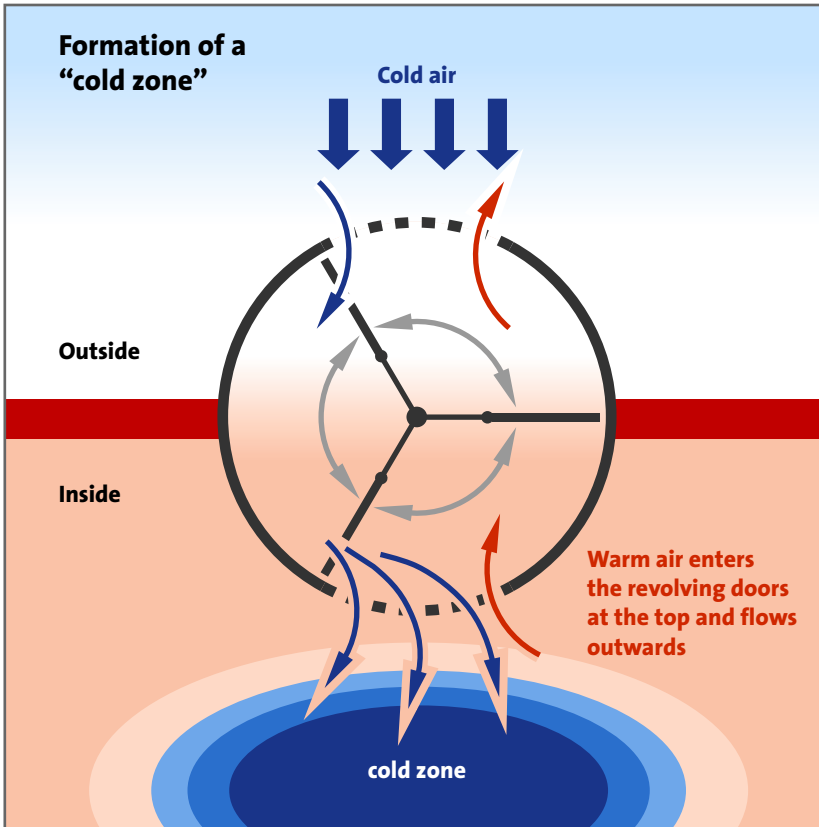




**Designer air curtain systems  
for revolving doors and automatic sliding doors  
Saphir, Rondo, Topas and Sintra**

Technical documentation





**The problem:**

Revolving doors have many advantages. However, there is also a system related problem: As a result of their revolving movement, cold air from outside is forced into the room being protected and the warm room air is carried outwards. This forms a "cold zone".

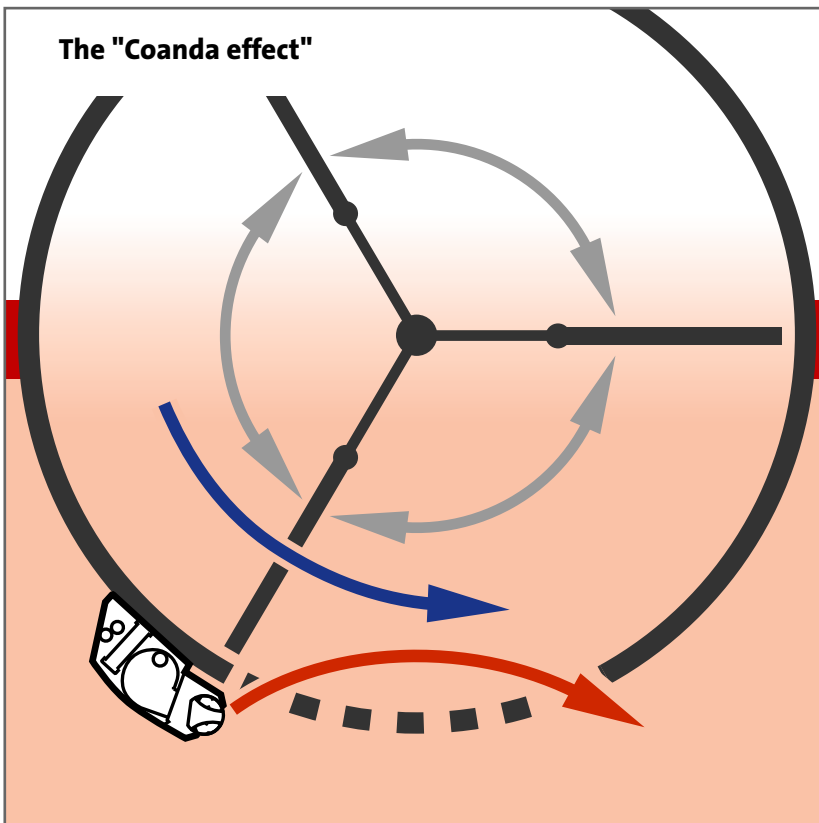
Although this is not a draft in the conventional sense, the effect is the same because of the steep temperature gradient.

Depending on the speed at which the doors rotate, the cold air at the bottom flows in on either the left or right side. The task of the Teddington door air curtain is to effectively prevent this.

**The solution:**

The Saphir door air curtain with its patented pressure chamber nozzle system.

Blowing in from the side, it optimally prevents cold air from entering revolving doors up to 6200 mm in diameter, while in so doing uses an extremely small amount of energy.





#### **SAPHIR**

Saphir is a special door air curtain for revolving doors.

Its design, comprising a combination of aluminium profiles and coated steel sheets is self-supporting. Stainless steel 1.4301 lining plates, grain 240, brushed, are possible on request.

The shape and colour of the top cover is adapted to the housing and forms a harmonious unit in combination with the equipment.

#### **Area of use**

The unit was designed specially for installation at the sides of revolving doors and forms a harmonious unit with the doors.

Saphir has the patented Evolvent pressure chamber nozzle system (Patent No. 4415079)

#### **The advantages of the Evolvent pressure chamber nozzle system when used on stationary systems:**

- Precise adjustment possibility of the air direction for optimum adaptation to the door geometry
- Much less energy used than is the case with conventional revolving door air curtain systems, since the highest air exit speed occurs near to the ground
- Low noise
- Attractive design
- Visible housing surfaces can be used as advertising spaces

#### **Product advantages**

- Double-flow, extremely low-noise radial ventilators on vibration-free bearings. Full motor protection via thermal contacts (adjustment and monitoring in the control unit / remote control)
- Outside air brought into motion by the door's scooping movement is kept in the revolving door, since the air exits on the optimum side and in the optimum direction
- The most effective air exit is in the lower area, critical for revolving doors, of approximately 2/3 - LH; in the upper area, the work is done with a significantly reduced air speed and the height of the unit is adapted to the door height
- Heating resistor designed for a wide range of applications
- Heating connections optionally from below or from above
- Comfortable maintenance (convenient access to the motors, the heater and the electrical components via a large inspection door)
- Without any visible screw and rivet connections
- End caps adapted to the housing shape



#### 4 · Teddington Designer air curtain systems Saphir for revolving doors – Design, technical data and dimensions

##### ■ Heater

Consisting of copper pipe and aluminium slats, designed for a wide range of applications. The heating connections can be optionally be made either from below or from above.

##### ■ Resistance heating elements

Made of corrosion-resistant spiral slats with thermal overheating protection (electrically-heated version)

##### ■ Radial ventilators

Operation with alternating current (230V, 1Ph, 50Hz)

##### ■ Blow-out nozzle of the pressure chamber nozzle system

made of natural-coloured anodised aluminium

##### ■ Suction grid

Fold-down perforated steel sheet finished in the same colour as the housing, behind which an EU 2 filter prevents contamination of the universal heater.

#### Technical data, Saphir 1, 2 and 3

Series	1-220	1-250	1-300	2-220	2-250	2-300	3-220	3-250	3-300	
Overall height [cm]	220	250	300	220	250	300	220	250	300	
Door diameter approx.* [m]	3.6	3.6	3.6	4.8	4.8	4.8	6	6	6	
Air quantity [m <sup>3</sup> /h]	max.	2800	3900	4800	3900	4875	5850	4875	5850	6825
	effective	2400	3200	4000	3200	4000	4800	4000	4800	6300
Air speed [m/s]	6 - 9	6 - 9	6 - 9	7 - 11	7 - 11	7 - 11	9- 13	9- 13	9- 13	
Noise level max. [dB(A)]	50	52	54	52	54	55	54	55	56	
<b>PWW 70/50°C</b>										
Heating capacity [kW]	13.7	18.3	18.3	18.3	22.2	22.2	21.4	24	24	
Flow rate [m <sup>3</sup> /h]	0.6	0.8	0.8	0.8	0.97	0.97	0.94	1.06	1.06	
Water resistances [kPa]	5.9	12.3	12.3	9.9	17.4	17.4	13.2	20	20	
Pipe connections VL / RL [inches]	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	
Electrical data	[V]	230	230	230	230	230	230	230	230	
	[kW]	0.72	0.96	1.2	0.96	1.2	1.4	1.2	1.4	
	[A]	3.15	4.2	5.2	4.2	5.2	6.3	5.2	6.3	
Electric heater (3-stage) [kW]	9	12	12	12	12	18	12	18	18	
Weight (approx.) [kg]	79	88	97	87	94	103	96	106	117	

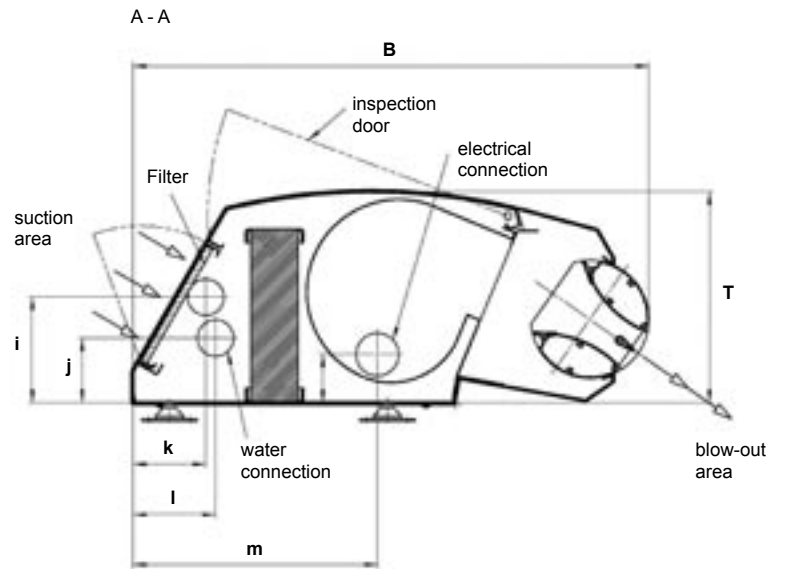
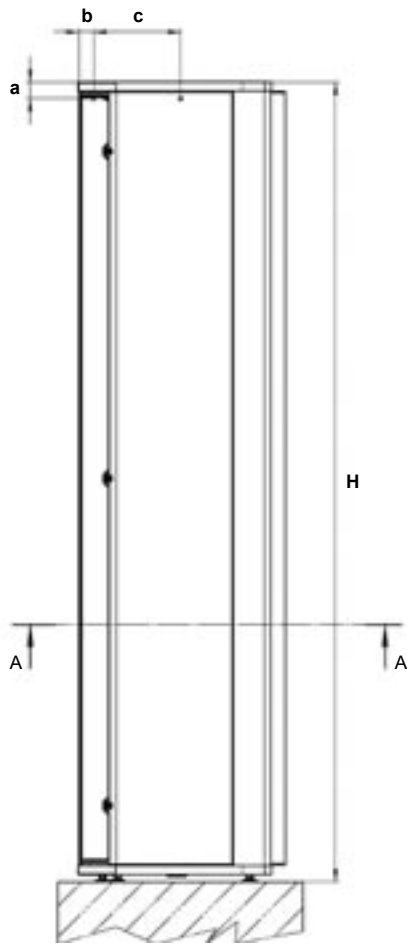
\* Dependent on the building situation and position • We reserve the right to make technical changes.

#### Dimensions Saphir 1, 2 and 3

	Dimensions			Attachment			Pipe connection			Electrical		
	Height H [mm]	Width W [mm]	Depth D [mm]	a [mm]	b [mm]	c [mm]	i [mm]	j [mm]	k [mm]	l [mm]	m [mm]	n [mm]
<b>Saphir 1</b>	1000 to 3000	568	232	45	44	240	116	71	80	91	269	53
<b>Saphir 2</b>		568	232	45	44	240	116	71	80	91	269	53
<b>Saphir 3</b>		568	232	45	44	240	116	71	80	91	269	53

We reserve the right to make technical changes.

5 · Teddington Designer air curtain systems Saphir for revolving doors – Dimensions





## RONDO

Rondo is a special door air curtain for revolving doors in three classic, proven types.

The basic housing is of a self-supporting design and has attachment points at the side. The blow-out channels are of different shapes, depending on the version. Like the housing, there are made of sendzimir-galvanised sheet steel.

The air is sucked in via a perforated sheet steel suction grid and a filter behind this grid (Class EU 2).

The air is blown out via a combined air flow redirection chamber with air guide plates and an integrated blow-out grid adapted to the radius of the revolving door.

### Area of use

Rondo is used for integration in revolving doors, and the air outlet is adapted to the door radius.

### Product advantages

- Robust construction
- Simple attachment with rivet nuts above, in front of or inside the revolving door
- The filter (Class EU 2) can be easily replaced or removed for cleaning
- The universal heater can be emptied without having to be removed, and is designed for a high capacity and a wide range of applications.
- Heating connection optionally from above or at the side
- Radial ventilators with a high feed pressure, double-flow on vibration-free bearings, directly driven, with multiple blades and low-noise. Back-up fuse in the unit. Motor protection via thermal contacts (adjustment and monitoring in the control unit / remote control)
- Air blow-out with air guide plates for optimum air flow into the critical zones
- **Universal heater**  
for PWW in Cu-Al design, test pressure 16 bar (warm water version)
- **Heating connections**  
as standard at top right, viewed in the air direction
- **Resistance heating elements**  
Made of corrosion-resistant spiral slats with thermal overheating protection (electrically-heated version)
- **Radial ventilators**  
The number depends on the performance class. Operation with alternating current (230V, 1Ph, 50Hz)
- **Blow-out blind**  
Aluminium drip slats shaped conducive to the flow, vertically aligned, permanently installed

## 7 · Teddington Designer air curtain systems Rondo for revolving doors –Technical data and dimensions



### Technical data Rondo up to max. 2.60 m blow-out height

Series	Ro 10-10	Ro 10-15	Ro 10-20	Ro 10-25	Ro 10-30	Ro 10-30 L	
Air capacity (excluding channel) [m <sup>3</sup> /h]	1.900	2.700	4.500	5.400	6.300	7.200	
Outside diameter min./max.[m] with opening angle 60° *	2.2 - 3.1	3.2 - 4.1	4.2 - 5.1	5.2 - 6.1	6.2 - 6.5	—	
Outside diameter min./max.[m] with opening angle 90° *	1.5 - 2.2	2.3 - 2.9	3 - 3.6	3.7 - 4.4	4.5 - 5.2	5.3 - 6.2	
<b>PWW 70/50°C</b>							
Heating capacity at dT 20 K [kW]	12.4	17.6	29.3	35.0	41.0	46.8	
Flow rate [m <sup>3</sup> /h]	0.54	0.76	1.3	1.55	1.8	2.05	
Pressure loss [kPa]	6.2	2.6	3.3	5.3	4.6	6	
<b>PWW 60/40°C</b>							
Heating capacity at dT 15 K [kW]	9.1	14.8	23.0	27.7	33.4	35.7	
Flow rate [m <sup>3</sup> /h]	0.4	0.65	1.01	1.23	1.44	1.55	
Pressure loss [kPa]	3.5	2	2.2	3.5	2.5	3.6	
Heating connections, internal [inches]	3/4"	3/4"	3/4"	3/4"	1	1	
Motor data	[A]	2.10	3.15	5.20	6.30	7.35	8.40
	[kW]	0.48	0.72	1.20	1.44	1.68	1.92
	[V/Hz]	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50
Noise level max. [dB(A)]**	54	55	57	57	58	59	
Weight (round unit) [kg] (ca.)	47	78	108	140	156	160	

\* dependent on door make, installation height and installation type \*\* Measuring point at 3 m side clearance. • We reserve the right to make technical changes.

### Dimensions Rondo

Dimensions			Attachment		Heating connection			Electrical	
Width W [mm]	Height H [mm]	Depth D [mm]	b [mm]	c [mm]	i [mm]	k [mm]	l [mm]	m [mm]	n [mm]
1000 to 3000	240	400	65	270	120	60	136	75	55

We reserve the right to make technical changes.

**Specifications of the 3 types:**

**RONDO Type SDA**

- For surface-installed revolving doors
- Air suction at the front
- Optional, for servicing the revolving door, removable blow-out connectors
- Lining plates for connector lining powder-coated in RAL colour or made of stainless steel 1.4301, ground, grain 240
- Blow-out is inside the room, in front of the revolving door

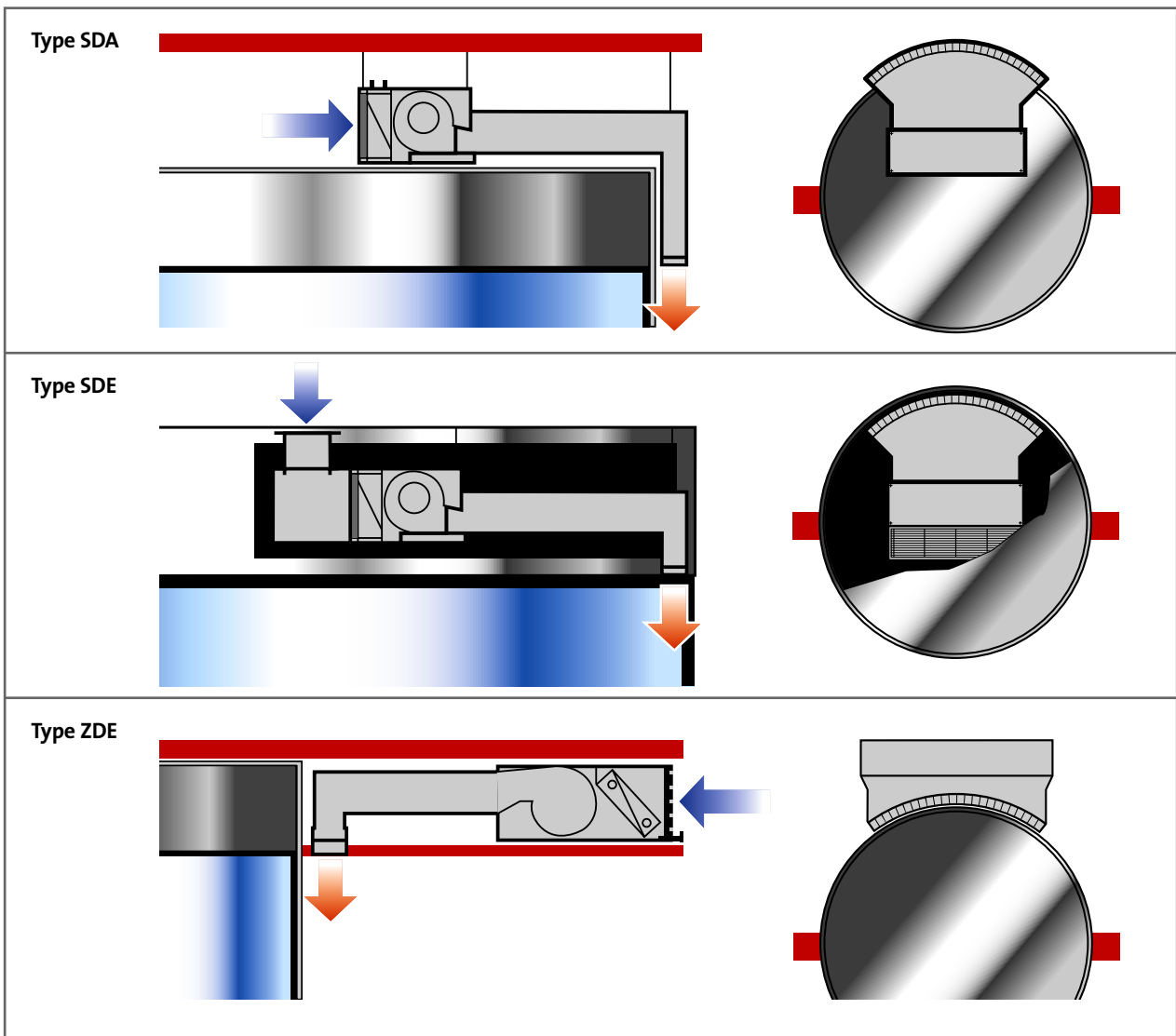
**RONDO Type SDE**

- For flush-installed revolving doors
- Air suction at the top, on the front or on the underside via suction chamber
- Blow-out is inside the revolving door, in the passage leading to the room

**RONDO Type ZDE**

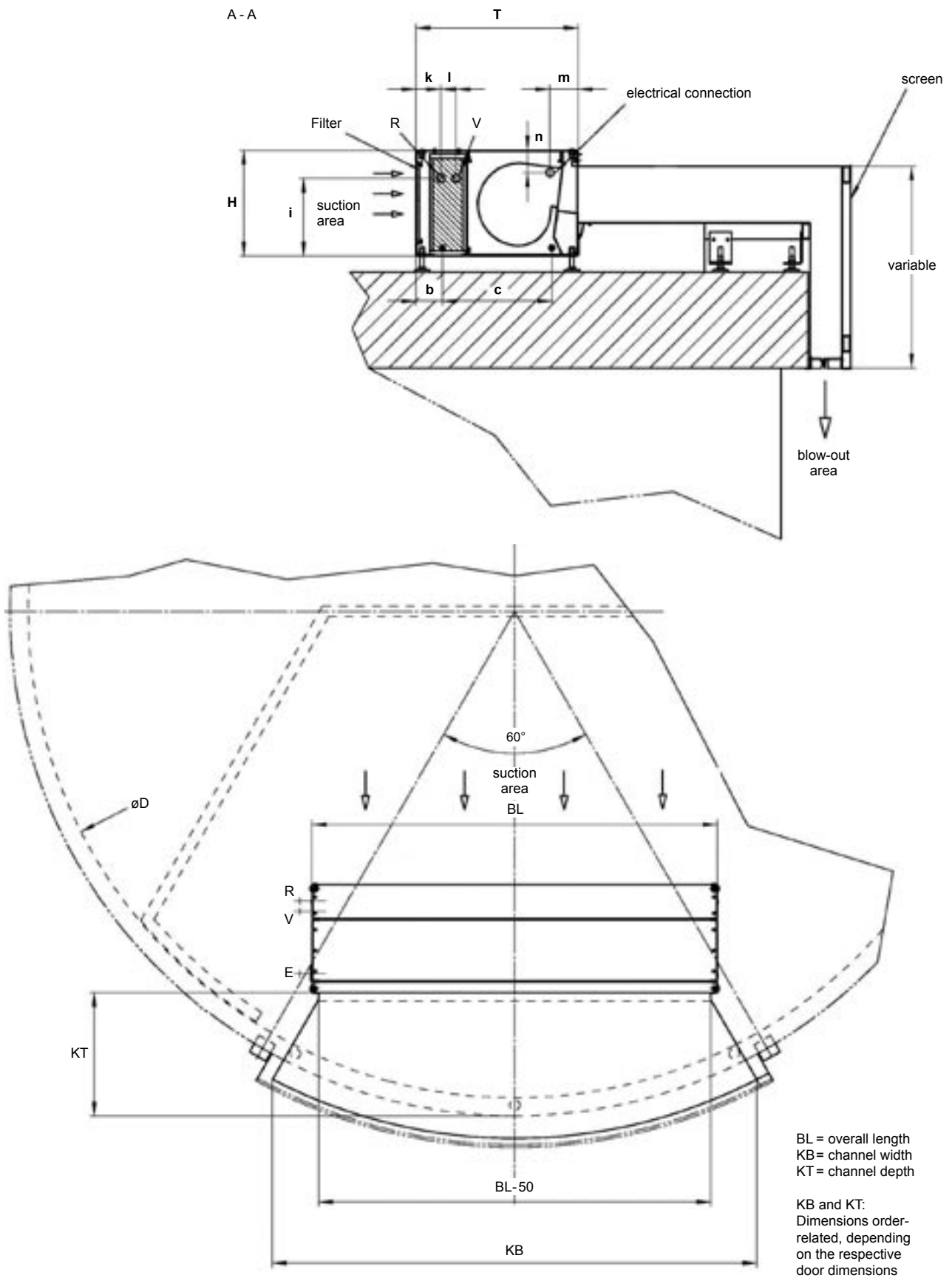
- For revolving doors installed in intermediate ceilings
- Air suction on the front side or via suction chamber on the underside
- Blow-out is on the inside of the room in front of the revolving door

All types are suitable for 2, 3 or 4-leaf revolving doors.





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#### **TOPAS**

Topas is a special door air curtain for automatic sliding doors.

Its design, comprising a combination of aluminium profiles and coated steel sheets is self-supporting. Stainless steel 1.4301 lining plates, grain 240, brushed, are possible on request. The shape and colour of the top cover is adapted to the housing and forms a harmonious unit in combination with the equipment.

#### **Area of use**

The unit was designed specially for installation at the sides of automatic sliding doors and forms a harmonious unit with the doors.

#### **SINTRA**

The Sintra unit is principally the same as Topas, but is different in that it has 90° air flow.

#### **Area of use**

Due to its design, Sintra is suitable for side, vertical installation in porches or passages with narrow space restrictions and for use in curved sliding doors.

Topas and Sintra have the patented Evolvent pressure chamber nozzle system (Patent No. 4415079 )

#### **The advantages of the Evolvent pressure chamber nozzle system when used in stationary systems:**

- Precise adjustment possibility of the air direction for optimum adaptation to the door geometry
- Exact adjustment possibility for the blow-out direction against the outside air
- Significantly less energy used than is the case with vertically-installed conventional air curtain systems and displacement of the highest air exit speed near to the ground
- Low noise
- Attractive design
- Visible housing surfaces can be used as advertising spaces

#### **Product advantages**

- Double-flow radial ventilators on vibration-free bearings and extremely low-noise. Full motor protection via thermal contacts (adjustment and monitoring in the control unit / remote control)
- Heating resistor designed for a wide range of applications
- Heating connections optionally from below or from above
- Comfortable maintenance (convenient access to the motors, the heater and the electrical components via a large inspection door)
- Without any visible screw and rivet connections
- End caps adapted to the housing shape



■ **Heater**

Consisting of copper pipe and aluminium slats, designed for a wide range of applications. The heating connections can be optionally be made either from below or from above.

■ **Resistance heating elements**

Made of corrosion-resistant spiral slats with thermal overheating protection (electrically-heated version)

■ **Radial ventilators**

Operation with alternating current (230V, 1Ph, 50Hz)

■ **Blow-out nozzle of the pressure chamber nozzle system**

made of natural-coloured anodised aluminium

■ **Suction grid**

Fold-down perforated steel sheet finished in the same colour as the unit, behind which an EU 2 filter prevents contamination of the universal heater.

**Technical data Topas and Sintra 1, 2 and 3**

Series	1-220	1-250	1-300	2-220	2-250	2-300	3-220	3-250	3-300
Overall height [cm]	220	250	300	220	250	300	220	250	300
Door width approx.* [m]	1.8	1.8	1.8	2.2	2.2	2.2	2.4	2.4	2.4
Air quantity [m <sup>3</sup> /h]	max.	2800	3900	4800	3900	4875	5850	4875	6825
	effective	2400	3200	4000	3200	4000	4800	4000	6300
Air speed [m/s]	6 - 9	6 - 9	6 - 9	7 - 11	7 - 11	7 - 11	9 - 13	9 - 13	9 - 13
Noise level max. [dB(A)]	50	52	54	52	54	55	54	55	56
<b>PWW 70/50°C</b>									
Heating capacity [kW]	13.7	18.3	18.3	18.3	22.2	22.2	21.4	24	24
Flow rate [m <sup>3</sup> /h]	0.6	0.8	0.8	0.8	0.97	0.97	0.94	1.06	1.06
Water resistances [kPa]	5.9	12.3	12.3	9.9	17.4	17.4	13.2	20	20
Pipe connections VL / RL [inches]	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Electrical data	[V]	230	230	230	230	230	230	230	230
	[kW]	0.72	0.96	1.2	0.96	1.2	1.4	1.2	1.68
	[A]	3.15	4.2	5.2	4.2	5.2	6.3	5.2	7.35
Electric heater (3-stage) [kW]	9	12	12	12	12	18	12	18	18
Weight (approx.) [kg]	79	88	97	87	94	103	96	106	117

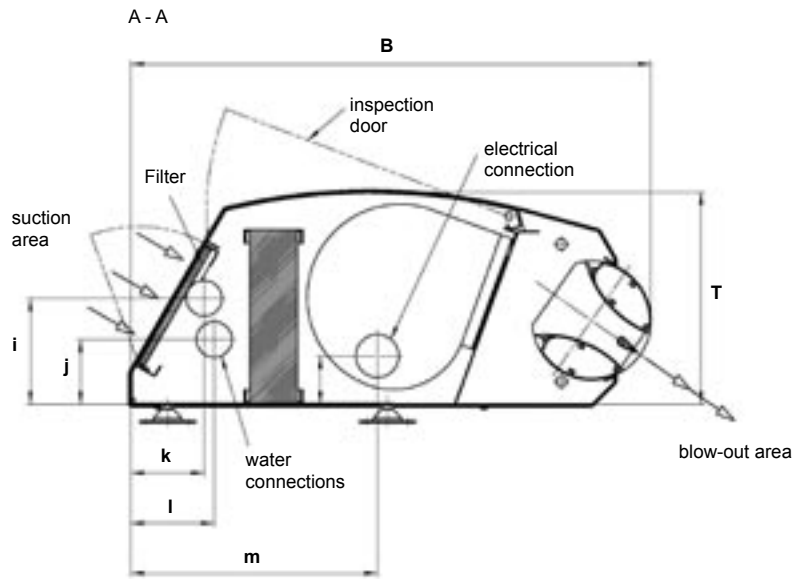
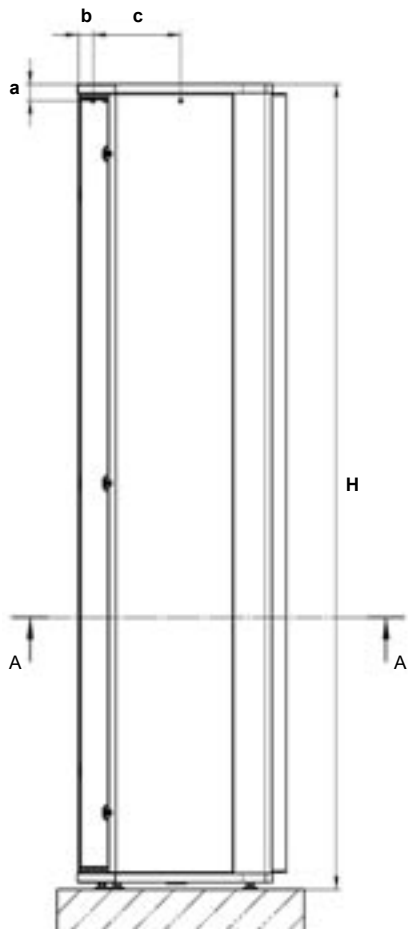
\* dependent on the building situation and position. • We reserve the right to make technical changes.

**Dimensions Topas and Sintra 1, 2 and 3**

	Dimensions			Attachment			Pipe connection			Electrical		
	Height H [mm]	Width W [mm]	Depth D [mm]	a [mm]	b [mm]	c [mm]	i [mm]	j [mm]	k [mm]	l [mm]	m [mm]	n [mm]
<b>Topas 1</b>	1000 to 3000	568	232	45	44	240	116	71	80	91	269	53
<b>Topas 2</b>		568	232	45	44	240	116	71	80	91	269	53
<b>Topas 3</b>		568	232	45	44	240	116	71	80	91	269	53
<b>Sintra 1</b>	1000 to 3000	600	250	45	44	405	97	54	40	85	212	100
<b>Sintra 2</b>		600	250	45	44	405	97	54	40	85	212	100
<b>Sintra 3</b>		600	250	45	44	405	97	54	40	85	212	100

We reserve the right to make technical changes.

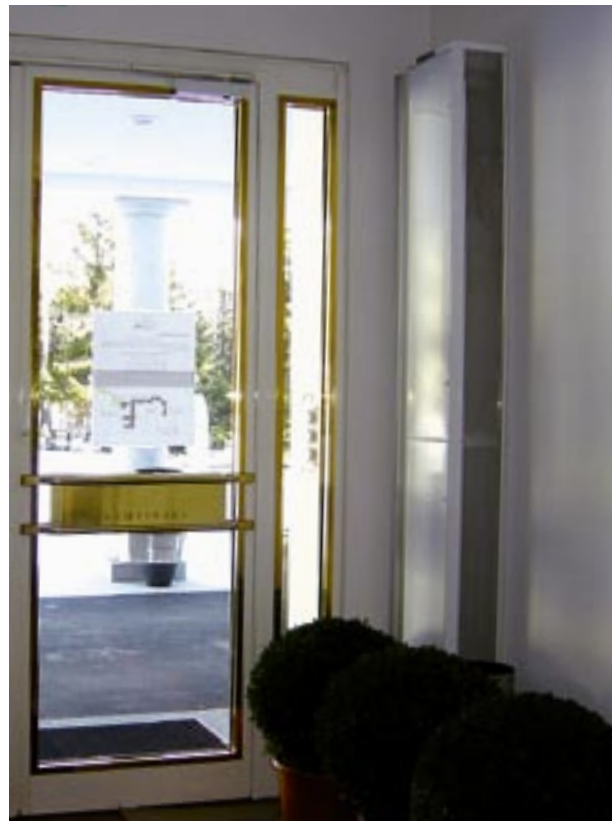
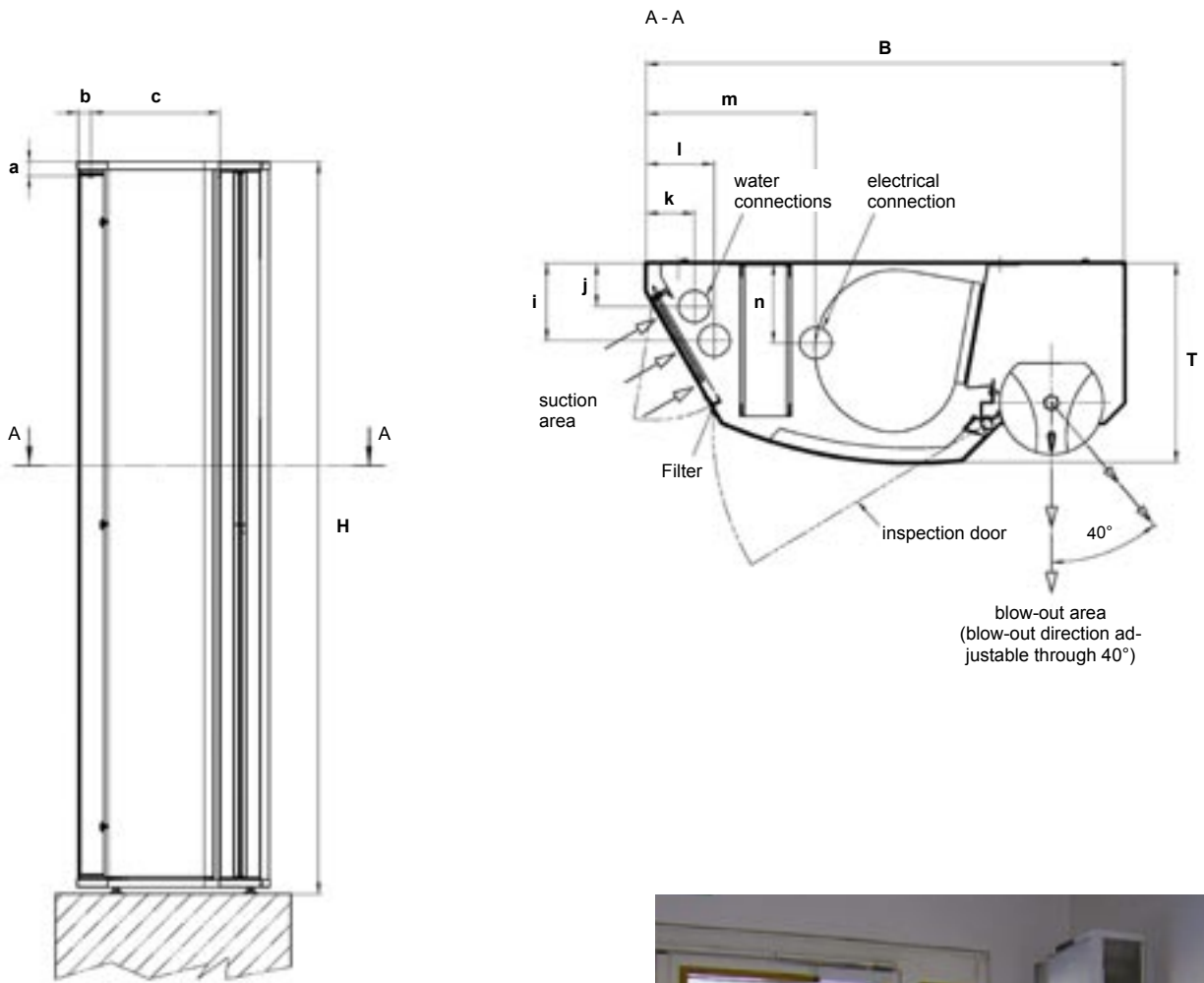
13 · Teddington Designer air curtain systems Topas and Sintra – Dimensions



14 · Teddington Designer air curtain systems Topas and Sintra – Installation situations



15 · Teddington Designer air curtain systems Topas and Sintra – Dimensions



## Ordering key

### Saphir/Topas/Sintra = Article

1 = Series (power stage)

2 = Series (power stage)

3 = Series (power stage)

L = vertical on left

R = vertical on right

100, 150, 200, 220, 250, 300 = overall length in cm

W = pump warm water 90/70°C - 80/60°C

N = pump warm water 70/50°C

NT = pump warm water 55/45°C

E = Electric heater

9010 = colour as per RAL table or CrNi for lining plates in CrNi

**Saphir 1-L-100 W 9010 = example**

### Rondo = Article

10 = Series (power stage)

15 = Series (power stage)

20 = Series (power stage)

SDA = surface-mounted unit

SDE = flush-mounted unit

ZDE = intermediate ceiling version

100, 150, 200, 250, 300 = overall length in cm

W = pump warm water 90/70°C - 80/60°C

N = pump warm water 70/50°C

NT = pump warm water 55/45°C

E = Electric heater

9010 = colour as per RAL table

**Rondo 10-SDA-100 W 9010 = example**

