

# Active Chilled Beams

Type DID300B



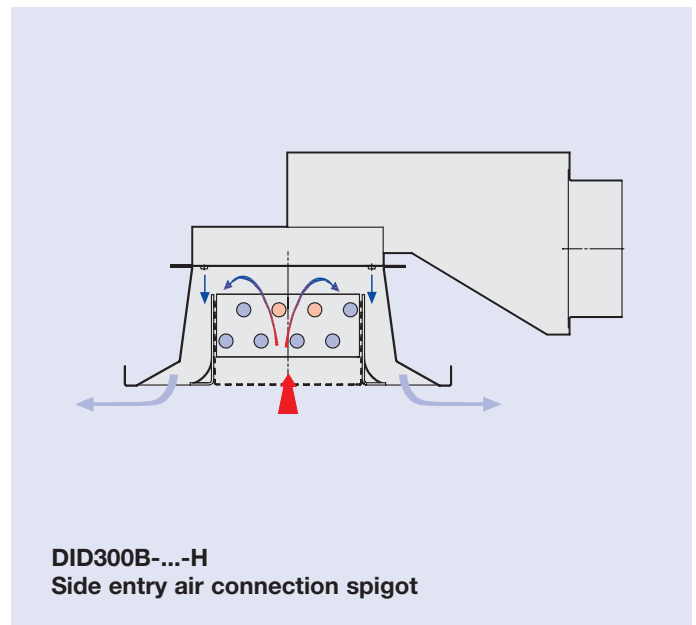
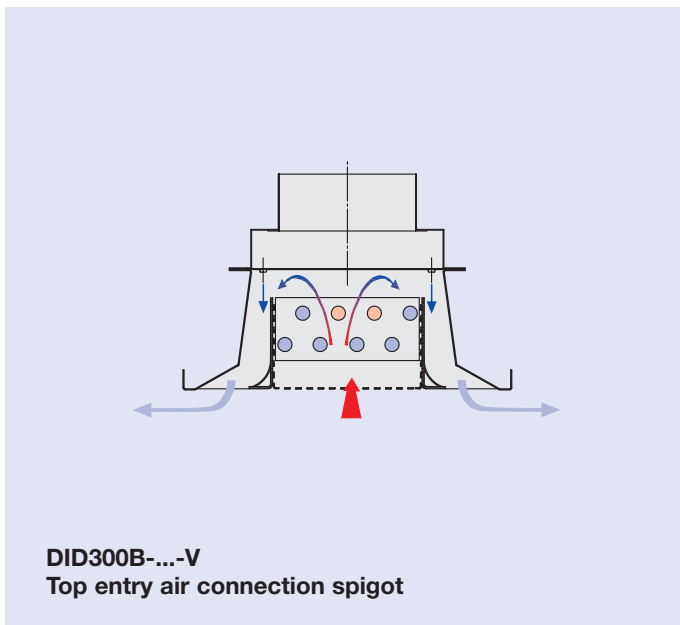
**TROX**<sup>®</sup> **TECHNIK**

TROX GmbH  
Heinrich-Trox-Platz  
D-47504 Neukirchen-Vluyn

Telephone +49/28 45/2 02-0  
Telefax +49/28 45/2 02-2 65  
e-mail [trox@trox.de](mailto:trox@trox.de)  
[www.troxtechnik.com](http://www.troxtechnik.com)

# Contents · Description

Contents · Description	2	Nomenclature	8
Construction	3	Performance overview – cooling with 2-pipe and 4-pipe systems	9
Casing arrangements	4	Performance overview – heating with 4-pipe systems	10
Dimensions	5	Aerodynamic data	11
Assembly	6	Order details	12



## Description

TROX Active Chilled Beams type DID300B use a combination of air and water systems. They combine the air flow characteristics of ceiling diffusers with the energy benefits of load dissipation using water (heating/cooling).

The primary air volume flow required for fresh air supply enters the upper plenum box through a connecting spigot and is then discharged into the mixing zone via nozzles which are fitted into a diaphragm plate.

The induced air is drawn from the room through a water coil. In the mixing section of the DID300B the induced air is mixed with the primary air and the total discharged into the room via slots. The DID300B can be used for cooling and/or heating.

An additional spigot for extract of exhaust air can be fitted adjacent to the primary air duct (supply and extract air construction).

### Caution !

**The cold water supply temperature must be selected such that it never falls below room dewpoint.**

### Max. pressure:

for 2-pipe and 4-pipe system

6 bar at 90°C

7 bar at 20°C

Other operating pressures available on request!

The type DID300B chilled beams are particularly suitable for use in low ceiling void spaces because of their shallow construction. Thus they are suitable not only for use in new buildings but are also excellent for refurbishment projects.

When connected appropriately, they can be used for both individual room control or form a grouped zone control.

The DID300B is available with either top or side entry air connection spigot for supply and extract air.

Between the upper and lower casing there is a diaphragm plate which contains two longitudinal rows of nozzles. These discharge nozzles are available in three different sizes, the selection depending on the volume flow rates required.

The induction grille can easily be removed for cleaning purposes.

### Materials

Casing, including the top plenum and perforated plate induction grille are made of galvanised steel sheet.

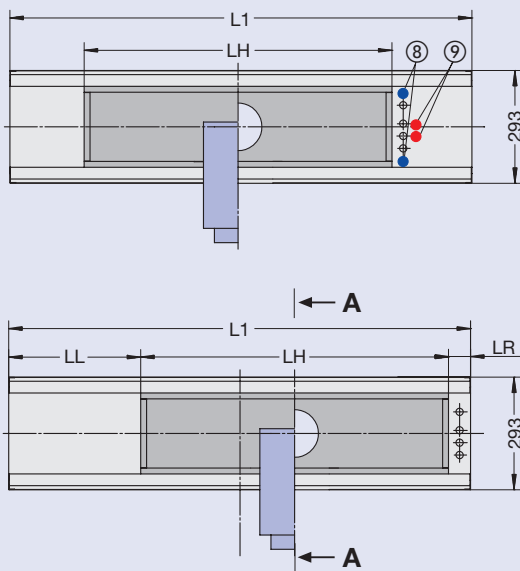
The standard finish of the casing and the induction grille is powder-coated white (RAL 9010), the top casing (plenum) and coil remain untreated - optionally can be finished in black (RAL 9005), nozzle plate only finished in black (RAL 9005).

The heat exchanger consists of copper tubes with formed aluminium fins. The flexible hose, available as an accessory, is made of special plastic with stainless steel sheathing.

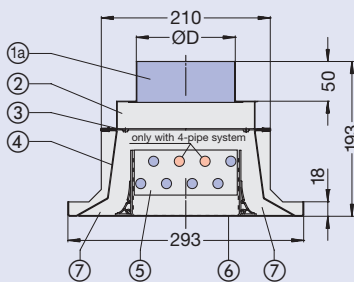
- ①a Supply air top entry connecting spigot }  $L_N$  900 to 1800 =  $\varnothing$  123
- ①b Supply air side entry connecting spigot }  $L_N$  2100 to 3000 =  $\varnothing$  158
- ② Top of casing (plenum)
- ③ Discharge nozzles
- ④ Casing
- ⑤ Coil (pipe- $\varnothing$  12 mm)
- ⑥ Perforated plate induction grille
- ⑦ Discharge slots
- ⑧ Label chilled water (blue)
- ⑨ Label warm water (red)
- ⑩a Extract air top connecting spigot
- ⑩b Extract air side connecting spigot

$L_1$  = Total length (diffuser face)  
 $L_N$  = Nominal length  
 (for dimensions of unit see page 5)

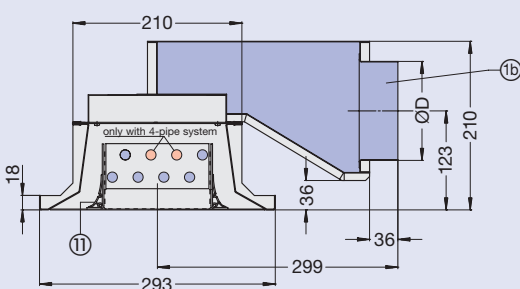
## Construction with supply air spigot



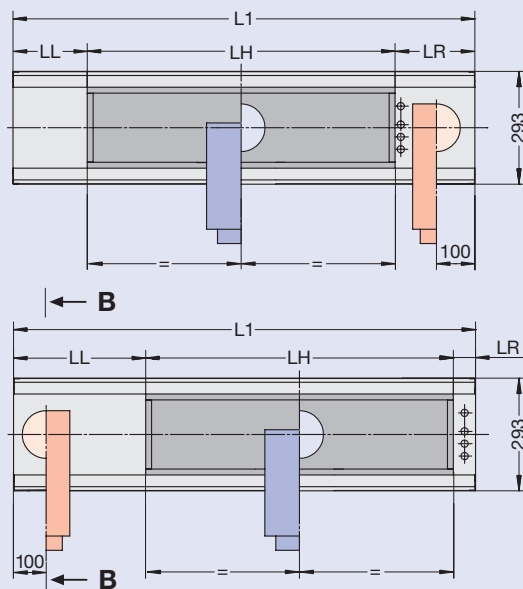
View A - A  
 Construction with top entry supply air spigot



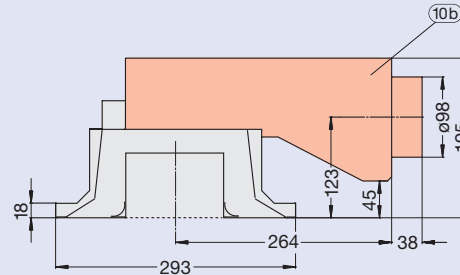
View A - A  
 Construction with side entry supply air spigot



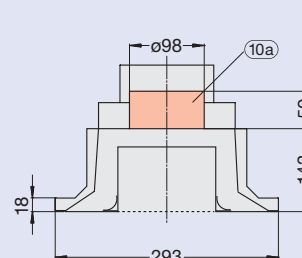
## Construction with supply and extract air spigot









View B - B  
 Construction with side extract air spigot



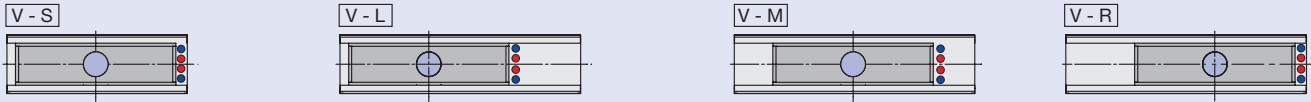
View B - B  
 Construction with top extract air spigot



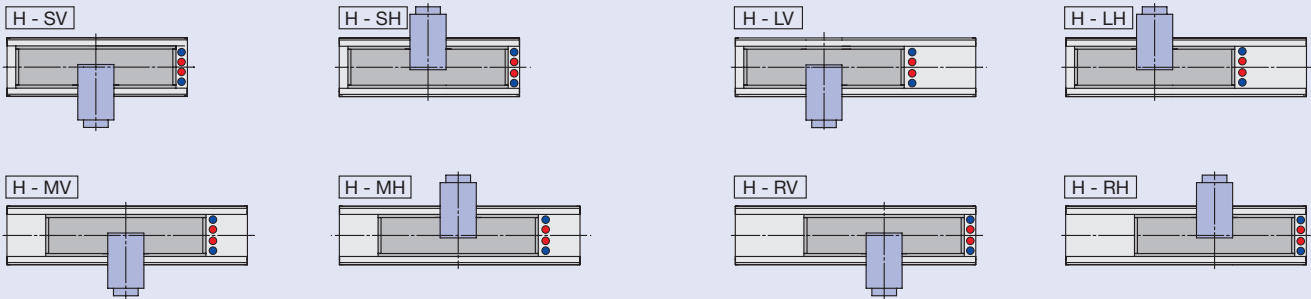
# Casing arrangements

-  Top entry supply air spigot
-  Top extract air spigot
-  Side entry supply air spigot
-  Side extract air spigot
-  Chilled water connection
-  Warm water connection

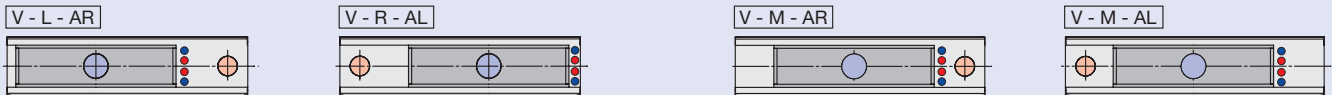
## Casing arrangement with top entry supply air spigot



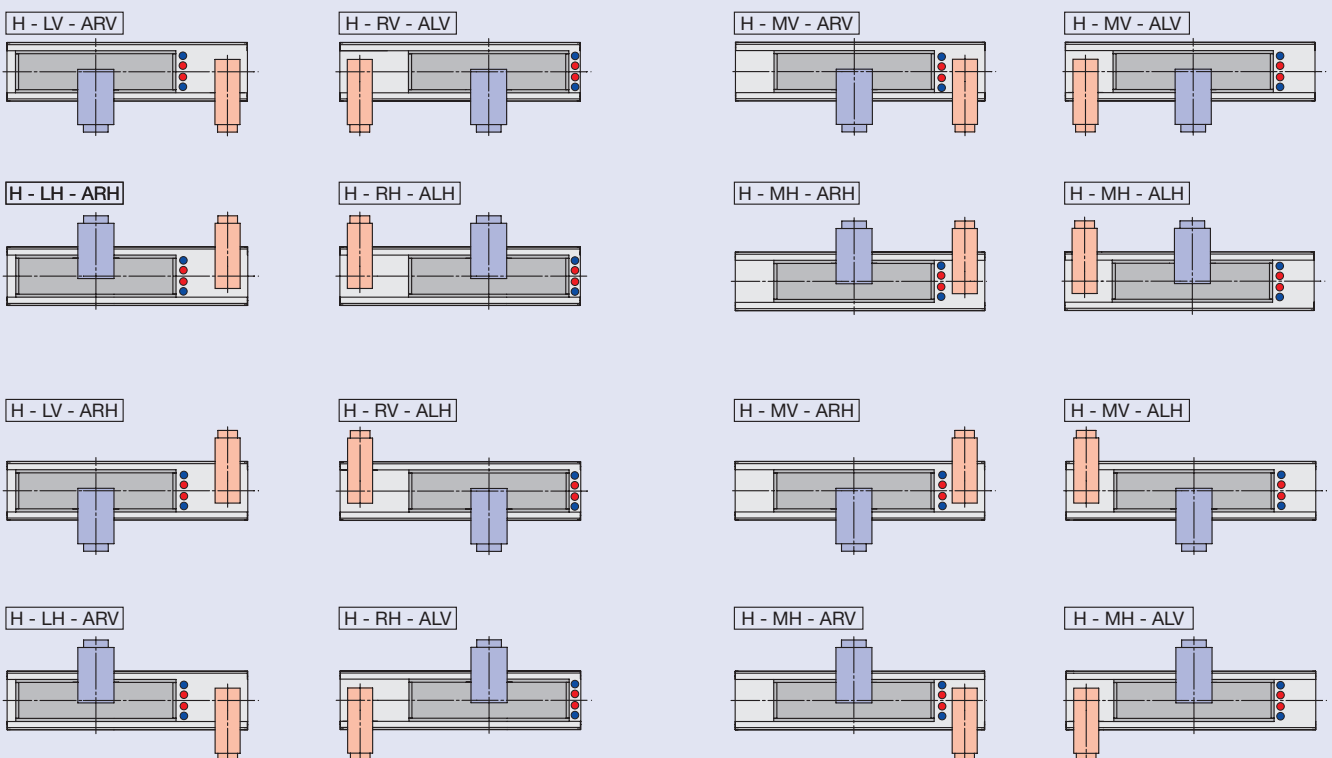
## Casing arrangement with side entry supply air spigot



## Casing arrangement with top entry supply and extract air spigot



## Casing arrangement with side entry supply and extract air spigot



		V - S	H - SV	H - SH			
Supply air		Arrangement of the top active plenum					
		Extends over total length (standard)					
L <sub>N</sub>	L <sub>H</sub>	L <sub>L</sub>		L <sub>R</sub>		L <sub>1</sub>	
		min	max	min	max	min	max
900	800	40	43	54	58	893	900
1200	1100	40	43	54	58	1193	1200
1500	1400	40	43	54	58	1493	1500
1800	1700	40	43	54	58	1793	1800
2100	2000	40	43	54	58	2093	2100
2400	2300	40	43	54	58	2393	2400
2700	2600	40	43	54	58	2693	2700
3000	2900	40	43	54	58	2993	3000

		V - L	H - LV	H - LH			
Supply air		Arrangement of the top active plenum (plenum shorter than L <sub>1</sub> )					
		left					
L <sub>N</sub>	L <sub>H</sub>	L <sub>L</sub>	L <sub>R</sub>		L <sub>1</sub>		
			min	max	min	max	
900	800	43	58	658	901	1500	
1200	1100	43	58	658	1201	1800	
1500	1400	43	58	658	1501	2100	
1800	1700	43	58	658	1801	2400	
2100	2000	43	58	658	2101	2700	
2400	2300	43	58	658	2401	3000	
2700	2600	43	58	358	2701	3000	

		V - M	H - MV	H - MH			
Supply air		Arrangement of the top active plenum (plenum shorter than L <sub>1</sub> )					
		middle					
L <sub>N</sub>	L <sub>H</sub>	L <sub>1</sub>					
		min		max			
900	800	901		1500			
1200	1100	1201		1800			
1500	1400	1501		2100			
1800	1700	1801		2400			
2100	2000	2101		2700			
2400	2300	2401		3000			
2700	2600	2701		3000			

		V - R	H - RV	H - RH			
Supply air		Arrangement of the top active plenum (plenum shorter than L <sub>1</sub> )					
		right					
L <sub>N</sub>	L <sub>H</sub>	L <sub>L</sub>		L <sub>R</sub>		L <sub>1</sub>	
		min	max	min	max	min	max
900	800	43	643	58	901	1500	
1200	1100	43	643	58	1201	1800	
1500	1400	43	643	58	1501	2100	
1800	1700	43	643	58	1801	2400	
2100	2000	43	643	58	2101	2700	
2400	2300	43	643	58	2401	3000	
2700	2600	43	343	58	2701	3000	

For construction and casing arrangements see pages 3 and 4

		V - L - AR	H - LV - ARV	H - LH - ARV			
Supply and extract air		Arrangement of the top active plenum (plenum shorter than L <sub>1</sub> )					
		left					
L <sub>N</sub>	L <sub>H</sub>	L <sub>L</sub>	L <sub>R</sub>		L <sub>1</sub>		
			min	max	min	max	
900	800	43	253	658	1096	1500	
1200	1100	43	253	658	1396	1800	
1500	1400	43	253	658	1696	2100	
1800	1700	43	253	658	1996	2400	
2100	2000	43	253	658	2296	2700	
2400	2300	43	253	658	2596	3000	
2700	2600	43	253	358	2896	3000	

		V - M - AL	H - MV - ALV	H - MV - ARV	H - MH - ALV	H - MH - ARV	
Supply and extract air		Arrangement of the top active plenum (plenum shorter than L <sub>1</sub> )					
		middle					
L <sub>N</sub>	L <sub>H</sub>	L <sub>1</sub>					
		min		max			
900	800	1290		1800			
1200	1100	1590		1800			
1500	1400	1890		2100			
1800	1700	2190		2400			
2100	2000	2490		2700			
2400	2300	2790		3000			

		V - R - AL	H - RV - ALV	H - RH - ALV			
Supply and extract air		Arrangement of the top active plenum (plenum shorter than L <sub>1</sub> )					
		right					
L <sub>N</sub>	L <sub>H</sub>	L <sub>L</sub>		L <sub>R</sub>		L <sub>1</sub>	
		min	max	min	max	min	max
900	800	238	643	58	1095	1500	
1200	1100	238	643	58	1395	1800	
1500	1400	238	643	58	1695	2100	
1800	1700	238	643	58	1995	2400	
2100	2000	238	643	58	2295	2700	
2400	2300	238	643	58	2595	3000	
2700	2600	238	343	58	2895	3000	

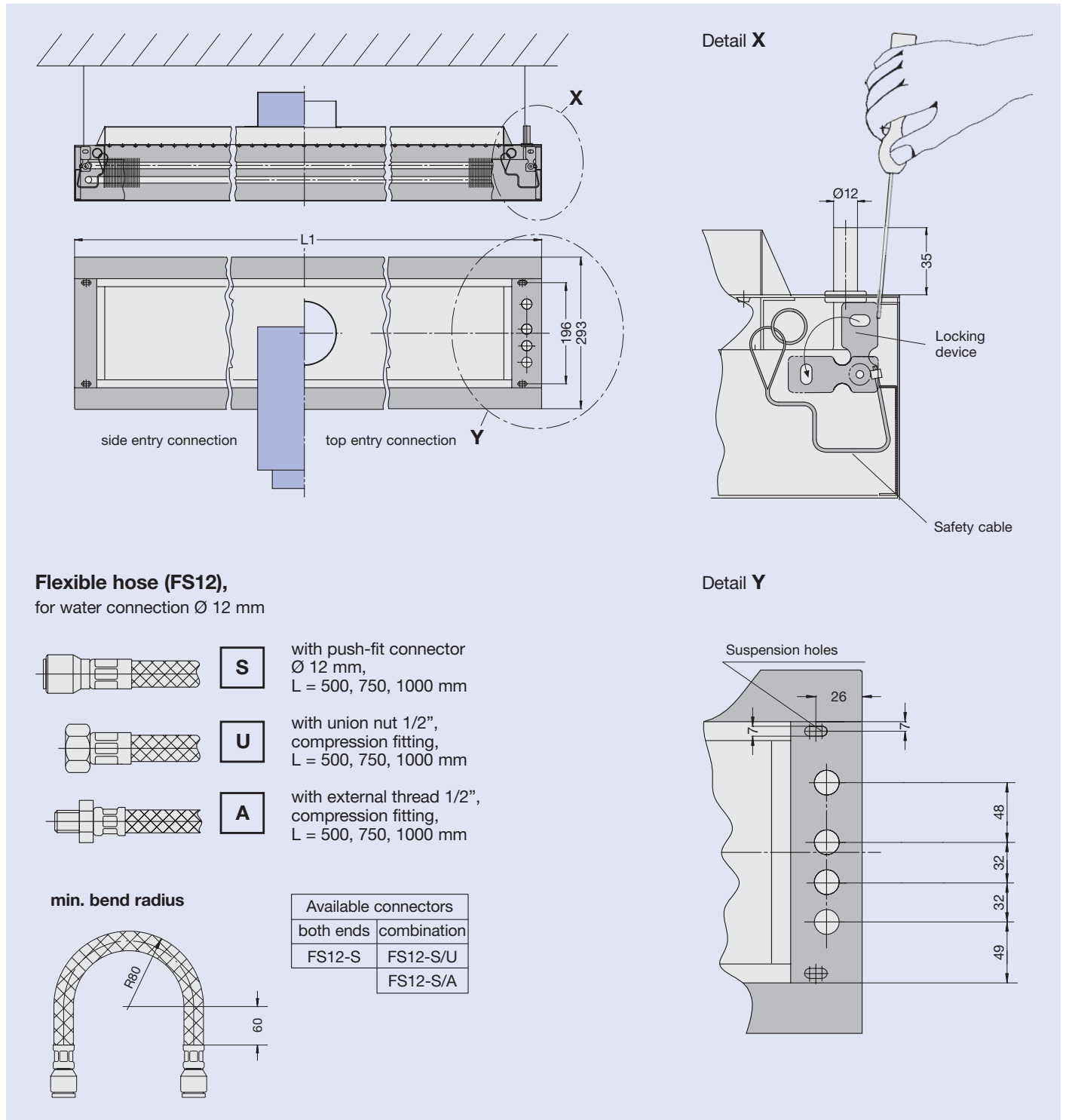
All dimensions in mm with normal tolerances for sheet construction!

# Assembly

## Assembly

The two long sides of the DID300B are each provided with two suspension holes or for  $L_1 = 1500$  4 holes are provided on each side. The assembly is installed on site using wire or metal hangers which must have the Building Authority certificate of approval. When the DID300B has been installed, 4 locking devices can be loosened with a screw driver (detail X) and the whole induction grille can be lowered down lengthways. The induction grille is supported by two safety cables.

The coil is accessible when the induction grille is removed. The coil connections are on the outside of the DID300B unit. The connection options to the flow and return pipes are, solid soldered, push fit or compression fittings (internal or external threaded end fittings). The air connection is either from the side or from the top, depending on the construction.



- The DID300B unit is fitted with a border extrusion which is suitable for the usual range of ceiling constructions. This ensures the best possible ceiling design.

## Installation into grid ceilings

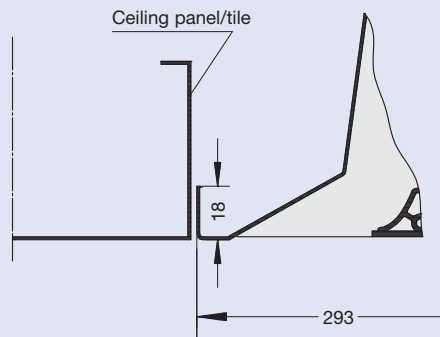
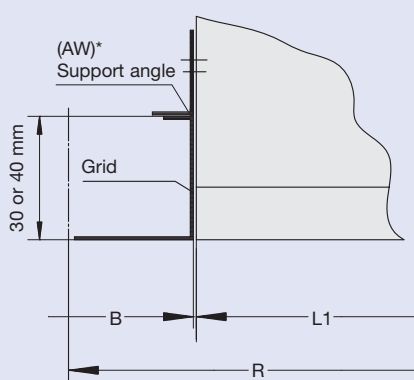
The DID300B can be installed on site at the ends using the support angles which are available as an accessory. The support angles are supplied loose and can be fitted as appropriate for the grid on site. With this method it is no longer necessary to level the DID300B units.

## Installation in T-bar ceilings or closed ceilings

These options allow for installation in a visible T-bar ceiling arrangement or in plasterboard or other closed ceiling systems.

Weight relative to the stability of the construction must be taken off the ceiling. Suspension holes are provided for this. The same also applies to preventing the units themselves from sagging.

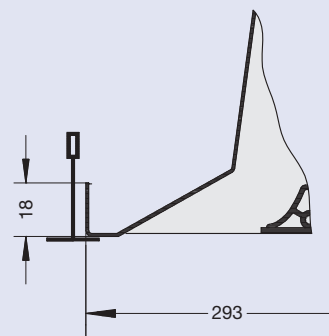
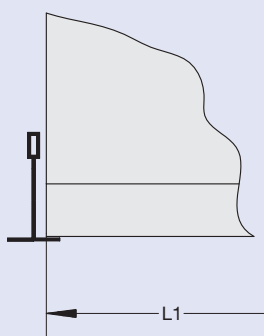
### Installation in grid ceilings



B = Grid width  
R = Grid pitch

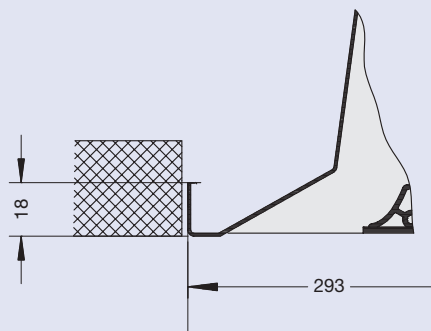
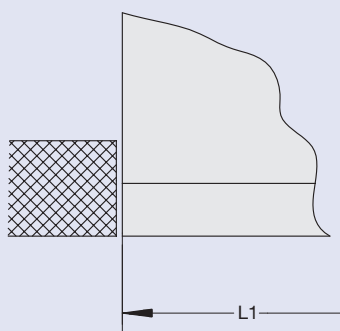
\* Support angle (AW) can be supplied loose

### Installation in T-bar ceilings



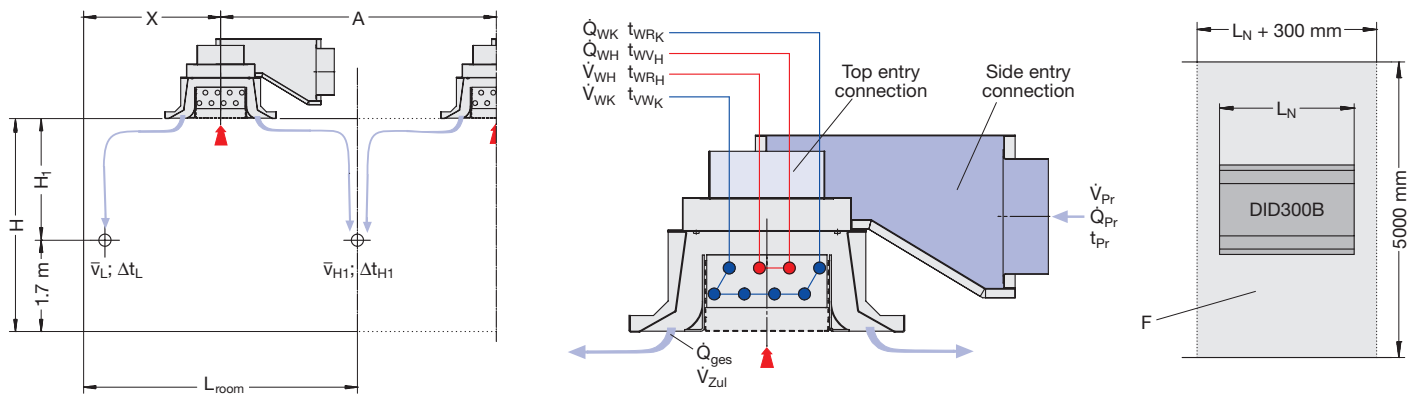
Depending on the quality of the room air, there is the possibility of dust deposits as with all room air induction units. If necessary the unit can be cleaned with ordinary, non-aggressive household cleaners. The coil can be cleaned with an industrial vacuum cleaner.

### Installation in plasterboard ceilings or closed ceilings



(See also VDI 6022, page 1 – “Hygiene requirements for room air-conditioning systems”)

# Nomenclature



$\Delta t_L$	in K:	Temp. diff. between room air $t_R$ and core $t_L$ at distance $L = X + H_1$
$\Delta t_{H1}$	in K:	Temp. diff. between room air $t_R$ and core $t_{H1}$ at distance $L = A/2 + H_1$
$\Delta t_{Pr}$	in K:	Temp. diff. between room air and primary air
$\Delta t_z$	in K:	Temp. diff. between room air and supply air into space
$\Delta t_W$	in K:	Water temperature difference
$\Delta t_{RWV}$	in K:	Temp. diff. between room air and water flow temperature
$\Delta p_t$	in Pa:	Primary air pressure drop
$\Delta p_W$	in kPa:	Water pressure drop
$t_R$	in °C:	Room temperature
$t_{WVK}$	in °C:	Water flow temperature – cooling
$t_{WRK}$	in °C:	Water return temperature – cooling
$t_{WVH}$	in °C:	Water flow temperature – heating
$t_{WRH}$	in °C:	Water return temperature – heating
$t_{Pr}$	in °C:	Primary air temperature
$\dot{Q}_{WK}$	in W:	Water cooling capacity
$\dot{Q}_{WH}$	in Watt:	Water heating capacity
$\dot{Q}_{ges}$	in Watt:	Total cooling capacity $\dot{Q}_{Pr} + \dot{Q}_S$
$\dot{Q}_{Pr}$	in Watt:	Primary air cooling capacity
$\dot{Q}_S$	in Watt:	Water side thermal capacity (for cooling $\dot{Q}_S = \dot{Q}_{WK}$ , for heating $\dot{Q}_S = \dot{Q}_{WH}$ )
$\dot{q}_{Zul}$	in W/m <sup>2</sup> :	Specific cooling capacity based on reference area F
$\dot{V}_{WK}$	in l/h:	Water volume flow rate – cooling
$\dot{V}_{WH}$	in l/h:	Water volume flow rate – heating
$\dot{V}_{Zul}$	in l/s:	Supply air volume flow rate to space
$\dot{V}_{Pr}$	in l/s:	Primary air volume flow rate
$\bar{v}_L$	in m/s:	Time average air velocity at distance L
$\bar{v}_{H1}$	in m/s:	Time average air velocity at distance $A/2 + H_1$
$L_{WA}$	in dB(A):	A-weighted sound power level
A	in m:	Spacing between 2 diffusers
L	in m:	Horizontal plus vertical distance from diffuser, discharge down the wall $L = X + H_1$
$X_{krit}$	in m:	Horizontal distance from diffuser at which the supply air begins to separate from ceiling
$H_1$	in m:	Distance ceiling - occupied zone
H	in m:	Room height or height of installation
X	in m:	Distance from diffuser centre line to the wall
$L_N$	in mm:	Nominal length
F	in m <sup>2</sup> :	Reference area $(L_N + 0.3) \times 5$

# Performance overview – cooling

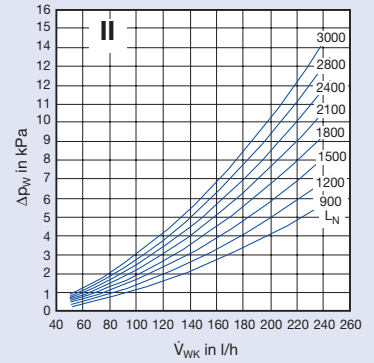
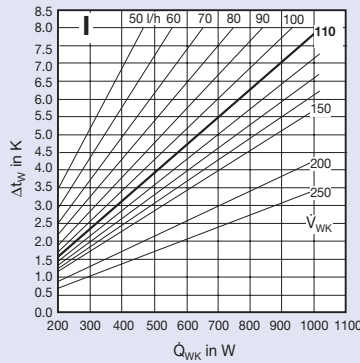
## with 2-pipe and 4-pipe system

### Correction factors

$\dot{V}_{WK}$ in l/h		50	70	90	110	140	180	200	250
$L_N$	900	0.71	0.85	0.94	1.00	1.07	1.12	1.14	1.18
	1200	0.69	0.83	0.93	1.00	1.07	1.14	1.15	1.20
	1500	0.68	0.82	0.93	1.00	1.08	1.15	1.18	1.23
	1800	0.67	0.81	0.92	1.00	1.09	1.16	1.19	1.25
	2100	0.55	0.67	0.76	0.83	0.90	0.97	1.00	1.05
	2400	0.53	0.66	0.75	0.82	0.90	0.97	1.00	1.05
	2700	0.52	0.64	0.74	0.81	0.89	0.97	1.00	1.05
	3000	0.51	0.63	0.73	0.80	0.89	0.97	1.00	1.05

### Reference values

$t_{WVK} = t_{Pr} = 16^\circ\text{C}$   
 $\dot{V}_{WK} = 110 \text{ l/h}$  ( $L_N$  900 up to 1800)  
 $\dot{V}_{WK} = 200 \text{ l/h}$  ( $L_N$  2100 up to 3000)  
 $\Delta t_{Pr} = t_{Pr} - t_R = -10 \text{ K}$   
 $\Delta t_{RWV} = t_{WVK} - t_R = -10 \text{ K}$



$L_N$	Type of nozzles	$\dot{V}_{Pr}$		$\dot{Q}_{Pr}$ (air) watts	$\dot{Q}_S$ (water) watts	$\dot{Q}_{ges}$ watts	$\Delta t_W$ K	$\dot{q}_{Zul}$ W/m <sup>2</sup>	$\dot{V}_{Pr}/m^2$		$L_{WA}$ entry from top dB(A)	entry from side dB(A)	$\Delta P_1$ (air) Pa	$\Delta P_W$ (water) kPa
		l/s	m <sup>3</sup> /h						l/(s·m <sup>2</sup> )	m <sup>3</sup> /(h·m <sup>2</sup> )				
900	K	3	11	36	116	152	0.9	25	0.5	1.8	< 20	< 20	29	1.3
		7	25	84	256	340	2.0	57	1.2	4.2	32.5	32.5	156	
		11	40	133	324	457	2.5	76	1.8	6.6	45.1	45.1	386	
	M	6	22	72	156	229	1.2	38	1.0	3.6	< 20	< 20	24	
		13	47	157	291	448	2.3	75	2.2	7.8	34.0	35.0	112	
		19	68	229	352	581	2.7	97	3.2	11.4	44.6	45.6	239	
	G	11	40	133	201	334	1.6	56	1.8	6.6	< 20	20.8	25	
		19	68	229	295	524	2.3	87	3.2	11.4	32.0	36.0	75	
		27	97	326	351	676	2.7	113	4.5	16.2	41.7	45.7	151	
1200	K	3	11	36	79	115	0.6	15	0.4	1.4	< 20	< 20	17	1.7
		8	29	96	303	399	2.4	53	1.1	3.8	31.4	31.4	124	
		13	47	157	399	556	3.1	74	1.7	6.2	44.9	44.9	326	
	M	8	29	96	202	298	1.6	40	1.1	3.8	< 20	< 20	24	
		15	54	181	347	528	2.7	70	2.0	7.2	33.1	34.1	85	
		23	83	277	437	714	3.4	95	3.1	11.0	45.0	46.0	201	
	G	15	54	181	267	448	2.1	60	2.0	7.2	22.5	26.5	28	
		23	83	277	363	640	2.8	85	3.1	11.0	34.4	38.4	65	
		30	108	362	418	780	3.3	104	4.0	14.4	41.8	45.8	110	
1500	K	4	14	48	113	161	0.9	18	0.4	1.6	< 20	< 20	21	2.0
		9	32	109	342	451	2.7	50	1.0	3.6	30.9	30.9	106	
		15	54	181	466	647	3.6	72	1.7	6.0	45.1	45.1	294	
	M	10	36	121	245	366	1.9	41	1.1	4.0	< 20	< 20	25	
		18	65	217	412	629	3.2	70	2.0	7.2	34.4	35.4	80	
		26	94	314	504	818	3.9	91	2.9	10.4	44.6	45.6	167	
	G	19	68	229	329	559	2.6	62	2.1	7.6	26.9	30.9	30	
		25	90	301	404	706	3.2	78	2.8	10.0	34.5	38.5	51	
		32	115	386	468	854	3.7	95	3.6	12.8	41.4	45.4	84	
1800	K	5	18	60	146	206	1.1	20	0.5	1.7	< 20	< 20	24	2.3
		11	40	133	406	539	3.2	51	1.0	3.8	34.3	33.3	115	
		17	61	205	527	732	4.1	70	1.6	5.8	46.5	45.5	275	
	M	12	43	145	287	432	2.2	41	1.1	4.1	< 20	21.0	25	
		21	76	253	472	725	3.7	69	2.0	7.2	34.5	36.5	76	
		29	104	350	565	915	4.4	87	2.8	9.9	43.5	45.5	146	
	G	22	79	265	374	639	2.9	61	2.1	7.5	26.1	32.1	28	
		29	104	350	462	811	3.6	77	2.8	9.9	33.8	39.8	49	
		36	130	434	526	960	4.1	91	3.4	12.3	39.8	45.8	76	
2100	K	6	22	72	199	271	0.9	23	0.5	1.8	< 20	< 20	26	7.6
		12	43	145	515	660	2.2	55	1.0	3.6	34.1	33.1	105	
		18	65	217	681	898	2.9	75	1.5	5.4	45.4	44.4	236	
	M	14	50	169	377	546	1.6	45	1.2	4.2	20.6	22.6	25	
		23	83	277	609	886	2.6	74	1.9	6.9	34.4	36.4	68	
		32	115	386	750	1136	3.2	95	2.7	9.6	43.6	45.6	132	
	G	26	94	314	503	817	2.2	68	2.2	7.8	29.2	35.2	30	
		32	115	386	598	984	2.6	82	2.7	9.6	35.0	41.0	46	
		38	137	458	673	1131	2.9	94	3.2	11.4	39.8	45.8	64	
2400	K	7	25	84	235	319	1.0	24	0.5	1.9	< 20	< 20	28	8.5
		13	47	157	555	711	2.4	53	1.0	3.5	34.1	33.1	98	
		19	68	229	729	958	3.1	71	1.4	5.1	44.7	43.7	208	
	M	16	58	193	425	618	1.8	46	1.2	4.3	22.0	24.0	25	
		25	90	301	659	961	2.8	71	1.9	6.7	34.5	36.5	62	
		34	122	410	807	1217	3.5	90	2.5	9.1	43.0	45.0	115	
	G	30	108	362	571	933	2.5	69	2.2	8.0	31.9	37.9	31	
		35	126	422	650	1072	2.8	79	2.6	9.3	36.2	42.2	43	
		40	144	482	715	1198	3.1	89	3.0	10.7	39.9	45.9	56	
2700	K	8	29	96	270	366	1.2	24	0.5	1.9	< 20	< 20	30	9.3
		14	50	169	592	761	2.5	51	0.9	3.4	34.2	33.2	92	
		21	76	253	797	1050	3.4	70	1.4	5.0	45.5	44.5	207	
	M	18	65	217	471	688	2.0	46	1.2	4.3	23.3	25.3	26	
		27	97	326	707	1033	3.0	69	1.8	6.5	34.6	36.6	58	
		37	133	446	873	1319	3.8	88	2.5	8.9	43.4	45.4	108	
	G	34	122	410	637	1047	2.7	70	2.3	8.2	34.2	40.2	33	
		37	133	446	684	1131	2.9	75	2.5	8.9	36.6	42.6	39	
		41	148	494	741	1235	3.2	82	2.7	9.8	39.4	45.4	47	
3000	K	9	32	109	304	413	1.3	25	0.5	2.0	20.1	< 20	32	10.2
		16	58	193	664	857	2.9	52	1.0	3.5	36.1	35.1	100	
		23	83	277	863	1140	3.7	69	1.4	5.0	46.2	45.2	207	
	M	20	72	241	517	758	2.2	46	1.2	4.4	24.4	26.4	26	
		30	108	362	773	1135	3.3	69	1.8	6.5	35.7	37.7	58	
		39	140	470	922	1393	4.0	84	2.4	8.5	43.0	45.0	98	
	G	38	137	458	701	1159	3.0	70	2.3	8.3	36.3	42.3	34	
		40	144	482	732	1214	3.1	74	2.4	8.7	37.7	43.7	37	
		43	155	518	775	1294	3.3	78	2.6	9.4	39.7	45.7	43	

# Performance overview – heating

with 4-pipe system

## Correction factors

$\dot{V}_{WH}$ in l/h		30	50	70	90	110	130	150
$L_N$	900	0.70	1.00	1.18	1.30	1.38	1.44	1.49
	1200	0.70	1.00	1.19	1.32	1.41	1.47	1.52
	1500	0.69	1.00	1.20	1.34	1.43	1.50	1.56
	1800	0.69	1.00	1.21	1.35	1.45	1.53	1.59
	2100	0.47	0.68	0.83	0.93	1.00	1.06	1.10
	2400	0.46	0.67	0.82	0.93	1.00	1.06	1.10
	2700	0.45	0.67	0.81	0.92	1.00	1.06	1.11
	3000	0.44	0.66	0.81	0.92	1.00	1.06	1.11

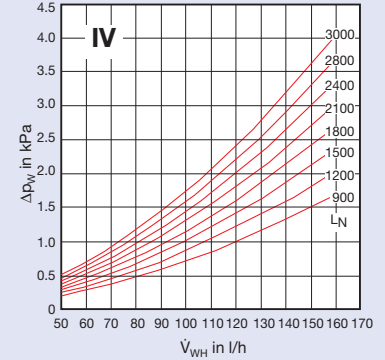
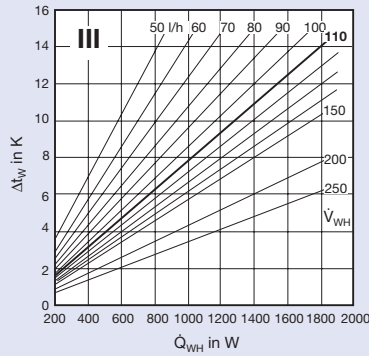
## Reference values

$t_R = t_{Pr} = 22\text{ °C}$  (isothermal)

$\dot{V}_{WH} = 50\text{ l/h}$  ( $L_N$  900 up to 1800)

$\dot{V}_{WH} = 110\text{ l/h}$  ( $L_N$  2100 up to 3000)

$\Delta t_{RWV} = t_{WH} - t_R = 28\text{ K}$

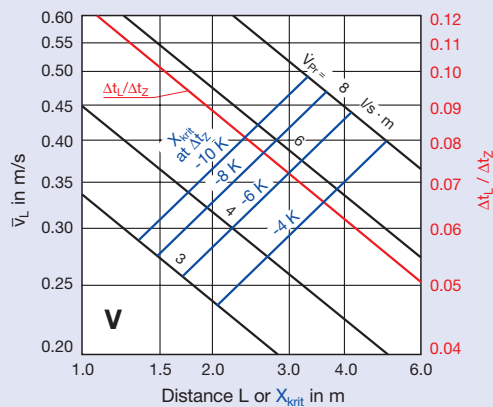


$L_N$	Type of nozzles	$\dot{V}_{Pr}$		$\dot{Q}_S = \dot{Q}_{ges}$ (water) watts	$\Delta t_W$ K	$\dot{q}_{Zul}$ W/m <sup>2</sup>	$\dot{V}_{Pr}/m^2$		$L_{WA}$ , entry from		$\Delta P_1$ (air) Pa	$\Delta P_W$ (water) kPa
		l/s	m <sup>3</sup> /h				l/(s·m <sup>2</sup> )	m <sup>3</sup> /(h·m <sup>2</sup> )	top dB(A)	side dB(A)		
900	K	3	11	184	3.2	31	0.5	1.8	< 20	< 20	29	0.12
		7	25	399	6.9	66	1.2	4.2	32.5	32.5	156	
		11	40	502	8.6	84	1.8	6.6	45.1	45.1	386	
	M	6	22	246	4.2	41	1.0	3.6	< 20	< 20	24	
		13	47	452	7.8	75	2.2	7.8	34.0	35.0	112	
		19	68	543	9.3	90	3.2	11.4	44.6	45.6	239	
	G	11	40	316	5.4	53	1.8	6.6	< 20	20.8	25	
		19	68	457	7.9	76	3.2	11.4	32.0	36.0	75	
		27	97	542	9.3	90	4.5	16.2	41.7	45.7	151	
1200	K	3	11	125	2.2	17	0.4	1.4	< 20	< 20	17	0.14
		8	29	469	8.1	63	1.1	3.8	31.4	31.4	124	
		13	47	613	10.5	82	1.7	6.2	44.9	44.9	326	
	M	8	29	316	5.4	42	1.1	3.8	< 20	< 20	24	
		15	54	536	9.2	72	2.0	7.2	33.1	34.1	85	
		23	83	668	11.5	89	3.1	11.0	45.0	46.0	201	
	G	15	54	416	7.2	55	2.0	7.2	22.5	26.5	28	
		23	83	559	9.6	75	3.1	11.0	34.4	38.4	65	
		30	108	642	11.0	86	4.0	14.4	41.8	45.8	110	
1500	K	4	14	178	3.1	20	0.4	1.6	< 20	< 20	21	0.16
		9	32	529	9.1	59	1.0	3.6	30.9	30.9	106	
		15	54	711	12.2	79	1.7	6.0	45.1	45.1	294	
	M	10	36	383	6.6	43	1.1	4.0	< 20	< 20	25	
		18	65	632	10.9	70	2.0	7.2	34.4	35.4	80	
		26	94	767	13.2	85	2.9	10.4	44.6	45.6	167	
	G	19	68	509	8.8	57	2.1	7.6	26.9	30.9	30	
		25	90	621	10.7	69	2.8	10.0	34.5	38.5	51	
		32	115	714	12.3	79	3.6	12.8	41.4	45.4	84	
1800	K	5	18	229	3.9	22	0.5	1.7	< 20	< 20	24	0.18
		11	40	624	10.7	59	1.0	3.8	34.3	33.3	115	
		17	61	800	13.8	76	1.6	5.8	46.5	45.5	275	
	M	12	43	446	7.7	43	1.1	4.1	< 20	21.0	25	
		21	76	720	12.4	69	2.0	7.2	34.5	36.5	76	
		29	104	854	14.7	81	2.8	9.9	43.5	45.5	146	
	G	22	79	575	9.9	55	2.1	7.5	26.1	32.1	28	
		29	104	705	12.1	67	2.8	9.9	33.8	39.8	49	
		36	130	798	13.7	76	3.4	12.3	39.8	45.8	76	
2100	K	6	22	379	3.0	32	0.5	1.8	< 20	< 20	26	0.85
		12	43	965	7.5	80	1.0	3.6	34.1	33.1	105	
		18	65	1264	9.9	105	1.5	5.4	45.4	44.4	236	
	M	14	50	711	5.6	59	1.2	4.2	20.6	22.6	25	
		23	83	1135	8.9	95	1.9	6.9	34.4	36.4	68	
		32	115	1388	10.8	116	2.7	9.6	43.6	45.6	132	
	G	26	94	943	7.4	79	2.2	7.8	29.2	35.2	30	
		32	115	1114	8.7	93	2.7	9.6	35.0	41.0	46	
		38	137	1249	9.8	104	3.2	11.4	39.8	45.8	64	
2400	K	7	25	446	3.5	33	0.5	1.9	< 20	< 20	28	0.93
		13	47	1037	8.1	77	1.0	3.5	34.1	33.1	98	
		19	68	1350	10.6	100	1.4	5.1	44.7	43.7	208	
	M	16	58	799	6.2	59	1.2	4.3	22.0	24.0	25	
		25	90	1226	9.6	91	1.9	6.7	34.5	36.5	62	
		34	122	1488	11.6	110	2.5	9.1	43.0	45.0	115	
	G	30	108	1066	8.3	79	2.2	8.0	31.9	37.9	31	
		35	126	1208	9.4	89	2.6	9.3	36.2	42.2	43	
		40	144	1326	10.4	98	3.0	10.7	39.9	45.9	56	
2700	K	8	29	512	4.0	34	0.5	1.9	< 20	< 20	30	1.02
		14	50	1104	8.6	74	0.9	3.4	34.2	33.2	92	
		21	76	1471	11.5	98	1.4	5.0	45.5	44.5	207	
	M	18	65	884	6.9	59	1.2	4.3	23.3	25.3	26	
		27	97	1311	10.3	87	1.8	6.5	34.6	36.6	58	
		37	133	1605	12.5	107	2.5	8.9	43.4	45.4	108	
	G	34	122	1185	9.3	79	2.3	8.2	34.2	40.2	33	
		37	133	1271	9.9	85	2.5	8.9	36.6	42.6	39	
		41	148	1371	10.7	91	2.7	9.8	39.4	45.4	47	
3000	K	9	32	576	4.5	35	0.5	2.0	20.1	< 20	32	1.11
		16	58	1235	9.7	75	1.0	3.5	36.1	35.1	100	
		23	83	1587	12.4	96	1.4	5.0	46.2	45.2	207	
	M	20	72	967	7.6	59	1.2	4.4	24.4	26.4	26	
		30	108	1428	11.2	87	1.8	6.5	35.7	37.7	58	
		39	140	1692	13.2	103	2.4	8.5	43.0	45.0	98	
	G	38	137	1299	10.2	79	2.3	8.3	36.3	42.3	34	
		40	144	1355	10.6	82	2.4	8.7	37.7	43.7	37	
		43	155	1432	11.2	87	2.6	9.4	39.7	45.7	43	

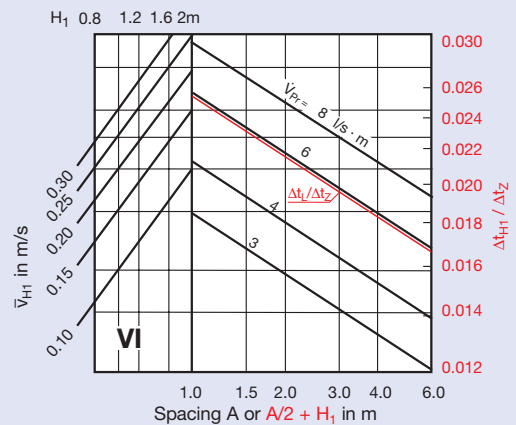
## Correction factors for diagram values depending on length of unit $L_N$

$L_N$ in mm	900	1200	1500	1800	2100	2400	2700	3000
$\bar{v}_L, \bar{v}_{H1}, X_{krit.}$ from diagram	0.92	0.96	1.0	1.04	1.07	1.11	1.14	1.17
$\Delta t_L, \Delta t_Z, \Delta t_{H1}/\Delta t_Z$ from diagram	0.87	0.94	1.0	1.05	1.09	1.13	1.17	1.20

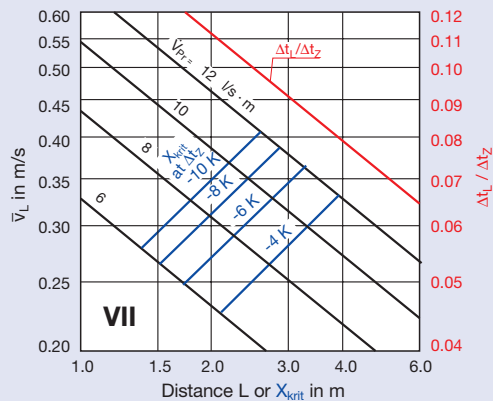
Nozzle type K



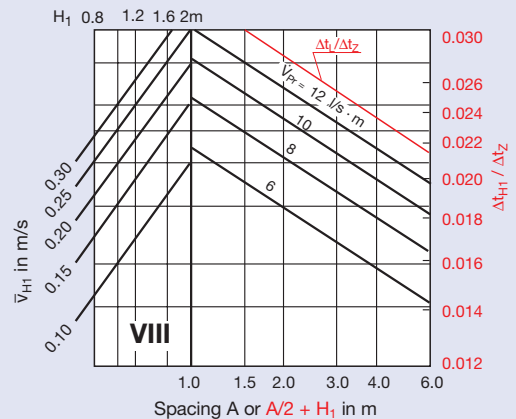
Nozzle type K



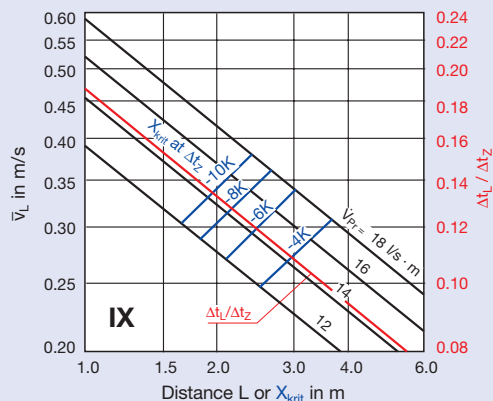
Nozzle type M



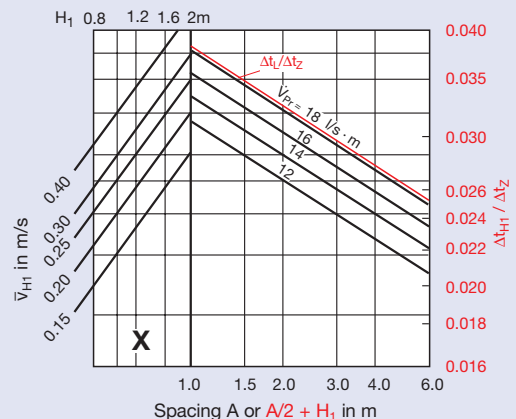
Nozzle type M



Nozzle type G



Nozzle type G



# Order details

## Specification text

The active chilled beam type DID300B is suitable for dealing with high internal heat loads using a combination of air and water. It consists of the top plenum which serves as primary air duct and a diaphragm plate with nozzles in two longitudinal rows (different nozzle sizes are available). A coil is fitted underneath the primary air plenum and diaphragm plate. The induction grille below the coil is a perforated plate. The coil can be used either for heating or cooling (2-pipe system) as well as heating and cooling (4-pipe system). The external diameter of the bare coil tube ends is 12 mm. Primary and conditioned induced air are mixed in the unit and discharged horizontally with coanda effect into the room via the two slots formed by the external frame and the internal extrusions. There are holes in the casing to enable the unit to be hung by the customer. A construction incorporating an extract air spigot can be provided. Spigots for supply and extract air can be either side or top mounted.

Support angles and flexible hoses are available as accessories for the DID300B unit.

### Materials

Casing, including the top plenum and perforated plate induction grille are made of galvanised steel sheet.

The standard finish of the casing and the induction grille is powder-coated white (RAL 9010), the top casing (plenum) and coil remain untreated – optionally can be finished in black (RAL 9005), nozzle plate only finished in black (RAL 9005).

The heat exchanger consists of copper tubes with formed aluminium fins. The flexible hose, available as an accessory, is made of special plastic with stainless steel sheathing.

## Order code

These codes do not need to be completed for standard products

**DID300B - 2 - K - H - SV - ALV** / **1800 x 1500** / **0** / **0** / **P1** / **RAL 9016** / **G3**

Coil:  
Two-pipe 2 }  
Four-pipe 4 }

Nozzle options:  
small K }  
medium M }  
large G }

Spigot and casing arrangements (see page 4) }

900 x 900
1200
1500
1800 <sup>1)</sup>
1200 x 1200
1500
1800
1500 x 1500
1800
2100
1800 x 1800
2100
2400
2100 x 2100
2400
2700
2400 x 2400
2700
3000
2700 x 2700
3000
3000 x 3000
$L_1 \times L_N$ (mm)

Not used

Coil finish:  
0 Standard untreated  
G3 Finished to RAL 9005

0 Standard finish Powder-coated to RAL 9010 (GE 50%)<sup>2)</sup>  
P1 Powder-coated to RAL... (GE 70%)<sup>2)</sup>

**Note:**  
 $L_1$  = 893 ... 3000 mm  
 $L_N$  only available in standard length  
 $L_1$  maximum 7 mm shorter than  $L_N$

<sup>1)</sup> For casing arrangement M, MV and MH  
<sup>2)</sup> GE = Gloss level

### Accessory:

FS12-... (see table)  
AW = Support angle

### Accessory: Flexible hose (FS12) (see page 6)

Available connectors		
both ends	combination	length in mm
FS12-S	FS12-S/U	500, 750, 1000
	FS12-S/A	

## Order example

Make: TROX

Type: DID300B-2-K-H-SV-ALV / 1800 x 1500 / P1 / RAL 9016 / G3