Induction units for suspended ceilings
Type DID312

DID312-LR, with hinged down induced air grille

Water connection

Eurovent certification

Tested to VDI 6022

Active chilled beam with two-way air discharge, 300 mm nominal width, vertical heat exchanger and condensate drip tray

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

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Application

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

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

Nominal sizes

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

Description

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

Construction features
– Spigot is suitable for circular ducts to EN 1506 or EN 13180
– 4 or 6 suspension points for on-site installation (by others)
– Three nozzle variants to optimise induction based on demand
– Optional extract air spigot on the same side as the primary air spigot or opposite
– Condensate drip tray including condensate drain that can be connected to a condensate pipe (Ø12 mm, to be provided by others)

Materials and surfaces
– Casing, front frame, nozzle plate, and perforated induced air grille (LR/LQ) made of galvanised sheet steel
– Border and 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)
– Nozzle plate powder-coated black (RAL 9005)
– Additional casing for extract air with a spigot made of galvanised sheet steel

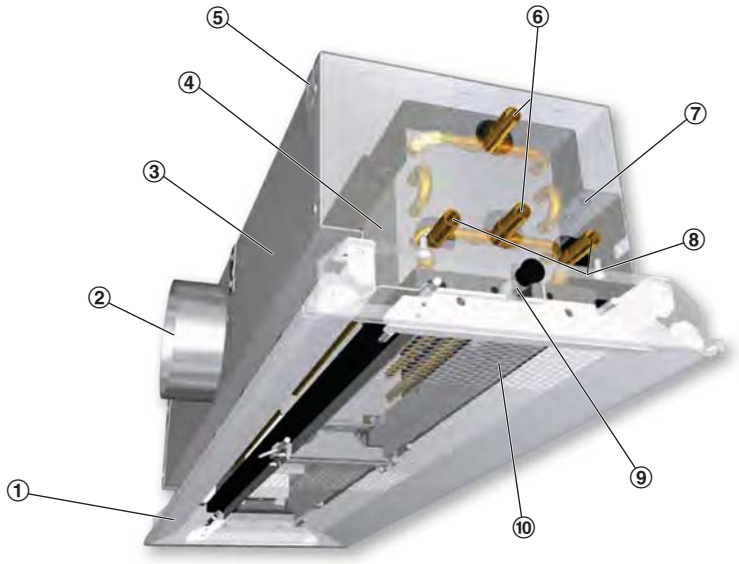
Standards and guidelines
– Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
– Declaration of hygiene conformity to VDI 6022

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

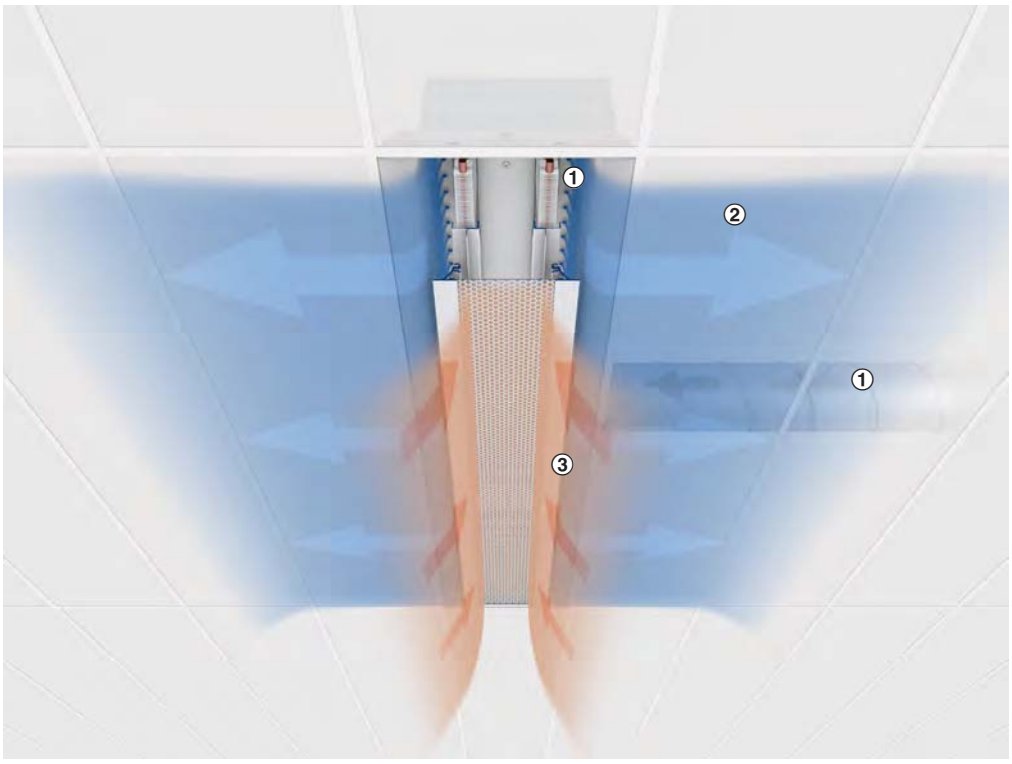
Active chilled beams provide centrally conditioned primary air (fresh air) to the room and use heat exchangers for additional cooling and/or heating. The primary air is discharged through nozzles into the mixing chambers; as a result of this, secondary air (room air) is induced via the induced air grille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

Schematic illustration of DID312



① Front frame
② Primary air spigot
③ Casing
④ Heat exchanger
⑤ Suspension points
⑥ Chilled water connections
⑦ Nozzle plate with punched nozzles
⑧ Hot water connections
⑨ Drainage pipe for condensate
⑩ Hinged induced air grille

Principle of operation – DID312



① Conditioned fresh air (primary air)
② Supply air
③ Room air (secondary air)

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 m^3/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

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

Description

Active chilled beams of Type DID312, 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 4.00 m.
The units consist of a casing with suspension points, a spigot, non-combustible nozzles, and two vertical heat exchangers.
Three nozzle variants to optimise induction based on demand.

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

Materials and surfaces

- Casing, front frame, nozzle plate, and perforated induced air grille (LR/LQ) made of galvanised sheet steel
- Border and 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)
- Nozzle plate powder-coated black (RAL 9005)
- Additional casing for extract air with a spigot made of galvanised sheet steel

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: 210/241 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 m^3/h
- Cooling capacity: up to 1830 W
- Heating capacity: up to 1240 W
- Max. operating pressure: 6 bar
- Max. operating temperature: 75 °C

Sizing data

Primary air
- $\dot{V}$ _____ _____ [m^3/h]
- Δp_t _____ _____ [Pa]

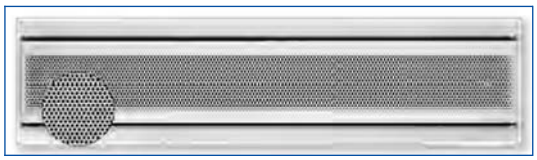
Air-regenerated noise
- L_{WA} _____ _____ [dB(A)]

Cooling
- $\dot{Q}_{ges}$ _____ _____ [W]

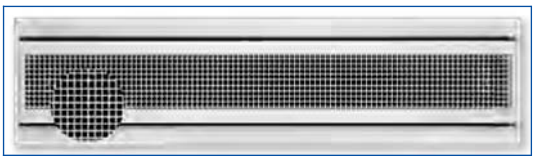
Heating
- $\dot{Q}_{ges}$ _____ _____ [W]

Product examples

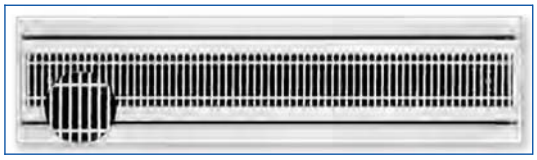
DID312-LR



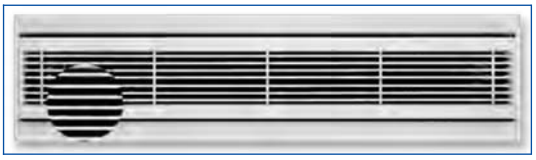
DID312-LQ



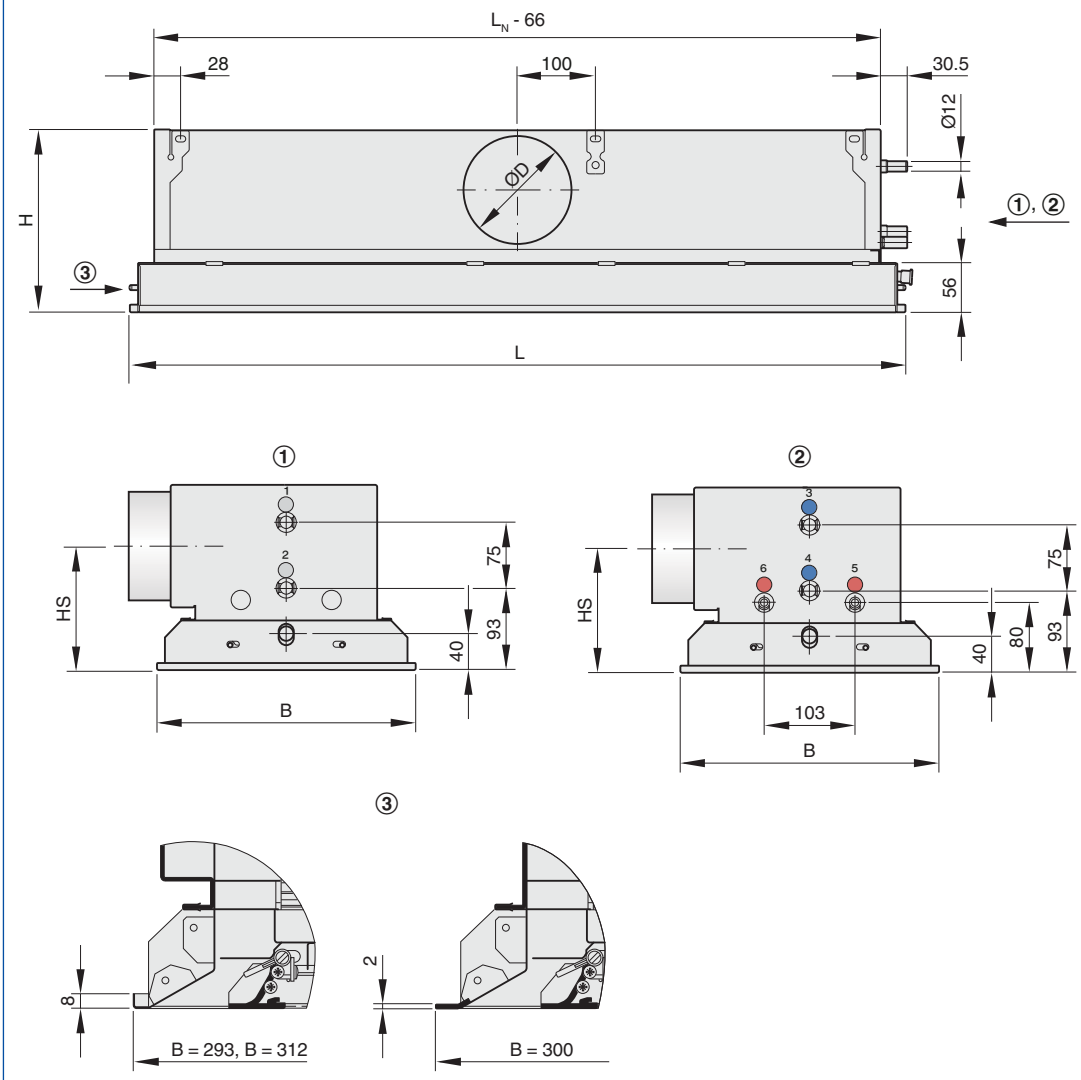
DID312-GQ



DID312-GL



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)
L_N = Nominal length
B = Width of front frame

Dimensions [mm]

B	293
	300
	312

B = Width of front frame

Dimensions [mm]

L_N	Available sizes L	ØD	H	HS
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

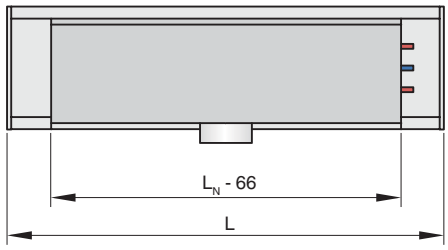
Nominal length (L_N)	mm	900	1200	1500	1800	2100	2400	2700	3000
DID312-LR	kg/piece	15	19	23	27	31	35	39	43
DID312-LQ	kg/piece	15	19	23	27	31	35	39	43
DID312-GL	kg/piece	16	20	25	29	33	38	42	46
DID312-GQ	kg/piece	16	20	25	29	33	38	42	46
Contained water (max.)	kg	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8

Non-active section as extension: 10 kg/m
Differences in width can be neglected

Casing arrangement

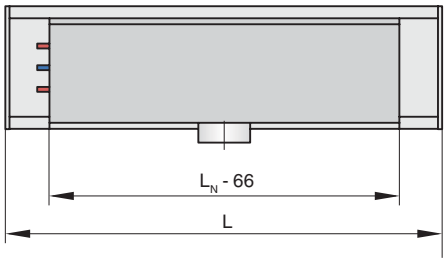
Supply air

DID312-...-MR



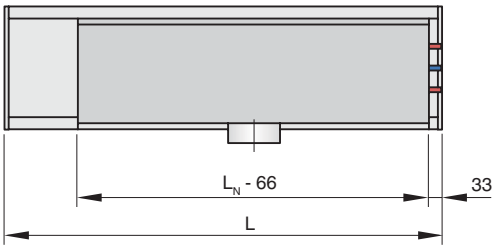
Casing: centre
Water connections: right side

DID312-...-ML



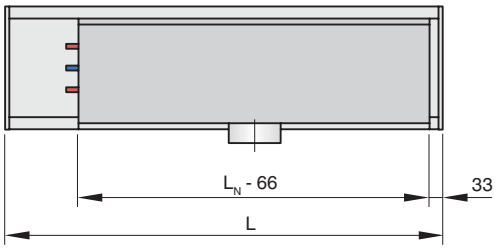
Casing: centre
Water connections: left side

DID312-...-RR



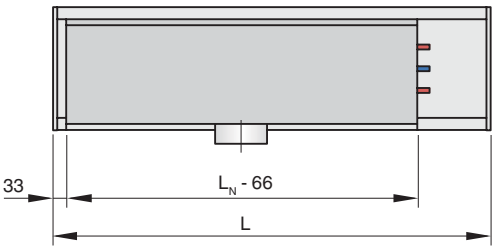
Casing: right side
Water connections: right side

DID312-...-RL



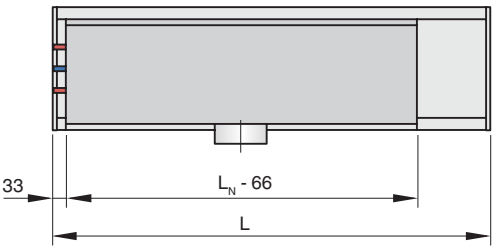
Casing: right side
Water connections: left side

DID312-...-LR



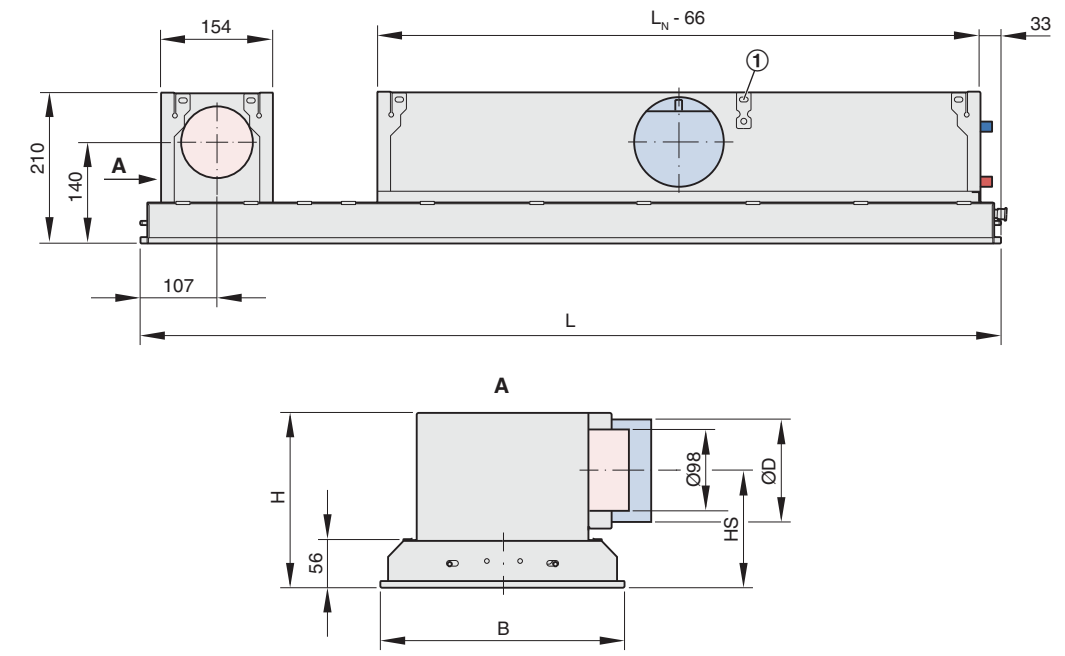
Casing: left side
Water connections: right side

DID312-...-LL



Casing: left side
Water connections: left side

DID312, with additional casing for extract air



① From L_N = 2100 mm

Dimensions [mm]

B	293
	300
	312

B = Width of front frame

Dimensions [mm]

L_N	Available sizes L	ØD	H	HS
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

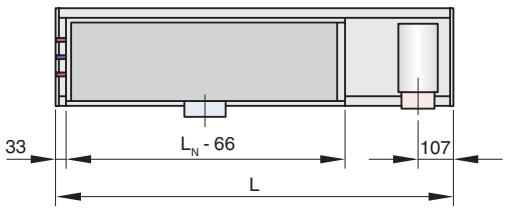
Nominal length (L_N)	mm	900	1200	1500	1800	2100	2400	2700
DID312-LR	kg/piece	15	19	23	27	31	35	39
DID312-LQ	kg/piece	15	19	23	27	31	35	39
DID312-GL	kg/piece	16	20	25	29	33	38	42
DID312-GQ	kg/piece	16	20	25	29	33	38	42
Contained water (max.)	kg	0.7	1.0	1.3	1.6	1.9	2.2	2.5

Non-active section as extension: 10 kg/m
Extract air spigot Ø98 mm, 3 kg/piece
Differences in width can be neglected

Casing arrangement

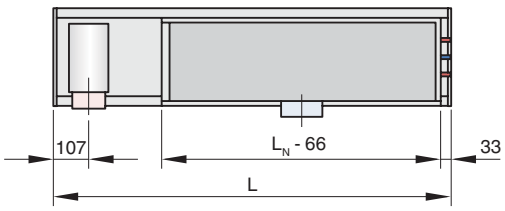
Mit Zusatzgehäuse für Abluft

DID312-...-LL-AV



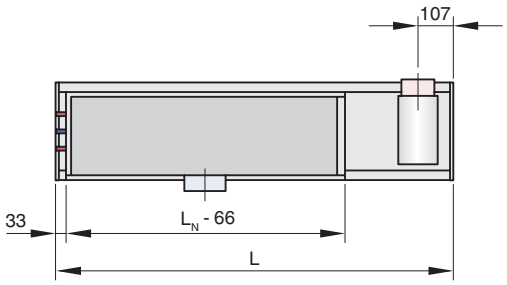
Casing: left side
Water connections: left side
Extract air spigot at the front

DID312-...-RR-AV



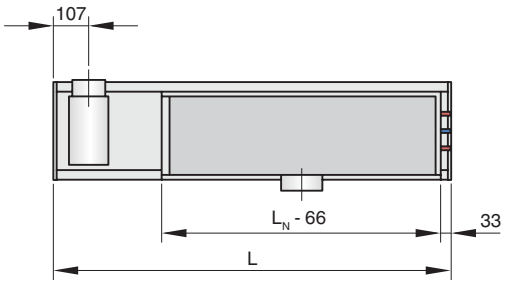
Casing: right side
Water connections: right side
Extract air spigot at the front

DID312-...-LL-AH



Casing: left side
Water connections: left side
Extract air spigot at the rear

DID312-...-RR-AH



Casing: right side
Water connections: right side
Extract air spigot at the rear

Installation into grid ceilings

Installation into continuous plasterboard ceilings

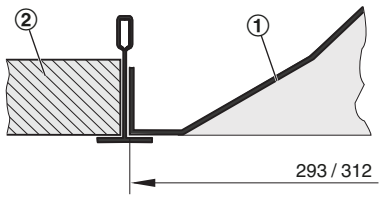
Installation and commissioning

- Preferably for rooms with a clear height up to 4.00 m
- Flush ceiling installation
- Side entry primary air spigot
- Lengths from 893 to 3000 mm, and widths of 293, 300, and 312 mm, hence suitable for various ceiling systems
- Installation and connections to be performed by others; fixing, connection and sealing material to be provided by others
- Active chilled beam has 4 suspension points (6 for nominal size 2100 mm and above) for on-site installation (by others)
- Heat exchangers are fitted with water flow and water return connections at the narrow side

Installation into T-bar ceilings

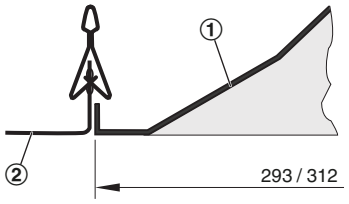
- To avoid too much load on the ceiling, the suspension points should be used

Ceiling installation, visible T-bars



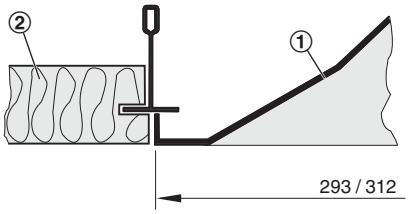
① DID
② Ceiling tile

Ceiling installation with clamping profile



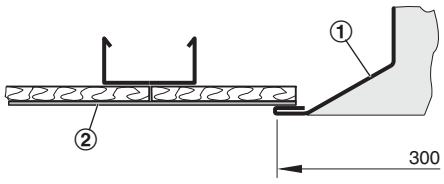
① DID
② Ceiling tile

Ceiling installation, concealed T-bars



① DID
② Ceiling tile

Ceiling installation of DID312, plasterboard ceiling



① DID312
② Plasterboard ceiling