

# STEGO INC. Filter Fan Kits

018000-02



## Applications

Filter fans provide an optimum climate in enclosures. The interior temperature of enclosures is reduced by channeling cooler filtered outside air into the enclosure, thus expelling heated internal air. The resulting air flow prevents formation of localized heat pockets and protects electronic components from overheating.

Outdoor filter fans are used in outdoor enclosures where warm air must be dissipated. To clean and exchange the filter mat, you open the lockable door of the outdoor hood, eliminating the need to allow interior access to the enclosure. IP55 protection type is achieved due to the special design of the hood and the use of fine filter mats.

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## Features

- Easy filter change
- Outer door lock for outdoor models
- Impact resistant
- Weather/UV resistant UL 94V-0 (indoor)/UL94H-B (outdoor)
- No-screw installation - except outdoor models
- Low noise
- 120 VAC and 24 VDC models available
- Service life - 50,000 hrs@77°F (25°C) + 65%RH
- Connection type - 12 to 69 CFM - 2 wires w/case clamps, AWG 14, length 4"/136 to 373 CFM - 3 pole terminal, AWG 14, clamping torque 0.8 Nm
- Airflow direction easily switched by reversing the axial fan (except on models 018040-01 and 018050-01)
- Includes self-adhesive gasket pre-installed on frame
- Optional mounting screws for additional support

## Standards

All models except outdoor: CE, RoHS, IP55, UL Type 12 when using supplied filter. For use with NEMA 1 and NEMA 12 enclosures only.

UL #: E234324

Note: Using fine filter mat F5 reduces the airflow. (See *Stego Air Volume and Pressure Data*, later in this section.)



Part Number	Price	Amps (mA)	Rated Voltage	Power Consumption (60 Hz for 120V models)	Free Flow Air Delivery (CFM)*	Air Delivery with Exhaust (CFM)**	Max. Static Pressure (Pa)*	Operating Temp. (Max/Min °F/°C)	Filter Density (g/m <sup>2</sup> )	Filtering Level	Sound Level (dB)	Required Cutout Sizes
<b>Filter Fans</b>												
018000-02	\$92.00	90	24 VDC	2.2W	12	9	19	158/14 °F (70/-10°C)	350	94%	31	3.82 x 3.82 inch (97.03mm x 97.03mm)
018000-01	\$68.00	160	120 VAC	13W	14	11	18				31	
018010-02	\$101.00	210	24 VDC	5W	32	25	32				40	4.92 x 4.92 inch (124.97mm x 124.97mm)
018010-01	\$75.00	180	120 VAC	15W	37	28	30				40	
018020-02	\$104.00	210	24 VDC	5W	60	40	23				39	
018020-01	\$91.00	180	120 VAC	15W	69	46	27				39	6.93 x 6.93 inch (176.02mm x 176.02mm)
018040-01	\$156.00	470	120 VAC	39W	136	84	60	140/-13°F (60/-25°C)			52	
018030-03	\$276.00	840	24 VDC	20W	176	135	23	158/14 °F (70/-10°C)			53	9.84 x 9.84 inch (249.94mm x 249.94mm)
018030-01	\$265.00	700	120 VAC	60W	202	156	27				53	
018050-01	\$218.00	780	120 VAC	85W	373	203	85	140/-13°F (60/-25°C)			52	
<b>Outdoor Filter Fans (Rain Hoods)</b>												
018210-04	\$144.00	210	24 VDC	5W	12	11.8	48	158/14 °F (70/-10°C)	360	98%	40	4.92 x 4.92 inch (124.97mm x 124.97mm)
018210-02	\$123.00	180	120 VAC	15W	14	14	54					

Dimensions in inches (millimeters)

\*Fan with filter and louver

\*\*Fan with filter, louver, exhaust filter, and grille.

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Wire Management Products

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Transformers and Filters

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Safety: Electrical Components

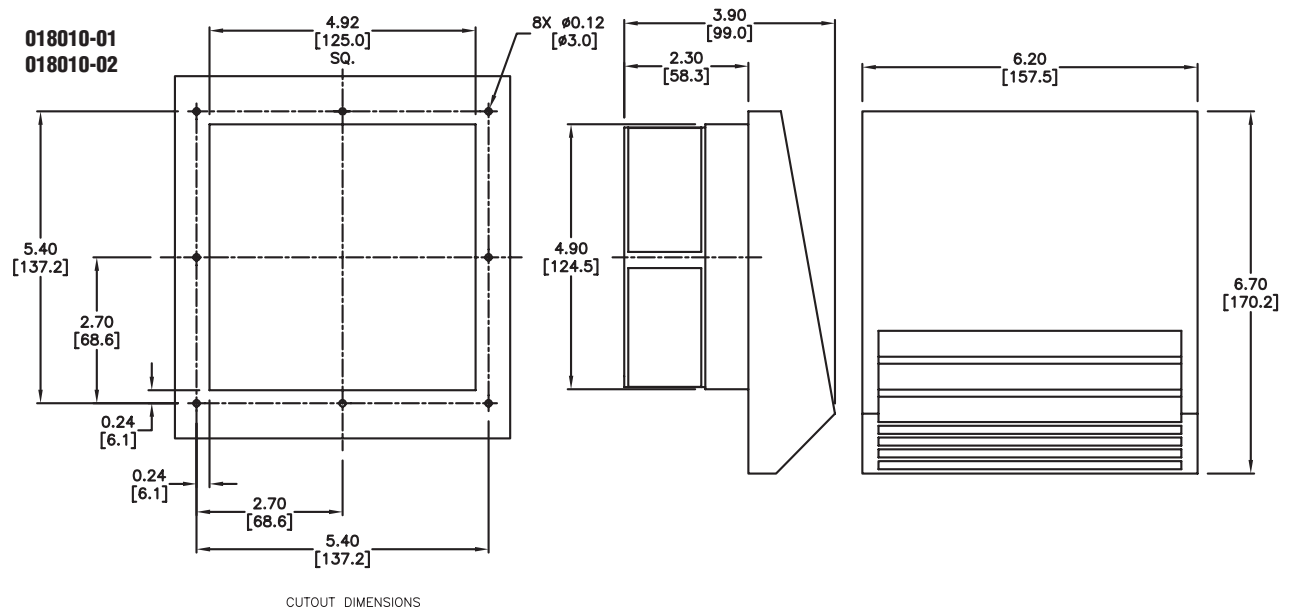
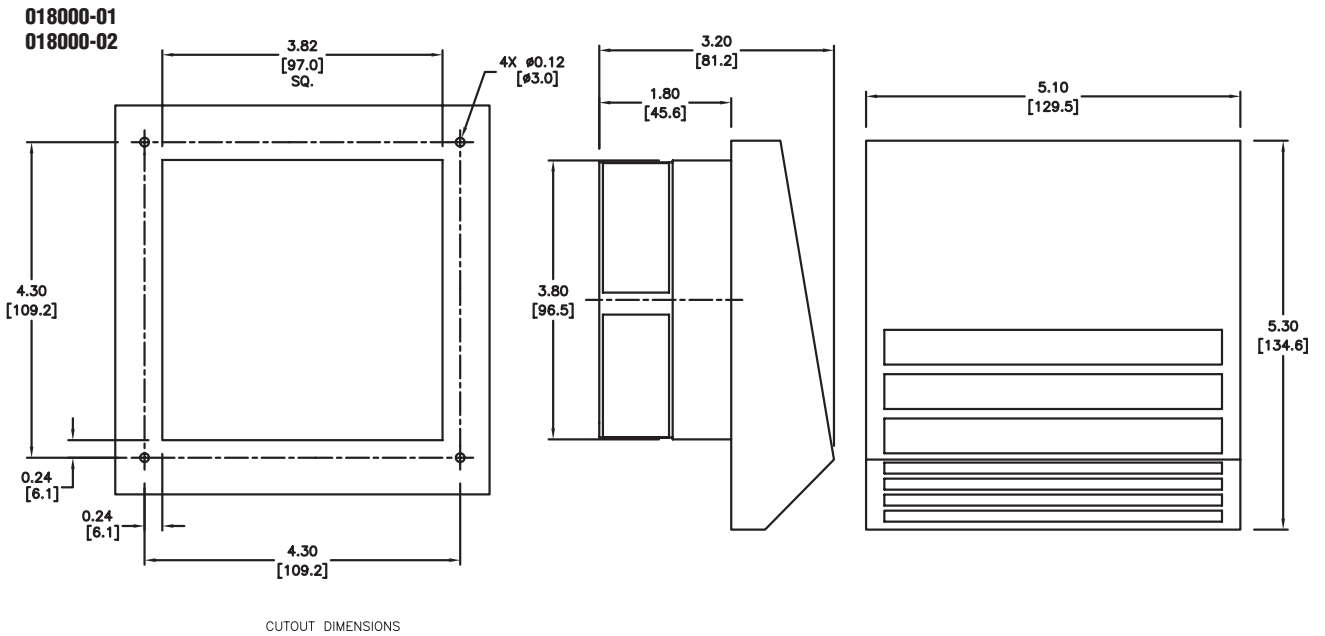
Safety: Protective Wear

Terms and Conditions



# Filter Fan Kit Cutouts and Dimensions

## Dimensions [in mm]

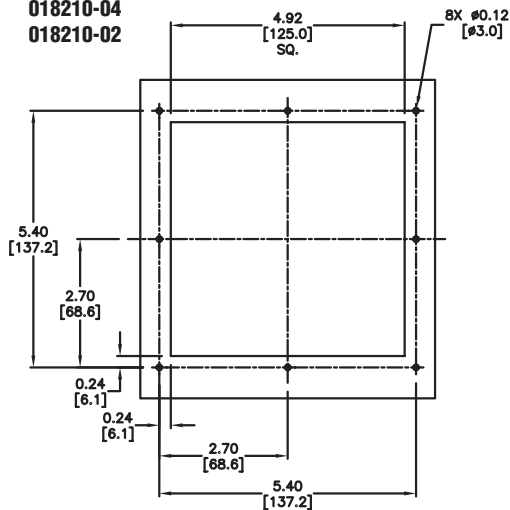




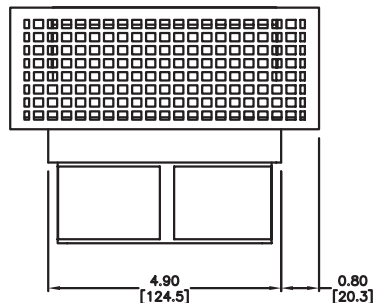
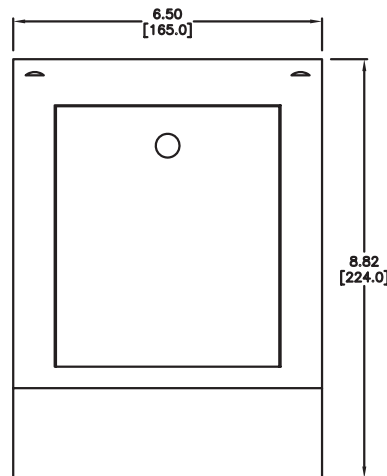
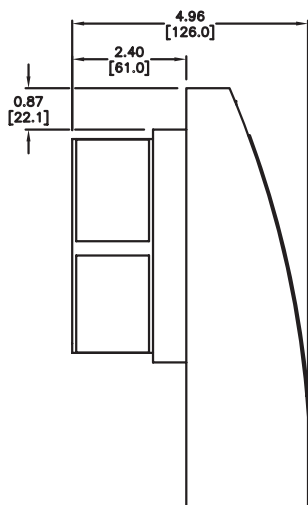
# Filter Fan Kit Cutouts and Dimensions

## Dimensions [in mm]

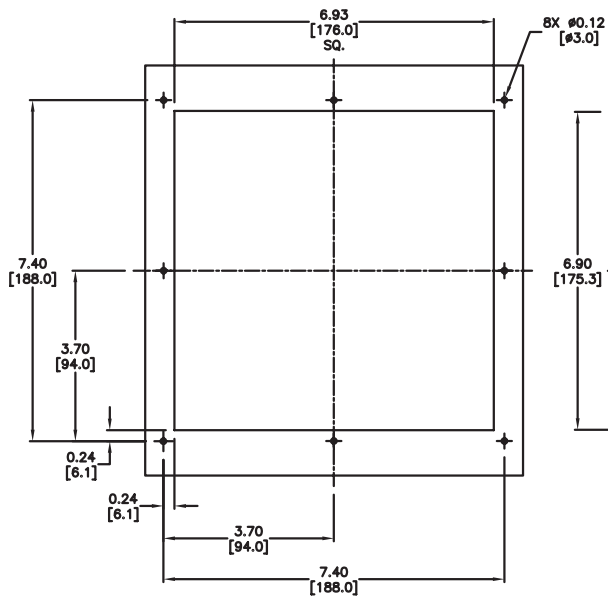
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**018210-02**



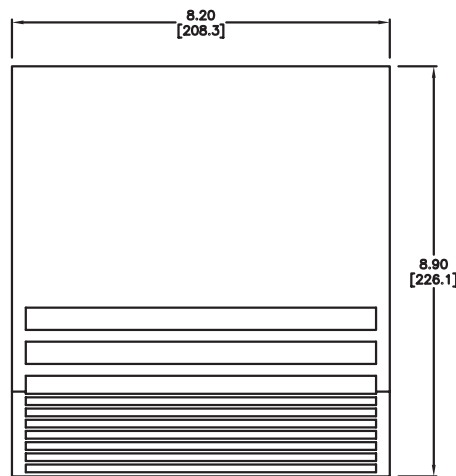
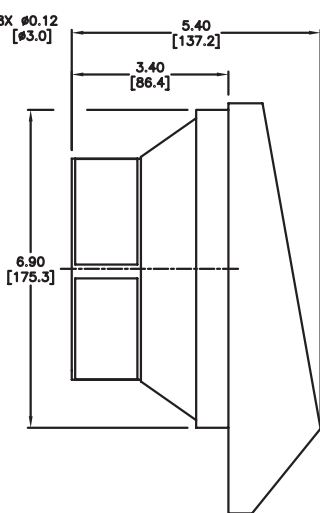
CUTOUT DIMENSIONS



**018020-01**  
**018020-02**



CUTOUT DIMENSIONS



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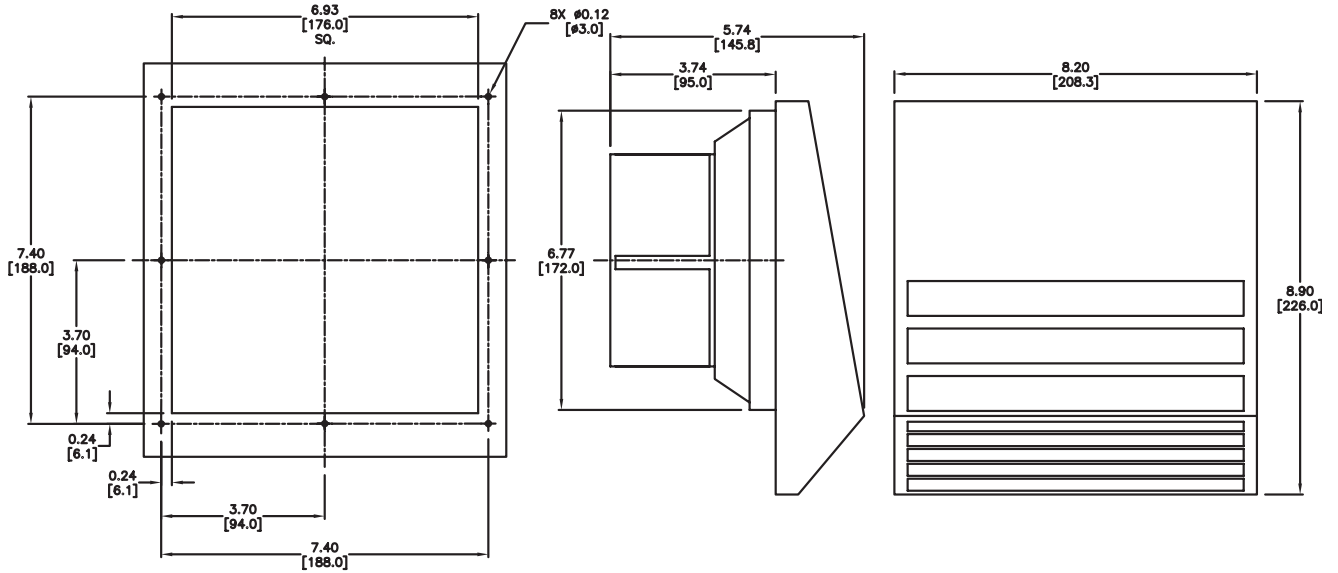
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# Filter Fan Kit Cutouts and Dimensions

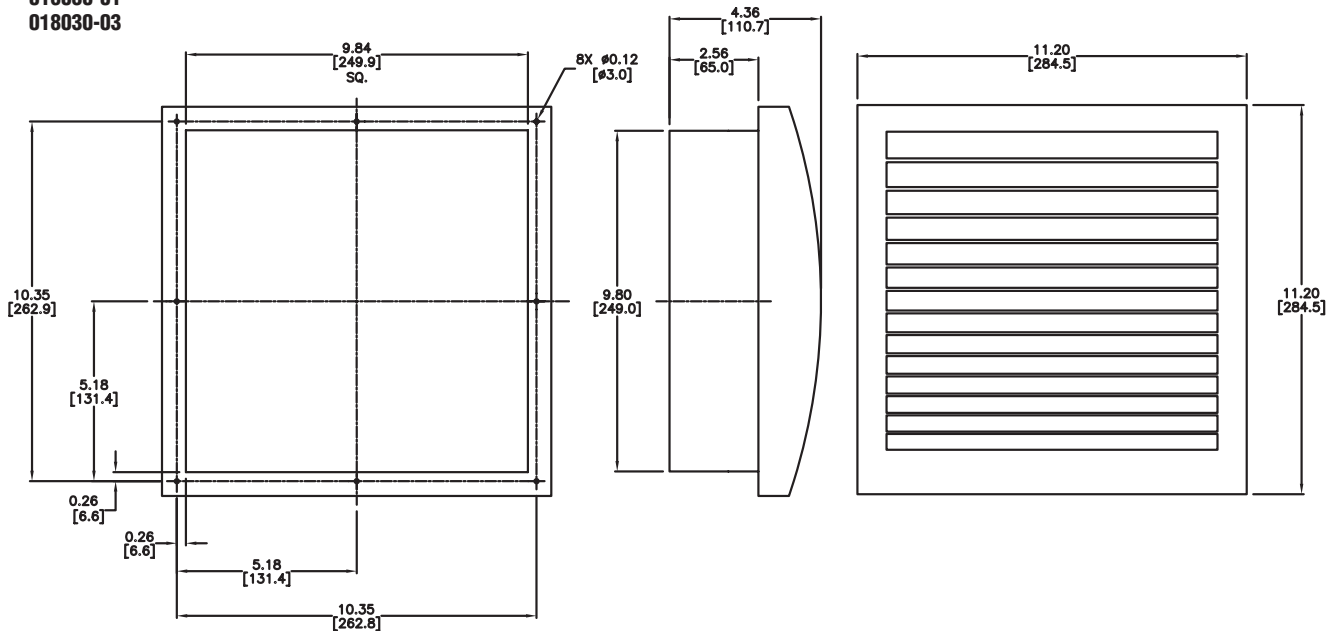
## Dimensions [in mm]

**018040-01**



CUTOUT DIMENSIONS

**018030-01  
018030-03**

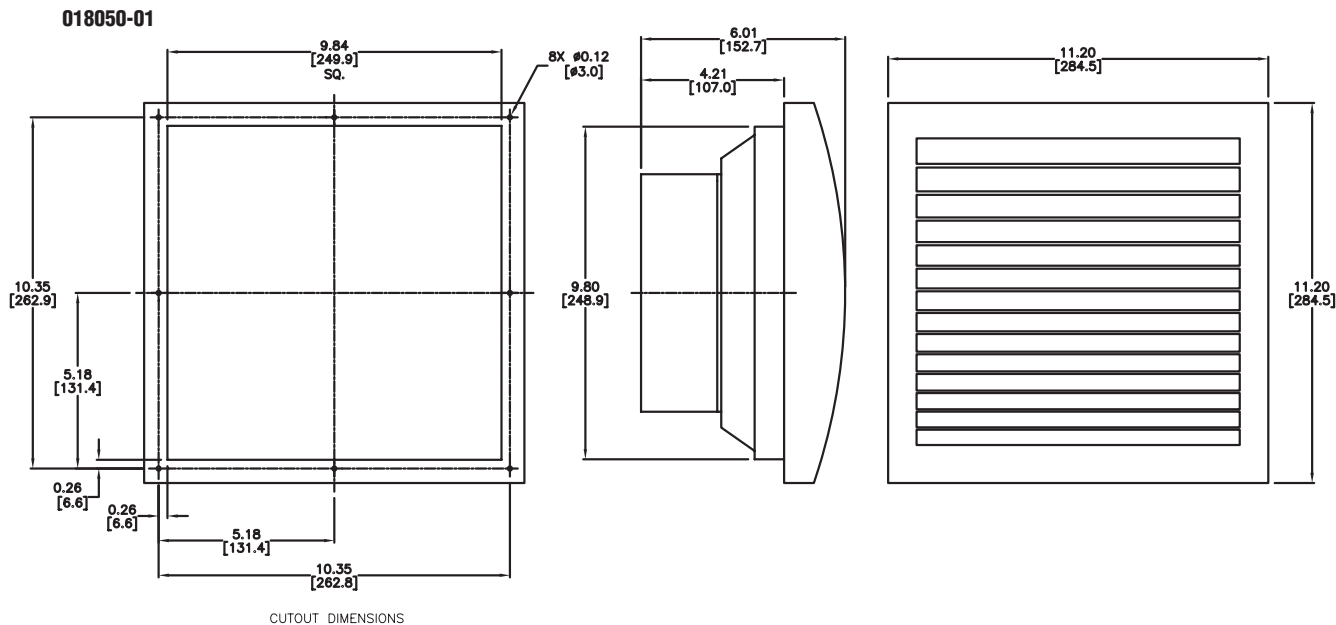


CUTOUT DIMENSIONS



# Filter Fan Kit Cutouts and Dimensions

## Dimensions [in mm]



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# Exhaust Grilles With Filters

118000-00



## Features

- No-screw installation
- Mounting depth 0.6 in. (16mm)

## Accessories

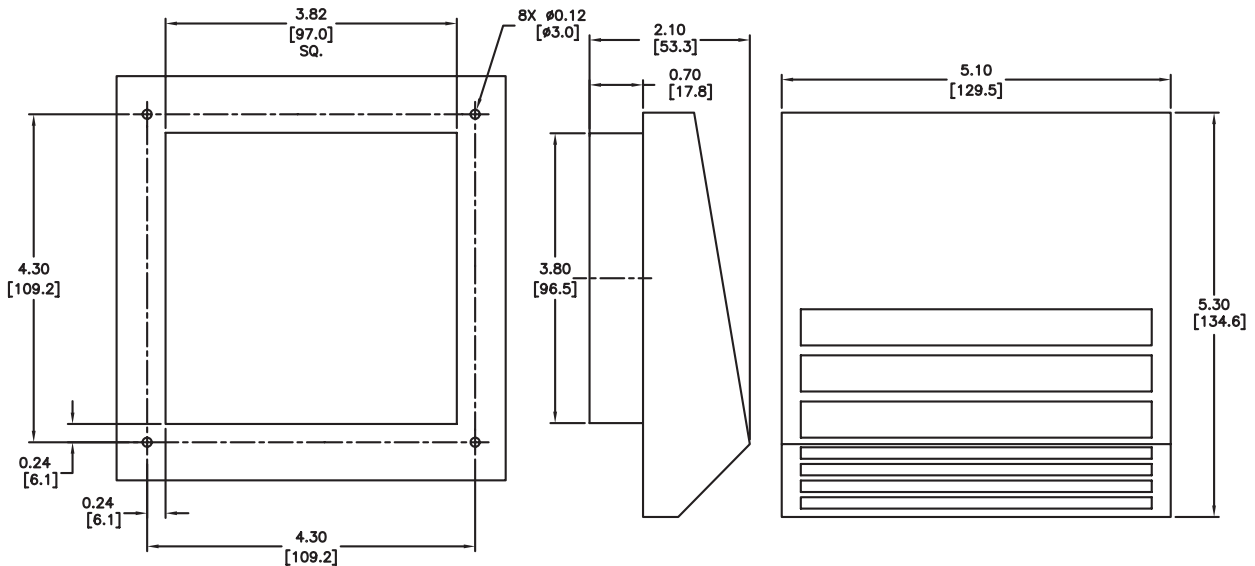
- Come with gaskets attached (adhesive-sided to stick on panel)

Part Number	Price	Filter Density (g/m <sup>2</sup> )	Mass Filter Level %
<b>Exhaust Grilles</b>			
<b>118000-00</b>	\$15.50	350	94%
<b>118010-00</b>	\$19.50		
<b>118020-00</b>	\$22.00		
<b>118030-00</b>	\$56.00		
<b>Outdoor Exhaust Grilles</b>			
<b>118210-00</b>	\$89.00	360	98%

Dimensions in inches (millimeters)

## Dimensions [in mm]

118000-00



CUTOUT DIMENSIONS

# Exhaust Grille and Filter Accessories

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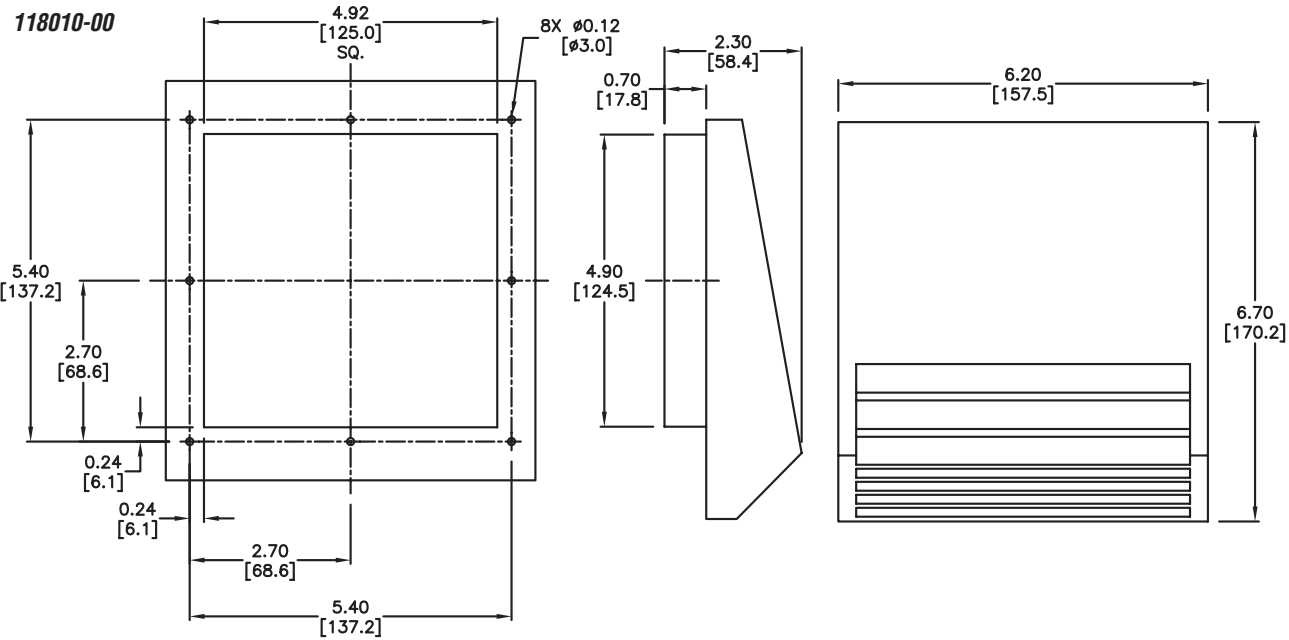
Enclosure Climate Control

Safety: Electrical Components

Safety: Protective Wear

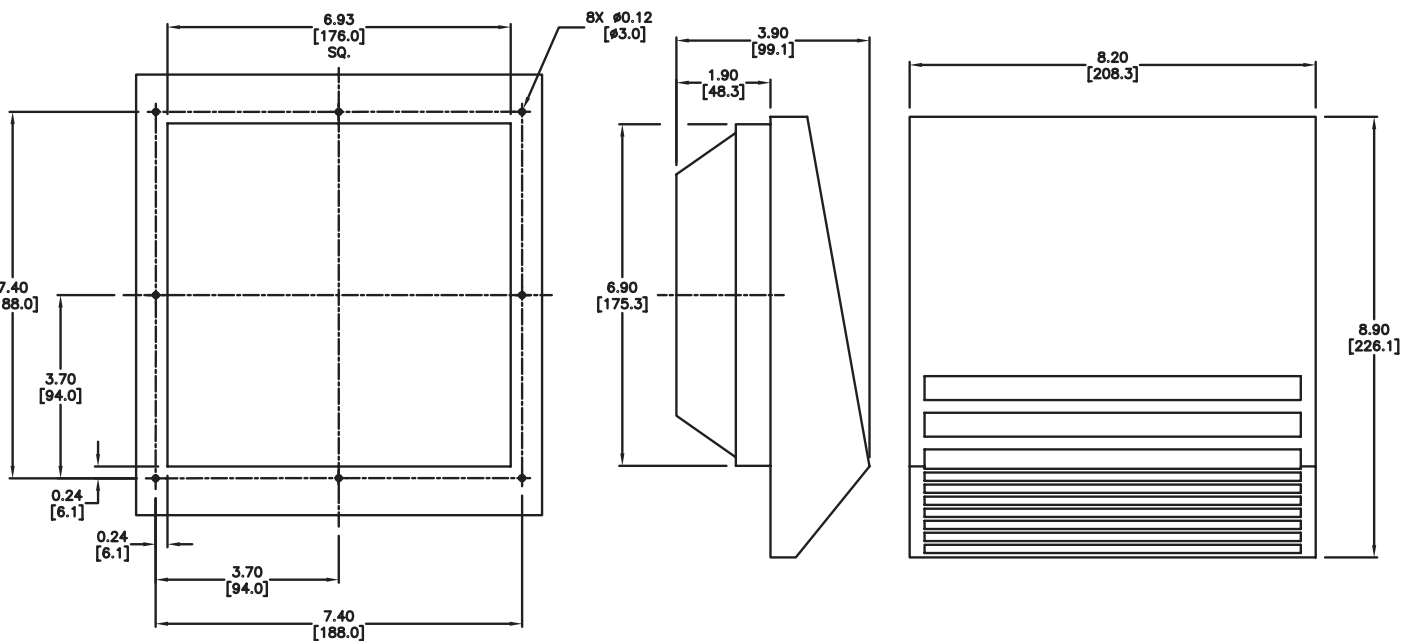
Terms and Conditions

## 118010-00



CUTOUT DIMENSIONS

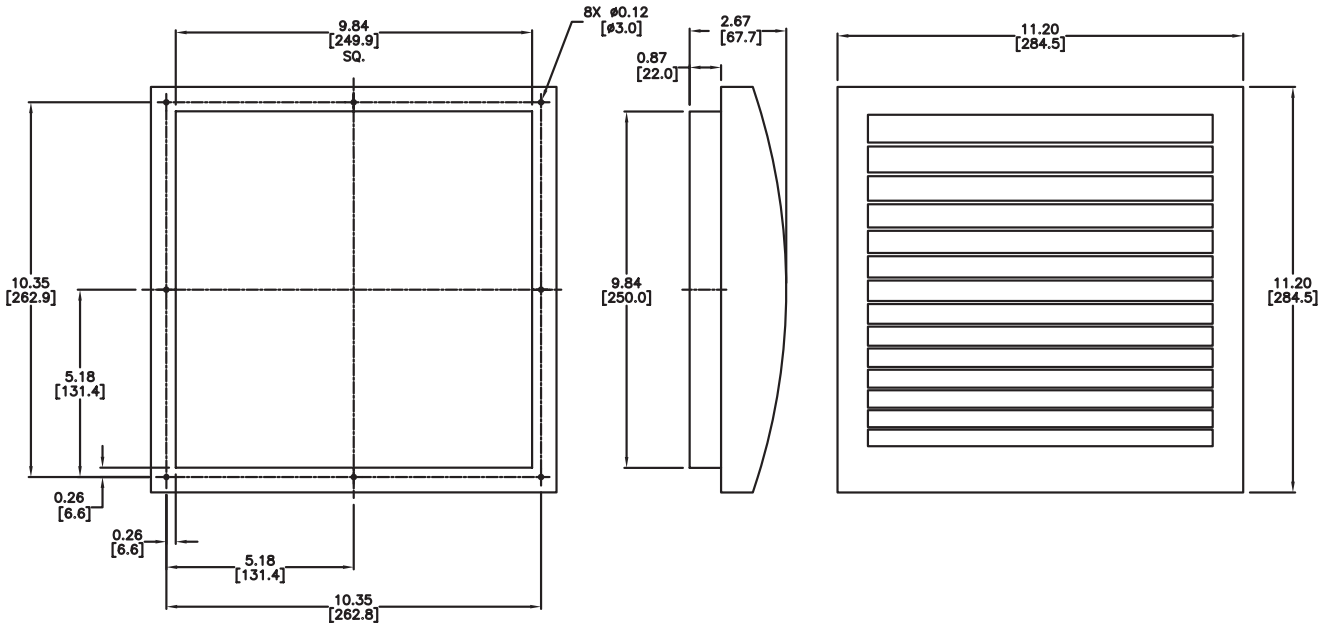
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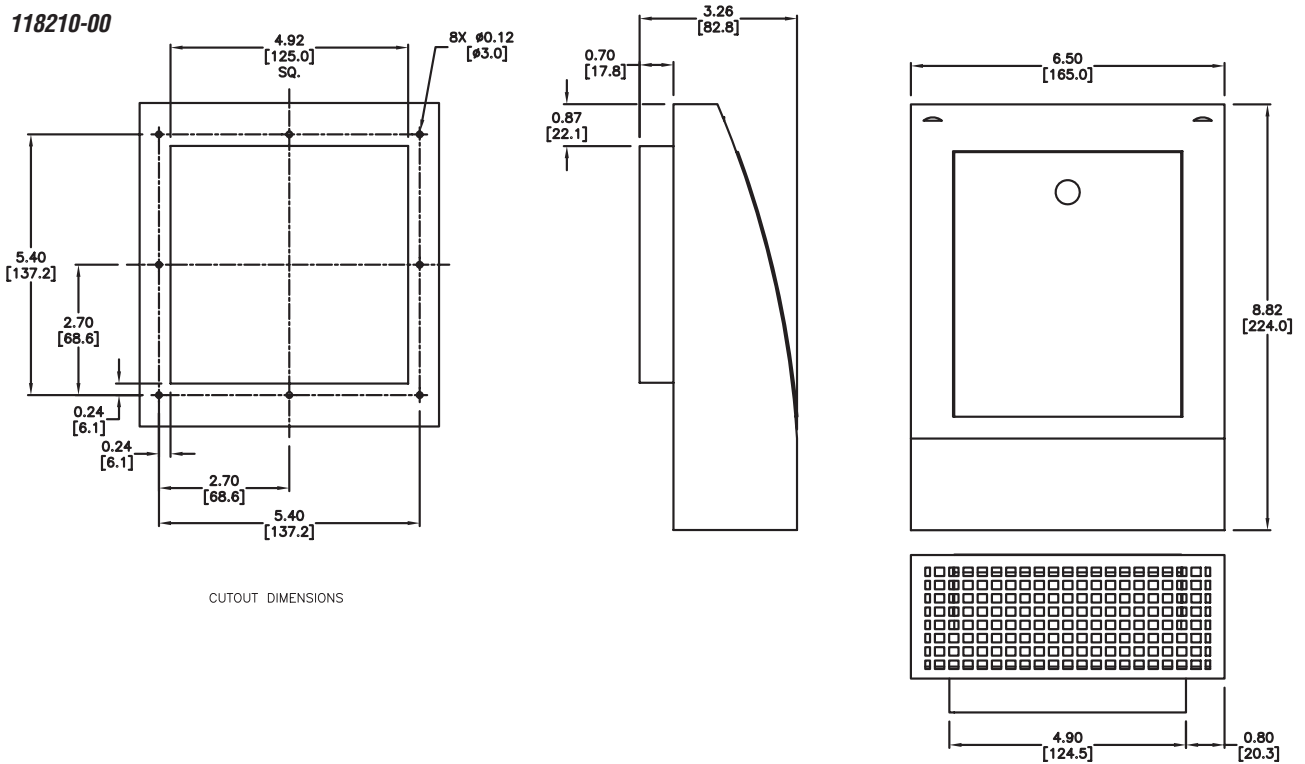
# Exhaust Grille and Filter Accessories

## 118030-00



CUTOUT DIMENSIONS

## 118210-00



CUTOUT DIMENSIONS



# Replacement Filter Elements

086000-00



## Applications

- Replacement filter mats for Stego series filter fans and Stego series exhaust grilles

## Features

- Filter media for enclosure fans
- Fine or medium density
- Fits 3.82 x 3.82, 4.92 x 4.92, 6.93 x 6.93, or 9.84 x 9.84 inch filter fans
- Package of 3

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Replacement Filter Elements							
Part Number	Pieces per Package	Use With Filter Fan Kit Part Number	Use With Exhaust Grille and Filter Part Number	Filter Rating	Filter Density g/m <sup>2</sup>	Mass Filter Level %	Dimensions HxW in (mm)
086000-00	3	018000-01 018000-02	118000-00	G4 (Med.)	350	94	3.5 x 3.5 (88.90x88.90)
086010-00		018010-01 018010-02	118010-00				4.6 x 4.6 (116.84x116.84)
086020-00		018020-01 018020-02 018040-01	118020-00				6.6 x 6.6 (167.64x167.64)
086080-00		018030-01 018030-03 018050-01	118030-00				9.7 x 9.7 (246.38x246.38)
086030-00		018000-01 018000-02	118000-00	F5 (Fine)	360	98	3.5 x 3.5 (88.90x88.90)
086040-00		018010-01 018010-02 018210-02 018210-04	118010-00				4.6 x 4.6 (116.84x116.84)
086050-00		018020-01 018020-02 018040-01	118020-00				6.6 x 6.6 (167.64x167.64)
086090-00		018030-01 018030-03 018050-01	118030-00				9.7x9.7 (246.38x246.38mm)

Air Volume and Pressure Data						
Part Number	Filter Mat Air Volume (cfm)				Filter Mat Static Pressure (Pa)	
	G4 filter free flow*	G4 filter with exhaust filter**	F5 filter free flow*	F5 filter with exhaust filter**	G4 filter free flow*	F5 filter free flow*
018000-02	12	9	4	3	19	37
018000-01	14	11	5	4	18	35
018010-02	32	25	16	13	32	53
018010-01	37	28	19	15	30	50
018020-02	60	40	31	21	23	30
018020-01	69	46	36	24	27	35
018040-01	136	84	58	36	60	100
018030-03	176	135	47	36	23	46
018030-01	202	156	54	42	27	54
018050-01	373	203	145	83	85	140
018210-04	30	n/a	12	n/a	48	74
018210-02	35	n/a	14	n/a	35	54

\*Fan with filter and louver

\*\*Fan with filter, louver, exhaust filter, and grille.

# Enclosure Accessories - Miscellaneous



## Vapor Capsule

## Carrying Handle



Carrying Handle	Price	Description	Wt.
<b>HW-CARRYINGHANDLE</b>	\$16.50	Non-metallic black handle, for use on Hubbell-Wiegmann non-metallic enclosures.	2 oz.

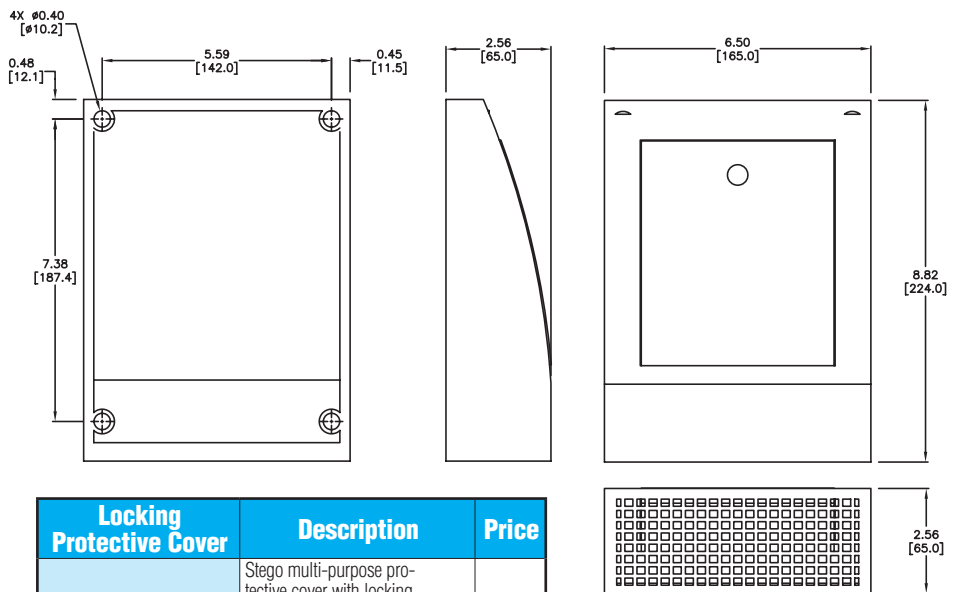
Vapor Capsule	Price	Description	Wt.
<b>HW-C12</b>	\$13.50	Non-toxic vapor emitted from the capsule passivates the metal surfaces on the interior of the enclosure against atmospheric corrosion for up to one year by reducing the electro-chemical activity of the metal surfaces. Installs easily with a self-adhesive strip.	1 oz.



Enclosure Shipping Schedule	
Same day	1 - 14 days
Color indicates shipping lead time in business days.	



## Locking Protective Cover



## Features

- Packaged multi-purpose protective cover
- Locking door
- Weather and UV resistant (UL 94-HB)
- IP 20 Protection Class
- Includes mounting screws

Locking Protective Cover	Description	Price
<b>086110-00</b>	Stego multi-purpose protective cover with locking door, weather and UV resistant (UL 94-HB), IP20 protection class. Includes mounting screws and keys.	\$37.00

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# 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<sub>watts</sub>) / Delta T °F**

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

## 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**

### 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 WPF60-115BK

### 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.

