



# Cooling solutions with filtered ambient air

A practical solution to help the dissipation of heat inside the electrical cabinet and protect electronic components from overheating.

The filter fans channel the cooler, filtered outside air into the cabinet, expelling the heated air through exhaust filters or roof exhaust units.

**VIRDIS**  
fan filters

Most of our products are available  
in the industrial engineering software:



■ **FF SERIES** | FILTERS AND FILTERS FANS

The FF series allows practical, tool-less assembly with a clip-on locking system. FF filters and filter fans have a quick electrical connection system and sliding lid opening for easy filter media replacement.


■ **TIME-SAVING INSTALLATION**

Quick tool-less assembly system with clips for plates from 1 to 3.7 mm thick

■ **QUICK CONNECTION**

Cage clamp tool-less wiring system

■ **IP55 AND TYPE 3R (OPTIONAL)**

Ideal for indoor or outdoor use in harsh industrial environments

■ **EMC-COMPATIBLE (OPTIONAL)**

Metal shielding for electromagnetic protection

■ **SLIDE OPENING**

Easy replacement of the filter media with no need for tools

■ **COLOURS**

Standard colour RAL 7035, custom RAL colours subject to minimum order


■ **APPROVALS**

■ **Details that make the difference**


Cage clamp system



Sliding mechanism



Water resistance



### TYPE 3R AND IP55

Heat management in the toughest indoor and outdoor applications requires ventilation solutions with high degrees of protection. The IP55 rated FF filters and filter fans are ideal for dusty and humid environments. They are capable of withstanding powerful jets of water from any angle. The UL Type 3R version, on the other hand, is suited for application in outdoor environments where high resistance to weather, temperature variations and premature ageing from UV rays is required. Made of plastic with high glass fibre content, the FF range is more durable and less subject to deterioration and crumbling than common plastic.



### EMC SHIELDING

Electromagnetic compatibility (EMC) refers to the property of an electrical device to function properly in a given electromagnetic environment, without adversely affecting it.

As this is an important quality prerogative, designers must take the protection requirements into account already at the equipment drawing-board stage to guarantee the stability and long life of the various electrical components.

The EMC shielding of an electrical cabinet reduces noise emissions and protects internal components from external sources of interference. The Fandis EMC filters and filter fans are designed to restore the protective effect of the cabinet despite the openings made for housing the devices.



Model numbering system for FF SERIES

description	FF	15	P	A	230	U	N	R	5	3	C	1	-S00	description
FAMILY FF														CUSTOM SERIES      S** = custom version
DIMENSION CODE (mm)														VERSION
08 - 107 x 107	12	-	107 x 150											
13 - 204 x 204	15	-	250 x 250											EMC      C = EMC shielded
20 - 325 x 325														TYPE RATING () = Type 12 or Type1 3 = Type 3R
FAN SIZE														FILTER MAT () = G3      A = G2 5 = G4      O = without
P = small      M = medium      G = large														
GE = large with plastic adaptor														
VOLTAGE      A = a.c. voltage      D = d.c. voltage														AIR FLOW DIRECTION () = standard flow      R = reverse flow
RATED VOLTAGE														
115 = 115 V.a.c.      230 = 230 V.a.c.      400T = 400 V.a.c. 3~														
12 = 12 V.d.c.      24 = 24 V.d.c.      48 = 48 V.d.c.														
COLOUR														FAN SUPPLIER N = NMB      E = Ecofit      F = Fandis
R = grey RAL 7032      U = grey RAL 7035      N = black RAL 9005														

## ■ GF SERIES | FILTER AND FILTERS FANS

The GF series filter fans are characterized by a jack fixing system suited for application on thick plastic or sheet metal electrical panels. The advantages of the series include quick installation without additional drilling and easy filter replacement, thanks to the swivelling structure of the protective guard.



### FIXING WITH JACKS

Patented system for applications on thick plastic or metal wall of cabinets (up to 16mm)

### HINGED OPENING

Easy tool-less filter media replacement

### Model numbering system for GF SERIES

<i>description</i>	GF	15K	P	U	230	BE	R	<i>description</i>
FAMILY GF								AIRFLOW DIRECTION ( ) = standard      R = reverse flow
DIMENSION CODE (mm)								
12 = 150x150    15 = 250x250    20 = 325x325								
FAN SIZE								FAN SUPPLIER B = NMB or Ecofit      BE = Fandis
P = small    G = large    ( ) = standard								
COLOUR								VOLTAGE 24 = 24 V.a.c. 115 = 115 V.a.c. 230 = 230 V.a.c. 400T = 400 V.a.c. 3~
U = grey RAL 7035    other colours on request								D12 = 12 V.d.c. D24 = 24 V.d.c. D48 = 48 V.d.c. G = no voltage

## ■ TP SERIES | ROOF EXHAUST UNITS

Roof exhaust units are a forced ventilation solution used in restricted spaces for direct heat extraction from the upper area of the electrical panel.

The TP series roof exhaust units have a plastic structure with aluminium roof and are equipped with a high-pressure radial fan. They are normally coupled to a filter for natural or forced convection air cooling (in the version with fan) and minimize the introduction of dust.



**CASING MATERIAL**  
Plastic structure with aluminium top



**PROTECTION**  
Available in 4 different protection classes



## ■ T SERIES | ROOF EXHAUST UNITS

The T series roof exhaust units have an all-metal, painted steel structure.

A high-performance version is also available. They are normally coupled to a filter for natural or forced convection air cooling (in the version with fan) and minimize the introduction of dust.



**CASING MATERIAL**  
Metal structure

**HIGH-PERFORMANCE VERSION (T22)**

### Model numbering system for TP/T SERIES

description	TP	19	U	230	B	54	1	-	S00	description
FAMILY TP / T										CUSTOM SERIES
TP = plastic	T = metallic									S** = custom version
<b>FAN DIMENSION</b>										<b>VERSION</b>
COLOUR										(-) = CE      1 = UL
R = grey RAL 7032    U = grey RAL 7035										
N = black RAL 9005										
<b>VOLTAGE</b>										<b>PROTECTION DEGREE</b>
115 = 115 V.c.c.    230 = 230 V.c.c.    (-) = no voltage										44 = IP44    54 = IP54    55 = IP55
D24 = 24 V.c.c.    D48 = 48 V.c.c.										<b>DESIGN</b>



### FF series exhaust filters

- Tool-less assembly system with clips
- Plate thickness: FF08 from 1 to 2mm; FF12, FF13 from 1.3 to 3.2mm; FF15, FF20 from 1.3 to 3.7mm (up to 4mm with cut-out max tolerance)
- Standard colour RAL 7035, other colours available on request, subject to quantity
- Standard protection ratings: IP54 and Type 12. IP55 version, Type 1, 3R and EMC on request



Model	Dimensions mm	Cut-Out mm	Approvals
<b>FF08U</b>	107x107x23	92x92	cURus; cULus; cCSAus
<b>FF12U</b>	150x150x29	124x124	cURus; cULus; cCSAus
<b>FF13U</b>	204x204x30	177x177	cURus; cULus; cCSAus
<b>FF15U</b>	250x250x34	223x223	cURus; cULus; cCSAus
<b>FF20U</b>	325x325x34	291x291	cURus; cULus; cCSAus



### FF series IP55 exhaust filters

- IP55 protection degree for humid, dusty or dirty environments



Model	Dimensions mm	Cut-Out mm	Approvals
<b>FF12U5</b>	150x150x29	124x124	cURus; cULus; cCSAus
<b>FF13U5</b>	204x204x30	177x177	cURus; cULus; cCSAus
<b>FF15U5</b>	250x250x34	223x223	cURus; cULus; cCSAus
<b>FF20U5</b>	325x325x34	291x291	cURus; cULus; cCSAus



### FF series EMC exhaust filters

- Metal shielding against electromagnetic interference



Model	Dimensions mm	Cut-Out mm	Approvals
<b>FF08UC</b>	107x107x23	92x92	cURus; cULus; cCSAus
<b>FF12UC</b>	150x150x29	124x124	cURus; cULus; cCSAus
<b>FF13UC</b>	204x204x30	177x177	cURus; cULus; cCSAus
<b>FF15UC</b>	250x250x34	223x223	cURus; cULus; cCSAus
<b>FF20UC</b>	325x325x34	291x291	cURus; cULus; cCSAus



## FF series Type 3R exhaust filters

- Suitable for outdoor applications
- Weather resistant plastics
- UV resistant
- Colour RAL 9005
- IP55 protection degree (IP54 for FF08 series)



Model	Dimensions mm	Cut-Out mm	Approvals
<b>FF08N3</b>	107x107x23	92x92	cURus; cULus
<b>FF12N53</b>	150x150x29	125x125	cURus; cULus
<b>FF13N53</b>	204x204x30	177x177	cURus; cULus
<b>FF15N53</b>	250x250x34	223x223	cURus; cULus
<b>FF20N53</b>	325x325x34	291x291	cURus; cULus



## FF series filter fans

- Tool-less assembly system with clips
- Plate thickness: FF08 from 1 to 2mm; FF12, FF13 from 1.3 to 3.2mm; FF15, FF20 from 1.3 to 3.7mm (up to 4mm with cut-out max tolerance)
- Quick electrical connection by screwless terminal block
- Standard colour RAL 7035, other colours available on request, subject to quantity
- Standard protection ratings: IP54 and Type 12. Optional versions: IP55, Type 1, 3R and EMC on request
- R version (airflow from inside to outside the enclosure)
- Frequency: 50/60Hz



Model	Dimensions mm	Cut-Out mm	Rated Voltage V	Rated Power W	Max Airflow m³/h	Airflow with Exhaust Filter m³/h	Approvals
<b>FF08A</b>							
<b>FF08A115UN</b>	107x107x67	92x92	115 V a.c.	9/7	12/15	8,5/11	cURus; cULus; cCSAus
<b>FF08A115UNR</b>	107x107x67	92x92	115 V a.c.	9/7,5	16/21	13/15	cURus; cULus; cCSAus
<b>FF08A230UN</b>	107x107x67	92x92	230 V a.c.	10/8	12/15	8,5/11	cURus; cULus; cCSAus
<b>FF08A230UNR</b>	107x107x67	92x92	230 V a.c.	10/8	16/21	13/15	cURus; cULus; cCSAus
<b>FF08D</b>							
<b>FF08D12UN</b>	107x107x54	92x92	12 V d.c.	2	16	11,5	cURus; cULus; cCSAus
<b>FF08D24UN</b>	107x107x54	92x92	24 V d.c.	2	16	11,5	cURus; cULus; cCSAus
<b>FF08D24UNR</b>	107x107x54	92x92	24 V d.c.	2,2	23	17	cURus; cULus; cCSAus
<b>FF08GA</b>							
<b>FF08GA115UF</b>	107x107x80	92,5x92,5	115 V a.c.	12/10	22/26	15/19	cURus; cULus; cCSAus
<b>FF08GA230UF</b>	107x107x80	92,5x92,5	230 V a.c.	12/11	22/26	15/19	cURus; cULus; cCSAus
<b>FF08GD</b>							
<b>FF08GD24UN</b>	107x107x77	92,5x92,5	24 V d.c.	15	55	36	cURus; cULus; cCSAus
<b>FF08GD24UNR</b>	107x107x77	92,5x92,5	24 V d.c.	17	64	42	cURus; cULus; cCSAus
<b>FF12A</b>							
<b>FF12A115UF</b>	150x150x73	124x124	115 V a.c.	16/15	45/50	29/34	cURus; cULus; cCSAus
<b>FF12A115UFR</b>	150x150x74	124x124	115 V a.c.	16/15	47/52	37/41	cURus; cULus; cCSAus
<b>FF12A115UN</b>	150x150x73	124x124	115 V a.c.	19/17	67/79	43/51	cURus; cULus; cCSAus
<b>FF12A115UNR</b>	150x150x73	124x124	115 V a.c.	19/17	57/69	42/50	cURus; cULus; cCSAus
<b>FF12A230UF</b>	150x150x73	124x124	230 V a.c.	18/17	45/50	29/34	cURus; cULus; cCSAus



Model	Dimensions	Cut-Out	Rated Voltage	Rated Power	Max Airflow	Airflow with Exhaust Filter	Approvals
	mm	mm	V	W	m³/h	m³/h	
<b>FF12A230UFR</b>	150x150x73	124x124	230 V a.c.	18/17	47/52	37/41	cURus; cULus; cCSAus
<b>FF12A230UN</b>	150x150x73	124x124	230 V a.c.	18/16	67/79	43/51	cURus; cULus; cCSAus
<b>FF12A230UNR</b>	150x150x73	124x124	230 V a.c.	18/16	57/69	42/50	cURus; cULus; cCSAus
<b>FF12A24UF</b>	150x150x73	124x124	24 V a.c.	15/15	39/44	28/31	-
<b>FF12A24UFR</b>	150x150x73	124x124	24 V a.c.	15/15	50/51	38/38	-
<b>FF12D</b>							
<b>FF12D24UN</b>	150x150x74	124x124	24 V d.c.	7,4	46	33	UR; cULus; cCSAus
<b>FF12D24UN4</b>	150x150x73	124x124	24 V d.c.	23	107	70	-
<b>FF12D24UNR</b>	150x150x73	124x124	24 V d.c.	7,4	63	46	UR; cULus; cCSAus
<b>FF12D48UN</b>	150x150x74	124x124	48 V d.c.	8,6	46	33	UR; cULus; cCSAus
<b>FF12D48UNR</b>	150x150x73	124x124	48 V d.c.	8,6	63	46	UR; cULus; cCSAus
<b>FF13PA</b>							
<b>FF13PA115UF</b>	204x204x96	177x177	115 V a.c.	19/18	118/136	88/98	cURus; cULus; cCSAus
<b>FF13PA115UFR</b>	204x204x96	177x177	115 V a.c.	18/18	100/110	68/79	cURus; cULus; cCSAus
<b>FF13PA115UN</b>	204x204x96	177x177	115 V a.c.	16/15	107/130	84/100	cURus; cULus; cCSAus
<b>FF13PA230UF</b>	204x204x96	177x177	230 V a.c.	18/18	118/136	88/98	cURus; cULus; cCSAus
<b>FF13PA230UFR</b>	204x204x96	177x177	230 V a.c.	18/18	100/110	68/79	cURus; cULus; cCSAus
<b>FF13PA230UN</b>	204x204x96	177x177	230 V a.c.	19/17	107/130	84/100	cURus; cULus; cCSAus
<b>FF13PA230UNR</b>	204x204x96	177x177	230 V a.c.	19/18	112/132	87/104	cURus; cULus; cCSAus
<b>FF13PD</b>							
<b>FF13PD24UN</b>	204x204x95	177x177	24 V d.c.	8,2	101	76	UR; cULus; cCSAus
<b>FF13PD24UNR</b>	204x204x95	177x177	24 V d.c.	8,5	114	96	UR; cULus; cCSAus
<b>FF15A</b>							
<b>FF15A115UF</b>	250x250x125	223x223	115 V a.c.	31/31	230/270	159/190	cURus; cULus; cCSAus
<b>FF15A115UFR</b>	250x250x125	223x223	115 V a.c.	31/31	240/285	160/195	cURus; cULus; cCSAus
<b>FF15A115UN2</b>	250x250x113	223x223	115 V a.c.	39/41	226/264	165/204	cURus; cULus; cCSAus
<b>FF15A115UNR2</b>	250x250x112	223x223	115 V a.c.	39/41	238/283	185/222	cURus; cULus; cCSAus
<b>FF15A230UF</b>	250x250x125	223x223	230 V a.c.	32/36	230/270	159/190	cURus; cULus; cCSAus
<b>FF15A230UFR</b>	250x250x125	223x223	230 V a.c.	32/36	240/285	160/195	cURus; cULus; cCSAus
<b>FF15A230UN2</b>	250x250x113	223x223	230 V a.c.	42/45	230/272	178/213	cURus; cULus; cCSAus
<b>FF15A230UNR2</b>	250x250x112	223x223	230 V a.c.	42/45	238/283	185/222	cURus; cULus; cCSAus
<b>FF15D</b>							
<b>FF15D24UF</b>	250x250x126	223x223	24 V d.c.	31	298	200	cURus; cULus; cCSAus
<b>FF15D24UFR</b>	250x250x125	223x223	24 V d.c.	31	297	210	cURus; cULus; cCSAus
<b>FF15D24UN</b>	250x250x125	223x223	24 V d.c.	17	245	180	UR; cULus; cCSAus
<b>FF15D24UNR</b>	250x250x125	223x223	24 V d.c.	17	285	210	UR; cULus; cCSAus
<b>FF15D48UF</b>	250x250x126	223x223	48 V d.c.	43	295	195	-
<b>FF15D48UFR</b>	250x250x125	223x223	48 V d.c.	43	310	210	-
<b>FF15MA</b>							
<b>FF15MA115UF</b>	250x250x112	223x223	115 V a.c.	16/15	132/139	92/100	-
<b>FF15MA115UFR</b>	250x250x112	223x223	115 V a.c.	16/15	138/154	109/124	-
<b>FF15MA230UF</b>	250x250x112	223x223	230 V a.c.	21/20	132/139	92/100	-
<b>FF15MA230UFR</b>	250x250x111	223x223	230 V a.c.	21/20	138/154	109/124	-
<b>FF15PA</b>							
<b>FF15PA115UF</b>	250x250x112	223x223	115 V a.c.	17/16	110/123	96/108	cURus; cULus; cCSAus
<b>FF15PA115UFR</b>	250x250x112	223x223	115 V a.c.	17/16	108/123	91/104	cURus; cULus; cCSAus
<b>FF15PA230UF</b>	250x250x112	223x223	230 V a.c.	18/17	110/123	96/108	cURus; cULus; cCSAus
<b>FF15PA230UFR</b>	250x250x112	223x223	230 V a.c.	18/17	108/123	91/104	cURus; cULus; cCSAus
<b>FF15PA230UN</b>	250x250x112	223x223	230 V a.c.	19/17	122/143	108/126	cURus; cULus; cCSAus



Model	Dimensions	Cut-Out	Rated Voltage	Rated Power	Max Airflow	Airflow with Exhaust Filter	Approvals
	mm	mm	V	W	m³/h	m³/h	
<b>FF15PD</b>							
<b>FF15PD24UN</b>	250x250x112	223x223	24 V d.c.	7,6	138	105	UR; cULus; cCSAus
<b>FF15PD24UNR</b>	250x250x112	223x223	24 V d.c.	7,6	147	124	UR; cULus; cCSAus
<b>FF15PD48UN</b>	250x250x112	223x223	48 V d.c.	8,6	138	105	UR; cULus; cCSAus
<b>FF15PD48UNR</b>	250x250x112	223x223	48 V d.c.	8,6	148	124	UR; cULus; cCSAus
<b>FF20A</b>							
<b>FF20A115UE</b>	325x325x161	291x291	115 V a.c.	100/129	535/620	375/445	-
<b>FF20A115UE1</b>	325x325x161	291x291	115 V a.c.	74/83	455/505	320/355	cURus; cULus; cCSAus
<b>FF20A115UER</b>	325x325x160	291x291	115 V a.c.	101/129	600/670	452/505	-
<b>FF20A115UER1</b>	325x325x161	291x291	115 V a.c.	74/83	535/580	370/415	cURus; cULus; cCSAus
<b>FF20A230UE</b>	325x325x161	291x291	230 V a.c.	92/116	535/620	375/445	-
<b>FF20A230UE1</b>	325x325x161	291x291	230 V a.c.	70/85	450/505	320/355	cURus; cULus; cCSAus
<b>FF20A230UER</b>	325x325x161	291x291	230 V a.c.	92/116	600/670	452/505	-
<b>FF20A230UER1</b>	325x325x161	291x291	230 V a.c.	70/85	545/595	382/427	cURus; cULus; cCSAus
<b>FF20A400TUE</b>	325x325x161	291x291	400 V a.c. 3 ~	99/124	535/630	357/410	-
<b>FF20GA</b>							
<b>FF20GA115UE</b>	325x325x159	291x291	115 V a.c.	143/177	710/775	505/540	-
<b>FF20GA115UE1</b>	325x325x159	291x291	115 V a.c.	110/156	680/740	415/430	cURus; cULus; cCSAus
<b>FF20GA115UEA1</b>	325x325x159	291x291	115 V a.c.	110/156	900/975	620/660	cURus; cULus; cCSAus
<b>FF20GA115UER</b>	325x325x159	291x291	115 V a.c.	124/192	765/845	510/545	-
<b>FF20GA115UER1</b>	325x325x159	291x291	115 V a.c.	102/145	760/850	515/570	cURus; cULus; cCSAus
<b>FF20GA230UE</b>	325x325x159	291x291	230 V a.c.	155/194	705/795	510/560	-
<b>FF20GA230UE1</b>	325x325x159	291x291	230 V a.c.	120/158	680/765	420/470	cURus; cULus; cCSAus
<b>FF20GA230UEA</b>	325x325x159	291x291	230 V a.c.	158/198	860/960	610/675	-
<b>FF20GA230UEA1</b>	325x325x159	291x291	230 V a.c.	120/158	900/1000	630/690	cURus; cULus; cCSAus
<b>FF20GA230UER</b>	325x325x159	291x291	230 V a.c.	170/208	770/870	525/580	-
<b>FF20GA230UER1</b>	325x325x159	291x291	230 V a.c.	120/157	760/850	515/570	cURus; cULus; cCSAus
<b>FF20GA400TUE</b>	325x325x161	291x291	400 V a.c. 3 ~	137	585	395	-
<b>FF20PA</b>							
<b>FF20PA115UF</b>	325x325x164	291x291	115 V a.c.	45/45	315/345	264/297	cURus; cULus
<b>FF20PA115UFR</b>	325x325x164	291x291	115 V a.c.	45/45	340/375	295/320	cURus; cULus
<b>FF20PA230UF</b>	325x325x164	291x291	230 V a.c.	45/45	315/345	264/297	cURus; cULus
<b>FF20PA230UFR</b>	325x325x164	291x291	230 V a.c.	45/45	340/375	295/320	cURus; cULus



## FF series filter fans IP55

- Protection from strong water jets and solid foreign bodies
- Tool-less assembly system with clips
- Plate thickness: FF08 from 1 to 2mm; FF12, FF13 from 1.3 to 3.2mm; FF15, FF20 from 1.3 to 3.7mm (up to 4mm with cut-out max tolerance)
- Quick electrical connection by screwless terminal block
- Standard colour RAL 7035, other colours available on request, subjects to quantity
- R version (airflow from inside to outside the enclosure)
- Frequency: 50/60Hz



Model	Dimensions	Cut-Out	Rated Voltage	Rated Power	Max Airflow	Airflow with Exhaust Filter	Approvals
	mm	mm	V	W	m³/h	m³/h	
<b>FF12A5</b>							
<b>FF12A115UF5</b>	150x150x74	124x124	115 V a.c.	16/15	33/39	23/26	cURus; cULus; cCSAus
<b>FF12A230UF5</b>	150x150x74	124x124	230 V a.c.	18/17	33/39	23/26	cURus; cULus; cCSAus
<b>FF12A230UFR5</b>	150x150x74	124x124	230 V a.c.	18/17	38/45	24/28	cURus; cULus; cCSAus
<b>FF12A230UN5</b>	150x150x73	124x124	230 V a.c.	18/16	50/60	32/38	cURus; cULus; cCSAus
<b>FF12D5</b>							
<b>FF12D24UN5</b>	150x150x73	124x124	24 V d.c.	7,4	35	24	UR; cULus; cCSAus
<b>FF13PA5</b>							
<b>FF13PA115UN5</b>	204x204x96	177x177	115 V a.c.	16/15	94/110	62/75	cURus; cULus; cCSAus
<b>FF13PA230UF5</b>	204x204x96	177x177	230 V a.c.	18/18	78/89	46/54	cURus; cULus; cCSAus
<b>FF13PA230UN5</b>	204x204x96	177x177	230 V a.c.	19/17	94/110	62/75	cURus; cULus; cCSAus
<b>FF13PD5</b>							
<b>FF13PD24UN5</b>	204x204x92	177x177	24 V d.c.	8,2	85	56	UR; cULus; cCSAus
<b>FF15A5</b>							
<b>FF15A115UF5</b>	250x250x125	223x223	115 V a.c.	31/31	160/190	112/138	cURus; cULus; cCSAus
<b>FF15A230UF5</b>	250x250x125	223x223	230 V a.c.	32/36	160/190	112/138	cURus; cULus; cCSAus
<b>FF15A230UFR5</b>	250x250x125	223x223	230 V a.c.	32/36	165/200	131/159	cURus; cULus; cCSAus
<b>FF15D5</b>							
<b>FF15D24UF5</b>	250x250x126	223x223	24 V d.c.	31	230	154	cURus; cULus; cCSAus
<b>FF15D24UN5</b>	250x250x125	223x223	24 V d.c.	17	205	130	UR; cULus; cCSAus
<b>FF15D48UF5</b>	250x250x126	223x223	48 V d.c.	42	215	152	-
<b>FF15PA5</b>							
<b>FF15PA115UF5</b>	250x250x112	223x223	115 V a.c.	17/16	95/105	68/80	cURus; cULus; cCSAus
<b>FF15PA230UF5</b>	250x250x112	223x223	230 V a.c.	18/17	95/105	68/80	cURus; cULus; cCSAus
<b>FF15PA230UFR5</b>	250x250x112	223x223	230 V a.c.	18/17	99/111	75/86	cURus; cULus; cCSAus
<b>FF20A5</b>							
<b>FF20A230UE5</b>	325x325x161	291x291	230 V a.c.	79/99	410/460	270/300	-
<b>FF20A230UE51</b>	325x325x161	291x291	230 V a.c.	70/85	360/400	240/275	cURus; cULus; cCSAus
<b>FF20A230UER5</b>	325x325x161	291x291	230 V a.c.	79/96	460/515	325/360	-



## FF series filter fans Type 3R

- UV resistant
- Weatherproof plastic construction, ideal for outdoor applications
- Tool-less assembly system with clips
- Plate thickness: FF08 from 1 to 2mm; FF12, FF13 from 1.3mm to 3.2mm; FF20 from 1.3 to 3.7mm (up to 4mm with cut-out max tolerance)
- Quick electrical connections by screwless terminal block
- Standard colour RAL 9005
- Standard protection ratings: Type 3R and IP55 (IP54 for FF08 series)
- Frequency: 50/60 hz



Model	Dimensions	Cut-Out	Rated Voltage	Rated Power	Max Airflow	Airflow with Exhaust Filter	Approvals
	mm	mm	V	W	m³/h	m³/h	
<b>FF08A3</b>							
FF08A115NN3	107x107x67	92x92	115 V a.c.	9/7	12/15	8,5/11	cURus; cULus
FF08A230NN3	107x107x67	92x92	230 V a.c.	10/8	12/15	8,5/11	cURus; cULus
<b>FF08D3</b>							
FF08D12NN3	107x107x54	92x92	12 V d.c.	2	16	11,5	cURus; cULus
FF08D24NN3	107x107x54	92x92	24 V d.c.	2	16	11,5	cURus; cULus
<b>FF08GA3</b>							
FF08GA115NF3	107x107x80	92,5x92,5	115 V a.c.	12/10	22/26	15/19	cURus; cULus
FF08GA230NF3	107x107x80	92,5x92,5	230 V a.c.	12/11	22/26	15/19	cURus; cULus
<b>FF08GD3</b>							
FF08GD24NN3	107x107x77	92,5x92,5	24 V d.c.	15	55	36	cURus; cULus
<b>FF12A53</b>							
FF12A115NF53	150x150x73	125x125	115 V a.c.	16/15	33/39	23/26	cURus; cULus
FF12A115NN53	150x150x73	125x125	115 V a.c.	19/17	50/60	32/38	cURus; cULus
FF12A230NF53	150x150x74	125x125	230 V a.c.	18/17	33/39	23/26	cURus; cULus
FF12A230NN53	150x150x73	125x125	230 V a.c.	18/16	50/60	32/38	cURus; cULus
<b>FF12D53</b>							
FF12D24NN53	150x150x73	125x125	24 V d.c.	7,4	35	24	UR; cULus
FF12D48NN53	150x150x73	125x125	48 V d.c.	8,6	35	24	UR; cULus
<b>FF13PA53</b>							
FF13PA115NF53	204x204x96	177x177	115 V a.c.	19/18	78/89	46/54	cURus; cULus
FF13PA115NN53	204x204x96	177x177	115 V a.c.	16/15	94/110	62/75	cURus; cULus
FF13PA230NF53	204x204x96	177x177	230 V a.c.	18/18	78/89	46/54	cURus; cULus
FF13PA230NN53	204x204x96	177x177	230 V a.c.	19/17	94/110	62/75	cURus; cULus
<b>FF13PD53</b>							
FF13PD24NN53	204x204x95	177x177	24 V d.c.	8,2	85	56	UR; cULus
<b>FF15A53</b>							
FF15A115NF53	250x250x125	223x223	115 V a.c.	31/31	160/190	112/138	cURus; cULus
FF15A115NN532	250x250x112	223x223	115 V a.c.	39/41	187/225	118/142	cURus; cULus
FF15A230NF53	250x250x124	223x223	230 V a.c.	32/36	160/190	112/138	cURus; cULus
FF15A230NN532	250x250x113	223x223	230 V a.c.	42/45	187/225	118/142	cURus; cULus
<b>FF15D53</b>							
FF15D24NF53	250x250x125	223x223	24 V d.c.	31	230	154	cURus; cULus
FF15D24NN53	250x250x125	223x223	24 V d.c.	17	205	130	UR; cULus
<b>FF15PA53</b>							
FF15PA115NF53	250x250x112	223x223	115 V a.c.	17/16	95/105	68/80	cURus; cULus
FF15PA230NF53	250x250x112	223x223	230 V a.c.	18/17	96/110	68/82	cURus; cULus



Model	Dimensions	Cut-Out	Rated Voltage	Rated Power	Max Airflow	Airflow with Exhaust Filter	Approvals
	mm	mm	V	W	m³/h	m³/h	
<b>FF15PD53</b>							
<b>FF15PD24NN53</b>	250x250x112	223x223	24 V d.c.	7,6	110	81	UR; cULus
<b>FF15PD48NN53</b>	250x250x112	223x223	48 V d.c.	8,6	110	81	UR; cULus
<b>FF20A53</b>							
<b>FF20A115NE531</b>	325x325x161	291x291	115 V a.c.	74/83	360/400	240/275	cURus; cULus
<b>FF20A230NE531</b>	325x325x161	291x291	230 V a.c.	70/85	360/400	240/275	cURus; cULus
<b>FF20GA31</b>							
<b>FF20GA115NE31</b>	325x325x159	291x291	115 V a.c.	110/156	680/740	415/430	cURus; cULus
<b>FF20GA230NE31</b>	325x325x159	291x291	230 V a.c.	120/158	680/765	420/470	cURus; cULus



## GF series exhaust filters

- Mounting system with jacks for plastic or plate enclosures
- Plate thickness: up to 8mm and by cutting the jacks up to 16mm
- Standard colour RAL 7035, other colours available on request
- IP54 protection degree



Model	Dimensions mm	Cut-Out mm
<b>GF12KUG</b>	150x150x31	125x125
<b>GF15KUG</b>	250x250x32	223x223
<b>GF20KUG</b>	325x325x33	290x290



## GF series filter fans

- Mounting system with jacks for plastic or plate enclosures
- Plate thickness: up to 8mm and by cutting the jacks up to 16mm
- Standard colour RAL 7035, other colours available on request
- IP54 protection degree
- R version (airflow from inside to outside the enclosure)
- Frequency: 50/60Hz



Model	Dimensions mm	Cut-Out mm	Rated Voltage V	Rated Power W	Max Airflow m³/h	Airflow with Exhaust Filter m³/h
<b>GF12K</b>						
<b>GF12KU230BE</b>	150x150x76	125x125	230 V a.c.	17/16	47/53	32/37
<b>GF12KU230BER</b>	150x150x76	125x125	230 V a.c.	17/16	41/46	32/36
<b>GF12KD</b>						
<b>GF12KUD24B</b>	150x150x76	125x125	24 V d.c.	7	46	33
<b>GF15KP</b>						
<b>GF15KPU230BE</b>	250x250x110	223x223	230 V a.c.	18/18	116/130	96/108
<b>GF15K</b>						
<b>GF15KU115BE</b>	250x250x118	223x223	115 V a.c.	32/35	220/265	148/178
<b>GF15KU230BE</b>	250x250x118	223x223	230 V a.c.	32/34	220/265	148/178
<b>GF15KU230BER</b>	250x250x123	223x223	230 V a.c.	32/35	245/285	160/185
<b>GF20KG</b>						
<b>GF20KGU230B</b>	325x325x148	290x290	230 V a.c.	159/125	580/670	420/470
<b>GF20K</b>						
<b>GF20KU230BE</b>	325x325x159	290x290	230 V a.c.	76/92	470/530	330/380



### TP series roof exhaust units without fan

- Plastic structure with aluminium top
- Plate thickness: any
- Available in 3 protection degrees: IP24, IP54 e IP55
- Standard colour RAL 7035, others colours available on request, subject to quantity



Model	Dimensions mm	IP Protection Degree	Approvals
<b>TP19U1</b>	324x324x94	IP24	cURus; cULus; cCSAus
<b>TP19U541</b>	324x324x94	IP54	cURus; cULus; cCSAus
<b>TP19U551</b>	324x324x94	IP55	cURus; cULus; cCSAus

### TP series AC roof exhaust units



- Plastic structure with aluminium top
- Plate thickness: any
- Available in 4 protection degrees: IP24, IP44, IP54 e IP55
- Standard colour RAL 7035, other colours available on request
- Frequency: 50/60 hz



Model	Dimensions mm	Rated Voltage V	Rated Power W	Max Airflow m³/h	Airflow with Exhaust Filter m³/h	IP Protection Degree	Approvals
<b>TP19B</b>							
<b>TP19U115B</b>	324x324x94	115 V a.c.	62/75	500/575	445/505	IP24	-
<b>TP19U115B1</b>	324x324x94	115 V a.c.	/97	/575	/505	IP24	cURus; cULus; cCSAus
<b>TP19U115B54</b>	324x324x94	115 V a.c.	66/74	420/490	380/440	IP54	-
<b>TP19U115B541</b>	324x324x94	115 V a.c.	/97	/490	/440	IP54	cURus; cULus; cCSAus
<b>TP19U115B55</b>	324x324x94	115 V a.c.	66/74	420/490	360/410	IP55	-
<b>TP19U115B551</b>	324x324x94	115 V a.c.	/97	/490	/410	IP55	cURus; cULus; cCSAus
<b>TP19U230B</b>	324x324x94	230 V a.c.	67/83	500/575	445/505	IP24	-
<b>TP19U230B1</b>	324x324x94	230 V a.c.	70/81	500/575	445/505	IP24	cURus; cULus; cCSAus
<b>TP19U230B44</b>	324x324x94	230 V a.c.	69/81	485/560	430/495	IP44	-
<b>TP19U230B54</b>	324x324x94	230 V a.c.	70/83	420/490	380/440	IP54	-
<b>TP19U230B541</b>	324x324x94	230 V a.c.	70/81	420/490	380/440	IP54	cURus; cULus; cCSAus
<b>TP19U230B55</b>	324x324x94	230 V a.c.	70/83	420/490	360/410	IP55	-
<b>TP19U230B551</b>	324x324x94	230 V a.c.	70/81	420/490	360/410	IP55	cURus; cULus; cCSAus



## TP series roof exhaust units in CC

- Plastic structure with aluminium top
- Plate thickness: any
- Standard colour RAL 7035, other colours on request, subject to quantity
- Speed sensor output (open collector)
- PWM or 0-10 Vd.c signal input for speed adjustment



Model	Dimensions	Rated Voltage	Rated Power	Max Airflow	Airflow with Exhaust Filter	IP Protection Degree
	mm	V	W	m³/h	m³/h	
<b>TP19DB</b>						
TP19UD24B	324x324x120	24 V d.c.	95	613	560	IP24
TP19UD24B44	324x324x120	24 V d.c.	93	600	530	IP44
TP19UD24B54	324x324x120	24 V d.c.	92	543	480	IP54
TP19UD24B55	324x324x120	24 V d.c.	92	543	455	IP55
TP19UD48B	324x324x120	48 V d.c.	96	620	580	IP24
TP19UD48B44	324x324x120	48 V d.c.	95	600	545	IP44
TP19UD48B54	324x324x120	48 V d.c.	93	555	505	IP54
TP19UD48B55	324x324x120	48 V d.c.	93	555	480	IP55



## T series roof exhaust unit without fan

- Metal structure
- Plate thickness: any
- IP23 protection degree
- Standard colour RAL 7035 and RAL 7032



Model	Dimensions	IP Protection Degree
	mm	
T19UK	375x295x119	IP23



## T series roof exhaust units

- Metal structure
- Plate thickness: any
- IP23 protection degree
- Standard colour RAL 7035 e RAL 7032
- Frequency: 50/60 Hz



Model	Dimensions	Rated Voltage	Rated Power	Max Airflow	Airflow with Exhaust Filter	IP Protection Degree
	mm	V	W	m³/h	m³/h	
<b>T19B</b>						
T19R115B	375x295x119	115 V a.c.	58/71	550/590	487/525	IP23
T19R230B	375x295x119	230 V a.c.	62/78	550/590	487/525	IP23
T19U115B	375x295x119	115 V a.c.	58/71	550/590	487/525	IP23
T19U230B	375x295x119	230 V a.c.	62/78	550/590	487/525	IP23
<b>T22B</b>						
T22R115B	375x295x119	115 V a.c.	130/170	800/850	660/700	IP23
T22R230B	375x295x119	230 V a.c.	125/161	800/850	660/700	IP23
T22U115B	375x295x119	115 V a.c.	130/170	800/850	660/700	IP23
T22U230B	375x295x119	230 V a.c.	125/161	800/850	660/700	IP23



### Accessories - Type 4X hose-proof protection hood

- Particularly suitable for outdoor applications or in food&beverage industry
- Suitable for all sizes of FF e GF series
- AISI 304 stainless steel brushed finish
- Slide mounting system on brackets
- IP56/Type 4X protection degree when used with FF filter fans
- UL approved only if used in combination with FF filter fans



Model	Suitable for filters	Approvals
<b>SSC-08A</b>	FF08	cURus; cULus
<b>SSC-12A</b>	FF12; GF12	cURus; cULus
<b>SSC-13A</b>	FF13	cURus; cULus
<b>SSC-15A</b>	FF15; GF15	cURus; cULus
<b>SSC-20A</b>	FF20; GF20	cURus; cULus



### Accessories - RAL7035 hose -proof protection hood

- Particularly suitable for outdoor applications
- Suitable for all sizes of FF e GF series
- Powder coated RAL7035 steel
- Slide mounting system on brackets
- IP56/Type 12 protection degree when used with FF filter fans
- UL approved only if used in combination with FF filter fans



Model	Suitable for filters	Approvals
<b>SSC-08EU</b>	FF08	cURus; cULus
<b>SSC-12EU</b>	FF12; GF12	cURus; cULus
<b>SSC-13EU</b>	FF13	cURus; cULus
<b>SSC-15EU</b>	FF15; GF15	cURus; cULus
<b>SSC-20EU</b>	FF20; GF20	cURus; cULus



### Accessories - Hose-proof protection hood

- Particularly suitable for outdoors applications
- Suitable for all sizes of FF e GF series
- AISI 304 stainless steel cover of 1mm thickness
- Slide mounting system on brackets
- IP56 protection degree in combination with a FF filter fans



Model	Suitable for filters
<b>SSC-08</b>	FF08
<b>SSC-12</b>	FF12; GF12
<b>SSC-13</b>	FF13
<b>SSC-15</b>	FF15; GF15
<b>SSC-20</b>	FF20; GF20



## Accessories - Adapters

- Allow fan filter installation in a semi built-in position in the electric cabinet, reducing the internal dimensions
- Available for FF and GF series in 150x150mm, 204x204mm and 325x325mm sizes
- Standard colour RAL 7035 and RAL 7032



Model	Suitable for filters
FPFA12-7032G	FF12; GF12
FPFA12-7035G	FF12; GF12
FPFA12-9005G	FF12; GF12
FPFA15-7032G	FF15; GF15
FPFA15-7035G	FF15; GF15
FPFA20-7011G	FF20; GF20
FPFA20-7032G	FF20; GF20
FPFA20-7035G	FF20; GF20



## Accessories - Filter media

- Filter media can be cleaned, up to 10 times, by careful washing, blowing dry and lightly beating
- Available for FF, FPF and GF filter fans in all sizes and TP roof exhaust units
- G4 not available for FF08 and FPF08 models
- K versions: 6 pieces kit



Model	Suitable for filters	Filter Class
M08FPFK	FF08; FPF08	ISO coarse 55%; G3
M117-TP19	TP19	ISO coarse 30%; G2
M12FPF5K	FF12; FPF12	ISO coarse 75%; G4
M12FPFK	FF12; FPF12	ISO coarse 55%; G3
M12GFK	GF12	ISO coarse 55%; G3
M13FPF5K	FF13; FPF13	ISO coarse 75%; G4
M13FPFK	FF13; FPF13	ISO coarse 55%; G3
M15FPF5K	FF15; FPF15	ISO coarse 75%; G4
M15FPFK	FF15; FPF15	ISO coarse 55%; G3
M15GFK	GF15	ISO coarse 55%; G3
M20FPF5K	FF20; FPF20	ISO coarse 75%; G4
M20FPFK	FF20; FPF20	ISO coarse 55%; G3
M20GFK	GF20	ISO coarse 55%; G3