

Units for suspended ceilings

Type DID632



DID632, hinged induced air grille



DID632, water connections



Eurovent certification



Tested to VDI 6022



Active chilled beam with two-way air discharge and horizontal heat exchanger, suitable for grid ceilings with grid size 600 or 625

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 4.20 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

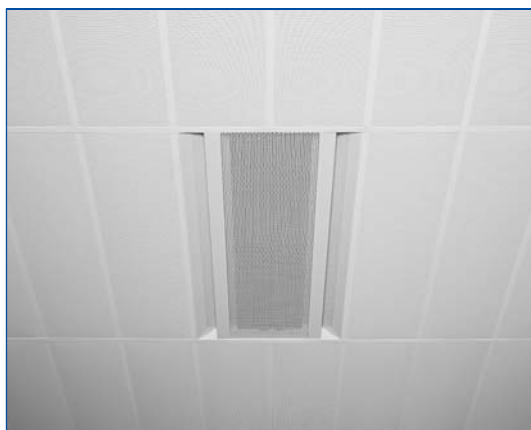
- Control package
- Also available as supply and extract air combination
- Adjustable air control blades to control the airflow
- Heat exchanger powder-coated black
- Powder coating in many different colours, e.g. RAL CLASSIC or NCS

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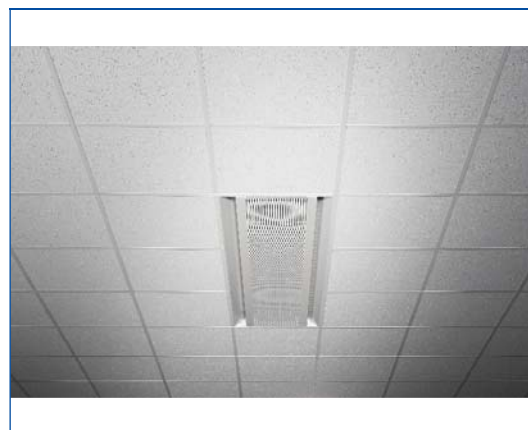
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Installation examples

Installation into grid ceilings



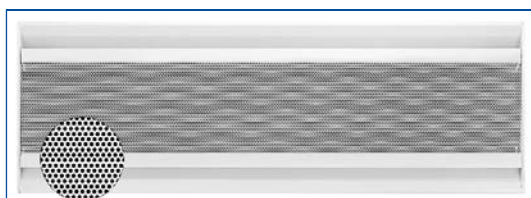
Installation into T-bar ceilings



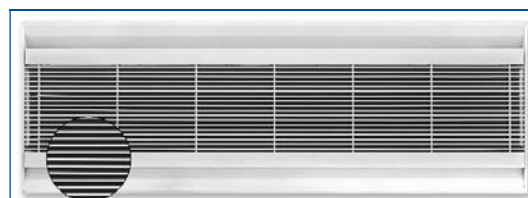
Variants

Product examples

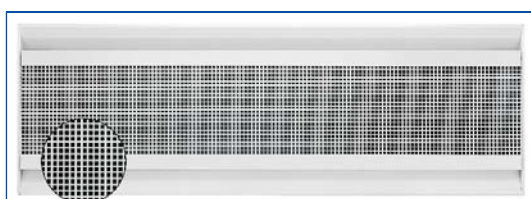
DID632-LR



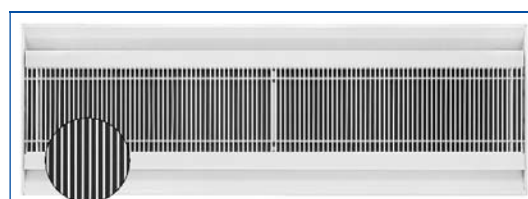
DID632-GL



DID632-LQ



DID632-GQ



Description



DID632-LR-4-M-LL

Application

- Active chilled beams of Type DID632 for the integration into various ceiling systems, preferably for room heights up to 4.20 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 as a medium for heating and cooling
- Adjustable air control blades (optional) allow for the manual adjustment of the air discharge direction

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

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 %

Nominal sizes

- 900, 1200, 1500, 1800, 2100, 2400, 2700, 3000 mm

Attachments

- Extract air spigot (45° connection) for supply and extract air combination
- Adjustable air control blades

Useful additions

- Connecting hoses
- Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and compression couplers

Special features

- Adjustable air control blades to control the airflow
- Hinged, removable induced air grille in four 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 G½" external thread and flat seal
- Internal nozzle plate with punched nozzles (non-combustible)

Construction features

- Spigot is suitable for circular ducts to EN 1506 or EN 13180
- 4 suspension points for on-site installation (by others)
- Four nozzle variants to optimise induction based on demand
- Integral extract air spigot (optional)

Materials and surfaces

- Casing, front frame, nozzle plate, and perforated induced air grille (LR/LQ) made of galvanised sheet steel
- Blades of the induced air grille (GL/GQ) made of aluminium sections
- Heat exchanger with copper tubes and aluminium fins
- Exposed surfaces are powder-coated pure white (RAL 9010) or in any other RAL colour
- Heat exchanger also in black (RAL 9005)
- Extract air spigot made of galvanised sheet steel
- Air control blades made of polypropylene, UL 94, flame retardant (V0)

Installation and commissioning

- Preferably for rooms with a clear height up to 4.20 m
- Flush ceiling installation
- Lengths from 893 to 3000 mm, and widths of 593, 598, 618 and 623 mm, hence suitable for all ceiling systems, particularly for grid ceilings with grid size 600 or 625
- Side entry primary air spigot
- Active chilled beam has 4 suspension points for on-site installation (by others)
- Installation and connections to be performed by others; fixing, connection and sealing material to be provided by others
- Heat exchangers are fitted with water flow and water return connections at the narrow side

Installation into T-bar ceilings or continuous ceilings

- To avoid too much load on the ceiling, the suspension points should be used

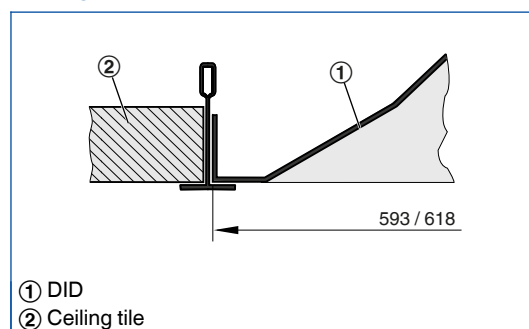
Standards and guidelines

- Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- Hygiene certificate to VDI 6022

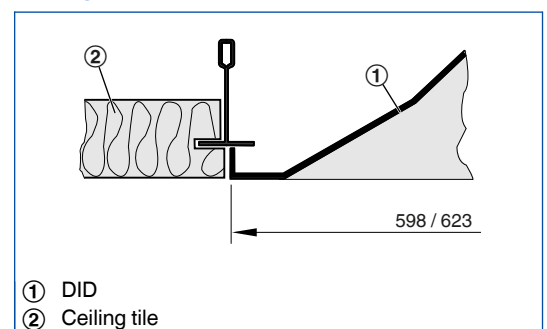
Maintenance

- No moving parts, hence low maintenance
- The heat exchanger can be vacuumed with an industrial vacuum cleaner if necessary
- VDI 6022, Part 1, applies (Hygiene requirements on air handling units and systems)

Ceiling installation with T-bars

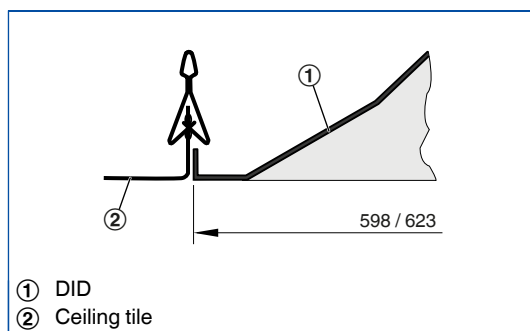


Ceiling installation with concealed T-bars

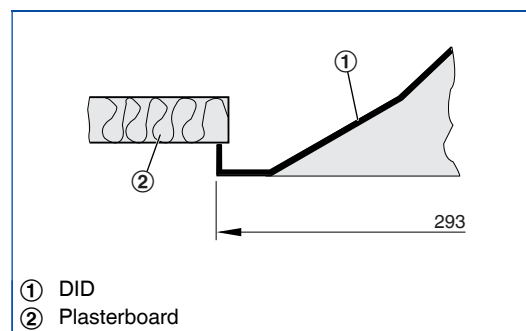


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Ceiling installation with clamping profile



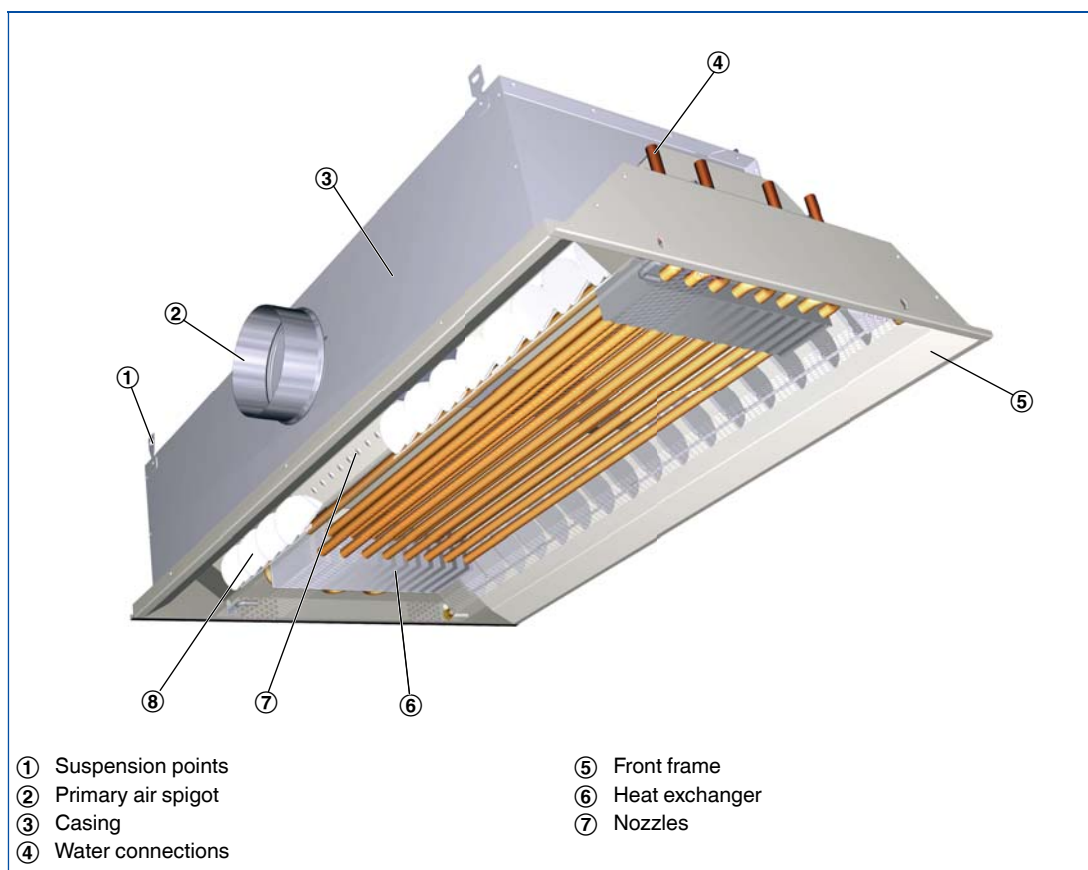
Ceiling installation, plasterboard



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, 22 – 306 m ³ /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 |

Schematic illustration of DID632

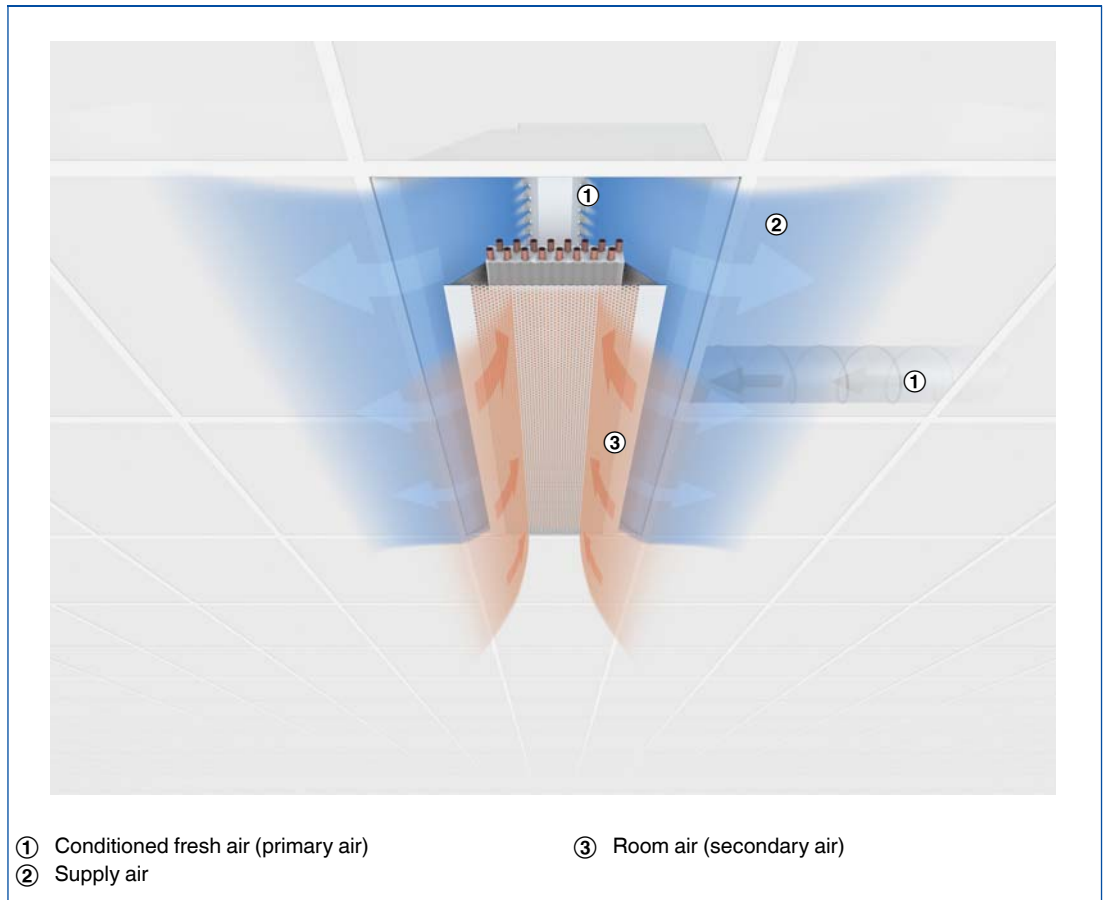


Function

Functional description

Active chilled beams provide centrally conditioned primary air (fresh air) to the room and use heat exchangers for additional cooling and/or heating. The primary air is discharged through nozzles (four variants are available) into the mixing chambers; as a result of this, secondary air (room air) is induced via the induced air grille and passes through the horizontal heat exchanger, where it is heated or cooled. Primary and secondary air mix and are then supplied to the room horizontally through the supply air slots.

Principle of operation – DID632



Description

1

Set of air control blades

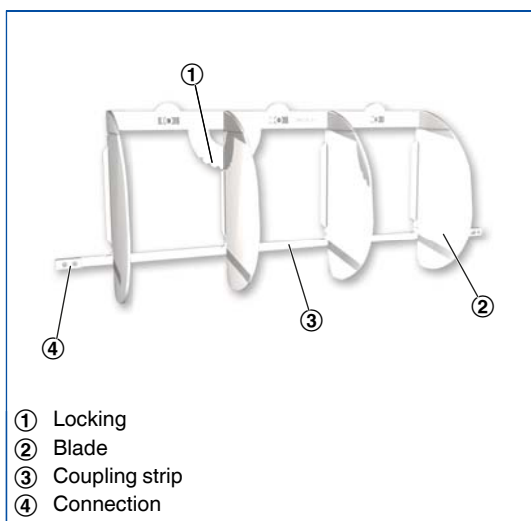
If a high cooling capacity is required in a very small space with active chilled beams, optional air control blades allow for adjusting the air discharge direction such that the acceptable air velocity in the occupied zone is not exceeded. The airflow of each active chilled beam is spread and discharged according to the room geometry. If the use of a room changes, the air distribution can be optimised by adjusting the air control blades accordingly.

- It is possible to adjust several sets of air control blades together

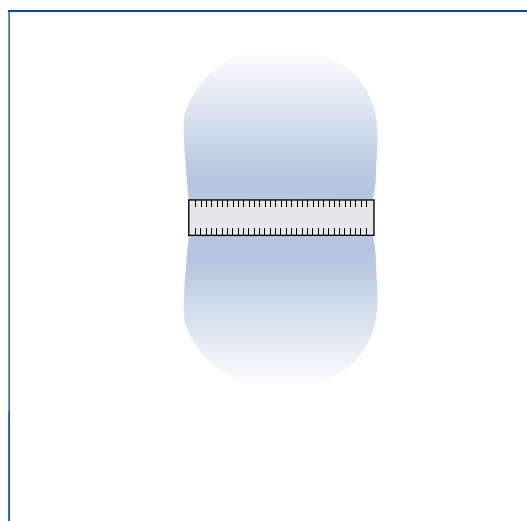
- For fine adjustment, the sets of air control blades can be disconnected from each other
- To adjust a set of air control blades, use both hands to move the two outer blades of the set as required
- Maximum possible adjustment is 45° to the right or left in steps of 15°
- The blade elements are factory set to straight air discharge

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 %.

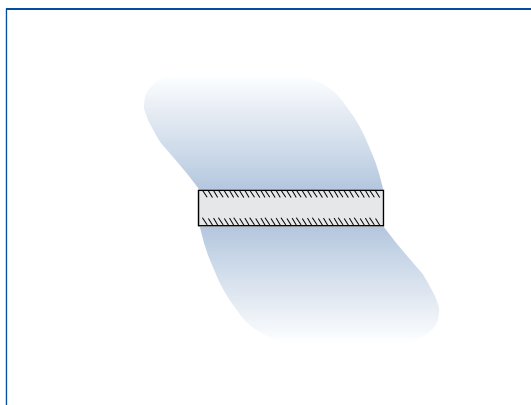
Set of air control blades



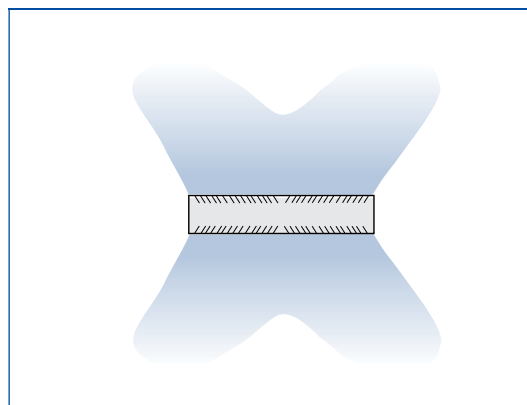
Straight air discharge



Angled air discharge



Divergent air discharge



Order code

DID632

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|
| 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 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

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

Order examples

1

DID632-LR-2-M-LL/1193x1200x593

| | |
|---|----------------------------------|
| Induced air grille | Perforated metal, circular holes |
| Heat exchanger | 2-pipe |
| Nozzle variant | Medium |
| Arrangement of casings and connections | Left side, left side |
| Total length (diffuser face) × nominal length | 1193 × 1200 mm |
| Width of front frame | 593 mm |

DID632-GQ-2-U-RR-AV-A1/1798x1200x598/P1/RAL9006/G3/LE/VS

| | |
|---|--|
| Induced air grille | Transverse blades |
| Heat exchanger | 2-pipe |
| Nozzle variant | Extra large |
| Arrangement of casings and connections | Right side, right side |
| Extract air spigot | Front |
| Water connections | With G½" external thread and flat seal |
| Total length (diffuser face) × nominal length | 1798 × 1500 mm |
| Width of front frame | 598 mm |
| Exposed surface | RAL 9006 |
| Surface of heat exchanger | Black |
| Valves and actuators | With |

Quick sizing

| L _N | ① | Primary air | | ② | ③ | Cooling mode | | | | Heating mode | | |
|----------------|---|------------------|-------------------|-----------------|-----------------|---------------------------|-----------------|-----------------|-----------------|------------------------------------|-----------------|-----------------|
| | | V̇ _{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} | Δt _w | Δp _w |
| | | | | | | W | K | kPa | W | K | 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 |
| 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 |

¹ Maximum 5 % reduction of water-side capacity has to be considered if the air control blades have been adjusted by up to 45°.

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 |
| V̇ _w (L _N 900 – 1800 mm) | 110 l/h | 50 l/h |
| V̇ _w (L _N from 2100 mm) | 200 l/h | 110 l/h |

For volume flow rates, pressure drop, and sound power levels for the optional extract air spigot please refer to the Easy Product Finder design programme.

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 | m ³ /h | Pa | dB (A) | Q _{tot} | Q _{wk} | Δt _w | Δp _w | Q _{WH} = Q _{tot} | Δt _w | Δp _w | |
| | | | | | | W | K | kPa | W | K | kPa | | |
| 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 Maximum 5 % reduction of water-side capacity has to be considered if the air control blades have been adjusted by up to 45°.

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 mm) | 110 l/h | 50 l/h |
| V _w (L _N from 2100 mm) | 200 l/h | 110 l/h |

For volume flow rates, pressure drop, and sound power levels for the optional extract air spigot please refer to the Easy Product Finder design programme.

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 | | 4-pipe system |
| | | l/s | m ³ /h | Pa | dB (A) | Q _{tot} | Q _{WK} | Δt _w | Δp _w | Q _{WH} = Q _{tot} | Δt _w | Δp _w |
| | | | | | | 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 Maximum 5 % reduction of water-side capacity has to be considered if the air control blades have been adjusted by up to 45°.

① Nozzle variant

② Pressure drop

③ Air-regenerated noise

Reference values

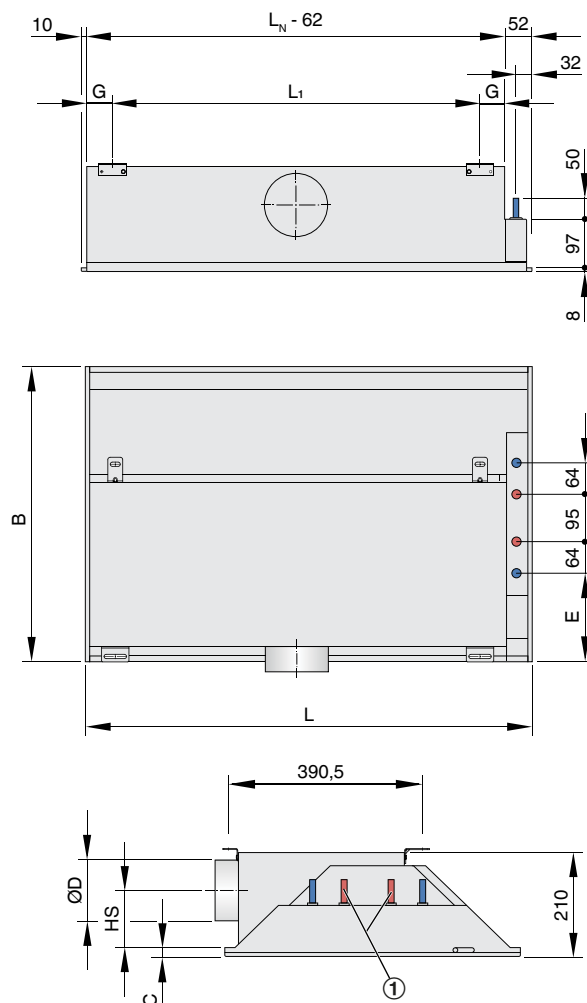
| Parameter | Cooling | Heating |
|---|---------|--------------------|
| t _R | 26 °C | 22 °C |
| t _{Pr} | 16 °C | 22 °C (isothermal) |
| t _{wv} | 16 °C | 50 °C |
| V _w (L _N 900 – 1800 mm) | 110 l/h | 50 l/h |
| V _w (L _N from 2100 mm) | 200 l/h | 110 l/h |

For volume flow rates, pressure drop, and sound power levels for the optional extract air spigot please refer to the Easy Product Finder design programme.

| Aerodynamic data – extract air | | | |
|--------------------------------|-------------------|-----------------|-----------------|
| V _{ABL} | V _{ABL} | Δp _t | L _{WA} |
| l/s | m ³ /h | Pa | dB(A) |
| 12 | 43 | 0,5 | <15 |
| 18 | 65 | 1,0 | <15 |
| 24 | 86 | 1,9 | <15 |
| 30 | 108 | 2,9 | <15 |
| 35 | 126 | 3,9 | <15 |
| 40 | 144 | 5,1 | <15 |
| 50 | 180 | 8,0 | 20 |
| 60 | 216 | 11,6 | 26 |
| 70 | 252 | 15,7 | 30 |
| 80 | 288 | 20,6 | 34 |

Dimensions

DID632-...-LR



Water connection, Ø12 mm pipe, either with plain tails
or with G½" external thread
① Only with 4-pipe system

Dimensions [mm]

| B | C | E |
|-----|----|-----|
| 593 | 18 | 193 |
| 598 | 8 | 195 |
| 618 | 18 | 205 |
| 623 | 8 | 208 |

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 | 351,5 |
| 2400 | 2393 – 3000 | 158 | 116 | 451,5 |
| 2700 | 2693 – 3000 | 158 | 116 | 551,5 |
| 3000 | 2993 – 3000 | 158 | 116 | 651,5 |

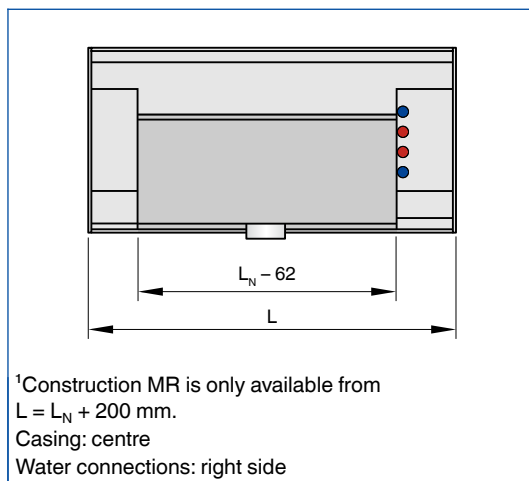
L = Total length (diffuser face)
L_N = Nominal length

Weight per unit [kg]

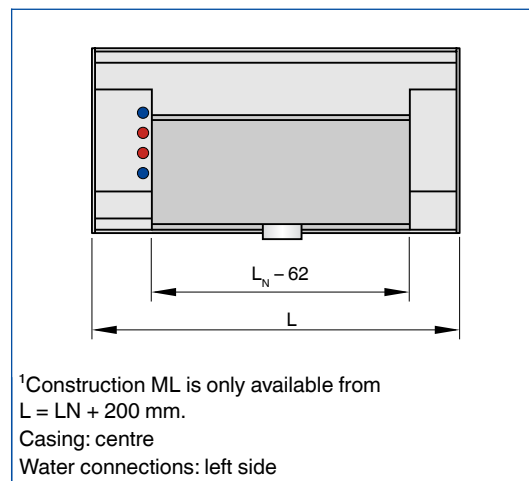
| Nominal length (L_N) | 900 | 1200 | 1500 | 1800 | 2100 | 2400 | 2700 | 3000 |
|--------------------------|-----|------|------|------|------|------|------|------|
| DID632-LR | 18 | 22 | 27 | 32 | 39 | 47 | 54 | 61 |
| DID632-LQ | 17 | 21 | 26 | 31 | 38 | 46 | 53 | 60 |
| DID632-GL | 20 | 25 | 31 | 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

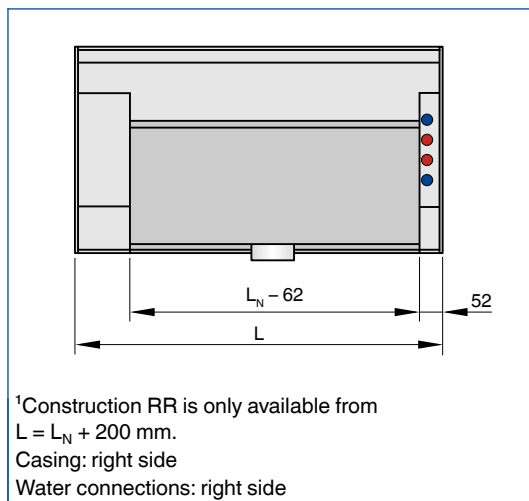
DID632-...-MR¹



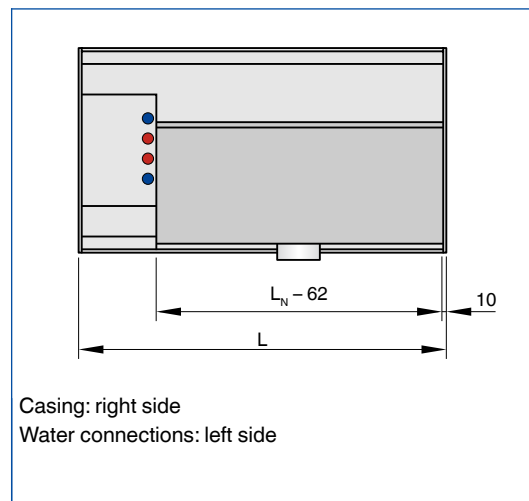
DID632-...-ML¹



DID632-...-RR¹

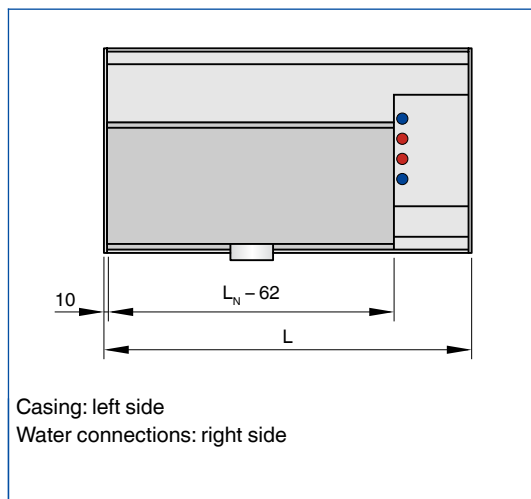


DID632-...-RL

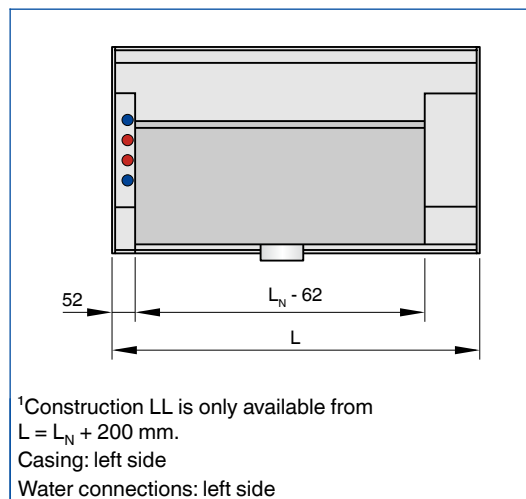


1

DID632-...-LR

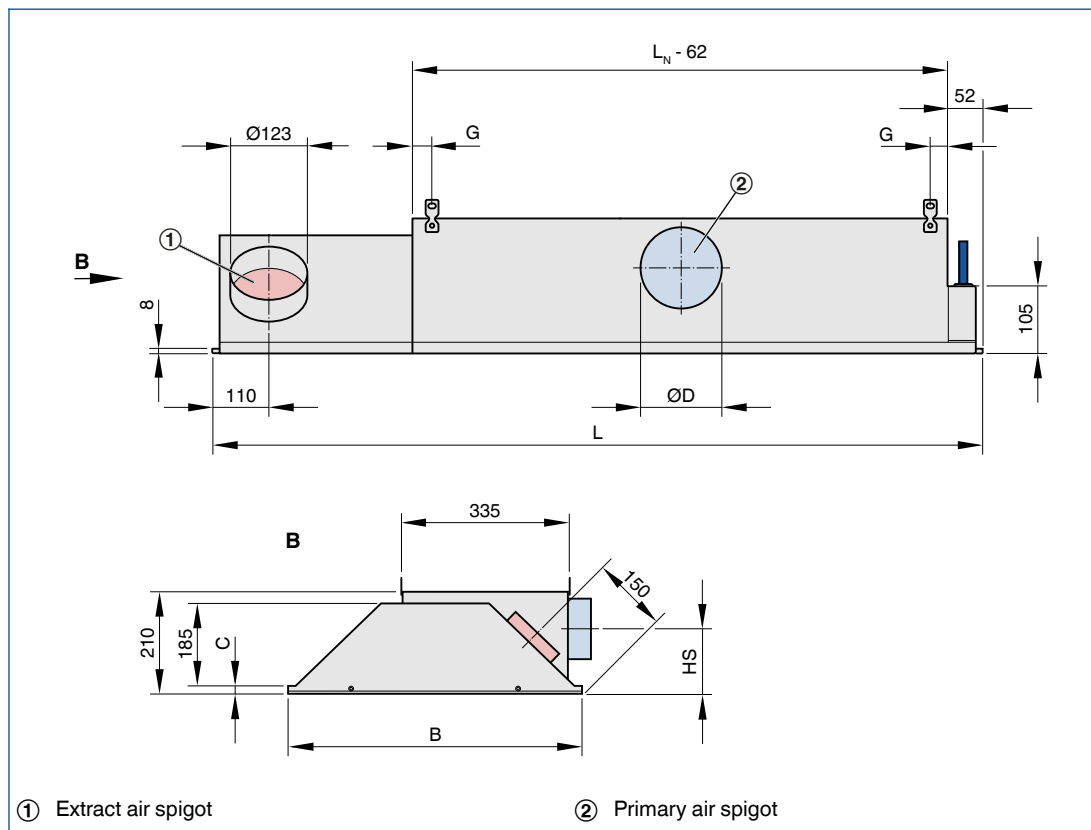


DID632-...-LL¹



Dimensions

Typ 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 | $\text{Ø}D$ | HS | G |
|-------|-------------|-------------|-----|-----|
| 900 | 1150 – 1500 | 123 | 134 | 30 |
| 1200 | 1450 – 1800 | 123 | 134 | 30 |
| 1500 | 1750 – 2100 | 123 | 134 | 30 |
| 1800 | 2050 – 2400 | 123 | 134 | 330 |
| 2100 | 2350 – 2700 | 158 | 116 | 330 |
| 2400 | 2650 – 3000 | 158 | 116 | 430 |
| 2700 | 2950 – 3000 | 158 | 116 | 530 |

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 |

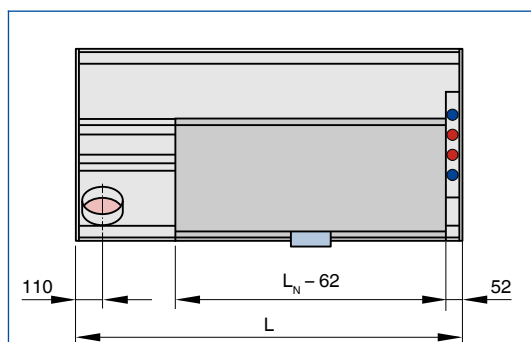
Non-active section as extension: 10 kg/m

Extract air spigot $\text{Ø}123$ mm (min. length 250 mm) 3 kg/piece

Differences in width and LE can be neglected

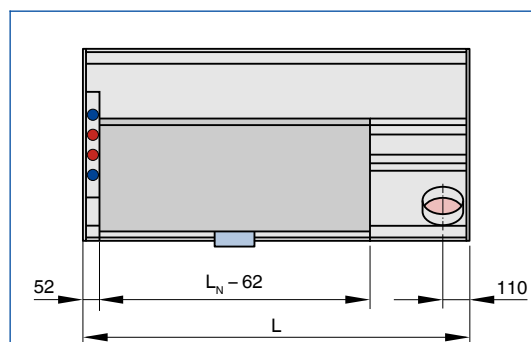
1

DID632-...-RR-AV



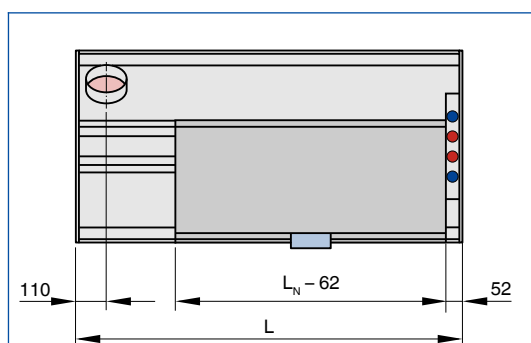
Supply and extract air combination is only available with arrangement LL and RR, and from $L = L_N + 250$ mm
Casing: right side
Water connections: right side
Extract air spigot at the front

DID632-...-LL-AV



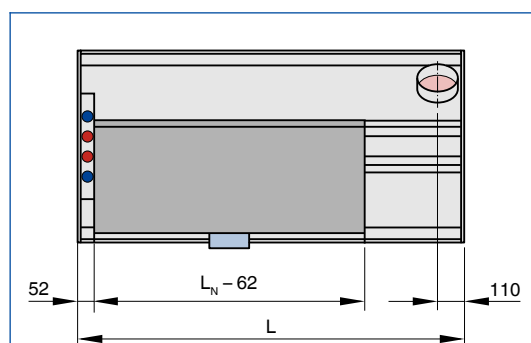
Supply and extract air combination is only available with arrangement LL and RR, and from $L = L_N + 250$ mm
Casing: left side
Water connections: left side
Extract air spigot at the front

DID632-...-RR-AH



Supply and extract air combination is only available with arrangement LL and RR, and from $L = L_N + 250$ mm
Casing: right side
Water connections: right side
Extract air spigot at the rear

DID632-...-LL-AH



Supply and extract air combination is only available with arrangement LL and RR, and from $L = L_N + 250$ mm
Casing: left side
Water connections: left side
Extract air spigot at the rear

Description

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Active chilled beams of Type DID632, with two-way air discharge and high thermal output, providing high thermal comfort levels. For installation flush with the ceiling, preferably in rooms with a height up to 4.20 m. The units consist of a casing with suspension points, a spigot, non-combustible nozzles, and a horizontal heat exchanger. Nozzles in four sizes to optimise induction based on demand.

Special features

- Adjustable air control blades to control the airflow
- Hinged, removable induced air grille in four 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 G½" external thread and flat seal
- Internal nozzle plate with punched nozzles (non-combustible)

Materials and surfaces

- Casing, front frame, nozzle plate, and perforated induced air grille (LR/LQ) made of galvanised sheet steel
- Blades of the induced air grille (GL/GQ) made of aluminium sections
- Heat exchanger with copper tubes and aluminium fins
- Exposed surfaces are powder-coated pure white (RAL 9010) or in any other RAL colour
- Heat exchanger also in black (RAL 9005)
- Extract air spigot made of galvanised sheet steel
- Air control blades made of polypropylene, UL 94, flame retardant (V0)

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 %

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, 22 – 306 m³/h
- Cooling capacity: up to 2450 W
- Heating capacity: up to 2970 W
- Max. operating pressure: 6 bar
- Max. operating temperature: 75 °C

Order options

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 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

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

Air-water systems

Basic information and nomenclature



- Product selection
- Principal dimensions
- Nomenclature



Eurovent certification

Air-water systems

Basic information and nomenclature

Product selection

| | Air-water systems | | | |
|----------------------------|-----------------------------------|--|---|--|
| | Passive chilled beams | Induction units for ceiling installation | Induction units for under sill installation | Induction units for under floor installation |
| 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 | | | | ● |
| Air distribution | | | | |
| Mixed flow | | ● | | |
| Inducing displacement flow | | | ● | ● |
| Displacement flow | | | ○ | ○ |
| Basic functions | | | | |
| Heating | | ● | ● | ● |
| Cooling | ● | | | |
| Ventilation | | | | |
| Extract ventilation | | | | |
| ● | Possible | | | |
| ○ | Possible under certain conditions | | | |
| | Not possible | | | |

Air-water systems

Basic information and nomenclature

Product selection

| | Induction units (active chilled beams) | | | | | | |
|-----------------------------|--|------------------|------------------|------------------|------------------|------------------|----------------|
| | DID312 | DID300B | DID632 | Type DID600B-L | DID604 | DID-R | DID-E |
| 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 |
| T-bar ceilings | | | | | | | |
| Continuous ceilings | ● | ● | ● | ● | ● | ● | |
| Ceiling bulkheads | | | | | | | ● |
| Freely suspended | with wide border | with wide border | with wide border | with wide border | with wide border | with wide border | |
| Heat exchanger | | | | | | | |
| 2-pipe | | ● | ● | ● | | | ● |
| 4-pipe | ● | | | | ● | ● | |
| Condensate drip tray | | | | | | | |
| ● | Possible | | | | | | |
| | Not possible | | | | | | |

Product selection

| | Induction units (active chilled beams) | | Passive chilled beams | Induction units (active chilled beams) | Under sill induction units | Induction units for under floor installation |
|------------------------------|--|-----|-----------------------|--|----------------------------|--|
| | DID-SB | IDH | PKV | QLI | IDB | BID |
| Installation details | | | | | | |
| Freely suspended | ● | ● | ● | | | |
| Wall or floor mounted | | | | ● | ● | |
| Under floor | | | | | | ● |
| Heat exchanger | | | | | | |
| 2-pipe | ● | ● | ● | | | |
| 4-pipe | | | | ● | ● | ● |
| Condensate drip tray | | ● | | | | |
| ● | Possible | | | | | |
| | Not possible | | | | | |

Air-water systems

Basic information and nomenclature

Principal dimensions

L_N [mm]
Nominal length

Nomenclature

L_N [mm]
Nominal length

L_{WA} [dB(A)]
Sound power level

t_{Pr} [°C]
Primary air temperature

t_{wV} [C°]
Water flow temperature – cooling/heating

t_R [C°]
Room temperature

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]
Primary air volume flow rate

\dot{V}_{Pr} [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]
Pressure drop, water side

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

Air-water systems

Basic information and nomenclature

Sizing with the help of this catalogue

This catalogue provides convenient quick sizing tables for air-water systems. The tables give sound power levels, thermal output values, temperature differences and volume flow rates for all nominal sizes. In addition, generally accepted room temperature and water flow temperature

values have been taken into account. Sizing data for other parameters can be determined quickly and precisely using the Easy Product Finder design programme.

Easy Product Finder

The Easy Product Finder allows you to size products using your project-specific data.

You will find the Easy Product Finder on our website.

Function

The induction principle

Induction units provide centrally conditioned primary air (fresh air) to the room in order to maintain the room air quality, and use heat exchangers for cooling and/or heating. The primary air is discharged through nozzles into the mixing chamber. As a result of this, secondary air (room air) is induced via the induced air grille and passes through the heat exchanger into the mixing chamber.

Convection

Passive chilled beams remove the heat from the room air and transfer it via a heat exchanger to the water (transport medium). More than 90 % of the heat are transferred through convection. As the air passes over the surfaces of the heat exchanger, its temperature decreases while its density increases as a consequence, hence accelerating the downward airflow. The air flows straight down from the top to the bottom of the unit. This further increases the downward airflow (stack effect) and hence the cooling output.

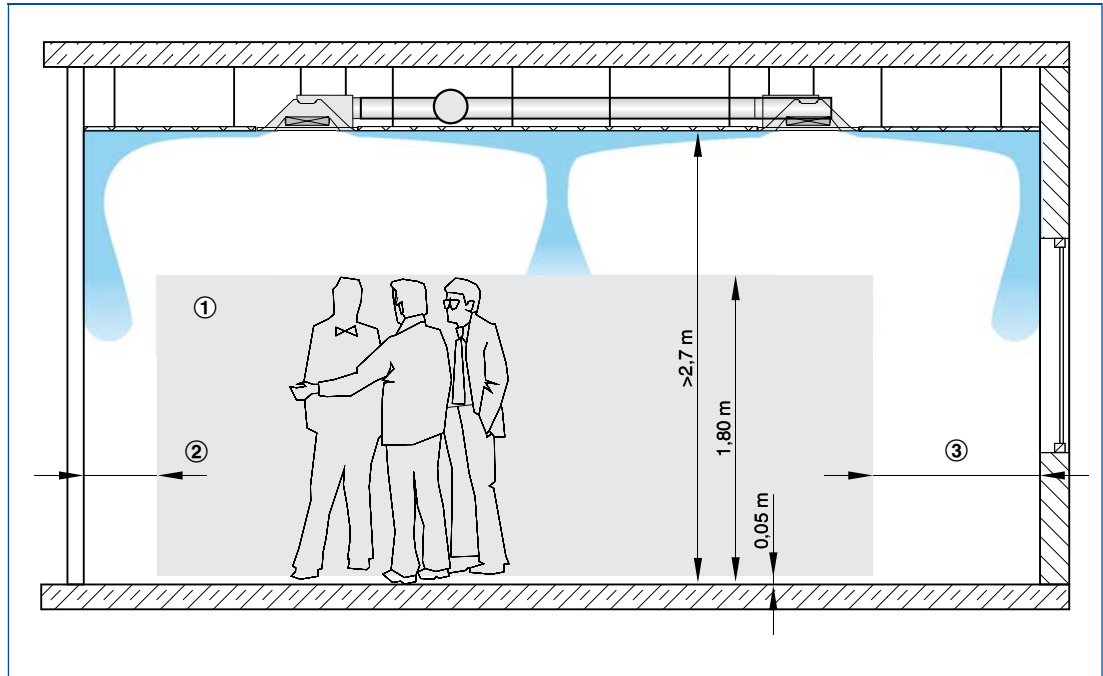
Types of ventilation

Mixed flow

The supply air is discharged from the diffuser into the space with a velocity between 2 and 5 m/s. The resulting air jet mixes with the room air, ventilating the entire space. Mixed flow systems typically provide a uniform temperature

distribution and air quality within the space. The originally high velocity of the turbulent air jet decreases rapidly due to the high induction levels of mixed flow systems.

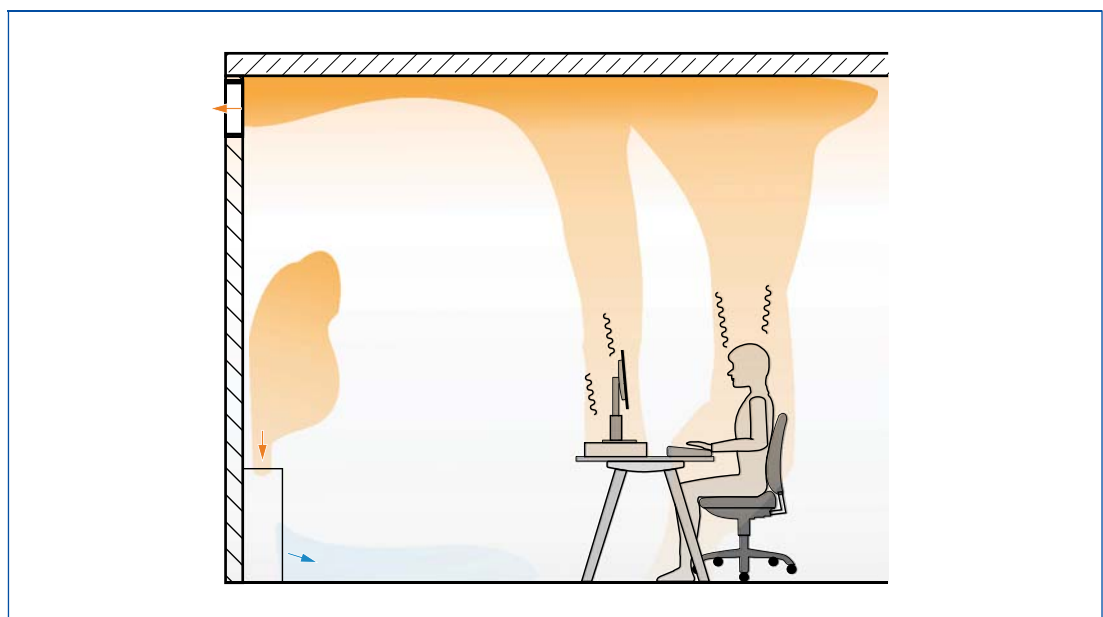
Schematic illustration of mixed flow ventilation



Schematic illustration of displacement flow ventilation The supply air is discharged into the space with a velocity between 0.15 and 0.20 m/s and as close as possible to the floor; the result is a pool of fresh air over the entire floor area. The convection from people and other heat sources causes the fresh air from the pool to rise and

create comfortable conditions in the occupied zone. Displacement flow ventilation is characterised by low airflow velocities and low turbulence. The air quality in the occupied zone is very high. The extract air should ideally be removed near the ceiling.

Schematische Darstellung Quelllüftung

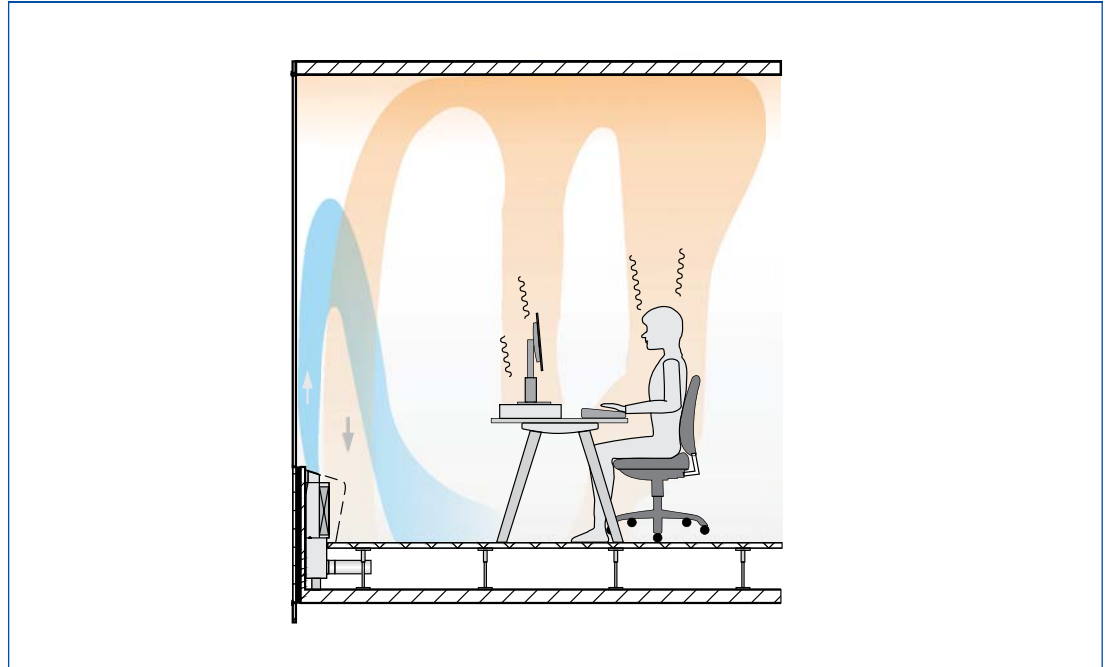


Inducing displacement flow

The supply air is discharged near the external wall and with a medium velocity between 1.0 and 1.5 m/s. Due to the induction effect the supply air velocity is rapidly reduced such that, in cooling mode, the supply air displaces the room

air over the entire floor area. The convection from people and other heat sources causes the fresh air from the pool to rise and create comfortable conditions in the occupied zone.

Schematic illustration of inducing displacement flow ventilation



Heat exchangers

The maximum water-side operating pressure for all heat exchangers is 6 bar.

The maximum water flow temperature (heating circuit) for all heat exchangers is 75 °C; if flexible hoses are used, the water flow temperature should not exceed 55 °C. Units for other pressures and temperatures are available on request.

The water flow temperature (cooling circuit) should be at least 16 °C such that it does not permanently fall below the dew point. For units with a condensate drip tray the water flow temperature may be reduced to 15 °C.

Heat exchanger as 2-pipe system

Air-water systems with a 2-pipe heat exchanger may be used for either heating or cooling. In changeover mode it is possible to use all units within a water circuit exclusively for cooling in summer and exclusively for heating in winter.

Heat exchanger as 2-pipe system



Heat exchanger as 4-pipe system

Air-water systems with a 4-pipe heat exchanger may be used for both heating and cooling. Depending on the season, i.e. especially in spring and autumn, it may be possible that an office has to be heated in the morning and cooled in the afternoon.

Heat exchanger as 4-pipe system

