

Air conditioners maintain the temperature inside an enclosure at levels equal to or below the ambient outside temperature. Because it creates a closed system, an air conditioner can control humidity inside the enclosure while it excludes airborne contaminants.

Hoffman offers a variety of air conditioning solutions, including compact, full-size, multiple voltages, single and 3-phase, with both top and side-mount options. By separating internal and external air paths and recirculating internal air, enclosed controls are protected from external heat, humidity, dust and other pollution.



Air Conditioners

Air Conditioners Sizing and Selection.....	4
Side-Mount Compact Air Conditioners	8
Side-Mount Subcompact Air Conditioners	12
Side-Mount Mid-Size Air Conditioners.....	14
Side-Mount Full-Size Air Conditioners.....	18
3-Phase 460-Volt Side-Mount Full-Size Air Conditioners	20
Top-Mount Air Conditioners	22
CR Compact, Mid-Size, and Full-Size Air Conditioners	24





A Pentair Company

Air Conditioners Sizing and Selection

Before choosing a thermal management solution, you need to carefully consider the specifics of your application in addition to the following factors:

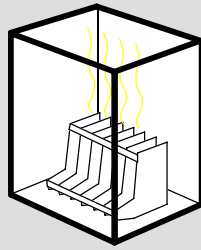
- Fan packages and blowers (page 46) may introduce ambient contaminants like oil mist and dust into the enclosure
- Heat exchangers (page 34) cannot cool below the ambient temperature
- Closed-loop air conditioners (this section) can cool below ambient temperature and reduce humidity without introducing contaminants
- Simple ventilation devices such as louvers or grilles and filters are appropriate if maintaining a cool, constant temperature is not a critical factor

Once you have determined the proper form of cooling equipment you need, selecting the required cooling capacity is outlined in this section.

How to Read Catalog Numbers

Air Conditioners **CR43 - 06 | 6 - 002**

1. Identifies the type/family of air conditioner and the approximate height (i.e., CR43 = CR family, about 43" high).
2. This is the air conditioner's listed capacity in BTU/Hr. (i.e., 06 = 6000 BTU/Hr.)
3. 1 = 115 Volt, or 2 = 230 Volt; 4 = 460 Volt
4. 6 = 50/60 Hz or 60 Hz (depending on unit, see Design Data); 5 = 50 Hz
5. Unique set of numbers for each air conditioner which identifies the accessories on a model.

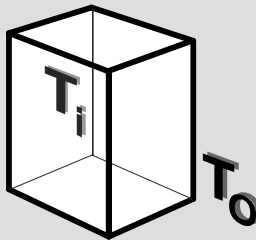


Help Notes:

WATTS

1 WATT = 3.413 BTU/Hr.

Determine the internal *heat load* produced by equipment as total operating Watts.



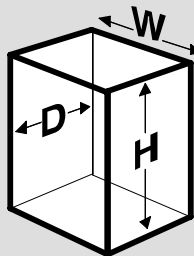
Help Notes:

ΔT (Desired Temperature Difference)

1 °K ΔT = 1.8 °F ΔT °K ΔT = °C ΔT

Determine the ΔT (°F), the temperature difference between the maximum temperature outside the enclosure (To) and the maximum desired temperature inside the enclosure (Ti), which can be calculated as:

To - Ti = ΔT for air conditioners.



Help Notes:

AREA (ft²)

1 M² = 10.76 FT²

Calculate the exposed surface area of the enclosure in *Square Feet*:

AREA (ft²) =
2[(H" x W") + (H" x D") + (W" x D")] ÷ 144

where "H", "W", and "D" are the dimensions of the enclosure.

Air Conditioners

» Determine the required air conditioner size (capacity):

$$+ \frac{(\text{WATTS} \times 3.413)}{[1.25 \times \text{AREA (ft}^2\text{)} \times \Delta T(\text{°F})]}$$

BTU/HR.

Use the above formula to determine the required cooling capacity needed to maintain the desired operating temperature for your enclosure. This selection procedure applies to uninsulated, sealed, gasketed enclosures in indoor locations.

All industrial air conditioners are rated at their maximum operating point. Operating an air conditioner at temperatures below maximum conditions will result in reduced cooling capacity. In other words, operating 95°F ambient and 95°F enclosure temperature results in a 10% to 20% reduction in the rated capacity. (Note: full cooling capacity is probably not necessary at lower ambient temperatures.)

Air conditioners are appropriate for applications in which:

- The temperature inside the enclosure must be maintained at or below ambient temperature
- Humidity must be removed from the enclosure
- Ambient air contaminants must be kept out of the enclosure

Air Conditioner Selection

BTU/Hrs.	Side Mount Models	Page
800-1000	13	8
800	T15	12
1400-1700	CR23	24
1500-1800	17	8
2200-4000	28	14
2200-4000	CR29	24
3700-4000	33NSM	14
0-6000	36N	14
6000-8500	CR43	24
6700-12000	52	18
3800-10000	52 3-Phase	20

BTU/Hrs.	Top-Mount Models	Page
2200-4000	HBII	22

BTU/Hrs.	Vortex Cooler	Page
400-2500	VC Series	30

Selection and Sizing Software

Designed to assist you in determining the most suitable choices of air conditioners, heat exchangers, or fans for your application.

Download a free copy of our selection software by visiting our web site: www.hoffmanonline.com.



Air Conditioners Sizing and Selection

■ **Side-Mount Compact Air Conditioners**



Side-Mount Compact

Page 8

Series	H		W		D		BTU/Hr.	Watts
	in.	mm	in.	mm	in.	mm		
13	13.25	337	14.25	362	7.80	198	1000	293
17	17.65	448	12	305	8.68	220	1800	527

■ **Side-Mount Subcompact Air Conditioner**



Side-Mount Subcompact

Page 12

Series	H		W		D		BTU/Hr.	Watts
	in.	mm	in.	mm	in.	mm		
T15	15.75	400	6.30	160	7.50	190	800	234

■ **Side-Mount Mid-Size Air Conditioners**



Side-Mount Mid-Size

Page 14

Series	H		W		D		BTU/Hr.	Watts
	in.	mm	in.	mm	in.	mm		
28	28.50	724	17	432	11.33	288	2000-4000	586-1172
33NSM	34.37	873	12	305	9.88	251	4000	1172
36N	38.72	984	15	381	11.33	288	6000	1758



A Pentair Company

Air Conditioners Sizing and Selection

**Side-Mount Full-Size
Air Conditioners**



Side-Mount Full-size

Page 18

Series	H in.	mm	W in.	mm	D in.	mm	BTU/Hr.	Watts
52	52.63	1337	17.13	435	11.33	288	8000- 12,000	2344-3516

**3-Phase 460-Volt
Side-Mount Full-Size
Air Conditioners**



3-Phase 460-Volt Full-Size

Page 20

Series	H in.	mm	W in.	mm	D in.	mm	BTU/Hr.	Watts
52	52.63	1337	17.13	435	11.33	288	3800- 10,000	1113-2930

**Top-Mount
Air Conditioners**



Top-Mount

Page 22

Series	H in.	mm	W in.	mm	D in.	mm	BTU/Hr.	Watts
HBII	10.25	260	17	432	21.08	535	2200-4000	645-1172

Air Conditioners Sizing and Selection

■ Compact to Full-Size Air Conditioners



CR Compact to Full-Size

Page 24

	H		W		D		BTU/Hr.	Watts
	in.	mm	in.	mm	in.	mm		
CR23	23	584	10	254	8.75	222	1600	469
CR29	29.50	749	15.75	400	8.63	219	2200-4000	645-1172
CR43	43.31	1100	15.75	400	10.25	260	6000-8500	1758-2490

■ Corrosive / Outdoor Air Conditioners



CR Corrosive/Outdoor

Page 24

	H		W		D		BTU/Hr.	Watts
	in.	mm	in.	mm	in.	mm		
CR23	23	584	10	254	8.75	222	1600	469
CR29	29.50	749	15.75	400	8.63	219	2200-4000	645-1172
CR43	43.31	1100	15.75	400	10.25	260	6000-8500	1758-2490

■ Vortex Cooling System



VC Vortex Cooler

Page 30

	Cooling Capacity		Voltage	Frequency (Hz)
	BTU/Hr.	Watts		
VC04—	400	117	115	50/60
VC09—	900	264	115	50/60
VC15—	1500	440	115	50/60
VC17—	1700	440	115	50/60
VC25—	2500	733	115	50/60



A Pentair Company

AIR CONDITIONERS

Bulletin
MCL

Side-Mount Compact Air Conditioners



Application

Models are equipped with a thermostat control that offers convenient digital display of enclosure temperature and high temperature alarm (125°F/52°C). Flashing display indicates alarm condition. EMI/RFI noise suppressor is standard. Compact models are ideal for cooling smaller enclosures from 25 cu. ft. to 40 cu. ft. The Series 17 model is only 12 inches wide, making it ideal for enclosures with narrow side walls.

Features

- Most components accessible by removing grille/filter
- Hanging brackets facilitate installation on door, side, or front of enclosure
- For a typical application, unique condensate management system evaporates moisture from enclosure
- High performance, industrial-grade ball-bearing fans provide maximum heat transfer
- All units use a CFC-free or environmentally-safe refrigerant that is universally accepted
- Mounting hardware, gaskets, mounting template, and instruction manual furnished

Industry Standards

Maintains UL/cUL Type 12 rating when properly installed on a UL/cUL Type 12 enclosure.

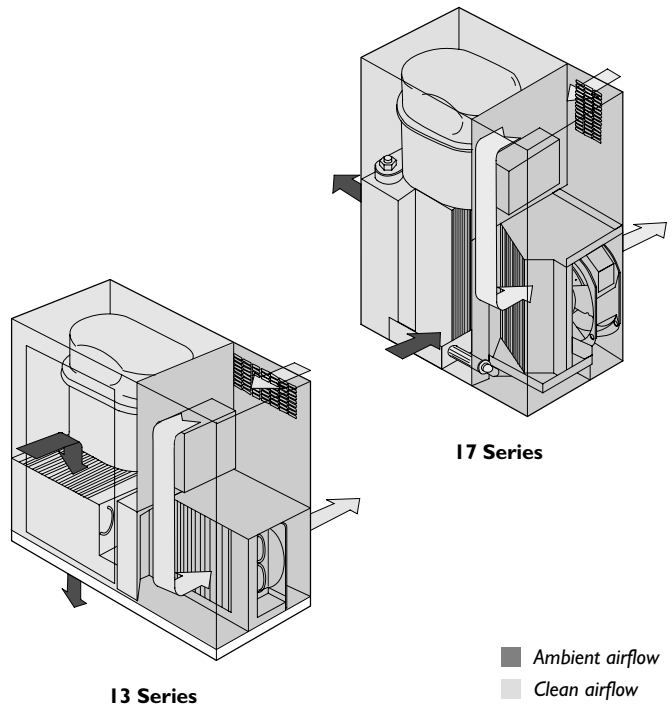
UL/cUL Listed, UL File Number SA6453
CE

Finish

- Body: RAL 7042 smooth gray polyester powder coating
- Grille: RAL 7035 light gray

Closed Loop Cooling

Within the air conditioner, the recirculated clean air is kept separate from the ambient airflow system. This protects the electronic controls and prevents shutdowns caused by heat, humidity, dust, and other contaminants.



Note: Hoffman side-mount models are directly interchangeable with comparable Slimboy and GENESIS™ models.

Side-Mount Compact Air Conditioners

Side-Mount 13 Series 13.25 x 14.25 x 7.80 (337 x 362 x 198) Replacement Filter No. 10100057

Catalog Number	Voltage	Hz	Phase	BTU/Hr. @ 125°F/125°F	Full Load Amps	Max Amb. Temp °F/°C	Shipping Weight Lbs./Kgs.
M130116G1014	115	50/60	1	800/1000	4.0/4.0	125/52	48/22
M130126G1008	230	50/60	1	800/1000	2.2/2.1	125/52	48/22

Side-Mount 17 Series 17.65 x 12.00 x 8.68 (448 x 305 x 220) Replacement Filter No. 10100057

Catalog Number	Voltage	Hz	Phase	BTU/Hr. @ 125°F/125°F	Full Load Amps	Max Amb. Temp °F/°C	Shipping Weight Lbs./Kgs.
M170216G009	110/115	50/60	1	1500/1800	6.6/6.7	125/52	56/25
M170226G004	220/230	50/60	1	1500/1800	4.2/3.7	125/52	56/25



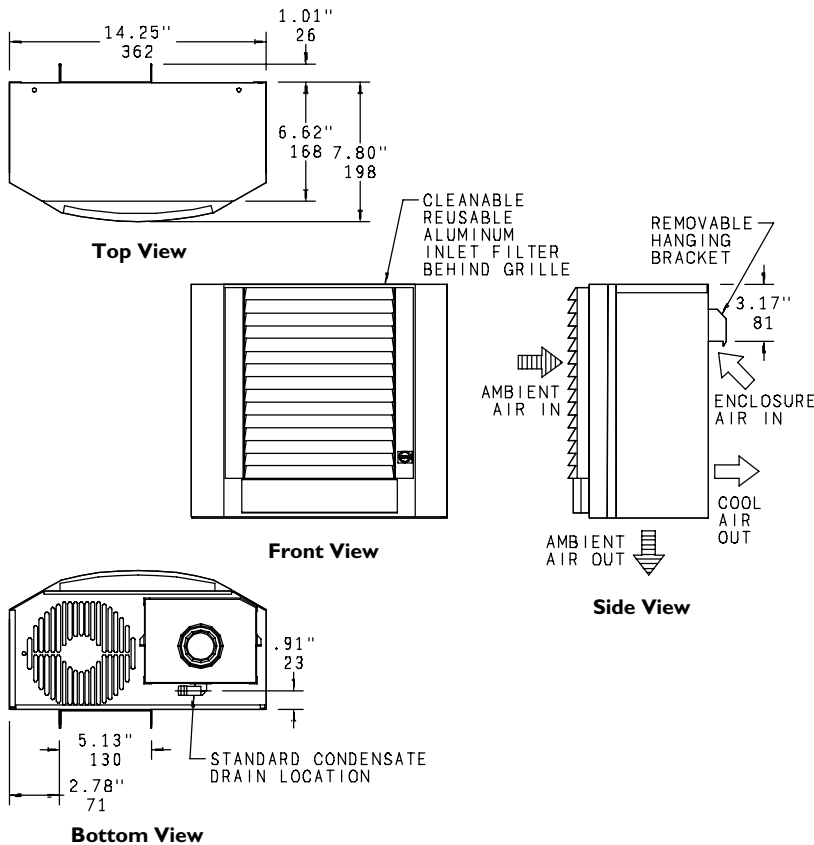
A Pentair Company

AIR CONDITIONERS

Bulletin
MCL

Side-Mount Compact Air Conditioners

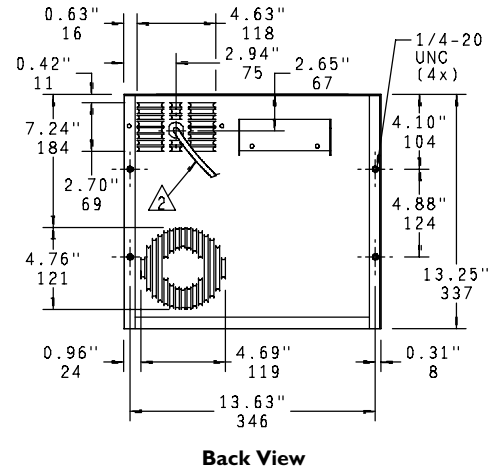
Side-Mount I3 Series



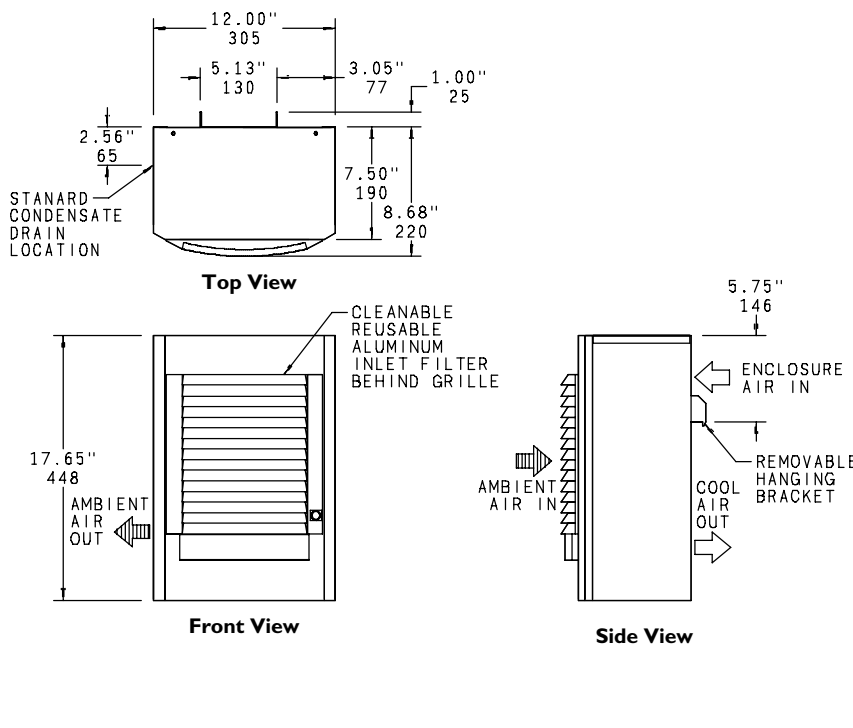
NOTE:

1. Gasket kit for mounting to enclosure included.
2. Service cord.

Number in triangle in CAD view refers to note number.



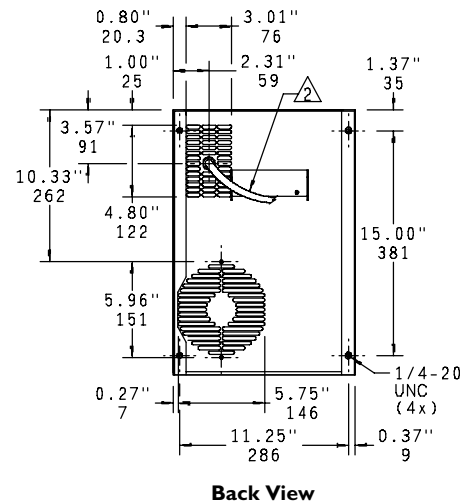
Side-Mount I7 Series



NOTE:

1. Gasket kit for mounting to enclosure included.
2. Service cord.
3. Condensate from enclosure drains to bottom of unit, where it is evaporated by condenser heat.

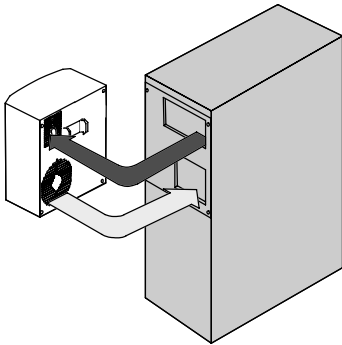
Number in triangle in CAD view refers to note number.



87542337

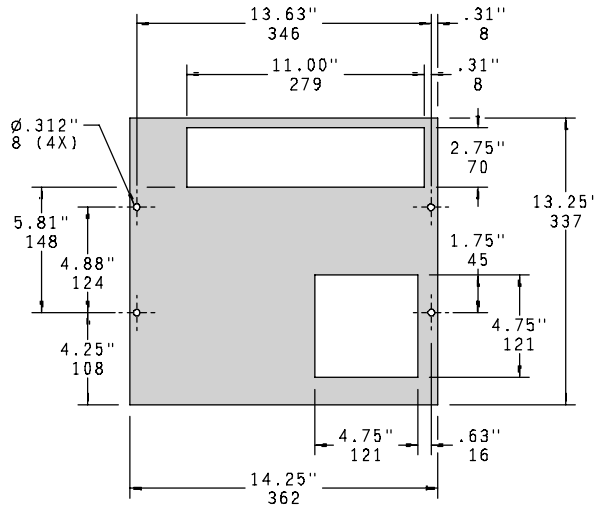
Side-Mount Compact Air Conditioners

Side-Mount I3 Series



Side-Mount to Enclosure

Generally, the I3 Series air conditioners are most effective on enclosures up to 25 cu. ft. unless the application only requires spot cooling in a larger enclosure.

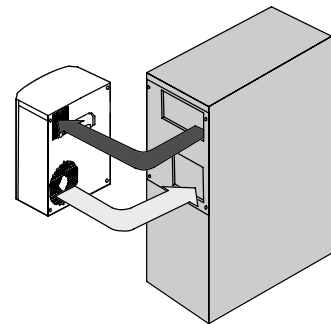


Mounting Cutout Dimensions

NOTE:

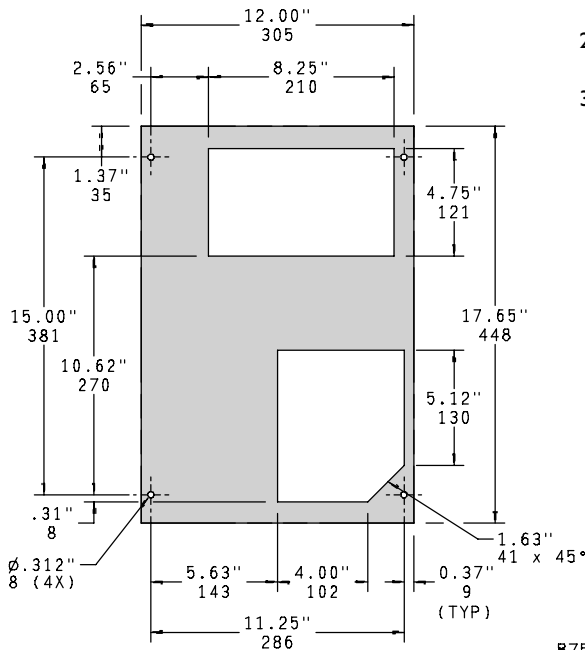
1. Shaded area represents air conditioner.
2. Cutout dimensions for standard product only.
3. Full-size mounting template provided.

Side-Mount I7 Series



Side-Mount to Enclosure

Generally, the I7 Series air conditioners are most effective on enclosures up to 40 cu. ft. unless the application only requires spot cooling in a larger enclosure.



Mounting Cutout Dimensions

NOTE:

1. Shaded area represents air conditioner.
2. Cutout dimensions for standard product only.
3. Full-size mounting template provided.

87542339



A Pentair Company

AIR CONDITIONERS

Bulletin
MCL

Side-Mount Subcompact Air Conditioner



Application

This Side-Mount Subcompact Air Conditioner provides high-efficiency, positive cooling for wall-mount and narrow enclosures, supporting industry trends toward smaller, densely-populated enclosures with greater heat dissipation requirements. Can be side-mounted on enclosures with 8 in. (203mm) or greater depth.

Construction

- Models are equipped with a screwdriver-adjustable thermostat located behind front grille
- EMI/RFI noise suppressor is standard
- Subcompact models are ideal for cooling smaller enclosures. The T15 series is only 7.50 in. (191mm) wide, making it ideal for wall-mount enclosures or enclosures with narrow side walls.
- Includes power cord with plug for standard grounded outlet
- Built-in hanging brackets facilitate installation on door, side, or rear of the enclosure
- Reusable and washable air filter is easily accessible without removing front cover
- Condensate management system with base pan side drain
- High performance, industrial-grade ball-bearing fans provide maximum heat transfer
- All units use CFC-free, environmentally-safe R134A refrigerant
- Mounting hardware, gaskets, mounting template, and instruction manual furnished

Industry Standards

Maintains UL/cUL Type 12 or 3R rating when properly installed on a UL/cUL Type 12 enclosure.

UL/cUL Listed, UL File Number SA6453
CE

Finish

RAL 7035 smooth light gray polyester powder coating

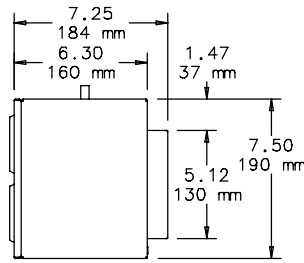
Accessories

Replacement Filter

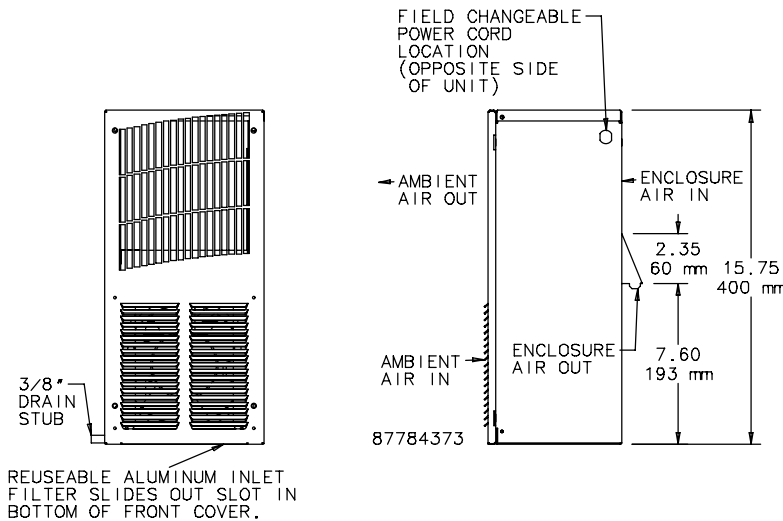
Closed Loop Cooling

These subcompact air conditioners are designed and tested to maintain a UL50 rated separation of the external ambient airflow from the sealed cabinet interior. This protects the electronic controls and equipment from shutdowns caused by heat, humidity, dust, and other contaminants.

Side-Mount Subcompact Air Conditioner

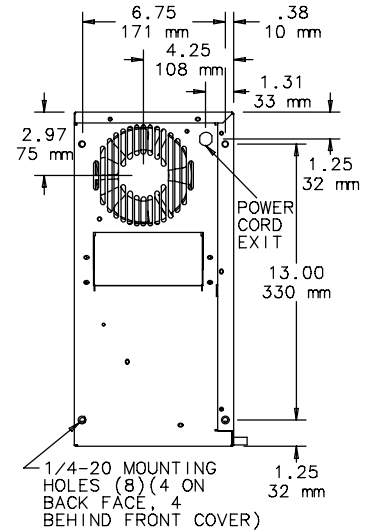


TOP VIEW



FRONT VIEW

RIGHT VIEW



BACK VIEW

87784373

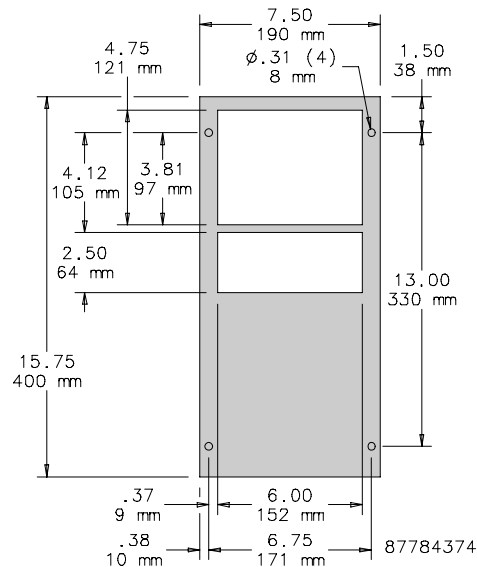
Standard Sizes Side-Mount Subcompact Air Conditioner—Replacement Filter Catalog Number 1010091

Catalog Number	Voltage	Hz	Phase	BTU/Hr. @ Max. Ambient Temp.	Full Load Amps	50 Hz Max Amb. Temp.		60 Hz Max Amb. Temp.		Shipping Weight Lbs/Kgs
						°F	°C	°F	°C	
T150116G120	110/115	50/60	1	800	3.8/3.6	125	52	131	55	27/12.25
T150126G120	220/230	50/60	1	800	1.4/1.5	125	52	131	55	27/12.25

Mounting Cutout Dimensions

Note:

1. Shaded area represents air conditioner.
2. Cutout dimensions for standard product only.
3. Full-size mounting template provided.



MOUNTING CUTOUT DIMENSIONS



A Pentair Company

AIR CONDITIONERS

Bulletin
MCL

Side-Mount Mid-Size Air Conditioners



Application

28 Series, 33NSM Series, and 36N Series air conditioners are equipped with a thermostat control that offers convenient digital display of enclosure temperature and high temperature alarm (125°F/52°C). Flashing display indicates alarm condition. EMI/RFI noise suppressor is standard on all models. 33NSM Series and 36N Series offer a broad capacity range with the advantage of mounting on narrow enclosures.

Features

- The 33NSM Series is only 12 inches wide and the 36N Series is 15 inches wide.
- Most components accessible by removing air filter
- Hanging brackets facilitate installation on door, side, or front of enclosure
- For a typical application, unique condensate management system evaporates moisture from enclosure
- High performance, industrial-grade ball-bearing fans in the 33NSM, and high performance centrifugal blowers in the 28 and 36N, provide maximum heat transfer in densely packed enclosures
- All units use a CFC-free or environmentally-safe refrigerant that is universally accepted
- Mounting gaskets and instruction manual furnished

Industry Standards

Maintains UL/cUL Type 12 rating when properly installed on a UL/cUL Type 12 enclosure.

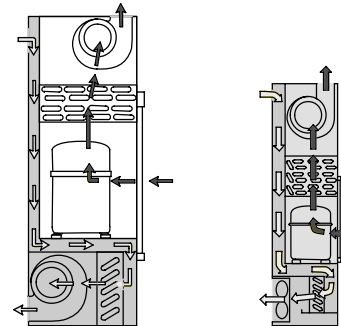
UL/cUL Listed, UL File Number SA6453
CE

Finish

- Body: RAL 7042 smooth gray polyester powder coating
- Grille: RAL 7035 light gray

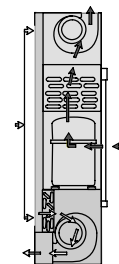
Closed Loop Cooling

Within the air conditioner, the recirculated clean air is kept separate from the ambient airflow system. This protects the electronic controls and prevents shutdowns caused by heat, humidity, dust, and other contaminants.



28 Series

33NSM Series



36N Series

■ Ambient airflow
■ Clean airflow

Note: Hoffman side-mount units are directly interchangeable with comparable GENESIS™ 33NSM models and Slimboy models (simply remove the hanging brackets when mounting to an existing Slimboy cutout). A field retrofit plate is needed only when mounting 28 Series to an existing Slimboy 28 cutout and when mounting the 36N Series to an existing Slimboy 36 cutout. Contact Hoffman for ordering retrofit plates.

Side-Mount Mid-Size Air Conditioners

28 Series 28.50 x 17.00 x 11.33 (724 x 432 x 288) Replacement Filter No. 10100056

Catalog Number	Voltage	Hz	Phase	BTU/Hr. @ 125°F/125°F	Full Load Amps	Max Amb. Temp °F/°C	Shipping Weight Lbs./Kgs.
M280216G013	115	50/60	1	2200/2200	9.8/9.0	125/52	98/45
M280226G004	230	50/60	1	2200/2200	5.0/4.5	125/52	98/45
M280416G007	115	50/60	1	3800/4000	14.6/14.0	125/52	116/53
M280426G032	230	50/60	1	3800/4000	7.4/6.9	125/52	116/53

33NSM Series 34.37 x 12.00 x 9.88 (873 x 305 x 251) Replacement Filter No. 10100057

Catalog Number	Voltage	Hz	Phase	BTU/Hr. @ 125°F/125°F	Full Load Amps	Max Amb. Temp °F/°C	Shipping Weight Lbs./Kgs.
M330416G010	115	50/60	1	3700/4000	13.0/13.2	125/52	105/48
M330426G009	230	50/60	1	3700/4000	7.2/7.3	125/52	105/48

36N Series 38.72 x 15.00 x 11.38 (984 x 381 x 288) Replacement Filter No. 10100056

Catalog Number	Voltage	Hz	Phase	BTU/Hr. @ 125°F/125°F	Full Load Amps	Max Amb. Temp °F/°C	Shipping Weight Lbs./Kgs.
M360616307	115	50/60	1	5000/6000	14.0/14.0	125/52	120/54
M360626306	230	50/60	1	5000/6000	7.0/7.0	125/52	120/54



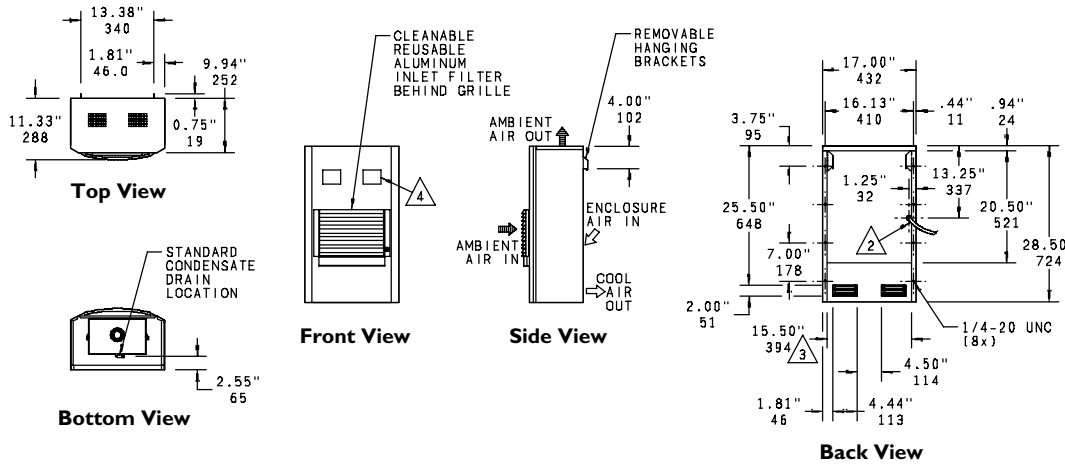
A Pentair Company

AIR CONDITIONERS

Bulletin
MCL

Side-Mount Mid-Size Air Conditioners

28 Series

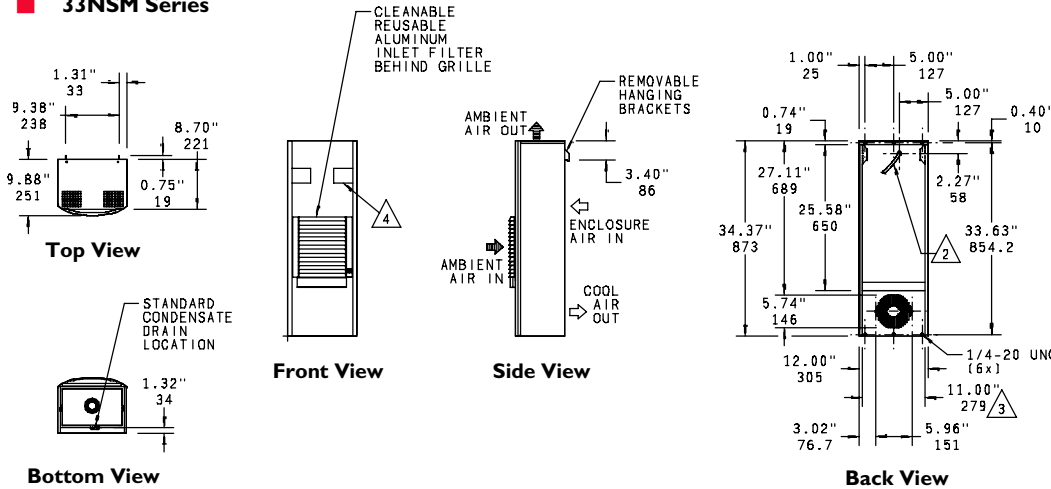


NOTE:

1. Gasket kit for mounting to enclosure included.
2. Service cord.
3. 20.50 x 15.50-inch area is recessed 1.00-inch from rear surface, or plenum.
4. Condenser air discharge out front is optional.

Number in triangle in CAD view refers to note number.

33NSM Series

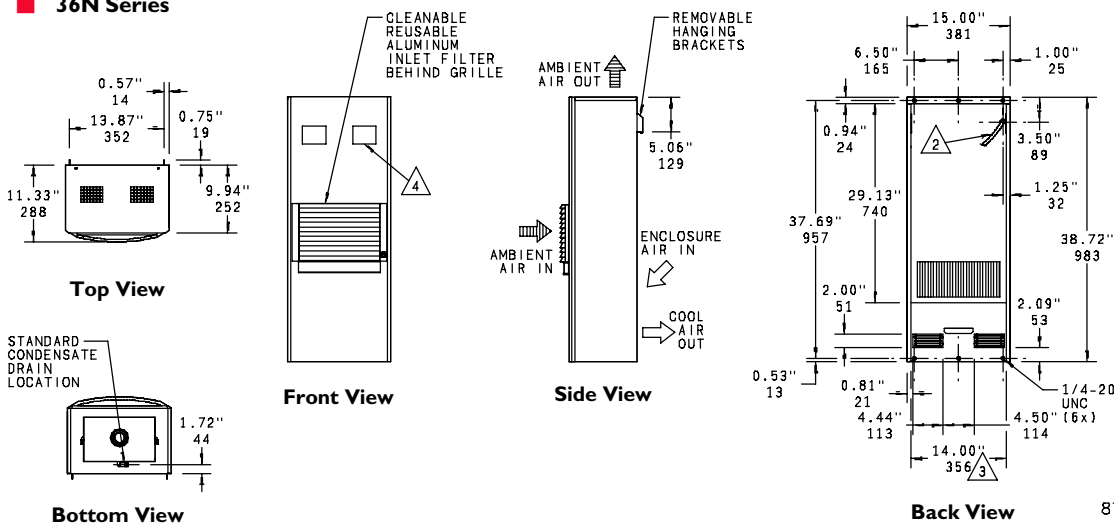


NOTE:

1. Gasket kit for mounting to enclosure included.
2. Service cord.
3. 25.58 x 11.00-inch area is recessed 1.12-inches from rear surface, or plenum.
4. Condenser air discharge out front is optional.

Number in triangle in CAD view refers to note number.

36N Series



NOTE:

1. Gasket kit for mounting to enclosure included.
2. Service cord.
3. 14.00 x 29.13-inch area is recessed 1.44-inches from rear surface, or plenum.
4. Condenser air discharge out front is optional.

Number in triangle in CAD view refers to note number.

87542341

