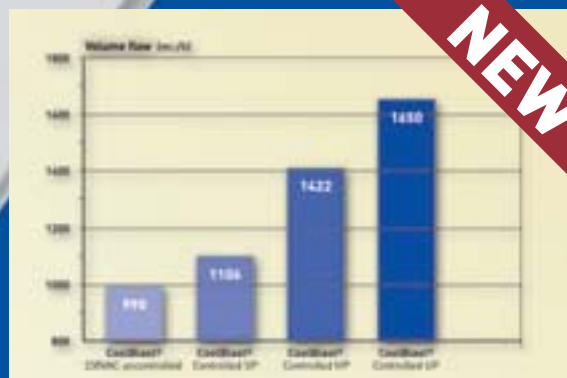


Thermal Management

12.2 to 12.14



CoolBlast®: “Power up – Cool down!”



Modularity

Selection according to required volume flow. Adjustment is made specifically via fan selection in acc. with three performance classes:

- **Standard Performance** (axial fan)
- **High Performance** (axial fan with high speed)
- **Ultra High Performance** (diagonal fan)



Grid (optimised flow)

- With very low pressure loss so that high module cooling power is guaranteed
- The structural design contributes to considerable noise reduction



Thermostat

- Switching the unit on and off – thermostat-regulated
- Can be set to desired temperatures



1 LUF20125



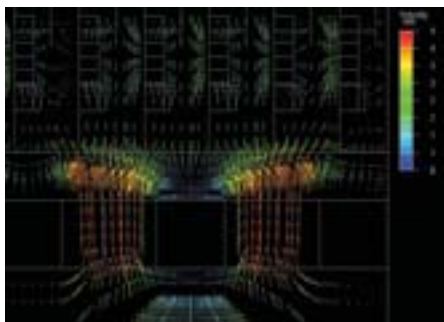
1 LUF20140



2 LUF20056



3 LUF20054



4 LUF20077

CoolBlast® Fan Unit Strong points

The constantly increasing power losses of electronic modules make high demands on the effective cooling of electronic modules.

Large airflow volumes ensure secured heat dissipation, whereby higher airflow speeds reach the components, which leads to better heat transfer.

The packing densities of electronics in racks also continue to increase. Fans with high pressure jump overcome the resulting higher increased pressure loss.

The space-saving 1 HU construction guarantees maximum installation space for our customers' equipment.

1 The **CoolBlast®** fan unit from Knürr is available as a slot in unit with 3 and 6 fans for vertical ventilation of installed modules. The airflow required for cooling is primarily determined by the fan selection.

Fans in three different performance classes are available (Standard, High, and Ultra High Performance). Quiet axial fans and special diagonal fans with an especially high support rate for cooling air can be selected.

2 To ensure that plenty of cooling air reaches the electronic components, **CoolBlast®** has an IP protective grid with high free cross-section surface. The grid form minimises the pressure loss of the streaming airflow and reduces the streaming noise.

3 The Knürr **CoolBlast®** adjusts its cooling airflow to the power loss to be cooled. The temperature-regulated control of the fan rotation optimises noise emission and the lifetime of the fans. The maximum reference temperature is set at the front.

A fan failure detector ensures high operational reliability. Exceeding the reference tempera-

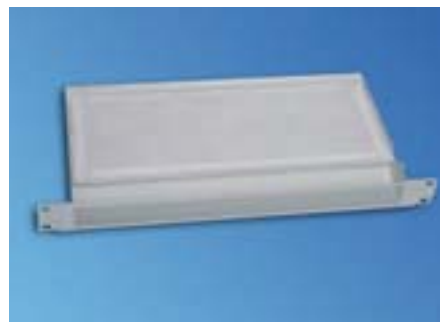
ture is also detected in the same way. The fault signalling can be processed further with the rack monitoring system, **RMS**.

A simple thermostat-controlled model is also available.

4 Optimum heat dissipation of the-cooled module is attained with the high airflow volumes and pressure jumps in the **CoolBlast®** fan unit. Building-specific CFD simulations can optimise each customer thermal management application.

5 Air conduction components, optionally with filter, round off the product range. The filter mat protects the electronic components in use from dirt build-ups and dust, and can be changed during running operation.

In addition to the **CoolBlast®** fan unit, a number of other components and accessory parts are also available for thermal management in server and network rack systems.



5 LUF20133



LUF20125



LUF20139

CoolBlast® Fan Unit Non-regulated

- Fan unit for vertical cooling of modules in 19" racks
- Chassis runners are recommended for mounting. Chassis runners are required with 6-piece CoolBlast.

Material

Sheet steel, high-grade steel grid

Finish / Colour

Housing, zinc-plated
Front panel, powder-coated, smooth
in RAL 7035 light-grey

How supplied

Assembled, wired and tested

Approvals

CE Label in acc. with
low voltage directive 73/23/EEC,
EMC directive 89/366/EEC

Supply schedule

1 CoolBlast fan unit,
packed with operating instructions

Only with DC devices:

1 connection cable, 2 m with connector
plug and free ends

Only with 230V AC devices:

1 2 m power supply lead, Euro

Note

Please also order specific mains cable
[see page 12.15]!

Name	W	H	D	kg	n	Elec. connection	P(W)	\dot{V} (m ³ /h)	ΔP (Pa)	p(dB(A))	Order no.
CoolBlast 230V 3-piece	440	43.6	230	3	3	207 ... 253VAC; 50/60Hz	45	495	74	45.2	03.027.001.1
CoolBlast 230V 6-piece	440	43.6	390	6	6	207 ... 253VAC; 50/60Hz	90	990	74	48.8	03.027.002.1
CoolBlast 115V 3-piece	440	43.6	230	3	3	103.5 ... 126.5VAC; 50/60Hz	44	576	88	47.3	03.027.004.1
CoolBlast 115V 6-piece	440	43.6	390	6	6	103.5 ... 126.5VAC; 50/60Hz	88	1152	88	50.8	03.027.005.1
CoolBlast 24V 3-way SP	440	43.6	230	2.5	3	12 ... 27VDC	23	553	68	49.6	03.027.031.1
CoolBlast 24V 6-way SP	440	43.6	390	5	6	12 ... 27VDC	46	1106	68	53.3	03.027.032.1
CoolBlast 24V 3-way HP	440	43.6	230	3	3	12 ... 25VDC	30	711	160	55.8	03.027.034.1
CoolBlast 24V 6-way HP	440	43.6	390	6	6	12 ... 25VDC	60	1422	160	59.1	03.027.035.1
CoolBlast 24V 3-way UP	440	43.6	230	3	3	16 ... 26VDC	62	825	310	61.8	03.027.037.1
CoolBlast 24V 6-way UP	440	43.6	390	6	6	16 ... 26VDC	123	1650	310	65.1	03.027.038.1
CoolBlast 48V 3-way SP	440	43.6	230	3	3	36 ... 55VDC	24	553	68	49.6	03.027.041.1
CoolBlast 48V 6-way SP	440	43.6	390	6	6	36 ... 55VDC	48	1106	68	53.2	03.027.042.1
CoolBlast 48V 3-way HP	440	43.6	230	3	3	36 ... 55VDC	54	826	160	58.6	03.027.044.1
CoolBlast 48V 6-way HP	440	43.6	390	6	6	36 ... 55VDC	108	1652	160	62	03.027.045.1
CoolBlast 48V 3-way UP	440	43.6	230	3	3	36 ... 53VDC	60	825	310	61.9	03.027.047.1
CoolBlast 48V 6-way UP	440	43.6	390	6	6	36 ... 53VDC	119	1650	310	65.3	03.027.048.1



LUF20127



LUF20138

CoolBlast® Fan Unit Thermostat-controlled

- Fan unit for vertical cooling of modules in 19" racks
- Fan function (ON/OFF) thermostat-controlled, setting from 0°C to 60°C
- Chassis runners are recommended for mounting. Chassis runners are required with 6-piece CoolBlast.

Material

Sheet steel, high-grade steel grid

Finish / Colour

Housing, zinc-plated
Front panel, powder-coated, smooth
in RAL 7035 light-grey

How supplied

Assembled, wired and tested

Approvals

CE Label in accordance with
low voltage directive 73/23/EEC,
EMC directive 89/366/EEC

Supply schedule

1 CoolBlast fan unit,
packed with operating instructions

Only with DC devices:

1 connection cable, 2 m with connector
plug and free ends

Only with 230V AC devices:

1 2 m power supply lead, Euro

Name	W	H	D	kg	n	Elec. connection	P(W)	\dot{V} (m ³ /h)	ΔP (Pa)	p(dB(A))	Order no.
CoolBlast 230V 3-piece, thermostat	440	43.6	230	3	3	207 ... 253VAC; 50/60Hz	45	495	74	45.2	03.027.011.1
CoolBlast 230V 6-piece, thermostat	440	43.6	390	6	6	207 ... 253VAC; 50/60Hz	90	990	74	48.8	03.027.012.1
CoolBlast 115V 3-piece, thermostat	440	43.6	230	3	3	103.5 ... 126.5VAC; 50/60Hz	44	576	88	47.3	03.027.014.1
CoolBlast 115V 6-piece, thermostat	440	43.6	390	6	6	103.5 ... 126.5VAC; 50/60Hz	88	1152	88	50.8	03.027.015.1



LUF20128



LUF20140

CoolBlast® Fan Unit Speed-controlled

- Fan unit for vertical cooling of modules in 19" racks
- Reference temperature can be set (20°C to 55°C)
- Speed regulation 30% to 100% of the nominal speed; with sensor break 100% speed
- Individual fan monitoring
- Digital alarm output for excess temperature alarm and fan failure
- Optical status display for O.K., excess temperature and fan failure
- Acoustic warning with push-button
- Chassis runners are recommended for mounting. Chassis runners are required with 6-piece CoolBlast.

Material
Sheet steel, high-grade steel grid

Finish / Colour
Housing, zinc-plated
Front panel, powder-coated, smooth in RAL 7035 light-grey

Approvals
CE Label in accordance with low voltage directive 73/23/EEC, EMC directive 89/366/EEC

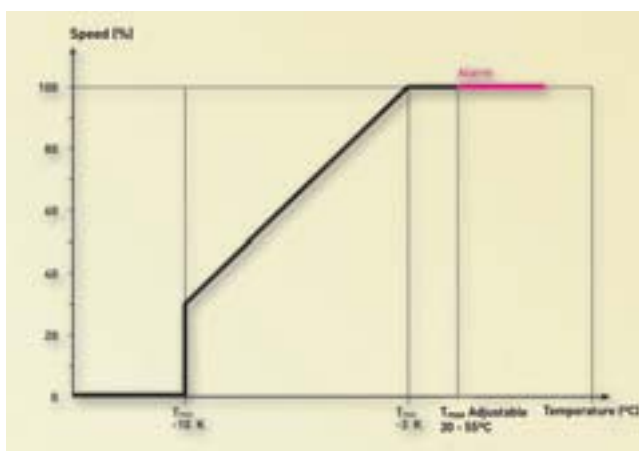
Supply schedule
1 CoolBlast fan unit, packed with operating instructions
1 sensor cable, 2 m (plug-in)
1 signal cable, 2 m (plug-in)

Only with DC devices:
1 connection cable, 2 m with connector plug and free ends

Only with AC devices:
1 2 m power supply lead, Euro

How supplied
Assembled, wired and tested

Note
Further characteristics can be implemented project-related in line with standards.



LUF20179

Name	W	H	D	kg	n	Elec. connection	P(W)	\dot{V} (m ³ /h)	ΔP (Pa)	p(dB(A))	Order no.
CoolBlast 115/230V, 3-piece, controlled SP	440	43.6	230	3.2	3	100 to 253VAC; 50/60Hz	25	553	68	49.6	03.027.021.1
CoolBlast 115/230V, 6-piece, controlled SP	440	43.6	390	6.2	6	100 to 253VAC; 50/60Hz	48	1106	68	53.3	03.027.022.1
CoolBlast 115/230V, 3-piece, controlled HP	440	43.6	230	3.2	3	100 to 253VAC; 50/60Hz	32	711	173	55.8	03.027.024.1
CoolBlast 115/230V, 6-piece, controlled HP	440	43.6	390	6.2	6	100 to 253VAC; 50/60Hz	62	1422	173	59.1	03.027.025.1
CoolBlast 115/230V, 3-piece, controlled UP	440	43.6	230	3.4	3	100 to 253VAC; 50/60Hz	64	825	310	61.8	03.027.027.1
CoolBlast 115/230V, 6-piece, controlled UP	440	43.6	390	6.4	6	100 to 253VAC; 50/60Hz	125	1650	310	65.1	03.027.028.1
CoolBlast 24/48V, 3-piece, controlled SP	440	43.6	230	3.1	3	20 to 60VDC	25	553	68	49.6	03.027.051.1
CoolBlast 24/48V, 6-piece, controlled SP	440	43.6	390	6.1	6	20 to 60VDC	48	1106	68	53.3	03.027.052.1
CoolBlast 24/48V, 3-piece, controlled HP	440	43.6	230	3.1	3	20 to 60VDC	32	711	173	55.8	03.027.054.1
CoolBlast 24/48V, 6-piece, controlled HP	440	43.6	390	6.1	6	20 to 60VDC	62	1422	173	59.1	03.027.055.1
CoolBlast 24/48V, 3-piece, controlled UP	440	43.6	230	3.3	3	20 to 60VDC	64	825	310	61.8	03.027.057.1
CoolBlast 24/48V, 6-piece, controlled UP	440	43.6	390	6.3	6	20 to 60VDC	125	1650	310	65.1	03.027.058.1

Dimensions in mm: W = Width
H = Height
D = Depth
h = Installation height
d = Useable depth
L = Length

HU = Standard height unit
1 HU = 44.45 mm
UP = Unit of packaging
kg = Weight
 = Express item

Conversion: 1 mm = 0.03937 inch 1 kg = 2.2046 pound

SP = Standard Performance
HP = High Performance
UP = Ultra High Performance

n = Number of fans
P = Power consumption (W)
 \dot{V} = Airflow volume (m³/h)
 $\Delta\dot{V}$ = Airflow volume loss (%)

ΔP = Pressure increase (Pa)
I_{nom} = Nominal current (A)
I_{max} = Residual current (A)
V = Voltage (400V = 3-phase)
p = Sound pressure (dB(A)) in 1 m from the rack (600 mm x 600 mm; raised cover)



LUF20148



1 LUF20056



2 LUF20136



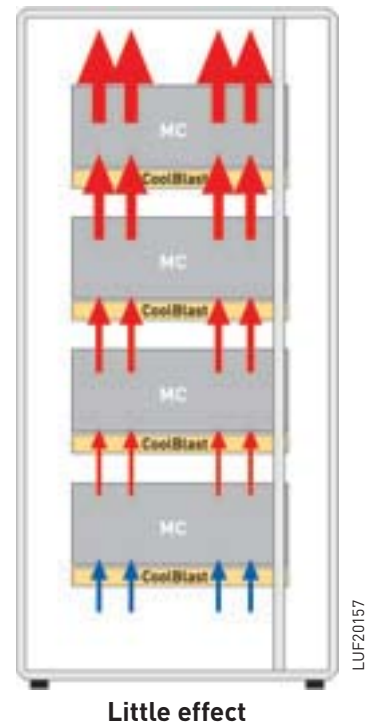
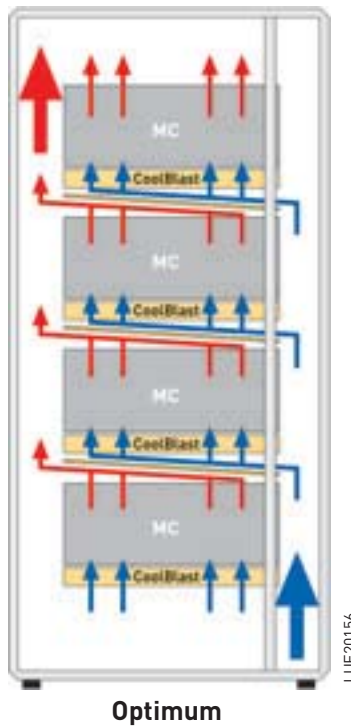
3 LUF20146

CoolBlast® Airflow via Front Intake Strong points

The front intake unit for the **CoolBlast®** is used for the targeted cooling of module chassis that are situated on top of one another (heat sources).

- 1 The optimised airflow guides the cooled air specifically to the rear (see graphic 1). This prevents increased warming up of the vertical airflows from module chassis to module chassis (see graphic 2).

- 2 The optionally available front panel can be mounted later on and is often used for optical appearance reasons.
- 3 The filter mats protect the electronic components in use from dirt build-up and dust, and they can also be swapped out during running operation.



Possible configurations:

Consists of	Figure	Order no.		Airflow volume loss	
		3-piece	6-piece	3-piece	6-piece
Airflow	1	03.027.094.1	03.027.095.1	30 %	45 %
Airflow plus front panel	1 + 2	03.027.094.1 03.027.097.1	03.027.095.1 03.027.097.1	40 %	55 %
Airflow plus front panel and filter	1 + 2 + 3	03.027.094.1 03.027.097.1 03.027.098.1	03.027.095.1 03.027.097.1 03.027.099.1	50 %	60 %



LUF20131

Air Guide for Front Intake, 1 HU CoolBlast®



- For CoolBlast® fan unit, 3-piece and 6-piece for front intake
- Use as air guide plate
- Can be supplemented with front panel and filter mat

Material
Sheet steel

Finish / Colour
Powder-coated texture, RAL 7035 light-grey

Supply schedule
1 air guide

How supplied
In units

W	H	D	Model	Order no.	UP
19"	43.6	230	For 3-piece	03.027.094.1	 1 unit
19"	43.6	390	For 6-piece	03.027.095.1	 1 unit



LUF20142



LUF20136

Front Panel for Front Intake Air Guide, 1 HU CoolBlast®


- For use with the front intake air guide
- Can be mounted later on

Material
Sheet steel

Finish / Colour
Powder-coated texture, RAL 7035 light-grey, smooth

Supply schedule
1 front panel

How supplied
In units

W	H	D	Model	Order no.	UP
19"	43.6			03.027.097.1	 1 unit



LUF20135

Filter for front intake CoolBlast®



- For use with the front intake air guide
- Can be mounted later on and filter can be swapped out during running operation

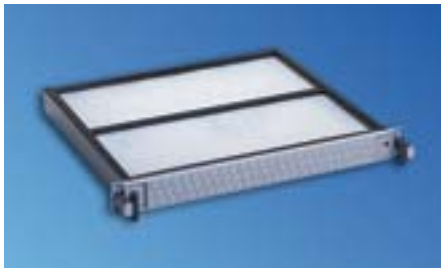
Filter class
G2

Material
Viledon K15/150

Supply schedule
1 filter

How supplied
In units

W	H	D	Model	Order no.	UP
400		160	For 3-piece	03.027.098.1	 1 unit
400		320	For 6-piece	03.027.099.1	 1 unit



LUF00205

19" filter unit, 1 HU

- Suitable for use with the CoolBlast® fan unit
- Adjusted to the respective chassis depth



Material
 Housing: sheet steel
 Front panel: ABS (UL94 V-0)
 Handle: extruded aluminium
 Filter: Viledon P 15/150

Filter class
 G2

Finish / Colour
 Housing: powder-coated texture
 - RAL 9011 black
 Front panel: RAL 7035
 - Light-grey
 Handle: powder-coated texture
 - RAL 5008 grey-blue

Supply schedule
 1 filter unit
 1 filter

How supplied
 In units

W	H	D	kg	W	n	Model	Order no.	UP
19"	43.6	282	2.0				03.025.250.1	 1 unit
19"	43.6	660	4.0				03.025.253.1	 1 unit



LUF00280

Replacement Filter



- For 19" filter unit

Material
 Filter: Viledon P 15/150

Filter class
 G2

Supply schedule
 1 filter

How supplied
 In units

W	H	D	kg	W	n	Model	Order no.	UP
		282					03.025.246.1	 1 unit
		660					03.025.249.1	 1 unit

Dimensions in mm: W = Width
 H = Height
 D = Depth
 h = Installation height
 d = Useable depth
 L = Length

HU = Standard height unit
 1 HU = 44.45 mm
 UP = Unit of packaging
 kg = Weight
 = Express item

Conversion: 1 mm = 0.03937 inch 1 kg = 2.2046 pound

SP = Standard Performance
 HP = High Performance
 UP = Ultra High Performance

n = Number of fans
 P = Power consumption (W)
 V̇ = Airflow volume (m³/h)
 ΔV̇ = Airflow volume loss (%)

ΔP = Pressure increase (Pa)
 I_{nom} = Nominal current (A)
 I_{max} = Residual current (A)
 V = Voltage (400V = 3-phase)
 p = Sound pressure (dB(A))
 1 mm from the rack
 (600 mm x 600 mm;
 raised cover)

Axial single fan technical data

	CoolBlast®	CoolBlast®	CoolBlast®	CoolBlast®	CoolBlast®
Item number	01.914.070.9	01.914.075.9	01.914.090.9	01.914.071.9	01.914.076.9
Dim: L x W x H	119 x 119 x 38	119 x 119 x 38	119 x 119 x 38	119 x 119 x 38	119 x 119 x 38
Max. volume flow, free blowing	184.2 m³/h	237 m³/h	275 m³/h	184.2 m³/h	275.4 m³/h
Voltage	24 VDC	24 VDC	24 VDC	48 VDC	48 VDC
Frequency					
Power consumption	7.4 W	11 W	20.5 W	7.7 W	17.8 W
Noise, free blowing	43 dB(A)	59 dB(A)	60 dB(A)	43 dB(A)	57 dB(A)
Bearing system	Ball bearing	Ball bearing	Ball bearing	Ball bearing	Ball bearing
Nominal speed	2950 min ⁻¹	4400 min ⁻¹	6000 min ⁻¹	2950 min ⁻¹	4200 min ⁻¹
Permitted environ. temp.	-10 °C to +70 °C	-30 °C to +55 °C	-20 °C to +65 °C	-10 °C to +70 °C	-10 °C to +70 °C
Lifetime, L10 at 40°C	75,000 h	70,000 h	70,000 h	75,000 h	105,000 h
Approvals	CE, VDE	CE, VDE	CE, VDE	CE, VDE	CE, VDE
Use in fan unit:	03.027.031.1	03.027.034.1	03.027.037.1	03.027.041.1	03.027.044.1
	03.027.032.1	03.027.035.1	03.027.038.1	03.027.042.1	03.027.045.1
	03.027.021.1	03.027.024.1	03.027.027.1		
	03.027.022.1	03.027.025.1	03.027.028.1		
	03.027.051.1	03.027.054.1	03.027.057.1		
	03.027.052.1	03.027.055.1	03.027.058.1		
	03.027.321.1	03.027.324.1	03.027.327.1		
	03.027.322.1	03.027.325.1	03.027.328.1		

	CoolBlast®	CoolBlast®	CoolBlast®	CoolBlast®
Item number	01.914.091.9	01.914.050.9	01.914.051.9	01.914.051.9-2
Dim: L x W x H	119 x 119 x 38	119 x 119 x 38	119 x 119 x 38	119 x 119 x 38
Max. volume flow, free blowing	275 m³/h	192 m³/h	165 m³/h	120 m³/h
Voltage	48 VDC	115 VAC	230 VAC	230 VAC
Frequency		50 Hz	50 Hz	50 Hz
Power consumption	19.7 W	14.5 W	15 W	7.5 W
Noise, free blowing	60 dB(A)	41 dB(A)	38 dB(A)	32 dB(A)
Bearing system	Ball bearing	Ball bearing	Ball bearing	Ball bearing
Nominal speed	6000 min ⁻¹	2900 min ⁻¹	2600 min ⁻¹	2100 min ⁻¹
Permitted environ. temp.	-20 °C to +65 °C	-40 °C to +60 °C	-40 °C to +60 °C	-40 °C to +70 °C
Lifetime, L10 at 40°C	70,000 h	43,500 h	43,500 h	43,500 h
Approvals	CE, VDE	CE, VDE	CE, VDE	CE, VDE
Use in fan unit:	03.027.047.1	03.027.004.1	03.027.001.1	02.111.181.9
	03.027.048.1	03.027.005.1	03.027.002.1	05.010.307.1
		03.027.014.1	03.027.011.1	
		03.027.015.1	03.027.012.1	
			03.027.300.1	
			03.027.301.1	
			03.027.302.1	
			03.027.310.1	
			03.027.311.1	
			03.027.312.1	
			02.111.180.9	
			05.010.306.1	
			01.113.430.0	
			01.113.431.0	
			01.243.428.1	
			03.028.110.8	



DOS00076

Euro Mains Cable For DIN 49 440 and French/Belgian standard

- Mains plug CEE/VII - Euro socket IEC 320
- Cable: H05VV-F 3G 1 mm²

Mains voltage
250 VAC

Nominal current
10 A

L	S	n	F1	F2	19"	Safe	Model	Order no.	UP
2000								04.000.054.9	1 unit
5000								04.000.050.9	1 unit



DOS00077

Euro Mains Cable For Swiss standard

- Mains plug: Type 12 - Euro socket IEC 320
- Cable: H05VV-F 3G 1 mm²

Mains voltage
250 VAC

Nominal current
10 A

L	S	n	F1	F2	19"	Safe	Model	Order no.	UP
2000								04.000.055.9	1 unit



DOS00078

Euro Mains Cable For British standard

- Mains plug: Type BS 1363 - Euro socket IEC320
- Cable: H05VV-F 3G 1 mm²

Mains voltage
250 VAC

Nominal current
10 A

L	S	n	F1	F2	19"	Safe	Model	Order no.	UP
2000								04.000.056.9	1 unit



DOS00519

Euro Connection Cable

- Mains plug: IEC 320 - Euro socket IEC 320
- Cable: H05VV-F 3G 1 mm²

Mains voltage
250 VAC

Nominal current
10 A

L	S	n	F1	F2	19"	Safe	Model	Order no.	UP
900								04.000.051.9	1 unit



ELM00137

Door Contact Switch

- On/off switch, 4 A, 230 V -
- Activation with opening and closing of the door

Supply schedule
1 door contact switch (not wired)
1 mounting brackets
Mounting material

W	H	S	HU	h	d	w	Model	Order no.	UP
								01.110.722.9	1 unit



LUF20057

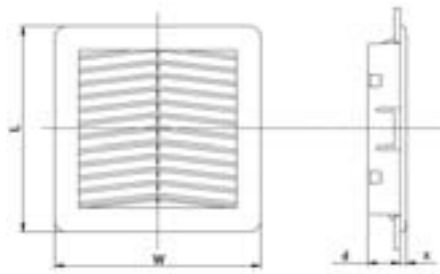


LUF20058

Filter Fan

- For specific use with hot spots
- Also suitable for later mounting, quick and easy
- The filter mats provide high filtering-out properties, are easily exchanged and can be cleaned
- The fans do not require maintenance and their value is especially emphasized by their long lifespan and low noise factor
- Airflow: blowing in the rack (pre-setting)
- Can be used as blowing-out or taking-in

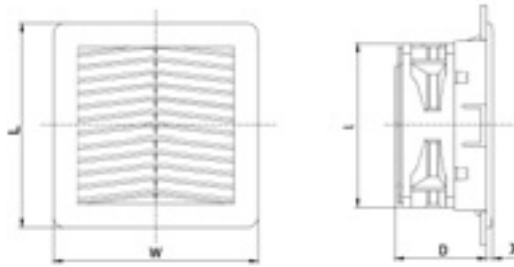
- Material**
Heat-resistant ABS plastic, UL 94 V-0
- Colour**
RAL 7035 light-grey
- Approvals**
CE Symbol
- Protection rating**
IP 54



LUF80011



LUF80012



LUF800040

LxW	D/l/x	y/z	kg	Max. AF	El. conn.	L	Noise	N	Life/40°	Model	Order no.	UP
150x150	71/120/5	125/131	0.812	57 m³/h	230V / 50/60Hz	20 W	43 dB(A)	2650/min	40,000 h	Filter fan	03.026.501.1	1 unit
204x204	90/120/5,7	177/185	1	90 m³/h	230V / 50/60Hz	20 W	43 dB(A)	2650/min	40,000 h	Filter fan	03.026.502.1	1 unit
250x250	113/172/6	223/230	1.690	240m³/h	230V / 50/60Hz	29 W	50 dB(A)	2800/min	40,000 h	Filter fan	03.026.503.1	1 unit
325x325	125/208/7	291/302	3.620	520m³/h	230V / 50/60Hz	67 W	63 dB(A)	2770/min	50,000 h	Filter fan	03.026.504.1	1 unit
150x150	24/5	125/131	0.140							Exit filter	03.026.511.1	1 unit
204x204	20.5/5.7	177/185	0.275							Exit filter	03.026.512.1	1 unit
250x250	25/6	233/230	0.440							Exit filter	03.026.513.1	1 unit
325x325	26/7	291/302	0.780							Exit filter	03.026.514.1	1 unit
150x150										Replacement filter mat	03.026.521.9	6 units
204x204										Replacement filter mat	03.026.522.9	6 units
250x250										Replacement filter mat	03.026.523.9	6 units
325x325										Replacement filter mat	03.026.524.9	6 units

Dimensions in mm: W = Width, H = Height, D = Depth, h = Installation height, d = Useable depth, L = Length, HU = Standard height unit (1 HU = 44.45 mm), UP = Unit of packaging, kg = Weight,  = Express item

Standard Performance = SP, High Performance = HP, Ultra High Performance = UP

n = Number of fans, W = Power consumption (W), m³/h = Airflow volume, Pa = Pressure increase, I nom = Nominal current (A), I max = Residual current (A), P = Power consumption (W), V = Voltage (400V=3-phase)

Conversion: 1 mm = 0.03937 inch, 1 kg = 2.2046 pound



LUF00237a

Temperature Module

- For monitoring the inside temperature of the rack
- Temperature display (+ 10°C... + 70°C)
- Setting the alarm temperature via frontal potentiometer
- Optical alarm display (LED red)
- Alarm signalling via floating switching contact (1 changeover contact 250 VAC / 8 A)
- Power supply 230 V / 50Hz

Approvals

CE Label in acc. with low voltage directive 73/23/EEC, EMC directive 89/336/EEC


Supply schedule

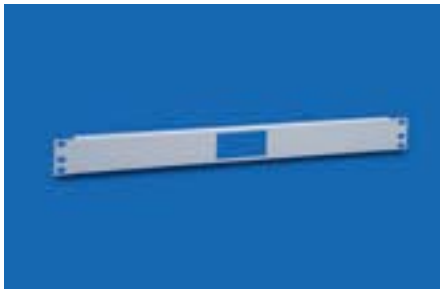
1 temperature module
1 temperature sensor (3 m)

How supplied

Assembled, wired and tested

- **Material**
Plastic

W	H	D	LxW	kg	W	n	Model	Order no.	UP
								01.117.525.1	 1 unit



LUF00256

19" Front Panel, 1 HU for Temperature Module

- For installing the temperature module

Material / Finish


Sheet steel 1.5 mm, powder-coated

Colour

RAL 7035 light-grey

Supply schedule

1 19" front panel

W	H	D	LxW	kg	W	n	Model	Order no.	UP
								01.117.526.1	 1 unit



LUF00255

Bracket for Temperature Module

- For non-standard installation of temperature module, e.g. laterally on the 19" extrusion

Material / Finish


Aluminium, 2 mm, sheer

Supply schedule

1 bracket
Mounting material

How supplied

Flat-packed kit

W	H	D	LxW	kg	W	n	Model	Order no.	UP
								01.117.527.0	 1 unit



LUF20000

Thermostat

- For controlling the inside temperature of the rack in conjunction with fan units and heating fans
- Setting range: + 10°C ... + 60°C
- Switching temperature difference (hysteresis) 2K
- Contact type: 1 changeover contact
- Sensor: thermostatic bimetal
- Contact rating: 230 VAC/10 A (heating), 5 A (cooling)
- Interference suppression: in acc. with DIN 55014

- **Material**
Plastic

Protection rating

IP 30

Approvals


CE Label in acc. with low voltage directive 73/23/EEC, EMC directive 89/336/EEC

Dimensions

74 x 74 x 23 mm

Supply schedule

1 thermostat
1 mounting bracket
Mounting material

W	H	D	LxW	kg	W	n	Model	Order no.	UP
								01.113.384.3	 1 unit



LUF00114



LUF00249

Installation Set for 19" Cooling Unit

- With PG screw fittings for cable routing

Finish

Powder-coated texture, RAL 7035
light-grey

Supply schedule

1 bottom cover
1 connection panel, 9 HU
2 chassis runners
Mounting material

How supplied

Flat-packed kit

Note

Please order a rear door shortened by 9 HU. Installation of this set is not possible in a rack with plinth!

W	H	D	kg	W	For rack type	Order no.	UP
600		800			Miracel	01.131.610.1	1 set
800		800			Miracel	01.131.612.1	1 set



LUF20209

Cooling Unit Wall installation

- Maintenance-free operation with biggest possible lamella spacing and filter-less operation
- Condensation vaporization or condensation run-off
- For mounting on rear panel, rear door or side panel of a rack
- Temperature regulation via electronic board
- CFC-free cooling agent, R 134a
- No danger to your electronic components from dust build-up and spray water: IP 54 on the rack side
- Even temperature distribution in the rack

Material
Sheet steel housing

Finish / Colour
Housing, powder-coated texture, RAL 7035 light-grey

Approvals
CE

Supply schedule
1 cooling unit
Mounting material
Operating instructions

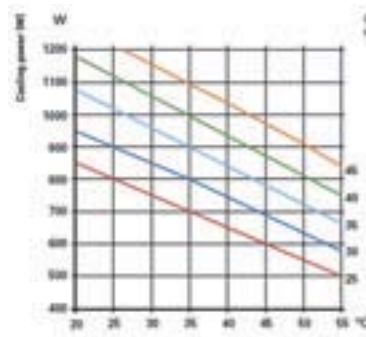
Technical data (general)

- Mains voltage: 230V ~1
- Mains frequency: 50Hz/60Hz
- Temperature range: 20°C to 55°C
- Cooling agent: R134a (CFC-free)
- Protection rating: IP54

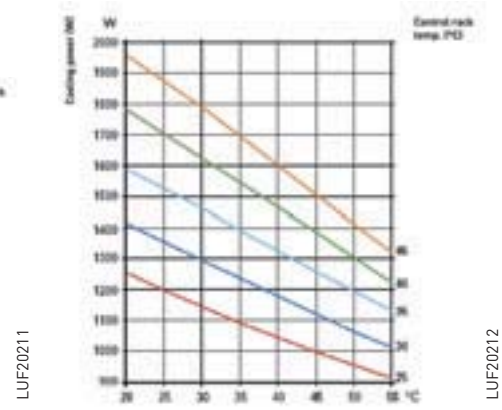
Electronic board functions

- Reference temperature (internal rack temperature) can be set between 25°C and 45°C
- LED display of the actual temperature and operating state; compressor "On", "Off"
- High and low temperature alarm display; test alarm
- Floating break contact for error messages
- Connection option for optional door contact switch

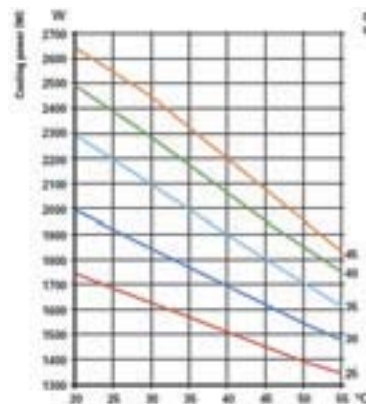
Qn L35L35	W	H	D	Wt	V rack side	I nom	I max	Sound press.in 1m (dB(A))		Order no.	UP
900	322	784	221	29	330	3	14.5	65	Type 1	03.032.330.1	1 unit
1400	406	934	244	42	575	5	17	65	Type 2	03.032.331.1	1 unit
2000	406	934	244	44	860	5	20	65	Type 3	03.032.332.1	1 unit
2700	508	1234	375	86	860	9	38	70	Type 4	03.032.333.1	1 unit



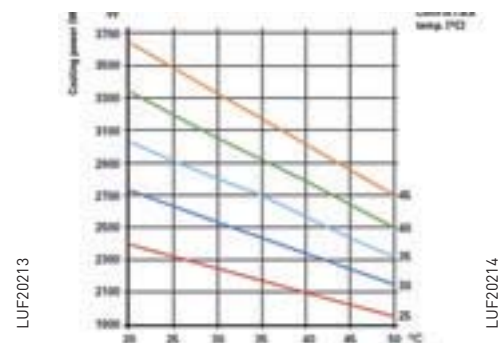
Type 1



Type 2



Type 3



Type 4

Dimensions in mm: W = Width, H = Height, D = Depth, h = Installation height, d = Useable depth, L = Length, HU = Standard height unit (1 HU = 44.45 mm), UP = Unit of packaging, Wt = Weight (kg), = Express item

Conversion: 1 mm = 0.03937 inch, 1 kg = 2.2046 pound

SP = Standard Performance, HP = High Performance, UP = Ultra High Performance, n = Number of fans, W = Power consumption (W), V = Volume flow (m³/h), Pa = Pressure increase, I nom = Nominal current (A), I max = Residual current (A), P = Power consumption (W), Qn = Nominal cooling power (W)



LUF20210

Cooling Unit Top-mounting

- Maintenance-free operation with biggest possible lamella spacing and filter-less operation
- Condensation vaporization or condensation run-off
- Easy set-up on the top of the rack
- Temperature regulation via electronic board
- CFC-free cooling agent, R 134a
- No danger to your electronic components from dust build-up and spray water: IP 54 on the rack side
- Even temperature distribution in the rack

Material

Sheet steel housing

Finish / Colour

Housing, powder-coated texture, RAL 7035 light-grey

Approvals

CE

Supply schedule

- 1 cooling unit
- Mounting material
- Operating instructions

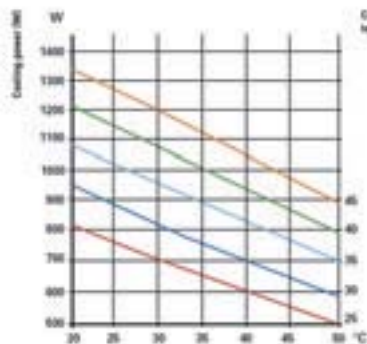
Technical data (general)

- Mains voltage: 230V ~1
- Mains frequency: 50Hz/60Hz
- Temperature range: 20°C to 55°C
- Cooling agent: R134a (CFC-free)
- Protection rating: IP54

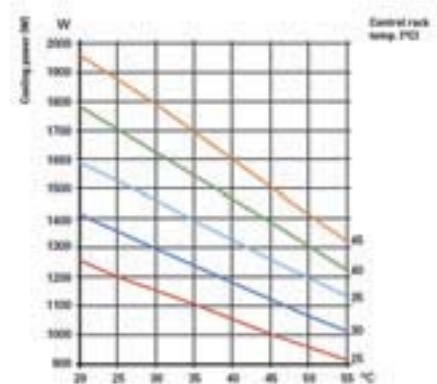
Electronic board functions

- Reference temperature (internal rack temperature) can be set between 25°C and 45°C
- LED display of the actual temperature and operating state; compressor "On", "Off"
- High and low temperature alarm display; test alarm
- Floating break contact for error messages
- Connection option for optional door contact switch

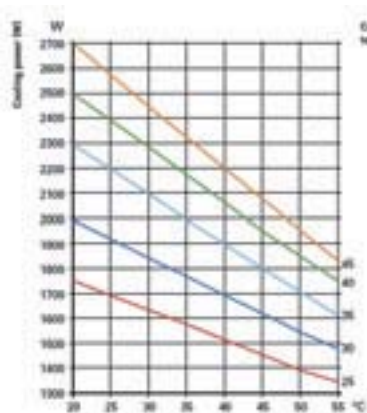
Qn L35L35	W	H	D	Wt	V rack side	I nom	I max	Sound press.in 1m (dB(A))		Order no.	UP
900	600	330	320	38	345	2.7	15	65	Type 5	03.032.340.1	1 unit
1400	604	350	448	45	575	4.3	17	65	Type 6	03.032.341.1	1 unit
2000	604	350	448	44	860	5	22	65	Type 7	03.032.342.1	1 unit
2700	808	487	480	81	860	8	38	67	Type 8	03.032.343.1	1 unit



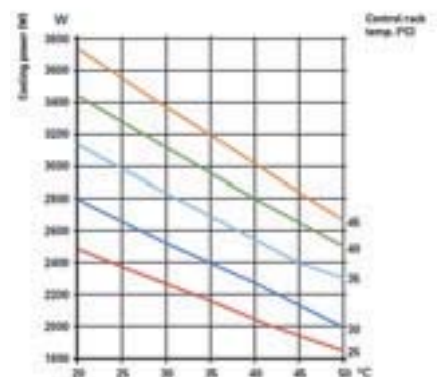
Type 5



Type 6



Type 7



Type 8

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