HAMMOND MANUFACTURING™

Climate Control Components and Equipment for Enclosures

Climate Control

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Quality Enclosures. Service Excellence.

Climate Control

Cooling Products
General Information

Climate Control

The Need for Environment Control

With wide spread use of micro-electronics in today's control systems, temperature management takes on a new priority in order to ensure steady and reliable performance. The maintenance of a correct operating temperature may combine both cooling and or heating inside an enclosure which can protect against costly down time and system failures.

General Selection Considerations

Cooling

Conditions	Solution	Advantages	Disadvantages
Maximum desired enclosure temperature is 10°F or 5°C above maximum outside ambient.	Oversize the enclosure.	Easy to implement, no maintenance. Maintains NEMA rating of the enclosure.	Dissipates small amount of heat. Larger enclosure size takes up more space.
	Install ventilation louvers.	Economical solution, very little maintenance, easy to implement.	Dissipates limited amount of heat. Dirt, oil or fluids could enter the enclosure. NEMA rating is affected.
	Install filter fans.	Less expensive than air/refrigeration systems. Relatively high amount of heat removed, some termperature control by using thermostats.	Must maintain filters. NEMA rating can be affected. Limited use in hostile environments such as chemical applications.
	Use an air/air heat exchanger.	Easy to install, small power consumption, temperature control via thermostat. Maintains NEMA rating of the enclosure.	Must maintain filters.
Maximum desired enclosure temperature lower than maximum outside ambient.	Use an air conditioner.	Easy to install. Temperature control via factory installed thermostat. Removes large amounts of heat. Maintains NEMA rating of enclosure, dehumidifies enclosure air.	Must maintain filter. Generally not to be used when outside temperature is below 59°F (15°) or above 130°F (52°C).

Circulation

Conditions	Solution	Advantages	Disadvantages
Localized heat or 'hot spots'.	Install circulation fans in the enclosure.	Economical solution, no maintenance, easy to install. Maintains NEMA rating of the enclosure.	Dissipates small amount of heat.

Heating

| Conditions	Solution	Advantages	Disadvantages
Outside temperature is below minimum allowable equipment operation range.	Heat with radiant heater.	Economical power consumption. Reliable, can be temperature controlled.	Consumes energy, takes up internal panel space.
Condensation occurs.	Heat with radiant heater to maintain temperature above the dewpoint.	Economical power consumption. Reliable, humidity can be controlled.	Consumes energy, takes up internal panel space.

Sizing an Air Conditioner

The proper selection of an air conditioner is determined by the following steps:

Step 1)   Internal heat load quoted as Watts that must be dissipated.

Step 2)   The exposed surface area of the enclosure.

Step 3)   Temperature differential required between maximum inside temperature and maximum outside ambient.

Step 4)   Final calculation of the above.

Step One
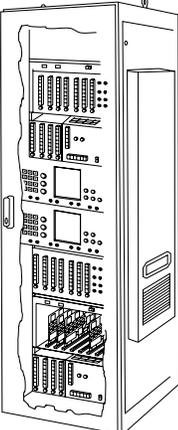
1 Watt = 3.413 BTU/H

Determine the internal heat load
(in Watts) that must be dissipated.

Step Two

W

H

D
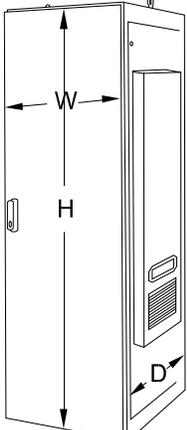
1 m^2 = 10.76 ft^2

Calculate the exposed surface
area of the enclosure:

$$\frac{2(h" \times w") + 2(h" \times d") + (w" \times d")}{144} = \text{Area (ft}^2)$$

(Example for freestanding enclosure)

Step Three

T_i T_O
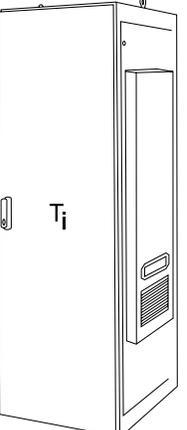
1°C or 1°K△T=1.8°F△T

Determine the temperature differential
by subtracting the maximum allowable
temperature inside the enclosure (T_i)
from the maximum ambient temperature
outside the enclosure (T_o).

T_o-T_i = DT

Step Four

(Watts x 3.413)   +   [1.25 x Area ft^2 X   DT (°F)] = BTU/H

Capacity Required
BTU/H. Capacity Rating.

The DTS/DTT offering is available in the most popular selection of cooling capacities, sizes, voltages and mounting configurations. Available capacities range from 1,200 to 16,000 BTU/H in both side mounting and top mounting models. All models use powerful radial fans for maximum air circulation inside the enclosure in ambient temperatures of 125°F (+52°C). Models from 2,000 BTU/H capacity are equipped with thermal expansion valves for optimal use of the evaporator heat exchange surface under all operating conditions. For additional protection of the compressor motor, these valves are supplied as standard with Maximum Operating Pressure control devices (MOP). For energy conservation, the use of hot gas bypass valves is limited to the unloaded starting and control of large compressors from 8,000 BTU/H upwards. All air conditioners were developed, designed and subject to final inspections in accordance with international standards.

Climate Control

Cooling Products
General Specifications for All Air Conditioners

Construction:	Outer shell of sheet steel.
Closed Loop Cooling:	Ambient outside air is never mixed with clean dry enclosure air.
Operating Temperature:	Minimum +46 F (+8 C) Maximum +125 F (52 C). Optional low ambient kit is available
Gasketing:	Is provided and/or installed on all units to maintain NEMA ratings specified.
Templates:	Provided on all units for easy layout of cutouts and mounting.
Power:	Available in 115 V 60 Hz, 110 V 50 Hz and 230 V, 460 50/60Hz 3 phase.
Filter:	Removable filter mat made from synthetic fibers are reusable and can be rinsed clean.
Refrigerants:	All models use environmentally friendly R134a.
Fans:	All blower motors are thermal protected and sealed with permanent lubricants.
Condensate Disposal:	Built in condensate evaporators are standard on most models. All units feature a condensate drain fitting complete with hose attachment.
Insulation:	Cold components, lines and evaporator compartment insulated for maximum efficiency and protection against condensation.
Quality Assurance:	Prior to charging, the refrigeration system is hermetically sealed with all joints brazed under protection gas atmosphere to exclude any internal scale. After a thorough leak test every unit undergoes safety and function checks, then is serialized and packed into sturdy boxes prior to shipment.
Installation Manuals:	Included with all models are detail drawings, mounting, schematic and wiring diagrams, a trouble shooting checklist and warranty information.

Product Summary
Side Mount Air Conditioners

Part No.	NEMA Protection	Rating BTU/H	Rated Voltage	Hz	Height	Width	Depth
DTS1200A115LG	12	1,200	115	60	13.00	14.76	7.48
DTS1200A230LG	12	1,200	230	50/60	13.00	14.76	7.48
DTS2000A115LG	12	2,000	115	60	17.52	12.40	10.04
DTS2000A230LG	12	2,000	230	50/60	17.52	12.40	10.04
DTS2000A115N4SS	4X	2,000	115	60	19.04	16.09	15.08
DTS2000A230N4SS	4X	2,000	230	60	19.04	16.09	15.08
DTI9031A115LG	12	2,500	115	60	22.12	12.20	13.90
DTI9031A230LG	12	2,500	230	50/60	22.12	12.20	13.90
DTS3500A115LG	12	3,500	115	60	36.00	15.35	7.87
DTS3500A230LG	12	3,500	230	50/60	36.00	15.35	7.87
DTS3141A115LG	12	4,000	115	60	29.46	15.55	9.38
DTS3161A115N3LG	3R/4	4,000	115	60	29.46	15.55	9.32
DTS3141A230LG	12	4,000	230	50/60	29.46	15.55	9.38
DTS3181A115N4SS	4X	4,000	115	60	29.46	15.55	9.32
DTS3161A230N3LG	3R/4	4,000	230	50/60	29.46	15.55	9.32
DTS3181A230N4SS	4X	4,000	230	50/60	29.46	15.55	9.32
DTS3241A115LG	12	7,500	115	60	47.61	15.55	10.65
DTS3261A115N3LG	3R/4	7,500	115	60	47.61	15.55	10.51
DTS3281A115N4SS	4X	7,500	115	60	47.61	15.55	10.51
DTS3141A230LG	12	7,500	230	50/60	47.61	15.55	10.65
DTS3261A230N3LG	3R/4	7,500	230	50/60	47.61	15.55	10.51
DTS3281A230N4SS	4X	7,500	230	50/60	47.61	15.55	10.51
DTS8000A115LG	12	8,000	115	60	53.15	15.63	10.63
DTS8000A230LG	12	8,000	230	50/60	53.15	15.63	10.63
DTS12000A115LG	12	12,000	115	60	53.15	15.63	10.63
DTS12000A230LG	12	12,000	230	50/60	53.15	15.63	10.63
DTS9841A460LG	12	16,000	460	60	60.98	19.09	14.17

A115 units can be operated 50 Hz at 110 V

Top Mount Air Conditioners

Part No.	NEMA Protection	Rating BTU/H	Rated Voltage	Hz	Height	Width	Depth
DTT4500A115LG	12	4,500	115	60	15.94	23.62	15.35
DTT4500A230LG	12	4,500	230	50/60	15.94	23.62	15.35

A115 units can be operated 50 Hz at 110 V and A460 units can be operated at 50Hz at 380V.

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Side Mounting DTS Series
1200 BTU/H

Climate Control

Description
- Designed for side mounting where hot spot cooling or low capacity cooling is required.
- Compact design uses minimal surface area.
- Closed loop cooling ensures air is recirculated without ever mixing with contaminated ambient air.

Standards
- Maintains NEMA 12 rating
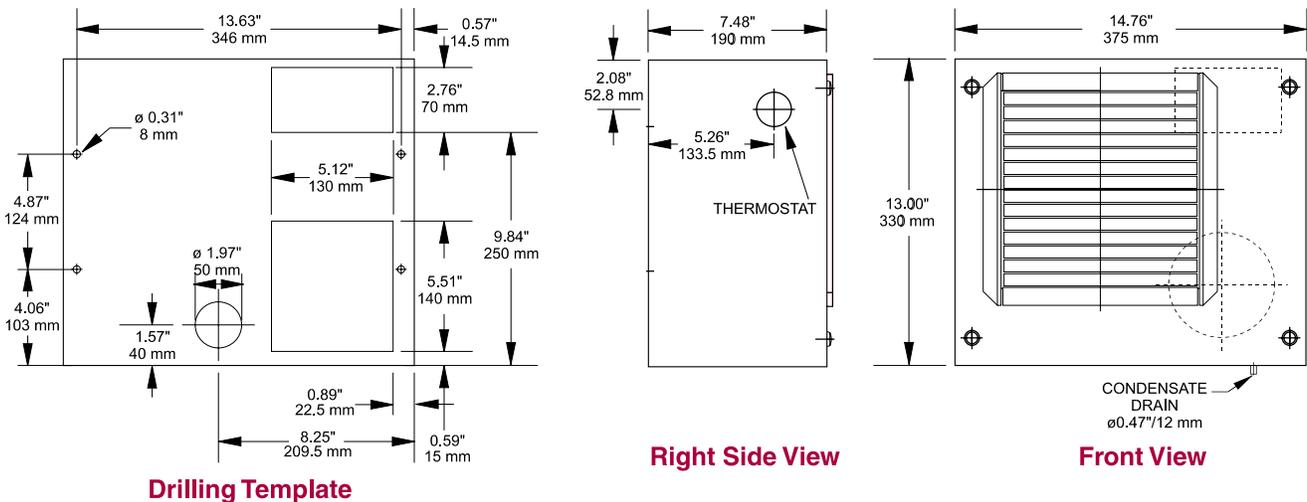- IP 54
- UR, cUR and CE

Features
- R134a refrigerant.
- Thermostat control.
- Continuous air circulation from high capacity fans.

- EMI/RFI suppression meets CE.
- Line cord with plug (115 V).
- Washable filter mat protected within an easily removable grill.
- Gasket, mounting kit and template for enclosure cutout and drilling are included.
- Condensate drain hose and clamp provided.
- Exterior case easily removable for field service.
- Q Mount allows unit to hang in place for easy installation.

Accessories
- Gaskets
- Replacement filters
- Replacement grill

Drilling Template

13.63" 346 mm
0.57" 14.5 mm
2.76" 70 mm
ø 0.31" 8 mm
5.12" 130 mm
4.87" 124 mm
ø 1.97" 50 mm
9.84" 250 mm
4.06" 103 mm
5.51" 140 mm
1.57" 40 mm
0.89" 22.5 mm
8.25" 209.5 mm
0.59" 15 mm

Right Side View

7.48" 190 mm
2.08" 52.8 mm
5.26" 133.5 mm
THERMOSTAT

Front View

14.76" 375 mm
13.00" 330 mm
CONDENSATE DRAIN ø0.47"/12 mm

Part Number	Ship Wt. lbs
DTS1200A115LG	42
DTS1200A230LG	42

Technical Data

Electrical Data	DTS1200A115LG	DTS1200A230LG
Rated Voltage	115 V 60 Hz	230 V 50/60 Hz
	110 V 50 Hz	
Range of Operation	103-127 V	207-253 V
Power Consumption	200 W	200 W
Running Amps	2.2 A	1.3 A
Starting Current	15.7 A	9.5 A
Line Cord	With plug	Without plug

Refrigeration Data	
Rated Capacity	1,200 BTU/H (350 Watts)
Type of Refrigerant	R134a
Refrigerant Charge	280 g
Adjustable Thermostat	Factory setting +95°F (+35°C)
Max. Ambient Air Temp.	+125°F (+52°C)
Min. Ambient Air Temp.	+46°F (+8°C)
Air Capacity (unrestricted)	Internal Circulation 106 CFM
	External Circulation 230 CFM
Condensate Discharge	Direct via tube
Filter Mat	150 g/m²
Db Noise Level	≤ 62 dB(A)
Unit Weight	40 lbs (18 kg)
Exterior Case	Galvanized sheet steel
Finish	RAL7035 light grey finish
NEMA Rating	Enclosures IP 54/NEMA 12

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Side Mounting DTS Series
2000 BTU/H

Description
• Compact design for side mounting on any enclosure surface where hot spot cooling or low capacity cooling is required.
• Closed loop cooling ensures clean enclosure air is recirculated without ever mixing with contaminated ambient air.

Standards
• Maintains enclosure's NEMA 12 rating
• IP 54
• UR, cUR and CE

Features
• R134a refrigerant.
• Thermostat control.
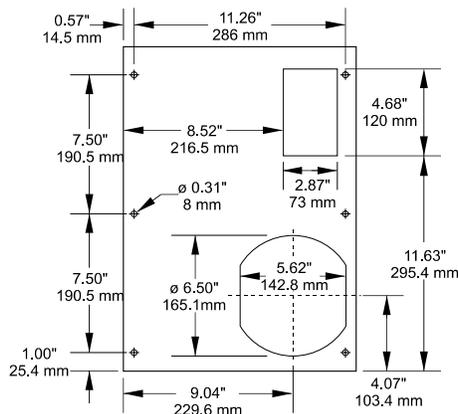• Line cord with plug (115 V).
• Washable filter mat protected within an easily removable grill.
• Expansion valve permits increased efficiency through improved evaporator heat transfer and less frequent compressor operation.
• Built in condensate evaporator.
• Continuous air circulation from high capacity fans.
• EMI/RFI suppression meets CE.
• Gasket, mounting kit and template for cutout and drilling are included.
• Condensate drain hose and clamp.
• Exterior case easily removable for field service.
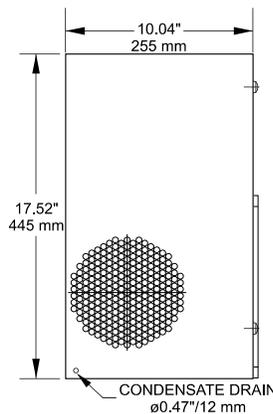• Q Mount allows unit to hang in place for easy installation.

Accessories
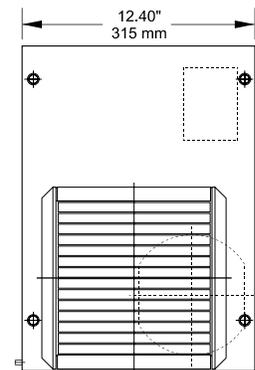• Gaskets
• Replacement filters
• Replacement grill

Drilling Template

Dimensions: 0.57" / 14.5 mm; 11.26" / 286 mm; 8.52" / 216.5 mm; ø 0.31" / 8 mm; 2.87" / 73 mm; 4.68" / 120 mm; 7.50" / 190.5 mm; 5.62" / 142.8 mm; ø 6.50" / 165.1mm; 11.63" / 295.4 mm; 7.50" / 190.5 mm; 1.00" / 25.4 mm; 9.04" / 229.6 mm; 4.07" / 103.4 mm

Left Side View

Dimensions: 10.04" / 255 mm; 17.52" / 445 mm; CONDENSATE DRAIN ø0.47"/12 mm

Front View

Dimensions: 12.40" / 315 mm

Part Number	Ship Wt. lbs
DTS2000A115LG	54
DTS2000A230LG	54

Technical Data

Electrical Data	DTS2000A115LG	DTS2000A230LG
Rated Voltage	115 V 60 Hz	230 V 50/60 Hz
	110 V 50 Hz	
Range of Operation	103-127 V	207-253 V
Power Consumption	270 W	230 W
Running Amps	2.9 A	1.3 A
Starting Current	13.8 A	7.4 A
Line Cord	With plug	Without plug

Refrigeration Data	
Rated Capacity	2,000 BTU/H (580 Watts)
Type of Refrigerant	R134a
Refrigerant Charge	300 g
Adjustable Thermostat	Factory setting +95°F (+35°C)
Max. Ambient Air Temp.	+125°F (+52°C)
Min. Ambient Air Temp.	+46°F (+8°C)
Air Capacity (unrestricted)	Internal Circulation 230 CFM
	External Circulation 230 CFM
Condensate Discharge	Condensate evaporator
Filter Mat	150 g/m²
Db Noise Level	$\leq$ 62 dB(A)
Unit Weight	51 lbs (23 kg)
Exterior Case	Galvanized sheet steel
Finish	RAL7035 light grey finish
NEMA Rating	Enclosures IP 54/NEMA 12

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Climate Control

Description
- Compact design for side mounting on any enclosure surface where hot spot or low capacity cooling is required.
- Closed loop cooling ensures clean enclosure air is recirculated without ever mixing with contaminated ambient air.

Standards
- Maintains enclosure's NEMA 12 rating
- IP 54
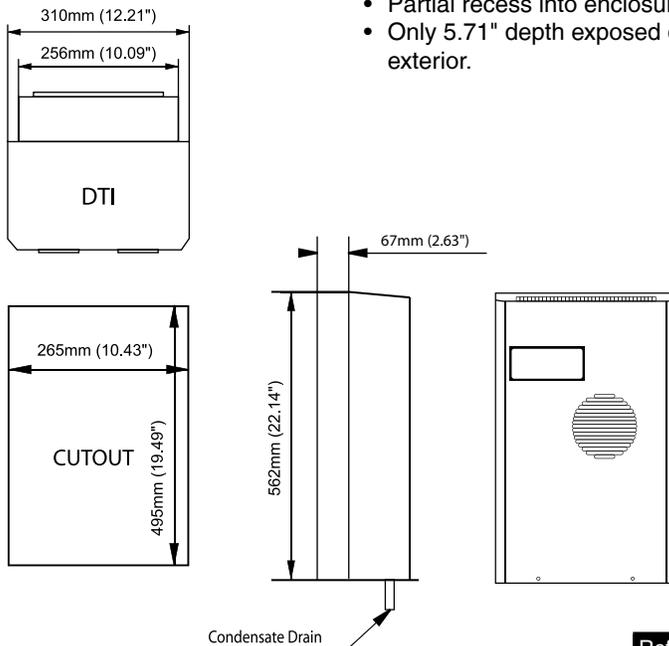- UR, cUR and CE

DTI Series Recessed Mount
- Partial recess into enclosure.
- Only 5.71" depth exposed on exterior.

Features
- R134a refrigerant.
- Thermostat control accessible from inside enclosure.
- Expansion valve increases efficiency with improved evaporator heat transfer and less frequent compressor operation.
- Direct condensate discharge via drain hose.
- Continuous air circulation from high capacity fans.
- EMI/RFI suppression meets CE.
- Self-diagnostics on startup.
- Fault indication via LED light.
- Door contact for power down when enclosure door is opened.
- Gasket, mounting kit and template for cutout and drilling are included.
- Condensate drain hose and clamp
- Partial recessed mounting
- Easy install with "Click & Fit" system

Accessories
- Gaskets
- Lifting lugs
- Remote door switch

310mm (12.21")
256mm (10.09")
DTI

265mm (10.43")
CUTOUT
495mm (19.49")

67mm (2.63")
562mm (22.14")

Condensate Drain

Part Number	Ship Wt. lbs
DTI9031A115LG	48
DTI9031A230LG	48

Technical Data

Electrical Data	DTI9031A115LG	DTI9031A230LG
Rated Voltage	115v 60 Hz	230v 50/60 Hz
	110v 50 Hz	
Range of Operation	103-127v	207-253v
Power Consumption	322 W	337 W
Running Amps	3.29 A	1.6 A
Starting Current	26.1 A	14.3 A
Line Cord	Terminal Block	Terminal Block

Refrigeration Data	
Rated Capacity	2500 BTU/H (585 Watts)
Type of Refrigerant	R134a
Refrigerant Charge	250 g
Adjustable Set Points	Factory setting +95°F (+35°C)
Max. Ambient Air Temp.	+131°F (+55°C)
Min. Ambient Air Temp.	+59°F (+15°C)
Air Capacity (unrestricted)	Internal Circulation 182 CFM
	External Circulation 203 CFM
Condensate Discharge	Condensate Drain
Filter Mat	Filterless
Db Noise Level	≤ 64 dB(A)
Unit Weight	46 lbs (21 kg)
Exterior Case	Galvanized sheet steel
Finish	RAL7035 light grey finish
NEMA Rating	Enclosures IP 54/NEMA 12

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Side Mounting DTS Series
3500 BTU/H

Description
- Compact design for side mounting on any enclosure surface where hot spot or low capacity cooling is required.
- Closed loop cooling ensures clean enclosure air is recirculated without ever mixing with contaminated ambient air.

Standards
- Maintains enclosure's NEMA 12 rating
- IP 54
- UR, cUR and CE

Features
- R134a refrigerant.
- Thermostat control.
- Expansion valve increases efficiency with improved evaporator heat transfer and less frequent compressor operation.
- Built in condensate evaporator.

- Continuous air circulation from high capacity fans.
- EMI/RFI suppression meets CE.
- Line cord with plug (115 V).
- Self-diagnostics on startup.
- Fault indication via LED light.
- Door contact for power down when enclosure door is opened.
- Washable filter mat protected within an easily removable grill.
- Gasket, mounting kit and template for cutout and drilling are included.
- Condensate drain hose and clamp.
- Exterior case easily removable for resetting thermostat and field service.
- Q Mount allows unit to hang in place for easy installation.

Accessories
- Gaskets
- Lifting lugs
- Remote door switch
- Replacement filters
- Replacement grill

Climate Control
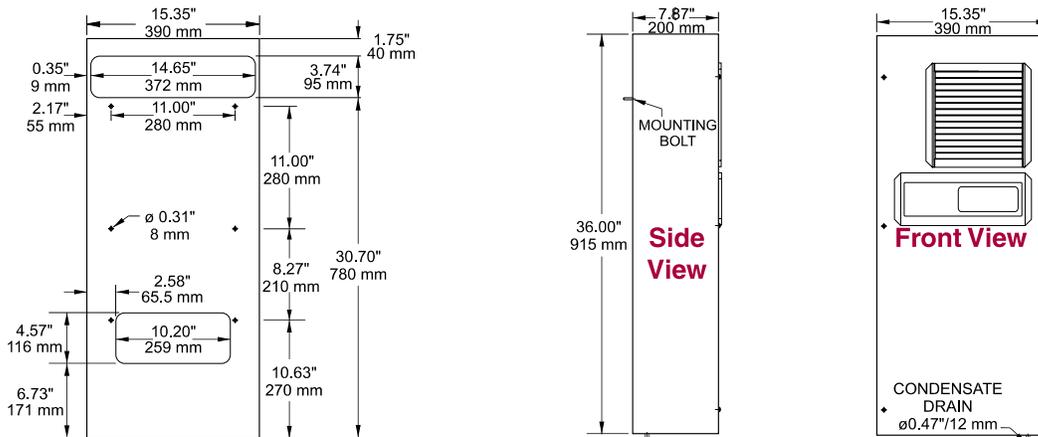
Drilling Template
Note: Any unmarked radius is ø 0.79"R

Side View

Front View

Part Number	Ship Wt. lbs
DTS3500A115LG	99
DTS3500A230LG	99

Technical Data

Electrical Data	DTS3500A115LG	DTS3500A230LG
Rated Voltage	115 V 60 Hz	230 V 50/60 Hz
	110 V 50 Hz	
Range of Operation	103-127 V	207-253 V
Power Consumption	590 W	550 W
Running Amps	6.7 A	2.9 A
Starting Current	17.5 A	8.3 A
Line Cord	With plug	Without plug

Refrigeration Data	
Rated Capacity	3,500 BTU/H (1,014 Watts)
Type of Refrigerant	R134a
Refrigerant Charge	480 g
Adjustable Set Points	Factory setting +95°F (+35°C)
Max. Ambient Air Temp.	+125°F (+52°C)
Min. Ambient Air Temp.	+46°F (+8°C)
Air Capacity (unrestricted)	Internal Circulation 247 CFM
	External Circulation 341 CFM
Condensate Discharge	Condensate evaporator
Filter Mat	150 g
Db Noise Level	≤ 64 dB(A)
Unit Weight	94 lbs (43 kg)
Exterior Case	Galvanized sheet steel
Finish	RAL7035 light grey finish
NEMA Rating	Enclosures IP 54/NEMA 12

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Side Mounting DTS Series
4000 & 7500 BTU/H

7500 BTU/H unit shown

Description
- Designed for side mounting on any enclosure surface where high capacity system cooling is required.
- Closed loop cooling ensures clean enclosure air is recirculated without ever mixing with contaminated ambient air.
- Optimum air circulation with maximum clearance distance between warm inlet and cold outlet for reduced hot spot locations.

Standards
- Maintains enclosure's NEMA 12 rating
- IP 54
- UR, cUR and CE

Features
- R134a refrigerant.
- Thermostat control accessible from inside enclosure.
- Hot gas bypass valve prevents evaporator freeze up while minimizing heavy inrush currents on large BTU/H units.
- Built in condensate evaporator.
- Continuous air circulation from high capacity fans.
- EMI/RFI suppression meets CE.
- Self-diagnostics on startup.
- Fault indication via LED light.
- Provision for door contact allowing power down when enclosure door is opened.
- Gasket, mounting kit and template for enclosure cutout and drilling are included.
- Condensate drain hose and clamp provided.
- Q Mount allows unit to hang in place for easy installation.

Accessories
- Gaskets
- Lifting lugs
- Remote door switch

Part Number	Ship Wt. lbs.
DTS3141A115LG	99
DTS3141A230LG	99
DTS3241A115LG	127
DTS3241A230LG	127

Technical Data

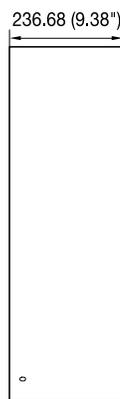| Electrical Data	DTS3141A115LG DTS3141A230LG	DTS3241A115LG DTS3241A230LG
Rated Voltage	115 V 60 Hz/ 230 V 50/60 Hz	115 V 60 Hz/ 230 V 50/60 Hz
Range of Operation	103-127 V/198-252 V	103-127 V/198-252 V
Power Consumption	950 W/860 W	1400 W/1400 W
Running Amps	7.2 A/4.0 A	14.6 A/6.3 A
Starting Current	17.1 A/9.3 A	26.8 A/16.5 A
Line Cord	Terminal Block	Terminal Block

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Side Mounting DTS Series
4000 & 7500 BTU/H

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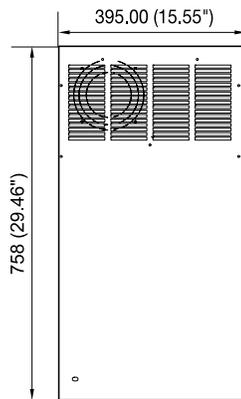
DTS 3141

Front View
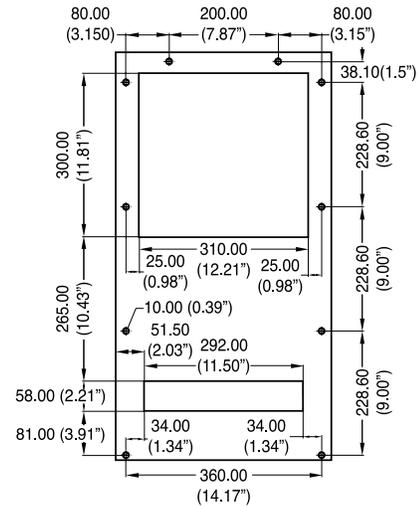
Side View

Drilling Template

DTS 3241
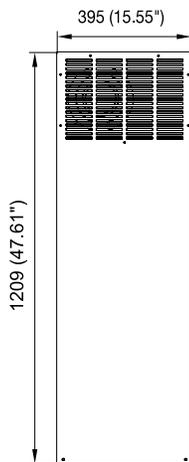
Front View

Side View
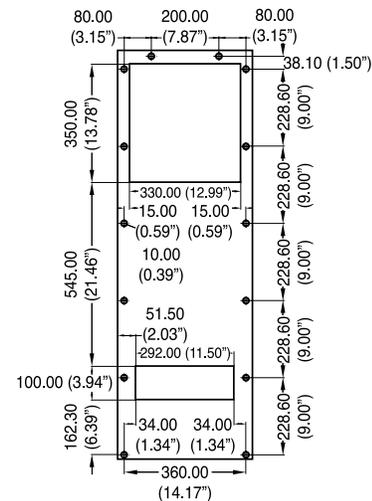
Drilling Template

Refrigeration Data	DTS3141A115/ 230LG	DTS3241A115/ A230LG
Rated Capacity	4,000 BTU/H (1,172 Watts)	7,500 BTU/H (2,197 Watts)
Type of Refrigeration	R134a	R134a
Refrigerant Charge	500 g	500 g
Adjustable Set Points	Factory setting +95°F (+35°C)	Factory setting +95°F (+35°C)
Max. Ambient Air Temp.	+125°F (+52°C)	+125°F (+52°C)
Min. Ambient Air Temp.	+46°F (+8°C)	+46°F (+8°C)
Air Capacity (unrestricted)	Internal Circulation 350 CFM External Circulation 350 CFM	Internal Circulation 580 CFM External Circulation 580 CFM
Condensate Discharge	Condensate Evaporator	Condensate Evaporator
Filter Mat	Filterless	Filterless
Db Noise Level	$\leq$ 70 dB(A)	$\leq$ 73 dB(A)
Unit Weight	80 lbs (36 kg)	101 lbs (46 kg)
Exterior Case	Galvanized sheet steel	Galvanized sheet steel
Color	RAL7035 Light Grey powder finish	RAL7035 Light Grey powder finish
NEMA Rating	Enclosures IP 54/NEMA 12	Enclosures IP 54/NEMA 12

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Side Mounting DTS Series
8000 & 12000 BTU/H

Climate Control

Description
• Designed for side mounting on any enclosure surface where high capacity system cooling is required.
• Closed loop cooling ensures clean enclosure air is recirculated without ever mixing with contaminated ambient air.
• Optimum air circulation with maximum clearance distance between warm inlet and cold outlet for reduced hot spot locations.

Standards
• Maintains enclosure's NEMA 12 rating
• IP 54
• UR, cUR and CE

Features
• R134a refrigerant.
• Thermostat control.
• Hot gas bypass valve prevents evaporator freeze up while minimizing heavy inrush currents on large BTU/H units.
• Built in condensate evaporator.
• Continuous air circulation from high capacity fans.
• EMI/RFI suppression meets CE.
• Self-diagnostics on startup.
• Fault indication via LED light.
• Provision for door contact allowing power down when enclosure door is opened.
• Gasket, mounting kit and template for enclosure cutout and drilling are included.
• Washable filtermat protected within an easily removable grill.
• Condensate drain hose and clamp provided.
• Q Mount allows unit to hang in place for easy installation.
• Versatile design maintains foot print for larger capacity units if required.

Accessories
• Gaskets
• Lifting lugs
• Remote door switch
• Replacement filters
• Replacement grill

Part Number	Ship Wt. lbs.
DTS8000A115LG	189
DTS8000A230LG	189
DTS12000A115LG	189
DTS12000A230LG	189

Technical Data

Electrical Data	DTS8000A115LG DTS8000A230LG	DTS12000A115LG DTS12000A230LG
Rated Voltage	115 V 60 Hz/ 230 V 50/60 Hz	115 V 60 Hz/ 230 V 50/60 Hz
Range of Operation	103-127 V/187-253 V	103-127 V/187-253 V
Power Consumption	2,100 W/1,800 W	2,300 W/2,000 W
Running Amps	21.0 A/12.5 A	21.0 A/12.5 A
Starting Current	52.0 A/46.2 A	52.0 A/46.2 A
Line Cord	8' Cord	8' Cord

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Quality Enclosures. Service Excellence.
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Side Mounting DTS Series
8000 & 12000 BTU/H

Climate Control

15.63" (397 mm)

10.63" (270 mm)

53.15" (1350 mm)

Condensation Drain Ø .47" (12mm)

13.00"
330 mm

ø0.39"
10 mm

ø0.39"
10 mm

16.60"
421.5 mm

11.61"
295 mm

13.19"
335 mm

2.07"
52.5 mm

15.35"
390 mm

13.00"
330 mm

1.38"
35 mm

34.76" / 883 mm

0.98"
25 mm

13.78"
350 mm

23.42"
595 mm

9.21"
234 mm

7.00"
177.5 mm

13.00"
330 mm

5.12"
130 mm

0.94"
24 mm

Front View

Side View

Drilling Template

Refrigeration Data	DTS8000A115LG DTS8000A230LG	DTS12000A115LG DTS12000A230LG
Rated Capacity	8,000 BTU/H (2,340 Watts)	12,000 BTU/H (3,500 Watts)
Type of Refrigeration	R134a	R134a
Refrigerant Charge	750 g	850 g
Adjustable Set Points	Factory setting +95°F (+35°C)	Factory setting +95°F (+35°C)
Max. Ambient Air Temp.	+125°F (+52°C)	+125°F (+52°C)
Min. Ambient Air Temp.	+46°F (+8°C)	+46°F (+8°C)
Air Capacity (unrestricted)	Internal Circulation 450 CFM External Circulation 589 CFM	Internal Circulation 530 CFM External Circulation 589 CFM
Condensate Discharge	Condensate Evaporator	Condensate Evaporator
Filter Mat	150 g/ m²	150 g/ m²
Db Noise Level	≤ 69 dB(A)	≤ 69 dB(A)
Unit Weight	160 lbs (72 kg)	165 lbs (75 kg)
Exterior Case	Galvanized sheet steel	Galvanized sheet steel
Color	RAL7035 Light Grey powder finish	RAL7035 Light Grey powder finish
NEMA Rating	Enclosures IP 54/NEMA 12	Enclosures IP 54/NEMA 12

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Side Mounting DTS Series
16,000 BTU/H

Description
- Designed for side mounting on any enclosure surface where high capacity system cooling is required.
- Closed loop cooling ensures clean enclosure air is recirculated without ever mixing with contaminated ambient air.

Standards
- Maintains enclosure's NEMA 12 rating
- IP 54
- UR, cUR and CE

Features
- R134a refrigerant.
- Thermostat control accessible from inside enclosure.
- Expansion valve increases efficiency with improved evaporator heat transfer and less frequent compressor operation.
- Direct condensate discharge via drain hose.
- Continuous air circulation from high capacity fans.
- EMI/RFI suppression meets CE.
- Self-diagnostics on startup.
- Fault indication via LED light.
- Door contact for power down when enclosure door is opened.
- Gasket, mounting kit and template for cutout and drilling are included.
- Condensate drain hose and clamp.

Accessories
- Gaskets
- Lifting lugs
- Remote door switch
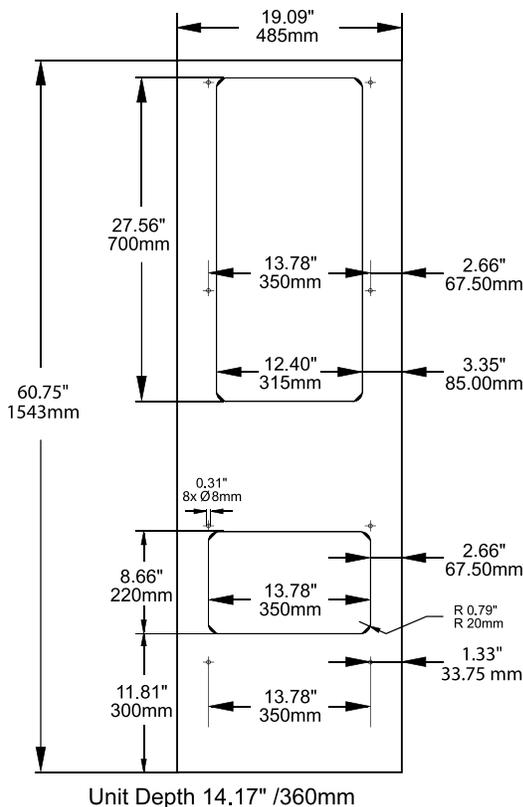
Part Number	Ship Wt. lbs
DTS9841A460LG	210

Technical Data

Electrical Data	DTS9841A460LG
Rated Voltage	460v 60Hz 3 phase
Range of Operation	380v 50Hz / 460v 60Hz
Power Consumption	1891W / 2336W
Running Amps	4.2A / 3.6A
Starting Current	28.3A / 25.2A
Line Cord	Terminal Block

Refrigeration Data	
Rated Capacity	16,000 BTU/H (4,000 Watts)
Type of Refrigerant	R134a
Refrigerant Charge	2,100 g
Adjustable Set Points	Factory setting +95°F (+35°C)
Max. Ambient Air Temp.	+131°F (+55°C)
Min. Ambient Air Temp.	+59°F (+15°C)
Air Capacity (unrestricted)	Internal Circulation 882 CFM
	External Circulation 1,076 CFM
Condensate Discharge	Condensate Drain
Filter Mat	Filterless
Db Noise Level	$\leq$ 70 dB(A)
Unit Weight	200 lbs (91 kg)
Exterior Case	Galvanized sheet steel
Finish	RAL7035 light grey finish
NEMA Rating	Enclosures IP 54/NEMA 12

Drilling Template

19.09" 485mm
27.56" 700mm
13.78" 350mm
2.66" 67.50mm
12.40" 315mm
3.35" 85.00mm
60.75" 1543mm
0.31" 8x Ø8mm
8.66" 220mm
13.78" 350mm
2.66" 67.50mm
R 0.79" R 20mm
1.33" 33.75 mm
11.81" 300mm
13.78" 350mm

Unit Depth 14.17" /360mm

Technical references and DXF downloads available at www.hammfg.com

All dimensions in inches unless specified otherwise
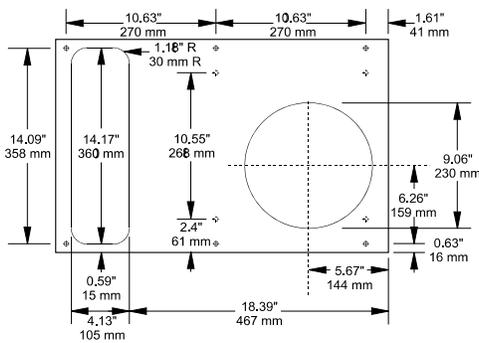
Top Mounting DTT Series
4500 BTU/H

Description
- Designed for top mounting where space limitations do not allow side mounting on the enclosure surface.
- Closed loop cooling ensures clean enclosure air is recirculated without ever mixing with contaminated ambient air.

Standards
- Maintains NEMA 12 rating
- IP 54
- UR, cUR, CE

Features
- R134a refrigerant.
- Thermostat control.
- Expansion valve increases efficiency with improved evaporator heat transfer and less frequent compressor operation.
- Built in condensate evaporator.
- Continuous air circulation from high capacity fans.
- EMI/RFI suppression meets CE.
- Line cord with plug (115 V).
- Washable filter mat protected within an easily removable grill.

- Gasket, mounting kit and template for cutout and drilling are included.
- Condensate drain hose and clamp.
- Volt free contact for high pressure failure.
- Exterior case easily removable for resetting thermostat and field service.
- Can accommodate crane hooks to assist installation.
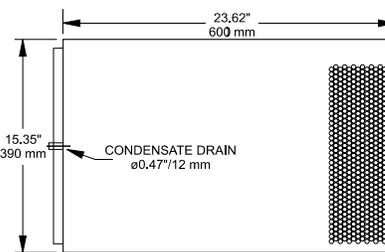- Versatile design maintains foot print through the series.

Accessories
- Gaskets
- Lifting lugs
- Remote door switch
- Replacement filters
- Replacement grill

Climate Control

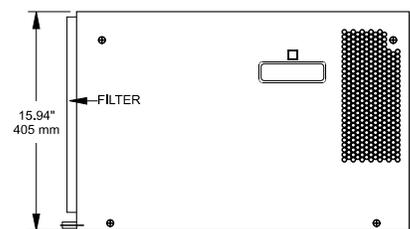Drilling for cabinets with 15.75" depth only.
Drilling Template

Top View

Side View

Part Number	Ship Wt. lbs.
DTT4500A115LG	95
DTT4500A230LG	95

Technical Data

Electrical Data	DTT4500A115LG	DTT4500A230LG
Rated Voltage	115 V 60 Hz 100 V 50 Hz	230V 50/60 Hz
Range of Operation	103-127 V	207-253 V
Power Consumption	630 W	840 W
Running Amps	7.7 A	5.2 A
Starting Current	24.9 A	18.5 A
Line Cord	With plug	Without plug

Refrigeration Data	
Rated Capacity	4,500 BTU/H (1,300 Watts)
Type of Refrigerant	R134a
Refrigerant Charge	480 g
Adjustable Thermostat	Factory setting +95°F (+35°C)
Max. Ambient Air Temp.	+125°F (+52°C)
Min. Ambient Air Temp.	+46°F (+8°C)
Air Capacity (unrestricted)	Internal Circulation 547 CFM External Circulation 547 CFM
Condensate Discharge	Condensate evaporator
Filter Mat	150 g/m²
Db Noise Level	≤ 66 dB(A)
Unit Weight	90 lbs (41 kg)
Exterior Case	Galvanized sheet steel
Color	RAL7035 beige powder finish
NEMA Rating	Enclosures IP 54/NEMA 12

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Air Conditioner Accessories

Neoprene Gasket Kit
• Replacement for standard supplied gasket.
• Self-adhesive cellular neoprene gasket.
• Supplied in 10 foot rolls, 0.19"x0.75".
• For side mount units greater than 3500 BTU/H, two gasket kits are required.

Part No.	1481DJ10

Replacement Grill
• Replacement grill for air conditioners.
• Packaged individually.

Black Part No.	RAL 7032 Beige Part No.	Use with Air Conditioner
PG3BK	PG3RAL	DTS1200 - DTS3500
PG5BK	PG5RAL	DTS8000 - DTS12000
n/a	AFF1	DTT4500

Replacement Filters
• Packaged in quantities of 5.
• Made of synthetic fibers.
• Re-usable up to 20 times.
• 100% resistant to humidity.
• Filters have a mass filtering level of 67%.

Part No.		Dimensions A	B	Use With Air Conditioner	Filter Density (g/m²)
DTSF3150	inch	8.30	8.30	DTS1200 - DTS6000	150
	mm	210	210		
DTSF5150	inch	11.00	11.00	DTS8000 - DTS12000	150
	mm	280	280		
DTTF5150	inch	11.81	11.81	DTT4500	150
	mm	300	300		

Remote Door Switch
• Permits convenient door activated on-off function of air conditioners. Mounts to flange of any Hammond enclosure.
• Can be wired normally open or normally closed.
• 115/230 V AC

Part No.	FLKDS

Hardware Included

Lifting Lugs
• Packaged in quantities of 2.
• Used for lifting, transporting and installation of air conditioners.
• 8 mm diameter.
• For use with DTS3500 - DTS12000 and DTT4500.

Part No.	LL8

Water Condensate Evaporator

Part No.	KVDTX

Technical Data	
Max. Water Volume	13.5 oz (400 ml)
Evaporation Rate	3.4 oz/hr (100 ml/hr)
Electrical Data	
Voltage(s)	230v /115v
Frequency	50/60 Hz
Voltage Range	100-240v
Max. Power	125 W
Power Range	20-110 W
Nominal Current	0.5 A (230v) / 0.8 A (115v)
Starting Current	1.3 A
Zero Water Current	0.09 A (230v) / 0.18 A (115v)
Mechanical Data	
Height x Width x Depth	3.35" x 10.35" x 4.00" (85 x 263 x 102 mm)
Finish	Stainless Steel
Weight	2.6 lbs (1.175 Kg)

• High performance evaporation kit
• Easy to retrofit on any cooling unit

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Side Mounting DTS Series - NEMA 3R, 4, 4X
2000 BTU/H - Stainless Steel

Climate Control

Description
- Compact design for side mounting on any enclosure surface where spot cooling or low capacity cooling is required.
- Closed loop cooling ensures clean enclosure air is recirculated without ever mixing with contaminated ambient air.
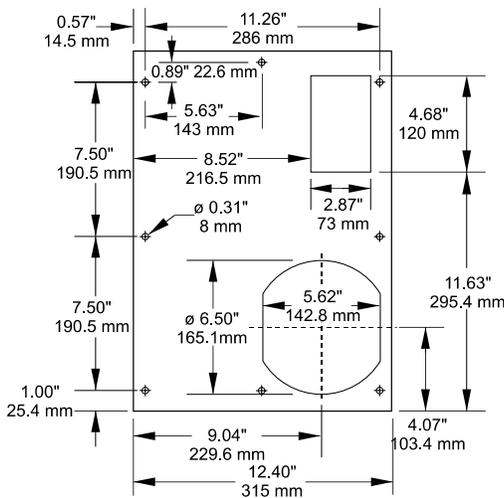- Ideal for outdoor or very wet conditions.

Standards
- UR, cUR, and CE
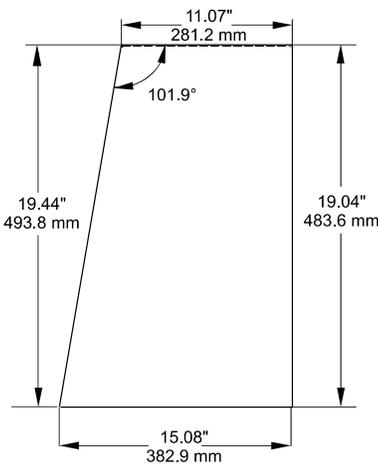- Complies with
  - NEMA 3R, 4, 4X

Features
- Stainless steel body.
- R134a refrigerant.
- Thermostat control.
- Line cord with plug (115 V).
- Aluminum filter for easy cleaning.
- Expansion valve permits increased efficiency through improved evaporator heat transfer and less frequent compressor operation.
- Built in condensate evaporator.
- Continuous air circulation from high capacity fans.
- EMI/RFI suppression meets CE standard.
- Gasket, mounting kit, and template for cutout and drilling are included.
- Condensate drain hose and clamp.
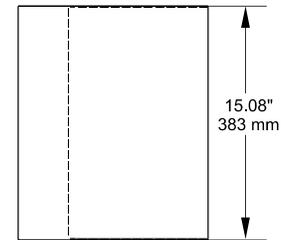- Q Mount allows unit to hang in place for easy installation.

Drilling Template

0.57" / 14.5 mm
11.26" / 286 mm
0.89" 22.6 mm
5.63" / 143 mm
4.68" / 120 mm
7.50" / 190.5 mm
8.52" / 216.5 mm
ø 0.31" / 8 mm
2.87" / 73 mm
7.50" / 190.5 mm
ø 6.50" / 165.1mm
5.62" / 142.8 mm
11.63" / 295.4 mm
1.00" / 25.4 mm
9.04" / 229.6 mm
4.07" / 103.4 mm
12.40" / 315 mm

Side View

11.07" / 281.2 mm
101.9°
19.44" / 493.8 mm
19.04" / 483.6 mm
15.08" / 382.9 mm

Top View

15.08" / 383 mm
Enclosure Side

Part Number	Ship Wt. lbs.
DTS2000A115N4SS	75
DTS2000A230N4SS	75

Technical Data

Electrical Data	DTS2000A115N4SS	DTS2000A230N4SS
Rated Voltage	115 V 60 Hz 110 V 50 Hz	230 V 50/60 Hz
Range of Operation	103-127 V	198-253 V
Power Consumption	230 W	230 W
Running Amps	2.9 A	1.3 A
Starting Current	13.8 A	7.4 A
Line Cord	With plug	Without plug

Refrigeration Data	
Rated Capacity	2,000 BTU/H (580 Watts)
Type of Refrigerant	R134a
Refrigerant Charge	300 g
Adjustable Thermostat	Factory setting +95°F (+35°C)
Max. Ambient Air Temp.	+125°F (+52°C)
Min. Ambient Air Temp.	+46°F (+8°C)
Air Capacity (unrestricted)	Internal Circulation 230 CFM
	External Circulation 230 CFM
Condensate Discharge	Condensate evaporator
Filter Mat	Aluminum metal mesh
Db Noise Level	≤ 62 dB(A)
Unit Weight	72 lbs (33 kg)
Exterior Case	304 Stainless steel
Color	Polish #3
NEMA Rating	3R, 4, 4X

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Side Mounting DTS Series - NEMA 3R, 4
4000 & 7500 BTU/H

Climate Control

4000 BTU/H Shown

Description
- Designed for side mounting on any enclosure surface where high capacity system cooling is required.
- Closed loop cooling ensures clean enclosure air is recirculated without ever mixing with contaminated ambient air.
- Optimum air circulation with maximum clearance distance between warm inlet and cold outlet for reduced hot spot locations.

Standards
- UR, cUR, and CE
- Complies with
  - NEMA 3R, 4

Features
- R134a refrigerant.
- Thermostat control accessible from inside enclosure.
- Expansion valve prevents evaporator freeze up while minimizing heavy inrush currents on large BTU/H units.
- Built in condensate evaporator.
- Continuous air circulation from high capacity fans.
- EMI/RFI suppression meets CE.
- Self-diagnostics on startup.
- Fault indication via LED light.
- Provision for door contact allowing power down when enclosure door is opened.
- Gasket, mounting kit and template for enclosure cutout and drilling are included.
- Condensate drain hose and clamp provided.
- Q Mount allows unit to hang in place for easy installation. Nema 3R/4 exterior galvanized sheet steel with powdercoat finish.

Accessories
- Gaskets
- Lifting lugs
- Remote door switch

Part Number	Ship Wt. lbs.
DTS3161A115N3LG	104
DTS3161A230N3LG	104
DTS3261A115N3LG	129
DTS3261A230N3LG	129

Technical Data

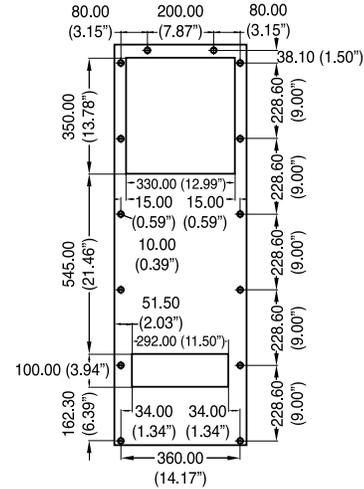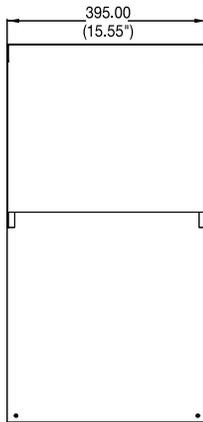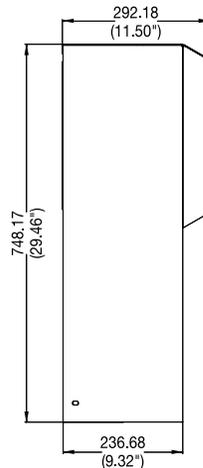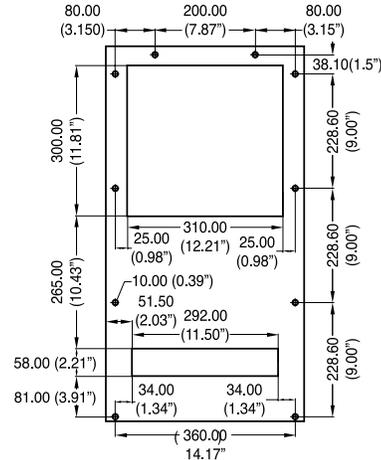| Electrical Data	DTS3161A115N3LG	DTS3161A230N3LG	DTS3261A115N3LG	DTS3261A230N3LG
Rated Voltage	115 V 60 Hz	230 V 50/60 Hz	115 V 60 Hz	230 V 50/60 Hz
Range of Operation	103-127 V	198-252 V	103-127 V	198-252 V
Power Consumption	950 W	860 W	1800 W	1800 W
Running Amps	7.2 A	4 A	14.6 A	6.3 A
Starting Current	17.1 A	9.3 A	26.8 A	16.5 A
Line Cord	Terminal Block	Terminal Block	Terminal Block	Terminal Block

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Side Mounting DTS Series - NEMA 3R, 4
4000 & 7500 BTU/H

Climate Control

DTS 3261

395.00 (15.55")

1209.40 (47.61")

Front View

324 (12.77")

270 (10.65")

Side View

80.00 (3.15")   200.00 (7.87")   80.00 (3.15")

38.10 (1.50")

350.00 (13.78")

228.60 (9.00")
228.60 (9.00")
228.60 (9.00")

330.00 (12.99")
15.00 (0.59")   15.00 (0.59")
10.00 (0.39")

545.00 (21.46")

51.50 (2.03")
292.00 (11.50")

228.60 (9.00")

100.00 (3.94")

162.30 (6.39")

34.00 (1.34")   34.00 (1.34")

228.60 (9.00")

360.00 (14.17")

Drilling Template

DTS 3262

395.00 (15.55")

748.17 (29.46")

Front View

292.18 (11.50")

236.68 (9.32")

Side View

80.00 (3.150)   200.00 (7.87")   80.00 (3.15")

38.10(1.5")

300.00 (11.81")

228.60 (9.00")
228.60 (9.00")

265.00 (10.43")

25.00 (0.98")   310.00 (12.21")   25.00 (0.98")

10.00 (0.39")
51.50 (2.03")   292.00 (11.50")

58.00 (2.21")
81.00 (3.91")

34.00 (1.34")   34.00 (1.34")

228.60 (9.00")

360.00 14.17"

Drilling Template

Refrigeration Data	DTS3161A115/230N3LG	DTS3261A115/230N3LG
Rated Capacity	4,000 BTU/H (1,172 Watts)	7,500 BTU/H (2,197 Watts)
Type of Refrigeration	R134a	R134a
Refrigerant Charge	500 g	500 g
Adjustable Thermostat	Factory setting +95°F (+35°C)	Factory setting +95°F (+35°C)
Max. Ambient Air Temp.	+125°F (+52°C)	+125°F (+52°C)
Min. Ambient Air Temp.	+46°F (+8°C)	+46°F (+8°C)
Air Capacity (unrestricted)	Internal Circulation 350 CFM External Circulation 350 CFM	Internal Circulation 580 CFM External Circulation 580 CFM
Condensate Discharge	Condensate Evaporator	Condensate evaporator
Filter Mat	150 g/m²	150 g/m²
Db Noise Level	≤ 70 dB(A)	≤ 73 dB(A)
Unit Weight	84 lbs (38 kg)	120 lbs (46 kg)
Exterior Case	Galvanized Steel Powdercoat Finish	Galvanized Steel Powdercoat Finish
Color	RAL7035 Light Grey powder finish (LG)	RAL7035 Light Grey powder finish (LG)
NEMA Rating	Enclosures IP56 /NEMA 3R/4	Enclosures IP56 /NEMA 3R/4

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Side Mounting DTS Series - NEMA 3R, 4, 4X
4000 & 7500 BTU/H - Stainless Steel

Climate Control

Light Grey 4000 BTU/H Shown

Description
- Designed for side mounting on any enclosure surface where high capacity system cooling is required.
- Closed loop cooling ensures clean enclosure air is recirculated without ever mixing with contaminated ambient air.
- Optimum air circulation with

maximum clearance distance between warm inlet and cold outlet for reduced hot spot locations.

Standards
- UR, cUR, and CE
- Complies with
  - NEMA 3R, 4, 4X

Features
- R134a refrigerant.
- Thermostat control accessible from inside enclosure.
- Expansion valve prevents evaporator freeze up while minimizing heavy inrush currents on large BTU/H units.

- Built in condensate evaporator.
- Continuous air circulation from high capacity fans.
- EMI/RFI suppression meets CE.
- Self-diagnostics on startup.
- Fault indication via LED light.
- Provision for door contact allowing power down when enclosure door is opened.
- Gasket, mounting kit and template for enclosure cutout and drilling are included.
- Condensate drain hose and clamp provided.
- Q Mount allows unit to hang in place for easy installation.
- Nema 4/4x exterior 304 stainless steel.

Accessories
- Gaskets
- Lifting lugs
- Remote door switch

Part Number	Ship Wt. lbs.
DTS3181A115N4SS	107
DTS3181A230N4SS	107
DTS3281A115N4SS	144
DTS3281A230N4SS	144

Technical Data

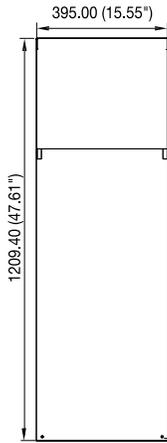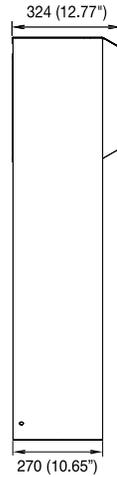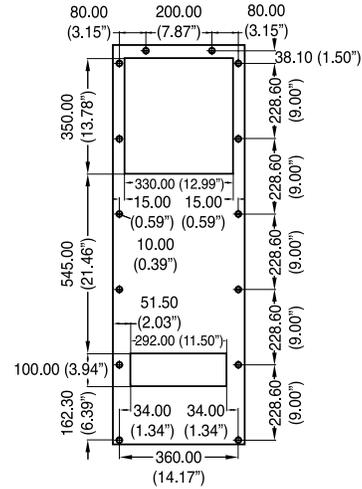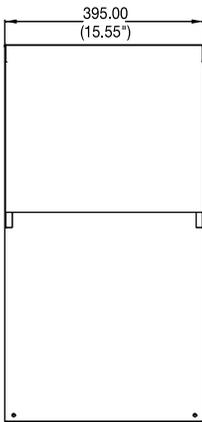| Electrical Data	DTS3181A115N4SS	DTS3181A230N4SS	DTS3281A115N4SS	DTS3281A230N4SS
Rated Voltage	115 V 60 Hz	230 V 50/60 Hz	115 V 60 Hz	230 V 50/60 Hz
Range of Operation	103-127 V	198-252 V	103-127 V	198-252 V
Power Consumption	950 W	860 W	1800 W	1800 W
Running Amps	7.2 A	4 A	14.6 A	6.3 A
Starting Current	17.1 A	9.3 A	26.8 A	16.5 A
Line Cord	Terminal Block	Terminal Block	Terminal Block	Terminal Block

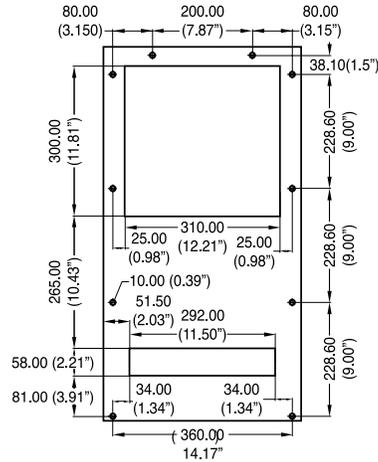Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Side Mounting DTS Series - NEMA 3R, 4, 4X
4000 & 7500 BTU/H - Stainless Steel

DTS3281

395.00 (15.55")

1209.40 (47.61")

Front View

324 (12.77")

270 (10.65")

Side View

80.00 (3.15") 200.00 (7.87") 80.00 (3.15")
38.10 (1.50")
350.00 (13.78")
228.60 (9.00")
228.60 (9.00")
545.00 (21.46")
330.00 (12.99")
15.00 (0.59") 15.00 (0.59")
228.60 (9.00")
10.00 (0.39")
51.50 (2.03")
292.00 (11.50")
228.60 (9.00")
100.00 (3.94")
162.30 (6.39")
228.60 (9.00")
34.00 (1.34") 34.00 (1.34")
360.00 (14.17")

Drilling Template

DTS3281

395.00 (15.55")

748.17 (29.46")

Front View

292.18 (11.50")

236.68 (9.32")

Side View

80.00 (3.150) 200.00 (7.87") 80.00 (3.15")
38.10(1.5")
300.00 (11.81")
228.60 (9.00")
228.60 (9.00")
265.00 (10.43")
25.00 (0.98") 310.00 (12.21") 25.00 (0.98")
10.00 (0.39")
51.50 (2.03") 292.00 (11.50")
58.00 (2.21")
81.00 (3.91")
34.00 (1.34") 34.00 (1.34")
228.60 (9.00")
360.00 14.17"

Drilling Template

Refrigeration Data	DTS3181A115/230N4SS	DTS3281A115/230N4SS
Rated Capacity	4,000 BTU/H (1,172 Watts)	7,500 BTU/H (2,197 Watts)
Type of Refrigeration	R134a	R134a
Refrigerant Charge	500 g	500 g
Adjustable Thermostat	Factory setting +95°F (+35°C)	Factory setting +95°F (+35°C)
Max. Ambient Air Temp.	+125°F (+52°C)	+125°F (+52°C)
Min. Ambient Air Temp.	+46°F (+8°C)	+46°F (+8°C)
Air Capacity (unrestricted)	Internal Circulation 350 CFM External Circulation 350 CFM	Internal Circulation 580 CFM External Circulation 580 CFM
Condensate Discharge	Condensate Evaporator	Condensate evaporator
Filter Mat	150 g/m²	150 g/m²
Db Noise Level	≤ 70 dB(A)	≤ 73 dB(A)
Unit Weight	84 lbs (38 kg)	120 lbs (46 kg)
Exterior Case	304 Stainles Steel	304 Stainless Steel
Color	Natural	Natural
NEMA Rating	Enclosures IP56 /NEMA 3R/4x	Enclosures IP56 /NEMA 3R/4x

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Blowers and Fans
General Selection Considerations

Climate Control

General Specifications

All Hammond blowers and filter fans are engineered for performance and built for reliability. This versatile line includes a blower, fan tray and filter fans.

Blowers and fans use forced convection cooling, which means ambient air flows through a filter into the enclosure to cool heated components. Both blowers and fans are sized in CFM (cubic feet per minute).
It is recommended that an exhaust filter be used in combination with the blower or filter fan to act both as an exhaust point for the hot internal air plus aid in the pressurization of the enclosure, reducing the chance of unfiltered air entering the enclosure. Whenever possible, the blower or filter fan should be located in the bottom third of the enclosure and the filtered exhaust grill placed as high as possible on the opposing side. Performance levels can be further increased by adding a second exhaust filter.

Sizing Blowers and Fans

To determine the CFM (cubic feet per minute) required in any standard situation, use the following calculation,
(non-standard situations would consist of high air density - significantly more than 0.075 lbs per cubic foot.)

$$CFM = \frac{\text{Power to be dissipated (Watts) x 3.17}}{\text{Maximum Allowable Internal Temperature (°F) - Maximum Ambient Temperature (°F)}}$$

Note - The calculation above is exact, but adding an additional 25% to the CFM level is a standard safety factor.

If the air density is high (significantly more than 0.075 lbs per cubic foot), use the number calculated above in the following formula:

$$\frac{\text{CFM x (0.075)}}{\text{Non-standard Air Density (lbs per cubic foot)}}$$

Note: Ambient Temperature must be lower than maximum internal temperature for fan/blower to be effective.

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Packaged Twin Blowers
160 to 470 CFM

Climate Control

Description
- Each contains a quadruplex centrifugal blower powered by a single precision ball-bearing motor.
- These widely-used Packaged Twin Blowers deliver air from more than 50% of their 17" width.
- Internal neoprene isolation mounts reduce transmission of vibration to the enclosure.
- Can be mounted on panel rails or into a cutout in an enclosure.
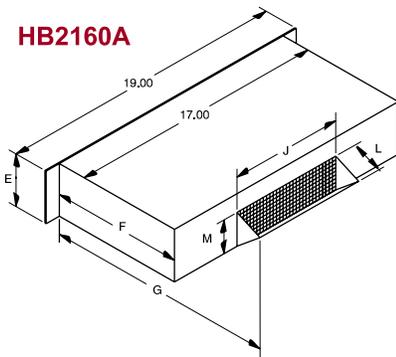
Features
- Capacities: 160 to 470 CFM.
- Heavy-gauge steel enclosures with EIA-notched flanges for rail mounting.
- Attractive 19 inch stainless steel grills.
- UR/CSA approved ball-bearing motors.
- Inlet air cools motor for longer life.
- Permanent filters.
- Exhaust guards included.
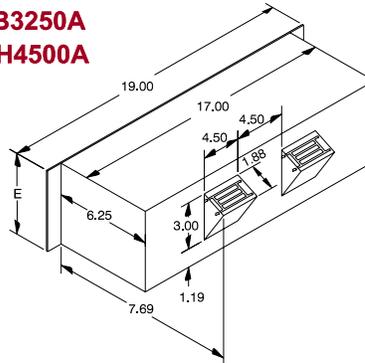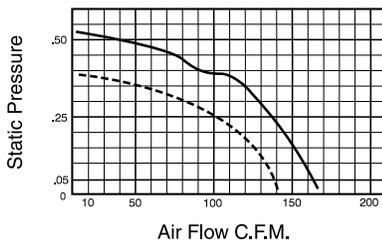- Six foot (minimum) SJTW 3-wire cord.

Accessories
- Filter coat

HB2160A

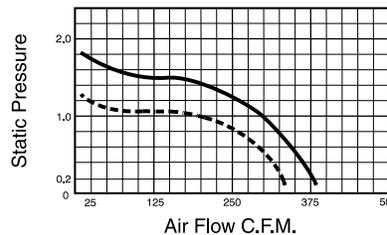**HB3250A & H4500A**

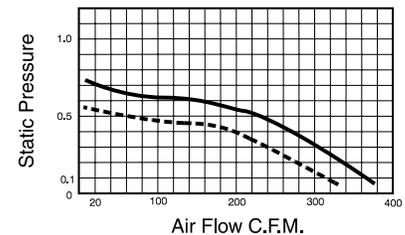### HB2160A
HB3250A
HB4500A

Static Pressure / Air Flow C.F.M.

50 Hz
60 Hz

Part No.	Free Flow Air Delivery (CFM)	RPM Nominal	Min. F	Max. F	Panel Height Units	E	F	G	H	J	K	L	M	N	Ship Wt.lbs
HB2160A	160	1500	-20	250	2	3.50	8.75	10.50	-	7.50	-	2.25	2.25	-	10
HB3250A	300	3000	-20	250	3	5.25	6.25	7.69	4.50	4.50	0.63	1.88	3.00	1.19	18
HB4500A	470	3250	-20	250	4	7.00	8.25	10.25	4.63	4.75	1.00	2.50	4.00	1.44	23

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

PF Filter Fans

Climate Control

PF3000 and PF2000

Description
- This line of fans provides innovative technology for fan cooling and pressurizing of industrial cabinets. A high quality filter fan provides an economical method of ensuring your enclosure does not overheat.
- Filtered passive ventilation can be provided by an exhaust filter for either convection cooling or in combination with a fan in forced air cooling.
- The slim-line design of this fan line is unique, when installed, the front louvered grill protrudes less than one quarter inch. The attractive grill maintains the sleek aesthetics of an enclosure system.

Standards
- UR, CUR and CE.
- Built to IP54 standards (except PF1000/PFA1000 - IP43 standards).
- Maintains NEMA 12 integrity of enclosure.
- Fan CSA Listed.

Features
- Available in 115V and 230V versions
- High performance fan motors with finger guards.
- ABS-FR grills (except PF1000 Series which is polystyrene FR).
- Durable, reusable filter mat.
- Grills are black allowing for a complementary match to all cabinet colors.
- Integral gasket to seal against enclosure. (except PF1000 - use PFG1000)

Easy Installation
- The patented "Click and Fit" system allows for rapid filter fan and exhaust filter installation without screws.
- After using the convenient cutout template (provided with every unit), the fan and/or exhaust filter just snaps into the opening.

Options
- Reverse flow (exhaust) ovailable on 5,6,7000 models

Accessories
- Exhaust filters
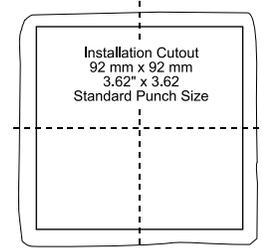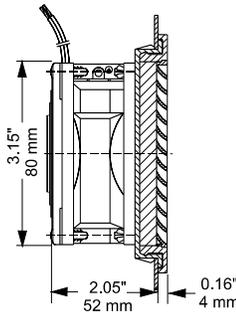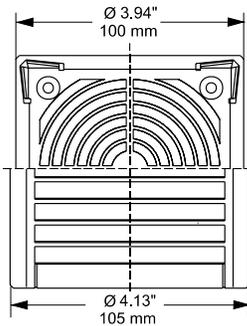- Replacement grills
- Replacement filters

Part No.	Voltage	Free Flow Air Delivery (CFM)	Air Delivery w/Exhaust (CFM)	Max. Static Pressure (Pa)	Filter Density (g/m^2)	Filtering Level	Sound Level (dB)	Connector Type	Ambient Temp. °F Max/Min	Comparable IP Standard	Ship Wt. lbs
PF1000	115	16	10	29	150	73%	39	2 - 12" wires	140/14	IP43	1.5
PF2000	115	38	28	69	150	73%	49	terminal strip	122/14	IP54	2
PF2500	115	89	62	57	150	73%	55	terminal strip	122/14	IP54	4
PF3000	115	169	142	89	150	73%	55	terminal strip	122/14	IP54	4
PF5000	115	324	249	205	150	73%	69	terminal strip	122/14	IP54	7
PF6000	115	410	295	225	150	73%	71	terminal strip	122/14	IP54	8
PF7000	115	506	368	158	150	73%	72	terminal strip	122/14	IP54	8
PF1000230	230	16	10	29	150	73%	39	2 - 12" wires	140/14	IP43	1.5
PF2000230	230	38	28	69	150	73%	49	terminal strip	122/14	IP54	2
PF2500230	230	89	62	57	150	73%	55	terminal strip	122/14	IP54	4
PF3000230	230	169	142	89	150	73%	55	terminal strip	122/14	IP54	4
PF5000230	230	324	249	205	150	73%	69	terminal strip	122/14	IP54	7
PF6000230	230	410	295	225	150	73%	71	terminal strip	122/14	IP54	8
PF7000230	230	506	368	158	150	73%	72	terminal strip	122/14	IP54	8

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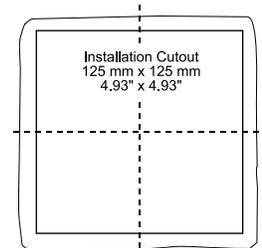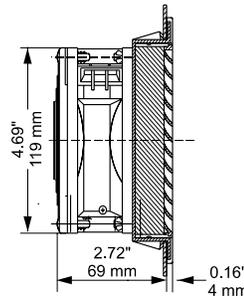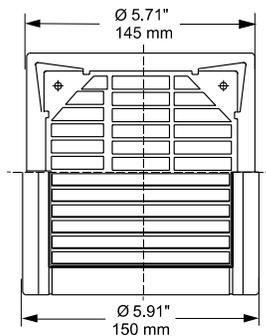
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HAMMOND MANUFACTURING™
ENCLOSURES

Climate Control

Mechanical Data:
PF 1000

Ø 3.94"
100 mm

Ø 4.13"
105 mm

3.15"
80 mm

2.05"
52 mm

0.16"
4 mm
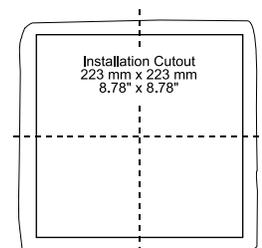
Installation Cutout
92 mm x 92 mm
3.62" x 3.62
Standard Punch Size

Installation Cutout

PF 2000

Ø 5.71"
145 mm

Ø 5.91"
150 mm

4.69"
119 mm

2.72"
69 mm

0.16"
4 mm
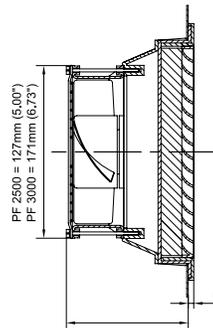
Installation Cutout
125 mm x 125 mm
4.93" x 4.93"

Installation Cutout

PF 2500 & 3000

Ø 9.65"
245 mm

Ø 9.84"
250 mm

PF 2500 = 127mm (5.00")
PF 3000 = 171mm (6.73")

6

PF 2500 = 111mm (4.37")
PF 3000 = 121mm (4.76")

Installation Cutout
223 mm x 223 mm
8.78" x 8.78"
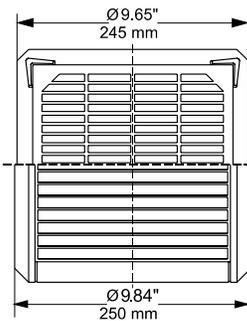
Installation Cutout

PF 5000, 6000 & 7000

Ø 12.52
318 mm

Ø 12.80
325 mm

PF 5000 = 202mm (7.95")
PF 6000 = 258mm (10.16")
PF 7000 = 282mm (11.10")

6

PF 5000 = 157mm (6.18")
PF 6000 = 158mm (6.22")
PF 7000 = 125mm (4.93")

Installation Cutout
291 mm x 291 mm
11.47" x 11.47"
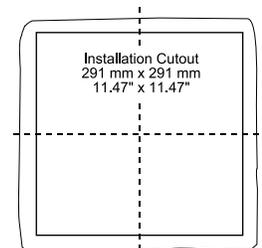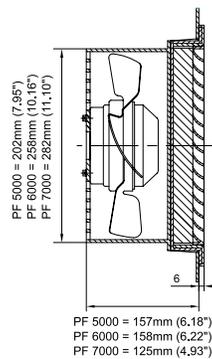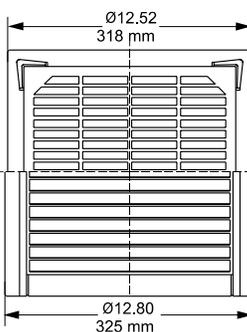
Installation Cutout

Note: All cutout tolerances +1/- 0 mm

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Fan Accessories

Exhaust Filters
- Built to IP54 standards (except PFA1000 - IP43 standards).
- ABS-FR grills (except PF1000 Series which is polystyrene FR).
- Self-extinguishing, re-usable filter mat.
- Grills are black to complement all cabinet colors.
- Grills also available (see below)
- Integral gasket seals against enclosure.

Part No.	Filter Density (g/m^2)	Filtering Level	Comparable IP Standard
PFA1000	150	73%	IP43
PFA2000	150	73%	IP54
PFA3000	150	73%	IP54
PFA5000	150	73%	IP54

Replacement Grill
- Packaged individually.
- Consists of replacement grill only.

Black Part No.	RAL7032 Beige Part No.	Use With Filter Fan	Use With Exhaust Filter
PG1BK	PG1RAL	PF1000	PFA1000
PG2BK	PG2RAL	PF2000	PFA2000
PG3BK	PG3RAL	PF2500/PF3000	PFA3000
PG5BK	PG5RAL	PF5000/PF6000/PF7000	PFA5000

Replacement Filters
- Packaged in quantities of 5.
- Made of self-extinguishing synthetic fibers.

Part No.		Dimensions A	B	Use With Filter Fan	Filter Density (g/m^2)
PFF1000	inch	3.40	3.40	PF1000	150
	mm	85	85		
PFF2000	inch	4.50	4.50	PF2000	350
	mm	115	115		
PFF3000	inch	8.30	8.30	PF2500/PF3000	350
	mm	210	210		
PFF5000	inch	11.00	11.00	PF5000/PF6000/PF7000	350
	mm	280	280		

Call Hammond for other Cooling Solutions….
- Intergral Door Air Conditioners
- Air/Water Heat Exchangers
- Custom Air/Air Heat Exchangers
- EMC Filter Fans
- other customer cooling solutions through our knowlegeable Pfannenberg experts

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Climate Control

Climate Control

Applications

- NEMA 3R / Outdoor Rainhoods Standard Filterfans
- Fits sizes PF 2000, PF 25/3000 & PF 5/6/7000 Units
- 304 Stainless Steel Design for use on Washdown NEMA 4X enclosures
- Due to dust protection regulations, NEMA 4/4X rating on these systems is not possible.
- Gasket and sealing washers included.

Part No.	Goes With	Color
PFRH2000LG	PF/PFA2000	RAL7035
PFRH2000GY	PF/PFA2000	ASA61 Grey
PFRH2000SS	PF/PFA2000	304 Stainless Steel
PFRH3000LG	PF/PFA2500/3000	RAL7035
PFRH3000GY	PF/PFA2500/3000	ASA61 Grey
PFRH3000SS	PF/PFA2500/3000	304 Stainless Steel
PFRH5000LG	PF/PFA5000/6000/7000	RAL7035
PFRH5000GY	PF/PFA5000/6000/7000	ASA61 Grey
PFRH5000SS	PF/PFA5000/6000/7000	304 Stainless Steel

FILTER FAN CUT OUT
G x G

.375" hex hole X(9)
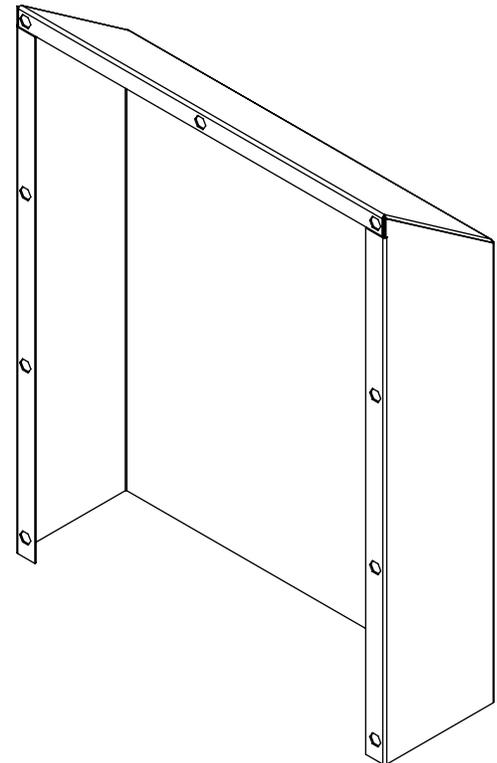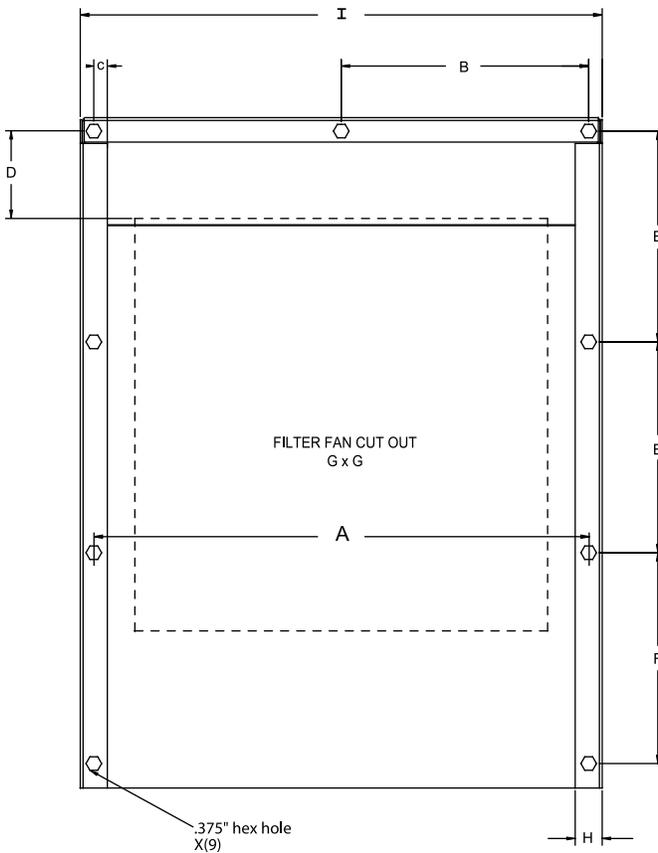
Part No.	A	B	C	D	E	F	G	H	I
PFRH2000	6.85	N/A	0.97	1.48	4.75	N/A	4.92	0.75	7.60
PFRH25/3000	10.79	5.39	1.00	2.50	6.82	N/A	8.78	0.75	11.54
PFRH5/6000	13.74	6.87	1.14	2.15	5.86	5.86	11.45	0.75	14.49

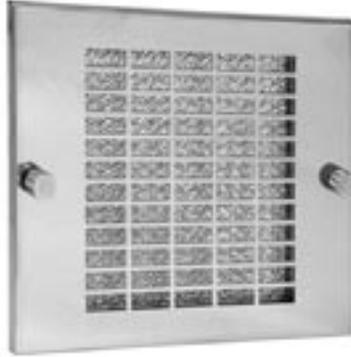Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Filtered Fan Boxes and Filter Grills

Filtered Fan Box

Filter Grill

Description
- In a typical cooling arrangement, the filtered fan box pulls air into the enclosures and the filter grill is used as an air outlet.
- The washable aluminum filter grill and the air filter are easily accessible and can be removed for cleaning.
- The filtered fan boxes are available in either 115 VAC or 230 VAC, 50/60 Hz.
- Filtered passive ventilation can be provided by an exhaust filter for either convection cooling or in combination with a fan in forced air cooling.

Standards
- UR/CUR/CE approved fan motors.
- CSA listed on fan only.

Features
- 115 VAC or 230 VAC, 50/60 Hz.
- 12" lead wires.
- Exceptionally quiet operation.
- Versatile mounting and adaptability.
- Heavy-gauge steel construction.
- Attractive stainless steel grills.
- Shipped with air flow to pressurize. Can be user modified to exhaust.
- Aluminum filter is coated with adhesive baffle surfaces for dust and dirt collection. Can be recoated after cleaning for optimum performance.
- Drilling template included.
- NOTE: One grill and filter are included with each fan package. Normally, an additional exhaust grill and filter are required for each installation and must be ordered separately.

Accessories
- Filter coat
- Replacement Filter

Filtered Fan Boxes and Filter Grills

0.19 DIA 4 PLACES
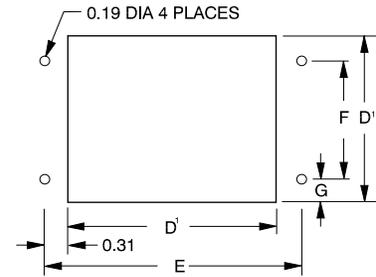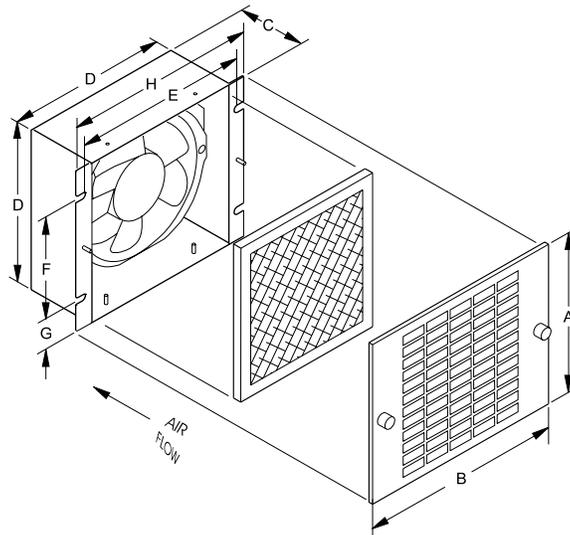
Cutout Detail

Filtered Fan Boxes

Part No.	Free Flow Air Delivery CFM	Volts	RPM Nominal	Running Amps	Watts	A	B	C	D	D¹	E	F	G	H	Ship Wt. lbs
XF4115	105	115	3000	0.18	15	6.13	7.38	2.38	5.63	5.75	6.38	4.13	0.78	7.0	5
XF4230	105	230	3000	0.09	15	6.13	7.38	2.38	5.63	5.75	6.38	4.13	0.78	7.0	5
XF6115	220	115	3300	0.29	33	7.63	8.88	3.00	7.13	7.25	7.88	4.50	1.34	8.5	6
XF6230	220	230	3300	0.15	33	7.63	8.88	3.00	7.13	7.25	7.88	4.50	1.34	8.5	6
XF10115	560	115	1600	0.87	60	11.63	13.00	4.56	11.13	11.25	11.88	6.88	2.16	12.5	12
XF10230	560	230	1600	0.45	60	11.63	13.00	4.56	11.13	11.25	11.88	6.88	2.16	12.5	12

Exhaust Grill and Filters

Part No	A	B	D	E¹	F¹	H¹
XFG4	6.13	7.38	5.63	6.38	4.13	7.00
XFG6	7.63	8.88	7.13	7.88	4.50	8.50
XFG10	11.63	13.00	11.13	11.88	6.88	12.50

Replacement Filters

Part No	Pkg. Qty.
XFF4	3
XFF6	3
XFF10	3

¹ Dimension for mounting and cabinet cutout. Secure sheet metal with #8 hardware.

Filter Coat
- Provides a filter adhesive with a grease-like consistency which absorbs and traps dust particles.
- 10 oz. bottle with environmentally friendly trigger spray.

Part No.	1475Q

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Fan Kits

Filter Fan Grills
- Mounts easily with 4 screws using the template provided.
- All mounting hardware included.
- Standard 80mm/3.15" and 120mm/4.00" fans can be attached with hardware provided to make a filter fan.
- Can be used alone as an enclosure exhaust.
- Moulded in flame retardant ABS.

- Flame retardant synthetic filter supplied.
- Integral gasket on reverse of grill seals against enclosure surface.
- Available in black, RAL7032 beige and ASA61/RAL7011 gray to match enclosures.

Accessories
- Spare hardware kit, Part No. **1421F4**

Black Part No.	Beige Part No.	Gray Part No.	H	W	Optional Compatible Fan Part No.	Size	CFM	Repl. Filter (pkg. 5)
XPFA80BK	XPFA80CG	XPFA80GY	4.13	4.13	FAN80AC115	80mm/3.15"	32	PFF1000
XPFA120BK	XPFA120CG	XPFA120GY	5.91	5.91	DNMF100AC115	120mm/4.70"	102	PFF2000

AC Fans and Guards
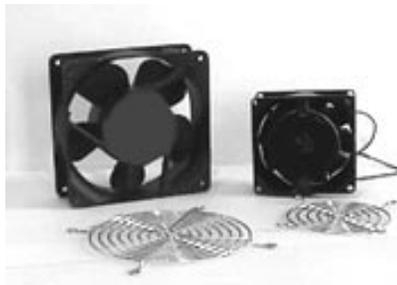
Fan Cords and Daisy Chains (10 amp, 115V)

Part No.	Description	Lead Length (In)	Connector	Fan End Termination
DNMFC	Fan Cord	24"	Straight	none
DNFC48P	Fan Cord	48"	45°	2 pin 115V plug
DNFC72P	Fan Cord	72"	45°	2 pin 115V plug
DNFCDC2P	Daisy Chain	24"	2x45°, 24" apart	2 pin 115V plug
DNFCDC3P	Daisy Chain	24"	3x45°, 24" apart	2 pin 115V plug

Part No.	Size(mm)	Size (In.)	CFM	AC Voltage	Use Fan Guard	Use Filter Fan Grill
FAN80AC115	80	3.15	32	115	FAN80FG	XPFA80...[1]
FAN80AC230	80	3.15	32	230	FAN80FG	XPFA80...[1]
DNMF100AC115	120	4.70	100	115	DNFG	XPFA120...[1]
DNMF100AC230	120	4.70	100	230	DNFG	XPFA120...[1]
FAN150AC115	150	6.00	210	115	FAN150FG	n/a
FAN150AC230	150	6.00	210	230	FAN150FG	n/a
FAN10A115	255	10.00	550	115	FAN10FG	n/a
FAN10A220	255	10.00	550	230	FAN10FG	n/a

[1]"..." specify color - BK (black), CG (RAL 7032) or GY (ASA61 gray)   UL recognized, CSA listed, CE certified
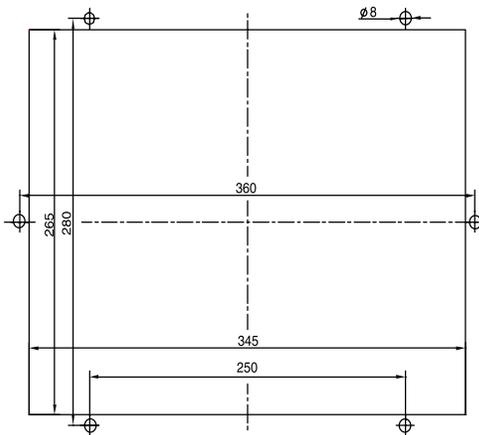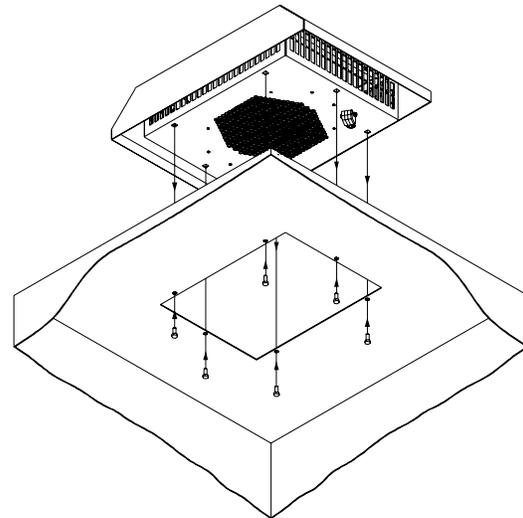
Top Mount Fan

- Mounts to top of enclosure.
- Ideal for use with IME Series (not compatible with 400mm deep IMET cabinets).
- 470 CFM free flow, 375 CFM using PFA6000 as inlet.
- 115V 50/60Hz
- Terminal block connection.
- 20.9" x 13.8" x 4.3"H
- UL/cUL Approved.
- Gasket seal- IP33 ingress protection level.
- Finished in RAL7032 beige.

Part No.	PTF8000

Cutout Template
(dimensions in mm)

ø8
360
265
280
345
250

Fan Panels

- Create your own rack mount fan or filter fan from these panels.
- Black powder coated steel.
- Also available in 24" and other widths or custom configurations.
- Fans sold separately

19" Grill Panel Shown

Punched 19" Fan Panels

Part No.	Panel Size	Cutouts for Stnd. Fans	# Holes	Optional Fan Part No. (115V)	Optional Fan Guard Grill	Optional Filter Grill (Black)	Optional Replacement Filter (pkg. 5)
PPFP190802BK1	3U	80mm/3.15"	2	FAN80AC115	FAN80FG	XPFA80BK	PFF1000
PPFP190803BK1	3U	80mm/3.15"	3	FAN80AC115	FAN80FG	XPFA80BK	PFF1000
PPFP191202BK1	4U	120mm/4.70"	2	DNMF100AC115	DNFG	XPFA120BK	PFF2000

Punched 19" Grill Panels (with integral front finger guard)

Part No.	Panel Size	Cutouts for Stnd. Fans	# Holes	Optional Fan Part No. (115V)	Optional Fan Guard Grill	Optional Filter Grill (Black)	Optional Replacement Filter (pkg. 5)
PPGP191202BK1	3U	120mm/4.70"	2	DNMF100AC115	DNFG	-	-

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Fan Tray
300, 600 and 900 CFM

Application
- Rack mount fan trays provide a compact, economical solution for cooling in electronic cabinets.
- Fan trays can be positioned at the bottom of an enclosure to force air through the cabinet, at the top to exhaust air out of the cabinet or below specific pieces of equipment for spot cooling.

### Standards
- UR/CUR listed

Features
- 300, 600 and 900 CFM sizes.
- 115VAC, 50/60Hz.
- 19" panel width mounting.
- Low profile 1.75" (1U) height.
- 600 and 900 CFM units include removable rear support brackets.
- Circuit breaker protected.
- 6 foot 14/3 SJTW cord with molded 3 prong plug.
- Thermally protected, ball bearing fans.
- Integral finger guards above and below fans.
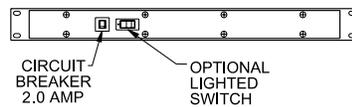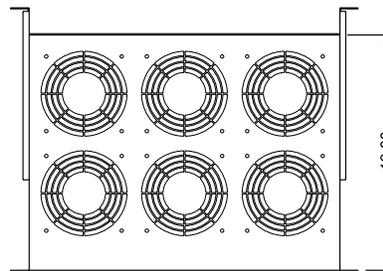- Shipped fully assembled.
- Available with or without ON/OFF switch.

Finish
- Stocked in textured, black body finish.
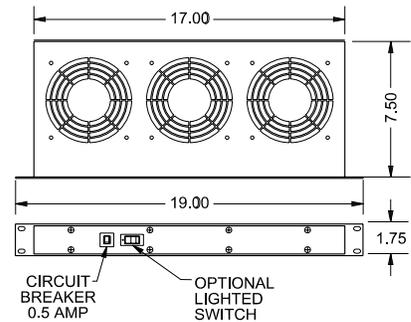- Textured black face panel.

Options
- Contact Hammond for information on:
  - 24" panel width mounting.
  - 230 V version (without plug).
  - 15 foot cord
  - Optional colors
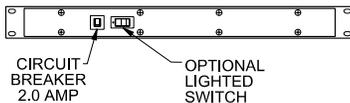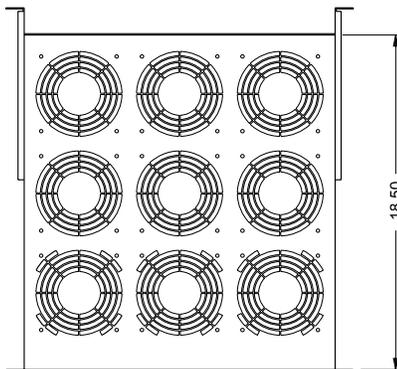
FT900HA1BK

FT600HA1BK

FT300HA1BK

Note: All cad drawings are shown with optional lighted switch. All units are also available without switch - see chart below.

Without Switch Part No.	With Lighted Switch Part No.	CFM	Running Amps	Watts	Panel Width	Case Width	Case Depth	Rear Bracket Depth Min.	Max.
FT300TA1BK	FT300HA1BK	300	0.5	40	19	17.00	7.50	n/a	n/a
FT600TA1BK	FT600HA1BK	600	1.0	80	19	17.00	13.00	2.40	19.20
FT900TA1BK	FT900HA1BK	900	1.5	120	19	17.00	18.50	7.90	24.70

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General Information

Heating products protect electronic and electrical components from temperature problems that are below acceptable tolerances. There are obvious circumstances when extremely low ambient (outside cabinet) temperatures would require a heater, but there are also less apparent times that a heater should be considered. For example, a system may run all day having its components generate heat, but once the system shuts down for the night, the quick drop in temperature could cause condensation and possibly corrosion - a heater could maintain a safe, constant temperature.

Combined Cooling and Heating

Some components today are sensitive enough that both cooling and heating could be required in the same enclosure. When designing your system, be aware of the need to maintain a relatively constant temperature inside the enclosure as ambient temperatures swing from cool to very hot. Hammond thermostats (one for heaters and one for cooling products) can control both systems automatically.

Heater Sizing Information

P_H = Total power required for this application (W)
P_V = Existing power from components (W)
DT = Temperature differential (Kelvin) ambient to cabinet interior (1°Kelvin = 1°C = 1.8°F)
A = Free-standing cabinet surface area (ft^2)
k = Heat transmission coefficient (W/ft^2 K) convection in quiet air:

Painted steel	approx.	0.51 W/ft^2 K
Aluminum	approx.	1.115 W/ft^2 K
Plastic	approx.	0.325 W/ft^2
Stainless Steel	approx.	.344 W/ft^2 K

Formula

P_H = (DT x k x A) - P_V
If enclosure located **outside**, use **x2 (**DT x k x A)

Sample with solution:

DT = 5K
k = Painted steel = 0.51 W/ft^2
A = 50 ft^2
P_V = 50 W
P_H = (5 x 0.51 x 50) - 50
= 127.5 - 50
= 77.5 W

Recommend: SHP045039, 80W Heater

Climate Control

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Heating Products

Climate Control
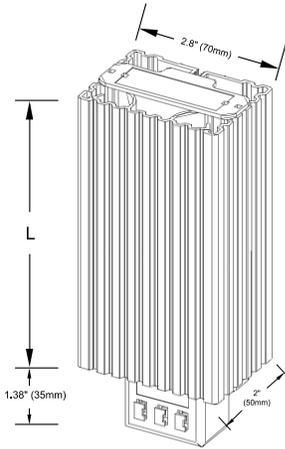
Heaters
- Designed to provide enclosed electronic, pneumatic, hydraulic and mechanical equipment with protection from low temperatures, condensation and corrosion.
- The PTC (Positive Temperature Coefficient) heater unit maintains a stable temperature environment within enclosures, allowing critical components to perform with consistent reliability for longer periods.
- Heating power adjusts to ambient temperature
- Push connectors for quick and easy wiring

Part No.	Watts[1]	Max. Current[2]	L (in.)	Ship Wt lbs
SHG14000	15 W	1.5 A	2.56	1
SHG14001	30 W	3.0 A	2.56	1
SHG14003	45 W	3.5 A	2.56	1
SHG14005	60 W	2.5 A	5.51	1
SHG14006	75 W	4.0 A	5.51	1
SHG14007	100 W	4.5 A	5.51	2
SHG14008	150 W	8.0 A	8.46	2

[1] At 68ºF (20ºC) ambient temperature. [2] Inrush current

Operating Voltage:	AC/DC 110 - 250 V
Heating Element:	PTC resistor, self regulating
Heating Body:	Anodized extruded aluminum
Connection:	Push-type terminals for stranded and solid wire 3 x AWG 20 AWG 16 (0.5 - 1.5 mm²)
Mounting:	Easily installed by clip mounting on 35 mm DIN rails (included)
Protection Class:	I, test voltage 1600 V
Protection:	IP20
Approval:	UL Recognized Component, cUL Recognized Component, CE

Fan Heaters
- For use when larger heating capacities or internal forced air circulation is required.
- Designed to prevent condensation or maintain minimum temperature in enclosures.
- Thermostats are also available.

Part No.	Watts	Surface Temperature	Starting Current	Dimensions L x W x D	Ship Wt. lbs
SHGL04600	250 W	167°F	2.2 A	7.00 x 3.15 x 3.15	2
SHGL04601	400 W	167°F	3.5 A	9.76 x 3.15 x 3.15	3

Operating Voltage:	AC 110-120 V, 50/60 Hz
Circulation Power:	20 CFM Free Blowing
Axial Fan:	Ball bearing
Durability:	30,000 hrs. at 68°F ambient temperature
Heating Element:	Resistance heating element with temperature limiter
Heating Body:	Extruded aluminum, black anodized
Connection:	3 pole terminal for 12 AWG
Mounting:	Easily installed by clip mounting on 35 mm DIN rails (included)
Protection Class:	1 (tested for grounding at 1250 V)
Protection:	IP20
Approval:	UL Recognized Component, cUL Recognized Component, CE

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

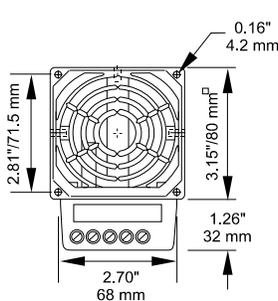**Heating Products**

Control Panel Heater

- When larger heating capacities or internal forced air circulation is required and space is limited.
- Compact design to prevent condensation or maintain minimum temperature in enclosures.
- Fan is included.
- Thermostats available

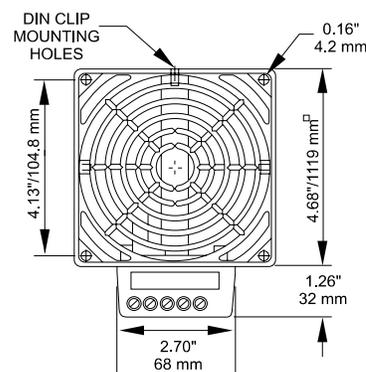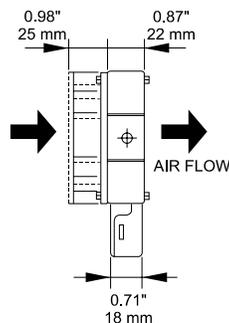| Part No.	Watts	Operating Current (Amps)	Volts	Temperature Maximum with Fan	Ship Wt. lbs
SHV031029	100 W	0.89	AC 120	250°F/120°C	1
SHV031039	150 W	1.30	AC 120	320°F/160°C	1
SHV031139	200 W	1.79	AC 120	250°F/120°C	1
SHV031149	300 W	2.62	AC 120	320°F/160°C	1
SHV031159	400 W	3.45	AC 120	360°F/180°C	1

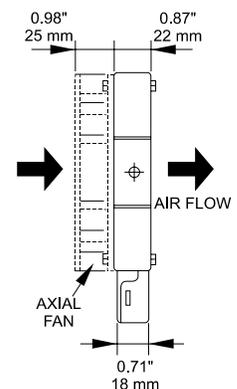|	
Operating Voltage:	AC 110 -120 V 50/60 Hz
Air Flow:	20 CFM (100W, 150W heaters), 63 CFM (200W, 300W, 400W heaters)
Axial Fan:	Ball bearing
Durability:	30,000 hrs. at 68°F ambient temperature
Heating Element:	Cartridge heater
Heating Body:	Die cast aluminum
Connection:	5 pole terminal for 14 AWG (maximum)
G/L1/N1:	Heater
L2/N2:	Fan
Mounting:	Easily installed by clip mounting on 35 mm DIN rails (included)
Protection class:	1 (tested for grounding at 1250 V)
Protection:	IP44
Approval:	UL Recognized Component, cUL Recognized Component,CE

100 W, 150 W Heaters

200 W, 300 W, 400 W Heaters

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Heating Products

Climate Control

High Wattage Fan Heater

- For large heating capacity requirements.
- Maintains minimum operating temperatures in enclosures.
- Helps prevent failures to components caused by condensation and corrosion.
- Built-in thermostat and control light.
- Heating power adjusts to ambient temperature.
- Heat exits top of fan heater. (add 2" clearance for heat sensitive parts)

Part No.	Watts	Inrush Current (Amps)	Volts	Temperature Maximum with Fan	Ship Wt. lbs
SCR027009	550 W	11 A	AC 120	250°F/120°C	2
SCR02009230	550 w	13 A	AC 230	250°F/120°C	2
SCR027019	650 W	12 A	AC 120	320°F/160°C	2.4

Air Flow:	20 CFM (550W), 26 CFM (650W)
Thermostat Range:	32 - 140 degrees Fahrenheit
Heating Element:	PTC - Semiconductor/resistor
Housing:	Plastic, rated UL94-VO
Connection:	3 pole terminal, AWG 14 max (2.5 mm^2)
Mounting:	Clip for 35mm DIN rail
Protection Class:	II (Double Insulated)
Protection Type:	IP20
Approval:	UL Recognized Component, cUL Recognized Component, CE

Fan Heater with Thermostat

- Designed to prevent condensation or maintain minimum temperature in enclosures.
- Built in Thermostat. (-18 C to +38 C) (0 F to +100 F)
- Fan Auto/On switch with pilot light for Heat On indication
- 20 CFM airflow
- High temperature safety protection
- Aluminum alloy outer casing
- Connection via terminal block.

Part No.	Watts	Voltage	Overall Dimensions Height x Width x Depth	Ship Wt. lbs
FLHTF125A115	125 W	120V	5.5" x 4.0" x 5.3"	2.2
FLHTF125A230	125 W	240V	5.5" x 4.0" x 5.3"	2.2
FLHTF200A115	200 W	120V	5.5" x 4.0" x 5.3"	2.2
FLHTF200A230	200 W	240V	5.5" x 4.0" x 5.3"	2.2
FLHTF400A115	400 W	120V	7.5" x 4.0" x 5.3"	3.0
FLHTF400A230	400 W	240V	7.5" x 4.0" x 5.3"	3.0
FLHTF800A115	800 W	120V	7.5" x 4.0" x 5.3"	3.0
FLHTF800A230	800 W	240V	7.5" x 4.0" x 5.3"	3.0

Technical references and DXF downloads available at www.hammfg.com   All dimensions in inches unless specified otherwise

Accessory Products

Thermostat

- Designed to provide air temperature control and monitoring in cabinets.
- Thermostat NC (Normally Closed) for the control of heaters and heater fans.
- Thermostat NO (Normally Open) for the control of cooling units, or for switching signal transmitters in case of overheating.
- Available in Fahrenheit or Celsius.
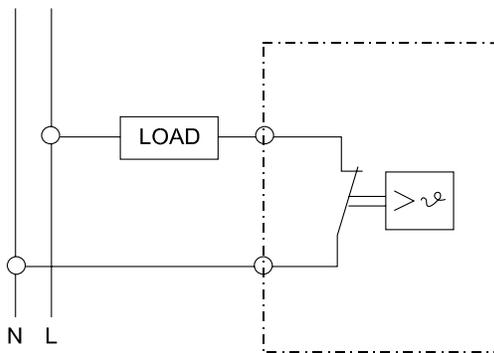
NC - Normally Closed (Red)
Used in conjunction with heaters.
Contact opens when rising
temperatures reach the set point
temperature shutting heater off.
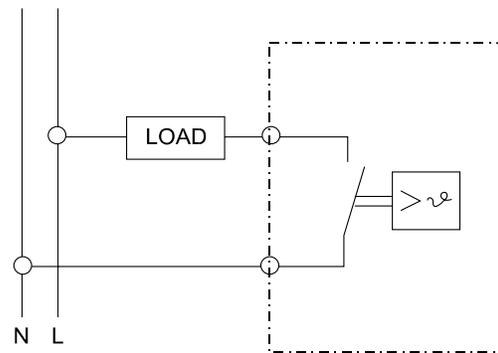
NO - Normally Open (Blue)
Used in conjunction with fans.
Contact closes when rising
temperatures reach the set point
temperature turning fan on.

Sensor Element:	Thermostatic bi-metal
Switching difference (hysteresis):	±4°F (±3°K)
Adjustment Range:	30-140°F
Connection:	2 pole terminal for AWG 14 (2.5mm^2)
Mounting:	Easily installed by clip mounting on 35 mm or 38 mm DIN rails (included)
Housing:	Flame retardant plastic UL94VO
Color:	Gray (SB)
Protection:	IP20
Approval:	UL Recognized Component , cUL Recognized Component, CE, CSA Listed

Part No.	Scale	Contact Type	Dimensions Height x Width x Depth	Switching Capacity	Ship Wt. lbs
SKT011409NC	°F	Normally Closed	2.4 x 1.6 x 1.4	15 A (1) AC 120 V, 10 A (1) AC 250 V	1
SKT011409NC-C	°C	Normally Closed	2.4 x 1.3 x 1.4	15 A (1) AC 120 V, 10 A (1) AC 250 V	1
SKT011419NO	°F	Normally Open	2.4 x 1.6 x 1.4	15 A (1) AC 120 V, 10 A (1) AC 250 V	1
SKT011419NO-C	°C	Normally Open	2.4 x 1.3 x 1.4	15 A (1) AC 120 V, 10 A (1) AC 250 V	1

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Accessory Products

Climate Control

Mechanical Humidistat

- Mechanical Humidistat regulates the control of heater or fans whenever the exceed a preset level of relative humidity.

Part No.	Dimensions Height x Width x Depth	Switching Capacity
SKH600NCC	3.5 x 1.5 x 1.8	AC 120 V - 2A
		AC 240 V - 2A
		AC 120 V - 5A
		AC 240 V - 5A
		DC 30 Watts

|	
Control Range:	40 to 90% r.H.
Differential Gap:	Approximately 5%
Switch Point Accuracy:	+/- 4% based on 50% r.H.
Working Temperature Range:	30°F to 140°F (0°C to 60°C)
Storage Temperature:	-5°F to 180°F (-20°C to 80°C)
Type of Contact:	Change-over switch
Sensor:	Polyamide band
Type of Connection:	2-pole clamp, 0,5 to 2,5mm^2
Color:	RAL 7035 - Grey
Protection Category:	IP20
Mounting:	Easily installed by clip mounting on 35mm DIN rail (7 included)
Approval:	CE
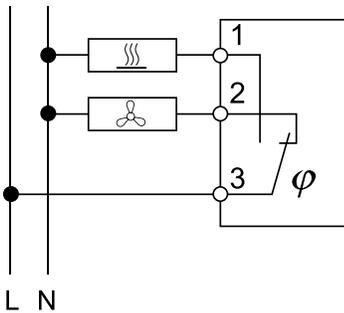
Electronic Humidity and Temperature Control

- Designed to provide both air temperature and humidity control as well as monitoring in electrical and electronic enclosures.
- Independently senses the relative humidity and temperature. Resistive and inductive loads (heaters or filter fans) can be switched.
- Highly effective in ATMs, parking control gates, ticket dispensers and traffic control systems where equipment is exposed to wide ranging outdoor elements.

Part No.	Dimensions Height x Width x Depth	Switching Capacity
SKTH012009230	3.03 x 2.36 x 1.69	NC: AC 240 V - 6A resistive, 1A inductive
		NO: AC 240 V - 8A resistive, 1.6A inductive
SKTH012009	3.03 x 2.36 x 1.69	NC: AC 120 V - 6A resistive, 1A inductive
		NO: AC 120 V - 8A resistive, 1.6A inductive
		DC 24 V - 4A resistive

Temperature Range:	32°F to 140°F (0°C to 60°C)
Switching difference (hysteresis):	Approximately 3.6°F (2°K)
Humidity range:	50% to 90% relative humidity
Response time:	Approximately 160 seconds
Function Indication:	LED
Life expectancy:	100,000 cycles
Mounting :	Easily installed by clip mounting on 35mm DIN rail
Housing :	Flame retardant plastic UL94VO
Color:	Gray
Protection:	IP20
Approval:	UL Recognized Component, cUL Recognized Component, CE
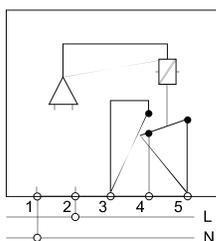
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Climate Control

Breather Kit (Pressure Compensation Plug)

CE

- Packaged individually.
- Provides for controlled pressure compensation due to temperature variations (i.e. night/day operation).
- Recommend two plugs per cabinet in opposite locations.
- Minimum cutout diameter 1.46"

Part No.	Dimensions (Diameter x Depth)	Ship Wt. lbs
SDA412	2.6" x 1.2"	1

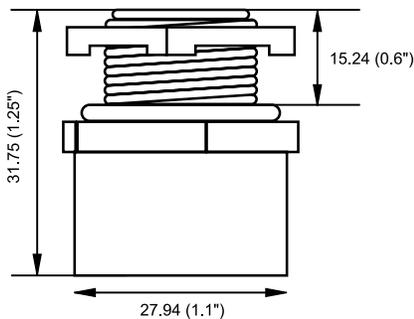|	
Mounting:	PG 29 (1.14") thread with union nut, minimum cutout diameter
Material:	Polycarbonate UL94VO
Protection:	IP45
Color:	RAL 7032 beige

Breather Kit (Pressure Compensation Plug)

CE

- Packaged individually.
- Provides for controlled pressure compensation due to temperature variations (i.e. night/day operation).
- Recommend two plugs per cabinet in opposite locations.
- Pipe Thread 1/2"NPT (actual dia. 0.84")

Part No.	BDN4XN1

15.24 (0.6")
31.75 (1.25")
27.94 (1.1")

CSA/A Ex Approvals:	Class I, Zone 1, Ex e II Class I Division 2 Groups ABCD Class II EFG, Class III
Ingress Protection:	IP66, CSA Enclosure Type NEMA 4X
Impact Resistance:	20Nm (7Nm GF Nylon)
Materials:	Durethan BKV 30 N1 30% Glass Filled Nylon O Ring - Nitrile Fixing nut - Brass
Operating Temp:	-50C to +85C

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MANUFACTURING ™

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