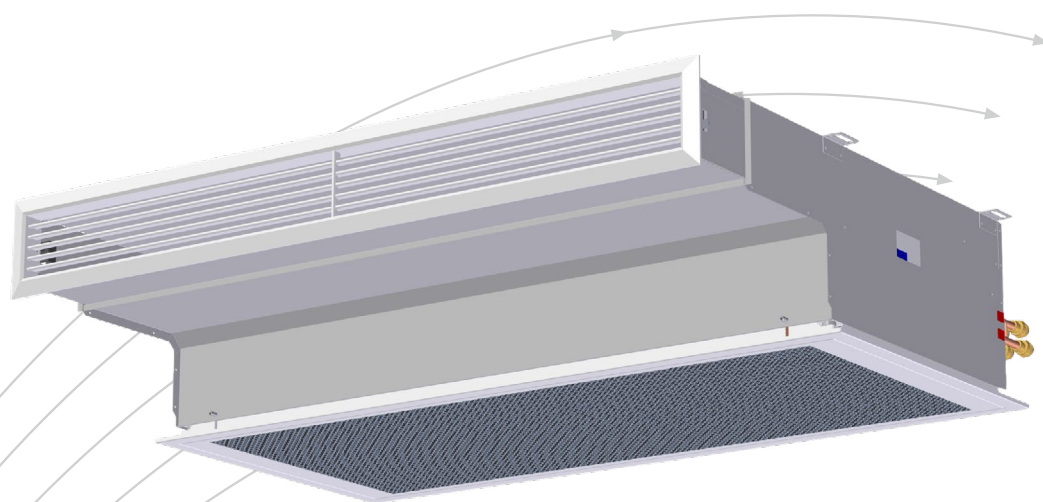


DID-E2 Nordic Edition

Active chilled beam



epd
NEPD-5906-5182

- Low air velocity in the occupied zone results in high comfort levels
- High heating and cooling capacity at lower air flow rates and sound levels
- Fixing points for various types of suspension and secondary air grille fastened with magnets



TROX

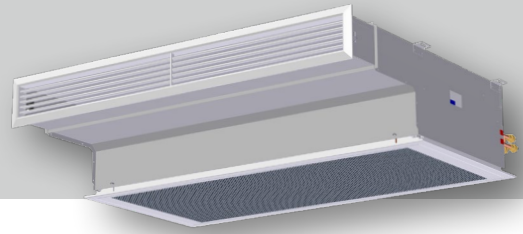
TROX Auranor AS

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DID-E2 Nordic Edition



APPLICATION

DID-E2 Nordic Edition is a chilled beam made especially for bulkhead applications, such as hospitals and hotel rooms. The beam is made for rooms up to 4 m high.

FUNCTION

Active chilled beams carries high cooling (or heating) capabilities by supplying primary (fresh) air from the ventilation system, and inducing air passing through a coil. The mixed air is then supplied to the room via the diffuser front and ensures comfort and low sound levels. By circulating cold water in the coil, cooling is supplied. By circulating hot water in the coil, warm air is supplied.

DESIGN

The coil for waterborne cooling and heating is delivered with two options: standard cooling and combined heating and cooling with two circuits. A suspendable perforated underplate simplifies the cleaning of the coil. The connection for primary air is Ø125 mm or Ø160 mm spiral duct. Connection to water with a Ø12 mm copper pipe. DID-E2 NE has a 50 mm telescopic frame for the secondary grille, and a 150 mm telescopic frame for the frontal grille. The secondary grille is mounted with magnets to simplify the process of cleaning and maintenance of the coil.

MATERIALS AND SURFACES

DID-E2 Nordic Edition is manufactured using galvanized steel, corrosion grade C3. Heat/cooling coil consists of copper and aluminium, corrosion grade C3. The secondary grille is manufactured using galvanized steel and coated in our standard RAL 9003, gloss 30, corrosion grade C3. The frontal grille is manufactured using aluminium, coated in our standard RAL 9003, gloss 30, corrosion grade C3. Other colors available upon request.

ACCESSORIES

Ordered separately and delivered unattached.
Actuator for water valve: 24V, 230V or 24V modulating 0-10V signal

ORDER CODE, DID-E2 NORDIC EDITION

DID-E2-NE - 4 - S1 - BH - A1 - 1000x512x123 - B - 0

1 2 3 4 5 6 7 8

1. Type

DID-E2-Nordic Edition
Active chilled beam

2. Heating and cooling coil

2 = 2-pipe connection, cooling
4 = 4-pipe connection, heating/cooling

3. Nozzle size

S1 = Medium
S2 = Large
HP = Extra large
HPX = Ekstra pluss *

* Only for dimension 1000x512x158 and 1250x512x158

4. Water connection placing

BH = Water connected on right side of the back plate*
BL = Water connected on left side of back plate *
* When duct are side connected, the water connection will always be on opposite side of air connection

5. Water connections

0 = Plain pipe Ø12 mm
A1 = With ½" external threads
A2 = With ½" internal threads

* IMPORTANT: When selecting a side connection, the water connection will be on the opposite side.

If duct connection is chosen to be on RIGHT SIDE, the water connection will be on LEFT SIDE of back plate. If duct connection is chosen to be on the LEFT SIDE, the water connection will be on the RIGHT SIDE of back plate. When rear duct connection is chosen, the water connection can be chosen.

6. Dimension:

Nominal width x coil depth x duct connection [mm]
1000x512x123
1000x512x158
1250x512x123
1250x512x158

7. Duct connection

B = Rear connection
SH = Right side *
SV = Left side *

* When duct are side connected, the water connection will always be on opposite side of air connection

8. Surface of secondary air grille

0 = RAL 9003, gloss 30
SL = Special finish

ORDER CODE, FRONTAL GRILLE

AT-A - 945x125 - 0

1 2 3

1. Type

AT-A front grille

2. Dimension

945x125*
1195x125**

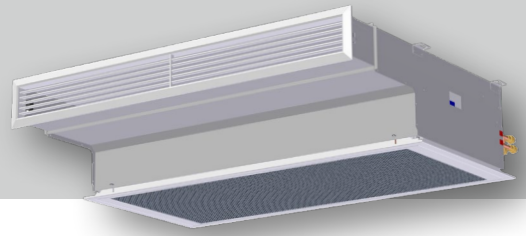
3. Surface

0 = RAL 9003, gloss 30
SL = Special finish

* Suitable for beam width 1000 mm

** Suitable for beam width 1250 mm

DID-E2 Nordic Edition



DIMENSIONS AND WEIGHTS, REAR CONNECTION

Dim.	D	F	K	L	Weight [kg]	Groove dimensions front grille	Groove dimensions secondary grille
1000x512x123	123	989	940	1000	26	945x125	945x520
1000x512x158	158	989	940	1000	26	945x125	945x520
1250x512x123	123	1239	1190	1250	33	1195x125	1195x520
1250x512x158	158	1239	1190	1250	33	1195x125	1195x520

Table 1. Dimensions and weights, rear connection.

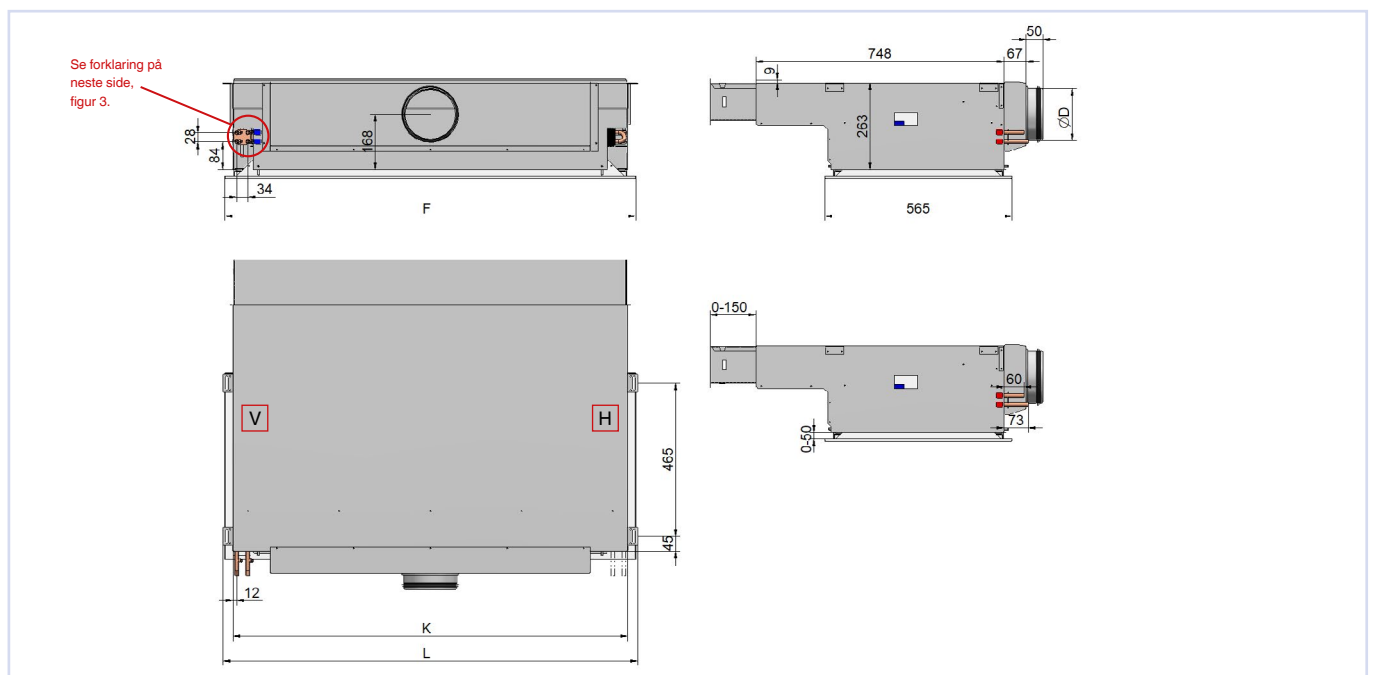


Figure 1. DID-E2 NE, measurement sketch backside (S1, S2 and HP).

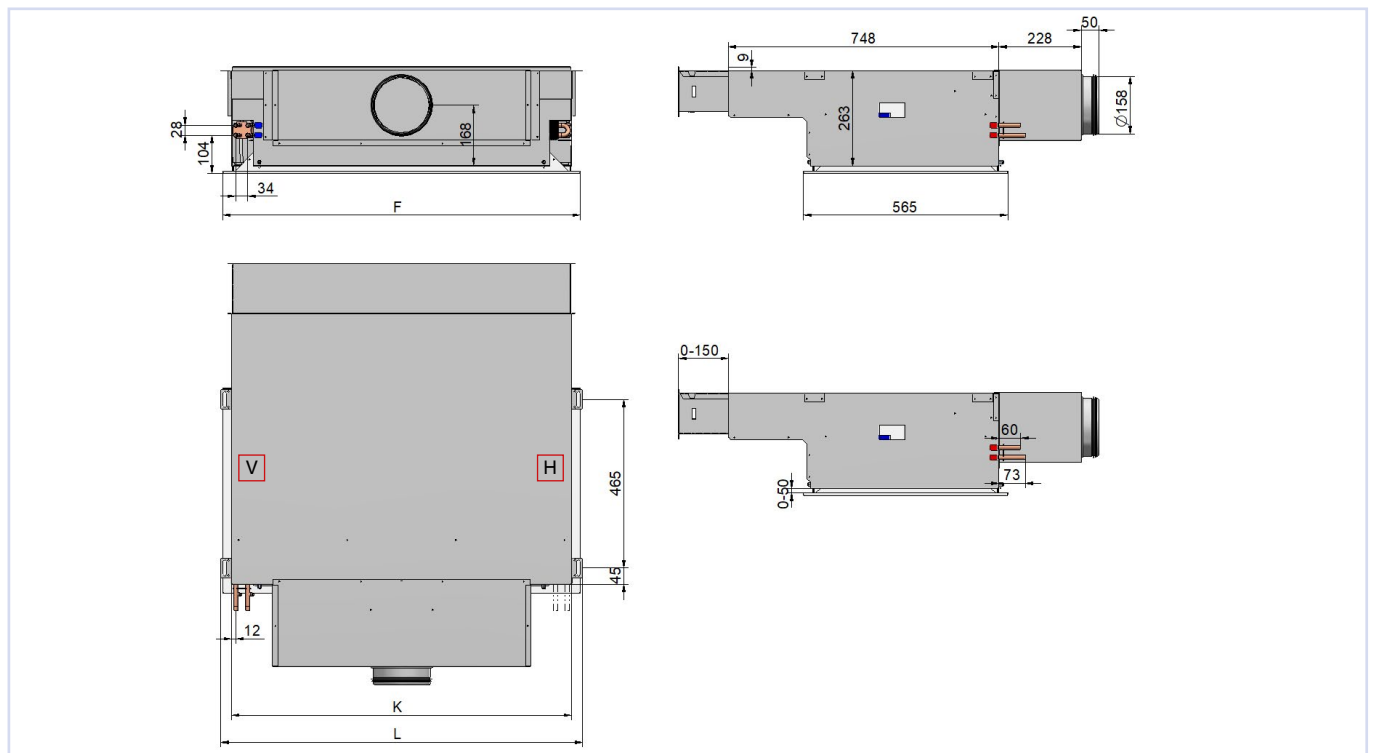


Figure 2, DID-E2 NE, measurement sketch backside (HPX)

DID-E2 Nordic Edition

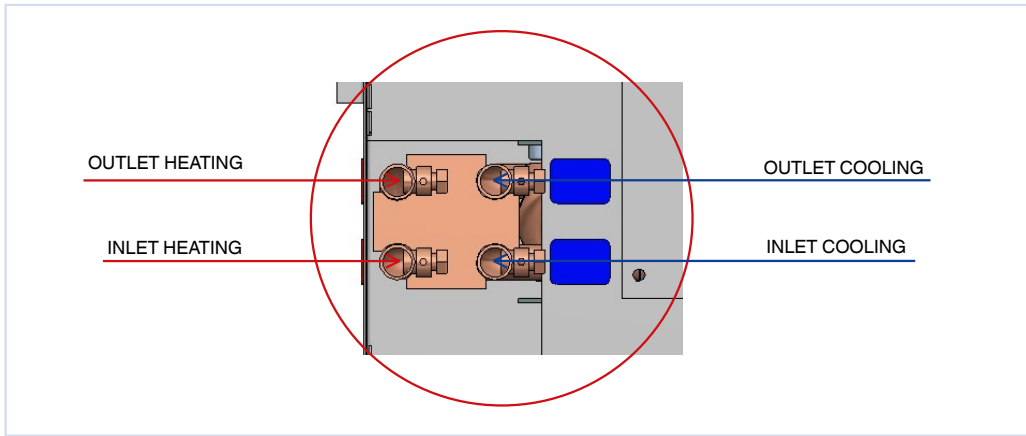


Figure 3, Magnification of heating and cooling circuits. With rear connection to air, the connection side “water” can be chosen.

DIMENSIONS AND WEIGHTS, SIDE

Dim.	D	F	K	L	Weight [kg]	Groove dimensions front grille	Groove dimensions secondary grille
1000x512x123	123	989	940	1000	28	945x125	945x520
1000x512x158	158	989	940	1000	28	945x125	945x520
1250x512x123	123	1239	1190	1250	35	1195x125	1195x520
1250x512x158	158	1239	1190	1250	35	1195x125	1195x520

Table 2. Dimensions and weights, side

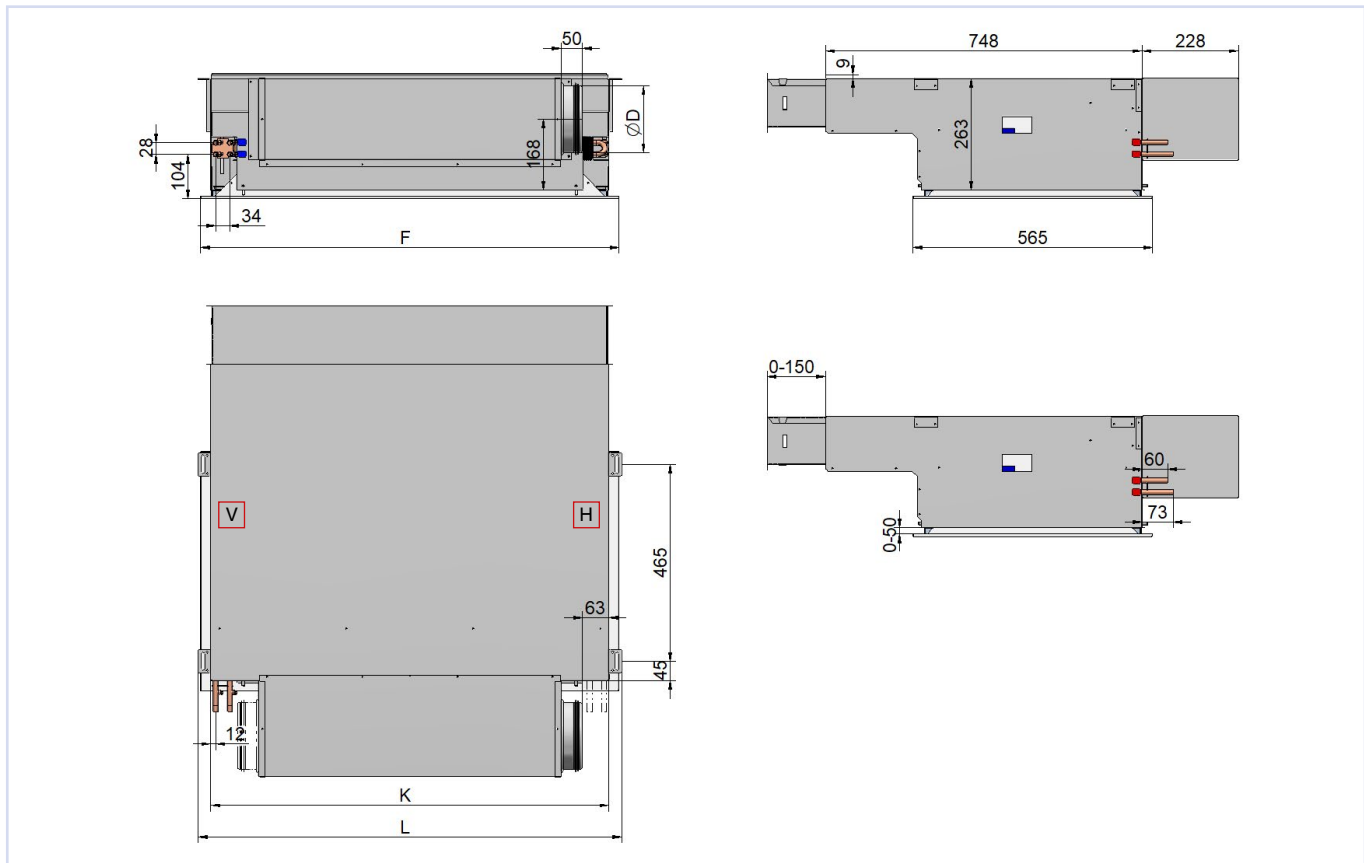


Figure 4. DID-E2 NE, measurement sketch side connection (figure show connection on the right side).

IMPORTANT: When you choose side connection, the water connection will be located on the opposite side. If you choose RIGHT SIDE (7) as the connection, the water connection will be located at BACK LEFT (4). If you choose LEFT SIDE (7) as the connection, the water connection will be located at BACK RIGHT (4).

DID-E2 Nordic Edition

DIMENSIONS AND WEIGHTS, FRONT GRILLE

Chilled beam Dim	B	Groove dimensions front grille	Weight [kg]
1000x512x123	972	945x125	1
1000x512x158	972	945x125	1
1250x512x123	1222	1195x125	1,3
1250x512x158	1222	1195x125	1,3

Table 3. Dimensions and weight, front grille

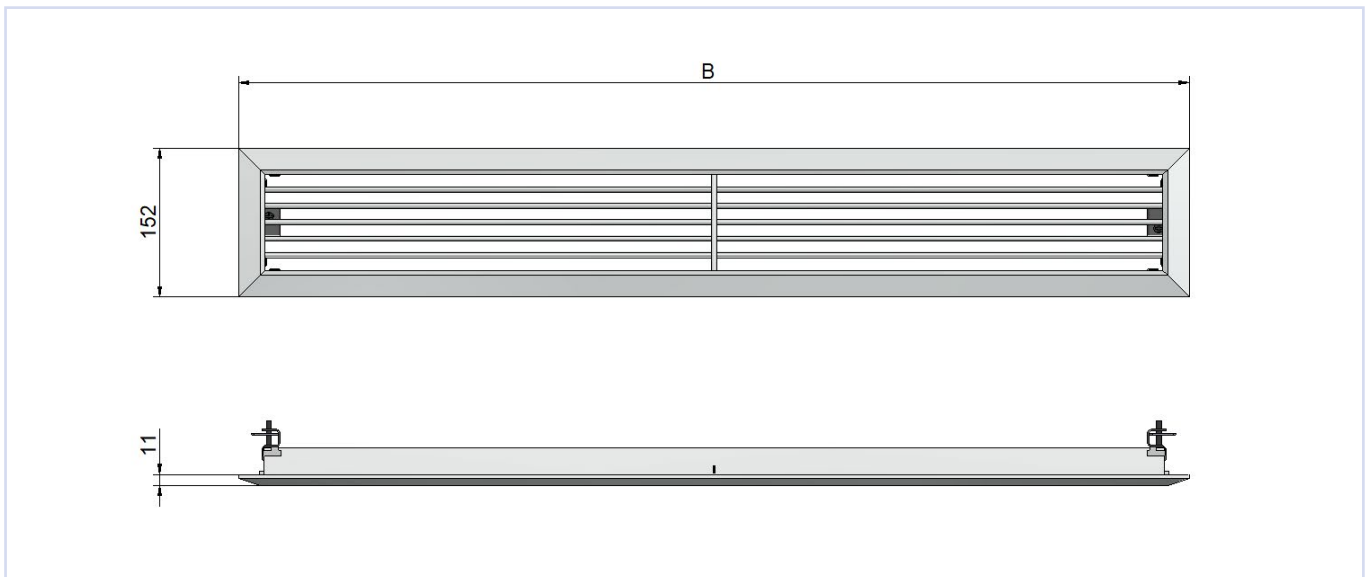


Figure 5, measurement sketch front grille

DID-E2 Nordic Edition

QUICK SELECTION, DID-E2 NORDIC EDITION Ø125

L_N	①	Primary air			②	Cooling				Heating		
		\dot{V}_{Pr}	\dot{V}_{Pr}	Δp_t	L_{WA}	2- and 4 pipe system				4 pipe system		
						\dot{Q}_{tot}	\dot{Q}_{WK}	Δt_W	Δp_W	$\dot{Q}_{tot} = \dot{Q}_W$	Δt_W	Δp_W
		l/s	m ³ /h	Pa	dB(A)	W	K	kPa	W	K	kPa	
1000	S1	13	47	60	<15	642	485	3,8	3,6	616	10,6	0,2
		15	54	80	16	720	539	4,2	3,6	664	11,4	0,2
		17	61	100	19	791	586	4,6	3,6	704	12,1	0,2
	S2	19	69	60	<15	774	543	4,2	3,6	648	11,2	0,2
		22	80	80	19	871	603	4,7	3,6	702	12,1	0,2
		25	89	100	22	942	644	5,0	3,6	739	12,7	0,2
	HP	28	100	60	23	904	570	4,5	3,6	708	12,2	0,2
		32	115	80	27	1011	626	4,9	3,6	757	13,0	0,2
		36	129	100	31	1101	669	5,2	3,6	795	13,7	0,2
1250	S1	16	59	60	<15	777	579	4,5	4,5	737	12,7	0,2
		19	68	80	19	873	645	5,0	4,5	792	13,6	0,2
		21	76	100	22	946	692	5,4	4,5	834	14,3	0,2
	S2	24	85	60	17	923	638	5,0	4,5	766	13,2	0,2
		27	98	80	21	1031	703	5,5	4,5	824	14,2	0,2
		30	109	100	24	1114	749	5,9	4,5	866	14,9	0,2
	HP	35	125	60	28	1093	675	5,3	4,5	840	14,4	0,2
		40	145	80	32	1227	741	5,8	4,5	897	15,4	0,2
		45	161	100	35	1324	785	6,1	4,5	936	16,1	0,2

Table 4. ① Nozzle variant

② Noise generated

Basis values

Parameter	Cooling	Heating
t_R	26 °C	22 °C
t_{Pr}	16 °C	22 °C
t_{wW}	16 °C	50 °C
\dot{V}_W	110 l/h	50 l/h

DID-E2 Nordic Edition

QUICK SELECTION, DID-E2 NORDIC EDITION Ø160

L _N	①	ØD (mm)	Primary air			② L _{WA} dB(A)	Cooling				Heating		
			Q _{Pr} l/s	Q _{Pr} m ³ /h	Δp _t Pa		2- and 4 pipe system				4 pipe system		
							Q _{tot} W	Q _{WK} W	Δt _w K	Δp _w kPa	Q _{TOT} W	Δt _w K	Δp _w kPa
1000	S1	125	13	47	60	<15	642	485	3,8	3,6	616	10,6	0,2
			15	54	80	16	720	539	4,2	3,6	664	11,4	0,2
			17	61	100	19	791	586	4,6	3,6	704	12,1	0,2
	S2	125	19	69	60	<15	774	543	4,2	3,6	648	11,2	0,2
			22	80	80	19	871	603	4,7	3,6	702	12,1	0,2
			25	89	100	22	942	644	5,0	3,6	739	12,7	0,2
	HP	125	28	100	60	23	904	570	4,5	3,6	708	12,2	0,2
			32	115	80	27	1011	626	4,9	3,6	757	13,0	0,2
			36	129	100	31	1101	669	5,2	3,6	795	13,7	0,2
	HPX	160	36	129	60	22	1057	625	4,9	3,6	753	13,0	0,2
			41	148	80	26	1176	681	5,3	3,6	801	13,8	0,2
			46	166	100	30	1280	725	5,7	3,6	1280	14,4	0,2
1250	S1	125	16	59	60	<15	777	579	4,5	4,5	737	12,7	0,2
			19	68	80	19	873	645	5,0	4,5	792	13,6	0,2
			21	76	100	22	946	692	5,4	4,5	834	14,3	0,2
	S2	125	24	85	60	17	923	638	5,0	4,5	766	13,2	0,2
			27	98	80	21	1031	703	5,5	4,5	824	14,2	0,2
			30	109	100	24	1114	749	5,9	4,5	866	14,9	0,2
	HP	125	35	125	60	28	1093	675	5,3	4,5	840	14,4	0,2
			40	145	80	32	1227	741	5,8	4,5	897	15,4	0,2
			45	161	100	35	1324	785	6,1	4,5	936	16,1	0,2
	HPX	160	48	172	60	24	1342	766	6,0	4,5	1131	15,7	0,2
			55	199	80	29	1495	829	6,5	4,5	1506	16,7	0,2
			62	222	100	32	1616	873	6,8	4,5	1570	1,4	0,2

Table 5. ① Nozzle variant

② Noise generated

Basis values

Parameter	Cooling	Heating
t _R	26 °C	22 °C
t _{Pr}	16 °C	22 °C
t _{wv}	16 °C	50 °C
Ṡ _w	110 l/h	50 l/h

DID-E2 Nordic Edition

EXPLANATION

Labels	Explanation
Δp_w [kPa]	Pressure drop, water side
Δp_i [Pa]	Total pressure loss, air
L_{WA} [dB(A)]	Sound effect
t_{Pr} [°C]	Temperature, supply air
t_{wv} [°C]	Water temperature - cooling/heating
t_R [°C]	Room temperature
\dot{Q}_{tot} [W]	Total effect - water and air
\dot{Q}_w [W]	Effect water side - cooling/heating
\dot{V}_{Pr} [l/s/m ³ /h]	Volume, supply air
\dot{V}_w [l/s]	Water volume - cooling/heating
Δt_w [K]	Temperature difference - water side
L_n [mm]	Nominal length

Table 6. Explanation of labels in quick selection. An exact calculation of all parameters can be done by using EPF.

ACUSTIC DOCUMENTATION - EASY PRODUCT FINDER

DID-E2 Nordic Edition

FLOW PATTERN

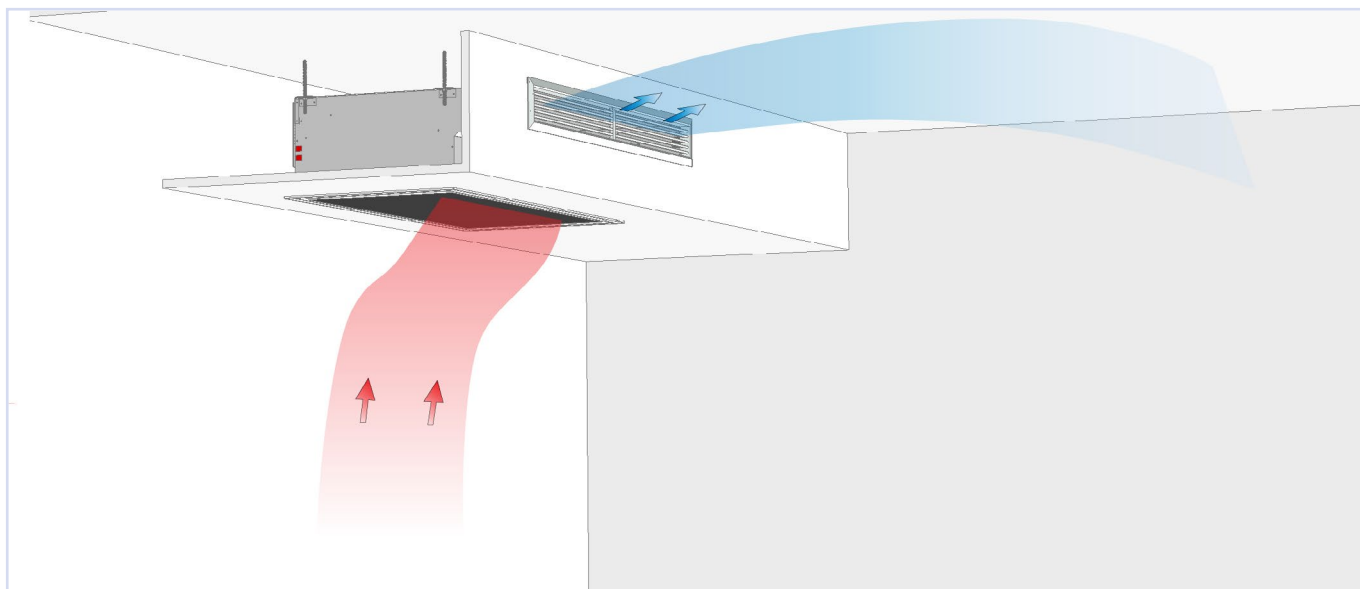


Figure 6. Flow pattern

INSTALLATION

IMPORTANT. To mount the beam in the roof, the telescopic frame for the front grille has to be taken out, and the secondary grille must be unmounted from the beam.

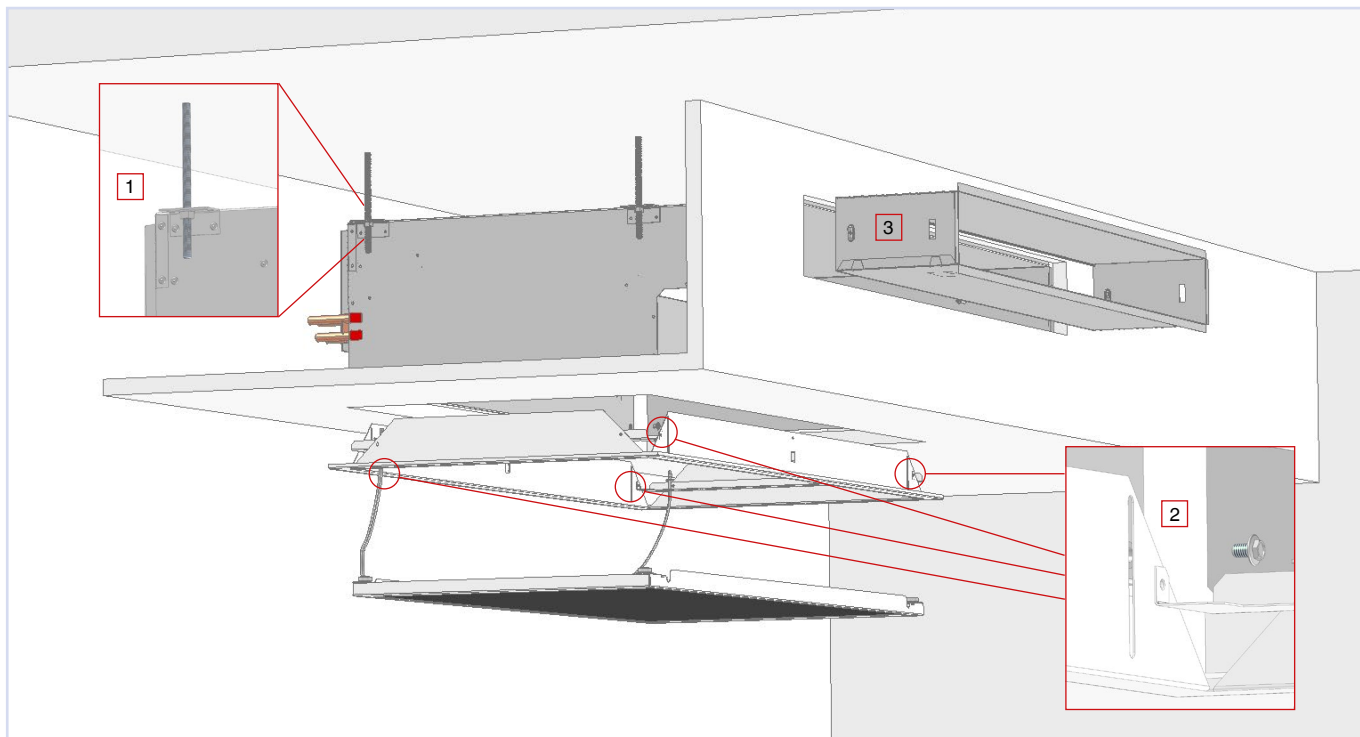


Figure 7. Installation.

DID-E2 NE has four mounting brackets for threaded rod (1). It is recommended to use impact anchors or similar when mounting in concrete.

(2) Secondary grille is mounted using four screws, one in each corner. (3) The telescopic frame is pushed into the baffle from the room side until it rests against the wall.

DID-E2 Nordic Edition

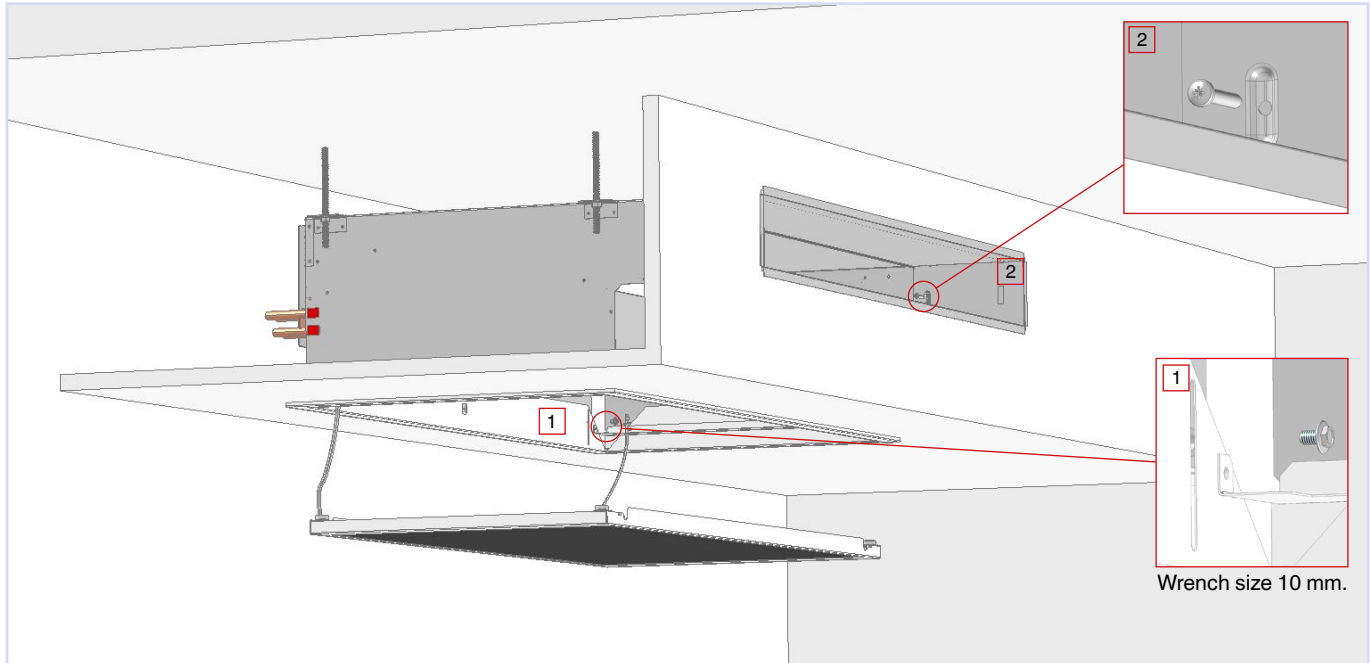


Figure 8. Mounting. When the baffle is secured to the ceiling with threaded rods, the frame for the secondary grille can be fastened back to the rim using four screws. The grille is clamped up to the suspended ceiling and the screws are tightened (1). Click secondary grille in place. Telescopic frame for front grille is attached to the short sides of the frame with mounting screws(2).

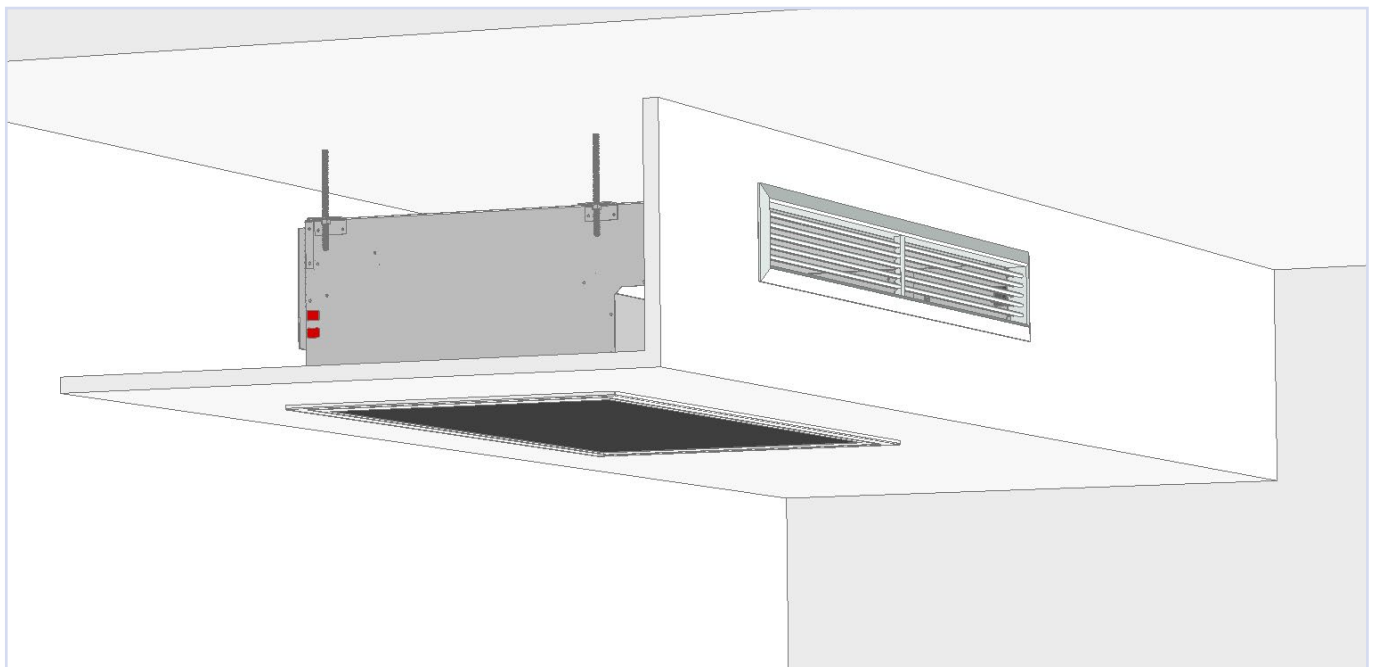


Figure 9. Mounting

DID-E2 Nordic Edition

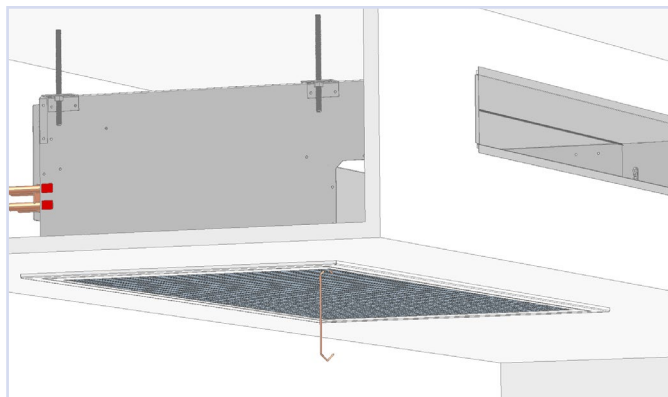


Figure 10, Mounting. To open the secondary grille, you can use a hook or similar. Gently pull down until the magnets release.

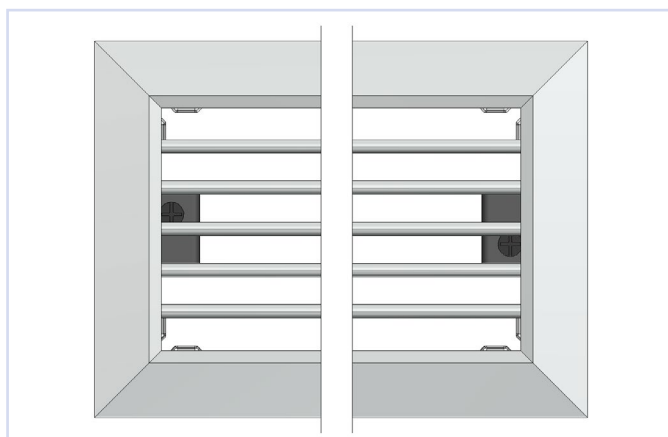


Figure 11, Mounting, front grille. The front grille is easily mounted in the telescopic frame. Screws in each short side of the front grille lock against slot grooves in the telescopic frame.

COMMISSIONING

DID-E2 NE is equipped with a measuring tube for air flow measurement. Max. operating pressure water side, 10 bar. K-Factor can be found on our website. www.trox.no

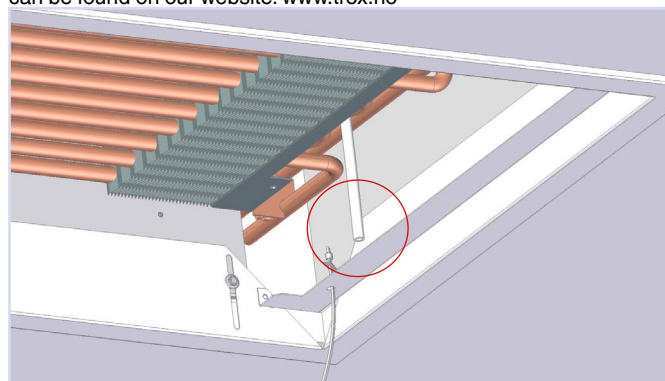


Figure 12, measuring tube

The water valve is regulated by turning the disc, which is numbered 1-10, with the current value against the groove in the threads. KVS/KV can be found in the data sheet Trox TRV-2veis ventil_KV-verdier, which can be found under Tilbehør kjølebaffel. KVS is the amount of water (here stated in l/h) that flows through the valve at a pressure drop of 1 bar and a fully open valve in the various positions. The KVS values apply without an actuator fitted. When an actuator is fitted, the values below KV (BP2) apply.

MAINTENANCE

By swinging down the baffle bottom plate as shown in figure 13, you get full access to the coil. Vacuuming and possible cleaning with a damp cloth is recommended if necessary.

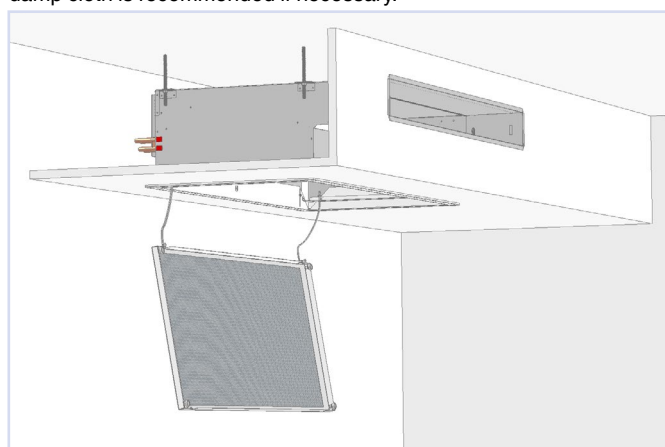


Figure 13, maintenance

ENVIRONMENT

Enquiries regarding product declaration can be directed to our sales team, or information can be found at our website: www.trox.no

DID-E2 Nordic Edition is developed and manufactured by:

The company reserves the right to make amendments without prior notice.