



Conforme à VDI 6022

## DID312

### 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 4.20 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 package
- Also available as supply and extract air combination
- Heat exchanger powder-coated black
- Powder coating in many different colours, e.g. RAL CLASSIC or NCS

## Application □

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### Application

- Active chilled beams of Type DID312 for the integration into various ceiling systems, preferably for room heights up to 4.20 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 as a medium 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

## Description □

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### 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

### 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

- Extract air casing with side entry spigot for supply and extract air combination

### 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

### 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)
- Extract air spigot made of galvanised sheet steel

## TECHNICAL INFORMATION

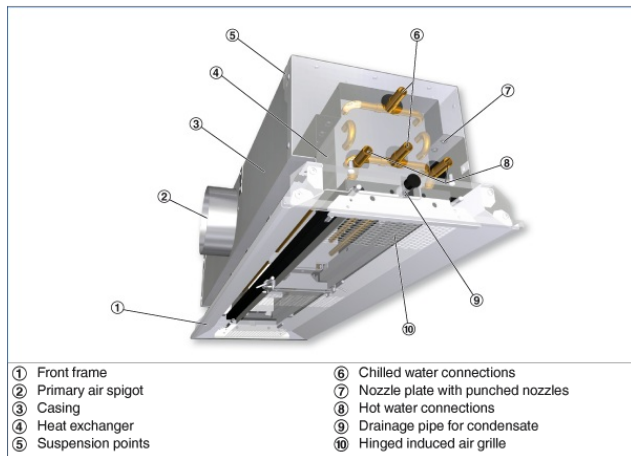
Functional description

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

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, 18 – 252 m <sup>3</sup> /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 <sub>WA</sub>	①	Primary air			②	Cooling				Heating		
		V <sub>PA</sub>	m <sup>3</sup> /h	Δp <sub>i</sub>		L <sub>WA</sub>	2-pipe and 4-pipe systems		4-pipe system			
							Q <sub>ref</sub>	Q <sub>W/C</sub>	Δt <sub>W</sub>	Δp <sub>W</sub>	Q <sub>REH</sub> = Q <sub>ref</sub>	Δt <sub>W</sub>
l/s	Pa	dB (A)	W	K	kPa	W	K	kPa				
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	448	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
	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	270	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

① Nozzle variant

② Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t <sub>a</sub>	26 °C	22 °C
t <sub>sp</sub>	18 °C	22 °C (isothermal)
t <sub>spW</sub>	18 °C	50 °C
V <sub>PA</sub> (L <sub>WA</sub> 900 – 1800)	150 l/h	60 l/h
V <sub>PA</sub> (L <sub>WA</sub> 2100 – 3000)	220 l/h	90 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.

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 4.20 m.

The units consist of a casing with suspension points, a spigot, non-combustible nozzles, and two vertical heat exchangers.

Nozzles in three sizes 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
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#### 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, 18 - 252 m³/h
- Cooling capacity: up to 1830 W
- Heating capacity: up to 1240 W
- Max. operating pressure: 6 bar
- Max. operating temperature: 75 °C

**DID312**

**DID312 – LR – 2 – Z – LL – AV – A1 / 1800 x 1200 x 293 / P1 – RAL ... / G3 / VS**

1 2 3 4 5 6 7 8 9 10 11 12

<b>1 Type</b> DID312 Active chilled beam	<b>8 Total length (diffuser face) x nominal size [mm]</b> L x L <sub>N</sub> Supply air 893 - 1500 x 900 1193 - 1800 x 1200 1493 - 2100 x 1500 1793 - 2400 x 1800 2093 - 2700 x 2100 2393 - 3000 x 2400 2693 - 3000 x 2700 2993 - 3000 x 3000
<b>2 Induced air grille</b> GL Longitudinal blades GQ Transverse blades LR Perforated metal, circular holes LQ Perforated metal, square holes	
<b>3 Heat exchanger</b> 2 2-pipe 4 4-pipe	
<b>4 Nozzle variant</b> Z Small plus M Medium G Large	Supply and extract air combination 1090 - 1500 x 900 1390 - 1800 x 1200 1690 - 2100 x 1500 1990 - 2400 x 1800 2290 - 2700 x 2100 2590 - 3000 x 2400 2890 - 3000 x 2700
<b>5 Arrangement of casings and connections</b> 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	<b>9 Width of front frame [mm]</b> B 293 300 312
<b>6 Extract air spigot</b> No entry: none AV Front AH Rear	<b>10 Exposed surface</b> 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 %
<b>7 Water connections</b> No entry: Ø12 mm pipe with plain tails A1 With G½" external thread and flat seal	<b>11 Surface of heat exchanger</b> No entry: untreated G3 RAL 9005, black
	<b>12 Valves and actuators</b> No entry: none VS With