OKNV

Ventilate, cool and heat
For suspended use
Low built-in height, removable faceplate

Available types
O K N V - - - -

O chilled beam
K closed version
N ventilate and cool
V suspended

- **Type**
  300
  450

- **Model**
  1200/1500/1800/2400/3000

- **Nozzle**
  - Permanent
    A1/A2/B1/B2/B3/C1/C2
  - Adjustable (extravent)
    BD00 to BD14
    AD00 to AD16
    (depending on the type and choice of model)

- **Coil**
  K cooling only
  V heating and cooling (double circuit)

SA-Select
Check SA-Select to create extended order codes and selection details online. **NB!** At this moment, SA-Select is only available in Dutch. But it is possible to create extended order codes and selection details online.

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

Use
The chilled beam type OKNV has a high capacity and is suitable for ventilating, cooling or heating rooms with a height of up to approximately 3 metres.

The chilled beam is designed for suspended use. Every length available between 1140 and 2995 mm at intervals of 5 mm.

The closed version brings in the supply air on two sides and its highly efficient supply effect means it can be fitted in offices in the middle of the rooms parallel to the facade. The choice of three nozzle types enables an optimum combination of ventilation air and cooling capacity in every situation.

For cleaning purposes of the battery and the nozzles, our patented construction allows the front to be removed easily and without tools; see page 38.

The chilled beam type OKNV "extravent" (Nozzle type BD00 to BD16 for type 300 and nozzle type AD00 to AD16 for type 450), is fitted with additional nozzles that allow a group change from small to large nozzles. It is operated at the front by sliding a magnetic closing strip. This patented system guarantees complete closure and prevents undesirable noise production. The use of extravents allows significant adjustments to the primary air quantity without the unit moving outside its operating range on the air or the water side. Changing an office area into a meeting room, or the other way around, at a later stage is easy with this unit.

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Finish

Housing

Material:	steel
Treatment:	electrogalvanised
Finish:	visible parts; epoxy varnish
Colour:	white (RAL 9010)

Battery

Tubes:	copper
Fins:	aluminium
Post-treatment:	none
Test/operating pressure:	15/10 bar

General

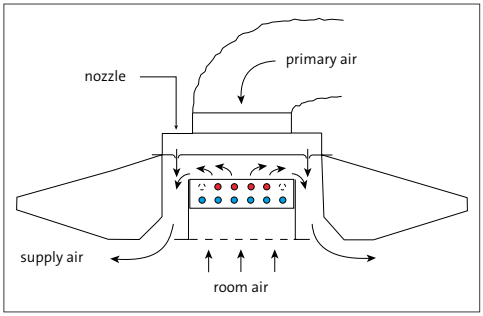
We recommend a straight flow length of 3 x D in the connection size of the chilled beam. We recommend studying our document "Solid Air recommendations for waterquality". For condensation-free operation, we recommend supplying the primary air with a dehumidifying capacity of 1 to 2 g/kg dry air. For specific information, please check the Mollier diagram.

Note

- The listed dimensions are in mm.
- The weight is given in kg.

Operating principle

The primary air is brought to high speeds via the venturi plates. This produces a powerful pump effect and secondary air is drawn in via the coil. The total of room air and primary air is brought into the room through the outflow openings integrated into the unit. When the air passes the coil, it is cooled or heated (optional) in function of the need in the room.



Tangible

Chilled beams only produce 'tangible' capacity, the units do not have a drip tray. In systems with chilled beams, the required 'latent' capacity is supplied by the dehumidifying capacity of the air-handling unit.

Selection process

Many factors play a role when you select a chilled beam. The unit has to be selected properly on the air and the water side. For the air side, we consider pressure and noise. On the water side, we consider the required volume of water, water-side resistance, "temperature difference (delta-T) on the water" and supplied output.

For a detailed selection procedure, we refer to the Appendix "Selection process Solid Air chilled beam".

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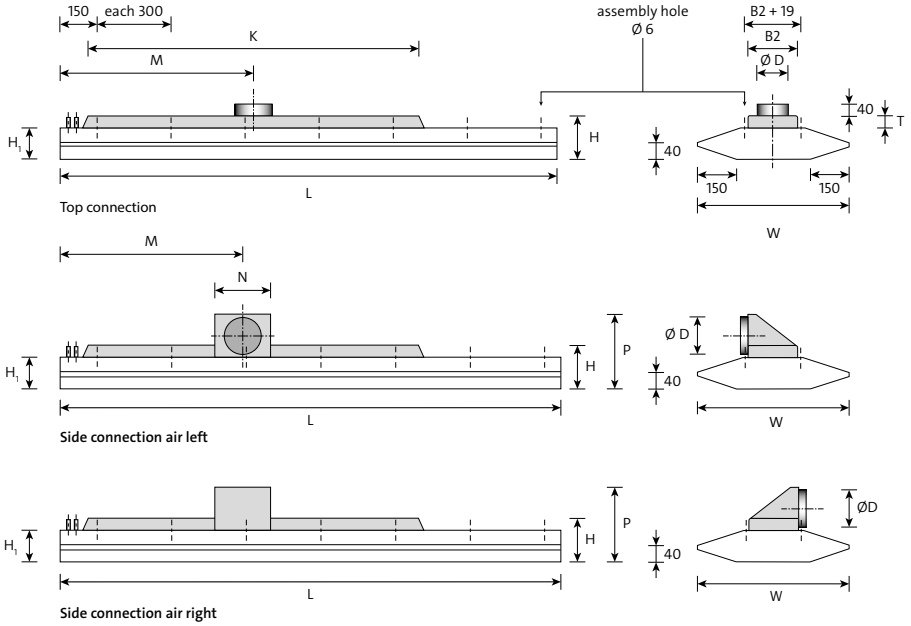
Dimensions



Available dimensions

type	model	L from/to	W	B2	H	H1	D	M	N	P	K	T	weight
300	1200	1140/2995	595	200	145	105	123	580	225	235	980	40	13
	1500	1440/2995	595	200	145	105	123	730	225	235	1280	40	15
	1800	1670/2995	595	200	145	105	123	845	225	235	1510	40	17
	2400	2295/2995	595	200	145	105	158	1170	300	270	2110	40	23
	3000	2895/2995	595	200	165	105	158	1470	300	270	2710	60	29
300 extravent	1200	1140/2995	595	200	165	105	123	580	225	235	980	60	13
	1500	1440/2995	595	200	165	105	123	730	225	235	1280	60	15
	1800	1670/2995	595	200	165	105	158	845	270	270	1510	60	18
	2400	2295/2995	595	200	165	105	158	1170	300	270	2110	60	24
	3000	2895/2995	595	200	165	105	158	1470	300	270	2710	60	30
450	1200	1090/2995	745	300	195	135	123	555	225	265	980	60	17
	1500	1390/2995	745	300	195	135	123	705	225	265	1280	60	22
	1800	1640/2995	745	300	195	135	123	840	225	265	1510	60	25
	2400	2240/2995	745	300	195	135	158	1140	300	300	2110	60	34
	3000	2840/2995	745	300	195	135	198	1440	300	340	2710	60	42
450 extravent	1200	1090/2995	745	300	215	135	123	555	225	265	980	80	17
	1500	1390/2995	745	300	215	135	158	705	300	300	1280	80	22
	1800	1640/2995	745	300	215	135	158	840	300	300	1510	80	26
	2400	2240/2995	745	300	215	135	158	1140	300	300	2110	80	35
	3000	2840/2995	745	300	215	135	198	1440	300	340	2710	80	43

Tolerances: width W: + 2/- 2 mm, length L: + 0/- 4 mm.

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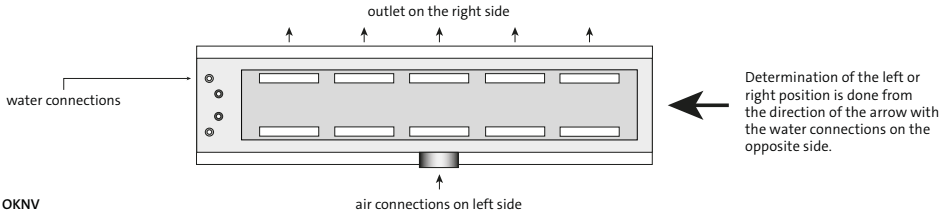
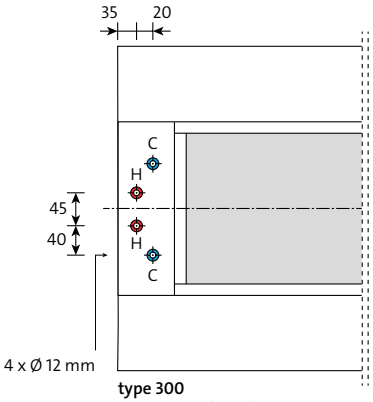
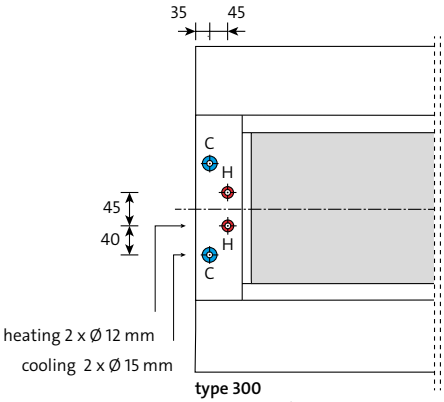
Position of air and water connection



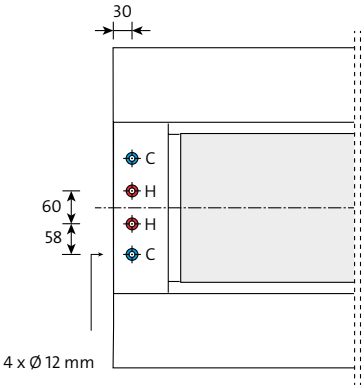
Water connections



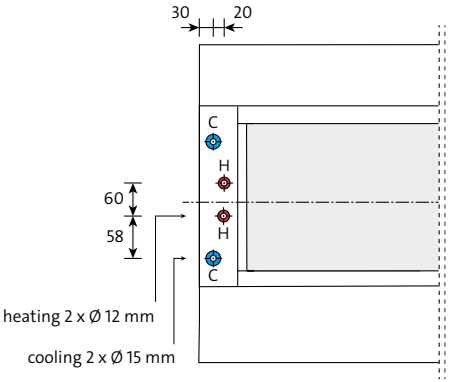
type 300
model 1200/1500/1800



type 300
model 2400/3000



type 450
model 1200/1500



type 450
model 1800/2400/3000

Operating principle extravents
With extravents, which can be changed from small to large nozzles in groups, it is possible to increase or reduce the net nozzle surface.

When the inlet pressure stays the same, the primary airflow can be increased or reduced, or the relationship between the primary airflow and the inlet pressure can be changed.

One extravent consists of a magnetic sliding strip on the plenum side of the nozzle plate. At the ends of this strip are2 socket head screws, the heads of which are visible and can be accessed through the outflow gap of the unit. This requires an ''socket-head screwdriver'' of sufficient length. Net length 110 mm, for example type 206 S/4 of PB Tools.

Setting the extravents
- Loosen both socket head screws loose by one turn. (1)
- Move one of the screws, and in doing so the sliding strip, to the 'high' or 'low' position.(2)
  Interim positions are not permitted!
- Turn both screws fingertight.

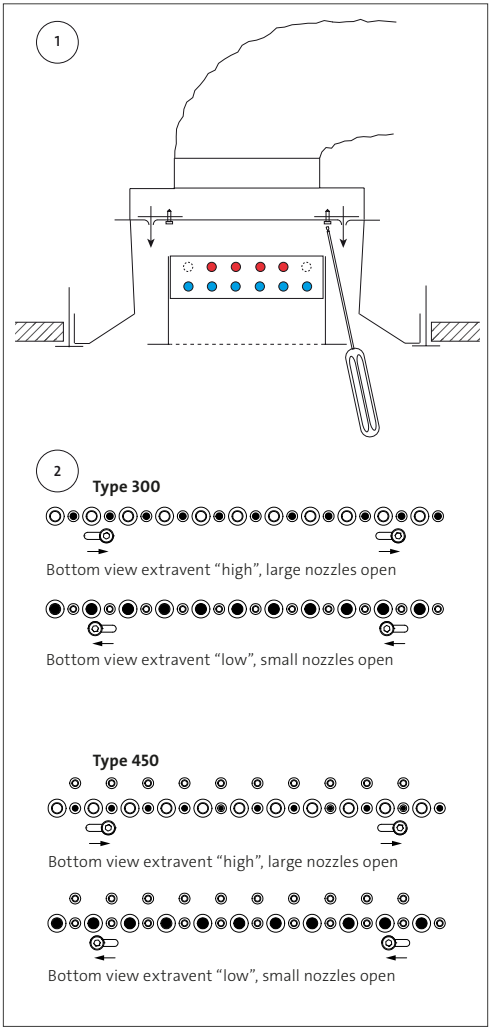
See the table below for the number of extravents per model.

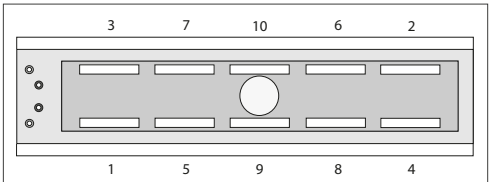
Extravents per model

type	model	aantal extravents
300	1200	6 (BD00 t/m BD06)
	1500	8 (BD00 t/m BD08)
	1800	10 (BD00 t/m BD10)
	2400	12 (BD00 t/m BD12)
	3000	16 (BD00 t/m BD16)
450	1200	6 (AD00 t/m AD06)
	1500	8 (AD00 t/m AD08)
	1800	10 (AD00 t/m AD10)
	2400	12 (AD00 t/m AD12)
	3000	16 (AD00 t/m AD16)

Standard factory setting extravents
The selected extravent versions BD to AD are set ex-factory on the basis of a set protocol. For example, see the numbers 1 to 10 in the figure on the right for the sequence in which the extravents are put in the 'high' position.

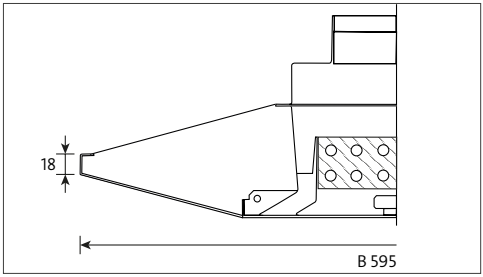
If the units need to have a different ex-factory setting, we recommend you contact our sales department.

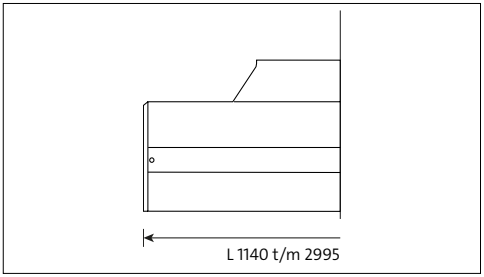




OKNV 300/1800
Defauld setting order from outside to inside

Side-edge configuration





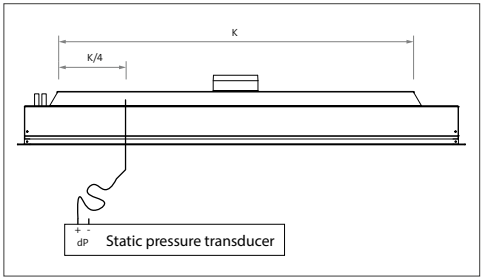
Water quality

To keep your water-fed system in optimum condition, it is essential to flush the system regularly (once every two days) and to check the water quality regularly. For more information, we refer to our document "Solid Air recommendations for water quality.".

Operating principle

After installation of the chilled beams, they must be adjusted air-sided and water-sided. This work is usually carried out by a specialized balancing company.

For the airside adjustment, the static pressure in the plenum should be measured at a quarter of the length of the plenum.



This requires a thin tube to insert through the nozzle into the plenum. Please note that extravent units use an open nozzle to perform the measurement. Inserting the measuring tube into a closed hole can damage the seal of the extravent strip and cause noise problems.

Maintenance

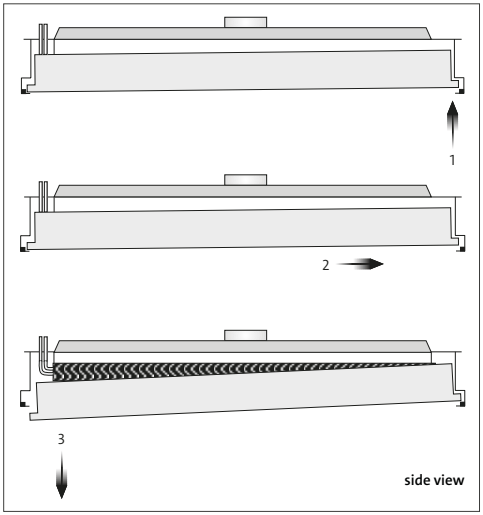
In view of cleaning the coil and the supply nozzles, it is possible to remove the middle segment of the unit in a simple fashion. This works as follows:

1. Push the perforated part of the middle segment, in the middle, next to one of the ends, approximately 5 mm up.

2. At the same time, push the entire middle segment lengthways into the relevant end.

3. **NB**: The other side of the middle segment is now released from the opposite end and can be removed from the unit. It remains connected to the unit with two safety cables.

Fit in reverse order.



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Order and options codes

OKNV 300/1500		A1 K 2		T O - -		O O O		595 x 1495		9010 55

Type
300 - 450

Model
1200 - 1500 - 1800 - 2400 - 3000

Nozzle plate
A1 - A2
B1 - B2 - B3
C1 - C2
BD00 to BD16 (type 300)
AD00 to AD16 (type 450)

Coil
K cooling
V cooling and heating
O none (dummy)

Uitblaasconfiguratie
2 2-sided outflow
3 1-sided outflow to the left
4 1-sided outflow to the right

Air connection
T top
L left
R right

Water connection
O standard

Air-connection diameter
- standard in accordance with size table on page 35

Plenum uitvoering
- standard in accordance with size table on page 35

Diffuser
O not applicable

Side-edge configuration
O not applicable

FPC (outflow direction element)
O not applicable
F FPC (type 450 only)

Actual width
depending on the type; see table of dimensions page 35

Actual length
depending on the model size (from 1140 to 2995 mm)

Colour
RAL 9010 (standard)

Gloss level
55 % (standard)