l/h

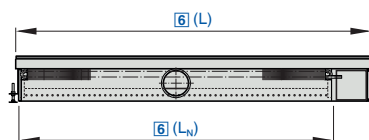
IDB



Weight [kg]

L _N [mm]	600	900	1200
Unit	9	15	21
Contained water	1.2	1.8	2.4
Condensate drip tray	0.6	0.9	1.2
Lint screen	0.8	1.1	1.4





Under floor induction unit in nominal lengths of 900 to 1500 mm, with horizontal heat exchanger

Order code

BID - 2 - M - R - E / 1197 x 900 x 98 / K00 / P1 / G3 / VS

1 2 3 4 5 6 7 8 9 10 11

1 Type

BID Underfloor induction unit

2 Heat exchanger

2 2-pipe
4 4-pipe

3 Nozzle variants

M Medium
G Large
U Extra large
2U 2 rows, extra large

4 Casing arrangement

R Right side
L Left side

5 Unit variant

E Single unit with perimeter frame
B Unit for continuous linear arrangement, i.e. open at the narrow sides

6 Total length (diffuser face) x nominal size [mm]

1100 - 1249 x 900
1250 - 1399 x 1050
1400 - 1549 x 1200
1550 - 1699 x 1350
1700 - 1849 x 1500

7 Spigot diameter [mm]

98, 123

8 Water connection

No entry: Ø12 mm pipe with plain tails
E00 Ø12 mm pipe with plain tails and vent

valve

A00 With G½" external thread and flat seal

K00 With G½" external thread and flat seal and vent valve

9 Surface of casing

No entry: untreated, galvanised steel
P1 Powder-coated RAL 9005, black, gloss level 70 %

10 Surface of heat exchanger

No entry: heat exchanger untreated
G3 RAL 9005, black

11 Valves and actuators

No entry: none
VS With

+ Features

Underfloor induction unit with 2-pipe or 4-pipe heat exchanger for installation in raised floors

- ▶ High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
- ▶ High comfort levels due to low airflow velocity in the occupied zone
- ▶ Four nozzle variants to optimise induction based on demand
- ▶ Levelling feet
- ▶ Continuous linear arrangement if required

Optional equipment and accessories

- ▶ Control equipment
- ▶ Choice of walk-on floor grille from our portfolio
- ▶ Heat exchanger powder-coated black
- ▶ Powder coating in many different colours, e.g. RAL CLASSIC

X Application

- ▶ Underfloor induction units of Type BID for installation in raised floors
- ▶ Under floor induction units allow for floor-to-ceiling glazing
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate

- ▶ Energy-efficient solution since water is used for heating and cooling

◊ Variants

- ▶ **E**: Single unit
- ▶ **B**: Unit for continuous linear arrangement, i.e. open at the narrow sides

Heat exchanger

- ▶ 2: 2-pipe systems
- ▶ 4: 4-pipe systems

Nozzle variants

- ▶ **M**: Medium
- ▶ **G**: Large
- ▶ **U**: Extra large
- ▶ **2U**: Two nozzle rows, extra large nozzles

+ Construction

- ▶ Galvanised
- ▶ **P1**: Powder-coated RAL 9005, black, or in any other RAL colour, gloss level 70 %

◊ Attachments

- ▶ Water connection A1: G½" external thread and flat seal
- ▶ Water connection A2: G½" union nut and flat seal

+ Useful additions

- ▶ Connecting hoses
- ▶ Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields
- ▶ Choice of floor grille from our portfolio
- ▶ X-AIRCONTROL control system

★ Special characteristics

- ▶ Supply air discharge as inducing displacement flow
- ▶ Horizontal heat exchanger as 2-pipe or 4-pipe system
- ▶ 4 levelling feet
- ▶ Water connections at the narrow side, Ø12 mm Cu pipe, with plain tails or with G½" external thread, or with a G½" union nut; with flat seal

ISO Standards and guidelines

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022



 **Technical data**

Nominal length	900, 1050, 1200, 1350, 1500 mm
Total length	1100 - 1849 mm
Height	191 mm
Width	403 mm
Primary air volume flow rate	4 - 40 l/s or 14 - 144 m ³ /h
Cooling capacity	Up to 1030 W
Heating capacity	Up to 1225 W
Max. operating pressure, water side	6 bar
Max. operating temperature, water side	75 °C

Quick sizing

L _N	①	Primary air				②		Cooling				Heating		
		V _{Pr}	V _{Pr}	Δp _t		L _{WA}		2-pipe and 4-pipe systems				4-pipe system		
				Ø98 mm	Ø123 mm	Ø98 mm	Ø123 mm	Q _{tot}	Q _{WK}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w	Δp _w
		l/s	m ³ /h	Pa		dB(A)		W		K		kPa		
900	M	4	14	52	52	<20	<20	229	181	1.4	3.1	244	4.2	0.24
		6	22	117	117	<20	<20	303	230	1.8	3.1	311	5.4	0.24
		9	32	264	264	27	23	400	291	2.3	3.1	395	6.8	0.24
	G	8	29	58	58	<20	<20	324	228	1.8	3.1	308	5.3	0.24
		12	43	130	129	23	<20	435	290	2.3	3.1	394	6.8	0.24
		17	61	262	260	33	28	560	355	2.8	3.1	483	8.3	0.24
	U	15	54	64	63	22	<20	457	276	2.2	3.1	374	6.4	0.24
		20	72	114	111	30	23	570	328	2.6	3.1	446	7.7	0.24
		30	108	256	250	42	35	778	417	3.3	3.1	569	9.8	0.24
	2U	23	83	43	40	34	20	540	263	2.1	3.1	310	5.3	0.24
		32	115	84	79	43	29	708	322	2.5	3.1	382	6.6	0.24
		41	148	138	126	50	36	867	373	2.9	3.1	445	7.7	0.24
1050	M	4	14	38	38	<20	<20	238	190	1.5	3.5	256	4.4	0.26
		8	29	151	151	20	<20	381	285	2.2	3.5	387	6.6	0.26
		11	40	285	285	29	25	474	341	2.7	3.5	468	8.0	0.26
	G	10	36	66	65	<20	<20	393	272	2.1	3.5	375	6.4	0.26
		15	54	148	146	27	21	526	345	2.7	3.5	466	8.0	0.26
		20	72	263	260	35	30	646	405	3.2	3.5	533	9.5	0.26
	U	15	54	47	46	20	<20	468	287	2.2	3.5	391	6.7	0.26
		25	90	131	126	35	27	691	389	3.0	3.5	513	9.0	0.26
		35	126	256	248	44	36	893	471	3.7	3.5	647	11.1	0.26
	2U	27	97	45	40	41	23	627	302	2.4	3.5	357	6.1	0.26
		37	133	85	76	50	32	811	364	2.8	3.5	435	7.5	0.26
		47	169	137	122	57	39	985	419	3.3	3.5	503	8.6	0.26
1200	M	5	18	45	45	<20	<20	286	226	1.8	3.8	306	5.3	0.29
		9	32	145	144	21	<20	425	317	2.5	3.8	431	7.4	0.29
		12	43	257	256	29	25	516	372	2.9	3.8	506	8.7	0.29
	G	10	36	50	49	<20	<20	403	282	2.2	3.8	383	6.6	0.29
		15	54	113	111	24	<20	538	357	2.8	3.8	486	8.4	0.29
		24	86	288	284	38	32	752	463	3.6	3.8	634	10.9	0.29
	U	16	58	41	40	21	<20	501	308	2.4	3.8	419	7.2	0.29
		24	86	93	89	32	23	682	392	3.1	3.8	535	9.2	0.29
		36	130	208	200	44	35	927	493	3.9	3.8	676	11.6	0.29
	2U	31	112	48	41	49	27	713	339	2.7	3.8	403	6.9	0.29
		39	140	76	65	55	34	858	388	3.0	3.8	464	8.0	0.29
		47	169	110	95	61	39	999	432	3.4	3.8	519	8.9	0.29



L _N	①	Primary air				②		Cooling				Heating		
		V̇ _{Pr}	V̇ _{Pr}	Δp _t		L _{WA}		2-pipe and 4-pipe systems				4-pipe system		
				Ø98 mm	Ø123 mm	Ø98 mm	Ø123 mm	Q _{tot}	Q _{wk}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w	Δp _w
		l/s	m ³ /h	Pa		dB(A)		W		K	kPa	W	K	kPa
1350	M	5	18	35	35	<20	<20	295	234	1.8	4.2	317	5.5	0.31
		10	36	140	139	21	<20	468	348	2.7	4.2	473	8.1	0.31
		13	47	237	236	29	24	558	401	3.1	4.2	547	9.4	0.31
	G	10	36	39	39	<20	<20	412	292	2.3	4.2	396	6.8	0.31
		15	54	89	87	22	<20	550	369	2.9	4.2	502	8.6	0.31
		25	90	246	242	37	30	789	487	3.8	4.2	668	11.5	0.31
	U	17	61	38	36	22	<20	535	330	2.6	4.2	448	7.7	0.31
		25	90	80	76	33	23	715	413	3.2	4.2	564	9.7	0.31
		40	144	205	194	46	36	1018	536	4.2	4.2	736	12.7	0.31
	2U	35	126	51	42	57	32	797	375	2.9	4.2	448	7.7	0.31
		41	148	70	58	61	36	905	411	3.2	4.2	493	8.5	0.31
		47	169	91	76	65	40	1011	444	3.5	4.2	535	9.2	0.31
1500	M	6	22	41	40	<20	<20	341	269	2.1	4.5	365	6.3	0.33
		11	40	137	136	21	<20	510	378	3.0	4.5	515	8.9	0.33
		15	54	254	252	30	26	626	445	3.5	4.5	609	10.5	0.33
	G	14	50	63	61	<20	<20	534	365	2.9	4.5	497	8.5	0.33
		22	79	154	151	31	25	733	468	3.7	4.5	640	11.0	0.33
		28	101	250	244	38	32	868	531	4.1	4.5	729	12.5	0.33
	U	20	72	42	40	27	<20	614	372	2.9	4.5	507	8.7	0.33
		33	119	115	107	41	29	893	495	3.9	4.5	678	11.7	0.33
		40	144	169	158	46	35	1031	549	4.3	4.5	754	13	0.33
	2U	39	140	54	44	65	36	880	409	3.2	4.5	491	8.4	0.33
		43	155	66	53	68	39	951	433	3.4	4.5	520	9.0	0.33
		47	169	78	63	70	41	1022	455	3.6	4.5	549	9.4	0.33

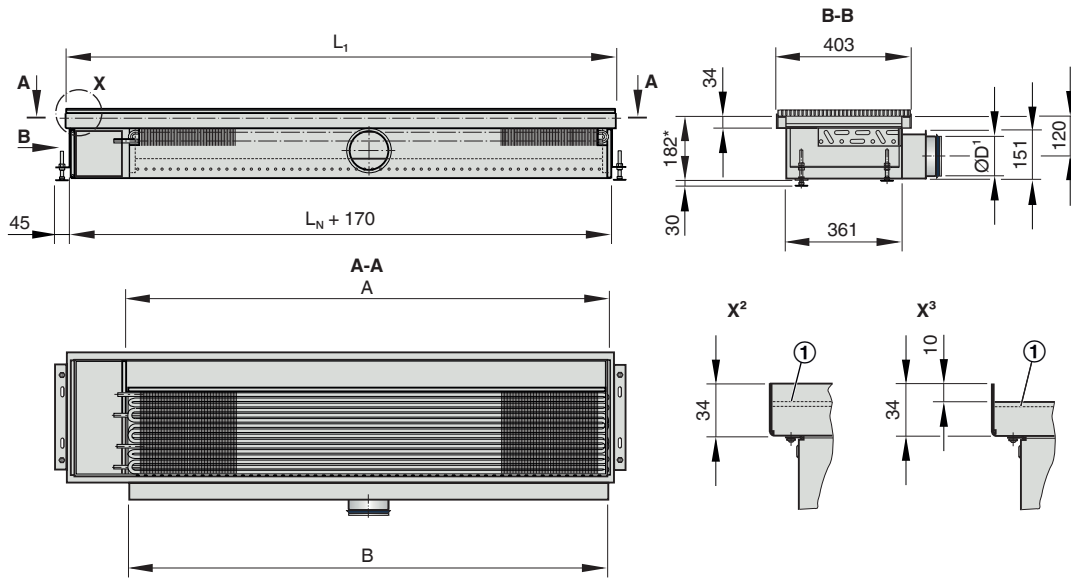
① Nozzle variant ② Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t _R	26 °C	22 °C
t _{AN}	24 °C	22 °C
t _{WV}	16 °C	50 °C
V̇ _W	110 l/h	50 l/h
Δt _{pr} = t _{pr} - t _R	-10 K	-
Δt _{RWV} = t _{WV} - t _R	-10 K	-28 K



BID



① Grille

rotated by 90°

*Lower edge of the casing to upper edge of the recess for the grille core

¹ $\varnothing D$: choice of $\varnothing 98$ or $\varnothing 123$

³Unit for continuous linear arrangement, i.e. open at the narrow sides (shown: rotated by 90°)

²Single unit with perimeter frame (shown: rotated by 90°)

Dimensions [mm]

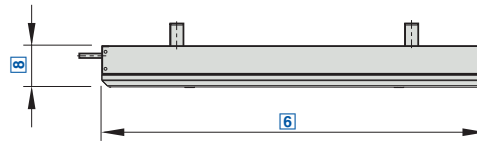
L_1	L_N	A	B
1100 - 1249	900	895	875
1250 - 1399	1050	1045	1025
1400 - 1549	1200	1195	1175
1550 - 1699	1350	1345	1325
1700 - 1849	1500	1495	1475

Weights

L_N	mm	900	1050	1200	1350	1500					
L_1	mm	1100	1249	1250	1399	1400	1549	1550	1699	1700	1849
Unit	kg/piece	26	28	30	32	34	36	38	40	42	44
Contained water (max.)	kg	1.8	1.8	2.1	2.1	2.4	2.4	2.7	2.7	3	3

min $L_1 = L_N + 200$ mm





Passive chilled beam in nominal lengths of up to 3000 mm and with a horizontal heat exchanger

Order code

PKV – R – L – G – W / 2500 x 440 x 200 / P1 – RAL ... / G3 / VS

1 2 3 4 5 6 7 8 9 10 11

<p>1 Type PKV Passive chilled beam</p> <p>2 Aluminium frame No entry: none R With</p> <p>3 Perforated metal facing No entry: none L With</p> <p>4 Water connection G Pipe connection, Ø12 mm, straight B Pipe connection, Ø12 mm, 90° bent upwards</p> <p>5 Suspension W Hanging brackets</p>	<p>6 Length [mm] L 1000, 1500, 2000, 2500, 3000</p> <p>7 Width [mm] B 295, 455, 575</p> <p>8 Height [mm] H 110, 200, 300</p> <p>9 Surface of casing No entry: no frame, RAL 9005, black No entry: with frame and/or perforated metal facing, RAL 9010, pure white</p>	<p>P1 Powder-coated, specify RAL CLASSIC colour Gloss level RAL 9010 50 % RAL 9006 30 % All other RAL colours 70 %</p> <p>10 Surface of heat exchanger G3 No entry: untreated RAL 9005, black</p> <p>11 Valves and actuators VS No entry: none With</p>
--	--	---

Features

Passive chilled beam with 2-pipe heat exchanger for ceiling installation, either freely suspended or above an open cell ceiling

- ▶ For room heights from 2.60 m
- ▶ Comfortable room cooling
- ▶ Water connection from the side or from the top
- ▶ 3 standard widths and heights for optimum dissipation of heat loads

Optional equipment and accessories

- ▶ Control equipment
- ▶ Aluminium frame with perforated metal facing
- ▶ Heat exchanger powder-coated black
- ▶ Powder coating in many different colours, e.g. RAL CLASSIC

Application

- ▶ Passive chilled beam of Type PKV for ceiling installation, either freely suspended or above an open cell ceiling, suitable for room heights from 2.60 m
- ▶ Passive chilled beam (no supply air) for new buildings and refurbishment projects
- ▶ Dissipation of high heat loads using a 2-pipe heat exchanger
- ▶ Energy-efficient solution since water is used for cooling

Variants

- ▶ PKV-0: Casing and heat exchanger
- ▶ PKV-L: Including perforated metal facing
- ▶ PKV-R-L: Including frame and perforated metal facing

Construction

- ▶ PKV-0 (without frame): Powder-coated RAL 9005, black, gloss level 70 %
- ▶ PKV-L (with perforated metal facing): Powder-coated RAL 9010, pure white, gloss level 50 %
- ▶ PKV-R-L (with frame and perforated metal facing): Powder-coated RAL 9010, pure white, gloss level 50 %
- ▶ P1: Powder-coated in any other RAL colour, gloss level 70 %
- ▶ G3: Heat exchanger, powder-coated RAL 9005, black, gloss level 70 %

Attachments

- ▶ Frame
- ▶ Perforated metal facing

Useful additions

- ▶ Connecting hoses
- ▶ Control equipment consisting of control panel including a controller with integral room temperature sensor; valve and valve actuator; and lockshield
- ▶ X-AIRCONTROL control system

Special characteristics

- ▶ Air-water component for the dissipation of heat loads
- ▶ Horizontal heat exchanger as 2-pipe system
- ▶ Aesthetic frame and perforated metal facing for freely suspended installation in comfort zones
- ▶ Water connections at the narrow side, Ø12 mm Cu pipe, with plain tails, either straight or 90° bent upwards

Standards and guidelines

- ▶ Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- ▶ Declaration of hygiene conformity to VDI 6022





Technical data

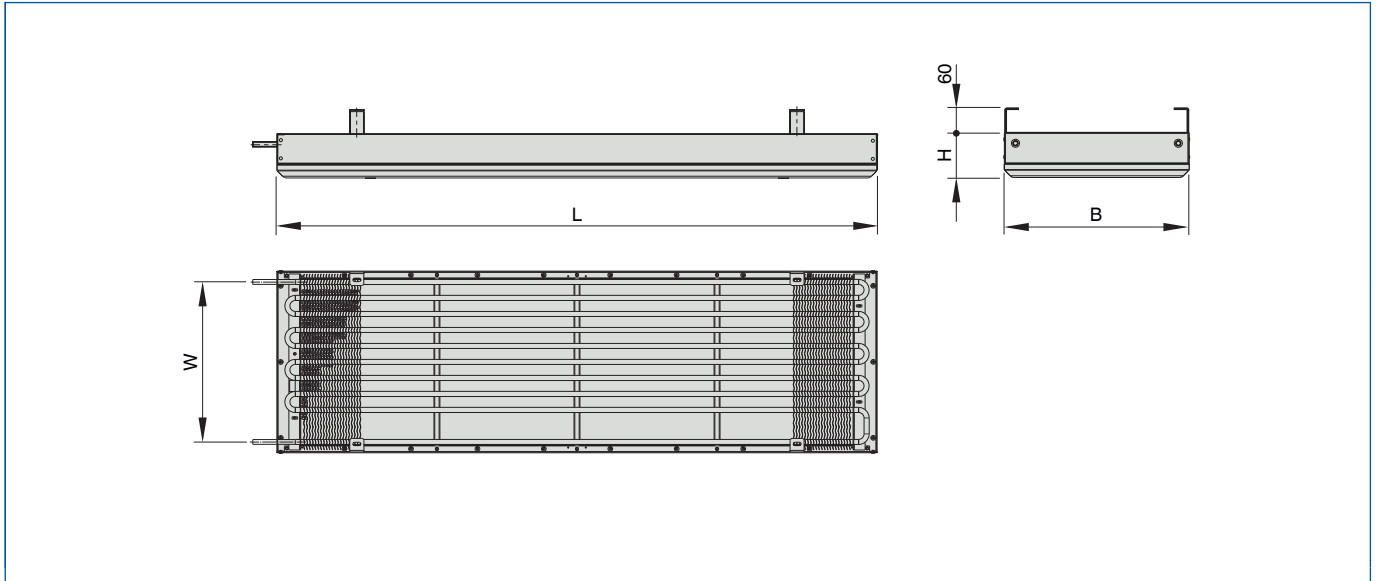
Length	1000, 1500, 2000, 2500, 3000 mm
Height	110, 200, 300 mm
Width	295, 455, 575 mm
Width of heat exchanger	280, 440, 560 mm
Cooling capacity	Up to 1000 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C

Quick sizing - nominal cooling capacity [W] to EN 14518

Length	Width	Height	$\Delta t_{Wm-Ref} = 8 \text{ K}; \Delta t_W = 2 \text{ K}$			
			Distance to ceiling			
			100 mm	200 mm	300 mm	
mm	mm		W			
1000	295	110	72	76	76	
		200	92	98	98	
		300	110	117	117	
		1500	110	120	128	128
			200	162	174	175
			300	203	218	219
		2000	110	182	197	198
			200	253	271	272
			300	310	330	331
2500	110	256	274	275		
	200	342	364	365		
	300	409	433	435		
3000	110	328	349	350		
	200	426	451	453		
	300	504	532	534		
1000	455	110	95	108	112	
		200	123	142	149	
		300	150	178	187	
		1500	110	178	213	224
			200	249	290	302
			300	304	347	361
		2000	110	291	334	347
			200	377	426	441
			300	442	497	513
2500	110	392	442	457		
	200	493	552	570		
	300	572	638	658		
3000	110	486	544	562		
	200	604	674	696		
	300	698	777	801		
1000	575	110	111	135	139	
		200	149	191	198	
		300	190	242	250	
		1500	110	244	300	307
			200	324	384	392
			300	382	446	455
		2000	110	421	443	452
			200	472	546	556
			300	543	625	637
2500	110	498	575	585		
	200	610	700	713		
	300	697	799	813		
3000	110	612	702	797		
	200	744	852	867		
	300	848	970	987		



PKV-R



Dimensions [mm]

L	100, 1500, 2000, 2500, 3000
B	295, 455, 575
W	240, 400, 520
H	110, 200, 300





Stand-alone single room control equipment to control the water-side components in air-water systems

Order code

RB – UP – T / V

1 2 3 4

1 Accessories (supplied separately)

RB Control panel

2 Variant

AP Surface mounted

UP Flush mounted

3 Timer

T No entry: none

T With

4 Amplifier (supplied separately)

V No entry: none

V With (required if a control panel is used for the control of more than four induction units)

+ **Features**

Compact, easy-to-operate control panel, used with air-water systems (2-pipe or 4-pipe systems) and the connected valves and actuators to control the room temperature

- ▶ Control panel for surface mounting or flush mounting, including control unit and room temperature sensor
- ▶ Self-explanatory push buttons
- ▶ Backlit LC display
- ▶ Temperature is displayed in °C or °F
- ▶ 2-point or 3-point outputs
- ▶ Valve with valve actuator, normally closed
- ▶ Control valves with G½" external thread and flat seal
- ▶ 230 V AC supply voltage

Optional equipment and accessories

- ▶ 7-day timer
- ▶ KNX or Modbus interface to the central BMS
- ▶ Amplifier, required if a control panel is used for the control of more than four induction units in a heating or cooling circuit

Application

- ▶ Room control panel to be used in combination with air-water systems, e.g. induction units
- ▶ Control of the water circuits for heating and/or cooling a room
- ▶ Controller for surface mounting or flush mounting with optional timer as a bespoke solution for project-specific installation situations

Components

- ▶ RDG100 - Surface mounted controller without timer
- ▶ RDG100T - Surface mounted controller with timer
- ▶ RDF600 - Flush mounted controller without timer
- ▶ RDF600T - Flush mounted controller with timer
- ▶ VVP47.10-x.xx - straight-way valve (KVS 0.25; 0.4; 0.63 or 1.0)
- ▶ Electro-thermal actuator, including valve adapter for straight-way valve VVP 47.10-x.xx
- ▶ Lockshield

+ **Construction**

- ▶ Casing in RAL 9003, signal white

& **Accessories**

- ▶ Amplifier (required if a control panel is used for the control of more than four induction units)

★ **Special characteristics**

- ▶ Control panels for surface mounting or flush mounting
- ▶ Optional timer
- ▶ Valve with valve actuator, normally closed
- ▶ Valves with G½" external thread and flat seal
- ▶ Valves can be used for up to PN 16
- ▶ Connecting cable for valve actuator is available in various lengths (1.0 m as standard)
- ▶ Valve actuator with bayonet fixing

Technical data

Operating voltage	230 V AC (+10/-15%)
Frequency	50/60 Hz
Power consumption	Max. 18 VA (RDG 100), max. 8 VA (RDF 600)
Control outputs	230 V AC, 1 A max.





Stand-alone single room control equipment to control the water-side components in air-water systems

Order code

VS / HV - R - 0,4 - NC / KV - R - 0,63 - NC

1 2 3 4 5 6 7 8 9

1 Accessories - valves and valve actuators

No entry: none
VS With valves and valve actuators

2 Valve - heating circuit

No entry: none
HV With heating valve

3 Lockshield - heating circuit

No entry: without lockshield
R With lockshield

4 K_{VS} -value - heating circuit
0.25, 0.40, 0.63, 1.00

5 Valve setting - heating circuit
NO Normally open

6 Valve - cooling circuit

No entry: none
KV With cooling valve

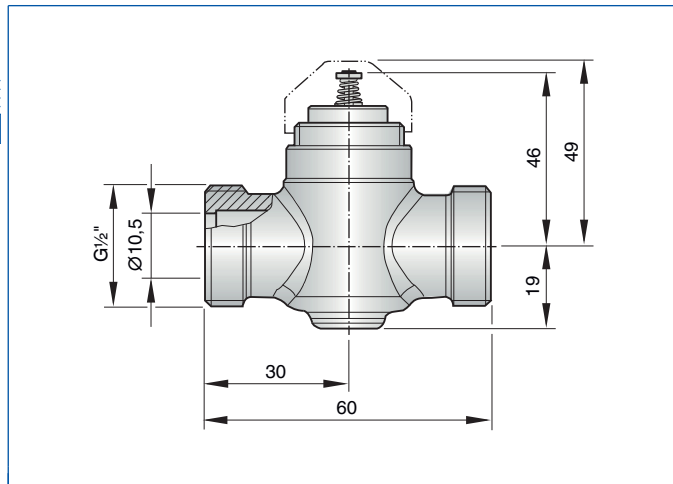
7 Lockshield - cooling circuit

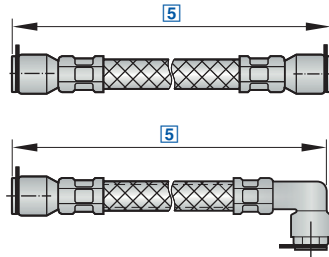
No entry: without lockshield
R With lockshield

8 K_{VS} value - cooling circuit
0.25, 0.40, 0.63, 1.00

9 Valve setting - cooling circuit
NO Normally open

Straight-way valve





Connecting hoses for the water-side connection of air-water systems and decentralised ventilation units

Order code

FS – 13 – SG12 – SG12 / 500



1 Accessories

FS Connecting hoses

2 Nominal size [mm]

10
13

3 Connection type 1

SG10 Push-fit coupling, straight, Ø10 mm (NW 10 only)
SG12 Push-fit coupling, straight, Ø12 mm
SW10 Push-fit coupling, 90°, Ø10 mm (NW 10 only)

SW12 Push-fit coupling, 90°, Ø12 mm
A1/2 G½" external thread with flat seal
U1/2 G½" union nut with flat seal
UW1/2 90°, G½" union nut with flat seal

4 Connection type 2

SG10 Push-fit coupling, straight, Ø10 mm (NW 10 only)
SG12 Push-fit coupling, straight, Ø12 mm
SW10 Push-fit coupling, 90°, Ø10 mm (NW 10 only)
SW12 Push-fit coupling, 90°, Ø12 mm

A1/2 G½" external thread with flat seal
U1/2 G½" union nut with flat seal
UW1/2 90°, G½" union nut with flat seal

5 Nominal length [mm]

500
750
1000
1500
2000

+ Features

Plastic hose with oxygen diffusion barrier, stainless steel overbraid, available with various end pieces to fit different requirements

- ▶ Can be used for water or water glycol mixtures (up to 30% glycol)
- ▶ Detachable push-fit couplings are supplied with a red O-ring seal
- ▶ Various G½" or G¾" threads
- ▶ Connecting piece either straight or 90°
- ▶ Nominal length: 500, 750, 1000 mm
- ▶ Other lengths upon request

Optional equipment and accessories

- ▶ Push-fit coupling for Ø12 mm Cu pipe, either straight or 90°
- ▶ Connecting piece with G½" external thread and flat seal, either straight or 90°
- ▶ Connecting piece with G½" union nut and flat seal, either straight or 90°

+ Application

- ▶ Flexible water-side connection between the pipework (heating and/or cooling) and the heat exchangers of air-water systems
- ▶ With connecting hoses it is possible to remove or swivel out heat exchangers for cleaning and maintenance without having to empty the system
- ▶ Connecting hoses are suitable for all air-water systems, chilled ceilings, chilled beams, induction units and façade ventilation units

◊ Variants

- ▶ The PE hoses with oxygen diffusion barrier and with stainless steel overbraid are available with DN 10 and DN 13

+ Construction

- ▶ The various couplers can be combined as needed
- ▶ Ø10 mm push-fit couplings are available for DN 10 hoses only

★ Special characteristics

- ▶ With oxygen diffusion barrier
- ▶ Various push-fit and screw-on connecting pieces

ISO Standards and guidelines

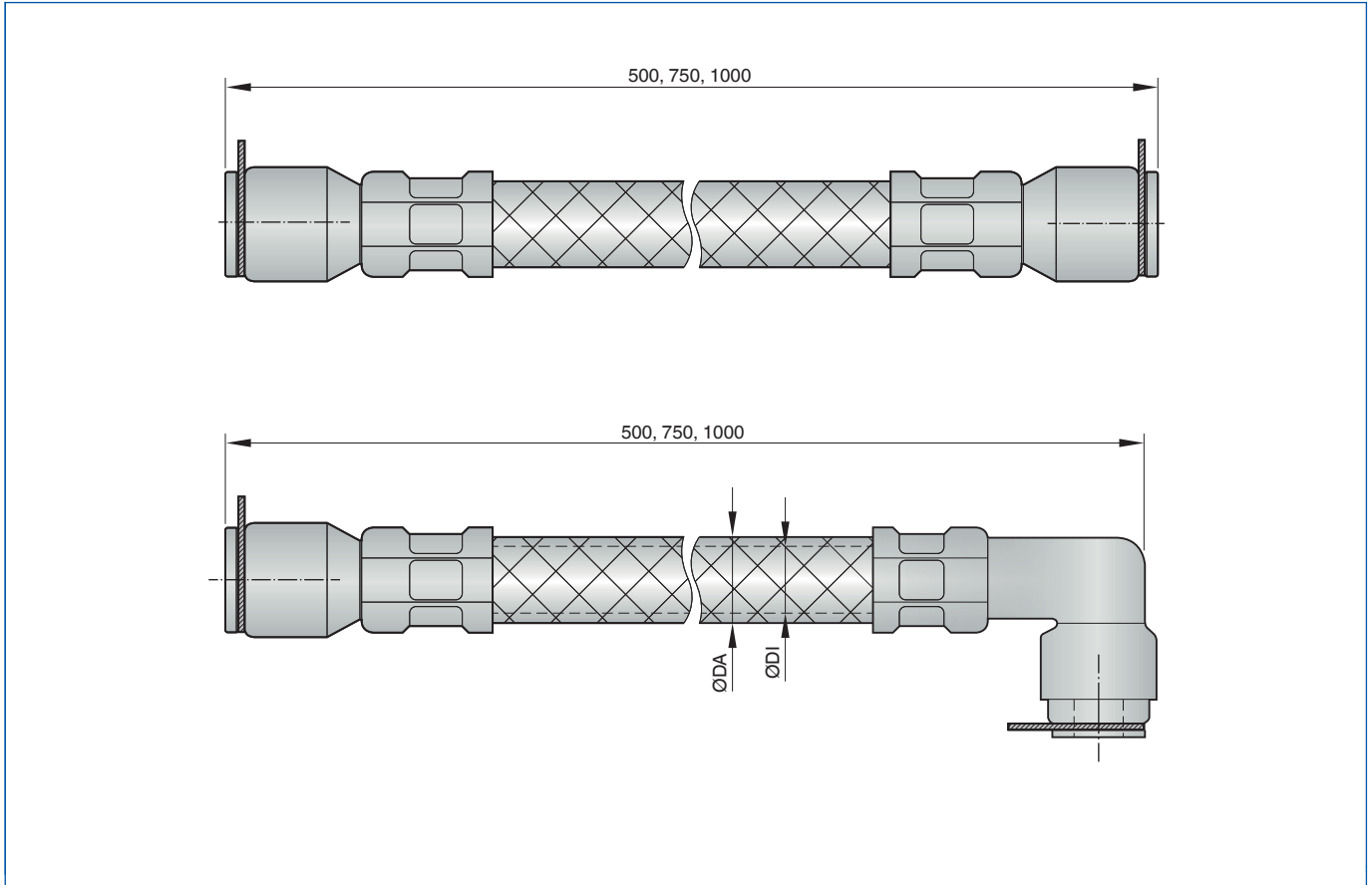
- ▶ With oxygen diffusion barrier to DIN 4726

Technical data

Lengths	500, 750, 1000 mm
Nominal width	10, 13 mm (to fit Ø10 mm or Ø12 mm Cu pipes)
Maximum operating pressure	6 bar
Application temperature	-20 to 55 °C



FS, flexible connecting hose

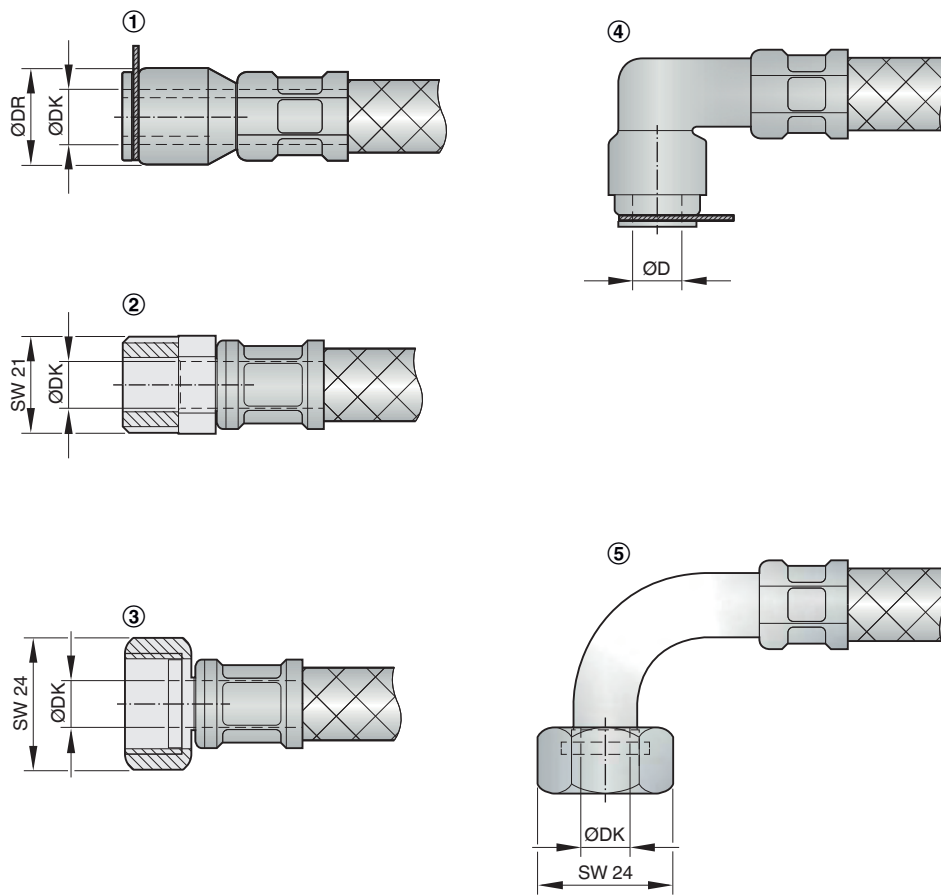


Dimensions [mm]

Hose		Connection	
DN		ØDA	ØDI
	10	14	9.5
	13	17	12.5



FS, connection types



- ① SG10/SG12, push-fit coupling, straight
- ② A½, G½" external thread and flat seal
- ③ U½, G½" internal thread, union nut and flat seal
- ④ SW10 / SW12, push-fit coupling, 90°
- ⑤ UW½, G½" internal thread, union nut 90°, flat seal

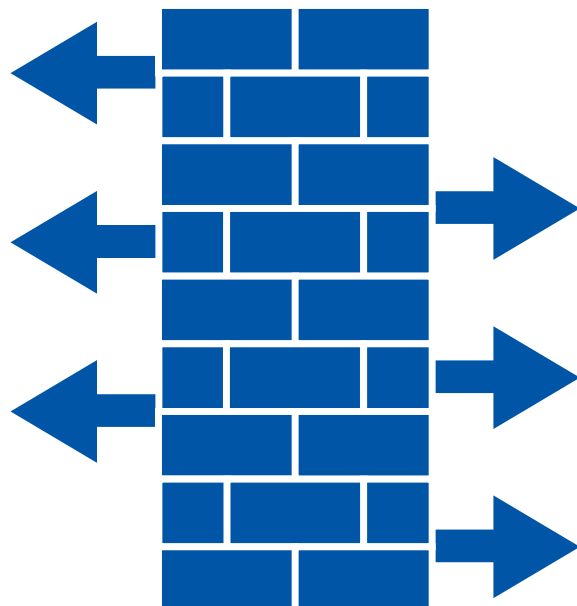
Dimensions [mm]

Hose		Connection	
DN		ØDA	ØDI
10		14	9.5
13		17	12.5





Decentralised ventilation



7 Decentralised ventilation

7.1 Under sill units



Supply and extract air unit with heat exchanger and heat recovery, secondary air option, for installation under the sill

SCHOOLAIR-B

489



Supply and extract air unit with heat exchanger and heat recovery, secondary air option, for installation under the sill

FSL-B-ZAB/SEK

493

7.2 Vertical units



Supply and extract air unit with heat exchanger and heat recovery, secondary air option, for vertical installation on an external wall, e.g. adjacent to a window

SCHOOLAIR-V

496



Supply and extract air unit with heat exchanger and heat recovery, secondary air option, for vertical installation on an external wall, e.g. adjacent to a window

FSL-V-ZAB/SEK

503

7.3 Ceiling units



Supply and extract air unit with heat exchanger and heat recovery, secondary air option (based on air quality), for installation below the ceiling slab

SCHOOLAIR-D

506

7.4 Under floor units



Supply and extract air combinations with secondary air addition

FSL-U-ZAS

509

7.5 Accessories for decentralised ventilation systems



Modular, stand-alone room control system, specially for decentralised ventilation systems (with bus communication as an option)

FSL-CONTROL II

512

Decentralised ventilation units

	Façade ventilation units					
	FSL-U-ZAS	FSL-B-ZAB/SEK	SCHOOLAIR-B	FSL-V-ZAB/SEK	SCHOOLAIR-V	SCHOOLAIR-D
Installation details						
In raised floors	●					
Under the sill		●	●			
Vertically on an external wall				●	●	
Ceiling						●
Ventilation functions						
Secondary air addition	●					
Secondary air function		●	●	●	●	●
Supply air	●	●	●	●	●	●
Extract air	●	●	●	●	●	●
Heat exchanger						
2-pipe or 4-pipe heat exchanger	●	●	●	●	●	●
F7 filter	●	●	●	●	●	●
Heat recovery with bypass	●	●	●	●	●	●
Explanation						
● - As standard						



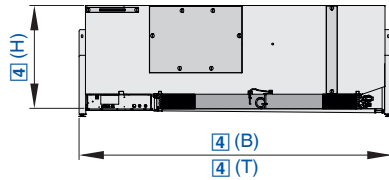


List of abbreviations

L_{WA} [dB(A)]	A-weighted sound power level of air-regenerated noise
\dot{V} [m ³ /h] and [l/s]	Volume flow rate
Δt_z [K]	Supply air to room air temperature difference, i.e. supply air temperature minus room temperature
Δp_t [Pa]	Total differential pressure
A_{eff} [m ²]	Effective air discharge area
$\varnothing D$ [mm]	Outer diameter of the spigot
$\varnothing D_1$ [mm]	Outer diameter of a circular diffuser face
$\varnothing D_2$ [mm]	Diameter of a circular diffuser face style
$\varnothing D_3$ [mm]	Diameter of a circular plenum box
Q_1 [mm]	Outer diameter of a square diffuser face
Q_2 [mm]	Dimensions of a square diffuser face style
Q_3 [mm]	Dimensions of a square plenum box
H_1 [mm]	Distance (height) from the lower edge of the suspended ceiling to the lower edge of the diffuser face
H_2 [mm]	Height of a ceiling diffuser, from the lower edge of the suspended ceiling to the upper edge of the spigot
H_3 [mm]	Height of a ceiling diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box or of the spigot
A [mm]	Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling
C [mm]	Length of the spigot
m [kg]	Weight

All sound power levels are based on 1 pW.





Supply and extract air unit with heat exchanger and heat recovery, secondary air option, for installation under the sill

Order code

SCHOOLAIR - B - HE - 4 / KM / 1590 x 650 x 420 / R / MA - T / B / V / Z / A / HV - R - 0,4 / KV - R - 0,4																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

- 1** Type
SCHOOLAIR-B Under sill unit
- 2** Variant
No entry: standard
HE High heat recovery percentage
- 3** Heat exchanger
2 2-pipe
4 4-pipe
- 4** Condensate drip tray
No entry: none
KM with condensate drain
- 5** Dimensions [mm]
B x H x T
1590 x 650 x 420 (SCHOOLAIR-B)
2090 x 750 x 420 (SCHOOLAIR-B-HE)
- 6** Control system
No entry: none
R With

- 7** Control function
MA Master (room module and control module)
SL Slave (control module)
- 8** Real time clock
No entry: none master only
T With
- 9** Interface
No entry: none master only
B BACnet MS/TP or Modbus RTU
L LonWorks LON-FTT10
- 10** Air quality sensor
No entry: none master only
V VOC sensor
- 11** Supply air temperature sensor
Z With

- 12** Fresh air temperature sensor
No entry: none master only
A With
- 13** Heating valve
HV With
- 14** Lockshield - heating circuit
R With
- 15** kVS value - heating valve
0.25, 0.40, 0.63, 1.00, F0.50
- 16** Cooling valve
For 4-pipe systems only
KV with
- 17** Lockshield - cooling circuit
R With
- 18** kVS value - cooling valve
0.25, 0.40, 0.63, 1.00, F0.50

+ Features

- Ready-to-operate decentralised ventilation unit that provides good comfort levels, used for the ventilation and extract ventilation of rooms such as classrooms in schools
- ▶ Acoustically optimised EC fans with low specific fan powers, SFP-1 according to EN 13779
 - ▶ Plate heat exchanger for heat recovery (air/air), including bypass with electric actuator
 - ▶ Highly efficient heat exchanger for heating and cooling as 2-pipe or 4-pipe system
 - ▶ Heat recovery all year round
 - ▶ Reduction of fine dust and pollen contamination due to integral filters that conform to VDI 6022 - F7 fresh air filter and G3 extract air filter
 - ▶ Easy filter change, no tools required
 - ▶ Condensate drip tray with condensate drain
 - ▶ Motorised shut-off dampers, normally closed (NC)
 - ▶ Installation without interruption to the operations of the respective school

- Optional equipment and accessories
- ▶ Modular control system FSL-CONTROL II, specially for decentralised ventilation systems
 - ▶ Demand-based fresh air volume, free cooling and night purge, depending on control strategy
 - ▶ Various fixing systems to fix the unit to the floor or wall
 - ▶ Variable heat recovery
 - ▶ Powder-coated RAL 9005 (black)

X Application

- ▶ Ventilation and extract ventilation of rooms with a depth up to approx. 6 m
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels
- ▶ Inducing displacement flow
- ▶ Energy-efficient solution since water is used for heating and cooling
- ▶ For new buildings, refurbishment projects and revitalisation projects
- ▶ Installation under the sill
- ▶ Typical applications include classrooms in

schools, playrooms in daycare facilities, meeting rooms and offices with a high air change rate

◊ Variants

- ▶ SCHOOLAIR-B - volume flow rates: 150, 200, 250 and 320 m³/h, with cross flow plate heat exchanger for heat recovery
- ▶ SCHOOLAIR-B-HE - volume flow rates: 200, 250, 300 and 400 m³/h, with cross counter flow plate heat exchanger for heat recovery

+ Construction

- ▶ Powder-coated RAL 9005, black

& Accessories

- ▶ Outer casing made of wood, with integral supply air and extract air grilles





Useful additions

- ▶ Modular control system FSL-CONTROL II, specially for decentralised ventilation systems
- ▶ Connecting hoses



Special characteristics

- ▶ Decentralised ventilation unit for high volume flow rates
- ▶ Motorised shut-off dampers for fresh air and exhaust air, normally closed (NC) in order to prevent uncontrolled airflows and the carry

- ▶ over of smoke
- ▶ Demand-based ventilation and extract ventilation is possible by means of monitoring the room air quality and with dedicated control equipment
- ▶ For demand-based ventilation
- ▶ Recuperative heat recovery with motorised variable bypass all year round
- ▶ Heat exchanger as 2-pipe or 4-pipe system, with G½" union nuts and flat seals
- ▶ Meets the hygiene requirements of VDI 6022
- ▶ Filter class: F7 for fresh air, G3 for extract air
- ▶ Easy filter change with quick release

- ▶ fasteners, no tools required
- ▶ Condensate drip tray with condensate drain
- ▶ Compact construction, hence particularly suitable for refurbishment projects



Standards and guidelines

- ▶ Façade ventilation units of Type SCHOOLAIR-B conform to VDI 6035 and VDMA 24390
- ▶ Hygiene certificate to VDI 6022
- ▶ Heating/cooling fluid conforms to VDI 2035
- ▶ Meets the requirements of EU directive 1253/2014 (ErP).



Technical data

Width	1590 mm SCHOOLAIR-B, 2090 mm SCHOOLAIR-B-HE
Height	650 mm SCHOOLAIR-B, 750 mm SCHOOLAIR-B-HE
Depth	420 mm
Volume flow rate	150, 200, 250 m³/h (boost: 320 m³/h) with SCHOOLAIR-B
Volume flow rate	150, 225, 300 m³/h (boost: 400 m³/h) with SCHOOLAIR-B-HE
Cooling capacity	Up to 1750 W
Heating capacity	Up to 6500 W
Room cooling capacity	Up to 1000 W
Room heating capacity	Up to 1700 W
Sound power level	32 - 49 dB(A) (depending on variant)
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C
Supply voltage	230 V AC ±10%; 50/60 Hz
Weight	70 kg (SCHOOLAIR-B), 125 kg (SCHOOLAIR-B-HE)



SCHOOLAIR-B (sizing examples)

Supply air flow rate	m³/h	150	200	250	320
Fresh air flow rate	m³/h	150	200	250	320
Total cooling capacity	W	687	913	1130	1390
Room cooling capacity	W	401	534	668	791
Temperature of the air in the unit	°C	32	32	32	32
Rel. humidity	%	40	40	40	40
Water content of the dry air	g/kg	11.9	11.9	11.9	11.9
Supply air temperature	°C	18	18	18	18.6
Condensation	g/h	0	0	0	0
Chilled water flow rate	l/h	90	150	220	250
Water temperature, inlet	°C	16	16	16	16
Water temperature, outlet	°C	22.6	21.2	20.4	20.8
Pressure drop - water side	kPa	<3	<3	<3	<5
Total heating capacity	W	2910	3780	4660	5810
Room heating capacity	W	972	1202	1445	1721
Temperature of the air in the unit	°C	-12	-12	-12	-12
Supply air temperature	°C	39.4	38.0	37.3	36.1
Hot water flow rate	l/h	70	100	140	200
Water temperature, inlet	°C	60	60	60	60
Water temperature, outlet	°C	24	27.3	31.2	34.8
Pressure drop - water side	kPa	<3	<3	<3	<5
Sound power level L _{WA}	dB(A)	29	34	38	43
Sound pressure level with 8 dB system attenuation	dB(A)	21	26	30	35





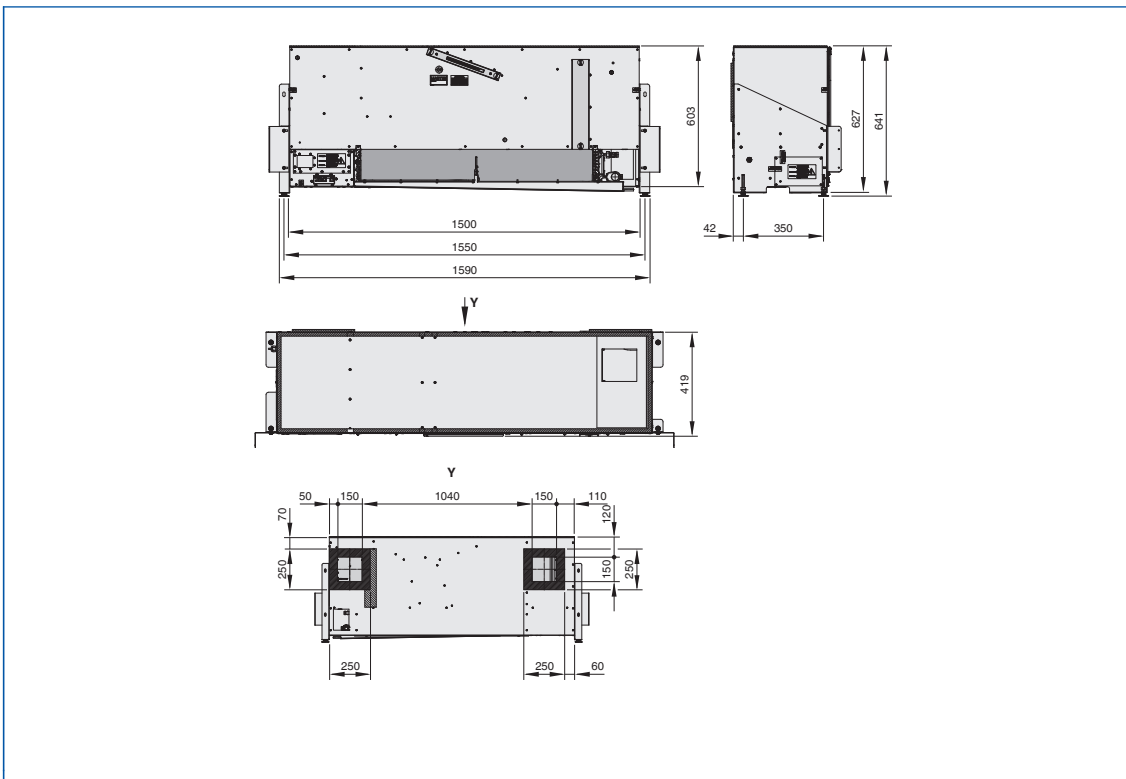
SCHOOLAIR-B-HE (sizing examples)

Supply air flow rate	m ³ /h	150	225	300	400
Heating capacity (without heat recovery)	W	2920	4060	5310	6530
Internal heating capacity	W	927	1105	1383	1363
Temperature of the air in the unit	°C	-12	-12	-12	-12
Supply air temperature	°C	39.5	35.7	34.8	31.2
Hot water flow rate	l/h	80	120	200	250
Water temperature, inlet	°C	60	60	60	60
Water temperature, outlet	°C	28.4	30.7	37.0	37.3
Pressure drop - water side	kPa	<3	<4	<15	<22
Sound power level L _{WA}	dB(A)	33	40	44	49
Sound pressure level with 8 dB system attenuation	dB(A)	25	32	36	41

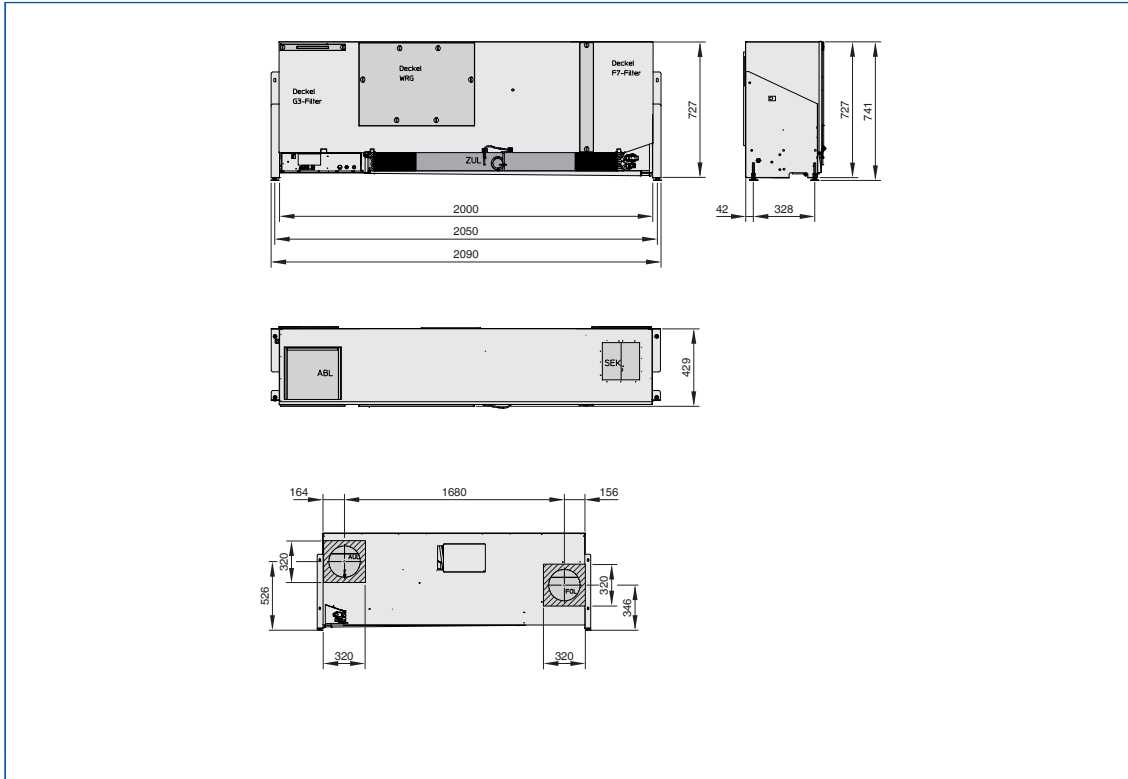


Technical data

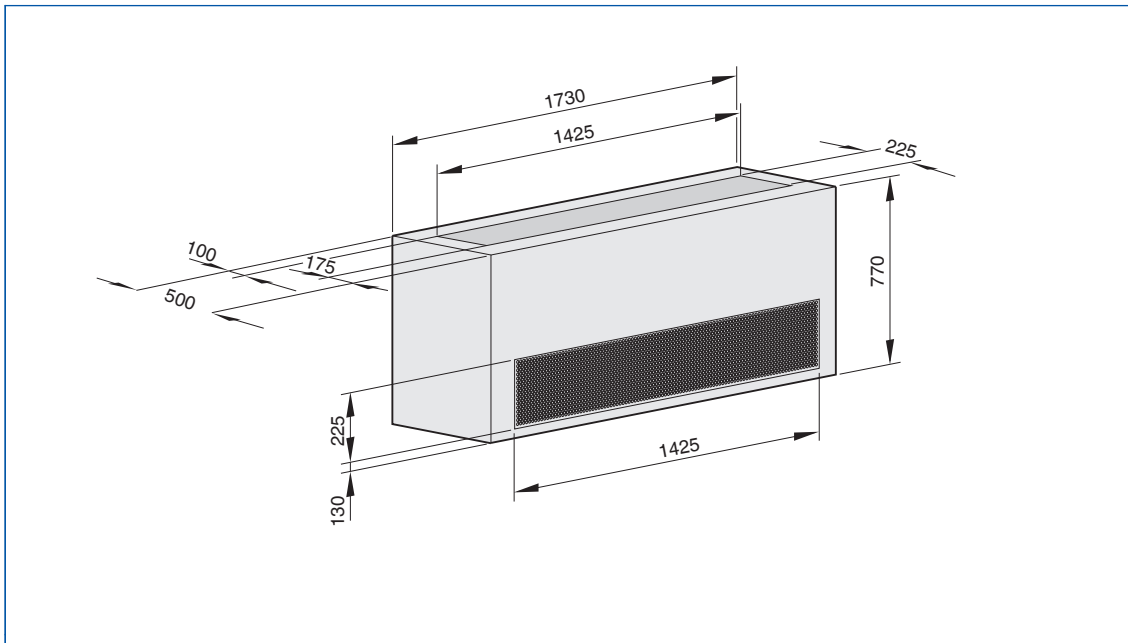
SCHOOLAIR-B

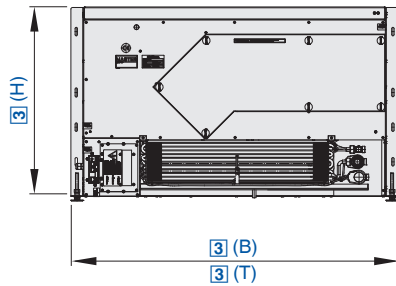


SCHOLLAIR-B-HE



SCHOLLAIR-B with outer casing





Supply and extract air unit with heat exchanger and heat recovery, secondary air option, for installation under the sill

Order code

FSL - B - ZAB/SEK - 4 - KM / 1085 x 630 x 320 / R / MA - T / B / V / Z / A / HV - R - 0,4 / KV - R - 0,4																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

- 1** Type
FSL-B-ZAB/SEK Decentralised under sill ventilation units
- 2** Heat exchanger
2 2-pipe
4 4-pipe
- 3** Condensate drip tray
KM With condensate drain
- 4** Dimensions [mm]
B x H x T
1085 x 630 x 320
- 5** Control equipment
No entry: none
R With
- 6** Control function
MA Master (room module and control module)
SL Slave (control module)

- 7** Real time clock
No entry: none
master only
T With
- 8** Interface
No entry: none
master only
B BACnet MS/TP or Modbus RTU
L LonWorks LON-FTT10
- 9** Air quality sensor
No entry: none
master only
V VOC sensor
- 10** Supply air temperature sensor
Z With
- 11** Fresh air temperature sensor
No entry: none
master only
A With

- 12** Heating valve
HV With
- 13** Lockshield - heating circuit
R With
- 14** kVS value - heating valve
0.25, 0.40, 0.63, 1.00, F0.50
- 15** Cooling valve
For 4-pipe systems only
with
KV
- 16** Lockshield - cooling circuit
R With
- 17** kVS value - cooling valve
0.25, 0.40, 0.63, 1.00, F0.50

Features

- Ready-to-operate decentralised ventilation unit that provides good comfort levels, used for the ventilation and extract ventilation of rooms
 - ▶ Acoustically optimised EC fans with low specific fan powers, SFP-1 according to EN 13779
 - ▶ Plate heat exchanger for heat recovery (air/air), including bypass damper with electric actuator (open-close)
 - ▶ Heat exchanger for heating and cooling as 2-pipe or 4-pipe system
 - ▶ Reduction of fine dust and pollen contamination due to integral filters that conform to VDI 6022 - F7 fresh air filter and G3 extract air filter
 - ▶ Inspection panel simplifies filter change and cleaning of the heat exchanger
 - ▶ Condensate drip tray with condensate drain
 - ▶ Motorised shut-off dampers, normally closed (NC)
 - ▶ Automatic switching to secondary air mode (based on air quality)

- Optional equipment and accessories
- ▶ Modular control system FSL-CONTROL II, specially for decentralised ventilation systems
 - ▶ Demand-based fresh air volume, free cooling and night purge, depending on control strategy
 - ▶ Various fixing systems to fix the unit to the floor or wall
 - ▶ Variable heat recovery
 - ▶ Powder-coated RAL 9005

Application

- ▶ Ventilation of rooms, preferably rooms with a depth up to 6 m
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels
- ▶ Inducing displacement flow
- ▶ Energy-efficient solution since water is used for heating and cooling
- ▶ For new buildings, refurbishment projects and revitalisation projects
- ▶ Installation under the sill
- ▶ Typical installation locations include offices and meeting rooms

Construction

- ▶ Powder-coated RAL 9005, black

Useful additions

- ▶ Modular control system FSL-CONTROL II, specially for decentralised ventilation systems
- ▶ Connecting hoses

Special characteristics

- ▶ Recuperative heat exchanger for heat recovery, including bypass damper with variable electric actuator (open-close)
- ▶ Mechanical self-powered volume flow controller for limiting the fresh air flow rate
- ▶ Heat exchanger as 2-pipe or 4-pipe system, with 1/2" union nuts and flat seals
- ▶ Meets the hygiene requirements of VDI 6022
- ▶ Filter class: F7 for fresh air, G3 for extract air
- ▶ Easy filter change with quick release fasteners, no tools required; easy access to the heat exchanger for cleaning



- ▶ Condensate drip tray with condensate drain
- ▶ Compact construction, hence particularly suitable for refurbishment projects
- ▶ Demand-based ventilation is possible by means of monitoring the room air quality and with dedicated control equipment
- ▶ 4 levelling feet
- ▶ Motorised shut-off dampers for fresh air and exhaust air, normally closed (NC) in order to prevent uncontrolled airflows and the carry over of smoke
- ▶ Automatic switching to secondary air mode (only with an air quality sensor) if the room air quality (measured with the integral VOC sensor, for example) is between the previously defined range. The fresh air damper closes, the self-powered secondary air damper opens and the extract air fan is switched off. The unit always starts in secondary air mode, which is more energy efficient.

ISO Standards and guidelines

- ▶ Façade ventilation units of Type FSL-B-ZAB/SEK conform to VDI 6035 and VDMA 24390
- ▶ Hygiene certificate to VDI 6022
- ▶ Heating/cooling fluid conforms to VDI 2035
- ▶ Meets the requirements of EU directive 1253/2014 (ErP).
- ▶ Energy efficiency class A



Technical data

Width	1085 mm
Height	630 mm
Depth	320 mm
Fresh air flow rate	Up to 150 m ³ /h
Supply air flow rate	Up to 150 m ³ /h
Cooling capacity	Up to 690 W
Heating capacity	Up to 2600 W
Room cooling capacity	Up to 400 W
Room heating capacity	Up to 1000 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C
Sound power level	31 - 43 dB(A)
Supply voltage	230 V AC ±10 %, 50/60 Hz

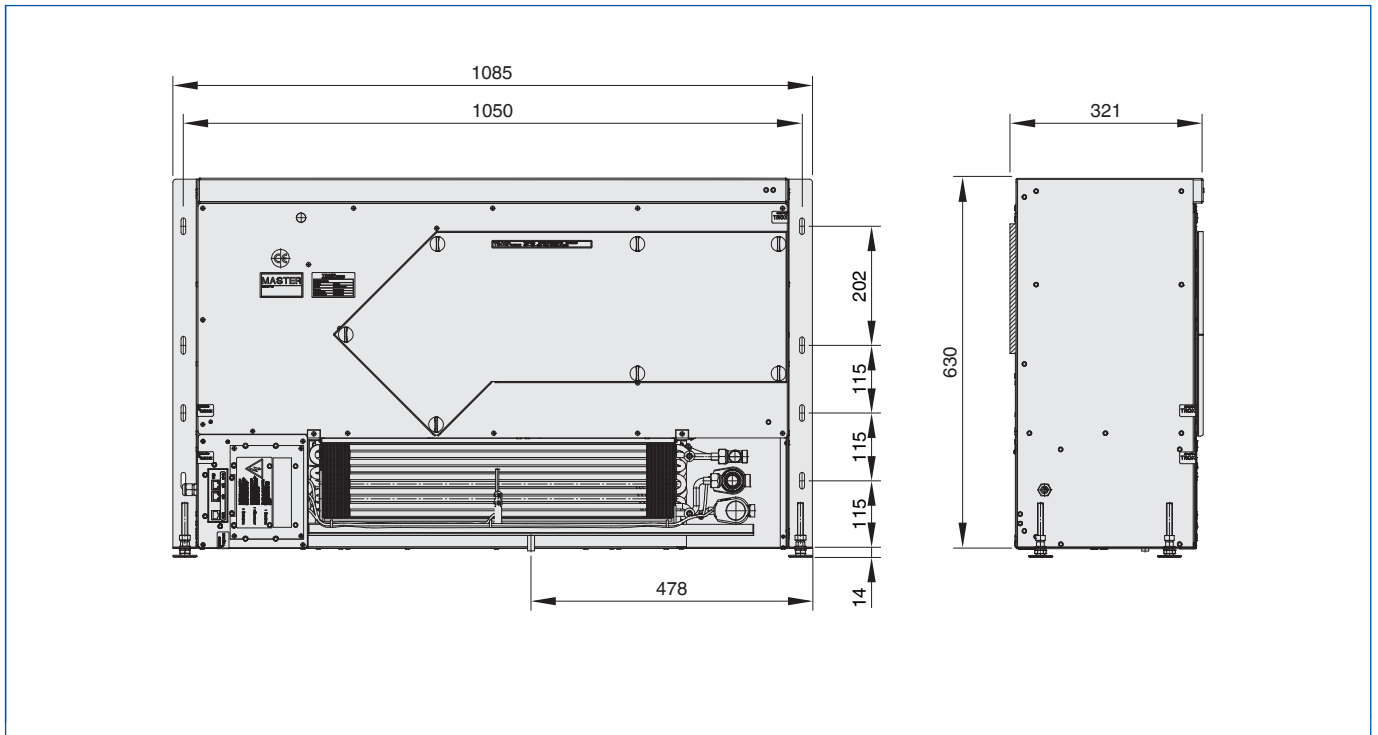


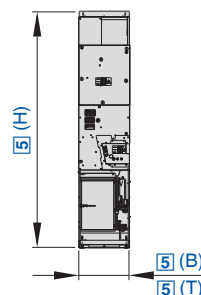
FSL-B-ZAB/SEK (sizing examples)

Supply air flow rate	m ³ /h	80	100	120
Fresh air flow rate	m ³ /h	80	100	120
Total cooling capacity	W	360	460	550
Room cooling capacity	W	216	271	329
Temperature of the air in the unit	°C	32.0	32.0	32.0
Relative humidity	%	40.0	40.0	40.0
Water content of the dry air	g/kg	11.9	11.9	11.9
Supply air temperature	°C	17.9	17.9	17.8
Condensation	g/h	0	0	0
Chilled water flow rate	l/h	100	130	170
Water temperature, inlet	°C	16	16	16
Water temperature, outlet	°C	19.1	19.0	18.8
Pressure drop - water side	kPa	<3	<3	<3
Total heating capacity	W	1500	1830	2140
Room heating capacity	W	446	521	573
Temperature of the air in the unit	°C	-12.0	-12.0	-12.0
Supply air temperature	°C	37.7	36.6	35.3
Hot water flow rate	l/h	90	130	170
Water temperature, inlet	°C	60	60	60
Water temperature, outlet	°C	45.4	47.7	49.0
Pressure drop - water side	kPa	<3	<3	<3
Sound power level L _{WA}	dB(A)	30	34	38
Sound pressure level with 8 dB system attenuation	dB(A)	22	26	30



FSL-B-ZAB/SEK, dimensions





Supply and extract air unit with heat exchanger and heat recovery, secondary air option, for vertical installation on an external wall, e.g. adjacent to a window

Order code

SCHOOLAIR - V - 0 - 2 / KM / 397 x 2160 x 359 / R / MA - T / B / V / Z / A / HV - R - 0,4 / KV - R - 0,4																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

1 Type
SCHOOLAIR-V Vertical ventilation unit

2 Variant
No entry: standard
HE High heat recovery percentage
HV High volume flow rate

3 Heat exchanger
2 2-pipe
4 4-pipe

4 Condensate drip tray
No entry: none
KM with condensate drain

5 Dimensions [mm]
B x H x T
397 x 2160 x 359 (2-pipe)
397 x 2350 x 359 (4-pipe)
604 x 1800 x 359 (2- or 4-pipe, length 1800)
600 x 2000 x 408 (2- or 4-pipe, construction HE)
600 x 2200 x 408 (2- or 4-pipe, construction HV)

6 Control system
No entry: none
R With

7 Control function
MA Master (room module and control module)
SL Slave (control module)

8 Real time clock
No entry: none
master only
T With

9 Interface
No entry: none
master only
B BACnet MS/TP or Modbus RTU
L LonWorks LON-FTT10

10 Air quality sensor
No entry: none
master only
V VOC sensor

11 Supply air temperature sensor
Z With

12 Fresh air temperature sensor
No entry: none
master only
A With

13 Heating valve
HV With

14 Lockshield - heating circuit
R With

15 kVS value - heating valve
0.25, 0.40, 0.63, 1.00, F0.50

16 Cooling valve
For 4-pipe systems only
KV with

17 Lockshield - cooling circuit
R With

18 kVS value - cooling valve
0.25, 0.40, 0.63, 1.00, F0.50



+ Features

Ready-to-operate decentralised ventilation unit that provides good comfort levels, used for the ventilation and extract ventilation of rooms such as classrooms in schools

- ▶ Acoustically optimised EC fans with low specific fan powers, SFP-1 according to EN 13779
- ▶ Plate heat exchanger for heat recovery (air/air), including bypass damper with electric actuator (open-close)
- ▶ Alternatively: Rotary heat exchanger for heat recovery (air/air), including bypass with electric actuator (modulating or open-close)
- ▶ Heat exchanger for heating and cooling as 2-pipe or 4-pipe system
- ▶ Unit base of approx. 0.24 m²
- ▶ Easy filter change, no tools required
- ▶ Condensate drip tray with or without condensate drain
- ▶ Motorised shut-off dampers, normally

closed (NC)
▶ Automatic switching to secondary air mode (based on air quality)

- Optional equipment and accessories
- ▶ Modular control system FSL-CONTROL II, specially for decentralised ventilation systems
 - ▶ Demand-based fresh air volume, free cooling and night purge, depending on control strategy
 - ▶ Variable heat recovery
 - ▶ Powder-coated RAL 9005 (black)

X Application

- ▶ Ventilation and extract ventilation of rooms with a depth up to approx. 6 m
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels
- ▶ Inducing displacement flow

- ▶ Energy-efficient solution since water is used for heating and cooling
- ▶ For new buildings, refurbishment projects and revitalisation projects
- ▶ Vertical installation on the façade system or an external wall
- ▶ Typical applications include classrooms in schools, playrooms in daycare facilities, meeting rooms and offices with a high air change rate

◊ Variants

- ▶ SCHOOLAIR-V-2L - volume flow rates: 150, 200, 250, 320 m³/h with cross flow plate heat exchanger for heat recovery
- ▶ SCHOOLAIR-V-4L - volume flow rates: 150, 200, 250, 320 m³/h with cross flow plate heat exchanger for heat recovery
- ▶ SCHOOLAIR-V-1800 - volume flow rates: 150, 230, 280 and 350 m³/h, with cross flow



- plate heat exchanger for heat recovery
- ▶ SCHOOLAIR-V-HE - volume flow rates: 150, 200, 240, 360 m³/h with cross flow plate heat exchanger for heat recovery (or enthalpy as an alternative)
- ▶ SCHOOLAIR-V-HV - volume flow rates: 200, 300, 400, 500 m³/h with rotary heat exchanger for heat recovery

+ **Construction**

- ▶ Powder-coated RAL 9005, black

& **Accessories**

- ▶ Outer casing made of wood, with integral supply air and extract air grilles

+ **Useful additions**

- ▶ Modular control system FSL-CONTROL II, specially for decentralised ventilation systems
- ▶ Connecting hoses

★ **Special characteristics**

- ▶ Decentralised ventilation unit for high volume flow rates
- ▶ Motorised shut-off dampers for fresh air and exhaust air, normally closed (NC) in order to prevent uncontrolled airflows
- ▶ Demand-based ventilation and extract ventilation is possible by means of monitoring the room air quality and with dedicated control equipment
- ▶ The type of heat exchanger for heat recovery depends on the unit variant: cross flow plate heat exchanger, cross counter flow plate heat exchanger including bypass damper with electric actuator (open-close or modulating) or rotary heat exchanger
- ▶ Heat exchanger as 2-pipe or 4-pipe system, with G¹/₂" union nuts and flat seals
- ▶ Meets the hygiene requirements of VDI 6022
- ▶ Filter class: F7 for fresh air, G3 for extract air
- ▶ Easy filter change with quick release fasteners, no tools required
- ▶ Condensate drip tray with or without

condensate drain

- ▶ Compact construction, hence particularly suitable for refurbishment projects
- ▶ Automatic switching to secondary air mode (only with an air quality sensor) if the room air quality (measured with the integral VOC sensor, for example) is between the previously defined range. The unit always starts in secondary air mode, which is more energy efficient.
- ▶ Depending on the unit, an enthalpy heat exchanger for heat recovery may be used

ISO **Standards and guidelines**

- ▶ Façade ventilation units of Type SCHOOLAIR-V conform to VDI 6035 and VDMA 24390
- ▶ Hygiene certificate to VDI 6022
- ▶ Heating/cooling fluid conforms to VDI 2035
- ▶ Meets the requirements of EU directive 1253/2014 (ErP).

Technical data

Width	397 mm (2-pipe or 4-pipe), 600 mm (2-pipe or 4-pipe, 1800, HE and HV)
Height	1800 mm (2-pipe or 4-pipe, 1800 version), 2000 mm (HE version), 2160 mm (2-pipe), 2200 mm (HV version), 2350 mm (4-pipe)
Depth	359 mm (2-pipe or 4-pipe, 1800 version) 408 mm (2-pipe or 4-pipe HE and HV versions)
Fresh air flow rate	Up to 500 m ³ /h
Supply air flow rate	Up to 500 m ³ /h
Cooling capacity	Up to 1685 W
Heating capacity	Up to 6020 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C
Sound power level	31 - 50 dB(A)
Supply voltage	230 V AC ±10 %, 50/60 Hz
Weight	From 80 kg





SCHOOLAIR-V-0 (sizing examples)

Supply air flow rate	m ³ /h	150	200	250	320
Fresh air flow rate	m ³ /h	150	200	250	320
Total cooling capacity	W	From 680	From 900	From 1130	From 1440
Room cooling capacity	W	From 401	From 534	From 668	From 844
Temperature of the air in the unit	°C	32	32	32	32
Rel. humidity	%	40	40	40	40
Water content of the dry air	g/kg	11.9	11.9	11.9	11.9
Supply air temperature	°C	18	18	18	18.1
Condensation	g/h	0	0	0	0
Chilled water flow rate	l/h	80	130	190	250
Water temperature, inlet	°C	16	16	16	16
Water temperature, outlet	°C	23.3	22	21.1	21
Pressure drop - water side	kPa	<3	<5	<8	<12
Total heating capacity	W	2780	3700	4490	5470
Room heating capacity	W	862	1136	1303	1422
Temperature of the air in the unit	°C	-12	-12	-12	-12
Supply air temperature	°C	37.2	37.0	35.6	33.3
Hot water flow rate	l/h	90	150	200	250
Water temperature, inlet	°C	60	60	60	60
Water temperature, outlet	°C	32.9	38.5	40.4	40.9
Pressure drop - water side	kPa	<3	<5	<7	<11
Sound power level L _{WA}	dB(A)	31	36	41	46
Sound pressure level with 8 dB system attenuation	dB(A)	23	28	33	38



SCHOOLAIR-V (1800 mm) (sizing examples)

Supply air flow rate	m ³ /h	150	230	280	350
Fresh air flow rate	m ³ /h	150	230	280	350
Total cooling capacity	W	684	1060	1310	1590
Room cooling capacity	W	406	630	786	935
Temperature of the air in the unit	°C	32.0	32.0	32.0	32.0
Rel. humidity	%	40.0	40.0	40.0	40.0
Water content of the dry air	g/kg	11.9	11.9	11.9	11.9
Supply air temperature	°C	17.9	17.8	17.6	18.0
Condensation	g/h	0	0	0	0
Chilled water flow rate	l/h	60	120	180	210
Water temperature, inlet	°C	16	16	16	16
Water temperature, outlet	°C	25.8	23.6	22.3	22.5
Pressure drop - water side	kPa	1.1	3.8	8	10.4
Total heating capacity	W	2950	4230	4900	5630
Room heating capacity	W	907	1122	1150	1005
Temperature of the air in the unit	°C	-12.0	-12.0	-12.0	-12.0
Supply air temperature	°C	40.1	36.6	34.3	30.6
Hot water flow rate	l/h	100	170	200	210
Water temperature, inlet	°C	60	60	60	60
Water temperature, outlet	°C	34.4	38.4	38.8	36.8
Pressure drop - water side	kPa	4.8	12.3	16.5	18.1
Sound power level L _{WA}	dB(A)	31	38	42	47
Sound pressure level with 8 dB system attenuation	dB(A)	23	30	34	39





SCHOOLAIR-V-HE (sizing examples)

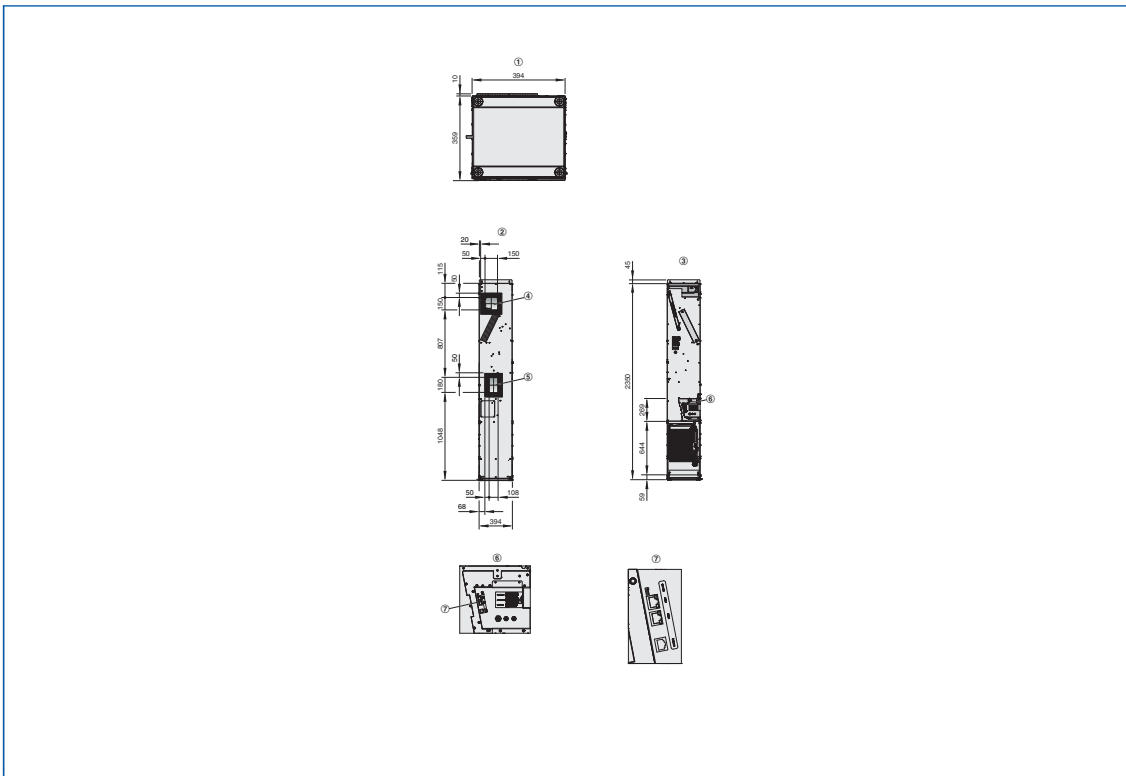
Supply air flow rate	m ³ /h	150	200	240	360
Total heating capacity (without heat recovery)	W	2960	3820	4520	6020
Room heating capacity	W	671	781	890	675
Temperature of the air in the unit	°C	-16	-16	-16	-16
Supply air temperature	°C	35.4	33.7	33.1	27.5
Quantity of condensate	g/h	510	690	830	1180
Hot water flow rate	l/h	75	110	150	200
Water temperature, inlet	°C	60	60	60	60
Water temperature, outlet	°C	26	30	34	34
Pressure drop - water side	kPa	2.9	5.7	10.0	16.7
Sound power level L _{WA}	dB(A)	36	40	43	50
Sound pressure level with 8 dB system attenuation	dB(A)	28	32	35	42



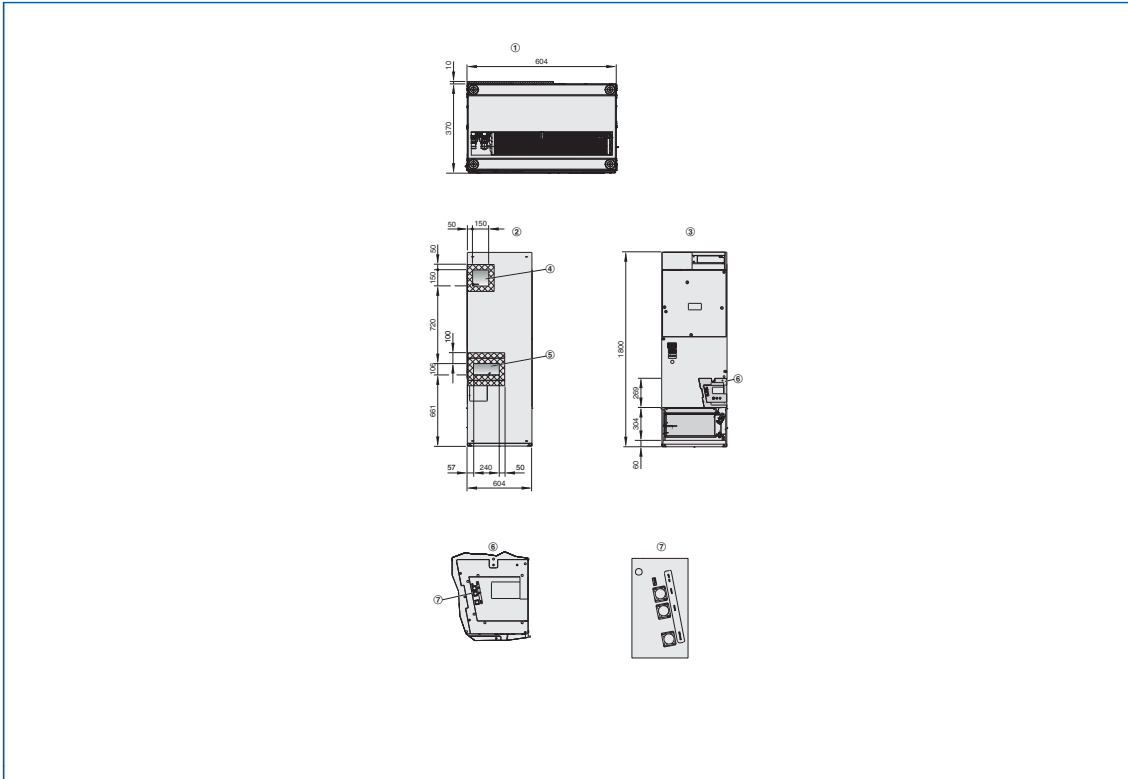
SCHOOLAIR-V-HV (sizing examples)

Supply air flow rate	m ³ /h	200	300	400	500
Total heating capacity (without heat recovery)	W	1300	1960	2530	3150
Room heating capacity	W	508	772	962	1169
Temperature of the air in the unit	°C	10.0	10.0	10.0	10.0
Supply air temperature	°C	28.6	28.7	28.2	28.0
Hot water flow rate	l/h	35	60	85	120
Water temperature, inlet	°C	60	60	60	60
Water temperature, outlet	°C	27.8	31.7	34.1	37.2
Pressure drop - water side	kPa	2	5	9.5	17

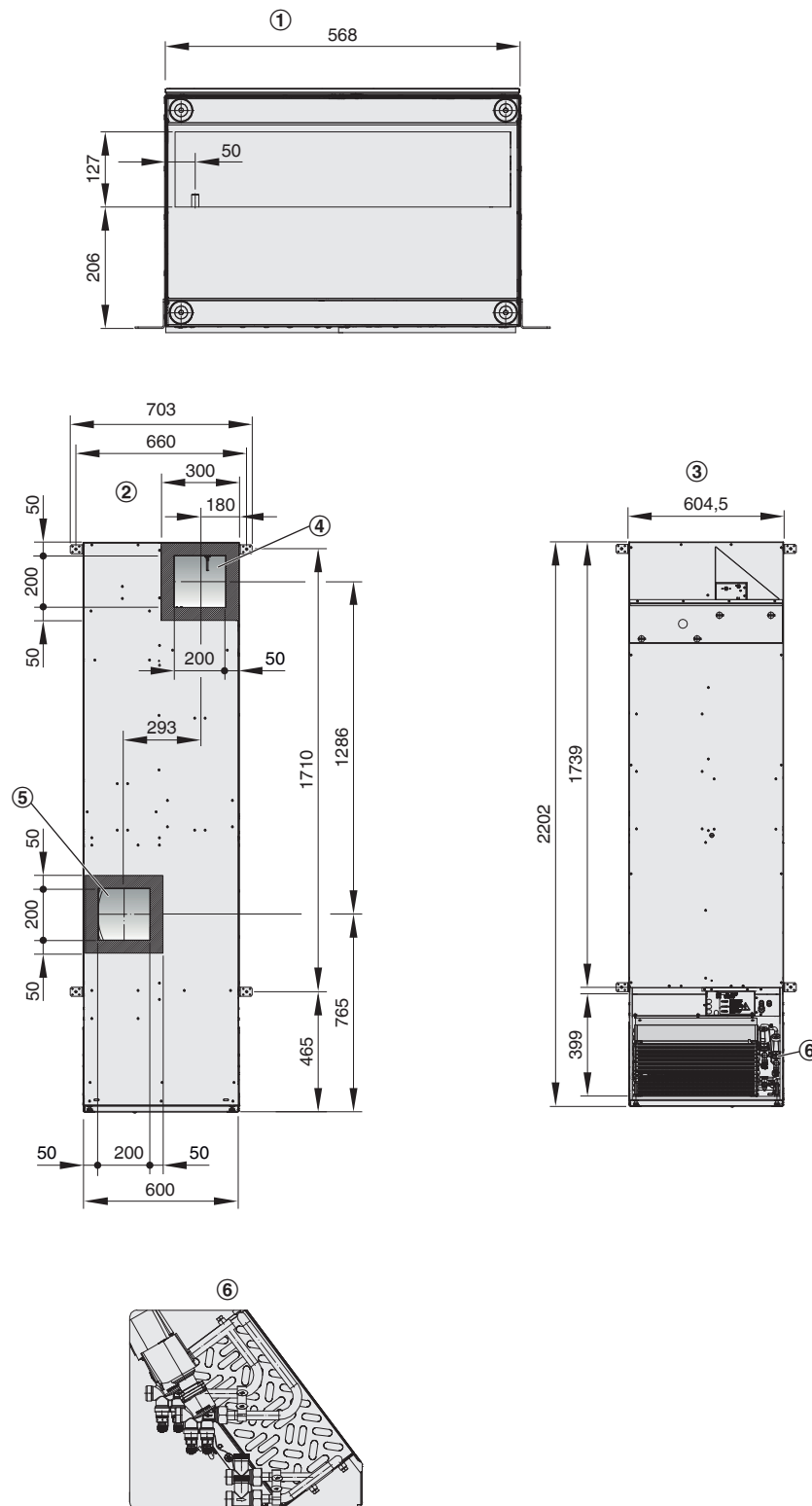
SCHOOLAIR-V-2350 4L FSL-CONTROL II

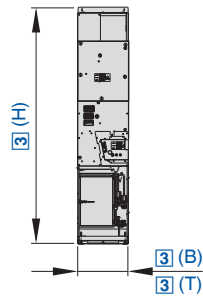


Schoolair-V-1800 2L-4L



SCHOOLAIR-V-HV





Supply and extract air unit with heat exchanger and heat recovery, secondary air option, for vertical installation on an external wall, e.g. adjacent to a window

Order code

FSL - V - ZAB/SEK - 4 / 396 x 1800 x 319 / R / MA - T / B / V / Z / A / HV - R - 0,4 / KV - R - 0,4															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

- 1 Type**
FSL-V-ZAB/SEK Vertical ventilation units
- 2 Heat exchanger**
2 2-pipe
4 4-pipe
- 3 Dimensions [mm]**
B x H x T
396 x 1800 x 319
- 4 Control equipment**
No entry: none
R With
- 5 Control function**
MA Master (room module and control module)
SL Slave (control module)

- 6 Real time clock**
No entry: none master only
T With
- 7 Interface**
No entry: none master only
B BACnet MS/TP or Modbus RTU
L LonWorks LON-FTT10
- 8 Air quality sensor**
No entry: none master only
V VOC sensor
- 9 Supply air temperature sensor**
Z With

- 10 Fresh air temperature sensor**
No entry: none master only
A With
- 11 Heating valve**
HV With
- 12 Lockshield - heating circuit**
R With
- 13 kVS value - heating valve**
0.25, 0.40, 0.63, 1.00, F0.50
- 14 Cooling valve**
For 4-pipe systems only
KV with
- 15 Lockshield - cooling circuit**
R With
- 16 kVS value - cooling valve**
0.25, 0.40, 0.63, 1.00, F0.50

Features

- Ready-to-operate decentralised ventilation unit that provides good comfort levels, used for the ventilation of rooms
- ▶ Acoustically optimised EC fans with low specific fan powers, SFP-1 according to EN 13779
 - ▶ Plate heat exchanger for heat recovery (air/air), including bypass damper with electric actuator (open-close)
 - ▶ Heat exchanger for heating and cooling as 2-pipe or 4-pipe system
 - ▶ Unit base of approx. 0.13 m²
 - ▶ Reduction of fine dust and pollen contamination due to integral filters that conform to VDI 6022 - F7 fresh air filter and G3 extract air filter
 - ▶ Condensate drip tray with condensate drain
 - ▶ Motorised shut-off damper, normally closed (NC)
 - ▶ Automatic switching to secondary air mode (based on air quality)

Optional equipment and accessories

- ▶ Modular control system FSL-CONTROL II, specially for decentralised ventilation

- systems
- ▶ Demand-based fresh air volume, free cooling and night purge, depending on control strategy
 - ▶ Variable heat recovery
 - ▶ Powder-coated RAL 9005

Application

- ▶ Ventilation of rooms, preferably rooms with a depth up to 6 m
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels
- ▶ Inducing displacement flow
- ▶ Energy-efficient solution since water is used for heating and cooling
- ▶ For new buildings, refurbishment projects and revitalisation projects
- ▶ Vertical installation on the façade or on an external wall
- ▶ Typical installation locations include offices and meeting rooms

Construction

- ▶ Powder-coated RAL 9005, black

Useful additions

- ▶ Modular control system FSL-CONTROL II, specially for decentralised ventilation systems
- ▶ Connecting hoses

Special characteristics

- ▶ Motorised shut-off dampers for fresh, normally closed (NC) in order to prevent uncontrolled airflows
- ▶ Recuperative heat exchanger for recovery, including bypass damper with electric variable actuator
- ▶ Heat exchanger as 2-pipe or 4-pipe system, with G½" union nuts and flat seals
- ▶ Meets the hygiene requirements of VDI 6022
- ▶ Filter class: F7 for fresh air, G3 for extract air
- ▶ Easy filter change with quick release fasteners, no tools required
- ▶ Condensate drip tray with or without condensate drain
- ▶ Compact construction, hence particularly suitable for refurbishment projects



- ▶ Demand-based ventilation and extract ventilation is possible by means of monitoring the room air quality and with dedicated control equipment
- ▶ 4 levelling feet
- ▶ Automatic switching to secondary air mode (only with an air quality sensor) if the room air quality (measured with the integral VOC sensor, for example) is between the

previously defined range. The fresh air damper closes, the self-powered secondary air damper opens and the extract air fan is switched off. The unit always starts in secondary air mode, which is more energy efficient.

ISO Standards and guidelines

- ▶ Façade ventilation units of Type FSL-V-ZAB/SEK conform to VDI 6035 and VDMA 24390
- ▶ Hygiene certificate to VDI 6022
- ▶ Heating/cooling fluid conforms to VDI 2035
- ▶ Energy efficiency class A



Technical data

Width	396 mm
Height	1800 mm
Depth	319 mm
Fresh air flow rate	150 m ³ /h
Supply air flow rate	Up to 150 m ³ /h
Cooling capacity	Up to 720 W
Heating capacity	Up to 2650 W
Room cooling capacity	Up to 400 W
Room heating capacity	Up to 750 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C
Sound power level	27 - 44 dB(A)
Supply voltage	230 V AC ±10 %, 50/60 Hz

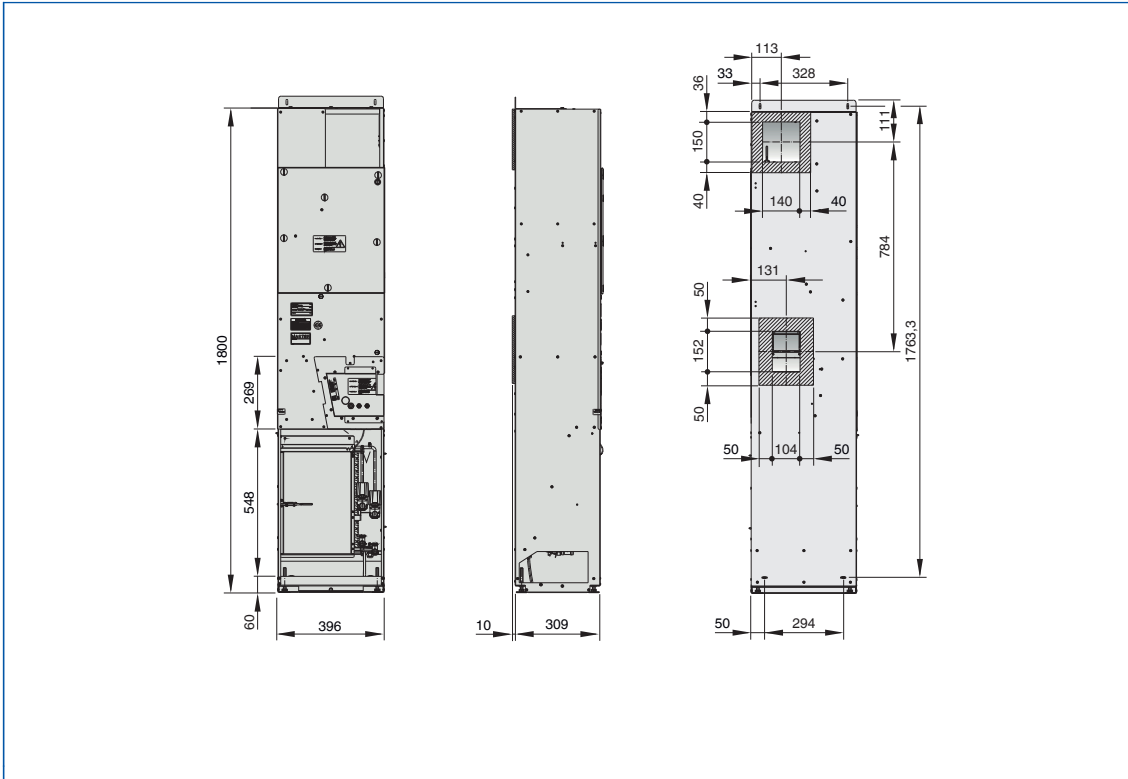


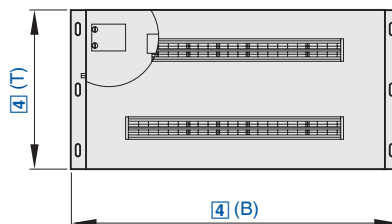
FSL-V-ZAB/SEK (sizing examples)

	m ³ /h	60	90	120	150
Supply air flow rate	m ³ /h	60	90	120	150
Total cooling capacity	W	287	409	563	688
Room cooling capacity	W	174	240	337	406
Temperature of the air in the unit	°C	32.0	32.0	32.0	32.0
Rel. humidity	%	40.0	40.0	40.0	40.0
Water content of the dry air	g/kg	11.9	11.9	11.9	0.0
Supply air temperature	°C	17.3	18.0	17.6	17.9
Condensation	g/h	0	0	0	0
Chilled water flow rate	l/h	30	40	80	100
Water temperature, inlet	°C	16	16	16	16
Water temperature, outlet	°C	24.2	24.8	22.0	21.9
Pressure drop - water side	kPa	1.5	2.4	8.5	12.7
Total heating capacity	W	1070	1620	2050	2460
Room heating capacity	W	269	412	449	471
Temperature of the air in the unit	°C	-12.0	-12.0	-12.0	-12.0
Supply air temperature	°C	35.4	35.7	33.2	31.4
Hot water flow rate	l/h	30	60	80	100
Water temperature, inlet	°C	50	50	50	50
Water temperature, outlet	°C	19.1	26.6	27.8	28.7
Sound power level L _{WA}	dB(A)	27	33	39	44
Sound pressure level with 8 dB system attenuation	dB(A)	19	25	31	36



FSL-V-ZAB/SEK





Supply and extract air unit with heat exchanger and heat recovery, secondary air option (based on air quality), for installation below the ceiling slab

Order code

SCHOOLAIR - D - 4 / 1690 x 400 x 800 / R / MA - T / B / V / Z / A / HV - R - 0,4 / KV - R - 0,4

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

1 Type

SCHOOLAIR-D Ceiling units

2 Heat exchanger

2 2-pipe
4 4-pipe

3 Dimensions [mm]

B x H x T
1690 x 400 x 800

4 Control equipment

No entry: none
R With

5 Control function

MA Master (room module and control module)
SL Slave (control module)

6 Real time clock

No entry: none
master only
T With

7 Interface

No entry: none
master only
B BACnet MS/TP or Modbus RTU
L LonWorks LON-FTT10

8 Air quality sensor

No entry: none
master only
V VOC sensor

9 Supply air temperature sensor

Z With

10 Fresh air temperature sensor

No entry: none
master only

A With

11 Heating valve

HV With

12 Lockshield - heating circuit

R With

13 kVS value - heating valve

0.25, 0.40, 0.63, 1.00, F0.50

14 Cooling valve

For 4-pipe systems only
KV with

15 Lockshield - cooling circuit

R With

16 kVS value - cooling valve

0.25, 0.40, 0.63, 1.00, F0.50

Features

Ready-to-operate decentralised ventilation unit that provides good comfort levels, used for the ventilation and extract ventilation of rooms such as classrooms in schools

- ▶ Acoustically optimised EC fans with low specific fan powers, SFP-1 according to EN 13779
- ▶ Plate heat exchanger for heat recovery (air/air), including bypass damper with electric actuator (open-close)
- ▶ Heat exchanger for heating and cooling as 2-pipe or 4-pipe system
- ▶ Reduction of fine dust and pollen contamination due to integral filters; F7 fresh air filter
- ▶ The condensate drip tray is useful if the temperature temporarily falls below the dew point
- ▶ Motorised shut-off dampers, normally closed (NC)
- ▶ Installation without interruption to the operations of the respective school
- ▶ Easy filter change, no tools required

Optional equipment and accessories

- ▶ Modular control system FSL-CONTROL II, specially for decentralised ventilation systems
- ▶ Demand-based fresh air volume, free cooling and night purge, depending on control strategy
- ▶ Automatic switching to secondary air mode (based on air quality)
- ▶ Variable heat recovery
- ▶ Powder-coated RAL 9005 (black, casing) or RAL 9010 (white, cover)

Application

- ▶ Ventilation and extract ventilation of rooms with a depth up to approx. 6 m
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels
- ▶ Supply air discharge from supply air slots
- ▶ Energy-efficient solution since water is used for heating and cooling
- ▶ For new buildings, refurbishment projects and revitalisation projects
- ▶ Installation below the ceiling slab and near an external wall
- ▶ Typical applications include classrooms in

schools, playrooms in daycare facilities, smaller meeting rooms and offices with a high air change rate

Variants

- ▶ SCHOOLAIR-D - volume flow rates: 150, 200, 250 and 300 m³/h, with cross flow plate heat exchanger for heat recovery

Construction

- ▶ Powder-coated RAL 9005, black

Useful additions

- ▶ Modular control system FSL-CONTROL II, specially for decentralised ventilation systems
- ▶ Connecting hoses

Special characteristics

- ▶ Decentralised ventilation unit for high volume flow rates



- ▶ Air-water heat exchanger as 2-pipe or 4-pipe system, with G½" union nuts and flat seals
- ▶ Cross flow heat exchanger for heat recovery, including bypass damper with electric actuator
- ▶ Motorised shut-off dampers for fresh air and exhaust air, normally closed (NC) in order to prevent uncontrolled airflows
- ▶ The condensate drip tray is useful if the temperature temporarily falls below the dew point
- ▶ Ceiling plate with height-adjustable frame (up to +29 mm) and integral supply and extract air slots
- ▶ 2 energy-efficient and acoustically optimised EC fans with low specific fan powers, SFP-1 according to EN 13779
- ▶ Meets the hygiene requirements of VDI 6022
- ▶ Recuperative heat recovery with motorised variable bypass all year round
- ▶ Compact construction, hence particularly suitable for refurbishment projects
- ▶ Demand-based ventilation and extract ventilation is possible by means of monitoring the room air quality and with dedicated control equipment
- ▶ Automatic switching to secondary air mode (only with an air quality sensor) if the room air quality (measured with the integral VOC sensor, for example) is between the previously defined range. The unit always starts in secondary air mode, which is more energy efficient.

ISO Standards and guidelines

- ▶ Façade ventilation units of Type SCHOOLAIR-D conform to VDI 6035 and VDMA 24390
- ▶ Hygiene certificate to VDI 6022
- ▶ Heating/cooling fluid conforms to VDI 2035
- ▶ Meets the requirements of EU directive 1253/2014 (ErP)

 **Technical data**

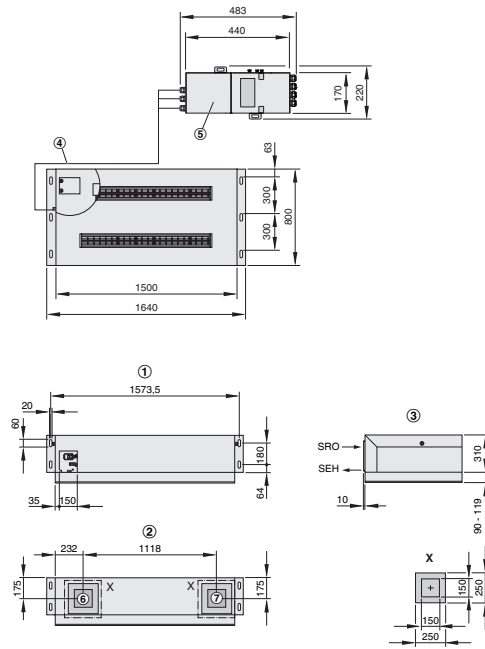
Width	1640 mm
Height	400 mm
Depth	800 mm
Fresh air flow rate	Up to 300 m³/h
Supply air flow rate	Up to 300 m³/h
Cooling capacity	Up to 1500 W
Heating capacity	Up to 5990 W
Room cooling capacity	Up to 792 W
Room heating capacity	Up to 1984 W
Max. operating pressure, water side	6 bar
Max. operating temperature, water side	75 °C
Sound power level	32 - 47 dB(A)
Supply voltage	230 V AC ±10 %, 50/60 Hz
Weight	Approx. 100 kg

 **SCHOOLAIR-D (sizing examples)**

	m³/h	150	200	250	300
Supply air flow rate	m³/h	150	200	250	300
Fresh air flow rate	m³/h	150	200	250	300
Total cooling capacity	W	685	911	1150	1350
Room cooling capacity	W	401	534	676	792
Temperature of the air in the unit	°C	32.0	32.0	32.0	32.0
Rel. humidity	%	40.0	40.0	40.0	40.0
Water content of the dry air	g/kg	11.9	11.9	11.9	11.9
Supply air temperature	°C	18	18	17.9	18.1
Condensation	g/h	0	0	0	0
Chilled water flow rate	l/h	70	110	170	210
Water temperature, inlet	°C	16	16	16	16
Water temperature, outlet	°C	24.4	23.1	21.8	21.5
Pressure drop - water side	kPa	<3	<3	<7	<9
Total heating capacity	W	3120	4120	5180	5990
Room heating capacity	W	1102	1443	1820	1984
Temperature of the air in the unit	°C	-12.0	-12.0	-12.0	-12.0
Supply air temperature	°C	43	42.6	42.8	40.8
Hot water flow rate	l/h	60	90	130	150
Water temperature, inlet	°C	60	60	60	60
Water temperature, outlet	°C	15.2	20.4	25.6	25.5
Pressure drop - water side	kPa	0.8	1.5	2.9	3.7
Sound power level L _{WA}	dB(A)	32	38	43	47
Sound pressure level with 8 dB system attenuation	dB(A)	24	30	35	39



SCHOOLAIR-D



- ① As seen from the room
- ② View from outside (façade)
- ③ Side view
- ④ 5 m cable
- ⑤ Control equipment box (95 mm high)
- ⑥ Exhaust air opening (SEH)
- ⑦ Fresh air opening (SRO)





Supply and extract air combinations with secondary air addition

Order code

FSL - U - ZAS - 4 - AR - S / R / MA - T / B / V / Z / A / HV - R - 0,4 / KV - R - 0,4

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

1 Type FSL-U-ZAS Underfloor unit	6 Real time clock No entry: none master only T With	11 Heating valve HV With
2 Heat exchanger 2 2-pipe 4 4-pipe	7 Interface No entry: none master only B BACnet MS/TP or Modbus RTU L LonWorks LON-FTT10	11 Lockshield - heating circuit R With
3 Arrangement of water connections AR Right-hand version AL Left-hand version	8 Air quality sensor No entry: none master only V VOC sensor	13 kVS value - heating valve 0.25, 0.40, 0.63, 1.00
4 False floor pedestal No entry: none S with (pipe sleeve for false floor pedestal with M16 threaded rod)	9 Supply air temperature sensor Z With	15 Cooling valve For 4-pipe systems only KV with
5 Control equipment R FSL-CONTROL II	10 Fresh air temperature sensor No entry: none master only A With	15 Lockshield - cooling circuit R With
5 Control function MA Master (room module and control module) SL Slave (control module)		16 kVS value - cooling valve 0.25, 0.40, 0.63, 1.00

Features

- Ready-to-operate, decentralised ventilation units for supply and extract air, with heat exchangers; addition of secondary air; heat recovery all year round; for the ventilation of rooms and for providing comfortable room temperatures
- ▶ Acoustically optimised EC fans with low specific fan powers, category SFP 1 according to EN 13779
 - ▶ Plate heat exchanger for heat recovery (air to air)
 - ▶ Heat exchanger for heating and cooling as 2-pipe or 4-pipe system
 - ▶ Reduced fine dust and pollen contamination due to integral filters that conform to VDI 6022; F7 fresh air filter and G3 extract air filter
 - ▶ Removable ventilation grille allows for easy access to all components for maintenance
 - ▶ Condensation-free operation all year round
 - ▶ Motorised shut-off dampers, power off to close
 - ▶ Motorised secondary air damper for adding secondary air to increase the thermal output
 - ▶ Modular control system FSL-CONTROL II,

- especially for decentralised ventilation systems
- ▶ Particularly compact height to fit low floor voids
 - ▶ Visible part with ventilation grille available in bespoke heights to fit individual projects

Optional equipment and accessories

- ▶ Air quality sensor
- ▶ Fresh air temperature sensor
- ▶ Lockshields
- ▶ Sleeves for raised floor pedestals

Application

- ▶ Type FSL-U-ZAS decentralised supply and extract air units with secondary air addition, for installation into raised floors
- ▶ Ventilation and extract ventilation of rooms, preferably rooms with a depth up to 6 m
- ▶ 2-pipe or 4-pipe heat exchangers enable good comfort levels
- ▶ Energy-efficient solution since water is used for heating and cooling
- ▶ Supply air discharge as inducing displacement flow
- ▶ For new buildings, refurbishment projects

- and revitalisation projects
- ▶ For use in, for example, offices, meeting rooms and rooms with floor to ceiling glazing

Variants

- Heat exchanger
- ▶ 2: 2-pipe systems
 - ▶ 4: 4-pipe systems

Arrangement of water connections
Left and right as viewed from the inside towards the outside. Right-hand version: Water connections and exhaust air opening on the right. Left-hand version: Water connections and exhaust air opening on the left.

- ▶ AR: Right-hand version
- ▶ AL: Left-hand version

Useful additions

- ▶ Ventilation grilles for floor installation
- ▶ Connecting hoses





Special characteristics

- ▶ 2 energy-efficient and acoustically optimised EC fans with low specific fan powers, category SFP 1 according to EN 13779
- ▶ Increased capacity due to secondary air addition
- ▶ Supply air discharge as inducing displacement flow

- ▶ Hygiene tested and certified to VDI 6022
- ▶ Compact construction, hence particularly suitable for refurbishment projects
- ▶ No additional heating or cooling system required
- ▶ Demand-based ventilation and extract ventilation is possible by means of monitoring the room air quality



Standards and guidelines

- ▶ Meets the requirements of VDI 6035 and VDMA 24390
- ▶ Meets the requirements of Commission Regulation (EU) No. 1253/2014 (Ecodesign requirements for ventilation units) implementing Directive 2009/125/EC with regard to ecodesign requirements for ventilation units
- ▶ Hygiene certificate to VDI 6022



Technical data

Width	1100 mm
Height	150 mm below the raised floor, total height including ventilation grille at least 196 mm
Depth	860 mm
Depth of ventilation grille	340 mm
Fresh air flow rate	0 - 33 l/s or 0 - 120 m ³ /h
Supply air flow rate	150 m ³ /h
Cooling capacity	427 W
Heating capacity	1460 W
Max. operating pressure, water side	6 bar
Max. operating temperature	60 °C
Sound power level	43 dB(A) at 33 l/s or 120 m ³ /h
Supply voltage	230 V AC ±10 %, 50/60 Hz



FSL-U-ZAS (sizing examples)

Fresh air flow rate	l/s	25	25	33
Fresh air flow rate	m ³ /h	90	90	120
Supply air flow rate	l/s	25	42	42
Supply air flow rate	m ³ /h	90	150	150
Total cooling capacity	W	299	414	427
Room cooling capacity	W	225	311	306
Air temperature following heat recovery	°C	28.6	28.2	28.6
Relative air humidity following heat recovery	%	49.0	51.0	49.1
Water content	g/kg	11.9	11.9	12.0
Supply air temperature	°C	18.5	19.8	19.9
Condensation	g/h	0	0	0
Water flow rate	l/h	70	80	80
Water temperature, inlet	°C	16.0	16.0	16.0
Water temperature, outlet	°C	19.7	20.4	20.6
Pressure drop - water side	kPa	6.7	8.4	8.4
Total heating capacity	W	844	1290	1460
Room heating capacity	W	445	631	651
Air temperature following heat recovery	°C	9.0	9.0	6.5
Supply air temperature	°C	35.8	33.6	34.0
Water flow rate	l/h	30	50	60
Water temperature, inlet	°C	50.0	50.0	50.0
Water temperature, outlet	°C	25.7	27.7	29.0
Pressure drop - water side	kPa	1.3	3.3	4.6





List of abbreviations

L_{WA} [dB(A)]	A-weighted sound power level of air-regenerated noise
t_{Pr} [°C]	Primary air temperature
t_{WV} [C°]	Water flow temperature - cooling/heating
t_R [C°]	Room temperature
t_{AN} [C°]	Secondary air intake temperature
Q_{Pr} [W]	Thermal output - primary air
Q_{tot} [W]	Thermal output - total
Q_W [W]	Thermal output - water side, cooling/heating
\dot{V}_{Pr} [l/s/m³/h]	Primary air volume flow rate
\dot{V}_W [l/h]	Water flow rate - cooling/heating
\dot{V} [l/h]	Volume flow rate
Δt_W [K]	Temperature difference - water
Δp_W [kPa]	Water-side pressure loss
Δp_t [Pa]	Total pressure drop, air side
$\Delta t_{Pr} = t_{Pr} - t_R$ [K]	Difference between primary air temperature and room temperature
$\Delta t_{RWV} = t_{WV} - t_R$ [K]	Difference between water flow temperature and room temperature
Δt_{Wm-Ref} [K]	Difference between mean water temperature and reference temperature
L_N [mm]	Nominal length

The maximum water-side operating pressure for all heat exchangers is 6 bar.





Modular, stand-alone room control system, specially for decentralised ventilation systems (with bus communication as an option)

Order code

R - MA - T - L / V / Z / A / HV - R - 0,4 - / KV - R - 0,63

1 2 3 4 5 6 7 8 9 10 11 12 13

1 Accessories

R Control

2 Variant

MA Master

SL Slave

3 Real time clock

No entry: none

T With RTC module

4 Expansion module

No entry: none

L With LON module

B With BACnet MS/TP / Modbus RTU module

5 VOC sensor

No entry: none

V With

6 Supply air temperature sensor

No entry: none

Z With

7 Fresh air temperature sensor

No entry: none

A With

8 Valve - heating circuit

No entry: none

HV With

9 Lockshield - heating circuit

No entry: none

R With

10 K_{VS} value - heating circuit

0.25, 0.40, 0.63, 1.00, F0.50

11 Valve - cooling circuit

No entry: none

KV With

12 Lockshield - cooling circuit

No entry: none

R With

13 K_{KS} value - cooling circuit

0.25, 0.40, 0.63, 1.00, F0.50

+ Features

Easy-to-operate single room control system which can be combined with façade ventilation units to provide demand-based ventilation and extract ventilation and enable the control of the water-side components of the heating and cooling circuits

- ▶ Plug and play solution
- ▶ Main PCB for connecting the integral components
- ▶ Master PCB for connecting components which are required for each room, e.g. control panels or sensors
- ▶ Control valves with $G\frac{1}{2}$ " external thread and flat seal
- ▶ 24 V AC or 230 V AC supply voltage
- ▶ Thermoelectric valve actuator, 0 - 10 V, 24 V DC

Optional equipment and accessories

- ▶ Various sensors, e.g. temperature sensor or room air quality sensor
- ▶ Plug-in real time clock module (RTC) for time-dependent operating modes (5 switching points per day and 4 operating modes can be set)
- ▶ Bus communication via BACnet MS/TP, Modbus RTU or LON-FTT-10 interface
- ▶ Control panels (can be integrated with various frames)
- ▶ Electric valve actuators
- ▶ Balancing and control valves (independent of pressure)

X Application

- ▶ Single room control system to be combined with TROX decentralised ventilation units
- ▶ Control of the functions of a decentralised ventilation unit
- ▶ Individual control strategies
- ▶ Modular control equipment with expansion PCBs that allow for the individual adjustment of functions to the project-specific conditions
- ▶ Optional expansion to allow for communication with the BMS using the LON-FTT-10, BACnet MS/TP or Modbus RTU protocol
- ▶ Plug-in communication cable for easy wiring (plug and play)

◇ Components

- ▶ Main PCB (control module)
- ▶ Master PCB (room module)
- ▶ RTC module (real time clock)
- ▶ LonWorks interface
- ▶ BACnet MS/TP interface card
- ▶ Modbus RTU interface
- ▶ VVP47.10-x.xx - straight-way valve (KVS 0.25; 0.4; 0.63 or 1.0)
- ▶ Lockshield
- ▶ Thermoelectric valve actuator 24 V DC, control signal 0 - 10 V, modulating
- ▶ Temperature sensors for fresh air, supply air etc. (e.g. NTC 10 k Ω)

- ▶ VOC sensor
- ▶ Control panel with selector switch
- ▶ Alternative control panel for automatic control (e.g. in schools)

& Accessories

- ▶ 5 m configuration cable and USB-RS485 adapter (M536ED7/M516SM3)
- ▶ Wireless communication with BlueCon adapter (M546GA1)

★ Special characteristics

- ▶ Modular control system with several components that can be individually combined
- ▶ LON-FTT-10, BACnet MS/TP or Modbus RTU interface as an option
- ▶ Master-slave combinations are available (up to 14 slaves per master)
- ▶ Valves with $G\frac{1}{2}$ " external thread and flat seal
- ▶ Valves can be used for up to PN 16
- ▶ Push-fit valve actuator
- ▶ Automatic, energy-efficient switching between fresh air mode and secondary air mode (based on air quality, depending on unit)
- ▶ Variable bypass damper for the heat recovery control
- ▶ Heat recovery all year round





Technical data

Operating temperature	0 - 50 °C
Relative humidity	<90% no condensation
Air pressure	> 700 hPa
Storage temperature	-20 to 70 °C
Power consumption (depending on equipment)	4 - 10 W



ADD	73	IDB	469
ADLQ	95	IDH	463
ADLR	105	ISH	348
AF	237	LON-WA TDC	391
AGS	246	LVS	369
AGW	253	LWS control equipment	479
AH	215	LWS control equipment - VS	480
AIRNAMIC	11	Modulating actuators	396
AK-Uni	130	PKV	476
ASL	206	PureLine18	139
ASW	254	PureLine35	147
AT	209	QL-BE	336
AWT	220	QLE	262
BID	472	QLF	266
DCS	79	QLI	466
DGW	255	QLV	302
DID300B	414	QLV-360	330
DID312	408	QLW-AZ	311
DID604	445	QL-WE	315
DID614	449	QL-WF	272
DID632	422	QL-WFM	279
DID642	429	QL-WFT	283
DID-E	456	QL-WH	289
DID-R	453	QL-WQT	286
DLK-Fb	128	QL-WQT-RO-4	324
DLQ	100	QL-WR	326
DLQ-AK	123	QL-WS	299
DLQL	116	QL-WV	294
DUK	359	QSH	344
EF	242	RFD	27
FBA	375	RFD-SIRIUS	37
FBK	378	SCHOOLAIR-B	489
FD	42	SCHOOLAIR-D	506
FDE	64	SCHOOLAIR-V	496
FS	481	SD	383
FSL-B-ZAB/SEK	493	SDRF	386
FSL-CONTROL II	512	SL	223
FSL-U-ZAS	509	SMART BEAM	460
FSL-V-ZAB/SEK	503	TDF-SilentAIR	47
Heating/Cooling	392	TDV-SilentAIR	21



Thermal actuators	399
TJN	353
TR	227
TRS	230
TRS-K	233
TRS-R	249
Type DID600B-L	435
VAT	212
VD	53
VDL	58
VDR	90
VDW	15
VSD15	156
VSD35	161
VSD35-3-AZ	189
VSD50	174
VSD50-1-LT	186
XARTO	68
X-GRILLE Basic	202
X-GRILLE Cover	198
Z-LVS	372



Disclaimer

For all our business relationships only our general delivery payment conditions in the respective version.

Our warranty is based solely on the contract between a customer and TROX. The information provided in this document is without obligation and does in particular not constitute a guarantee of the properties or usage of a product. The information given is of a general nature and may vary from case to case. The products and systems shown are examples. Some products and systems shown may have been designed for individual customers and hence represent customised solutions. Some of these products and systems come with special parts or equipment that is only available at a surcharge.

The information regarding the scope of delivery, appearance, performance, dimensions, and weights was correct at the time of going to press. Subject to change. This edition replaces all previous editions.

QUICK SELECTION
GUIDE 2019



TROX[®] TECHNİK

The art of handling air

TROX GmbH

Heinrich-Trox-Platz
47504 Neukirchen-Vluyn

Phone: +49 2845 202-0

Fax: +49 2845 202-265

trox@trox.de

www.troxtechnik.com