OKNI 300

Ventilate, cool and heat

For use in modular ceilings

Low built-in height, removable faceplate

Use

The chilled beam type OKNI has a high capacity and is suitable for ventilation, cooling or heating rooms with a height of up to approximately 3 metres.
The unit has been designed as an insert module for modular ceilings with a few T-bars or Omega profiles, with a module size of 300mm. The unit can also be integrated into cassette ceilings or surface-mounted on a permanent ceiling. Every length available between 1140 and 2995 mm at intervals of 5 mm. Due to its low weight, it is possible to use type 300 as an insert fitting and to lay it directly in the modular ceiling. Thisremoves the need to hang the unit independently and to align it to the ceiling height, as a simple fall protection suffices. Assembly holes are available for this purpose.

Finish

Housing

material:	steel
treatment:	electrogalvanised
finish:	visible parts; epoxy varnish
colour:	white (RAL 9010, 55 % gloss)

Coil

tubes:	copper
fins:	aluminium
post-treatment:	none
test pressure:	15 bar (all products are tested)
operating pressure:	10 bar
water temperature:	max 90 °C
water speed:	max 1.5 m/s

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.

Available types

O K N I - - - -

- **O** chilled beam
- **K** closed version
- **N** ventilate and cool
- **I** modular ceiling

- **Type**
  300
- **Model**
  1200/1500/1800/2400/3000
- **Nozzle**
  - **Permanent**
    A1/A2/B1/B2/B3/C1/C2
  - **Adjustable (extravent)**
    BD00 to BD16 (depending on choice of model)
- **Coil**
  K cooling only (2-tubes)
  V heating and cooling (4-tubes)

For detailed order information, see page 10.

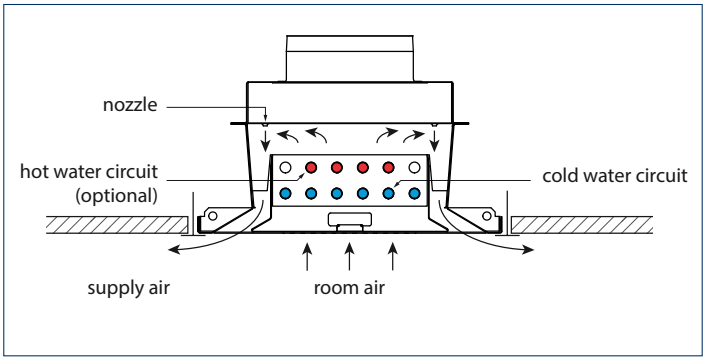
Check SA-select to create extended order codes and selection details online. **NB!** At this moment, SA-Select is only available in Dutch. But it is possible to create extended order codes and selection details online.

Comment

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

Operating principle

The primary air is brought to high speeds via the nozzles. This creates a vacuum above the coil and room air is drawn in. 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

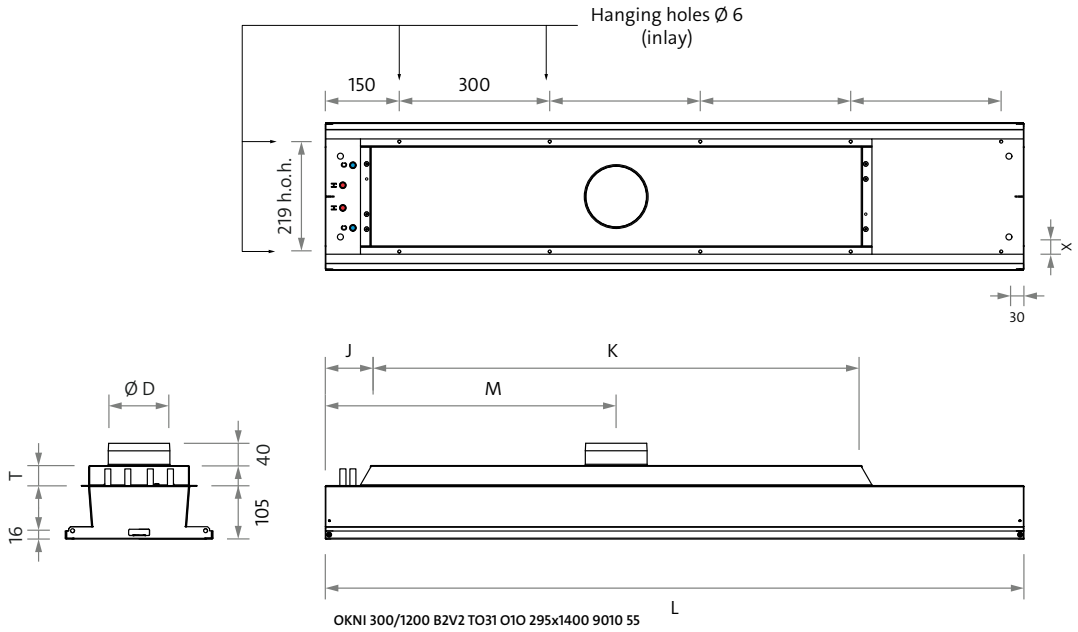
Chilled beams only produce 'tangible' capacity, the units do not have a drip tray. In systems with chilled beams, the required 'latent' capacity is supplied by the dehumidifying capacity of the air-handling unit.

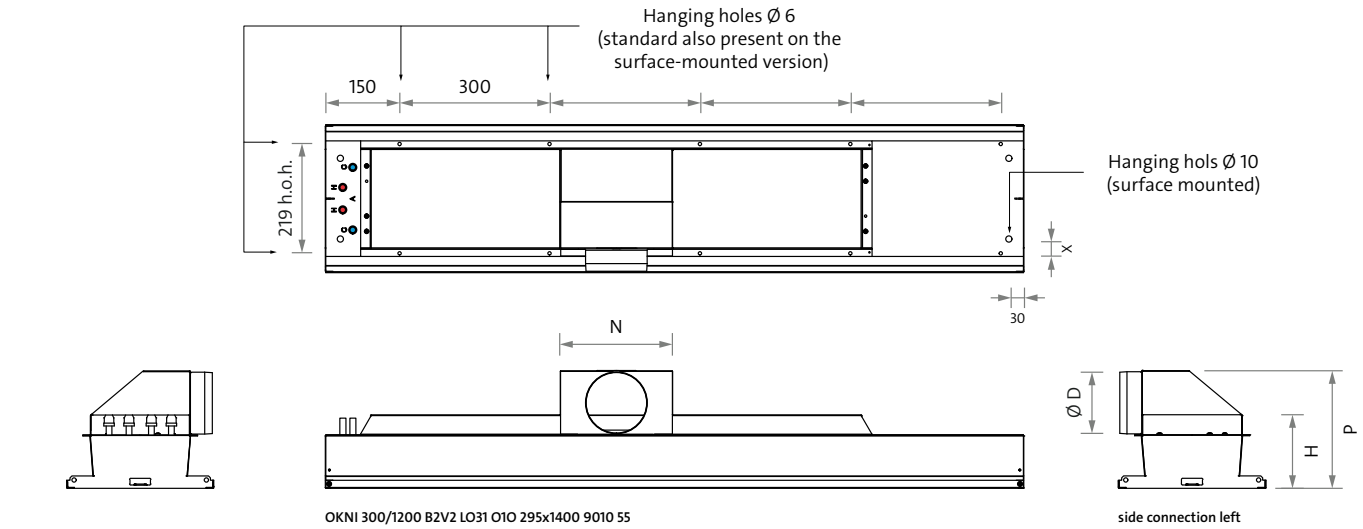
Selection process

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".

Dimensions



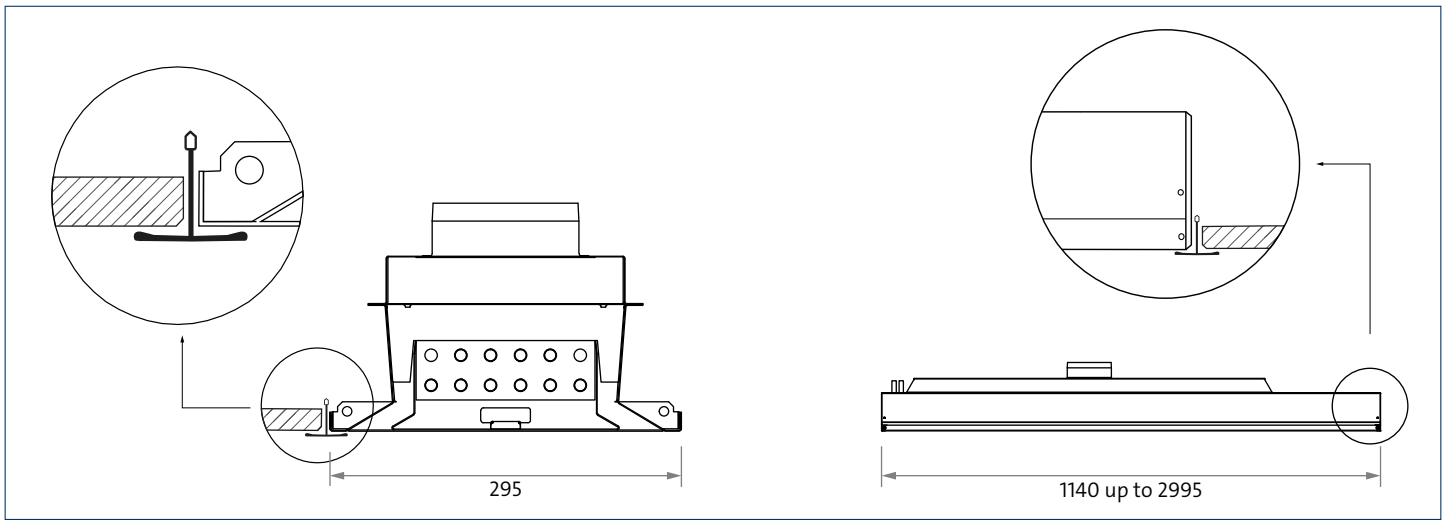


Available dimensions

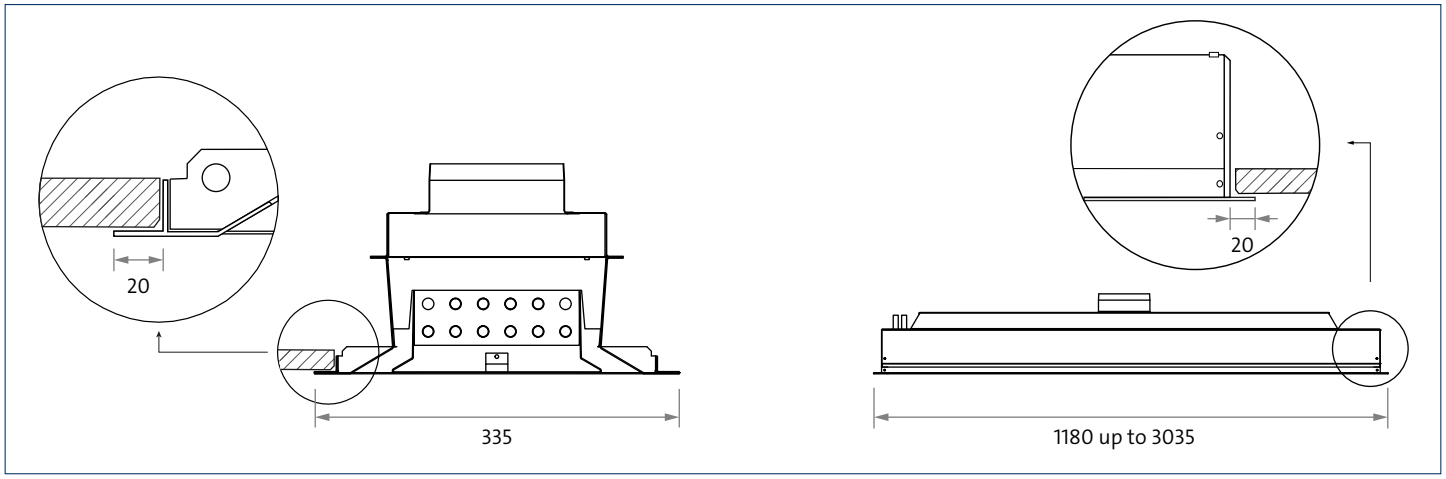
type	model	L from/to	W*	D	T	J	K	M	N	H	P	X	weight
300	1200	1140/2995	295	123	40	90	980	580	225	145	235	35	12
	1500	1440/2995	295	123	40	90	1280	730	225	145	235	35	14
	1800	1670/2995	295	123	40	90	1510	845	225	145	235	35	16
	2400	2295/2995	295	158	40	115	2110	1170	300	145	270	25	22
	3000	2895/2995	295	158	60	115	2710	1470	300	165	270	25	28
300 extravent	1200	1140/2995	295	123	60	90	980	580	225	165	235	35	12
	1500	1440/2995	295	123	60	90	1280	730	225	165	235	35	14
	1800	1670/2995	295	158	60	90	1510	845	270	165	270	35	17
	2400	2295/2995	295	158	60	115	2110	1170	300	165	270	25	23
	3000	2895/2995	295	158	60	115	2710	1470	300	165	270	25	29

Tolerances: width W: + 2/- 2 mm, length L: + 0/- 4 mm.
*different widths available on request.

Side-edge configuration 1: T-bar insert ceiling/Omega-profile ceilings.



Side-edge configuration 2: Surface-mounted version permanent ceilings.



Comment: Special version

For different ceiling systems, please contact our sales advisers for a suitable solution.

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 are 2 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.

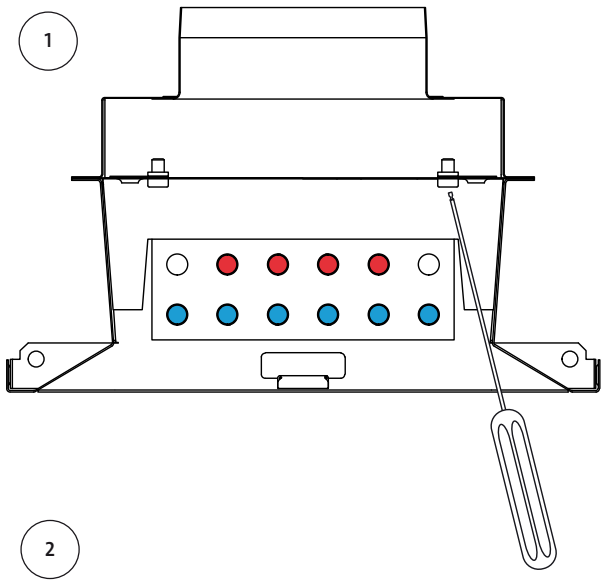
Setting the extravents

- Let the middle segment of the unit drop so that the nozzles are easier to see/access; see maintenance section for how you do this. Loosen both socket head screws by one turn. ①
- Move one of the screws, and in doing so move the sliding strip, to the 'high' or 'low' position. Interim positions are not permitted! ②
- Turn both screws fingertight.

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

Extravents per model

model	number of extravents
1200	6 (BD00 to BD06)
1500	8 (BD00 to BD08)
1800	10 (BD00 to BD10)
2400	12 (BD00 to BD12)
3000	16 (BD00 to BD16)



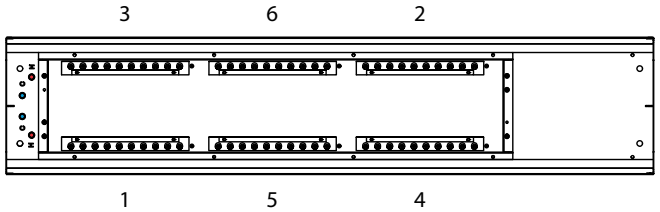
Bottom view extravent "high", large nozzles open

Bottom view extravent "low", small nozzles open

Standard factory setting extravents

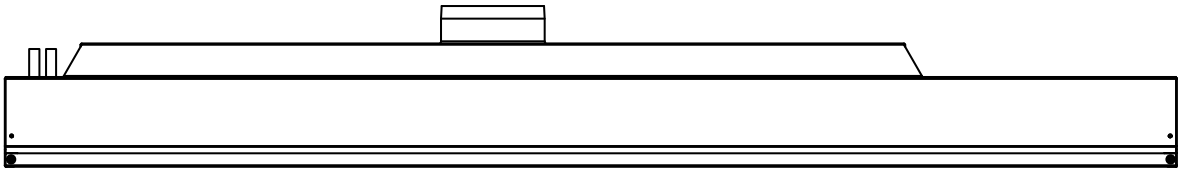
The selected extravent versions BD00 to BD16 are set ex-factory on the basis of a set protocol. For example, see the numbers 1 to 6 in the figure on the right for the sequence in which the extravents are put in the 'high' position.

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

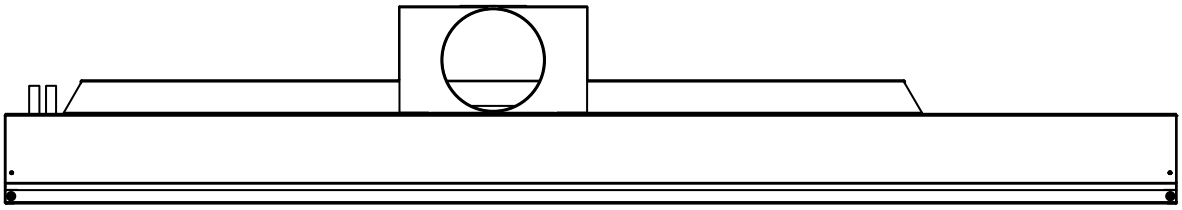


OKNI 300/1200 BD00 (no extravent in the 'high' position)

Air connections



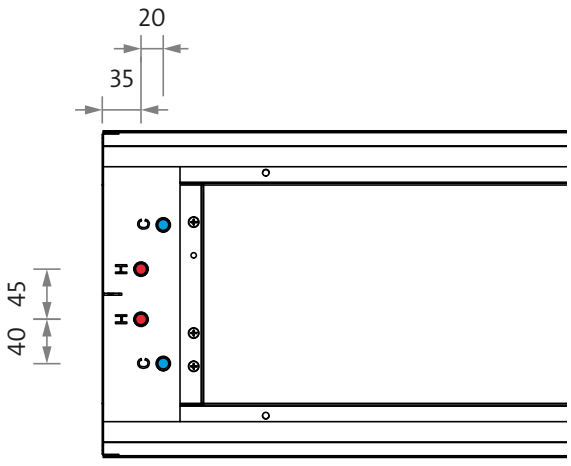
OKNI 300/1200 top connection L=1400



OKNI 300/1200 side connection left L=1400

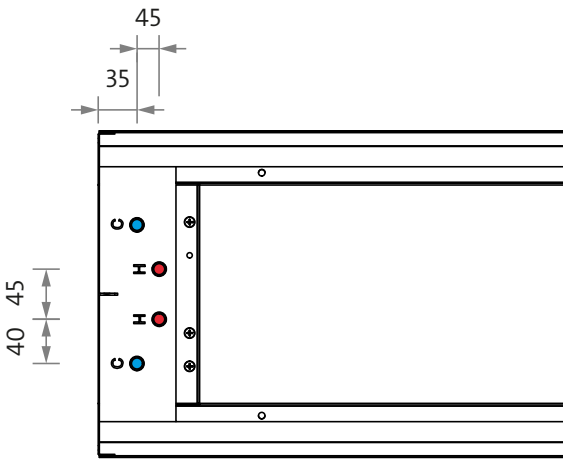
Water connections

In order to prevent damage/leaks of the water-side connection, we recommend using Push-Fit couplings.



cooling and heating: 4 x Ø 12 mm

Model 1200 / 1500 / 1800



cooling: 2 x Ø 15 mm
heating: 2 x Ø 12 mm

Model 2400 / 3000

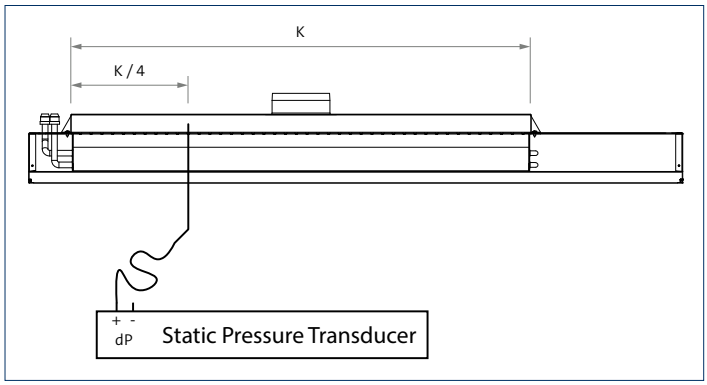
Water quality

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.".

Commissioning

After installing the chilled beans, they need to be set on the air side and the water side. Those activities are generally carried out by a specialised company.

For the air-side setting, the static pressure in the plenum must be measured at a quarter of the length of the plenum.



This requires a thin tube that is inserted through the nozzle into the plenum. Remember that for extravent units you use an open nozzle to carry out the measurement. Inserting the measuring tube in a closed vent could damage the seal of the extravent strip and produce noise problems.

Maintenance

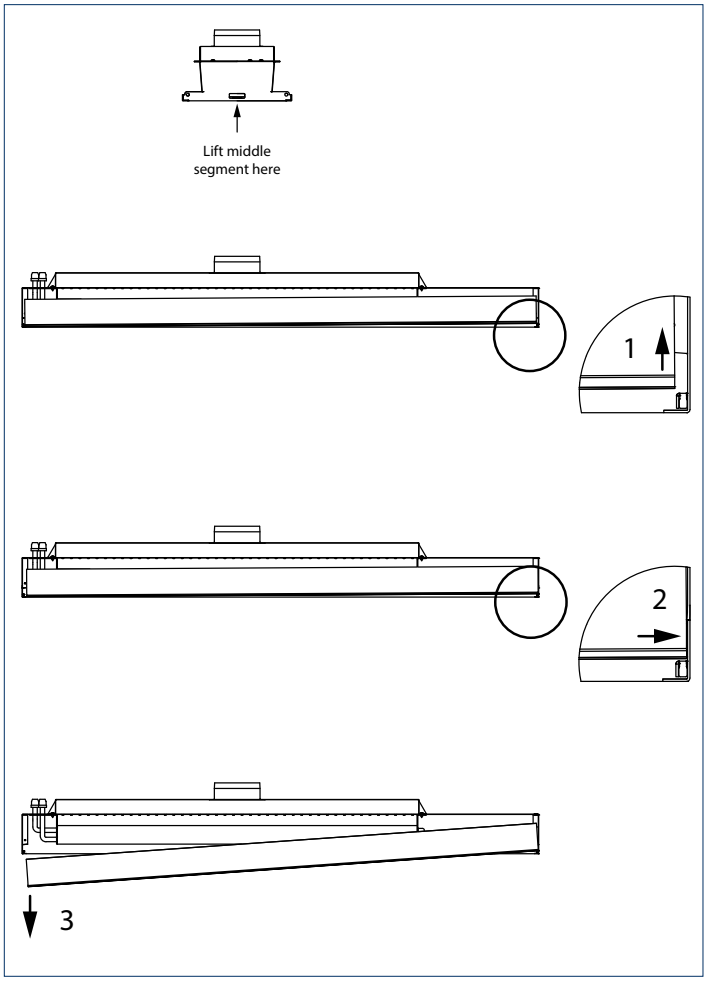
In view of cleaning the coil and the supply nozzles, it is possible to remove the middle segment of the unit in a simple fashion. This works as follows:

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.



Order and options codes

OKNI 300/1200		B2	V	4		L	O	-	-		O	1	O		295	x	1195		9010	55

Type
300

Model
1200 - 1500 - 1800 - 2400 - 3000

Nozzle plate
A1 - A2
B1 - B2 - B3
C1 - C2
BD00 to BD16 (depending on choice of model)

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

Outflow configuration
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 5

Plenum version
- standard in accordance with size table on page 5

Diffuser
O not applicable

Side-edge configuration
1 Suitable for T-bar
2 Suitable for surface mounting

FPC (outflow direction element)
O not applicable

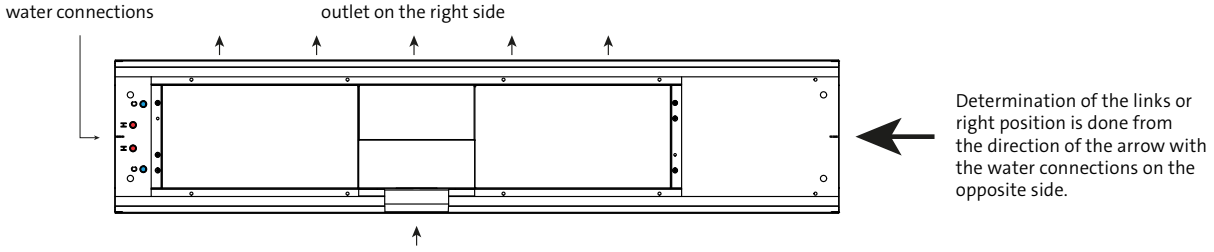
Actual width
295 mm (type 300)

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

Colour
RAL 9010 (standard), a different colour on request

Gloss level
55 % (standard)

Sample configuration (definition left/right)



Determination of the links or right position is done from the direction of the arrow with the water connections on the opposite side.

OKNI 300 / 1200 B2V4 LO--