

Filter Fan Kits



Features

- All models are 115V with an expected service life of 30,000 hours
- High-performance fan motors and finger guards
- Polycarbonate fire retardant plastic grilles, UL94-VO
- Durable, reusable filter mat included
- Patented "Click and Fit" system allows for rapid filter fan and exhaust filter installation without screws (This time-saving feature cuts installation time by up to 30 minutes when compared to traditional box fan packages)
- Cutout template provided with every unit
- Filter fan or exhaust filter simply snaps into cutout opening
- Connector type: WPF10 Series 2 has 12-inch wires. WPF20-WPF60 Series has terminal strip.

Standards

- cUL Recognized/CSA fan motor
- NEMA 1 (NEMA 12 with optional WPFG series gasket)
- IP43 (IP54 with optional WPFG Series gasket)

Accessories

- Gaskets (WPFG Series) recommended if installing on enclosure with textured finish
- Replacement Filters (WPFM Series)

Applications

- Most innovative technology for fan cooling and pressurizing of industrial enclosures.
- Provides a high quality, economical method of cooling enclosures
- Filtered passive ventilation can be provided by an exhaust filter for either convection cooling or in combination with a fan in forced air cooling
- Slim line design allows grille to protrude from enclosure surface less than one quarter inch
- Maintains aesthetics of enclosure



Part Number	Price	Amps at 50/60 Hz	Rated Voltage	Power Consumption at 50/60 Hz	Free Flow Air Delivery (CFM) ¹	Air Delivery with Exhaust (CFM) ¹	Max. Static Press. (PA)	Ambient Temp. Degree F Max/Min	Filter Density (G/M2)	Filtering Level	Sound Level (dB)	Required Cutout Sizes
WPF10-115BK	<--->	0.15/0.15	115V	12/12 Watts	16	10	29	140/14	150	67%	39	3.62x3.62 (92x92)
WPF20-115BK	<--->	0.25/0.25	115V	19/19 Watts	38	28	69	122/14	350	83%	49	4.92x4.92 (125x125)
WPF25-115BK	<--->	0.25/0.25	115V	18/18 Watts	89	62	57	122/14	350	83%	53	8.78x8.78 (223x223)
WPF30-115BK	<--->	0.5/0.5	115V	43/44 Watts	169	142	89	122/14	350	83%	55	8.78x8.78 (223x223)
WPF50-115BK ²	<--->	0.6/0.7	115V	63/76 Watts	324	249	205	122/14	350	83%	69	11.46x11.46 (291x291)
WPF60-115BK ²	<--->	1.2/1.6	115V	122/173 Watts	410	295	225	122/14	350	83%	71	11.46x11.46 (291x291)

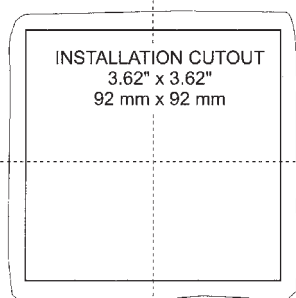
Note 1: For operation at 50Hz, reduce CFM by 15%.

Note 2: Intake fan use only
Dimensions in inches (millimeters)

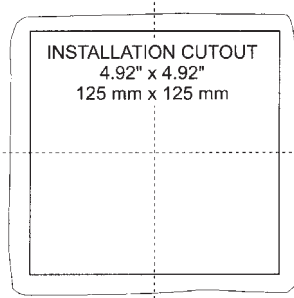
Filter Fan Kit Cutouts and Dimensions



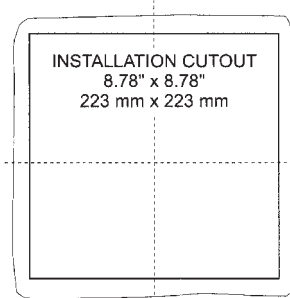
Installation cutouts



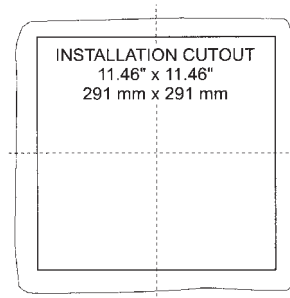
WPF10-115BK



WPF20-115BK

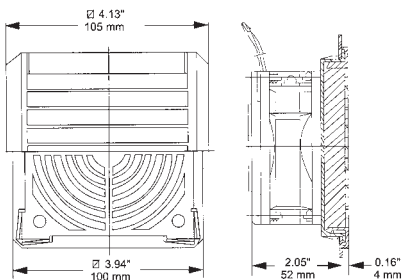


WPF25-115BK
WPF30-115BK

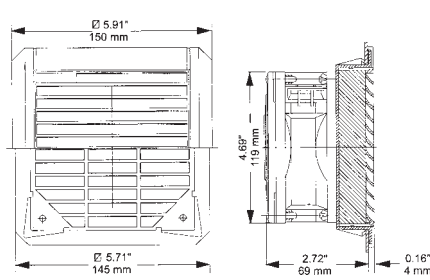


WPF50-115BK
WPF60-115BK

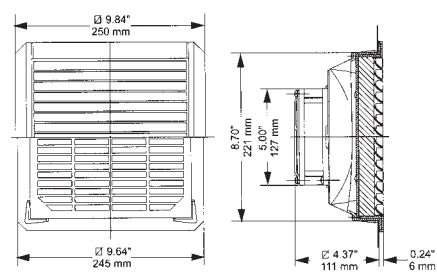
Dimensions



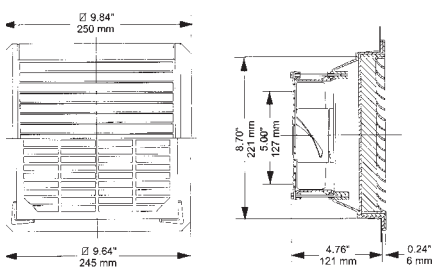
WPF10-115BK



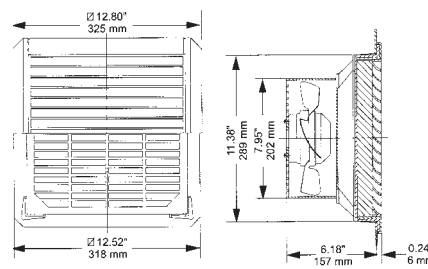
WPF20-115BK



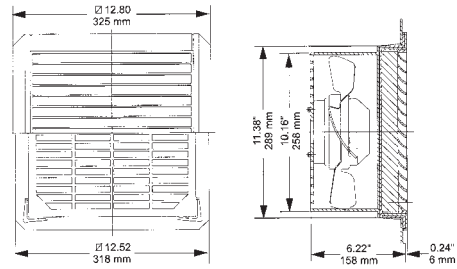
WPF25-115BK



WPF30-115BK



WPF50-115BK



WPF60-115BK

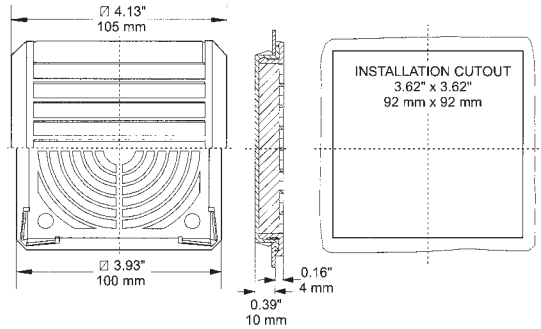
Exhaust Grille and Filter Accessories



Part Number	Price	Filter Density (G/M2)	Mass Filter Level %	Required Cutout Dimensions
WPFA10BK	<--->	150	67%	3.62x3.62 (92x92)
WPFA20BK	<--->	350	83%	4.92x4.92 (125x125)
WPFA25-30BK	<--->	350	83%	8.78x8.78 (223x223)
WPFA50-60BK	<--->	350	83%	11.46x11.46 (291x291)

Dimensions in inches (millimeters)

WPFA10BK



Exhaust grille

Features

- Polycarbonate fire retardant plastic grilles, UL94-V0
- Durable, reusable filter mat included

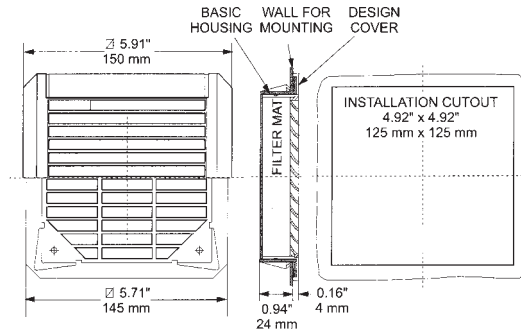
Standards

- NEMA 1 (NEMA 12 with optional WPFG Series gasket)
- IP43 (IP54 with optional WPFG Series gasket)

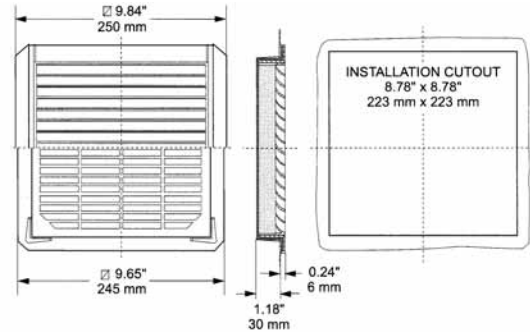
Accessories

- Gaskets (WPFG Series) recommended if installing on enclosure with textured finish

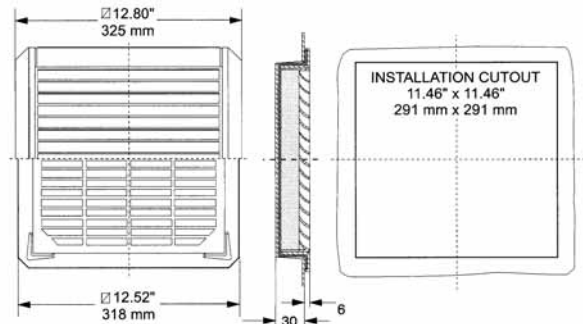
WPFA20BK



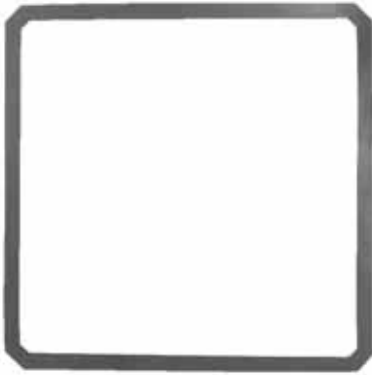
WPFA25-30BK



WPFA50-60BK



Exhaust Grille and Filter Accessories



Rubber gaskets for filter fans and exhaust grilles

Replacement filter mats

Applications

- Replacement filter mats for WPF series filterfans and WPFA series exhaust grilles

Features

- Packaged in quantities of five
- Made of washable synthetic fibers
- Reusable up to 20 times
- 100% resistant to humidity



Features

- Packaged individually
- Provide added sealing protection between enclosure and fan housing
- Recommended when fans or exhaust grilles are installed on enclosures with textured finishes

Standards

- Changes filterfan rating (WPF series) from NEMA 1 to NEMA 12 when installed

Replacement Filter Mats							
Part Number	Price	Use With This Filterfan Kit Part Number	Price	Use With This Exhaust Grille and Filter Part Number	Price	Mass Filter Lever %	Dimensions HxW
WPFM10	<-->	WPF10-115BK	<-->	WPFA10BK	<-->	67	3.40x3.40 (85x85)
WPFM20	<-->	WPF20-115BK	<-->	WPFA20BK	<-->	83	4.50x4.50 (115x115)
WPFM25-30	<-->	WPF25-115BK	<-->	WPFA25-30BK	<-->	83	8.30x8.30 (210x210)
		WPF30-115BK	<-->				
WPFM50-60	<-->	WPF50-115BK	<-->	WPFA50-60BK	<-->	83	11x11 (280x280)
		WPF60-115BK	<-->				

Rubber Gaskets					
Part Number	Price	Use With Filterfan Kit Part Number	Price	Use With Exhaust Grille Part Number	Price
WPFM10	<-->	WPF10-115BK	<-->	WPFA10BK	<-->
WPFM20	<-->	WPF20-115BK	<-->	WPFA20BK	<-->
WPFM25-30	<-->	WPF25-115BK	<-->	WPFA25-30BK	<-->
		WPF30-115BK	<-->		
WPFM50-60	<-->	WPF50-115BK	<-->	WPFA50-60BK	<-->
		WPF60-115BK	<-->		

Enclosure Shipping Schedule		
Same day	1 - 7 days	1 - 10 days
Color indicates shipping lead time in business days.		

Enclosure Cooling – Selecting a Fan or Air Conditioner

Fan selection

To select the proper size (CFM) fan for your forced air cooling solution, you need to determine the amount of heat to be removed (in watts) and determine the Delta T (Max. allowable internal enclosure temperature °F – Max. outside ambient temperature °F).

CFM = Cubic Feet per Minute

P = Power to be dissipated in watts

CFM = (3.17 x P_{watts}) / Delta T °F

Delta T = max. allowable internal enclosure temperature °F – max. outside ambient temperature °F

Fan Selection Example

A NEMA 12 Hubbell Wiegmann N12302412 enclosure (30" high x 24" wide x 12" deep) contains a GS3-2020 AC drive (20 HP 230 volt) that has a maximum allowable operating temperature of 104°F and is located in a warehouse that has a maximum outside ambient air temperature of 95°F.

Power to be dissipated is stated in the specifications of the GS3-2020 and is found to be 750 watts, so P=750 watts

Delta T = Max. operating temperature for the GS3-2020 is 104°F – Max. ambient air temperature of 95°F

Delta T = 9°F

CFM = (3.17 x 750 watts) / 9°F

CFM = 264

Choose a Hubbell Wiegmann WPF60-115BK filter fan kit that provides 295 CFM with exhaust kit WPFA50-60BK

Air conditioner selection

To select the proper size air conditioner, the worst-case conditions should be considered, but take care not to choose an oversized unit.

There are two main factors in choosing an uninsulated metal NEMA rated enclosure located indoors:

- Internal heat load
- Heat load transfer

Internal Heat Load

Internal heat load is the heat generated by the components inside the enclosure. This can be determined by a few different methods. The preferred method is to add the maximum heat output specifications that the manufacturers list for all the equipment installed in the cabinet. This is typically given in Watts, so use the following conversion:

BTU per Hour = Watts x 3.413

Example: The Watt-loss chart for the GS3 Drives shows that a GS3-2020 AC drive has a Watt-loss of 750 watts.

BTU per Hour = 750 watts x 3.413

BTU per Hour = 2559

Heat Load Transfer

Heat load transfer is the heat lost (negative heat load transfer) or gained (positive heat load transfer) through the enclosure walls with the surrounding ambient air. This can be calculated by the following formula:

Heat load transfer (BTU/H) = 1.25 x surface area (sq. ft.) x (max. outside ambient air (°F) – max. allowable internal enclosure temperature air (°F))

Surface Area (sq. ft.) = 2 [(H x W) + (H x D) + (W x D)] / 144 sq. inches

Note: 1.25 is an industry standard constant for metal enclosures; 0.62 should be used for plastic enclosures.

Once you have determined your Internal Heat Load and the Heat Load Transfer, you can choose the proper size unit by calculating the needed cooling capacity.

Cooling capacity (BTU/H) = Internal Heat Load ± Heat Load Transfer

Air Conditioner Selection Example

A NEMA 12 Hubbell Wiegmann N12302412 enclosure (30" high x 24" wide x 12" deep) contains a GS3-4030 AC drive (30 HP 460 volt) that has a maximum allowable operating temperature of 104°F and is located in a warehouse that has a maximum outside ambient air temperature of 115°F.

Power to be dissipated is stated in the specifications of the GS3-4030 and is found to be 1290 watts.

Internal heat load:

BTU per Hour = 1290 watts x 3.413

BTU per Hour = 4403 BTU/H

Heat load transfer:

Heat load transfer (BTU/H) = 1.25 x 19 sq. ft. x (115°F – 104°F)

Heat load transfer (BTU/H) = 261.25 BTU/H

Cooling capacity:

Cooling capacity (BTU/H) = 4403 BTU/H + 261.25 BTU/H

Cooling capacity (BTU/H) = 4664.25 BTU/H

In this example, you are able to determine that a 5000 BTU/H unit is needed. Select a TA10-050-16-12 Stratus air conditioner.

