BOON EDAM

Air Conditioning
Cooling
Heating
Ventilation

HVAC Nederland

For a professional approach

OmniVent-VMR

Air curtains

Air Conditioning Cooling

Ventilation Heating

Design air curtains for revolving doors

OmniVent-VMR

Revolving door air curtains OmniVent-VMR the optimal combination of design and function for revolving doors

OmniVent-VMR, developed in collaboration with FlowMotion, patented design air curtains – the modern entrance solution for your revolving door – persuades architects, planners, building owners and operators.

The entrance of a building pays an important role as business card of a building. There is no other part of the building that leaves such an impression on visitors. Therefore the optical qualities of a door system or an entrance have to be the same as the function and quality. Our air curtains are TÜV SÜD certified.

Revolving doors have many advantages, but cause some problems. The carousel movement of the door scoops up cold air from the outside and deposits this air in the warm room, which should be protected. At the same time warm air is transported to the outside. This is a loss of energy and causes a so called 'cold zone'. This build-up of cold air in front of the entrance is not a classical draught, but it has the same affect on staff and visitors due to the high temperature difference.

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Air curtains

Designed for revolving doors, the **OmniVent-VMR** cancels the loss of energy, caused by the carousel movement of the door. A cold zone no longer exists. Staff working near the door are protected from draught, which causes staff efficiency and satisfaction to increase.

Design
The small dimensions of the casing makes the air curtain almost impossible to spot. Build out of sendzimir galvanized steel, the unit is strong and durable. Powder coated in any RAL colour of anodic anodized finish as desired by the building owner. **OmniVent-VMR** has no visible screws or rivet connections, which give the unit a clean appearance.

A large maintenance hatch enables easy access to the fan unit. The fan unit has the same colour as the air curtain or (on request) powder coated in any RAL colour.

The water heated model has a high performance heat exchanger, made out of copper and aluminium. This heat exchanger is designed for a broad range of applications and different water temperatures. The water connections are located by default on the right-hand side.

The electrically heated version employs resistor heaters of corrosion-resistant, helical ribs with thermal overheating protection.

Depending on the power classes a number of double-surged and anti-vibration borne radial fans, which are supplied with energy saving EC motor, direct current and feature a very low noise level as well as a comprehensive motor protection via thermal contacts, provide the required air-flow for an optimum shielding.

Airflow regulation through five-stage touch button control, manual/auto and summer/winter operation (hot water) or five-stage air control and three-stage heat control (electrical). Length of regulating cable 20 meter including RJ45 connectors. There's also possibility to control the air curtain with a Building Management System. (BMS)

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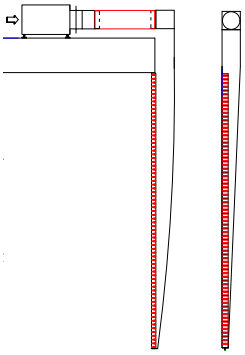
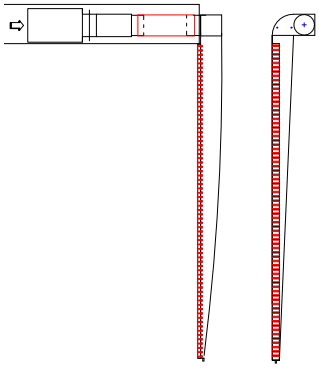
Type OmniVent-VMR-1 (Build on top off the canopy)

- Fan unit build on top off on the canopy
- Slim design
- Blows to the centre of the door
- Suitable for 2-, 3- and 4-wings doors
- Available for door diameters from 2,0 meter up to 3,8 meter, depends on the door type, other door diameters on request
- The standard heights 2,3 meter, 2,5 meter and 3,0 meter, other heights on request



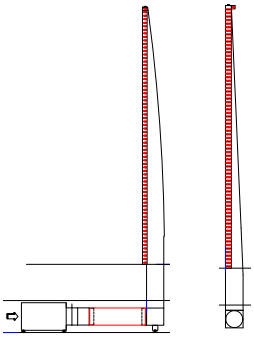
Type OmniVent-VMR-2 (Build in the canopy)

- Fan unit build in the canopy
- Slim design
- Blows to the centre of the door
- Suitable for 2-, 3- and 4-wings doors
- Available for door diameters from 2,0 meter up to 3,8 meter, depends on the door type, other door diameters on request
- The standard heights 2,3 meter, 2,5 meter and 3,0 meter, other heights on request



Type OmniVent-VMR-3 (Build under the floor)

- Fan unit build under the floor
- Slim design
- Blows to the centre of the door
- Suitable for 2-, 3- and 4-wings doors
- Available for door diameters from 2,0 meter up to 3,8 meter, depends on the door type, other door diameters on request
- The standard heights 2,3 meter, 2,5 meter and 3,0 meter, other heights on request



Colours

- Any RAL colour, powder coating in structured finish
- On special request available in stainless steel, aluminium and various Anodic colours with an additional casing approximately 150x150 mm
- Alternative for stainless steel or aluminium; RAL 9006 30% or 9007 30%

TÜV SÜD

OmniVent-VMR-3

Air Conditioning Cooling

Ventilation Heating

Technical Specifications

OmniVent-VMR-X up to 2300 mm height (230)

Specifications

Type			OmniVent-VMR-X-230
Maximum door hight		mm	2300
Air capacity **type 1 & 2**		m3/h	1200
Air capacity **type 3**		m3/h	1800
Noise level, min.-max.		dB(A)	≤ 40 - 52
Heating capacity* max.		kW	9,7
Flow ratings*		m3/h	0,42
Water resistance rates		kPa	3,0
Pipe connection	In	Gas	3/4"
	Out	Gas	3/4"
Electrical data		V	230
		kW	0,26
		A	1,2
Electrical heaters, 3 stage		kW	3/6/9
Electrical data heater		V/pH	400/3
Weight		kg	52
Dimensions air curtaIn:	height (H1)	mm	2300
	length	mm	150
	width	mm	150

Door diameter		mm
4- wings, 90°		
Tourniket		2600 - 3800
Tournex		3600
Twintour		3000 - 3800
Crystal Tourniket		2600 - 3000
2- and 3-wings, 60°		
Tourniket		2000 - 3800
Tournex		3600
Duotour		3600
Crystal Tourniket		2000 - 3000
Dimensions air curtain:	height	up to 3000
	length	150
	width	150 / 50x45
Dimensions ventilator unit:	height	240
	length	1000
	width	440

* 70/50 °C

OmniVent-VMR-X from 2301 to 2500 mm height (250)

Specifications

Type			OmniVent-VMR-X-250
Maximum door hight		mm	2500
Air capacity **type 1 & 2**		m3/h	1500
Air capacity **type 3**		m3/h	2100
Noise level, min.-max.		dB(A)	≤ 40 - 52
Heating capacity* max.		kW	11,2
Flow ratings*		m3/h	0,49
Water resistance rates		kPa	4,0
Pipe connection	In	Gas	3/4"
	Out	Gas	3/4"
Electrical data		V	230
		kW	0,28
		A	1,3
Electrical heaters, 3 stage		kW	3/6/9
Electrical data heater		V/pH	400/3
Weight		kg	52
Dimensions air curtaIn:	height (H1)	mm	2500
	length	mm	150
	width	mm	150

Door diameter		mm
4- wings, 90°		
Tourniket		2600 - 3800
Tournex		3600
Twintour		3000 - 3800
Crystal Tourniket		2600 - 3000
2- and 3-wings, 60°		
Tourniket		2000 - 3800
Tournex		3600
Duotour		3600
Crystal Tourniket		2000 - 3000
Dimensions air curtain:	height	up to 3000
	length	150
	width	150 / 50x45
Dimensions ventilator unit:	height	240
	length	1000
	width	440

* 70/50 °C

OmniVent-VMR-X from 2501 to 3000 mm height (300)

Specifications

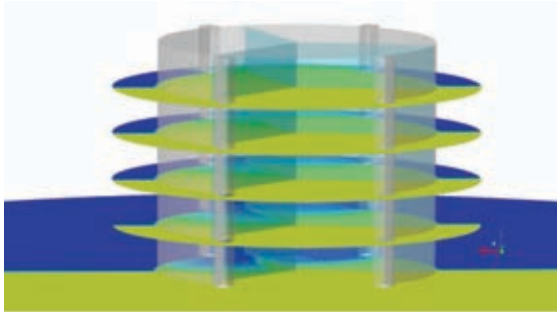
Type			OmniVent-VMR-X-300
Maximum door hight		mm	3000
Air capacity **type 1 & 2**		m3/h	1800
Air capacity **type 3**		m3/h	2700
Noise level, min.-max.		dB(A)	≤ 40 - 54
Heating capacity* max.		kW	12,5
Flow ratings*		m3/h	0,55
Water resistance rates		kPa	5,0
Pipe connection	In	Gas	3/4"
	Out	Gas	3/4"
Electrical data		V	230
		kW	0,3
		A	1,4
Electrical heaters, 3 stage		kW	4/8/12
Electrical data heater		V/pH	400/3
Weight		kg	59
Dimensions air curtaIn:	height (H1)	mm	3000
	length	mm	150
	width	mm	150

Door diameter		mm
4- wings, 90°		
Tourniket		2600 - 3800
Tournex		3600
Twintour		3000 - 3800
Crystal Tourniket		2600 - 3000
2- and 3-wings, 60°		
Tourniket		2000 - 3800
Tournex		3600
Duotour		3600
Crystal Tourniket		2000 - 3000
Dimensions air curtain	height	up to 3000
	length	150
	width	150 / 50x45
Dimensions ventilator unit:	height	240
	length	1000
	width	440

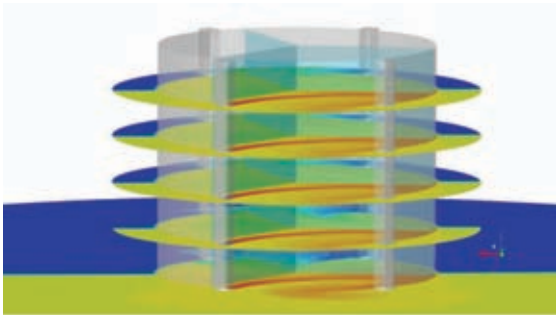
* 70/50 °C

CFD Flow Simulations air curtain OmniVent-VMR

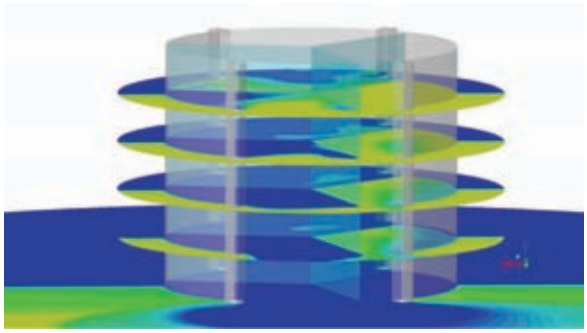
The images below are thermal views in which the air flow is visible. On the left the images show what happens with the air without an air curtain. The right-hand side shows what happens when an air curtain is installed.



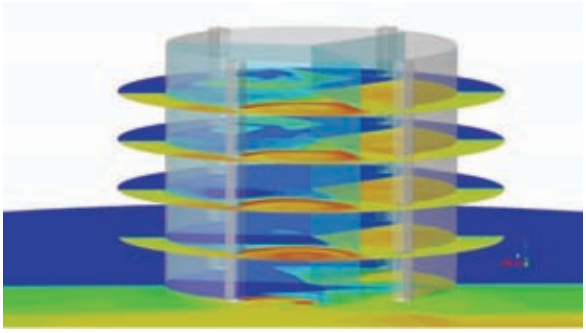
1A. Start situation revolving door without air curtain



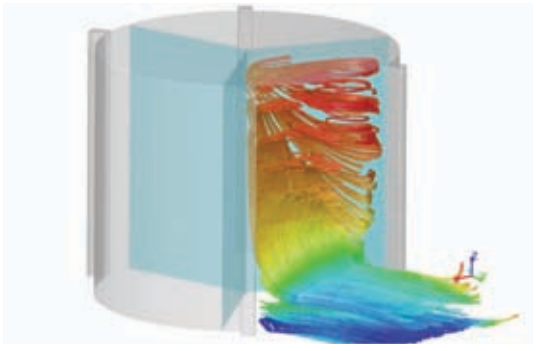
2A. Start situation revolving door with air curtain. On the inside the door is filled with warm air from the air curtain (red).



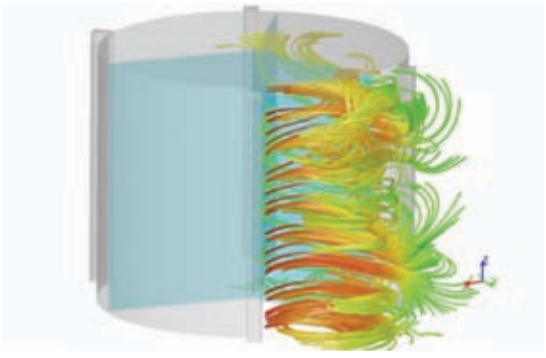
1B. Situation revolving door after one rotation, without air curtain. The cold air flows into the building in the bottom (blue).



2B. Situation revolving door after one rotation, with air curtain. The cold air (blue) is kept out by the door, while the occupied zone of the door is filled with warm air from the air curtain. Air with an ambient temperature enters the room (green/yellow).



1C. Air flow pattern revolving door without air curtain. The cold air flows into the building on the bottom (blue) and the warmer air leaks out on top (orange/red).



2C. Air flow pattern revolving door with air curtain. The air curtain uses the Coandă effect to stick the air to the door and keep it trapped in the compartment.

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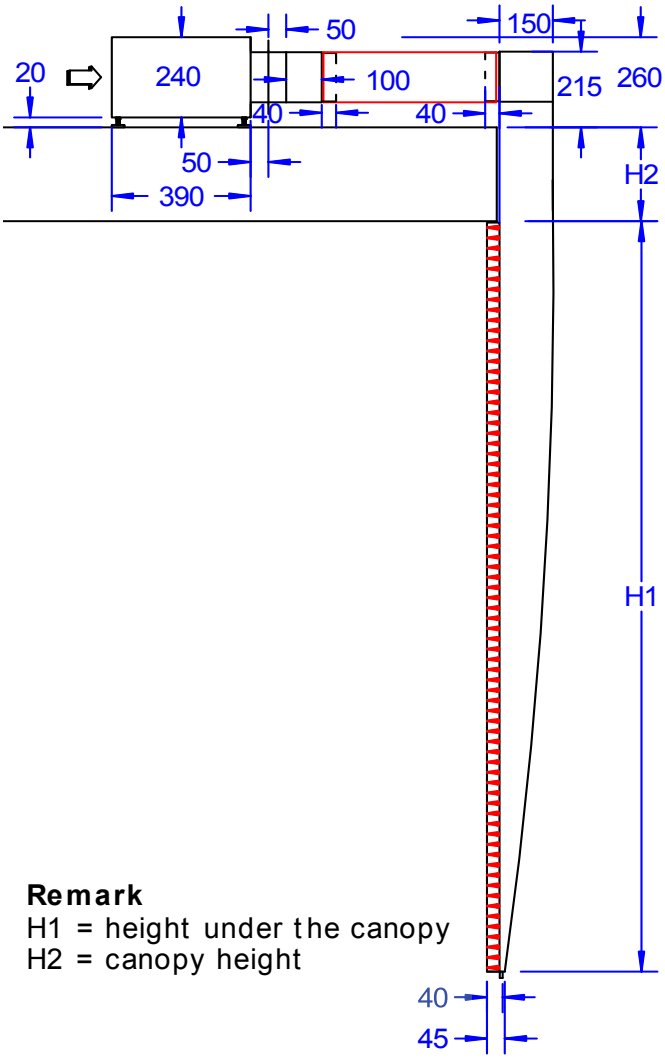
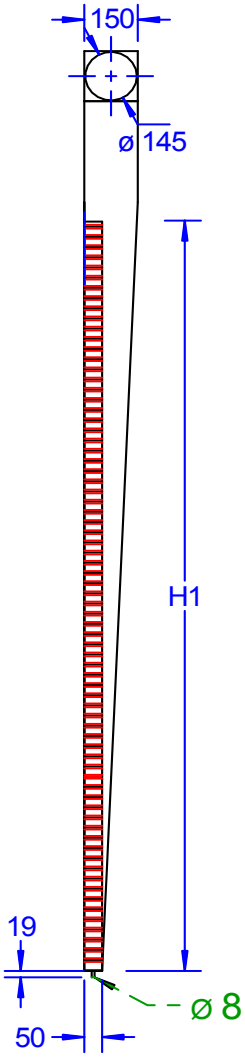
OmniVent-VMR-1

Dimensions

Side view

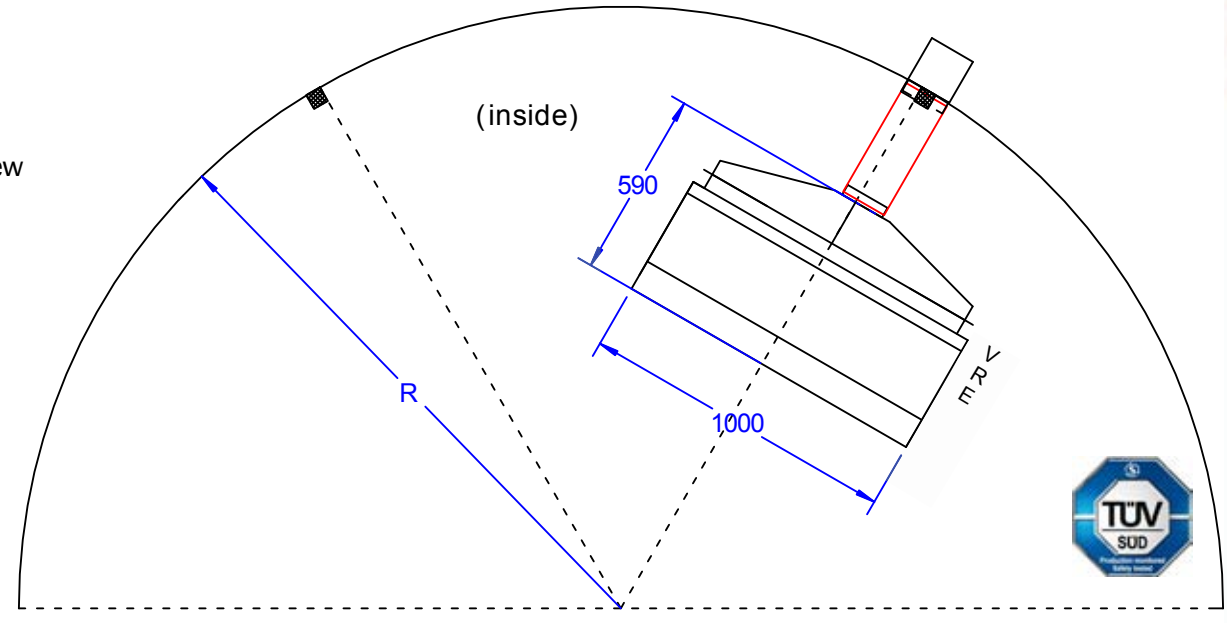


Front view



Remark
H1 = height under the canopy
H2 = canopy height

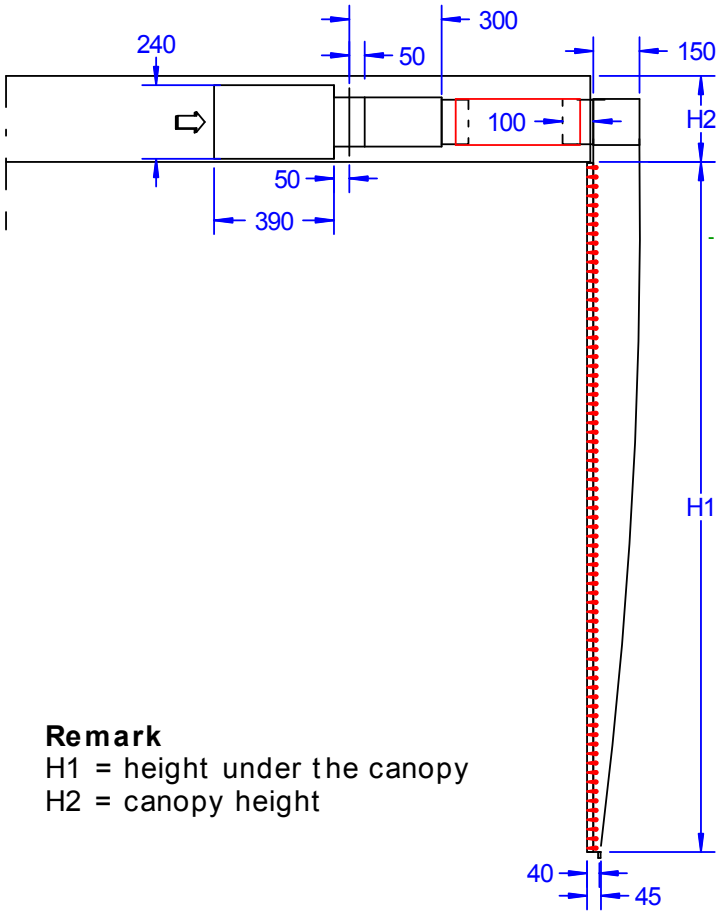
Top view



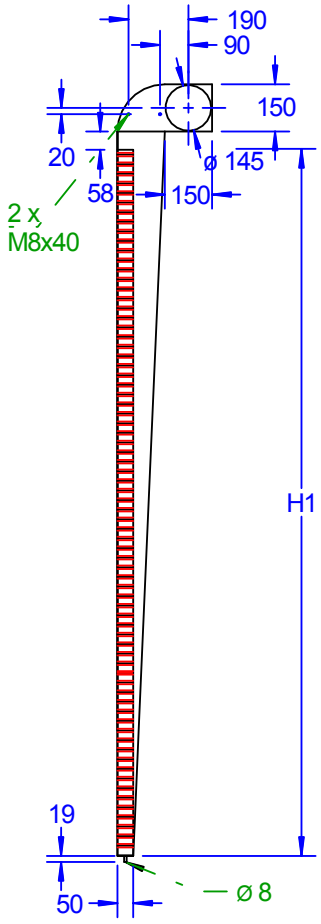
OmniVent-VMR-2

Dimensions

Side view

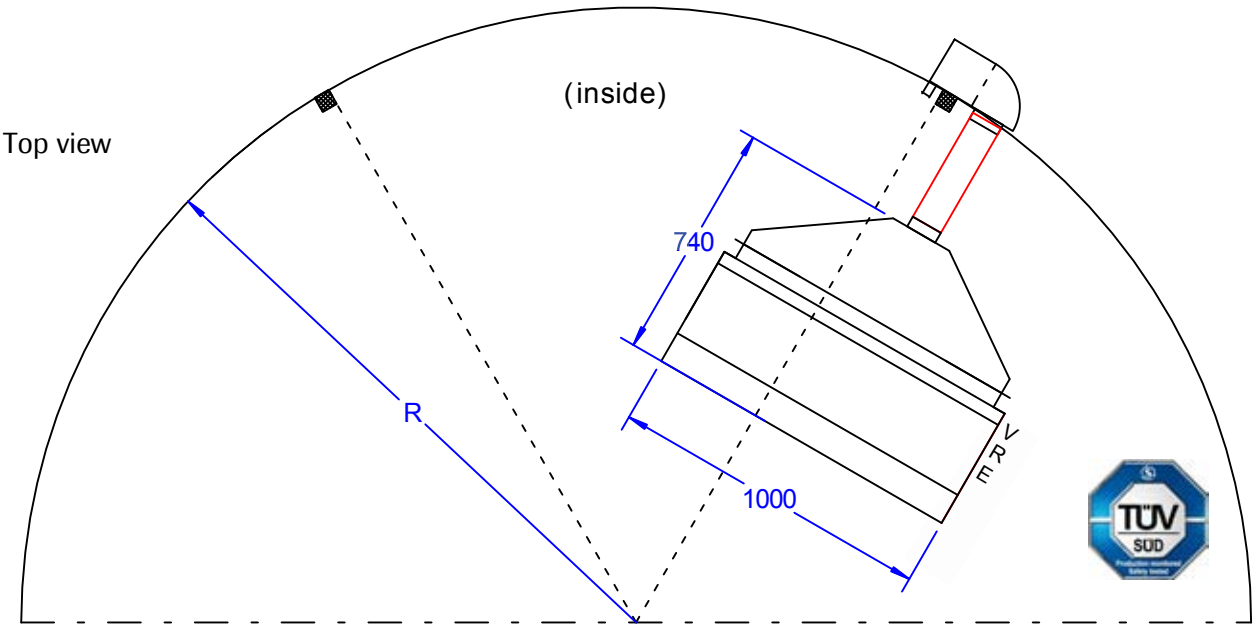


Front view



Remark
H1 = height under the canopy
H2 = canopy height

Top view



Air Conditioning Cooling

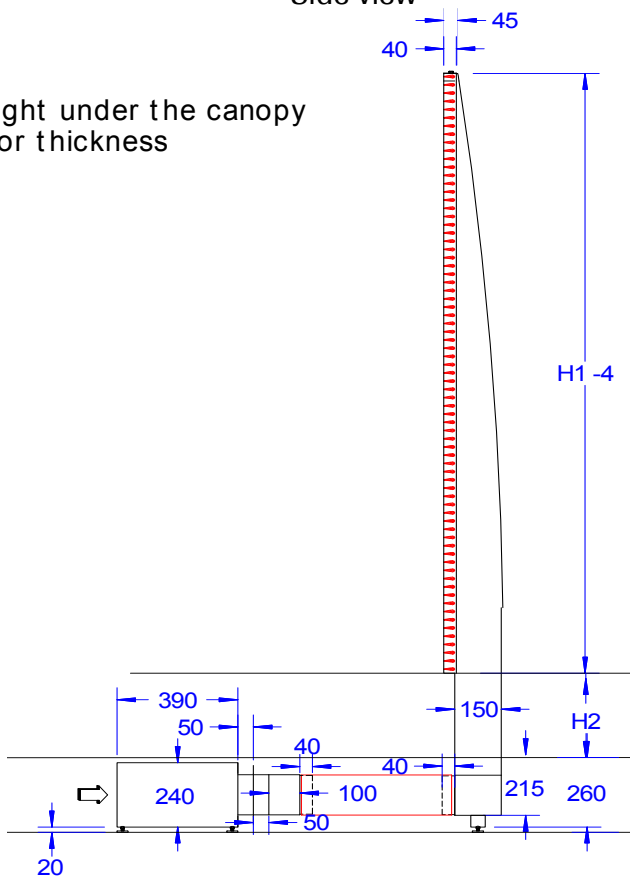
Ventilation Heating

OmniVent-VMR-3

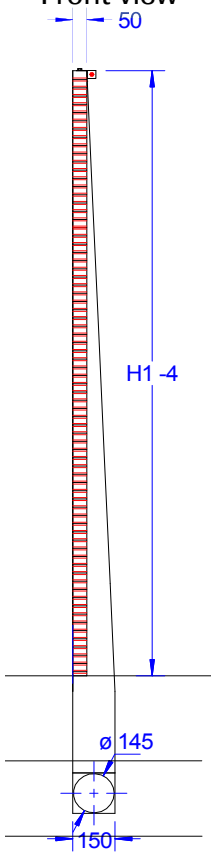
Dimensions

Remark
H1 = height under the canopy
H2 = floor thickness

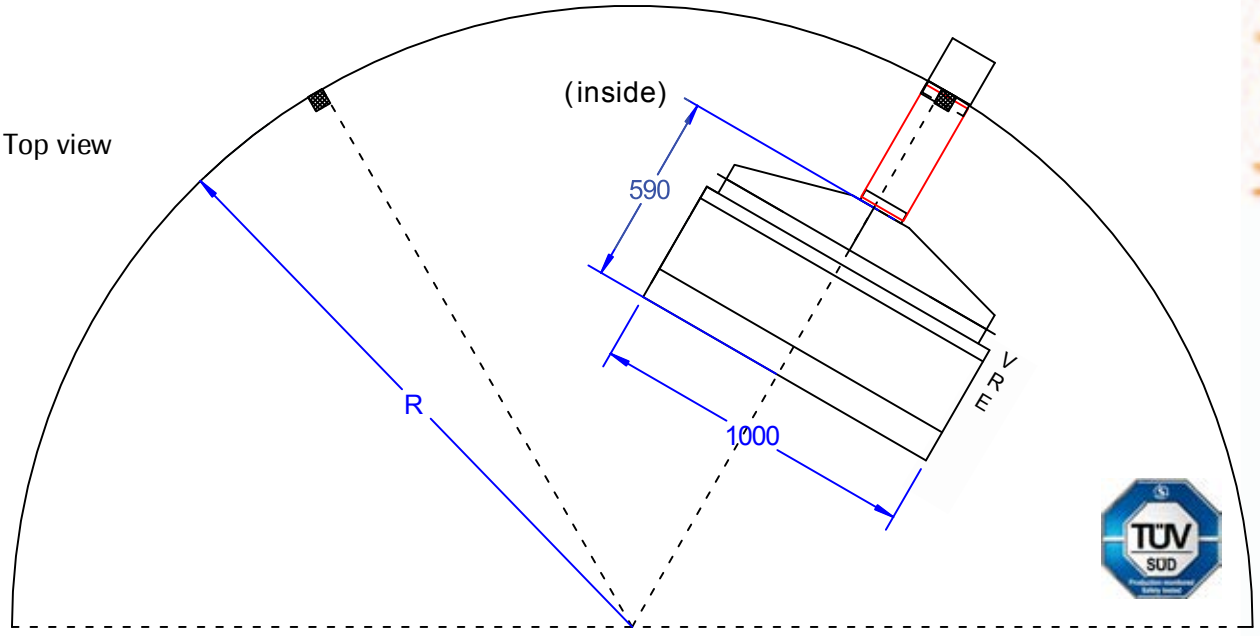
Side view



Front view



Top view



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