

THERMAL MANAGEMENT SYSTEMS



NEW!



CUV 212

vertical cooling unit

IP 54

cooling capacity: 330-4000W



EF/EFP 232

filter fans

IP 54 - IP 55 / NEMA 12

air flow: 25-925m³/h

NEW!



CUS 217

slim-in cooling unit

IP 54

cooling capacity: 850-2500W



RFU 240

roof fan unit

IP 33 - IP 54

air flow: 350-1000m³/h

NEW!



CUH 220

roof cooling unit

IP 54

cooling capacity: 600-3800W



HEATING 242

heaters & fan heaters

heating capacity: 10-550W

NEW!



CUO 224

outdoor cooling unit

IP 54

cooling capacity: 850-2000W



THERMAL CONTROL 245

hygrostats & thermostats

hygrostats & thermostats



BP/HT 226

vortex cooler

IP up to IP66

NEMA up to NEMA4X

cooling capacity: 162-820W

Accessories

248



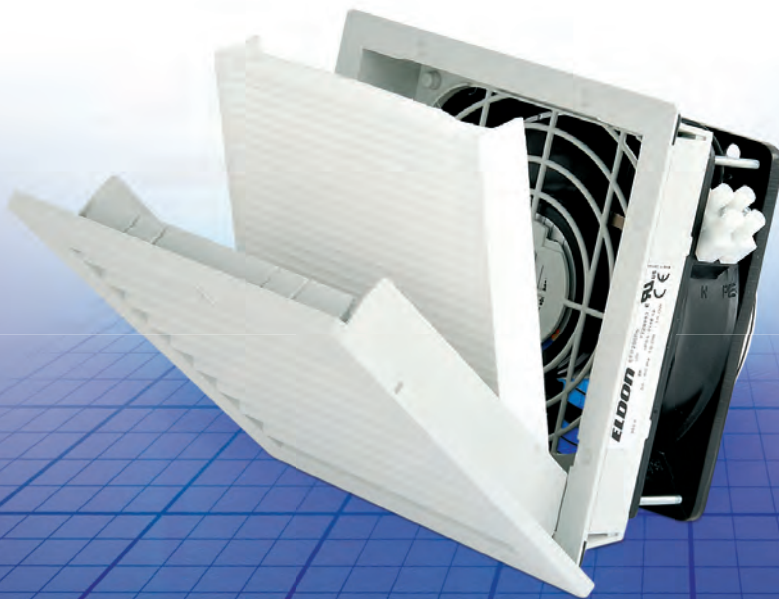
PWS/PWD 228

heat exchanger

IP 55

cooling capacity: 600-3400W

Thermal Management systems



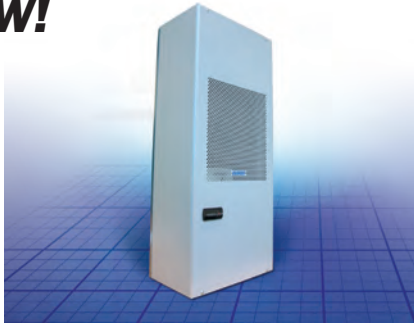
- ◆ Optimum thermal management concepts for all industrial applications in different environments.
- ◆ Full cooling range: filter fans, heat exchangers, vortex coolers and cooling units.
- ◆ Professional heaters to prevent condensation.
- ◆ Energy saving control products for various thermal management solutions.
- ◆ Check www.eldon.com for thermal management software.

Thermal Management

CUV, Vertical mounting cooling units

CUV 03302

NEW!



Description: High performance cooling unit for vertical installation.

The unit is mounted flush with the outside surface so maximizing space inside the enclosure. The air conditioners cover a cooling range from 330W to 4000W.

Common to all models is the self cleaning condenser coil which eliminates the necessity for an air filter and therefore avoiding ordinary maintenance.

Cooling capacity shown in the table is at L35/L35, the cooling capacity for specific conditions are indicated in the diagrams. Most models are equipped with Condensate Dissipator (starting from CUV10502).

The electrical thermostat (ECB) is installed on most models (starting from CUV05002)

Ozone friendly refrigerant R134a.

Type of connection: Spring-type terminal included

Material: Mild steel

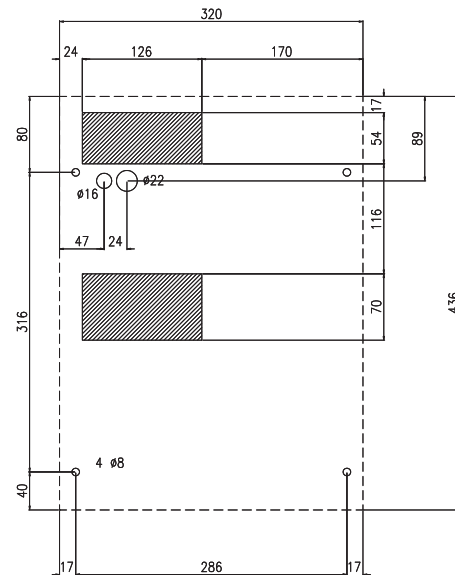
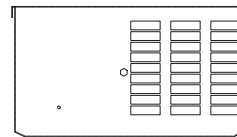
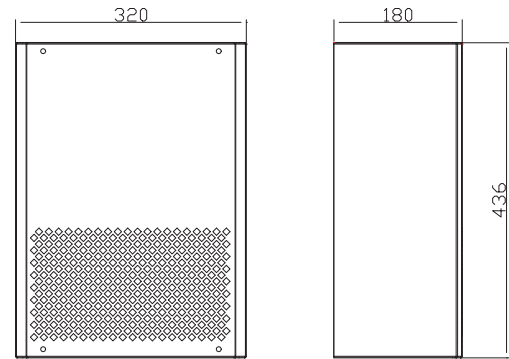
Temperature limits inside: 25°C to 45°C.

Temperature limits outside: 20°C to 55°C.

Protection: IP 54 towards the enclosure, and IP 34 towards the surroundings.

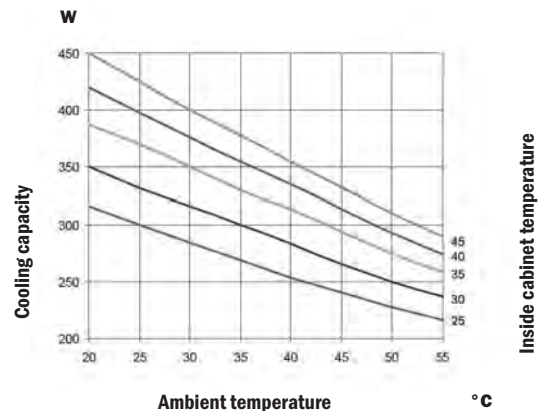
Finish: RAL 7035.

Approvals: CE, UL "for USA and Canada"



Capacity (W)	Voltage (V)	Current (A)	Noise (dB)	Weight (kg)	Part No.
330	230-1-50/60	1,4	60	17	CUV03302
500	230-1-50/60	2	65	23	CUV05002
850	230-1-50/60	2,7	65	26	CUV08502
1050	230-1-50/60	2,8	65	42	CUV10502
1400	230-1-50/60	5	65	42	CUV14002
2000	230-1-50/60	7,3	65	44	CUV20002
2700	230-1-50/60	8,8	70	79	CUV27002
4000	400-3-50/440-3/60	3,5	75	86	CUV40004

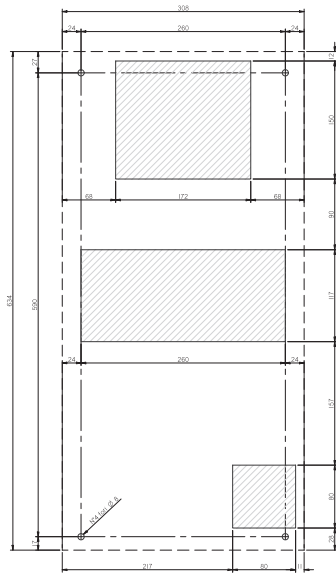
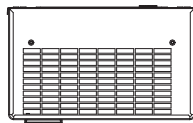
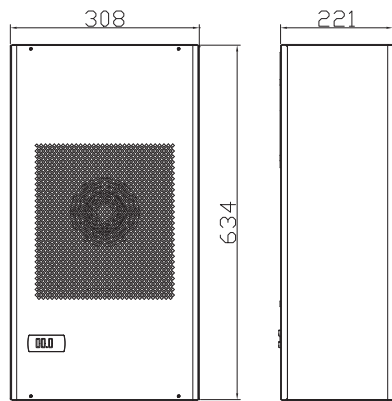
Performance



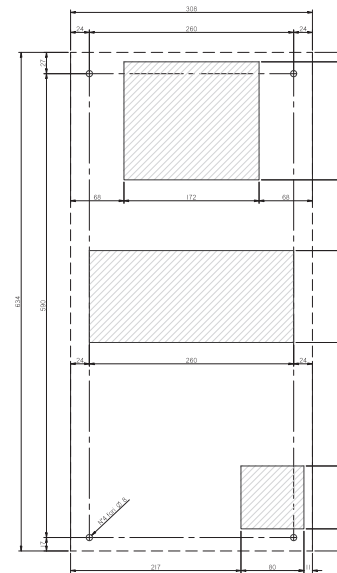
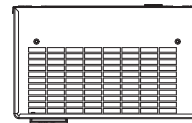
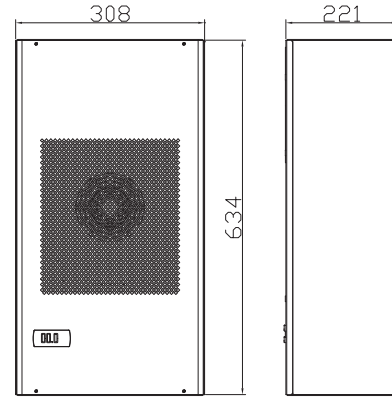


Thermal Management

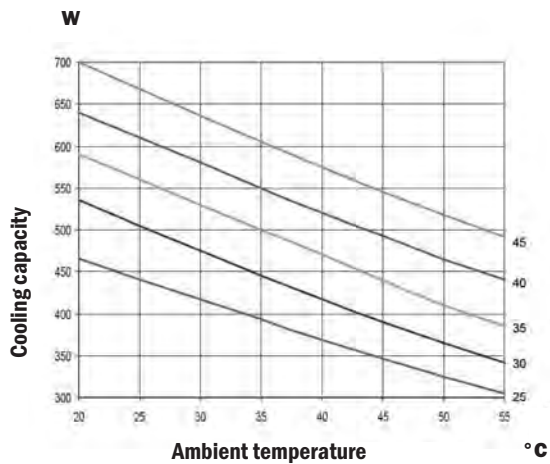
CUV 05002



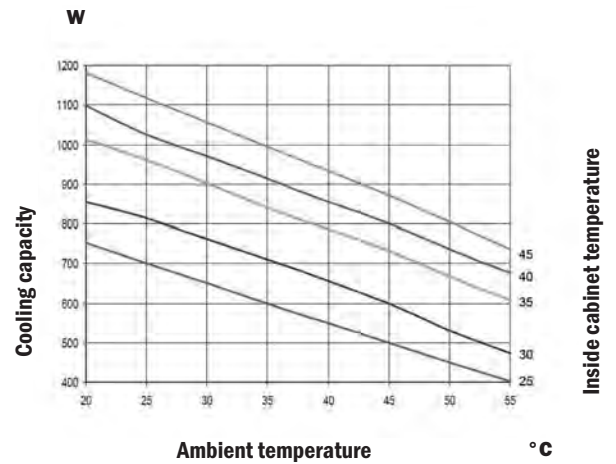
CUV08502



Performance

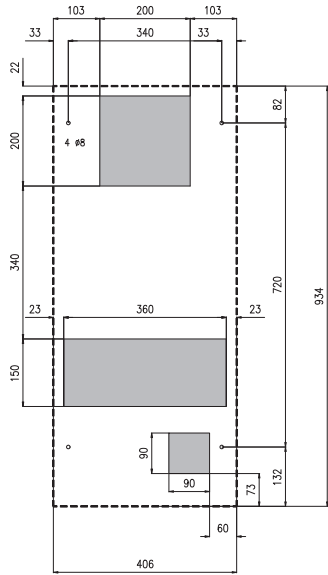
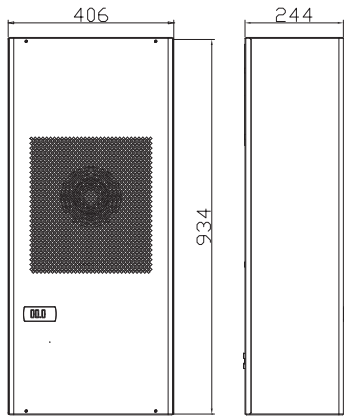


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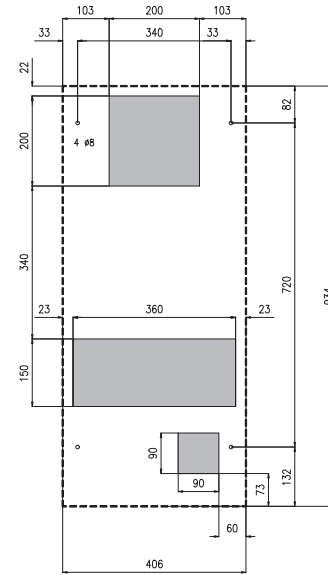
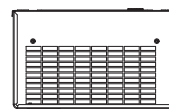
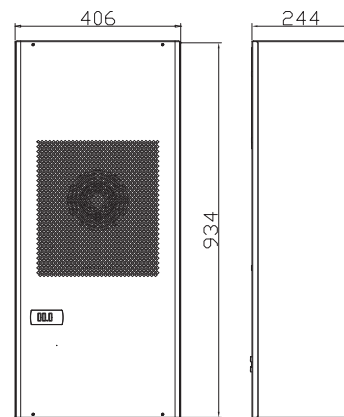


Thermal Management

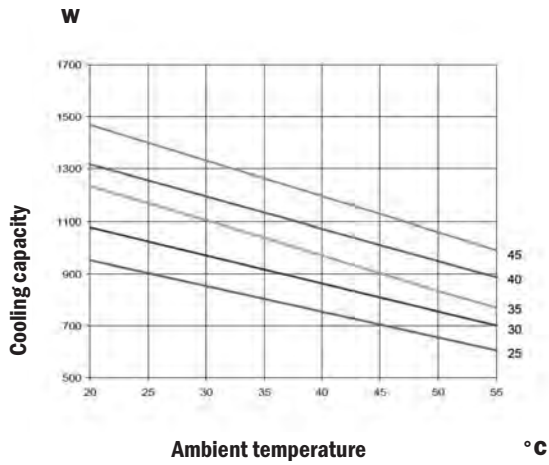
CUV10502



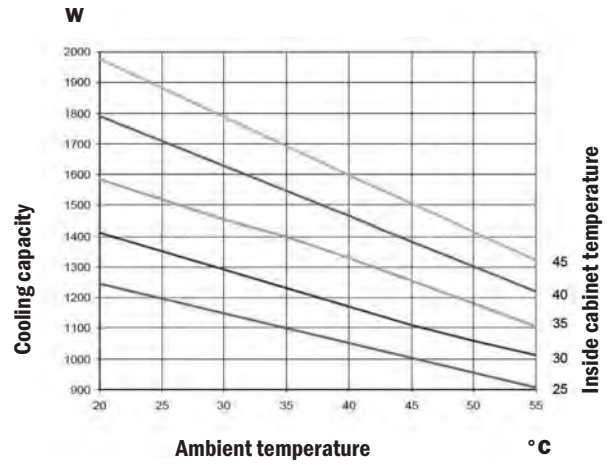
CUV14002



Performance



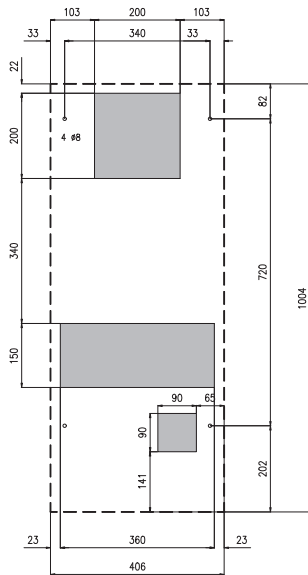
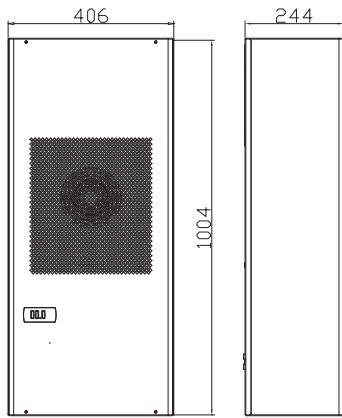
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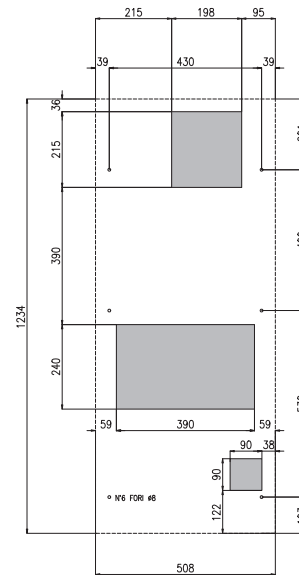
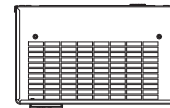
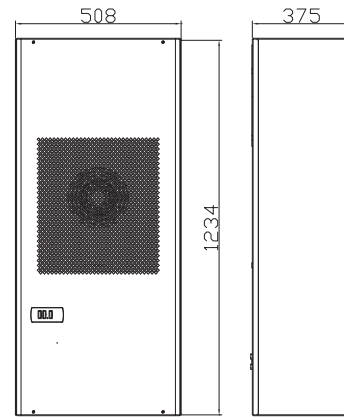


Thermal Management

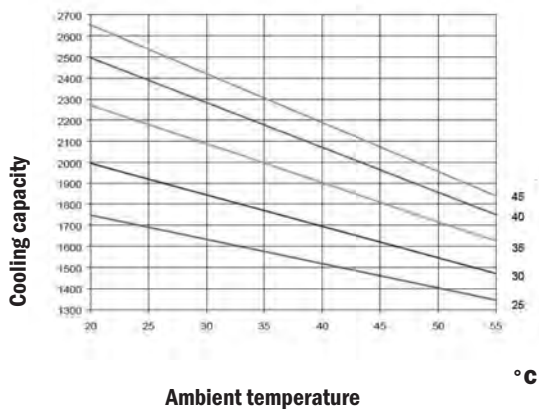
CUV 20002



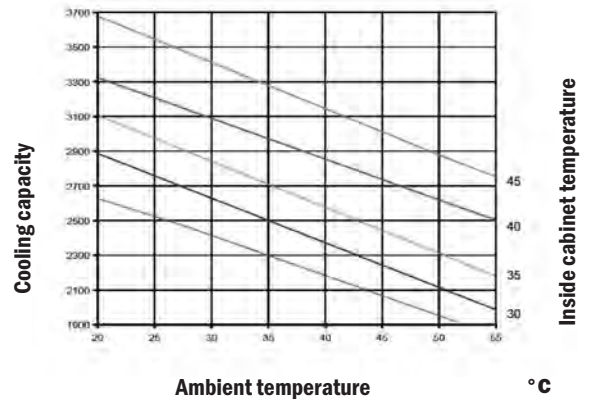
CUV27002



W Performance

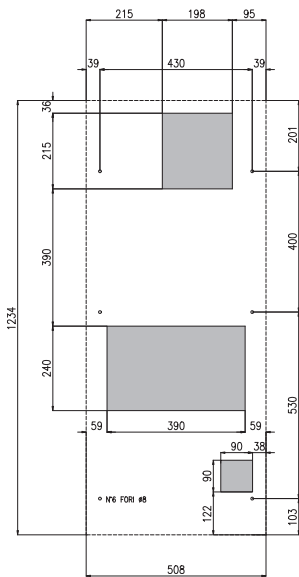
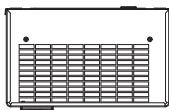
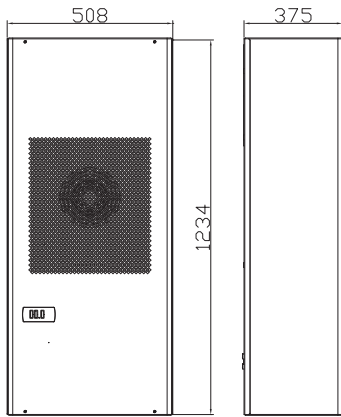


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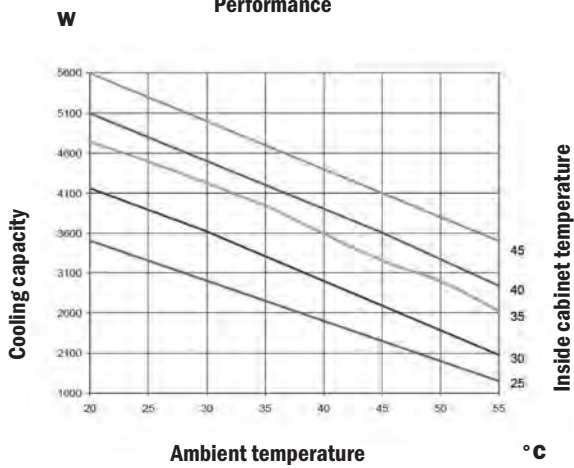


Thermal Management

CUV 40004



Performance





CUS, Slim-In mounting cooling units

NEW!



Description: High performance cooling unit for vertical installation. Partially recessed installation, providing effective use of space in front and side mounting. The cooling capacity range is from 850W to 2500 W, with only 3 different cut-outs. Common to all models is the self cleaning condenser coil which eliminates the necessity for an air filter and therefore avoiding ordinary maintenance.

In the Slim units the electronic controller is standard. The thermostat is adjustable between 25°C and 45°C, factory setting 35°C (set point can be modified directly from the electronic controller).

Cooling capacity shown in the table is at L35/L35, the cooling capacity for specific conditions are indicated in the diagrams. Ozone friendly refrigerant R134a.

Type of connection: Spring-type terminal included

Material: Mild steel

Temperature limits inside: 25°C to 45°C.

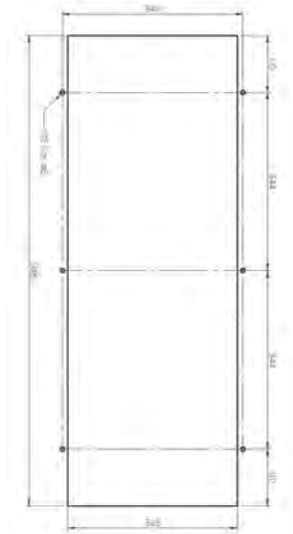
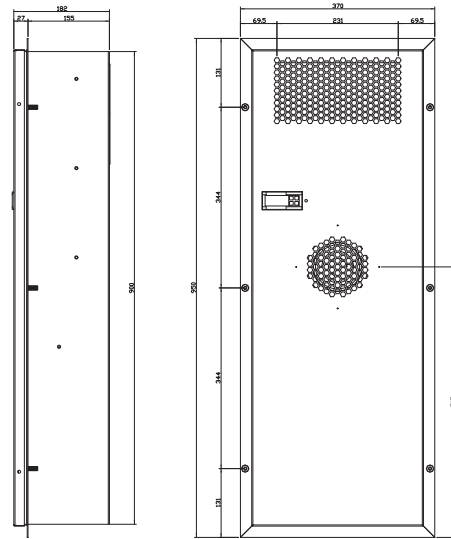
Temperature limits outside: 20°C to 55°C.

Protection degree: IP 54 towards the enclosure, and IP 34 towards the surroundings.

Finish: RAL 7035.

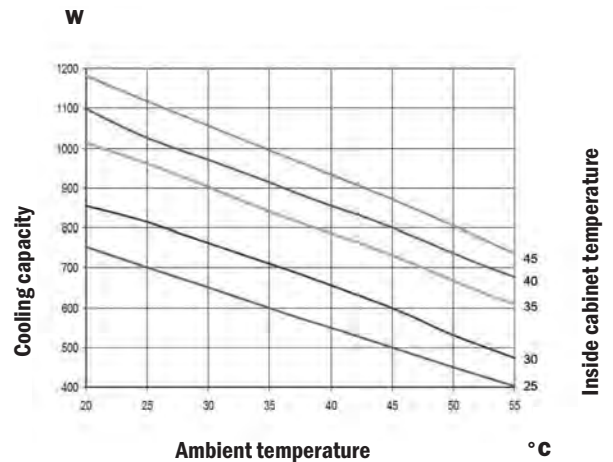
Approvals: CE, UL "for USA and Canada"

CUS 08502



Capacity (W)	Voltage (V)	Current (A)	Noise (dB)	Weight (kg)	Part No.
850	230-1-50/60	2,0	65	32	CUS08502
1400	230-1-50/60	4,0	65	50	CUS14002
2000	230-1-50/60	7,0	65	50	CUS20002
2500	400-3-50 460-3-60	3,6	65	84	CUS25004

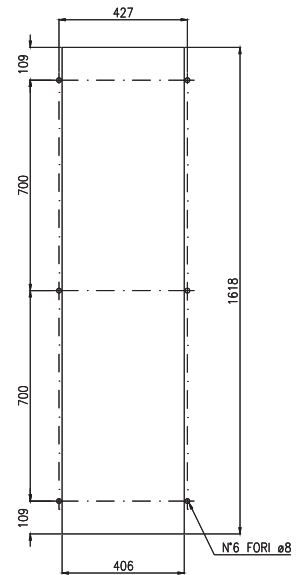
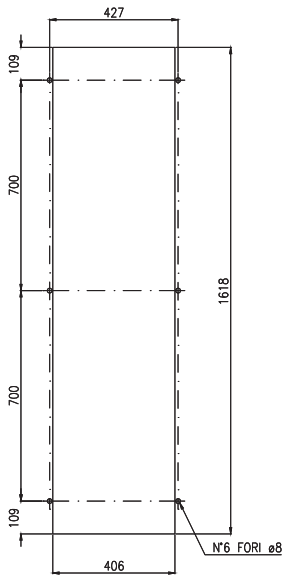
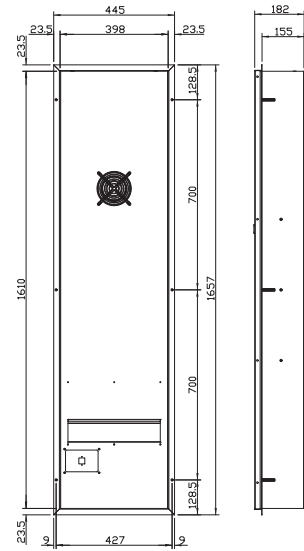
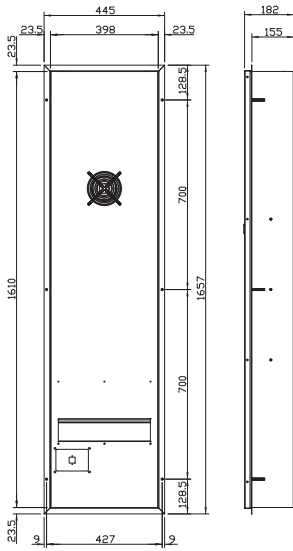
Performance



Thermal Management

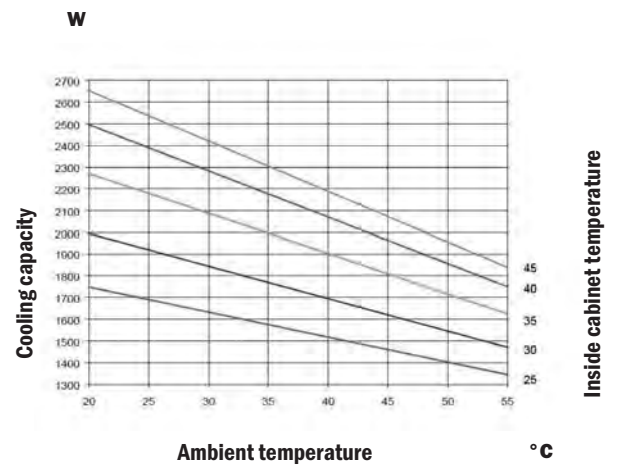
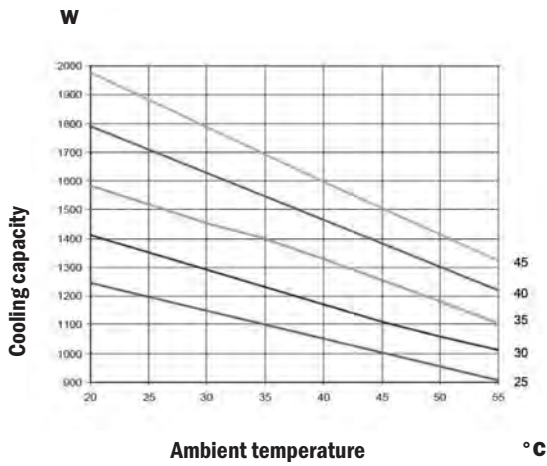
CUS 14002

CUS 20002



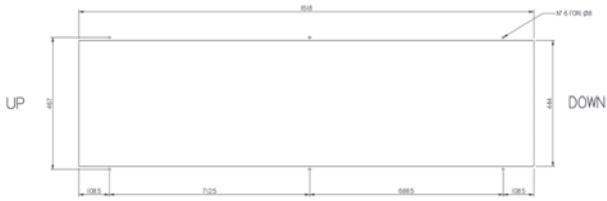
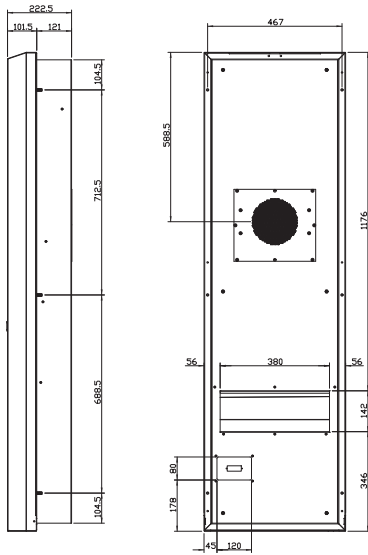
Performance

Performance

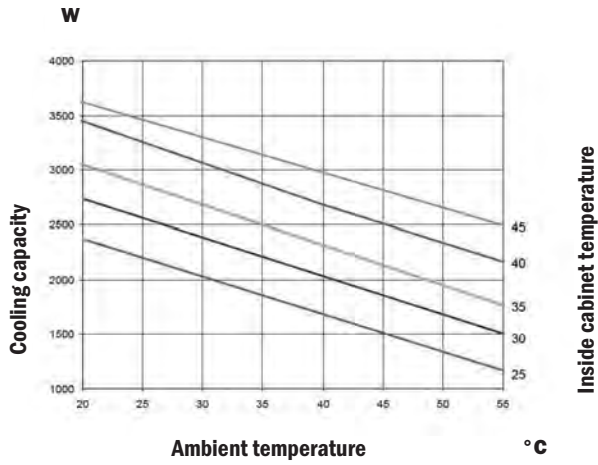




CUS 25004



Performance



Thermal Management

CUH, Roof mounting cooling unit

NEW!



Description: High performance cooling unit for top installation, the air conditioners cover a cooling capacity range from 600 W to 3800 W. Condensation management system, which prevents all condensation from penetrating into the enclosure. Easy installation with a quick release mounting frame. Common to all models is the self cleaning condenser coil which eliminates the necessity for an air filter, avoiding ordinary maintenance. Most models are equipped with a Condensation Dissipator and "triple condensation protection system", from 1400W up to 3800W units. The standard controller is electronic.

The electrical thermostat (ECB) is standard on all roof units. Cooling capacity shown in the table is at L35/L35, the cooling capacity for specific conditions are indicated in the diagrams. Ozone friendly refrigerant R134a.

Type of connection: Spring-type terminal included

Material: Mild steel powder coated, RAL7035

Temperature limits inside: 25°C to 45°C.

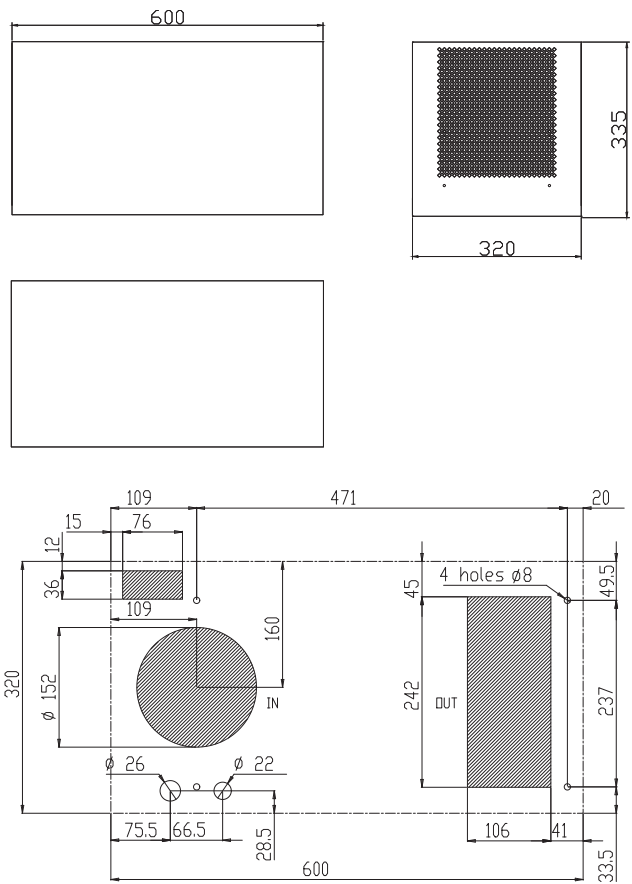
Temperature limits outside: 20°C to 55°C.

Protection: IP 54 towards the enclosure, and IP 34 towards the surroundings.

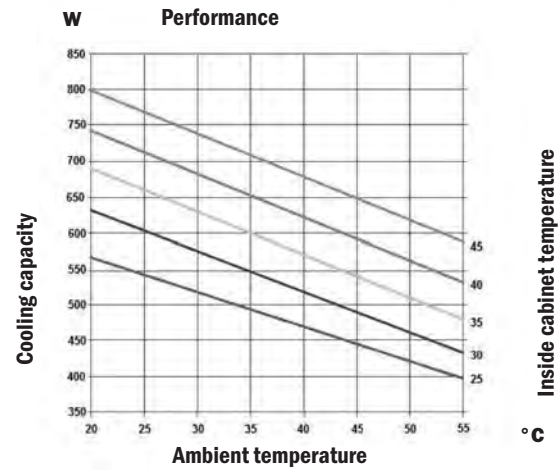
Finish: RAL 7035.

Approvals: CE, UL "for USA and Canada"

CUH 0*\$\$&

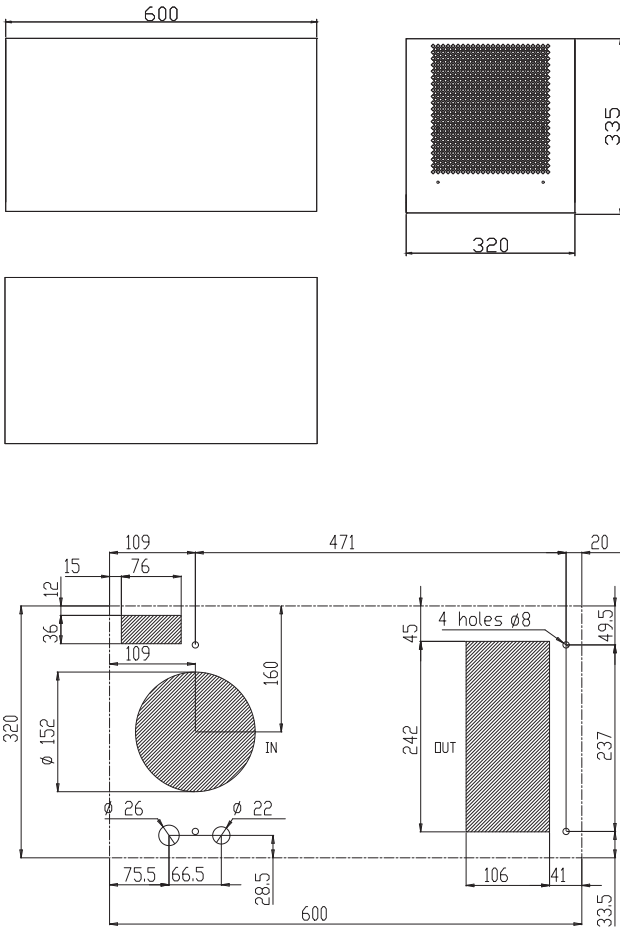


Capacity (W)	Voltage (V)	Current (A)	Noise (dB)	Weight (kg)	Part No.
600	230-1-50/60	2,2	65	30	CUH06002
900	230-1-50/60	3,0	65	38	CUH09002
1400	230-1-50/60	4,3	65	45	CUH14002
2000	230-1-50/60	5,0	65	44	CUH20002
2700	230-1-50/60	8,0	67	81	CUH27002
3800	400-3-50/ 460/3/60	3,8	75	88	CUH38004

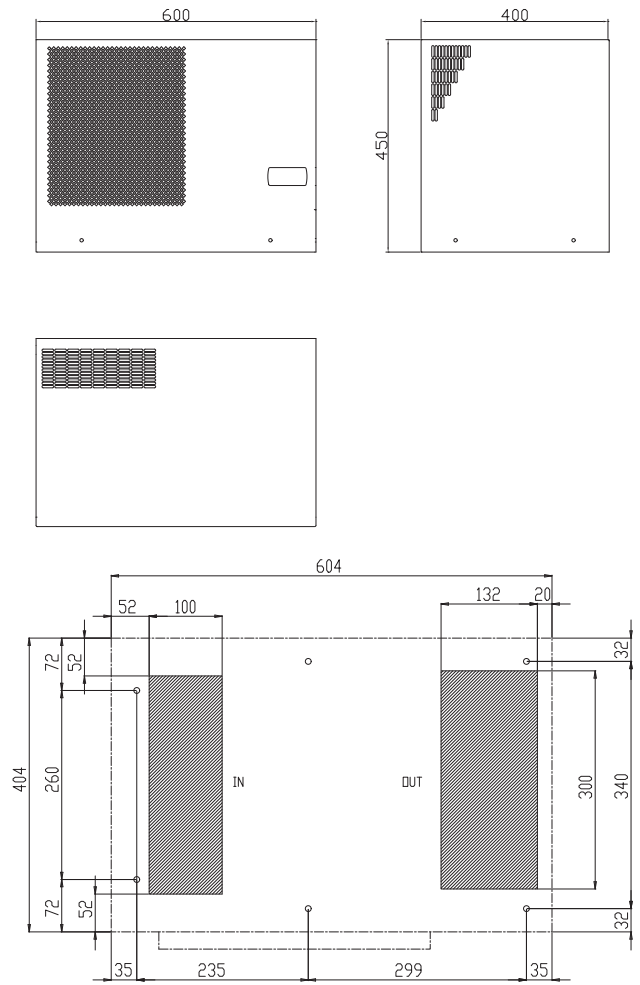




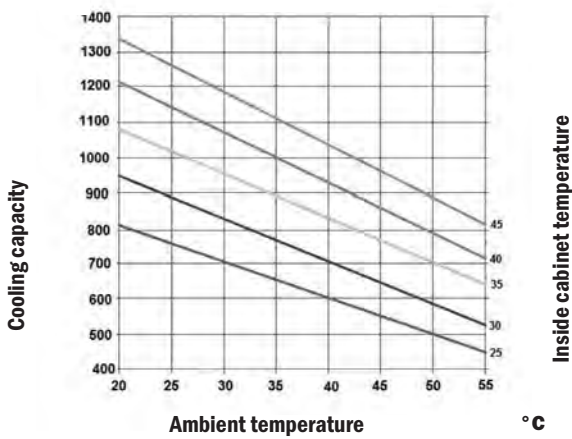
CUH 09002



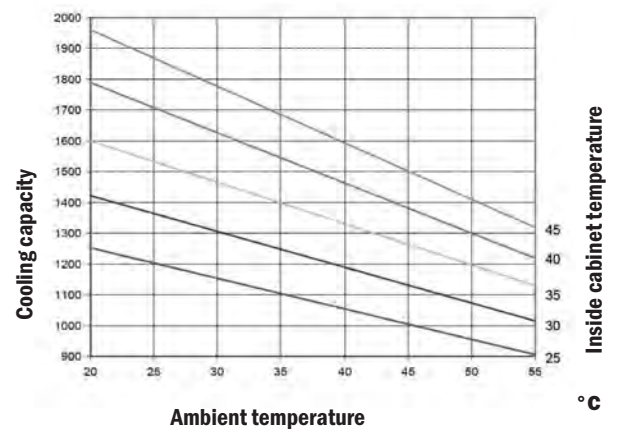
CUH 14002



W Performance

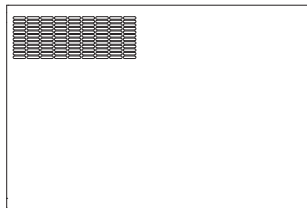
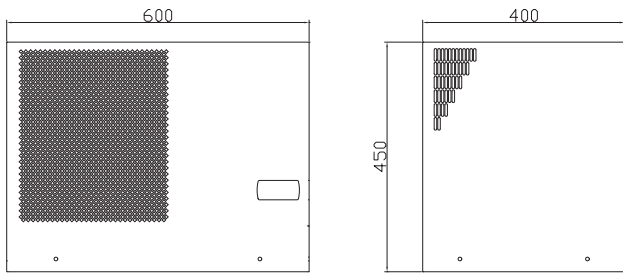


W Performance

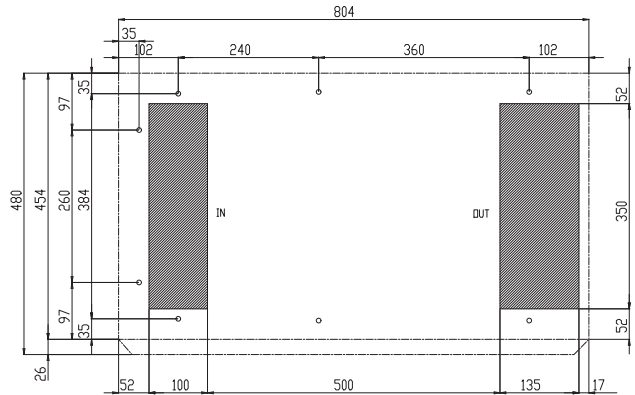
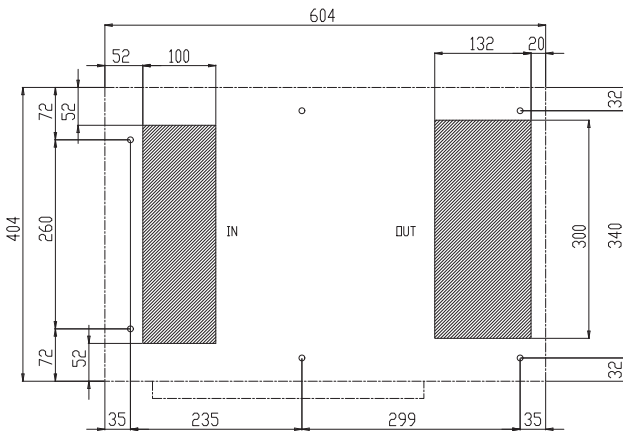
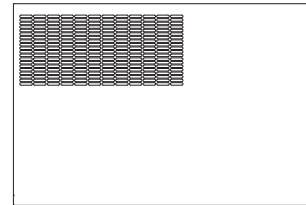
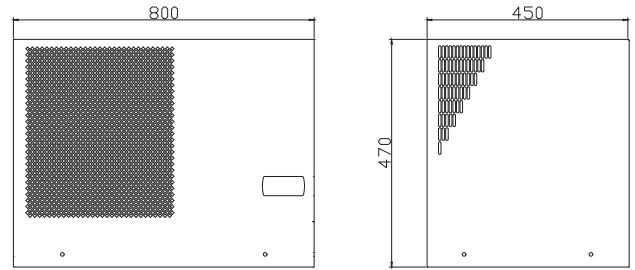


Thermal Management

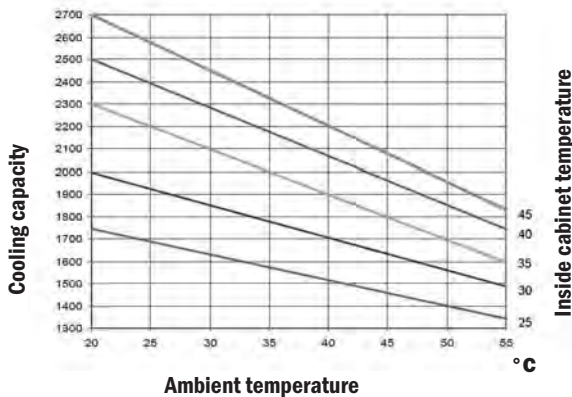
CUH 20002



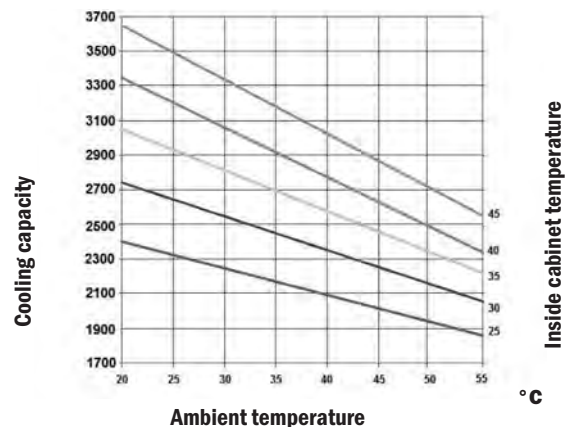
CUH 27002



W Performance

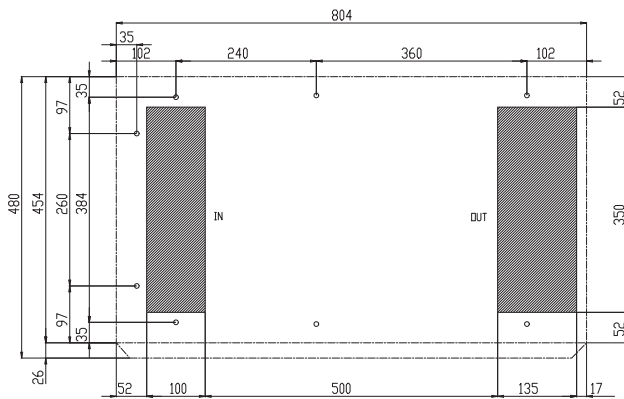
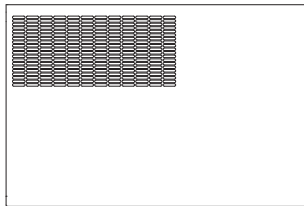
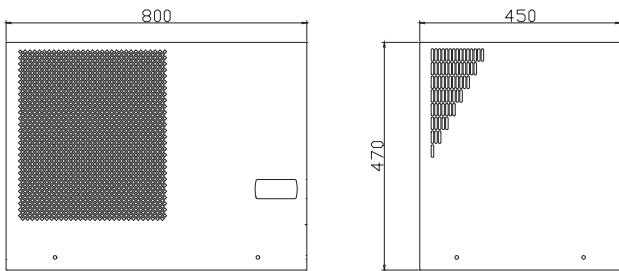


W Performance

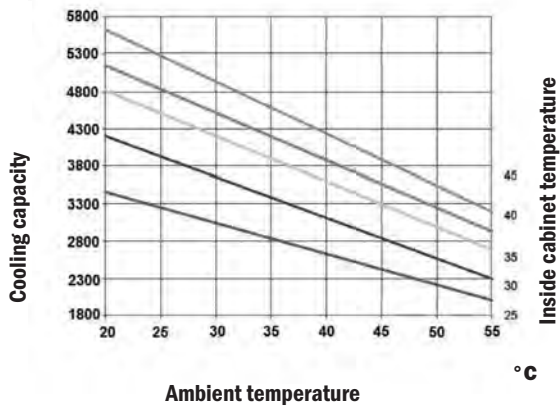




CUH 38004



W Performance



Thermal Management

CUO, Outdoor mounting cooling units

NEW!



Description: High performance cooling unit for vertical installation. CUO is the air conditioning solution for critical electronic environments including cabinets, shelters, cabins, and many other demanding applications in which the air conditioner is installed outdoors. The unit is mounted flush with the outside surface, so maximizing space inside the enclosure. Common to all models is the self cleaning condenser coil which eliminates the necessity for an air filter, avoiding ordinary maintenance.

The mechanical thermostat is inside the unit and it is adjustable between 25°C and 45°C, factory setting 35°C. Cooling capacity shown in the table is at L35/L35, the cooling capacity for specific conditions are indicated in the diagrams. Ozone friendly refrigerant R134a.

Type of connection: Spring-type terminal included
Material: Galvanized steel powder coated/ Stainless steel AISI304. Stainless steel AISI316 available on request.

Temperature limits inside: 25°C to 45°C.

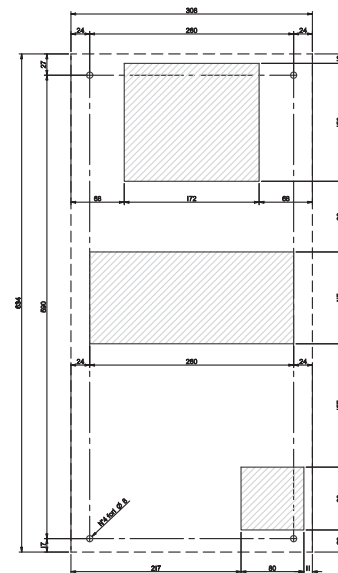
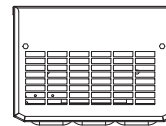
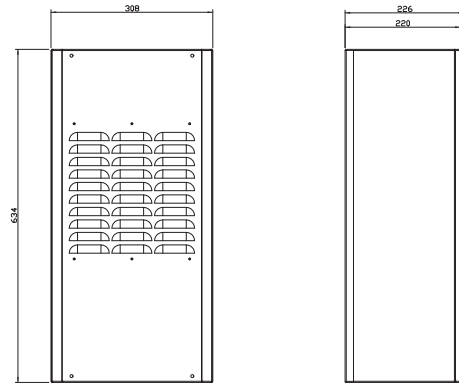
Temperature limits outside: -20°C to 55°C.

Protection degree: IP 54

Finish: RAL 7035.

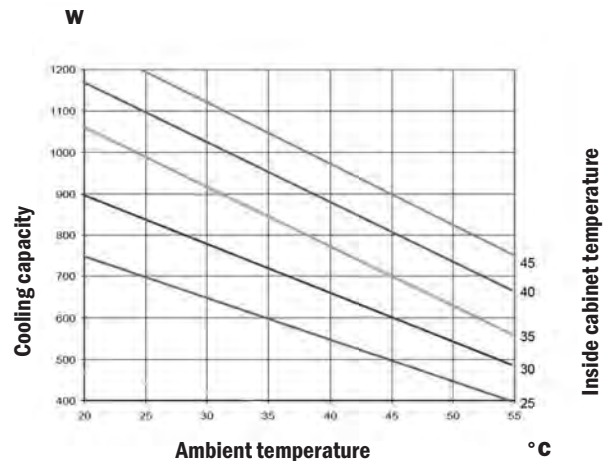
Approvals: CE

CUO08502 / CUO08502SS



Capacity (W)	Voltage (V)	Current (A)	Noise (dB)	Weight (kg)	Part No.
850	230-1-50/60	2,0	65	26	CUO08502
1400	230-1-50/60	5,0	65	42	CUO14002
2000	230-1-50/60	5,5	65	44	CUO20002
850	230-1-50/60	2,0	65	26	CUO08502SS
1400	230-1-50/60	5,0	65	42	CUO14002SS
2000	230-1-50/60	5,5	65	44	CUO20002SS

Performance

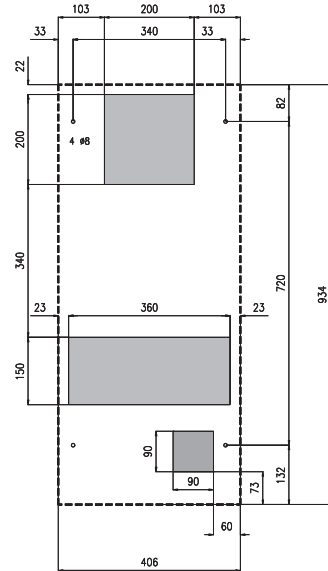
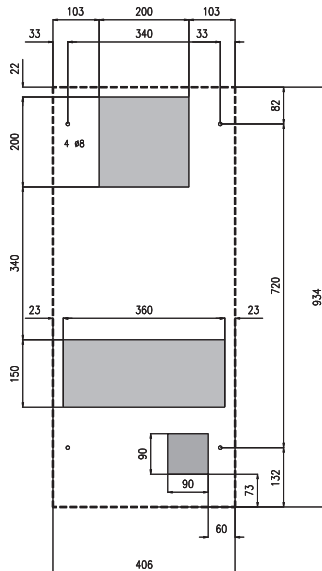
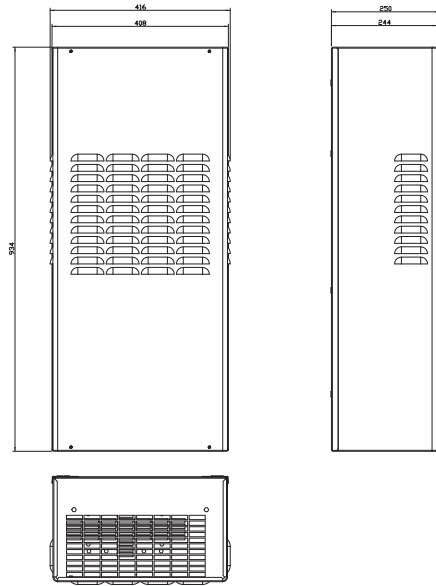
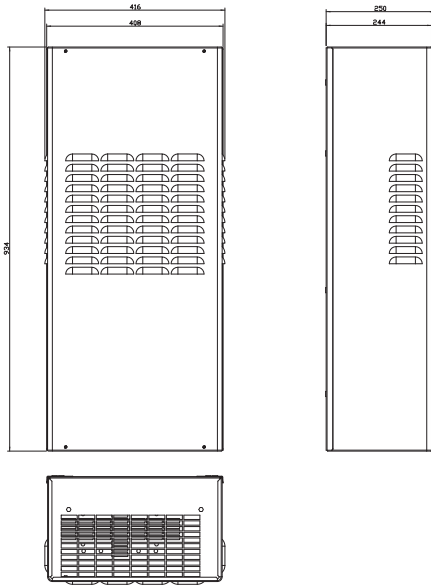




Thermal Management

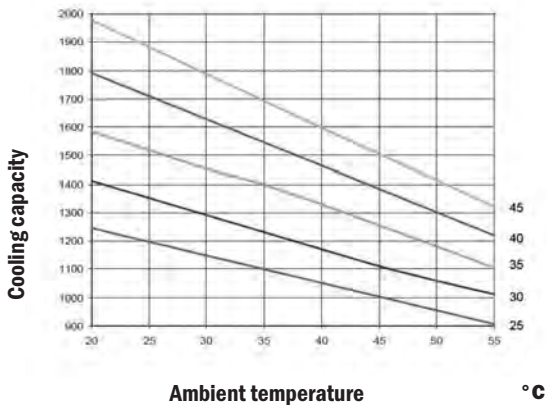
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CUO20002 / CUO20002SS



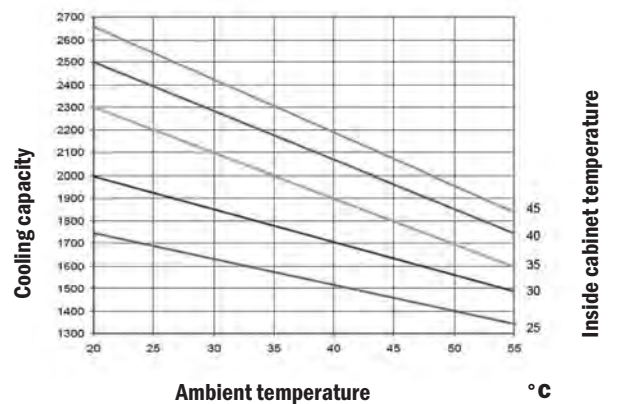
Performance

W



Performance

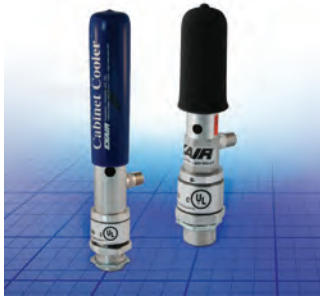
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Thermal Management

BP, Vortex cooler



Description: Compact, reliable and low cost way to cool and purge enclosures. It produces cold air from compressed air, with no moving parts. The easy mounting through a standard electrical knockout makes this solution specially suitable to be installed even when the enclosures are already in the field. Vortex coolers BP provide a 30°C temperature drop from supply air temperature when the inlet pressure is 7 bar (elevated inlet temperature will produce a rise in cold air temperature and reduction in cooling capacity, low air pressures will also reduce the cooling capacity). For a continuous Vortex operating, relative humidity inside the enclosure is maintained below 45%, no moisture condenses inside the enclosure (the enclosure must be sealed). Suitable even for ambient temperatures up to 52°C, the internal components can withstand these high temperatures. Most NEMA 4 and 4X units include a silencer to minimize the noise. **Material:** Internal Vortex tube manufactured in stainless steel. External cover, BP NEMA 12 in plastic and aluminium, BP NEMA 4 in aluminium, and 4X in stainless steel. **Protection:** Depending on type, up to IP 66 / NEMA 4X. **Approvals:** CE, UL **Pack quantity:** Vortex cooler with mounting accessories.

HT, High Temperature vortex cooler



Description: Compact, reliable and low cost way to cool and purge enclosures. It produces cold air from compressed air, with no moving parts. The easy mounting through a standard electrical knockout makes this solution specially suitable to be installed even when the enclosures are already in the field. Vortex coolers HT provide a 48°C temperature drop from supply air temperature when the inlet pressure is 7 bar (elevated inlet temperature will produce a rise in cold air temperature and reduction in cooling capacity, low air pressures will also reduce the cooling capacity). For a continuous Vortex operating, relative humidity inside the enclosure is maintained at 45%, no moisture condenses inside the enclosure (the enclosure must be sealed). Suitable even for ambient temperatures up to 93°C, the internal components can withstand these high temperatures. It includes a silencer to minimize the noise. **Material:** Vortex tube and external cover manufactured in stainless steel. **Protection:** Depending on type, up to IP 66 / NEMA 4X. **Approvals:** CE, UL **Pack quantity:** Vortex cooler with mounting accessories.

IP 54 / NEMA 12, Aluminium

H	Capacity (W)	Air flow (l/min)	Noise (dB)	Part No.
131	162	227	78	BP4008
203	293	425	87	BP4015
	586	850	88	BP4030
	820	1133	93	BP4040

IP 66 / NEMA 4, Aluminium

H	Capacity (W)	Air flow (l/min)	Noise (dB)	Part No.
126	162	227	78	BP4608
184	293	425	73	BP4615
	586	850	74	BP4630
	820	1133	78	BP4640

IP 66 / NEMA 4X, Stainless steel

H	Capacity (W)	Air flow (l/min)	Noise (dB)	Part No.
126	162	227	78	BP4608SS
184	293	425	73	BP4615SS
	586	850	74	BP4630SS
	820	1133	78	BP4640SS

IP 66 / NEMA 4, Aluminium

H	Capacity (W)	Air flow (l/min)	Noise (dB)	Part No.
184	293	425	73	HT4615
	586	850	74	HT4630
	820	1133	78	HT4640

IP 66 / NEMA 4X, Stainless steel

H	Capacity (W)	Air flow (l/min)	Noise (dB)	Part No.
184	293	425	73	HT4615SS
	586	850	74	HT4630SS
	820	1133	78	HT4640SS



Thermal Management

BPA, Air distribution kit



Description: Flexible vinyl tube used to direct the cold air for circulation, or to hot spots. Tube connectors and adhesive clips to hold the tube are included.

Delivery: Distribution tube and mounting accessories.

For	Part No.
BP/HT4x08	BPA01
BP/HT4x15, 4x30, 4x40	BPA02

BPT, Thermostat kit



Description: Brass solenoid valve and thermostat that limit the flow of compressed air to only when cooling is needed. The thermostat is factory set at 35°C, but adjustable to any other temperature. The thermostatically controlled vortex saves air, and are recommended where heat load fluctuates and continual purge is not required.

Voltage: 240V and 50 Hz. Other voltages on request.

Delivery: Thermostat with mounting bracket, and solenoid valve.

For	Part No.
BP/HT4x08, 4x15	BPT14
BP/HT4x30, 4x40	BPT38

PLFR, Air regulator kit



Description: Air pressure regulator with pressure dial, and manometer to adjust the air pressure. It filters condensated water and particles (> 5µ). Maximum inlet pressure 13 bar, and at max pressure maximum temperature: 40°C. Connection 1/4".

Delivery: Air pressure regulator, and water trap.

Part No.
PLFR1/4

BPS, Silencer Vortex



Description: To minimize the noise from the vortex tube. It mounts directly to the nozzle of the vortex cooler.

Delivery: Silencer with mounting material

For	Part No.
BP4015/4030/4040	BPS4902

Thermal Management

PWS, Air/Water heat exchanger



Description: For vertical installation. Additional work is not required to the cutout to guarantee the IP. Integrated thermostat and solenoid valve for temperature control, and temperature monitoring with alarm contact. The thermostat is adjustable between 8°C and 50°C, factory setting 35°C. 10 bar permissible operating pressure. Cooling capacity at 200 l/h and W10/A35, the cooling capacity for specific conditions are indicated in the diagrams.

Voltage: 230 V AC, 50/60 Hz (±10%).

Type of connection: Spring-type terminal included with plug. 13mm hose nozzle.

Material: Galvanized steel powder coated, and copper pipe with aluminium fins.

Temperature resistance: 1°C to +70°C.

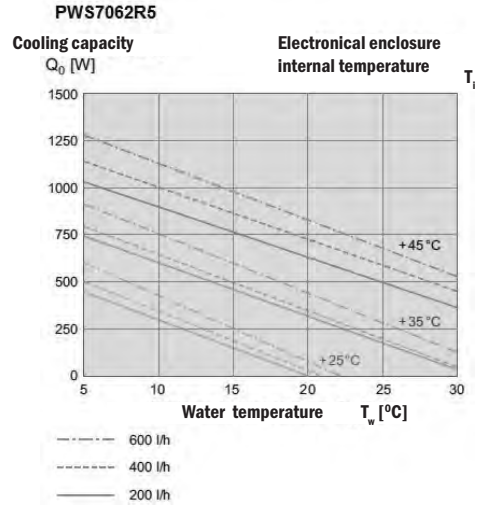
Protection: IP 55.

Finish: RAL 7035.

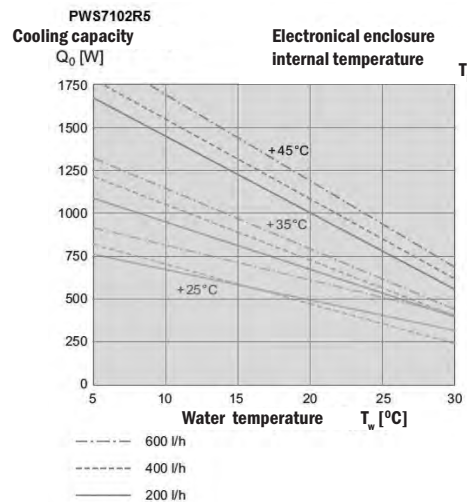
Approvals: CE, UL, cUL, GOST.

Pack quantity: One unit.

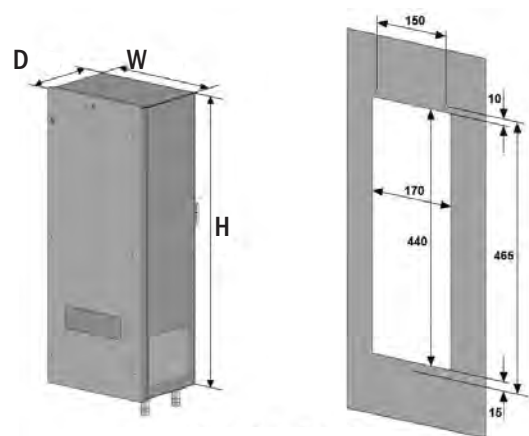
PWS7062R5



PWS7102R5



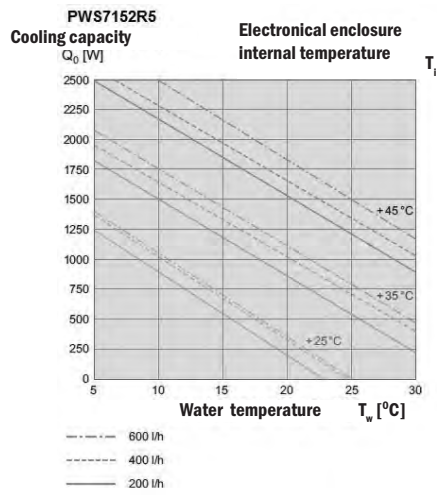
H	W	D	Capacity (W)	Current (A)	Noise (dB)	Part No.
500	200	100	600	0.35/0.38	≤48	PWS7062R5
		150	950	0.35/0.40	≤48	PWS7102R5
950	400	115	1500	0.55/0.75	53	PWS7152R5
		190	3150	1.30/1.70	54	PWS7332R5



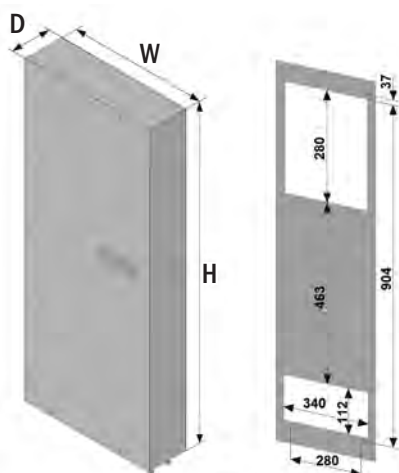
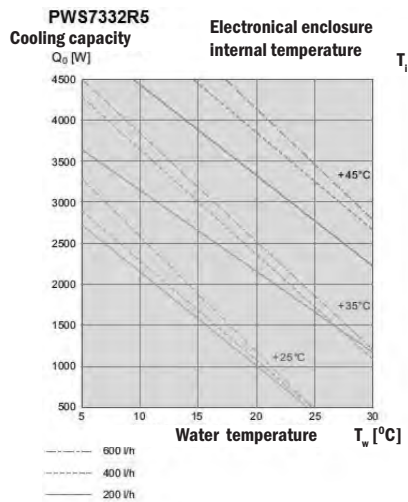
Mounting holes 8mm diameter



PWS715R5



PWS7332R5

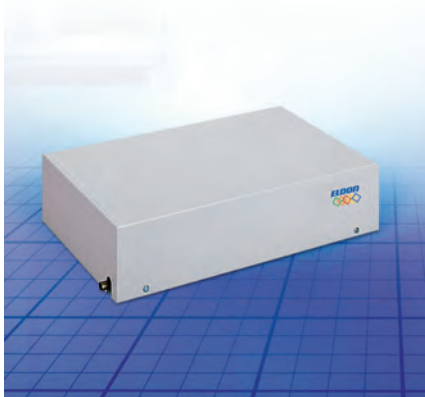


Mounting holes 8mm diameter

Thermal Management

PWD, Air/Water heat exchanger

PWD5302R5



Description: For horizontal installation. Additional work is not required to the cutout to guarantee the IP. Integrated thermostat and solenoid valve for temperature control. The thermostat is adjustable between 8°C and 50°C, factory setting 35°C. 10 bar permissible operating pressure. Cooling capacity at 400 l/h and W10/A35, the cooling capacity for specific conditions are indicated in the diagrams.

Voltage: 230 V AC, 50/60 Hz (±10%).

Type of connection: Cable 3x0.75mm² (3.5m). 13mm hose nozzle.

Material: Galvanized steel powder coated, and copper pipe with aluminium fins.

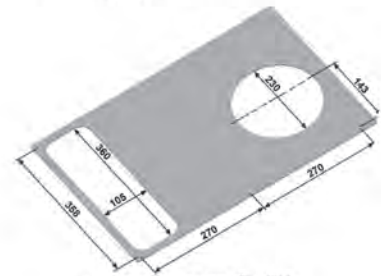
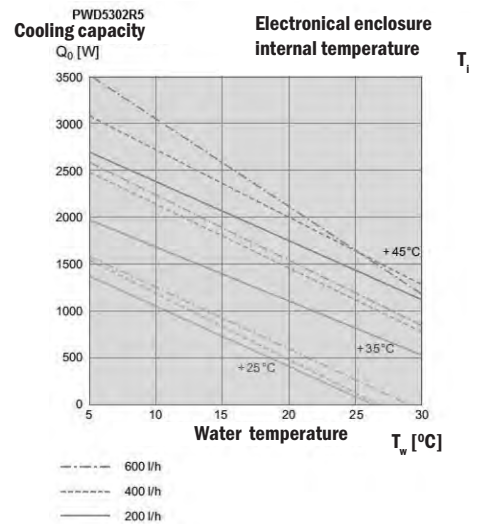
Temperature resistance: 1°C to +70°C.

Protection: IP 55.

Finish: RAL 7035.

Approvals: CE, GOST.

Pack quantity: One unit.

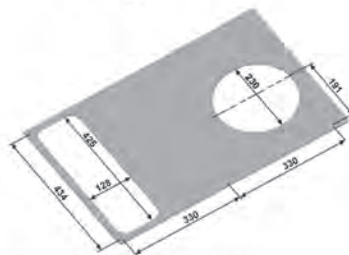
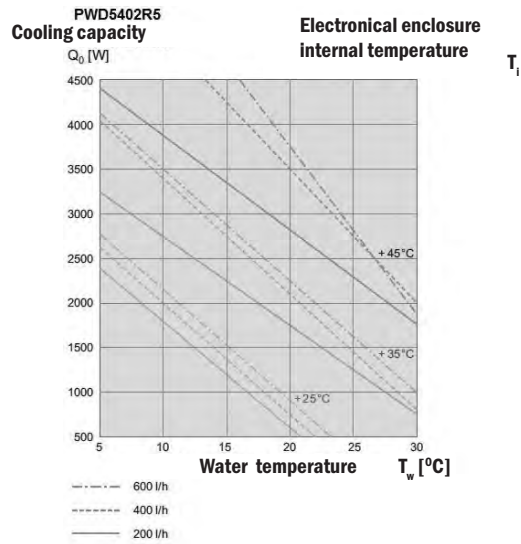


Mounting holes 8mm diameter

H	W	D	Capacity (W)	Current (A)	Noise (dB)	Part No.
140	600	390	2150	0.40	54	PWD5302R5
190	720	465	3400	0.84	64	PWD5402R5



PWD5402R5



Mounting holes 8mm diameter



Thermal Management

EF, High flow Filter fan



Description: Filter fan for forced ventilation. Eldon filter fans save time on installation as they are installed with a click-in system without screws. The hinged front cover can be easily opened for quick and easy filter replacement. The airflow direction and the connection position can easily be changed. Filtration efficiency of 88% (91% for EF500R5 and above). Sleeve bearing, and ball bearing for DC filter fans and EF250R5 and above.

Material: Front cover made of injection-moulded thermoplastic, self-extinguishing, UL94V0.

Filter Grade G3, and grade G4 for EF500R5 and above (according to EN 779).

Temperature resistance: -15°C to +55°C.

Type of connection: Depending on the filter fan size, type 1 cable length 310mm, type 2 terminal strip, type 3 spring-type terminal.

Protection: IP 54, NEMA12.

Finish: RAL 7035.

Approvals: CE, cUL, UL.

Pack quantity: 1 fan with filter.

230 V, 50/60 HZ

Connection Type	Current (A)	Noise (dB)	EF+EFA Air flow (m³/h)	Free air flow (m³/h)	Part No.
1	0.07	33	16	25	EF100R5
	0.12	44	44	61	EF200R5
3		40	110	82	EF220R5
	0.12	40	116	156	EF250R5
	0.32	42	231	256	EF300R5
	0.30	54	370	480	EF500R5
	0.51	63	445	640	EF600R5
	0.59	66	560	845	EF700R5

115 Volt AC, 60 Hz

Connection Type	Current (A)	Noise (dB)	EF+EFA Air flow	Free air flow (m³/h)	Part No.
1	0.15	33	18	29	EF100-115R5
	0.23	44	52	70	EF200-115R5
3		40	93	125	EF220-115R5
	0.25	43	127	171	EF250-115R5
	0.50	46	265	292	EF300-115R5
	0.80	52	370	480	EF500-115R5
	1.40	64	445	653	EF600-115R5
	1.71	69	625	875	EF700-115R5

24 Volt DC

Connection Type	Current (A)	Noise (dB)	EF+EFA Air flow	Free air flow (m³/h)	Part No.
1	0.10	33	16	25	EF100-24R5
	0.21	44	44	61	EF200-24R5
		40	110	82	EF220-24R5
3	0.20	40	116	156	EF250-24R5
	0.50	42	231	256	EF300-24R5

EFA, Exhaust filter



Description: Exhaust filter to be used for natural ventilation, or for forced ventilation working with filter fans EF. Eldon exhaust filters save us time because are installed with a click-in system without screws. The hinged front cover can be easily opened for quick and easy filter replacement. Filtration efficiency of 88% (91% for EFA500R5 and above).

Material: Front cover made of injection-moulded thermoplastic, self-extinguishing, UL94V0.

Filter Grade G3, and grade G4 for EFA500R5 and above (according to EN 779).

Temperature resistance: -15°C to +55°C.

Protection: IP54, NEMA12.

Finish: RAL 7035.

Approvals: CE, cUL, UL.

Pack quantity: One exhaust filter.

Cut out dim.	Part No.
92 x 92 mm	EFA100R5
125 x 125 mm	EFA200R5
177 x 177 mm	EFA220R5
223 x 223 mm	EFA250-300R5
291 x 291 mm	EFA500-700R5

EFM, Standard filter mat



Description: To replace the standard filter supplied with the filter fans EF and the exhaust filters EFA. It is recommended to replace the filter each year or sooner depending on the environment.

Material: Grade G3 according to EN 779.

Temperature resistance: -15°C to +100°C.

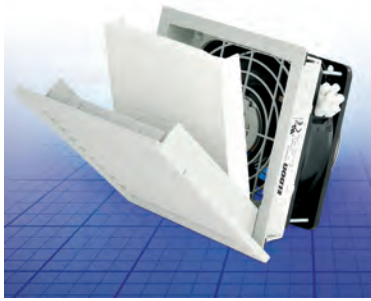
Pack quantity: 5 pieces.

For	Part No.
EF/EFA 100	EFM10
EF/EFA 200	EFM20
EF/EFA 220	EFM220
EF/EFA 250/300	EFM25-30
EF/EFA 500/600/700	EFM50-60



Thermal Management

EFP, Outdoor filter fan



Description: Filter fan for forced ventilation. Eldon filter fans save time on installation as they are installed with a click-in system without screws. The hinged front cover can be easily opened for quick and easy filter replacement. The airflow direction and the connection position can easily be changed. Filtration efficiency of 91%. Sleeve bearing, and ball bearing for DC filter fans and EFP250R5 and above. The new filter mat gives higher air flow and longer life with a low pressure drop because of special construction.

Material: Front cover made of injection-moulded thermoplastic, self-extinguishing, UL94V0. UV resistance.

Filter Grade G4 (according to EN 779).

Temperature resistance: -15°C to +55°C.

Type of connection: Depending on the filter fan size, type 1 cable length 310mm, type 2 terminal strip, type 3 spring-type terminal.

Protection: IP 55, NEMA12.

Finish: RAL 7035.

Approvals: CE, cUL, UL.

Pack quantity: One fan with filter.

230 V, 50/60 HZ

Connection Type	Current (A)	Noise (dB)	EF+EFA Air flow	Free air flow (m³/h)	Part No.	
2	0.12	44	40	56	EFP200R5	
		40	55	100	EFP220R5	
3	0.12	40	109	145	EFP250R5	
		0.32	42	180	233	EFP300R5
		0.30	54	380	505	EFP500R5
		0.51	63	490	770	EFP600R5
		0.59	66	570	925	EFP700R5

115 Volt AC, 60 Hz

Connection Type	Current (A)	Noise (dB)	EF+EFA Air flow	Free air flow (m³/h)	Part No.	
2	0.23	44	46	64	EFP200-115R5	
		40	64	110	EFP220-115R5	
3	0.25	43	113	160	EFP250-115R5	
		0.50	46	207	265	EFP300-115R5
		0.80	52	380	505	EFP500-115R5
		1.40	64	501	785	EFP600-115R5
		1.71	69	625	950	EFP700-115R5

24 Volt AC

Connection Type	Current (A)	Noise (dB)	EF+EFA Air flow	Free air flow	Part No.
1	0.21	44	40	56	EFP200-24VACR5

EFAP, Exhaust filter, outdoor version



Description: Exhaust filter to be used for natural ventilation, or for forced ventilation working with filter fans EFP. Eldon exhaust filters save us time because are installed with a clickin system without screws. The hinged front cover can be easily opened for quick and easy filter replacement. Filtration efficiency of 91%. The new filter mat gives longer life with a low pressure drop because of special construction.

Material: Front cover made of injection-moulded thermoplastic, self-extinguishing, UL94V0. UV resistance.

Filter Grade G4 (according to EN 779).

Temperature resistance: -15°C to +55°C.

Protection: IP 55, NEMA12.

Finish: RAL 7035.

Approvals: CE, cUL, UL.

Pack quantity: One exhaust filter.

Cut out dim.	Part No.
125 x 125 mm	EFAP200R5
177 x 177 mm	EFAP220R5
223 x 223 mm	EFAP250-300R5
291 x 291 mm	EFAP500-700R5

EFMP, Replacement filter mat



Description: To replace the standard filter supplied with the filter fans EFP and the exhaust filters EFAP. It is recommended to replace the filter each year or sooner depending on the environment.

Material: Grade G4 according to EN 779.

Temperature resistance: -15°C to +100°C.

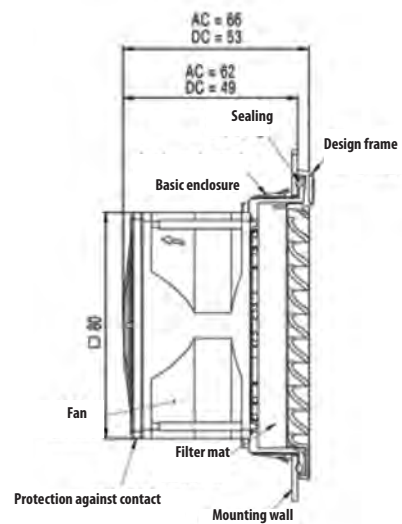
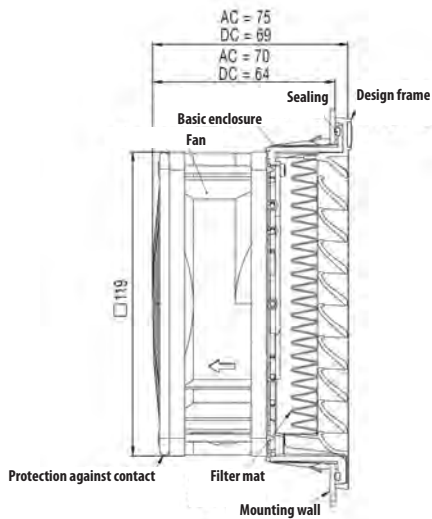
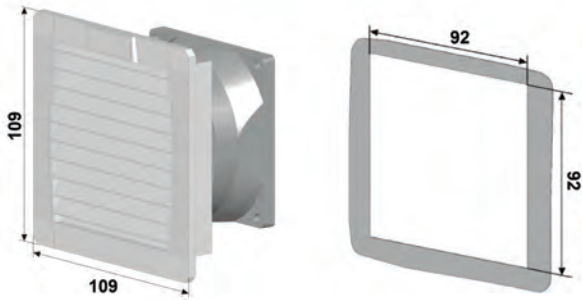
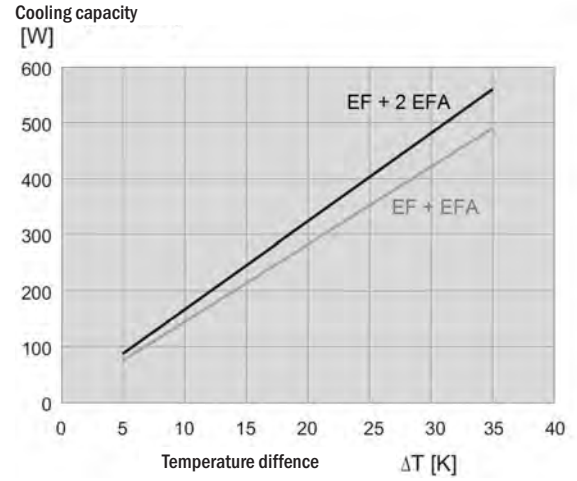
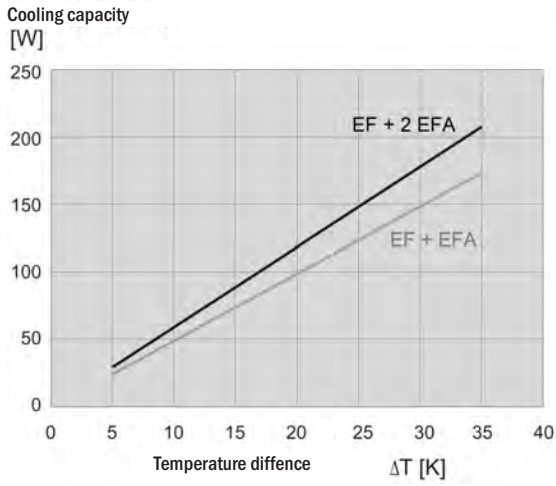
Pack quantity: 5 pieces.

For	Part No.
EFP/EFAP 200	EFMP200
EFP/EFAP 220	EFMP220
EFP/EFAP 250/300	EFMP250-300
EFP/EFAP 500/600/700	EFMP500-700

Thermal Management

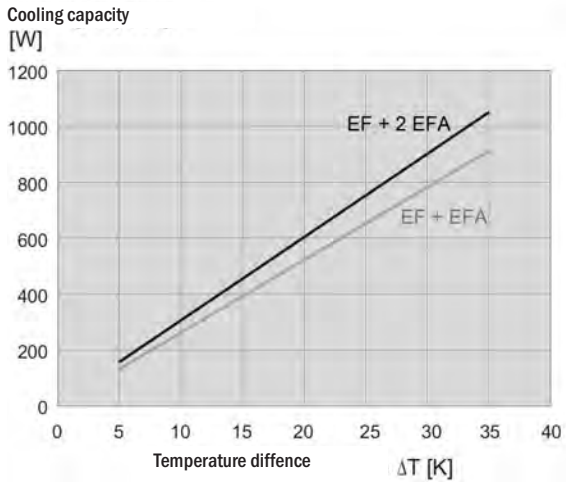
EF 100R5
EFA 100R5

EF 200R5
EFA 200R5

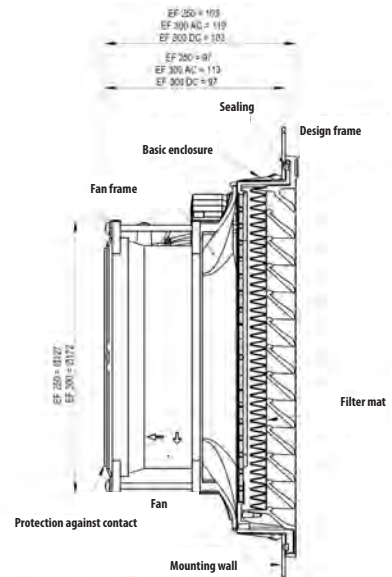
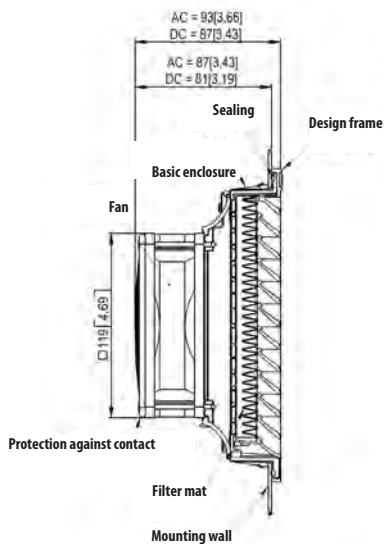
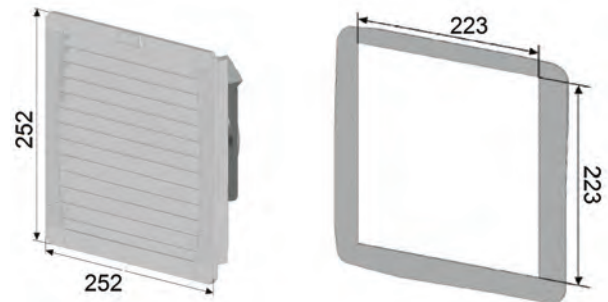
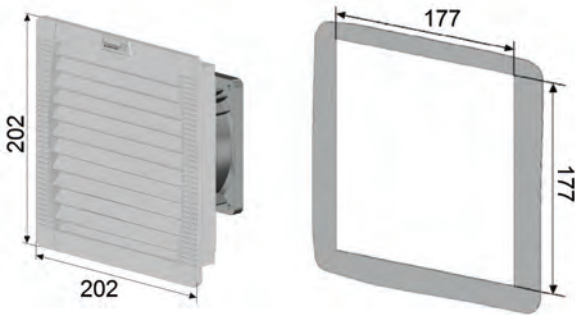
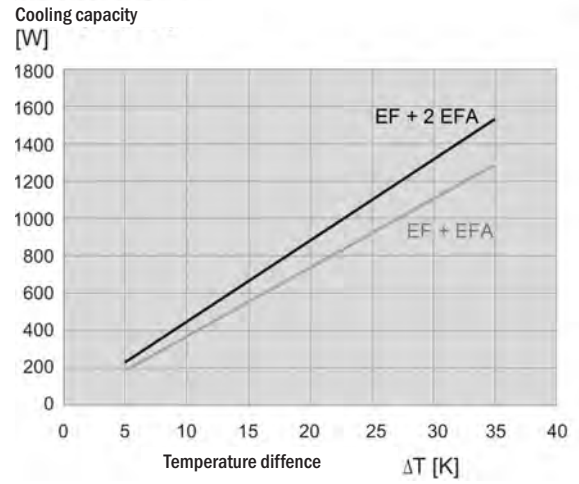




EF 220R5
EFA 220R5



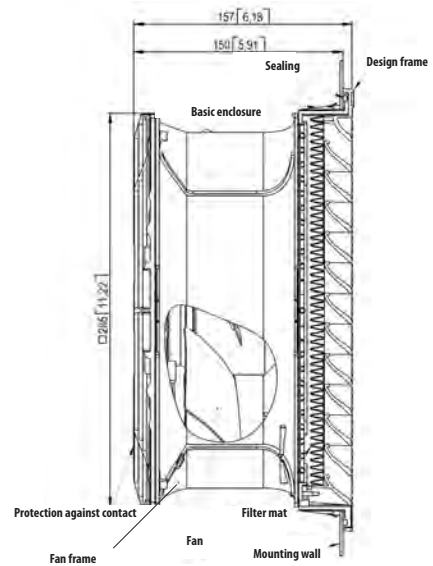
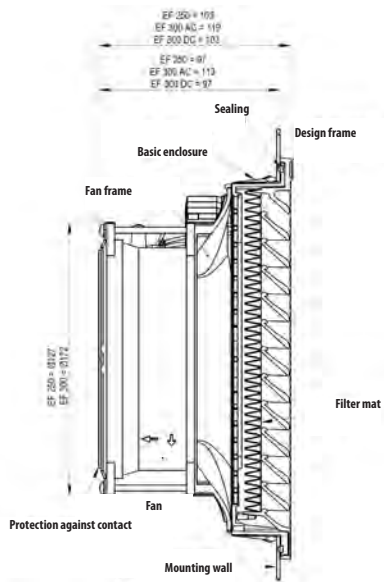
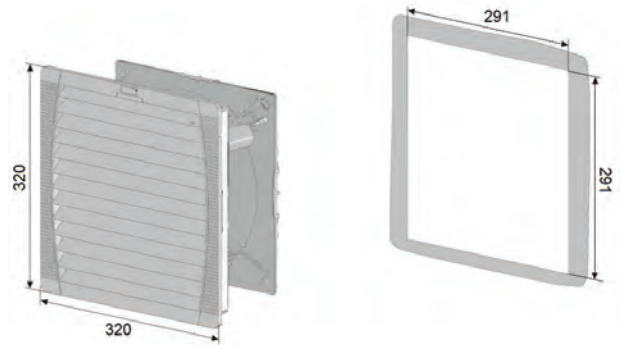
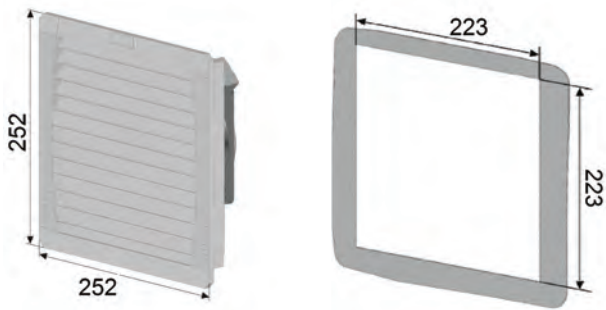
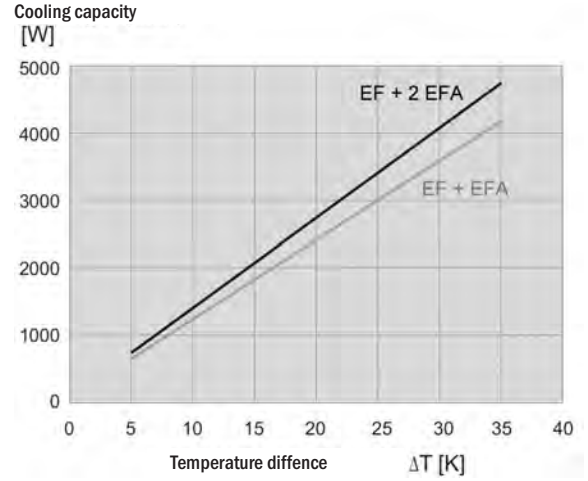
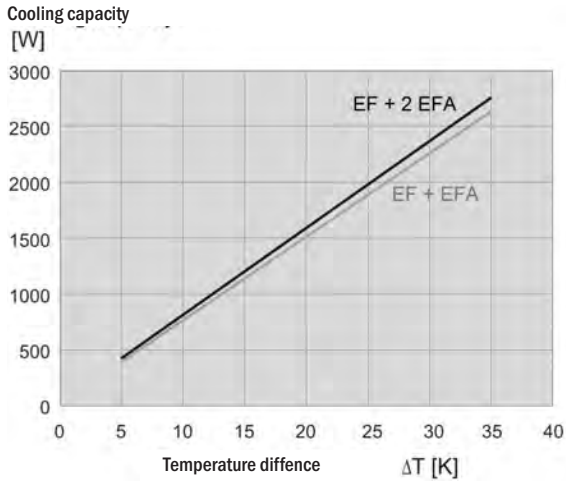
EF 250R5
EFA 250-300R5



Thermal Management

EF 300R5
EFA 250-300R5

EFA 500R5
EFA 500-700R5

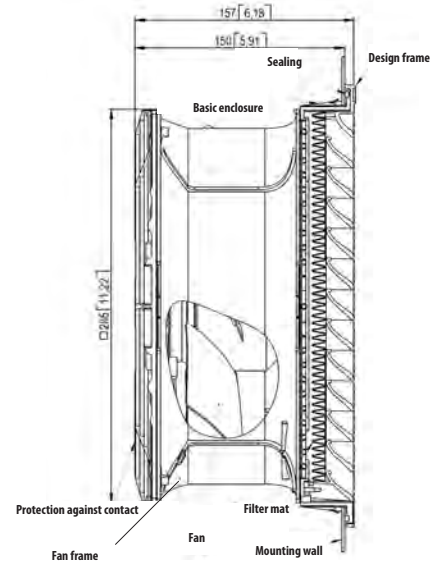
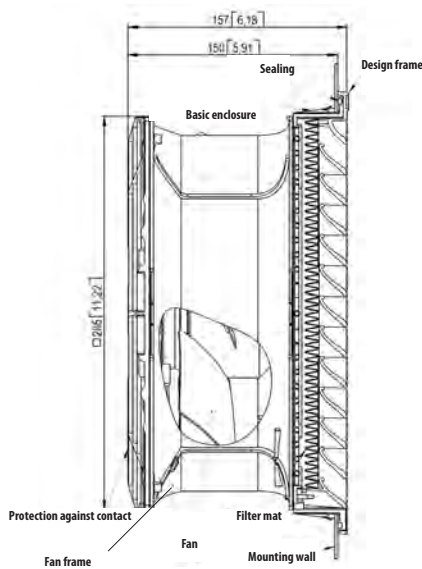
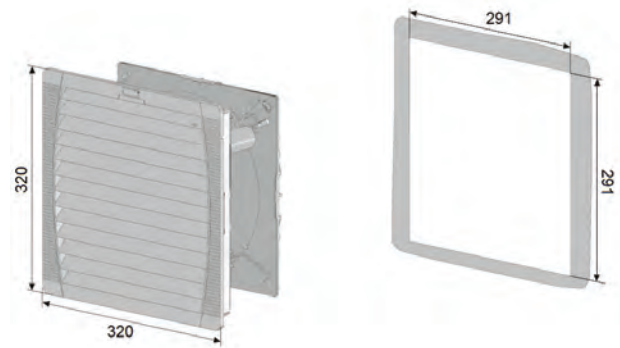
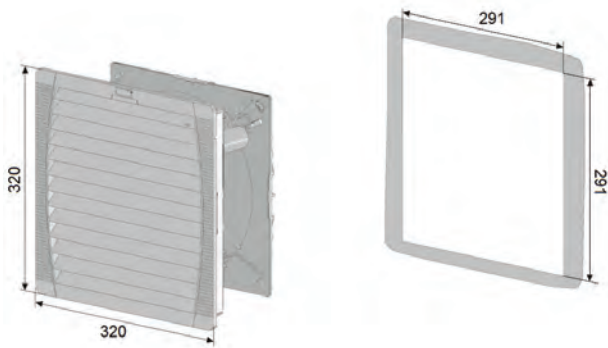
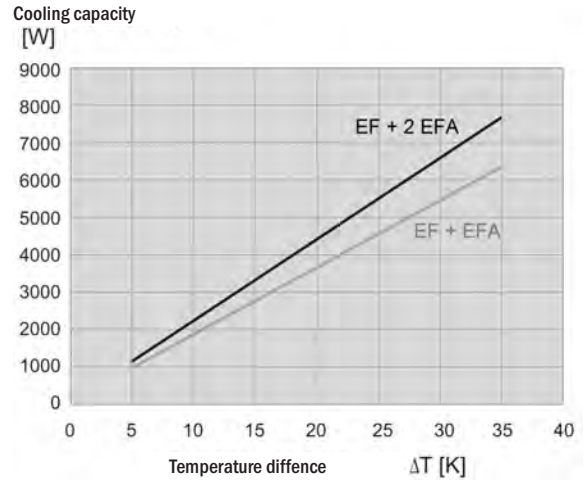
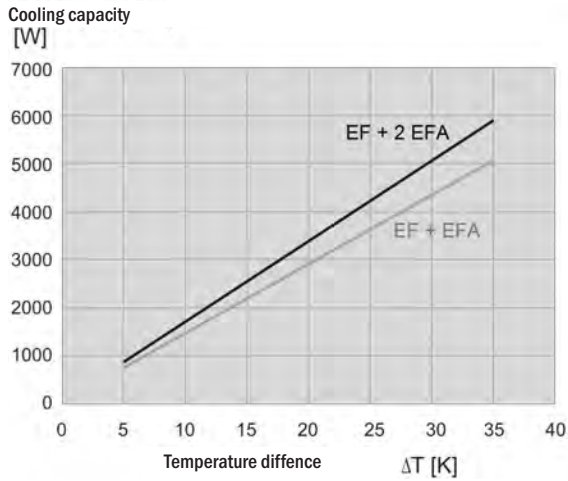




Thermal Management

EF 600R5
EFA 500-700R5

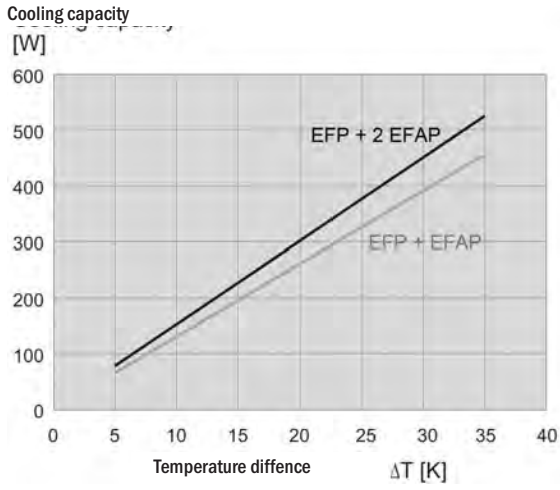
EF700R5
EFA 500-700R5



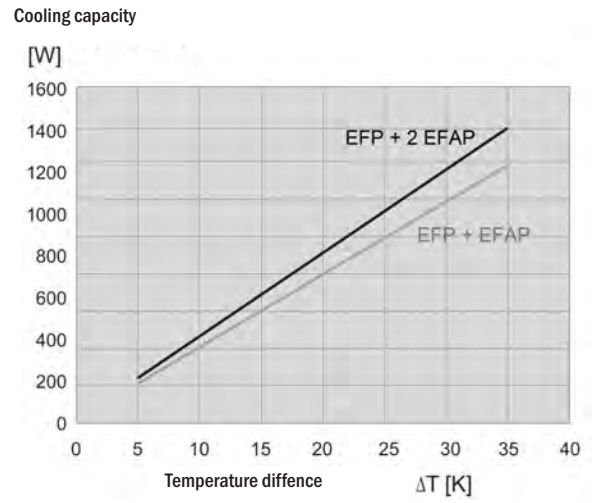


Thermal Management

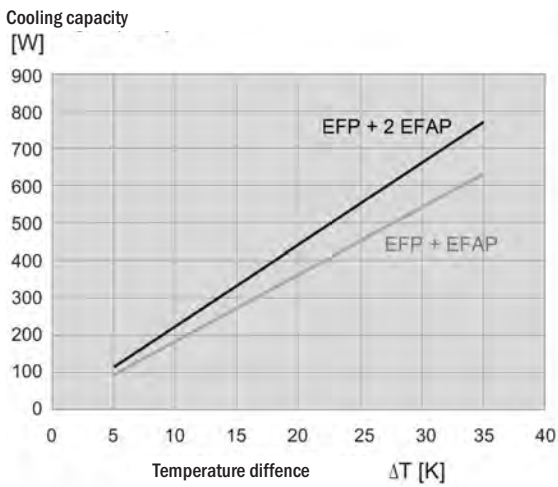
**EFP 200R5
EFAP 200R5**



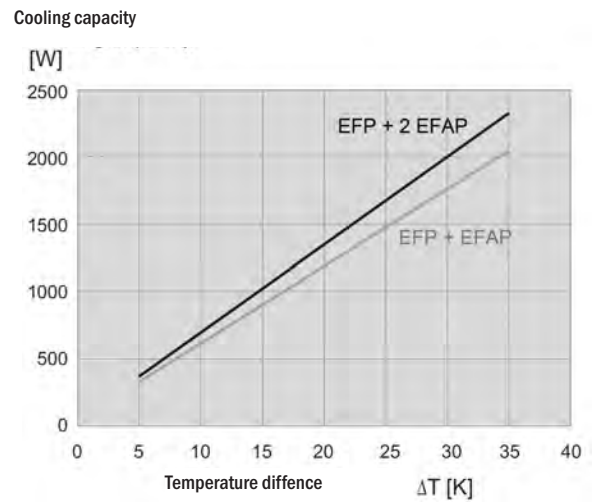
**EFP 250R5
EPAF 250-300R5**



**EFP 220R5
EFAP 220R5**



**EFP 300R5
EFAP 250-300R5**

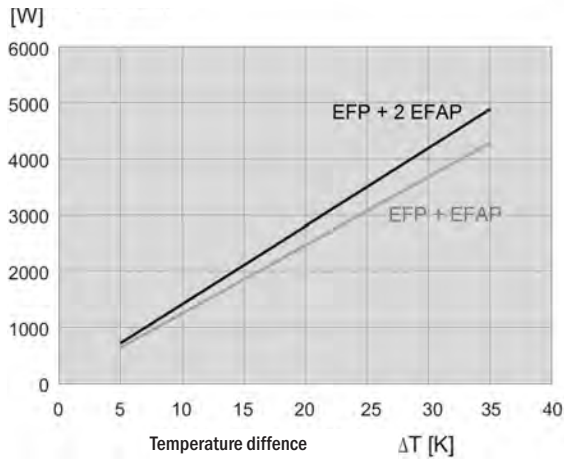




Thermal Management

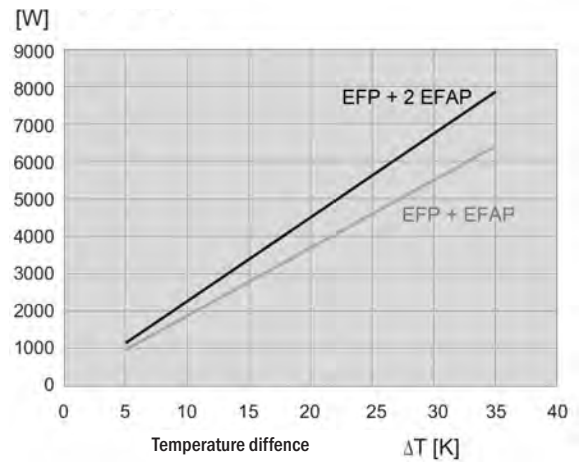
EFP 500R5
EFAP 500-700R5

Cooling capacity



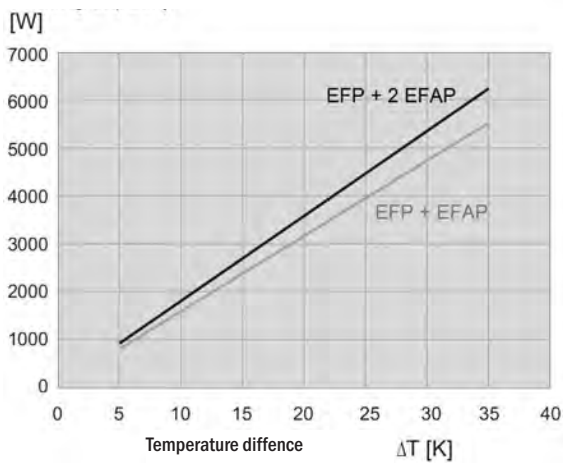
EFP700R5
EFAP 500-700R5

Cooling capacity



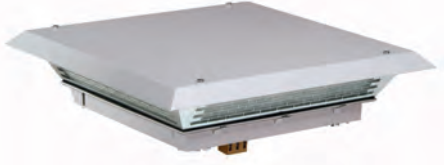
EFP 600R5
EFAP 500-700R5

Cooling capacity



Thermal Management

RFU, Roof fan unit



Description: Roof fan unit for mounting on the top of the enclosure providing forced ventilation. The unit is easily installed with a quick fastening system, and the required cutout is the same for the different flow values. Filtration efficiency of 81% for the IP 54 units. Ball bearing.

Material: Painted mild steel, and injection-moulded thermoplastic (ABS-FR) self extinguishing, UL94V0.

Filter Grade G3 for the IP 54 units, the IP 33 units have not filter.

Temperature resistance: -15°C to +55°C.

Type of connection: Terminal strip.

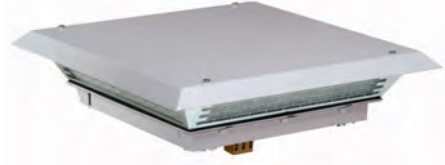
Protection: IP 33 / IP 54.

Finish: RAL 7035.

Approvals: CE, cUL, UL, GOST.

Pack quantity: One fan with filter.

REU, Roof exhaust unit



Description: Roof exhaust unit for mounting on the top of the enclosure providing natural ventilation. The unit is easily installed with a quick fastening system. Filtration efficiency of 81% for the IP 54 unit (REU05R5).

Material: Painted mild steel, and injection-moulded thermoplastic (ABS-FR) self extinguishing, UL94V0.

Filter Grade G3 for the IP 54 unit (REU05R5), the IP 33 unit (REU03R5) has no filter.:

Temperature resistance: -15°C to +55°C.

Protection: IP 33 / IP 54.

Finish: RAL 7035 structure powder coating.

Approvals: CE, cUL, UL.

Pack quantity: One roof exhaust unit.

230 V, 50/60 HZ

IP	Current (A)	Noise (dB)	Air flow m³/h	Free air flow (m³/h)	Part No.
33	4x0.2	67	268	500*	RFU5003R5
	0.30/0.36	69	427	700*	RFU7003R5
	0.51/0.66	77	582	1000*	RFU10003R5
54	4x0.2	67	242	350*	RFU5005R5
	0.30/0.36	69	370	550*	RFU7005R5
	0.51/0.66	77	500	750*	RFU10005R5

115VAC, 50/60Hz

IP	Current (A)	Noise (dB)	Air flow m³/h	Free air flow (m³/h)	Part No.
33	4x0.3	67	268	500*	RFU5013R5
	0.66/0.80	69	427	700*	RFU7013R5
	0.96/1.40	77	582	1000*	RFU10013R5
54	4x0.3	67	242	350*	RFU5015R5
	0.66/0.80	69	370	550*	RFU7015R5
	0.96/1.40	77	500	750*	RFU10015R5

(1) The value in the table is for the combination RFU + EFA500-700R5.

IP	Part No.
33	REU03R5
54	REU05R5

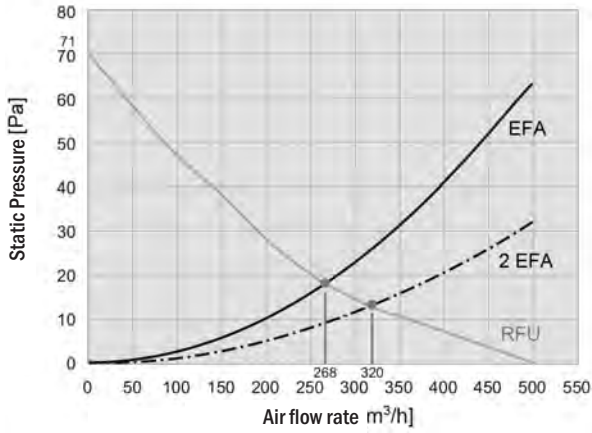


(mm)	X	Y	Z
REUxxxx	470	470	140
RFU5xxxxx	430	430	125
RFU7xxxxx	470	470	140
RFU10xxxxx	470	470	140

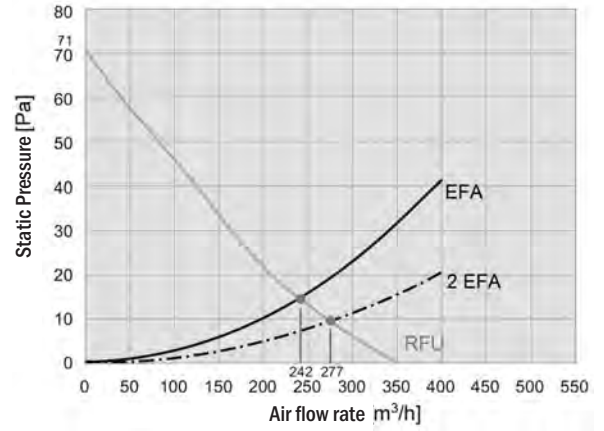


Thermal Management

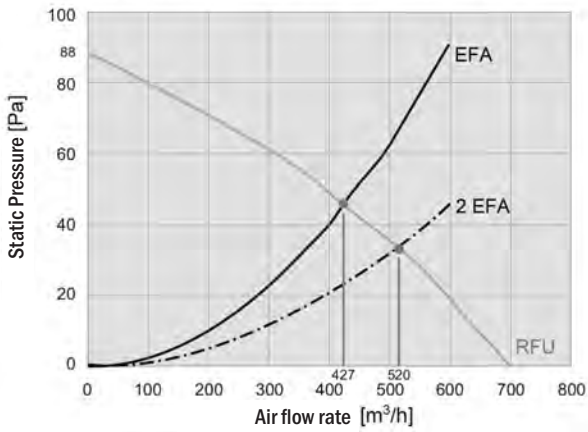
**RFU 5003R5
EFA 500-700R5**



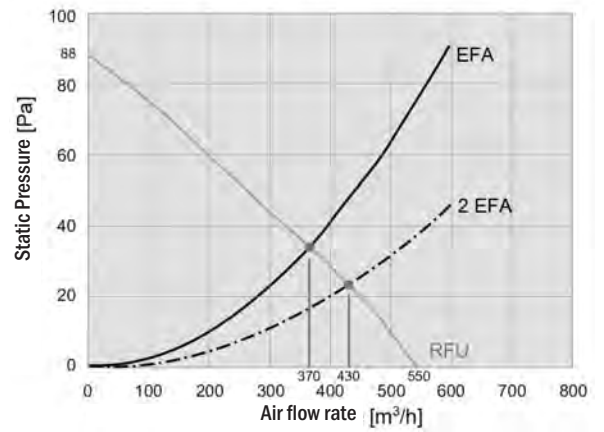
**RFU 5005R5
EFA 500-700R5**



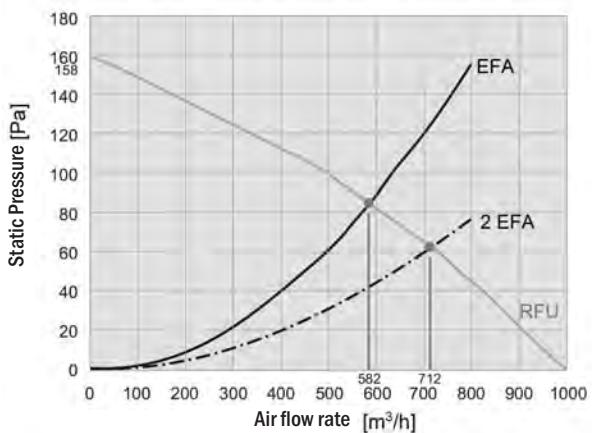
**RFU 7003R5
EFA 500-700R5**



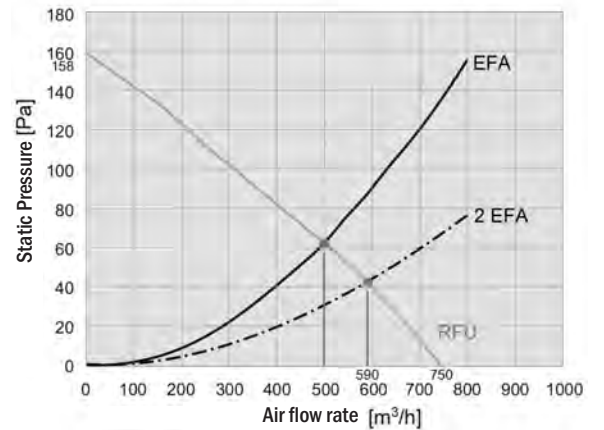
**RFU 7005R5
EFA 500-700R5**



**RFU 10003R5
EFA 500-700R5**



**RFU 10005R5
EFA 500-700R5**



Thermal Management

EGK, Anti condensation heater, small



Description: Small semiconductor heater to be fixed in vertical position to prevent condensation. Mounting clip for 35mm DIN rail (EN60715).

Heating element: PTC resistor, self regulating and temperature limiting.

Material: Plastic, and anodised aluminium profile.

Operating temperature: -45 to +70°C. The heating capacity is for ambient temperature 20°C.

Connection: 3x0.5mm² (300mm) silicon cable. For UL heaters 3XAWG20 (300mm) cable.

Protection: IP 54, Class I (earthed).

Approvals: CE, UL (Part number with UL at the end), GOST.

Pack quantity: 1 piece.

EHG, Anti condensation heater, large



Description: Large heater to be fixed in vertical position to prevent condensation. Mounting clip for 35mm DIN rail (EN60715).

Material: Plastic, and anodised aluminium profile.

Operating voltage: 110 - 250V AC, 50/60Hz.

Operating temperature: -40 to +70°C. The heating capacity is for ambient temperature 20°C.

Connection: Plug terminal connection (2 x 0.5-2.5mm²), available on request with connecting cable (500mm).

Protection: IP 20, Class I. IP 44 in connecting cable version.

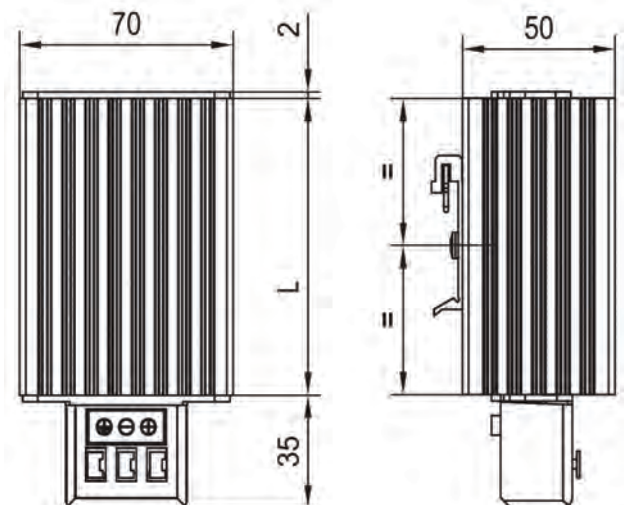
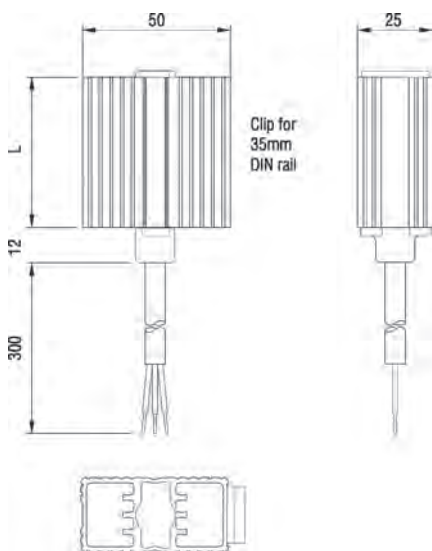
Approvals: CE, UL, cUL, GOST

Pack quantity: 1 piece.

Capacity (W)	Voltage (V)	Current (A)	L (mm)	Weight (kg)	Part No.
10	120-240V AC/DC	1.0	52	0.100	EGK010
20	120-240V AC/DC	2.5	60	0.200	EGK020
30	120-240V AC/DC	3.0	70	0.200	EGK030
10	110-120V AC/DC	1.0	52	0.100	EGK010UL
20	110-120V AC/DC	2.5	70	0.200	EGK020UL
30	110-120V AC/DC	3.0	100	0.200	EGK030UL

*The min/max voltage values for 120-240V heaters are 110/265V, operating with voltages below 140V AC/DC reduces heating performance by approx. 10%.

Capacity (W)	Current (A)	L (mm)	Weight (kg)	Part No.
15	1.1	65	0.250	EHG015
30	1.2	65	0.250	EHG030
45	1.8	65	0.250	EHG045
60	2.5	140	0.450	EHG060
75	4.5	140	0.510	EHG075
100	5.0	140	0.510	EHG100
150	7.5	215	0.770	EHG150





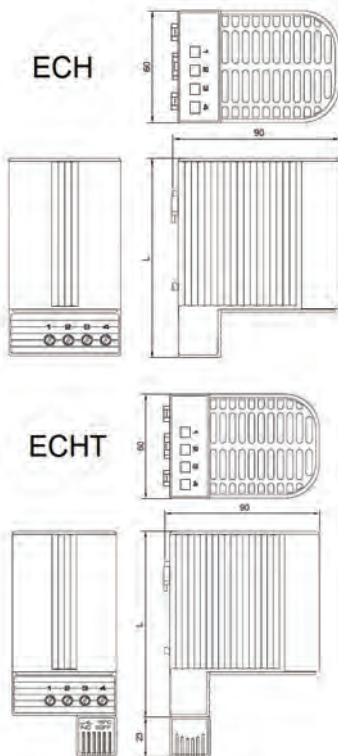
ECH(T), Compact heater with/without thermostat



Description: Double insulated vertical heater to prevent condensation. Mounting clip for 35mm DIN rail (EN60715). Touch-safe heater, the temperatures on the accessible surfaces of the housing are kept down. The heater with thermostat (ECHT) includes a plug-in thermostat therefore it does not require additional wiring (starting temperature of 5°C, and switch-off temperature of 15°C).
Heating element: PTC resistor, temperature limiting
Material: Plastic according to UL94 V-0
Operating voltage: 120-240V AC (min. 110V, max. 265V).
Operating temperature: -40 to +70°C. The heating capacity is for ambient temperature 20°C.
Connection: Pole terminal 2.5mm², torque 0.8Nm max.
Protection: IP 20, Class II (double insulated).
Approvals: CE, UL (only ECH).
Finish: Black
Pack quantity: 1 piece

Heating Capacity (W)	Starting current (A)	L (mm)	Weight (kg)	Part No.
50	2.5	110	0.300	ECH50
100	4.5	110	0,300	ECH100
150	8.0	150	0,500	ECH150
50	2.5	110	0,300	ECHT50
100	4.5	110	0,300	ECHT100
150	8.0	150	0,500	ECHT150

Operating below 140V AC/DC reduces performance by approx. 10%.

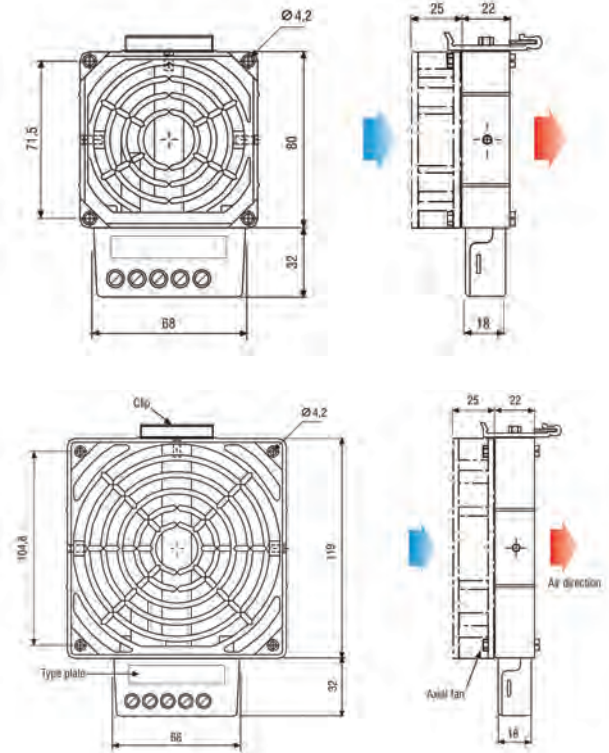


EHV, Fan Heater



Description: High performance space saving fan heater to prevent condensation. The fan assists the natural convection for fast distribution of the heat in large enclosures. Mounting clip for 35mm DIN rail (EN60715). Temperature safety cut-out to protect against overheating in case of fan failure, automatic reset.
Heating element: high performance cartridge.
Fan life: 50.000 h at 25°C.
Material: Plastic according to UL94 V-0, and die-cast aluminium.
Operating voltage: 230V AC, 50/60Hz, (120V AC on request).
Operating temperature: -45 to +70°C. Max. 90% RH.
Connection: 3-pole screw connector 2.5mm².
Protection: IP 20, Class I (earthed).
Approvals: CE, UL.
Pack quantity: 1 piece.

Capacity (W)	Air flow m ³ /h	Weight (kg)	Part No.
100	35	0.600	EHV100
150	35	0.600	EHV150
200	108	0.900	EHV200
300	108	0.900	EHV300
400	108	0.900	EHV400





Thermal Management

EGL, Fan Heater



Description: Heater with fan to be fixed as desired, but preferably in vertical position to prevent condensation. The fan assists the natural convection for fast distribution of the heat in large enclosures.
 Mounting clip for 35mm DIN rail (EN60715). Max. surface temperature of 70°C (EGL250), and 85°C (EGL400).
Air flow: 50m³/h (50Hz), and 61m³/h (60Hz).
Fan life: 40.000 h at 25°C.
Material: Plastic, and anodised aluminium profile.
Operating voltage: 104-126VAC (for 115VAC unit), 207-258VAC (for 230VAC unit)
Operating temperature: -20 to +70°C. The heating capacity is for ambient temperature 20°C.
Connection: Plug terminal connection (2 x 0.5-2.5mm²).
Protection: IP 20, Class I (earthed).
Approvals: CE, UL.
Pack quantity: 1 piece.

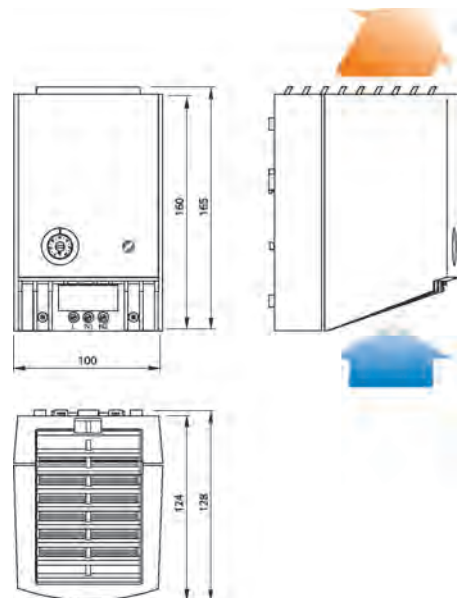
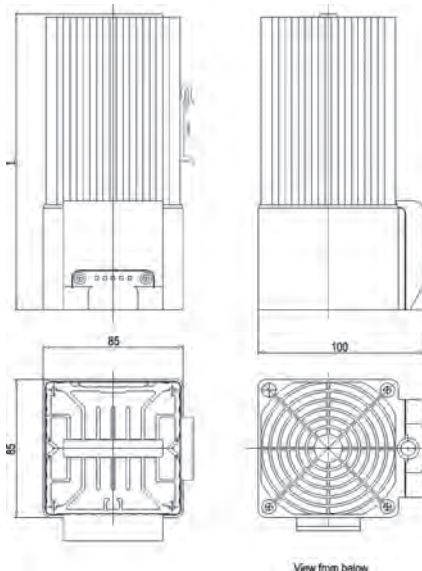
ECR, Fan heater with thermostat



Description: High performance heater to prevent condensation. The fan assists the natural convection for a better heat distribution. Double insulated. Mounting clip for 35mm DIN rail (EN60715).
 Temperature safety cut-out to protect against overheating in case of fan failure, automatic reset. Thermostat control lamp.
Setting range: 0°C to 60°C
Heating element: PTC resistor, temperature limiting.
Air flow: 45m³.
Fan life: 50.000 h at 25°C.
Material: Plastic according to UL94 V-0.
Operating voltage: 220-240V AC, 50/60Hz, (100-120V AC on request).
Operating temperature: -45 to +70°C. Max 90% RH.
Connection: 2 pole clamp 2.5mm², torque 0.8Nm max.
Protection: IP 20, Class II (double insulated).
Approvals: CE, UL.
Finish: Light grey.
Pack quantity: 1 piece.

Capacity (W)	Voltage (V)	Starting current	L mm	Weight kg	Part No.
250	115V AC	2.2	187	1.035	EGL250UL115
	50/60 Hz				EGL250UL230
400	230V AC	1.1	187	1.035	EGL250UL230
	50/60 Hz				EGL400UL115
	115V AC				EGL400UL230
400	230V AC	1.8	227	1.200	EGL400UL115
	50/60 Hz				EGL400UL230
	115V AC				EGL400UL230

Capacity (W)	Starting current (A)	Weight (kg)	Part No.
550	13.0	1.100	ECR550





Thermal Management

EFR, Fix Thermostat



Description: Pre-set thermostats to manage temperature in panels. Sensor element thermostatic bimetal. Red one (EFR202) with a normally closed contact for regulating heaters. Blue one (EFR201) with a normally open contact for regulating cooling devices or signal devices. Mounting clip for 35 mm DIN rail (EN 60715).

Material: Plastic according to UL94 V-0

Switch capacity: 250V AC, 5 (1.6)A. 120V AC, 10 (2)A. DC, 30W. Value in brackets for inductive load.

Operating temperature: -40 to +80°C. Max. 90% RH.

Service life: > 100,000 cycles

Connection: 2 pole terminal for 2.5mm², torque 0.8Nm max.

Protection: IP 20.

Approvals: CE, UL.

Pack quantity: 1 piece.

ETR, Thermostat



Description: Thermostat with NC/NO contacts to manage temperature in panels. ETR202 with a normally closed contact for regulating heaters. ETR201 with a normally open contact for regulating cooling devices or signal devices. Sensor element thermostatic bimetal. Mounting clip for 35mm DIN rail (EN 60715).

Setting range: 0°C to 60°C

Material: Plastic according to UL94 V-0

Switch capacity: 240V AC, 10(2)A. 120V AC, 15(2)A. DC, 30W. Value in brackets for inductive load.

Operating temperature: -40 to +80°C.

Service life: > 100,000 cycles.

Connection: Screw terminal for cable (0.5 to 2.5 mm²).

Protection: IP 20.

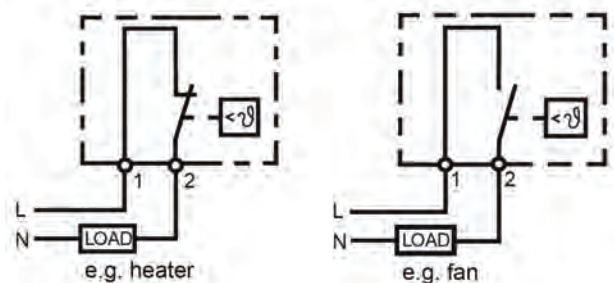
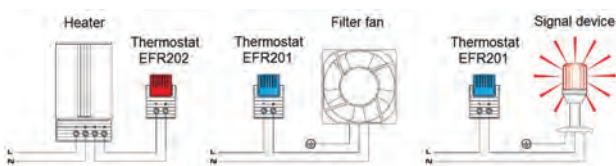
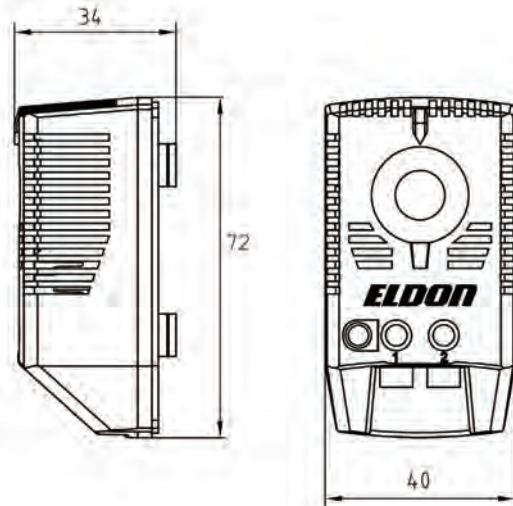
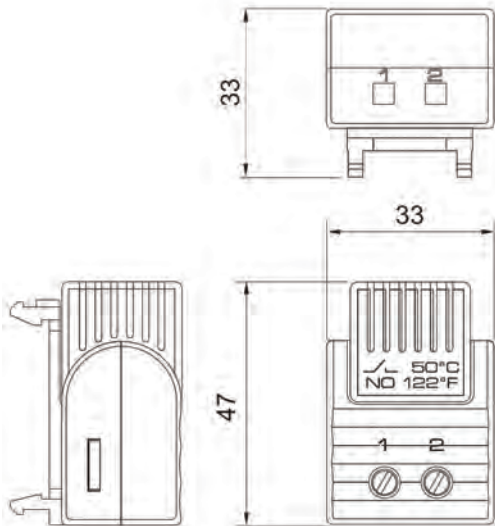
Approvals: CE, UL, cUL, GOST.

Finish: RAL 7035.

Pack quantity: 1 piece.

Description	Pre-set (°C)	Weight (kg)	Part No.
Normally opened contact	35	0.3	EFR201
Normally closed contact	5	0.3	EFR202

Description	Weight (kg)	Part No.
Normally opened contact	0.050	ETR201
Normally closed contact	0.050	ETR202



Thermal Management

ETR200, Thermostat



Description: Thermostat with changeover contacts to manage temperature in panels. Sensor element thermostatic bimetal. Mounting clip for 35mm DIN rail (EN 60715).

Setting range: 0°C to 60°C

Material: Plastic according to UL94 V-0

Switch capacity: NC contact, 100-250V AC, 10(2)A. NO contact, 100-250V AC, 5(2)A, for 230V AC operation only. DC, 30W. Value in brackets for inductive load.

Operating temperature: -40 to +80°C.

Service life: > 100,000 cycles.

Connection: Screw terminal for cable (0.5 to 2.5 mm²).

Protection: IP 20.

Approvals: CE

Finish: RAL 7035.

Pack quantity: 1 piece.

ETR203, Dual Thermostat



Description: Device with two independent thermostats. One thermostat with a normally closed contact for regulating heaters, and one with a normally opened contact for regulating cooling devices or signal devices. Sensor element thermostatic bimetal. Mounting clip for 35mm DIN rail (EN 60715).

Setting range: 0°C to 60°C

Material: Plastic according to UL94 V-0

Switch capacity: 240V AC, 10(2)A. 120V AC, 15(2)A. DC, 30W. Value in brackets for inductive load.

Operating temperature: -40 to +80°C.

Service life: > 100,000 cycles.

Connection: Screw terminal for cable (0.5 to 2.5mm²).

Protection: IP 20

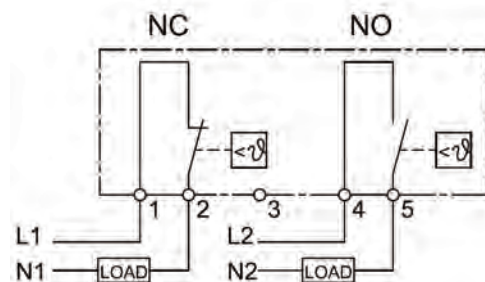
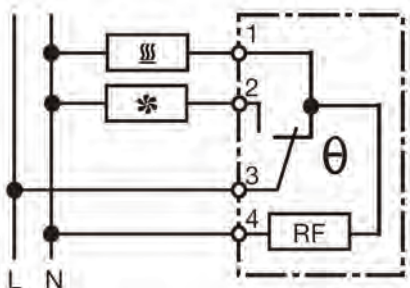
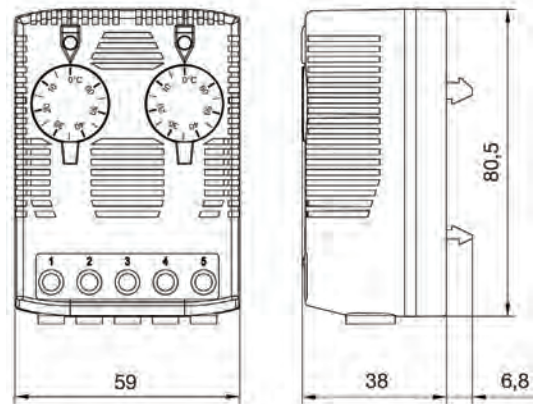
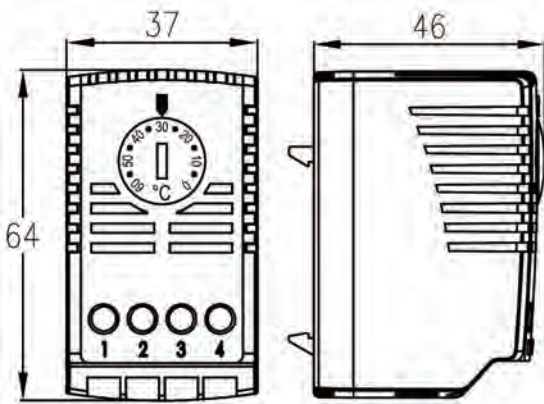
Approvals: CE, UL, cUL, GOST.

Finish: RAL 7035

Pack quantity: 1 piece.

Description	Weight (kg)	Part No.
Changeover contact	0.075	ETR200

Description	Weight (kg)	Part No.
Dual thermostat, 1xNO and 1xNC	0.095	ETR203





Thermal Management

ETF, Hygrostat



Description: Mechanical hygrostat designed to control heaters when the pre-set or fixed relative humidity is exceeded. The relative humidity must be kept above the dew point to prevent condensation and corrosion inside the enclosure. Mounting clip for 35mm DIN rail (EN 60715).
Material: Plastic according to UL94 V-0
Switch capacity: 250V AC, 5A. DC, 20W (30W ETF2000).
Operating temperature: 0°C to +60°C.
Service life: > 50,000 cycles.
Connection: 2 pole terminal for 2.5mm².
Protection: IP 20.
Approvals: CE, (ETF2000 – cUL, GOST)
Finish: RAL 7035.
Pack quantity: 1 piece.

ETF300, Electronic thermostat/hygrostat

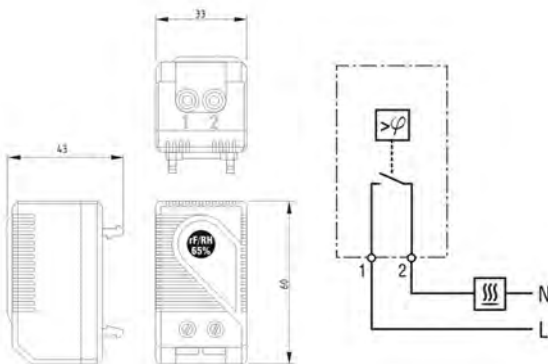


Description: Electronic hygrostat-thermostat monitors the relative humidity and the temperature independently of each other, and it manages heaters and filter fans to prevent condensation and corrosion inside the enclosure. Mounting clip for 35mm DIN rail (EN 60715).
Setting range: 0°C to 60°C, and 40 to 90% R.H.
Material: Plastic according to UL94 V-0
Switch capacity: 240V AC, 8(3)A. 120V AC, 8(3)A. 24V DC, 4A. Value in brackets for inductive load.
Operating temperature: -20°C to +60°C
Service life: 50,000 cycles
Connection: Pole terminal for 2.5mm²
Protection: IP 20
Approvals: CE, UL, cUL, GOST
Finish: RAL 7035
Pack quantity: 1 piece

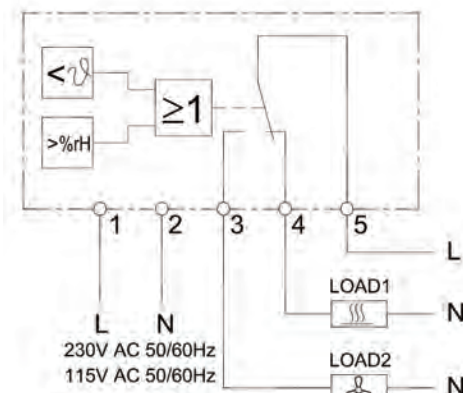
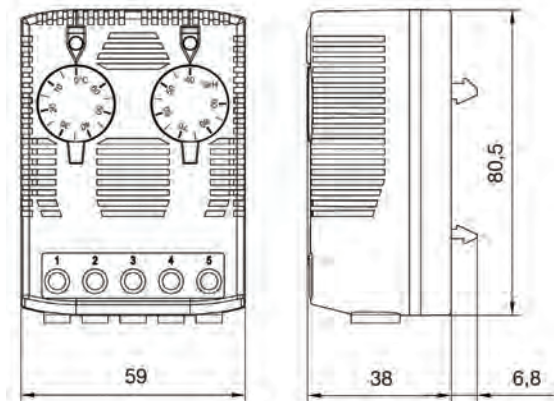
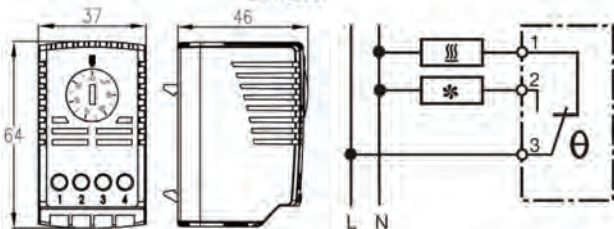
Description	Setting range	Weight (kg)	Part No.
Pre-set hygrostat	65%	0.040	ETF200
Adjustable hygrostat	40% to 90%	0.055	ETF2000

Voltage (V)	Weight (kg)	Frequency	Part No.
230V AC	0.085	50/60 (Hz)	ETF300
115V AC	0.085		ETF300120

ETF200



ETF2000



Thermal Management

DWP, Drain plug



Description: Drain plug to remove condensation water. Easy to install. Fits material thicknesses up to 4mm. Protection degree IP 44.

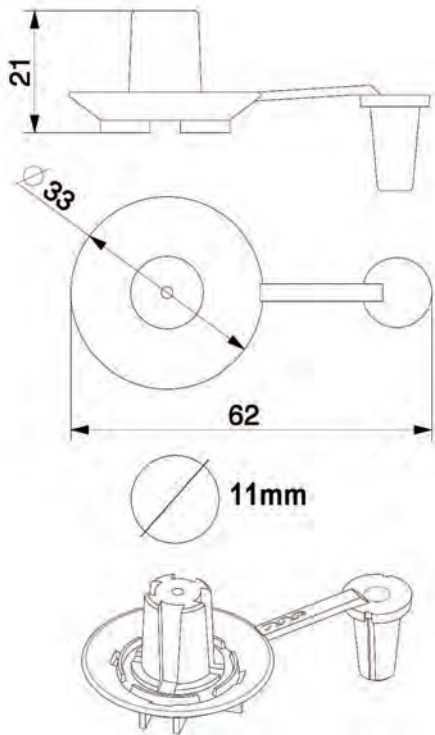
Material: Rubber

Machining required: Round hole 11mm diameter

Pack quantity: 10 pieces

Part No.

DWP02



PVD, Pressure compensation plug



Description: It gives a controlled change in pressure. In the enclosures pressure differentials can occur during extreme temperature variations, when this happens there is risk of dust and humidity inside the enclosure. Mounting with a PG29 thread with nut. For optimal pressure compensation we recommend to use two devices on opposite sides towards the top of the enclosure. Sealing gasket NBR.

Material: Plastic according to UL94 V-O

Operating temperature: -45 to +70°C.

Machining required: Round hole 37mm diameter.

Protection: IP 55

Finish: Light grey

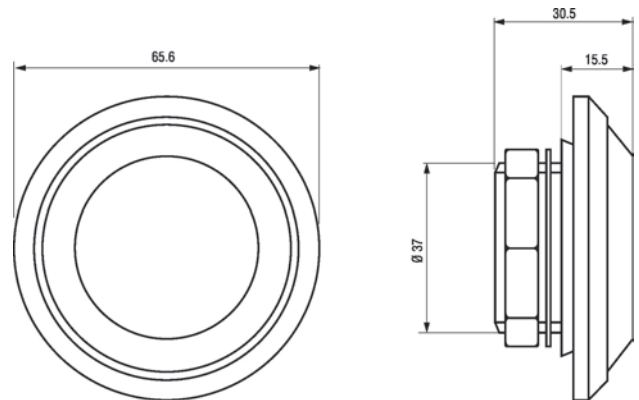
Pack quantity: 2 pieces.

Weight (kg)

2x0.031

Part No.

PVD02





Thermal Management

EDA, Plastic pressure compensation plug Goretex



Description: It compensates the pressure with high IP. In the enclosures pressure differentials can occur during extreme temperature variations, when this happens there is risk of dust and humidity inside the enclosure. A semipermeable membrane inside the plug allows air and humidity to leave the enclosure. In the opposite direction, it only allows dry air into the enclosure. Mounting with thread M40x1.5 with nut. For optimal pressure compensation we recommend to use two devices on opposite sides towards the top of the enclosure.

Material: Plastic.

Operating temperature: -35 to +70°C.

Gasket: Sealing gasket NBR.

Machining required: Round hole 40.5mm diameter.

Protection: IP 66 / IP X9K.

Finish: Light grey

Pack quantity: 1 piece.

EDAS, Stainless steel pressure compensation plug Goretex



Description: It compensates the pressure with high IP. In the enclosures pressure differentials can occur during extreme temperature variations, when this happens there is risk of dust and humidity inside the enclosure. A semipermeable membrane inside the plug allows air and humidity to leave the enclosure. In the opposite direction, it only allows dry air into the enclosure. Mounting with thread M40x1.5 with nut. For optimal pressure compensation we recommend to use two devices on opposite sides towards the top of the enclosure.

Material: Stainless steel.

Operating temperature: -45 to +80°C.

Gasket: Sealing gasket NBR.

Machining required: Round hole 40.5mm diameter.

Protection: IP 66 / IP X9K.

Finish: Stainless steel.

Pack quantity: 1 piece.

Weight	Part No.
0.045 kg	EDA40

Weight	Part No.
0.160 kg	EDAS40

