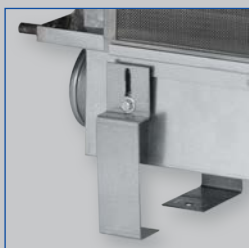


Under sill units

Type IDB



Row of nozzles



Levelling feet



Eurovent certification



Tested to VDI 6022



Brüstungsinduktionsdurchlass für Nennlängen von 600, 900, 1200, 1350 mm mit vertikalem Wärmeübertrager und Kondensatwanne

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

| Type | | Page |
|------|------------------------------------|----------|
| IDB | General information | IDB – 2 |
| | Function | IDB – 3 |
| | Technical data | IDB – 5 |
| | Quick sizing | IDB – 6 |
| | Specification text | IDB – 8 |
| | Order code | IDB – 9 |
| | Dimensions and weight | IDB – 11 |
| | Installation examples | IDB – 12 |
| | Installation details | IDB – 13 |
| | Basic information and nomenclature | IDB – 14 |

Application

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

- 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

Special characteristics

Nominal sizes

- 600, 900, 1200 mm

Description

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

Construction features

- Spigot is suitable for circular ducts to EN 1506 or EN 13180
- Four nozzle variants to optimise induction based on demand
- Vent valves on the heat exchanger

Materials and surfaces

- Casing, primary air plenum and feet made of galvanised sheet steel
- Lint screen made of stainless steel
- Heat exchanger with copper tubes and aluminium fins
- Exposed surfaces either untreated or powder-coated black (RAL 9005)
- Heat exchanger also in black (RAL 9005)

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

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 for ventilation and air-conditioning systems and units)

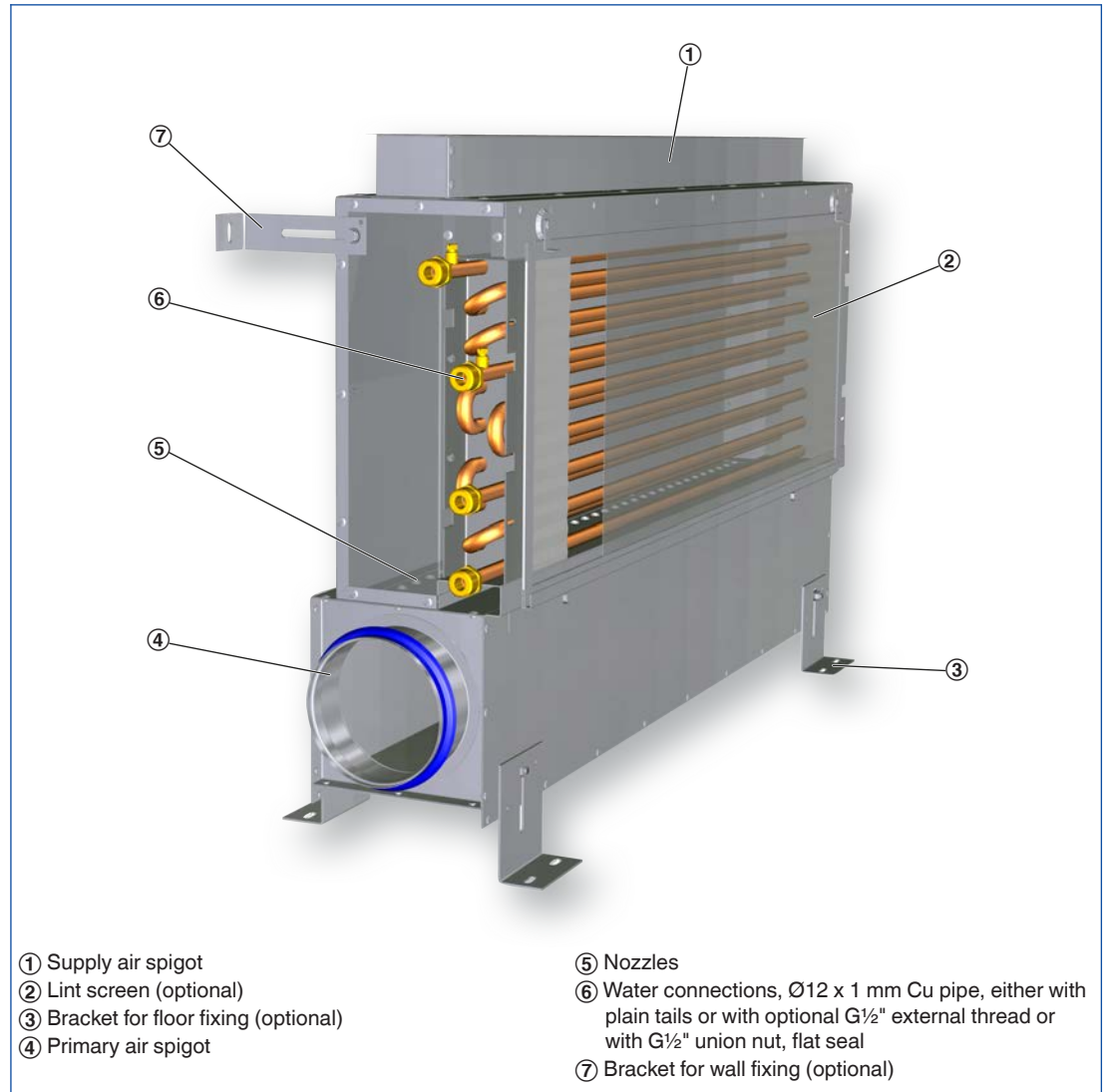
Functional description

Under sill induction units provide centrally conditioned primary air (fresh air) to the room and use heat exchangers for cooling and/or heating. The primary air is discharged through nozzles and

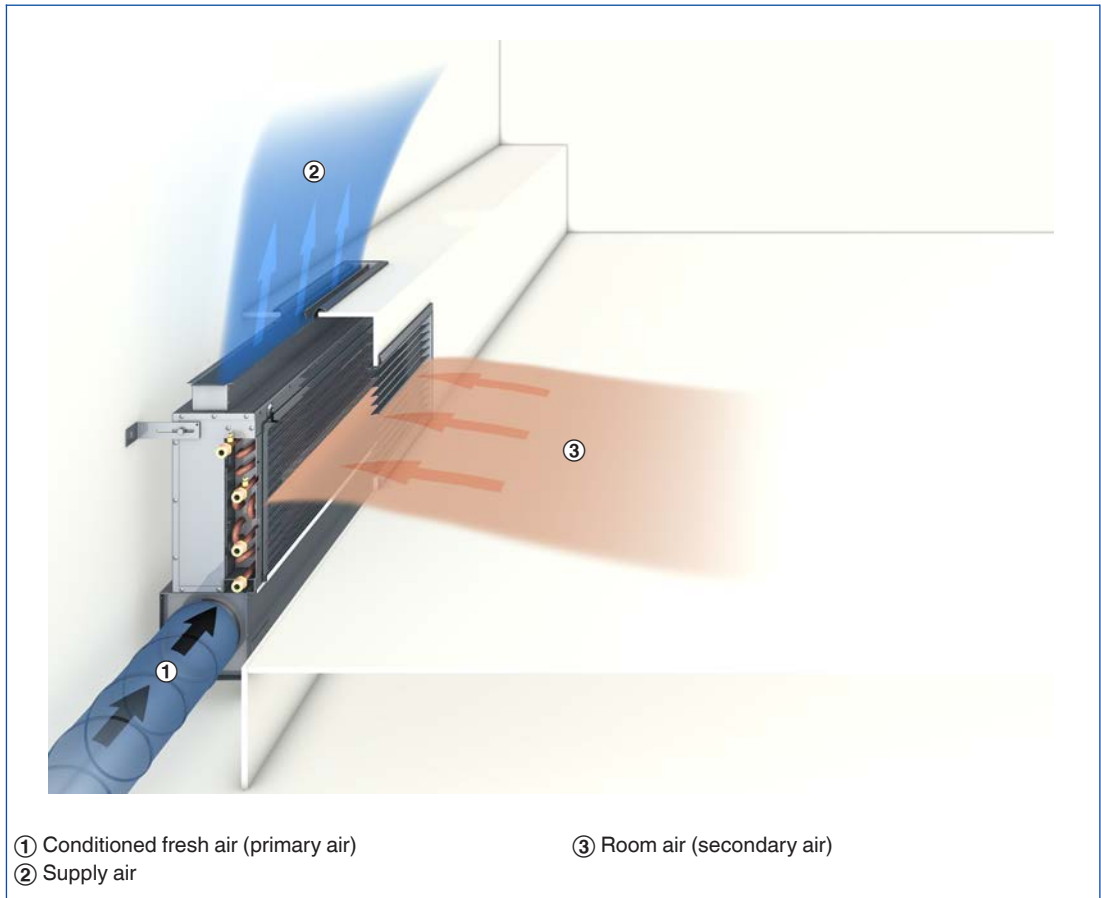
induces secondary air (room air), which passes through the heat exchanger.

Primary and secondary air mix and are then supplied to the room as an inducing displacement flow.

Schematic illustration of the IDB



Principle of operation – IDB



| | |
|---|--|
| 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 m ³ /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 |

The quick sizing table contains operating points for defined reference units.

Quick sizing – spigot diameter 100 mm

| 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 |
| | | | | | | | | | | | | |
| 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 | 4.8 | 0.24 |
| | | 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 | 5.3 | 0.29 |
| | | 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

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 |

Quick sizing – spigot diameter 125 mm

| L_N | ① | Primary air | | | ② L_{WA} | Cooling | | | | Heating | | |
|-------|----|----------------|-------------------|--------------|---------------|---------------------------|----------------|--------------|--------------|--------------------------------|--------------|--------------|
| | | \dot{V}_{Pr} | \dot{V}_{Pr} | Δp_t | | 2-pipe and 4-pipe systems | | | | 4-pipe system | | |
| | | | | | | \dot{Q}_{tot} | \dot{Q}_{WK} | Δt_w | Δp_w | $\dot{Q}_{WH} = \dot{Q}_{tot}$ | Δt_w | Δp_w |
| | | l/s | m ³ /h | Pa | | 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 | | 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 | | 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 |
| \dot{V}_W | 110 l/h | 50 l/h |

This specification text describes the general properties of the product.

Description

Induction units of Type IDB, for under sill or wall installation, with one-way discharge and high thermal output, providing high thermal comfort levels.

For installation under the sill or on a wall.

The units consist of a casing with a primary air plenum, spigot, non-combustible nozzles, and vertical heat exchanger; a condensate drip tray is optional.

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

Materials and surfaces

- Casing, primary air plenum and feet made of galvanised sheet steel

- Lint screen made of stainless steel
- Heat exchanger with copper tubes and aluminium fins
- Exposed surfaces either untreated or powder-coated black (RAL 9005)
- Heat exchanger also in black (RAL 9005)

Construction

- Galvanised
- P1: Powder-coated RAL 9005, black, gloss level 70 %

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: 6 bar
- Max. operating temperature: 75 °C

IDB

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

Order examples

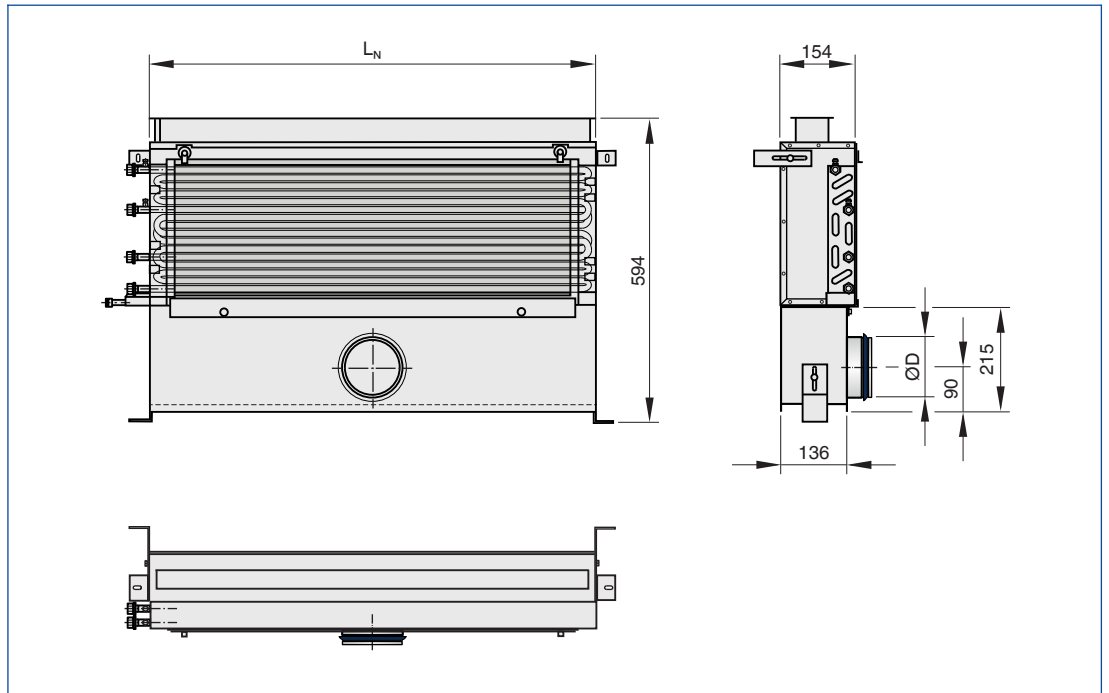
IDB-2-G-RE-SL/1200x123

| | |
|-------------------------------------|------------|
| Heat exchanger | 2-pipe |
| Nozzle variant | Large |
| Arrangement of the water connection | Right side |
| Arrangement of the air connection | Left side |
| Nominal length | 1200 mm |
| Spigot diameter | Ø123 mm |

IDB-4-U-LI-SL-KW/1200x123/WB/G1/FS/VS

| | |
|--------------------------------------|-------------|
| Heat exchanger | 4-pipe |
| Nozzle variant | Extra large |
| Arrangement of the water connection | Left side |
| Arrangement of the air connection | Left side |
| Condensate drip tray | With |
| Nominal length | 1200 mm |
| Spigot diameter | Ø123 mm |
| Wall and floor fixing | With |
| Surface of casing and heat exchanger | Black |
| Lint screen | With |
| Valves and actuators | With |

IDB



Dimensions [mm]

| L_N | $\varnothing D$ |
|----------------|-----------------|
| 600, 900, 1200 | 98 |
| | 123 |

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 |

Installation example



Installation example



Installation and commissioning

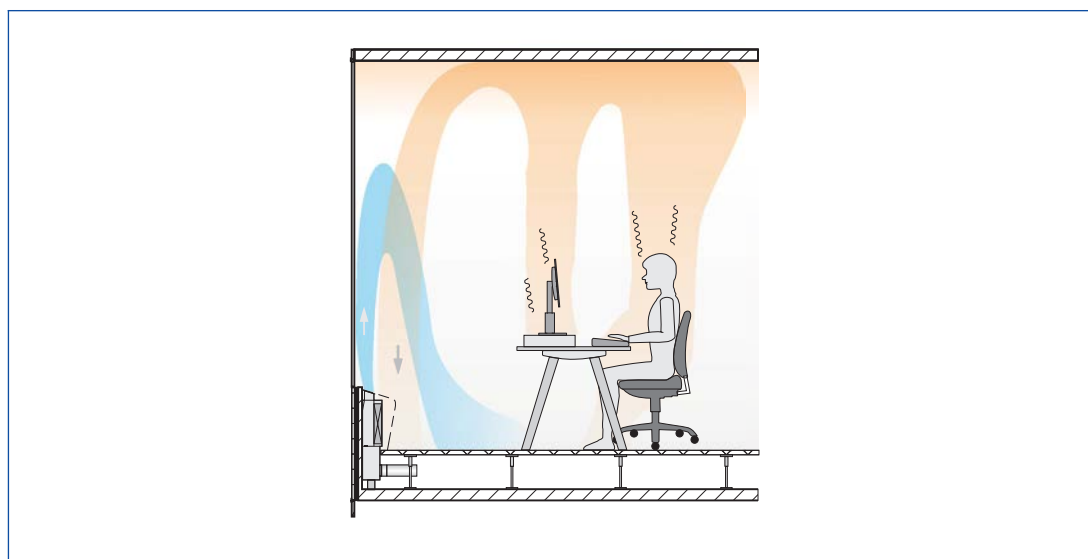
- Under sill or wall installation
- Side entry primary air spigot at the narrow side or front
- Installation and connections to be performed by others; fixing, connection and sealing material to be provided by others
- The unit can be fixed to the floor and/or to the wall with the fixing material supplied (accessory)
- Heat exchangers are fitted with water flow and water return connections at the narrow side

- 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
- L_N [mm]**
Nominal length

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.

Schematische Darstellung Misch-Quell-Lüftung



Heat exchanger

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

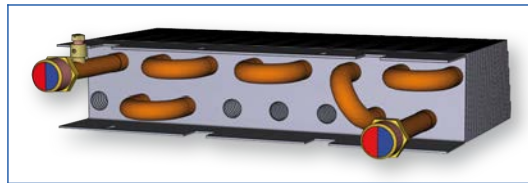
and temperatures are available on request.
The water flow temperature (cooling circuit) should be at least 16 °C such that it does not permanently fall below the dew point. For units with a condensate drip tray the water flow temperature may be reduced to 15 °C.

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.

Wärmeübertrager 2-Leiter-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.

Wärmeübertrager 4-Leiter-System

