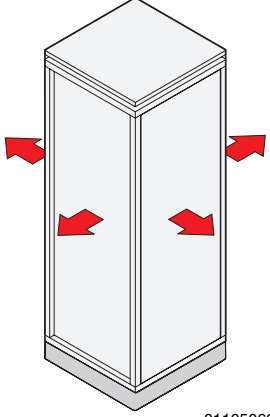
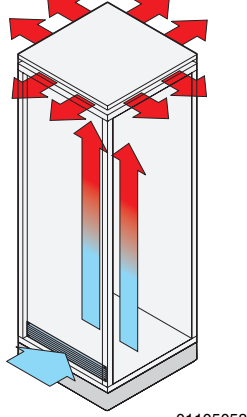
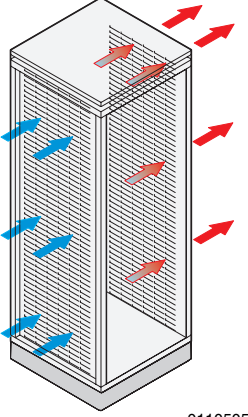
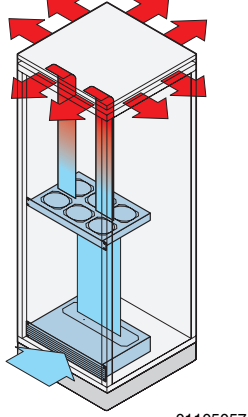


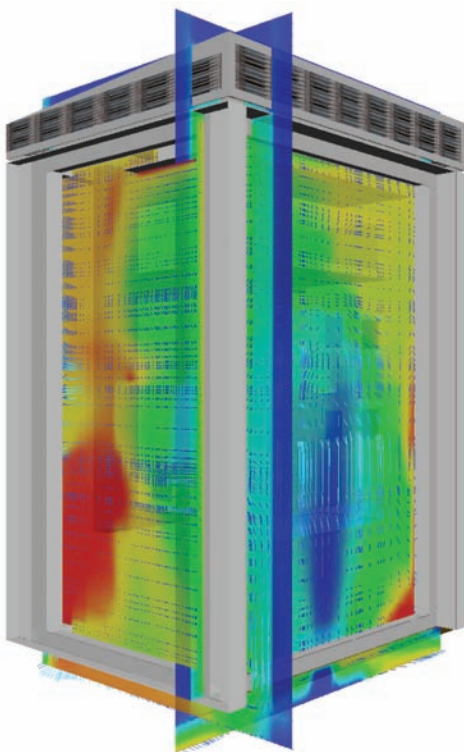
# Climate control

## Products / cooling concepts

Product	Plain cabinet	Raised top cover, vent slots	Perforated doors	19" fans, top cover fans
Cooling concept	 01105060	 01105058	 01105056	 01105057
Description	Natural convection through radiation	Free convection through top cover opening	Free convection through opening in the doors/rear panels	Air cooling
Type of protection	≤ IP 55	≤ IP 20	≤ IP 20	≤ IP 20
Noise level approx.	0	0	55 ... 65 dB(A)	34 ... 67 dB(A)
Ambient conditions	$T_i > T_a$	$T_i > T_a$	$T_i > T_a$	$T_i > T_a$
Cooling capacity approx <sup>1)</sup>	< 500 W	500 W ... 800 W	500 W ... 6000 W <sup>2)</sup>	< 2000 W

1) depending on cabinet size, electronic components, location and room cooling concept  
 2) > 800 W are only possible with own, active cooling through components like server etc.  
 $T_i$  = cabinet inner temperature  $T_a$  = cabinet ambient temperature

## FLOTHERM simulation



01103050

### Project support via simulation software

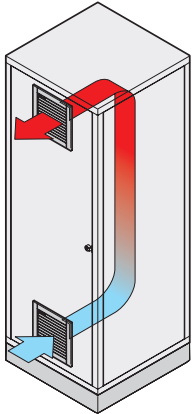
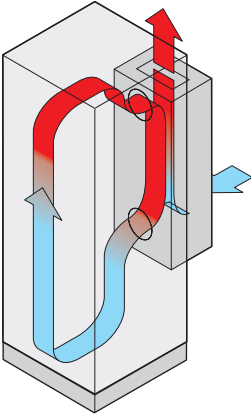
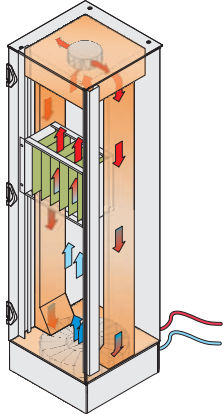
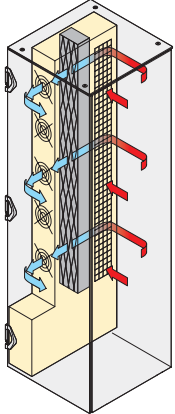
With the simulation software FLOTHERM hot spots and problem areas can already be detected during the concept phase. Cooling concepts for plug-in units up to complete case and cabinet systems can be analysed in advance. Our FLOTHERM specialists will help you in finding the right concept.

### Your advantage:

- Detailed analysis detects problems during the concept/prototype phase
- Short development times
- High efficiency and reliability of your systems

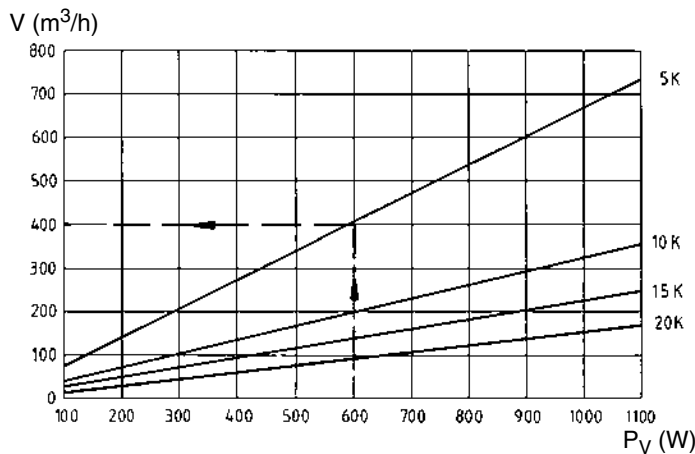
# Climate control

## Products / cooling concepts

Product	Air filtered fan	Climate equipment	Air / air-heat exchanger LHX 3	Air / water-heat exchanger LHX 20/40
Cooling concept				
Description	Cooling with air 01102050	Cooling with air 01105061	Air conditioner 01007055	Cooling with water 01005081
Type of protection	≤ IP 54	≥ IP 55	≥ IP 55	≥ IP 55
Noise level approx.	39 ... 71 dB(A)	60 ... 81 dB(A)	45,2 dB(A)	50 ... 70 dB(A)
Ambient conditions	$T_i > T_a$	$T_a \leq 55^\circ\text{C}$	$T_a \leq 70^\circ\text{C}$	$T_a \leq 70^\circ\text{C}$
Cooling capacity approx. <sup>1)</sup>	< 1500 W	< 2600 W	< 3000 W	< 40000 W

1) depending on cabinet size, electronic components, location and room cooling concept  
 $T_i$  = cabinet inner temperature  $T_a$  = cabinet ambient temperature

## Calculation on the Internet ([www.schroff.biz](http://www.schroff.biz))



Cooling with air, e.g. by means of filter fans

a41771

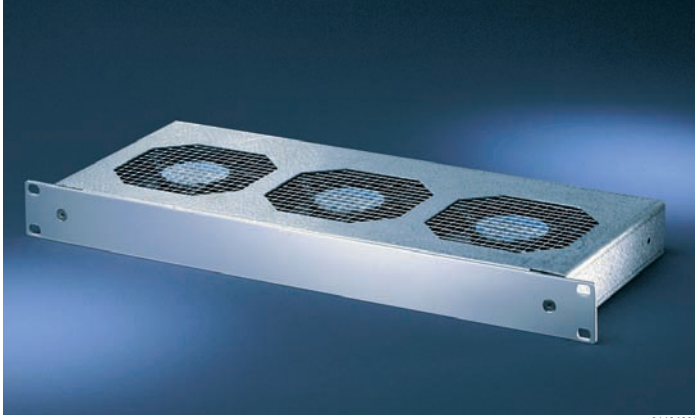
On our Internet website support is available to select off-the-shelf components. Describe your basic conditions:

- the installed heat dissipation capacity
- the desired cabinet inner temperature
- the maximum local ambient temperature
- the set-up type

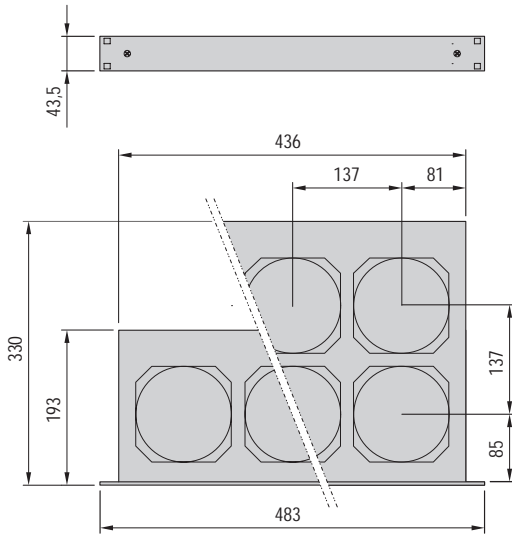
Thus you enhance the performance and reliability of your system and we lead you to possible alternatives of our standard program.

## Climate control – 19" fan trays

### 19" fan 1 U



01194002



KTA44306

- Mechanical strain relief for mains cable connection
- Adaptation onto subracks possible
- Contact protection in accordance with EN 294 (ISO 13857)



#### Delivery comprises (ready to connect)

Item	Qty	Description
1	1	19" circulation fan, 1 U, cover/base plate, St, 1 mm, finish AlZn, with perforation; front panel 1 U, Al, 3 mm, anodised
2	3 / 6	Fan, see Order Information
3a	1	AC with IEC connector (mains input IEC 320), incl. safety clamp for mechanical strain relief
b3	1	DC version with connecting cable, cable length 2.5 m

#### Order Information

	24 V <sub>DC</sub> Part no.	115 V <sub>AC</sub> Part no.	230 V <sub>AC</sub> Part no.
	<b>10713-103</b>	<b>10713-102</b>	<b>10713-100</b>
	<b>10713-107</b>	<b>10713-106</b>	<b>10713-104</b>

<b>Replacement fan 1 piece</b>	<b>20713-240</b>	<b>20713-244</b>	<b>20713-243</b>
<b>Side panel connecting bracket</b> for subrack europacPRO, incl. assembly kit	<b>21101-954</b>		
<b>Equipment cable SCHUKO/UTE</b> SCHUKO/UTE plug, IEC 320 C13 female connector, 2.5 m, 1 piece	<b>60103-131</b>		
<b>Equipment cable, BS</b> British standard plug, IEC 320 C13 female connector, 2.5 m, 1 piece	<b>60103-137</b>		
<b>Equipment cable, USA</b> USA plug, IEC 320 female connector 2 m, 1 piece	<b>60103-141</b>		

#### Technical data

Voltage	230 V <sub>AC</sub>		115 V <sub>AC</sub>		24 V <sub>DC</sub>
Frequency in Hz	50	60	50	60	-
Number of fans	3/6		3/6		3/6
Airflow volume in m <sup>3</sup> /h (3/6 fans)	440/845	520/1000	440/845	520/1000	506/970
Noise level in dB(A) (3/6 fans)	56.5/59.4	60.2/62.9	56.5/59.4	60.2/62.9	60.5/63.3
Power consumption in W (3/6 fans)	45/90	42/84	46.5/93	43.5/87	24/48
Max. stat. pressure in Pa	73	88	73	88	68
Permissible ambient temperature in °C	-40 ... +70 °C				
Lifespan in h L <sub>10</sub> 40 °C	43500				
Lifespan in h L <sub>10</sub> 55 °C	20000				

#### Note

- Replacement fans, see chapter Climate control - Accessories
- Versions with multiple fans see ServicePLUS configuration page 4.14



ServicePLUS see page 4.17

## Climate control – 19" fan trays

### Blower unit 2 U, with tangential fan

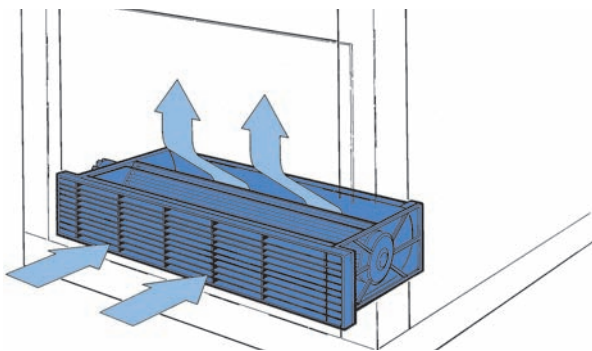


- High air supply volume
- Integrated filter mat
- 2 versions:
  - LE1: 19" bolt-on dimension, fan unit is wider than 19"
  - LE2: 19" reduced width, for easy assembly



#### Delivery comprises (ready to connect)

Item	Qty	Description
1	1	Blower unit 2 U, with grille, PA 6.6, UL 94 V-0, front grille 2 U, PPO, UL 94 V-0; filter mat, synthetic fibre, filter class G 2
2	1	Fan
3	1	Terminal block



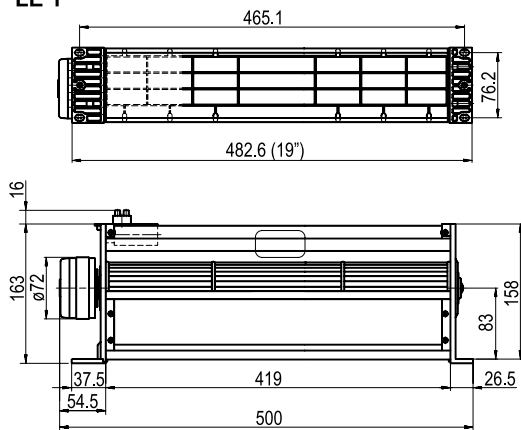
#### Order Information

Description	115 V <sub>AC</sub>	230 V <sub>AC</sub>
	Part no.	Part no.
LE1 blower unit 2 U with tangential fan	<b>60713-003</b>	<b>60713-001</b>
LE2 blower unit 2 U with tangential fan	<b>60713-004</b>	<b>60713-002</b>
Spare filter mat PU 10 pieces		<b>20705-008</b>

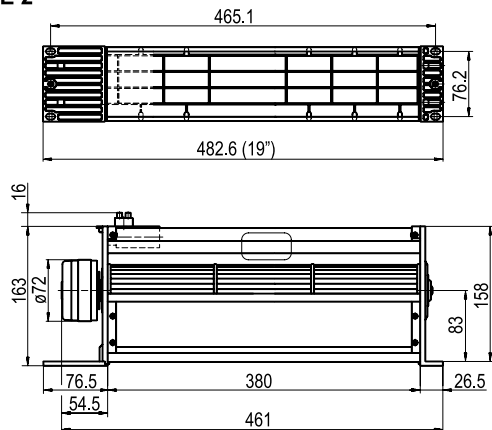
#### Dimensions

Voltage	230 V <sub>AC</sub>		115 V <sub>AC</sub>	
	50	60	50	60
Frequency in Hz	50	60	50	60
Airflow volume in m <sup>3</sup> /h	320	330	320	330
Noise level in dB(A)	59	62	59	62
Max. stat. pressure in Pa	65	70	65	70
Power consumption in W	37	46	30	40
Permissible ambient temperature in °C	-20 ... +65 °C			
Lifespan in h	30000			

LE 1



LE 2



ServicePLUS see page 4.17

Main Catalogue  
E 03/2009

**Part number in bold face type: ready for despatch within 2 working days**  
Part number in normal type: ready for despatch within 10 working days

## Climate control – 19" fan trays

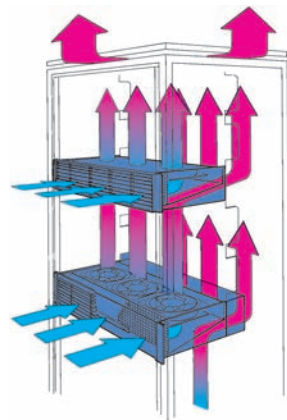
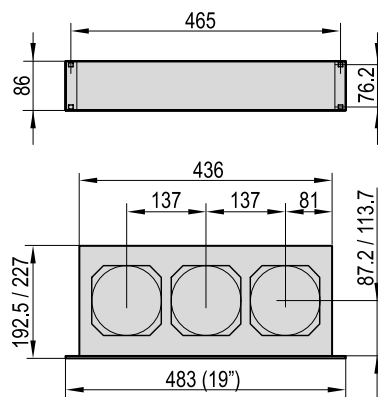
### 19" blower unit 2 U (depth 160 mm or 220 mm)



- Integrated air baffle prevents heat build-up in sub-assemblies positioned underneath
- Optionally with rear supplementary fan 2 U for active heat removal from the sub-assemblies underneath the blower fan
- Adaptation onto subracks possible

#### Delivery comprises (ready to connect)

Item	Qty	Description
1	1	19" blower fan, 2 U, case, St, 1 mm, finish AlZn; front grille, 2 U, PPO, UL 94 V-0; filter mat, synthetic fibre, filterclass G 2
2	3	Fan
3a	1	AC-version with plug (mains input, IEC 320), incl. safety clamp, mechanical strain relief for mains input cable; connector socket for connection of an optional supplementary fan
b3	1	DC version with connecting cable, cable length 2.5 m



#### Note

- Supplementary fan for AC version see page 4.11



For further information [www.schroff.biz/oneclick](http://www.schroff.biz/oneclick)  
oneClick search code = Part no.



ServicePLUS see page 4.17

#### Order Information

Description	24 V <sub>DC</sub>	115 V <sub>AC</sub>		230 V <sub>AC</sub>		230 V <sub>AC</sub>			
	515 m <sup>3</sup> /h	300/330 m <sup>3</sup> /h		445/530 m <sup>3</sup> /h		300/330 m <sup>3</sup> /h		445/530 m <sup>3</sup> /h	
	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
for board depth 160 mm	<b>10713-537</b>	10713-520	<b>10713-536</b>	<b>10713-518</b>	<b>10713-534</b>				
for board depth 220 mm	<b>10713-529</b>	-	<b>10713-528</b>	-	<b>10713-526</b>				
<b>Replacement fan</b> 1 piece	<b>20713-240</b>	<b>20713-147</b>	<b>20713-244</b>	<b>20700-001</b>	<b>20713-243</b>				
<b>Equipment cable</b> SCHUKO/UTE SCHUKO/UTE plug, IEC 320 C13 female connector, 2.5 m, 1 piece								<b>60103-131</b>	
<b>Equipment cable, BS</b> British standard plug, IEC 320 C13 female connector, 2.5 m, 1 piece								<b>60103-137</b>	
<b>Equipment cable, USA</b> USA plug, IEC 320 female connector, 2 m, 1 piece								<b>60103-141</b>	
<b>Side panel connecting bracket</b> For subrack europac, incl. assembly kit								<b>21101-104</b>	
<b>Side panel connecting bracket</b> For subrack europacPRO, incl. assembly kit								<b>21101-954</b>	
<b>Spare filter mat</b> PU 3 pieces								<b>60713-501</b>	

#### Dimensions with 3 fans

Voltage	24 V <sub>DC</sub>		115 V <sub>AC</sub>				230 V <sub>AC</sub>			
			50		60		50		60	
Frequency in Hz	-		50		60		50		60	
Airflow volume in m <sup>3</sup> /h	515		300		330		445		530	
Noise level in dB(A)	59.8		52.2		56.1		55.2		58.2	
Max. stat. pressure in Pa	68		41		41		78		88	
Power consumption in W	24		42		33		46.5		43.5	
Permissible ambient temperature in °C	-20 ... +70 °C		-40 ... +70 °C				-40 ... +70 °C			
Lifespan in h, <sup>1)</sup> at 20 °C, <sup>2)</sup> at 55 °C	20000 <sup>2)</sup>		50000 <sup>1)</sup>		20000 <sup>2)</sup>		50000 <sup>1)</sup>		20000 <sup>2)</sup>	



## Climate control – 19" fan trays

### AC fans/replacement fans



01108005

#### Delivery comprises

Item	Qty	Description
1	1	Fan (width 119 mm, depth 119 mm)

#### Order Information

Description	Height mm	Airflow volume m <sup>3</sup> /h	115 V <sub>AC</sub> Part no.	230 V <sub>AC</sub> Part no.
Type A	25	84	<b>20713-146</b>	<b>20713-142</b>
Type B	25	108	20713-147	<b>20700-001</b>
Type C	38	162	<b>20713-244</b>	<b>20713-243</b>
<b>Assembly kit for fan PU 1 kit</b>				<b>21102-013</b>

#### Dimensions AC fans

Type	Type A		Type B		Type C	
	50	60	50	60	50	60
Frequency in Hz	50	60	50	60	50	60
Airflow volume in m <sup>3</sup> /h	84	90	108	120	162	192
Noise level per fan in dB(A)	29	30	34	38	37	41
Max. static pressure in Pa	23	21	41	41	73	88
Max. ambient temperature in °C	70	70	70	70	70	70
Power consumption in W	8	7	14	11	15	14
Dimensions: height in mm (width 119 mm x depth 119 mm)	25		25		38	

- Please order connecting cable separately, see page 4.13
- Please order protective grille separately, see page 4.16

### DC fans/replacement fans



01108005

#### Delivery comprises

Item	Qty	Description
1a	1	Fan, height 38 mm, with plug connection
1b	1	Fan, height 25.5 mm, connecting cable, length 55 mm, connector with 2 x FASTON connectors (2.8 x 0.8 mm)

#### Order Information

Height mm	Airflow volume m <sup>3</sup> /h	Power consumption W	Input voltage V	Part no.
25.5	171	5.3	24	<b>20713-172</b>
38	184	8	24	<b>20713-240</b>
38	184	8	12	<b>20713-241</b>
38	184	8	48	<b>20713-242</b>
<b>Assembly kit for fan PU 1 kit</b>				<b>21102-013</b>

#### Dimensions DC fans

Voltage in V <sub>DC</sub>	24	24	12	48
Dimensions: height in mm (width 119 mm x depth 119 mm)	25	38	38	38
Airflow volume in m <sup>3</sup> /h	195	184	184	184
Noise level per fan in dB(A)	41,5	42	42	42
Max. static pressure in Pa	50,5	68	68	68
Max. ambient temperature in °C	70	70	70	70
Power consumption in W	7	8	8	8

- Please order connecting cable for 38 mm fans separately, see page 4.13
- Please order protective grille separately, see page 4.16