



The new degree of comfort.®

Renaissance Xcede™ Series Commerical Package Air Conditioner 5.0-10.0 Ton



EMRHR- High Efficiency Series

R410A, 60 Hz

Nominal Sizes [5.0, 5.5, 6.0, 8.0 & 10 Ton]



60Hz



TABLE OF CONTENTS

Unit Features & Benefits	3-6
Model Number Identification	7
General Data	8-9
General Data Notes	10
Gross Systems Performance Data	11-15
Airflow Performance Data	16-18
Electrical Data	19
Sound Data 60 Hertz	19
Unit Dimensions	20-22
Typical Installations	23
Wiring Diagram	24-25
Guide Specification EMRHR 042 thru 078	26-28
Guide Specification EMRHR 102 thru 120	29-31

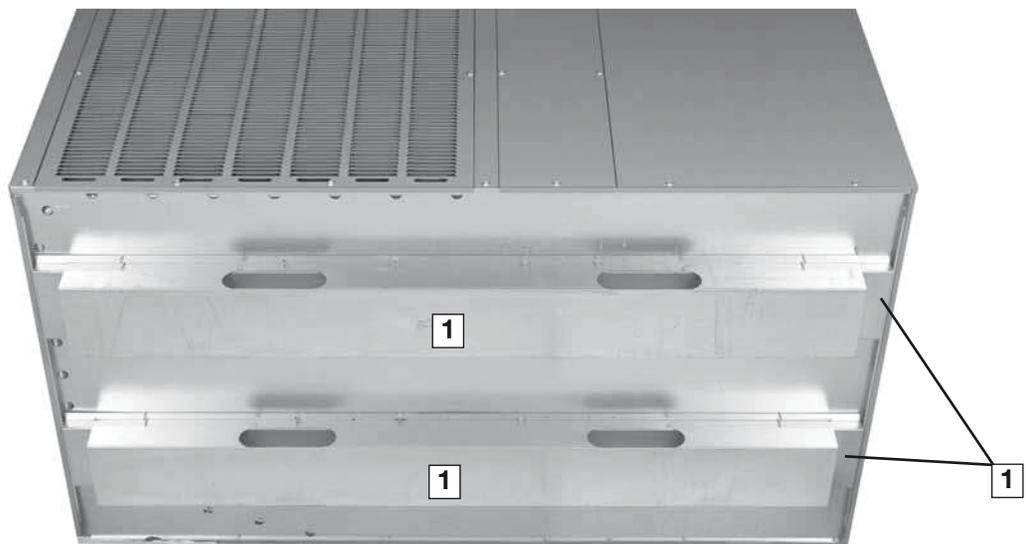


The EMRHR series of Package Air Conditioners is designed to be the most efficient, quickest to install, easiest to service, and most reliable units in the industry - while still maintaining an affordable price. This platform provides you with a full line of nominal capacities from 5.0 through 10 Tons.

As with all units offered by Rheem, we started our design process with input from the customer. From fan grille to the base rails, Rheem has combined 30 years worth of package unit design experience with input from Dealers to meet the latest application requirements.

Starting at the bottom, the base rails (1) allow for separation between the unit base and the ground level, protecting the base from ground moisture and providing air circulation around the unit. Constructed from sturdy 14-gauge G-90 sheet metal, the base rails also allow for easier maneuverability during installation.

The 096 and 120 models employ a full perimeter base rail that integrate fork slots and rigging holes (2) to save setup time on the job site.



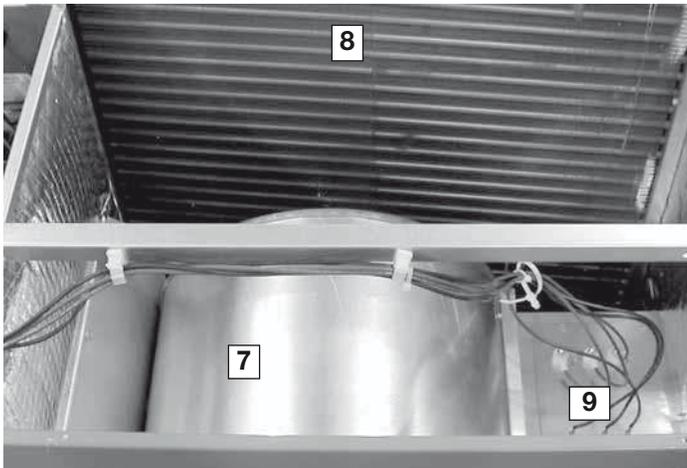


Rheem package equipment uses a pre paint system, rated at 1008 hour salt spray per ASTM B117. This process also greatly diminishes and dulls sharp edges, reducing the occurrence of cuts and torn clothes.

Furthermore, the cabinet is a slim 33" wide. Full-louver coil protection ([2]) makes Rheem unique in the industry and also totally protects the outdoor coil from vandalism and weather extremes.

Keeping service technicians in mind, Rheem takes pride providing easy access to internal components. The outdoor-section top cover ([3]) is easily removed to allow access to the scroll compressor ([4]), outdoor fan motor ([5]), and refrigerant tubing ([6]).





The indoor-section top cover also easily opens to access the removable blower housing and motor (7). This also gains total access to the indoor coil for cleaning and service (8).

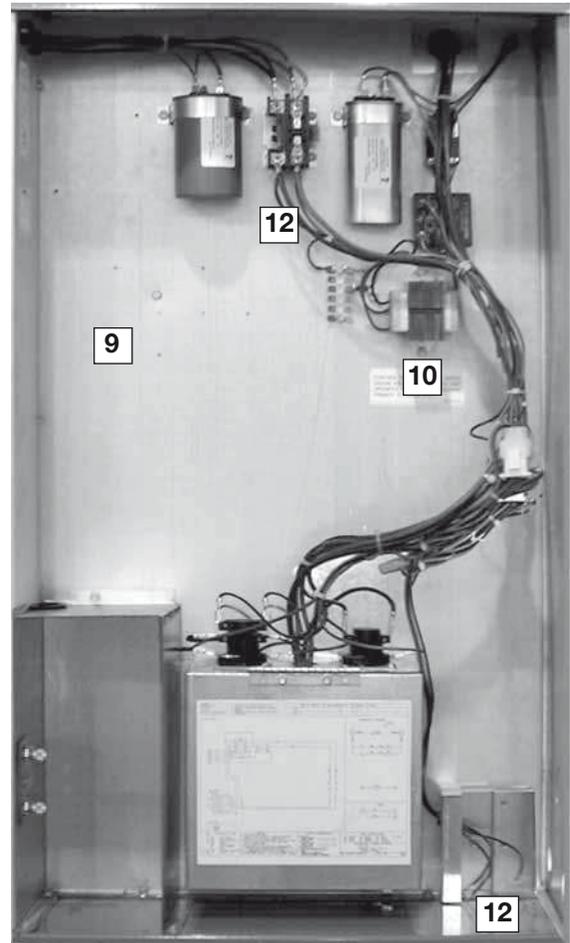
The indoor motor and blower system will achieve nominal 400 CFM per ton up to a minimum of .8 inches of static pressure, which helps to eliminate customer dissatisfaction over poor air-flow brought about by high-static duct designs.

The supply and return are located along width of the unit.

Models 060 thru 072 uses Direct drive indoor motor while 096 and 120 has a high performance belt drive motor with variable pitch pulleys and quick-adjust belt system.



The controls are located in a large, easy-to-access control box (10), which provides plenty of space in which to troubleshoot. The transformer (11) is protected by an in-line fuse, which protects the transformer during a low-voltage electrical short. The low-voltage (12) and high-voltage (13) wiring connections are easily accessed and have ample room around which to maneuver. Troubleshooting is further aided with number- and color-coded wiring, which corresponds with the large, easy-to-read wiring diagram located on the inside of the control box access panel.



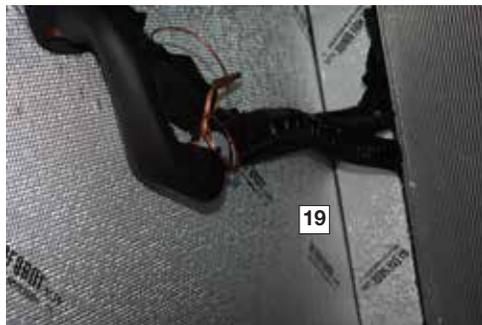
High and low refrigerant pressure can easily and accurately be measured using the two gauge ports (**14**) located inside the control box.



A small side panel grants access to a removable, sloped drain pan (**15**), which helps to ensure indoor air quality (IAQ) throughout the life of the unit. A 3/4" PVC drain trap (**16**) assembly is provided for convenience.



The smaller chassis units have the Copper tube/Aluminum Fin coils while the larger chassis units have aluminum MicroChannel coil that uses the latest enhanced fin design for the most effective method of heat transfer with a reduction in refrigerant charge and unit weight. All units use TXVs (**19**), as refrigerant metering system.

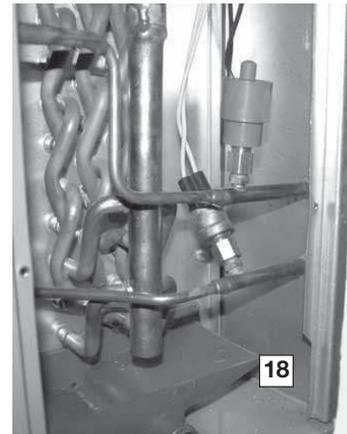


Foil-faced insulation is securely glued and captured to the cabinet of small chassis while closed-cell insulation is used for the cabinet of larger chassis. On the base of the unit, closed-cell insulation is used to prevent moisture from being absorbed and help reduce mold content to provide better indoor air quality.

For reliability and long-lasting operation, Rheem uses 100% scroll compressor technology (**17**) on all package platforms. With over 18 years of history, the scroll compressor has proven to be reliable, efficient, and quiet during operation.

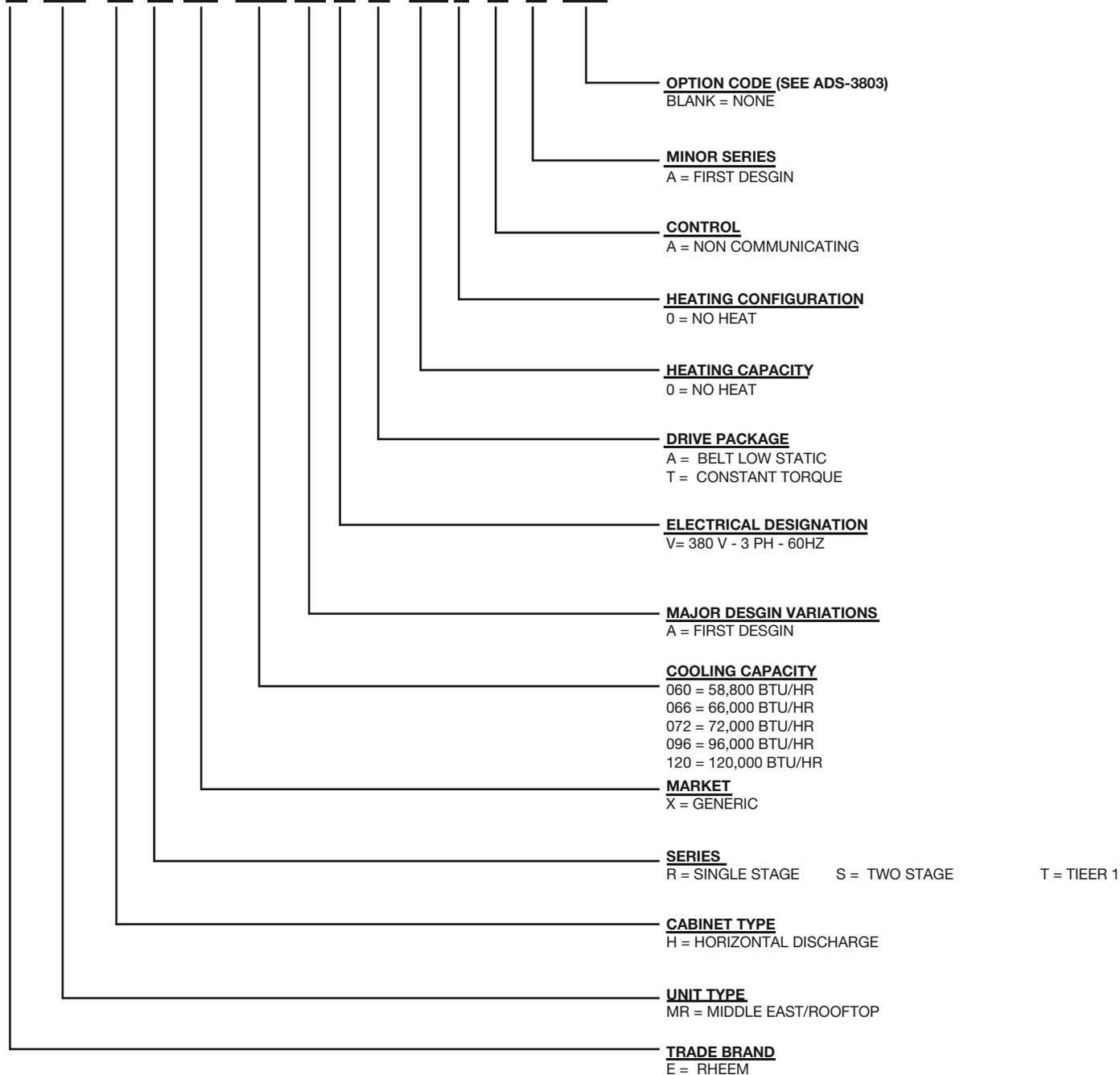


High and low pressure controls are provided from factory (**18**).



NOMENCLATURE

E MR H R X 066 A V T 00 0 A A ***



[] Designates Metric Conversions

Available Models 60Hz
EMRHRX060AVT000AAAA0
EMRHRX066AVT000AAAA0
EMRHRX072AVT000AAAA0
EMRHRX096AVA000AAAA0
EMRHRX120AVA000AAAA0



GENERAL DATA - EMRHR NOMINAL SIZES 5.0 - 10 TONS [17.6 - 35.2 kW]

Model EMRHR Series	X060AVT	X066AVT	X072AVT
Compressor			
No./Type	1/Scroll	1/Scroll	1/Scroll
Outdoor Sound Rating (dB)	78	78	86
Outdoor Coil - Fin Type			
Tube Type	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	Rined	Rined	Rined
Face Area sq. ft [sq.m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows/ FPI [FPcm]	16.54 [1.54]	16.54 [1.54]	16.54 [1.54]
	2/22 [9]	2/22 [9]	2/22 [9]
Indoor Coil - Fin Type			
Tube Type	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	Rined	Rined	Rined
Face Area sq. ft [sq.m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows/ FPI [FPcm]	5.78 [0.54]	5.78 [0.54]	5.78 [0.54]
Refrigerant Control	4/13 [5]	4/13 [5]	4/13 [5]
Drain Connection No./Size in. [mm]	TX Valves	TX Valves	TX Valves
	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
Outdoor Fan Type			
No. Used/Diameter in [mm]	Propeller	Propeller	Propeller
Drive Type/No. Speeds	1/24 [609.6]	1/24 [609.6]	1/24 [609.6]
CFM [L/s]	Direct/1	Direct/1	Direct/1
No. Motors/HP	3800 [1793]	3800 [1793]	3800 [1793]
Motor RPM	1 at 1/3 HP	1 at 1/3 HP	1 at 1/2 HP
	1075	1075	944
Indoor Fan Type			
No. Used/Diameter in [mm]	FC Centrifugal	FC Centrifugal	FC Centrifugal
Drive Type	1/11x9 [279x229]	1/11x9 [279x229]	1/11x9 [279x229]
No. Speeds	Direct	Direct	Direct
No. Motors	Multiple	Multiple	Multiple
Motor HP	1	1	1
Motor RPM	1	1	1
Motor Frame Size	1050	1050	1050
	48	48	48
Filter Type			
Furnished	Permanent	Permanent	Permanent
(NO.) Size Recommended in. [mmxmmxmm]	No	No	No
	(1) 1x12x24 [25x304x609]	(1) 1x12x24 [25x304x609]	(1) 1x12x24 [25x304x609]
Refrigerant Charge Oz. [g]	196 [5556]	181 [5131]	189 [5358]
Weights			
Net Weight lbs. [kg]	364 [165]	364 [165]	364 [165]
Ship Weight lbs. [kg]	390 [177]	390 [177]	390 [177]

NOTES:

1. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270.
2. Standard 3/4" PVC P-Trap provided.

[] Designates Metric Conversions



GENERAL DATA - EMRHR

NOMINAL SIZES 5.0 - 10 TONS [17.6 - 35.2 kW]

Model EMRHR Series	X096AVA	X120AVA
Compressor		
No./Type	1/Scroll	1/Scroll
Outdoor Sound Rating (dB)⁵	78	90
Outdoor Coil - Fin Type	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.71 [18.00]	1 [25.4]
Face Area sq. ft. [sq. m]	25.4 [2.36]	25.6 [2.38]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [25.4]	1.26 [32]
Face Area sq. ft. [sq. m]	11 [1.02]	10.9 [1.01]
Rows / FPI [FPcm]	11 / 20 [8]	1 / 20 [8]
Refrigerant Control	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8500 [4011]
No. Motors/HP	2 at 1/5 HP	2 at 1/3 HP
Motor RPM	820	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type	Belt (Adjustable)	Belt (Adjustable)
No. Speeds	Single	Single
No. Motors	1	1
Motor HP	2	2
Motor RPM	1725	1725
Motor Frame Size	56	56
Filter - Type	Permanent	Permanent
Furnished	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(2) .875x18x24 [22x457x610]	(2) .875x18x24 [22x457x610]
Refrigerant Charge Oz. [g]	98 [2778]	134 [3799]
Weights		
Net Weight lbs. [kg]	948 [430]	948 [430]
Ship Weight lbs. [kg]	987 [448]	987 [448]

NOTES:

- Outdoor Sound Rating shown is tested in accordance with ARI Standard 270.
- Standard 3/4" PVC P-Trap provided.

[] Designates Metric Conversions

NOTES:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat.
- EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
- Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.



COMMERCIAL PACKAGE UNIT PERFORMANCE DATA				
Model No.	T1 PERFORMANCE		T3 PERFORMANCE	
	Rated Capacity (Btu/hr)	EER (Btu/hr/W)	Rated Capacity (Btu/hr)	EER (Btu/hr/W)
EMRHRX060AVT***	57000	11.5	53300	8.3
EMRHRX066AVT***	65000	11.2	58000	8.3
EMRHRX072AVT***	68000	11.2	60450	8.3
EMRHRX096AVA***	90000	11.2	80000	7.7
EMRHRX120AVA***	115000	11.2	102000	8.3

COOLING PERFORMANCE DATA - EMRHRX060AV

wBE CFM [L/s]	Entering Indoor Air @ 80°F [26.8°C] dbE ①														
	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			61°F [16.1°C]			59°F [15.0°C]		
	2250 [1062]	1960 [925]	1750 [826]	2250 [1062]	1960 [925]	1750 [826]	2250 [1062]	1960 [925]	1750 [826]	2250 [1062]	1960 [925]	1750 [826]	2250 [1062]	1960 [925]	1750 [826]
DR ①	0.13	0.10	0.07	0.13	0.10	0.07	0.13	0.10	0.07	0.13	0.10	0.07	0.13	0.10	0.07
75°F [23.9°C]															
Total BTUH [kW]	72.1 [21.1]	70.2 [20.6]	68.9 [20.2]	69.5 [20.4]	67.6 [19.8]	66.3 [19.4]	66.3 [19.4]	65.2 [19.1]	63.5 [18.6]	62.2 [18.2]	60.8 [17.8]	59.6 [17.5]	59.3 [17.4]	57.7 [16.9]	56.6 [16.6]
Sens BTUH [kW]	48.1 [14.1]	45 [13.2]	42.7 [12.5]	57 [16.9]	54 [15.8]	51.3 [15]	51.3 [15]	64.9 [19]	60.7 [17.8]	57.7 [16.9]	62.4 [18.3]	59.6 [17.5]	59.3 [17.4]	57.7 [16.9]	56.6 [16.6]
Power	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.3	3.2	3.2	3.2	3.2
80°F [26.7°C]															
Total BTUH [kW]	70.5 [20.7]	68.7 [20.1]	67.3 [19.7]	67.9 [19.9]	66.1 [19.4]	64.8 [19]	64.8 [19]	63.6 [18.6]	61.9 [18.1]	60.7 [17.8]	60.8 [17.8]	58.1 [17]	57.7 [16.9]	56.2 [16.5]	55.1 [16.1]
Sens BTUH [kW]	47.5 [13.9]	44.4 [13]	42.2 [12.4]	57.1 [16.7]	53.4 [15.6]	50.7 [14.9]	50.7 [14.9]	63.6 [18.6]	60.1 [17.6]	57.1 [16.7]	60.4 [17.8]	58.1 [17]	57.7 [16.9]	56.2 [16.5]	55.1 [16.1]
Power	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.5	3.4	3.4	3.4	3.4
85°F [29.4°C]															
Total BTUH [kW]	68.8 [20.1]	67 [19.6]	65.7 [19.2]	66.1 [19.4]	64.4 [18.9]	63.1 [18.5]	63.1 [18.5]	61.8 [18.1]	60.2 [17.6]	59 [17.3]	59.1 [17.3]	56.4 [16.5]	55.9 [16.4]	54.5 [16]	53.4 [15.7]
Sens BTUH [kW]	46.7 [13.7]	43.7 [12.8]	41.5 [12.2]	56.3 [16.5]	52.7 [15.4]	50.1 [14.7]	50.1 [14.7]	61.8 [18.1]	59.4 [17.4]	56.5 [16.5]	59.1 [17.3]	56.4 [16.5]	55.9 [16.4]	54.5 [16]	53.4 [15.7]
Power	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.6	3.7	3.6	3.6
90°F [32.2°C]															
Total BTUH [kW]	66.9 [19.6]	65.1 [19.1]	63.9 [18.7]	64.2 [18.8]	62.6 [18.3]	61.3 [18]	61.3 [18]	60 [17.6]	58.4 [17.1]	57.3 [16.8]	57.2 [16.8]	54.6 [16]	54.1 [15.8]	52.6 [15.4]	51.6 [15.1]
Sens BTUH [kW]	45.9 [13.5]	43 [12.6]	40.8 [12]	55.5 [16.3]	51.9 [15.2]	49.3 [14.5]	49.3 [14.5]	60 [17.6]	58.4 [17.1]	55.7 [16.3]	57.2 [16.8]	54.6 [16]	54.1 [15.8]	52.6 [15.4]	51.6 [15.1]
Power	4.1	4.1	4	4	4	3.9	3.9	4	3.9	3.9	3.9	3.8	3.9	3.9	3.8
95°F [35.0°C]															
Total BTUH [kW]	64.9 [19]	63.2 [18.5]	62 [18.2]	62.4 [18.2]	60.6 [17.8]	59.4 [17.4]	59.4 [17.4]	58 [17]	56.4 [16.5]	55.3 [16.2]	55.2 [16.2]	52.7 [15.4]	52.1 [15.3]	50.7 [14.9]	49.7 [14.6]
Sens BTUH [kW]	45 [13.2]	42.1 [12.3]	40 [11.7]	54.6 [16]	51.1 [15]	48.5 [14.2]	48.5 [14.2]	58 [17]	56.4 [16.5]	54.9 [16.1]	55.2 [16.2]	52.7 [15.4]	52.1 [15.3]	50.7 [14.9]	49.7 [14.6]
Power	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.2	4.1	4.2	4.1	4.2	4.1	4.1
100°F [37.8°C]															
Total BTUH [kW]	62.7 [18.4]	61.1 [17.9]	59.9 [17.6]	60.1 [17.6]	58.5 [17.2]	57.4 [16.8]	57.4 [16.8]	55.8 [16.4]	54.4 [15.9]	53.3 [15.6]	53.1 [15.6]	50.7 [14.9]	49.9 [14.6]	48.6 [14.2]	47.7 [14]
Sens BTUH [kW]	44.1 [12.9]	41.2 [12.1]	39.2 [11.5]	53.7 [15.7]	50.2 [14.7]	47.7 [14]	47.7 [14]	55.8 [16.4]	54.4 [15.9]	53.3 [15.6]	53.1 [15.6]	50.7 [14.9]	49.9 [14.6]	48.6 [14.2]	47.7 [14]
Power	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.5	4.4	4.4	4.4	4.3	4.4	4.4	4.3
105°F [40.6°C]															
Total BTUH [kW]	60.5 [17.7]	58.9 [17.3]	57.7 [16.9]	57.8 [16.9]	56.3 [16.5]	55.2 [16.2]	55.2 [16.2]	53.6 [15.7]	52.2 [15.3]	51.1 [15]	50.8 [14.9]	48.5 [14.2]	47.7 [14]	46.4 [13.6]	45.5 [13.3]
Sens BTUH [kW]	43 [12.6]	40.2 [11.8]	38.2 [11.2]	52.6 [15.4]	49.2 [14.4]	46.7 [13.7]	46.7 [13.7]	53.6 [15.7]	52.2 [15.3]	51.1 [15]	50.8 [14.9]	48.5 [14.2]	47.7 [14]	46.4 [13.6]	45.5 [13.3]
Power	4.9	4.8	4.8	4.8	4.8	4.7	4.7	4.8	4.7	4.7	4.7	4.6	4.7	4.6	4.6
110°F [43.3°C]															
Total BTUH [kW]	58.1 [17]	56.6 [16.6]	55.5 [16.3]	55.4 [16.2]	54 [15.8]	52.9 [15.5]	52.9 [15.5]	51.2 [15]	49.8 [14.6]	48.8 [14.3]	48.4 [14.2]	46.2 [13.5]	45.3 [13.3]	44.1 [12.9]	43.2 [12.7]
Sens BTUH [kW]	41.8 [12.3]	39.1 [11.5]	37.2 [10.9]	51.4 [15.1]	48.1 [14.1]	45.7 [13.4]	45.7 [13.4]	51.2 [15]	49.8 [14.6]	48.8 [14.3]	48.4 [14.2]	46.2 [13.5]	45.3 [13.3]	44.1 [12.9]	43.2 [12.7]
Power	5.2	5.1	5.1	5.1	5	5	5	5	5	4.9	5	4.9	5	4.9	4.9
115°F [46.1°C]															
Total BTUH [kW]	55.6 [16.3]	54.1 [15.9]	53 [15.5]	52.9 [15.5]	51.5 [15.1]	50.5 [14.8]	50.5 [14.8]	48.6 [14.3]	47.4 [13.9]	46.4 [13.6]	45.9 [13.4]	43.8 [12.8]	42.7 [12.5]	41.6 [12.2]	40.8 [12]
Sens BTUH [kW]	40.6 [11.9]	38 [11.1]	36.1 [10.6]	50.2 [14.7]	47 [13.8]	44.6 [13.1]	44.6 [13.1]	48.6 [14.3]	47.4 [13.9]	46.4 [13.6]	45.9 [13.4]	43.8 [12.8]	42.7 [12.5]	41.6 [12.2]	40.8 [12]
Power	5.5	5.4	5.4	5.4	5.3	5.3	5.3	5.3	5.3	5.2	5.3	5.2	5.3	5.2	5.2
118.4°F [48°C]															
Total BTUH [kW]	53.8 [15.8]	52.3 [15.3]	51.3 [15]	51.1 [15]	49.7 [14.6]	48.8 [14.3]	48.8 [14.3]	46.8 [13.7]	45.6 [13.4]	44.7 [13.1]	44.1 [12.9]	42.1 [13.3]	40.9 [12]	39.8 [11.7]	39.1 [11.5]
Sens BTUH [kW]	39.7 [11.6]	37.1 [10.9]	35.3 [10.3]	49.3 [14.4]	46.1 [13.5]	43.8 [12.8]	43.8 [12.8]	46.8 [13.7]	45.6 [13.4]	44.7 [13.1]	44.1 [12.9]	42.9 [12.6]	40.9 [12]	39.8 [11.7]	39.1 [11.5]
Power	5.7	5.6	5.6	5.6	5.6	5.5	5.5	5.6	5.5	5.4	5.5	5.4	5.5	5.4	5.4
120°F [48.9°C]															
Total BTUH [kW]	52.9 [15.5]	51.5 [15.1]	50.5 [14.8]	50.2 [14.7]	48.9 [14.3]	48 [14.1]	48 [14.1]	46 [13.5]	44.8 [13.1]	43.9 [12.9]	43.2 [12.7]	41.3 [12.1]	40.1 [11.7]	39 [11.4]	38.3 [11.2]
Sens BTUH [kW]	39.3 [11.5]	36.7 [10.8]	34.9 [10.2]	48.9 [14.3]	45.7 [13.4]	43.4 [12.7]	43.4 [12.7]	46 [13.5]	44.8 [13.1]	43.9 [12.9]	43.2 [12.7]	41.3 [12.1]	40.1 [11.7]	39 [11.4]	38.3 [11.2]
Power	5.8	5.7	5.7	5.7	5.7	5.6	5.6	5.7	5.6	5.5	5.6	5.5	5.6	5.5	5.5
125°F [51.7°C]															
Total BTUH [kW]	50.1 [14.7]	48.8 [14.3]	47.8 [14]	47.5 [13.9]	46.2 [13.5]	45.3 [13.3]	45.3 [13.3]	43.2 [12.7]	42 [12.3]	41.2 [12.1]	40.4 [11.8]	38.6 [11.3]	37.3 [10.9]	36.3 [10.6]	35.6 [10.4]
Sens BTUH [kW]	37.9 [11.1]	35.4 [10.4]	33.7 [9.9]	47.5 [13.9]	44.4 [13]	42.2 [12.4]	42.2 [12.4]	43.2 [12.7]	42 [12.3]	41.2 [12.1]	40.4 [11.8]	38.6 [11.3]	37.3 [10.9]	36.3 [10.6]	35.6 [10.4]
Power	6.1	6	6	6.1	6	6	6	6	5.9	5.9	6	5.8	5.9	5.8	5.8

Outdoor Dry Bulb Temperature

COOLING PERFORMANCE DATA - EMRHRX066AV

wBE CFM [L/s]	Entering Indoor Air @ 80°F [26.8°C] dbE ①														
	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			61°F [16.1°C]			59°F [15.0°C]		
	2480 [1170]	1920 [1038]	1920 [906]	2480 [1170]	2200 [1038]	2480 [1170]	2200 [1038]	1920 [906]	2480 [1170]	2200 [1038]	1920 [906]	2480 [1170]	2200 [1038]	1920 [906]	
DR ①	0.09	0.07	0.05	0.09	0.07	0.05	0.09	0.07	0.05	0.09	0.07	0.05	0.09	0.07	0.05
75°F [23.9°C]	78.6 [23]	76.8 [22.5]	75 [22]	76 [22.3]	74.2 [21.8]	72.5 [21.3]	71.7 [21]	70.1 [20.5]	68.5 [20.1]	66.9 [19.6]	65.3 [19.3]	63.7 [18.9]	62.1 [18.4]	60.5 [18.0]	58.9 [17.5]
Total BTUH [kW]	53.1 [15.6]	50.1 [14.7]	47.1 [13.8]	44.1 [12.9]	41.1 [12.0]	38.1 [11.1]	35.1 [10.2]	32.1 [9.3]	29.1 [8.4]	26.1 [7.5]	23.1 [6.6]	20.1 [5.7]	17.1 [4.8]	14.1 [3.9]	11.1 [3.0]
Sens BTUH [kW]	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Power	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
80°F [26.7°C]	77 [22.6]	75.3 [22.1]	73.5 [21.5]	74.4 [21.8]	72.7 [21.3]	71 [20.8]	70.1 [20.5]	68.5 [20.1]	66.9 [19.6]	65.3 [19.3]	63.7 [18.9]	62.1 [18.4]	60.5 [18.0]	58.9 [17.5]	57.3 [17.0]
Total BTUH [kW]	52.4 [15.4]	49.5 [14.5]	46.6 [13.6]	43.6 [12.7]	40.6 [11.8]	37.6 [10.9]	34.6 [10.0]	31.6 [9.1]	28.6 [8.2]	25.6 [7.3]	22.6 [6.4]	19.6 [5.5]	16.6 [4.6]	13.6 [3.7]	10.6 [2.8]
Sens BTUH [kW]	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Power	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
85°F [29.4°C]	75.3 [22.1]	73.6 [21.6]	71.9 [21.1]	72.6 [21.3]	71 [20.8]	69.3 [20.3]	67.6 [19.8]	65.9 [19.3]	64.2 [18.8]	62.5 [18.3]	60.8 [17.8]	59.1 [17.3]	57.4 [16.8]	55.7 [16.3]	54 [15.8]
Total BTUH [kW]	51.7 [15.2]	48.8 [14.3]	45.9 [13.5]	42.9 [12.6]	39.9 [11.7]	36.9 [10.8]	33.9 [9.9]	30.9 [9.0]	27.9 [8.1]	24.9 [7.2]	21.9 [6.3]	18.9 [5.4]	15.9 [4.5]	12.9 [3.6]	9.9 [2.7]
Sens BTUH [kW]	4.6	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Power	4.6	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
90°F [32.2°C]	73.4 [21.5]	71.7 [21]	70.1 [20.5]	70.8 [20.7]	69.2 [20.3]	67.6 [19.8]	66.0 [19.3]	64.4 [18.8]	62.8 [18.3]	61.2 [17.8]	59.6 [17.3]	58.0 [16.8]	56.4 [16.3]	54.8 [15.8]	53.2 [15.3]
Total BTUH [kW]	50.9 [14.9]	48.1 [14.1]	45.2 [13.2]	42.2 [12.3]	39.2 [11.4]	36.2 [10.5]	33.2 [9.6]	30.2 [8.7]	27.2 [7.8]	24.2 [6.9]	21.2 [6.0]	18.2 [5.1]	15.2 [4.2]	12.2 [3.3]	9.2 [2.4]
Sens BTUH [kW]	4.8	4.8	4.7	4.8	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Power	4.8	4.8	4.7	4.8	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
95°F [35.0°C]	71.4 [20.9]	69.8 [20.4]	68.2 [20]	68.8 [20.1]	67.2 [19.7]	65.6 [19.2]	64.0 [18.7]	62.4 [18.2]	60.8 [17.7]	59.2 [17.2]	57.6 [16.7]	56.0 [16.2]	54.4 [15.7]	52.8 [15.2]	51.2 [14.7]
Total BTUH [kW]	50 [14.7]	47.2 [13.8]	44.4 [13]	41.4 [12.1]	38.4 [11.2]	35.4 [10.3]	32.4 [9.4]	29.4 [8.5]	26.4 [7.6]	23.4 [6.7]	20.4 [5.8]	17.4 [4.9]	14.4 [4.0]	11.4 [3.1]	8.4 [2.2]
Sens BTUH [kW]	5.1	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Power	5.1	5	5	5	5	5	5	5	5	5	5	5	5	5	5
100°F [37.8°C]	69.3 [20.3]	67.7 [19.8]	66.1 [19.4]	66.6 [19.5]	65.1 [19.1]	63.6 [18.6]	62.1 [18.1]	60.6 [17.6]	59.1 [17.1]	57.6 [16.6]	56.1 [16.1]	54.6 [15.6]	53.1 [15.1]	51.6 [14.6]	50.1 [14.1]
Total BTUH [kW]	49.1 [14.4]	46.3 [13.6]	43.6 [12.8]	40.6 [11.9]	37.6 [11.0]	34.6 [10.1]	31.6 [9.2]	28.6 [8.3]	25.6 [7.4]	22.6 [6.5]	19.6 [5.6]	16.6 [4.7]	13.6 [3.8]	10.6 [2.9]	7.6 [2.0]
Sens BTUH [kW]	5.3	5.3	5.2	5.3	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
Power	5.3	5.3	5.2	5.3	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
105°F [40.6°C]	67 [19.6]	65.5 [19.2]	64 [18.7]	64.4 [18.9]	62.9 [18.4]	61.4 [17.9]	60.1 [17.6]	58.8 [17.2]	57.5 [16.9]	56.2 [16.6]	54.9 [16.3]	53.6 [16.0]	52.3 [15.7]	51.0 [15.4]	49.7 [15.1]
Total BTUH [kW]	48 [14.1]	45.3 [13.3]	42.6 [12.5]	39.6 [11.6]	36.6 [10.7]	33.6 [9.8]	30.6 [9.0]	27.6 [8.1]	24.6 [7.2]	21.6 [6.3]	18.6 [5.4]	15.6 [4.5]	12.6 [3.6]	9.6 [2.7]	6.6 [1.8]
Sens BTUH [kW]	5.6	5.6	5.5	5.6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Power	5.6	5.6	5.5	5.6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
110°F [43.3°C]	64.6 [18.9]	63.2 [18.5]	61.7 [18.1]	62 [18.2]	60.6 [17.8]	59.2 [17.3]	57.7 [16.9]	56.4 [16.5]	55.1 [16.1]	53.8 [15.7]	52.5 [15.3]	51.2 [14.9]	49.9 [14.5]	48.6 [14.1]	47.3 [13.7]
Total BTUH [kW]	46.9 [13.7]	44.2 [13]	41.6 [12.2]	38.6 [11.3]	35.6 [10.4]	32.6 [9.5]	29.6 [8.6]	26.6 [7.7]	23.6 [6.8]	20.6 [5.9]	17.6 [5.0]	14.6 [4.1]	11.6 [3.2]	8.6 [2.3]	5.6 [1.4]
Sens BTUH [kW]	5.9	5.9	5.8	5.9	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
Power	5.9	5.9	5.8	5.9	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
115°F [46.1°C]	62.1 [18.2]	60.7 [17.8]	59.3 [17.4]	59.5 [17.4]	58.1 [17]	56.8 [16.6]	55.5 [16.2]	54.2 [15.8]	52.9 [15.4]	51.6 [15.0]	50.3 [14.6]	49.0 [14.2]	47.7 [13.8]	46.4 [13.4]	45.1 [13.0]
Total BTUH [kW]	45.6 [13.4]	43.1 [12.6]	40.5 [11.9]	37.5 [11.0]	34.5 [10.1]	31.5 [9.2]	28.5 [8.3]	25.5 [7.4]	22.5 [6.5]	19.5 [5.6]	16.5 [4.7]	13.5 [3.8]	10.5 [2.9]	7.5 [2.0]	4.5 [1.1]
Sens BTUH [kW]	6.2	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Power	6.2	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
118.4°F [48°C]	60.3 [17.7]	58.9 [17.3]	57.6 [16.9]	57.7 [16.9]	56.3 [16.5]	55 [16.1]	53.7 [15.7]	52.4 [15.3]	51.1 [14.9]	49.8 [14.5]	48.5 [14.1]	47.2 [13.7]	45.9 [13.3]	44.6 [12.9]	43.3 [12.5]
Total BTUH [kW]	44.7 [13.1]	42.2 [12.4]	39.8 [11.7]	36.8 [10.8]	33.8 [9.9]	30.8 [9.0]	27.8 [8.1]	24.8 [7.2]	21.8 [6.3]	18.8 [5.4]	15.8 [4.5]	12.8 [3.6]	9.8 [2.7]	6.8 [1.8]	3.8 [0.9]
Sens BTUH [kW]	6.4	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Power	6.4	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
120°F [48.9°C]	59.4 [17.4]	58.1 [17]	56.8 [16.6]	56.8 [16.6]	55.5 [16.3]	54.2 [15.9]	52.9 [15.5]	51.6 [15.1]	50.3 [14.7]	49.0 [14.3]	47.7 [13.9]	46.4 [13.5]	45.1 [13.1]	43.8 [12.7]	42.5 [12.3]
Total BTUH [kW]	44.3 [13]	41.8 [12.3]	39.4 [11.5]	36.4 [10.6]	33.4 [9.7]	30.4 [8.8]	27.4 [7.9]	24.4 [7.0]	21.4 [6.1]	18.4 [5.2]	15.4 [4.3]	12.4 [3.4]	9.4 [2.5]	6.4 [1.6]	3.4 [0.7]
Sens BTUH [kW]	6.5	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Power	6.5	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
125°F [51.7°C]	56.7 [16.6]	55.4 [16.2]	54.1 [15.9]	54 [15.8]	52.8 [15.5]	51.6 [15.1]	50.4 [14.7]	49.2 [14.3]	48.0 [13.9]	46.8 [13.5]	45.6 [13.1]	44.4 [12.7]	43.2 [12.3]	42.0 [11.9]	40.8 [11.5]
Total BTUH [kW]	42.9 [12.6]	40.5 [11.9]	38.1 [11.2]	35.1 [10.3]	32.1 [9.4]	29.1 [8.5]	26.1 [7.6]	23.1 [6.7]	20.1 [5.8]	17.1 [4.9]	14.1 [4.0]	11.1 [3.1]	8.1 [2.2]	5.1 [1.3]	2.1 [0.4]
Sens BTUH [kW]	6.8	6.8	6.7	6.8	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Power	6.8	6.8	6.7	6.8	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7

Outdoor Dry Bulb Temperature

COOLING PERFORMANCE DATA - EMRHRX072AV

wBE CFM [L/s] DR ①	Entering Indoor Air @ 80°F [26.8°C] dbE ①																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
	67°F [19.4°C]				69°F [17.2°C]				61°F [16.1°C]				59°F [15.0°C]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
	2480 [1170]	1920 [1038]	1920 [906]	2480 [1170]	2200 [1038]	2200 [906]	1920 [1038]	1920 [906]	2480 [1170]	2200 [1038]	2200 [906]	1920 [1038]	2480 [1170]	2200 [1038]	2200 [906]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
75°F [23.9°C]	Total BTUH [kW]	81.8 [24]	79.9 [23.4]	78.1 [22.9]	75.6 [22.1]	74.9 [21.9]	73.2 [21.4]	71.5 [21.1]	74.9 [21.9]	73.2 [21.4]	71.5 [20.9]	70.5 [20.7]	68.9 [20.2]	69 [20.2]	67.4 [19.8]	65.9 [19.3]	64.3 [18.9]	62.7 [18.4]	61.8 [18.1]	60.4 [17.7]	59 [17.3]	57.8 [17.1]	56.1 [16.4]	54.8 [16.1]	53.8 [15.8]	52.5 [15.4]	51.3 [15]	50.1 [14.7]	48.7 [14.2]	47.6 [13.9]	46 [13.5]	44.9 [13.2]	43.5 [12.9]	42.1 [12.5]	40.8 [12.2]	39.5 [11.9]	38.1 [11.5]	36.8 [11.2]	35.4 [10.8]	34.1 [10.5]	32.7 [10.2]	31.4 [9.9]	30.1 [9.6]	28.7 [9.3]	27.4 [9]	26.1 [8.7]	24.8 [8.4]	23.5 [8.1]	22.2 [7.8]	20.9 [7.5]	19.6 [7.2]	18.3 [6.9]	17 [6.6]	15.7 [6.3]	14.4 [6]	13.1 [5.7]	11.8 [5.4]	10.5 [5.1]	9.2 [4.8]	7.9 [4.5]	6.6 [4.2]	5.3 [3.9]	4 [3.6]	2.7 [3.3]	1.4 [3]	0.1 [2.7]	-1.2 [2.4]	-2.5 [2.1]	-3.8 [1.8]	-5.1 [1.5]	-6.4 [1.2]	-7.7 [0.9]	-9 [0.6]	-10.3 [0.3]	-11.6 [0]	-12.9 [0.3]	-14.2 [0.6]	-15.5 [0.9]	-16.8 [1.2]	-18.1 [1.5]	-19.4 [1.8]	-20.7 [2.1]	-22 [2.4]	-23.3 [2.7]	-24.6 [3]	-25.9 [3.3]	-27.2 [3.6]	-28.5 [3.9]	-29.8 [4.2]	-31.1 [4.5]	-32.4 [4.8]	-33.7 [5.1]	-35 [5.4]	-36.3 [5.7]	-37.6 [6]	-38.9 [6.3]	-40.2 [6.6]	-41.5 [6.9]	-42.8 [7.2]	-44.1 [7.5]	-45.4 [7.8]	-46.7 [8.1]	-48 [8.4]	-49.3 [8.7]	-50.6 [9]	-51.9 [9.3]	-53.2 [9.6]	-54.5 [9.9]	-55.8 [10.2]	-57.1 [10.5]	-58.4 [10.8]	-59.7 [11.1]	-61 [11.4]	-62.3 [11.7]	-63.6 [12]	-64.9 [12.3]	-66.2 [12.6]	-67.5 [12.9]	-68.8 [13.2]	-70.1 [13.5]	-71.4 [13.8]	-72.7 [14.1]	-74 [14.4]	-75.3 [14.7]	-76.6 [15]	-77.9 [15.3]	-79.2 [15.6]	-80.5 [15.9]	-81.8 [16.2]	-83.1 [16.5]	-84.4 [16.8]	-85.7 [17.1]	-87 [17.4]	-88.3 [17.7]	-89.6 [18]	-90.9 [18.3]	-92.2 [18.6]	-93.5 [18.9]	-94.8 [19.2]	-96.1 [19.5]	-97.4 [19.8]	-98.7 [20.1]	-100 [20.4]	-101.3 [20.7]	-102.6 [21]	-103.9 [21.3]	-105.2 [21.6]	-106.5 [21.9]	-107.8 [22.2]	-109.1 [22.5]	-110.4 [22.8]	-111.7 [23.1]	-113 [23.4]	-114.3 [23.7]	-115.6 [24]	-116.9 [24.3]	-118.2 [24.6]	-119.5 [24.9]	-120.8 [25.2]	-122.1 [25.5]	-123.4 [25.8]	-124.7 [26.1]	-126 [26.4]	-127.3 [26.7]	-128.6 [27]	-129.9 [27.3]	-131.2 [27.6]	-132.5 [27.9]	-133.8 [28.2]	-135.1 [28.5]	-136.4 [28.8]	-137.7 [29.1]	-139 [29.4]	-140.3 [29.7]	-141.6 [30]	-142.9 [30.3]	-144.2 [30.6]	-145.5 [30.9]	-146.8 [31.2]	-148.1 [31.5]	-149.4 [31.8]	-150.7 [32.1]	-152 [32.4]	-153.3 [32.7]	-154.6 [33]	-155.9 [33.3]	-157.2 [33.6]	-158.5 [33.9]	-159.8 [34.2]	-161.1 [34.5]	-162.4 [34.8]	-163.7 [35.1]	-165 [35.4]	-166.3 [35.7]	-167.6 [36]	-168.9 [36.3]	-170.2 [36.6]	-171.5 [36.9]	-172.8 [37.2]	-174.1 [37.5]	-175.4 [37.8]	-176.7 [38.1]	-178 [38.4]	-179.3 [38.7]	-180.6 [39]	-181.9 [39.3]	-183.2 [39.6]	-184.5 [39.9]	-185.8 [40.2]	-187.1 [40.5]	-188.4 [40.8]	-189.7 [41.1]	-191 [41.4]	-192.3 [41.7]	-193.6 [42]	-194.9 [42.3]	-196.2 [42.6]	-197.5 [42.9]	-198.8 [43.2]	-200.1 [43.5]	-201.4 [43.8]	-202.7 [44.1]	-204 [44.4]	-205.3 [44.7]	-206.6 [45]	-207.9 [45.3]	-209.2 [45.6]	-210.5 [45.9]	-211.8 [46.2]	-213.1 [46.5]	-214.4 [46.8]	-215.7 [47.1]	-217 [47.4]	-218.3 [47.7]	-219.6 [48]	-220.9 [48.3]	-222.2 [48.6]	-223.5 [48.9]	-224.8 [49.2]	-226.1 [49.5]	-227.4 [49.8]	-228.7 [50.1]	-230 [50.4]	-231.3 [50.7]	-232.6 [51]	-233.9 [51.3]	-235.2 [51.6]	-236.5 [51.9]	-237.8 [52.2]	-239.1 [52.5]	-240.4 [52.8]	-241.7 [53.1]	-243 [53.4]	-244.3 [53.7]	-245.6 [54]	-246.9 [54.3]	-248.2 [54.6]	-249.5 [54.9]	-250.8 [55.2]	-252.1 [55.5]	-253.4 [55.8]	-254.7 [56.1]	-256 [56.4]	-257.3 [56.7]	-258.6 [57]	-259.9 [57.3]	-261.2 [57.6]	-262.5 [57.9]	-263.8 [58.2]	-265.1 [58.5]	-266.4 [58.8]	-267.7 [59.1]	-269 [59.4]	-270.3 [59.7]	-271.6 [60]	-272.9 [60.3]	-274.2 [60.6]	-275.5 [60.9]	-276.8 [61.2]	-278.1 [61.5]	-279.4 [61.8]	-280.7 [62.1]	-282 [62.4]	-283.3 [62.7]	-284.6 [63]	-285.9 [63.3]	-287.2 [63.6]	-288.5 [63.9]	-289.8 [64.2]	-291.1 [64.5]	-292.4 [64.8]	-293.7 [65.1]	-295 [65.4]	-296.3 [65.7]	-297.6 [66]	-298.9 [66.3]	-300.2 [66.6]	-301.5 [66.9]	-302.8 [67.2]	-304.1 [67.5]	-305.4 [67.8]	-306.7 [68.1]	-308 [68.4]	-309.3 [68.7]	-310.6 [69]	-311.9 [69.3]	-313.2 [69.6]	-314.5 [69.9]	-315.8 [70.2]	-317.1 [70.5]	-318.4 [70.8]	-319.7 [71.1]	-321 [71.4]	-322.3 [71.7]	-323.6 [72]	-324.9 [72.3]	-326.2 [72.6]	-327.5 [72.9]	-328.8 [73.2]	-330.1 [73.5]	-331.4 [73.8]	-332.7 [74.1]	-334 [74.4]	-335.3 [74.7]	-336.6 [75]	-337.9 [75.3]	-339.2 [75.6]	-340.5 [75.9]	-341.8 [76.2]	-343.1 [76.5]	-344.4 [76.8]	-345.7 [77.1]	-347 [77.4]	-348.3 [77.7]	-349.6 [78]	-350.9 [78.3]	-352.2 [78.6]	-353.5 [78.9]	-354.8 [79.2]	-356.1 [79.5]	-357.4 [79.8]	-358.7 [80.1]	-360 [80.4]	-361.3 [80.7]	-362.6 [81]	-363.9 [81.3]	-365.2 [81.6]	-366.5 [81.9]	-367.8 [82.2]	-369.1 [82.5]	-370.4 [82.8]	-371.7 [83.1]	-373 [83.4]	-374.3 [83.7]	-375.6 [84]	-376.9 [84.3]	-378.2 [84.6]	-379.5 [84.9]	-380.8 [85.2]	-382.1 [85.5]	-383.4 [85.8]	-384.7 [86.1]	-386 [86.4]	-387.3 [86.7]	-388.6 [87]	-389.9 [87.3]	-391.2 [87.6]	-392.5 [87.9]	-393.8 [88.2]	-395.1 [88.5]	-396.4 [88.8]	-397.7 [89.1]	-399 [89.4]	-400.3 [89.7]	-401.6 [90]	-402.9 [90.3]	-404.2 [90.6]	-405.5 [90.9]	-406.8 [91.2]	-408.1 [91.5]	-409.4 [91.8]	-410.7 [92.1]	-412 [92.4]	-413.3 [92.7]	-414.6 [93]	-415.9 [93.3]	-417.2 [93.6]	-418.5 [93.9]	-419.8 [94.2]	-421.1 [94.5]	-422.4 [94.8]	-423.7 [95.1]	-425 [95.4]	-426.3 [95.7]	-427.6 [96]	-428.9 [96.3]	-430.2 [96.6]	-431.5 [96.9]	-432.8 [97.2]	-434.1 [97.5]	-435.4 [97.8]	-436.7 [98.1]	-438 [98.4]	-439.3 [98.7]	-440.6 [99]	-441.9 [99.3]	-443.2 [99.6]	-444.5 [99.9]	-445.8 [100.2]	-447.1 [100.5]	-448.4 [100.8]	-449.7 [101.1]	-451 [101.4]	-452.3 [101.7]	-453.6 [102]	-454.9 [102.3]	-456.2 [102.6]	-457.5 [102.9]	-458.8 [103.2]	-460.1 [103.5]	-461.4 [103.8]	-462.7 [104.1]	-464 [104.4]	-465.3 [104.7]	-466.6 [105]	-467.9 [105.3]	-469.2 [105.6]	-470.5 [105.9]	-471.8 [106.2]	-473.1 [106.5]	-474.4 [106.8]	-475.7 [107.1]	-477 [107.4]	-478.3 [107.7]	-479.6 [108]	-480.9 [108.3]	-482.2 [108.6]	-483.5 [108.9]	-484.8 [109.2]	-486.1 [109.5]	-487.4 [109.8]	-488.7 [110.1]	-490 [110.4]	-491.3 [110.7]	-492.6 [111]	-493.9 [111.3]	-495.2 [111.6]	-496.5 [111.9]	-497.8 [112.2]	-499.1 [112.5]	-500.4 [112.8]	-501.7 [113.1]	-503 [113.4]	-504.3 [113.7]	-505.6 [114]	-506.9 [114.3]	-508.2 [114.6]	-509.5 [114.9]	-510.8 [115.2]	-512.1 [115.5]	-513.4 [115.8]	-514.7 [116.1]	-516 [116.4]	-517.3 [116.7]	-518.6 [117]	-519.9 [117.3]	-521.2 [117.6]	-522.5 [117.9]	-523.8 [118.2]	-525.1 [118.5]	-526.4 [118.8]	-527.7 [119.1]	-529 [119.4]	-530.3 [119.7]	-531.6 [120]	-532.9 [120.3]	-534.2 [120.6]	-535.5 [120.9]	-536.8 [121.2]	-538.1 [121.5]	-539.4 [121.8]	-540.7 [122.1]	-542 [122.4]	-543.3 [122.7]	-544.6 [123]	-545.9 [123.3]	-547.2 [123.6]	-548.5 [123.9]	-549.8 [124.2]	-551.1 [124.5]	-552.4 [124.8]	-553.7 [125.1]	-555 [125.4]	-556.3 [125.7]	-557.6 [126]	-558.9 [126.3]	-560.2 [126.6]	-561.5 [126.9]	-562.8 [127.2]	-564.1 [127.5]	-565.4 [127.8]	-566.7 [128.1]	-568 [128.4]	-569.3 [128.7]	-570.6 [129]	-571.9 [129.3]	-573.2 [129.6]	-574.5 [129.9]	-575.8 [130.2]	-577.1 [130.5]	-578.4 [130.8]	-579.7 [131.1]	-581 [131.4]	-582.3 [131.7]	-583.6 [132]	-584.9 [132.3]	-586.2 [132.6]	-587.5 [132.9]	-588.8 [133.2]	-590.1 [133.5]	-591.4 [133.8]	-592.7 [134.1]	-594 [134.4]	-595.3 [134.7]	-596.6 [135]	-597.9 [135.3]	-599.2 [135.6]	-600.5 [135.9]	-601.8 [136.2]	-603.1 [136.5]	-604.4 [136.8]	-605.7 [137.1]	-607 [137.4]	-608.3 [137.7]	-609.6 [138]	-610.9 [138.3]	-612.2 [138.6]	-613.5 [138.9]	-614.8 [139.2]	-616.1 [139.5]	-617.4 [139.8]	-618.7 [140.1]	-620 [140.4]	-621.3 [140.7]	-622.6 [141]	-623.9 [141.3]	-625.2 [141.6]	-626.5 [141.9]	-627.8 [142.2]	-629.1 [142.5]	-630.4 [142.8]	-631.7 [143.1]	-633 [143.4]	-634.3 [143.7]	-635.6 [144]	-636.9 [144.3]	-638.2 [144.6]	-639.5 [144.9]	-640.8 [145.2]	-642.1 [145.5]	-643.4 [145.8]	-644.7 [146.1]	-646 [146.4]	-647.3 [146.7]	-648.6 [147]	-649.9 [147.3]	-651.2 [147.6]	-652.5 [147.9]	-653.8 [148.2]	-655.1 [148.5]	-656.4 [148.8]	-657.7 [149.1]	-659 [149.4]	-660.3 [149.7]	-661.6 [150]	-662.9 [150.3]	-664.2 [150.6]	-665.5 [150.9]	-666.8 [151.2]	-668.1 [151.5]	-669.4 [151.8]	-670.7 [152.1]	-672 [152.4]	-673.3 [152.7]	-674.6 [153]	-675.9 [153.3]	-677.2 [153.6]	-678.5 [153.9]	-679.8 [154.2]	-681.1 [154.5]	-682.4 [154.8]	-683.7 [155.1]	-685 [155.4]	-686.3 [155.7]	-687.6 [156]	-688.9 [156.3]	-690.2 [156.6]	-691.5 [156.9]	-692.8 [157.2]	-694.1 [157.5]	-695.4 [157.8]	-696.7 [158.1]	-698 [158.4]	-699.3 [158.7]	-700.6 [159]	-701.9 [159.3]	-703.2 [159.6]	-704.5 [159.9]	-705.8 [160.2]	-707.1 [160.5]	-708.4 [160.8]	-709.7 [161.1]	-711 [161.4]	-712.3 [161.7]	-713.6 [162]	-714.9 [162.3]	-716.2 [162.6]	-717.5 [162.9]	-718.8 [163.2]	-720.1 [163.5]	-721.4 [163.8]	-722.7 [164.1]	-724 [164.4]	-725.3 [164.7]	-726.6 [165]	-727.9 [165.3]	-729.2 [165.6]	-730.5 [165.9]	-731.8 [166.2]	-733.1 [166.5]	-734.4 [166.8]	-735.7 [167.1]	-737 [167.4]	-738.3 [167.7]	-739.6 [168]	-740.9 [168.3]	-742.2 [168.6]	-743.5 [168.9]	-744.8 [169.2]	-746.1 [169.5]	-747.4 [169.8]	-748.7 [170.1]	-750 [170.4]	-751.3 [170.7]	-752.6 [171]	-753.9 [171.3]	-755.2 [171.6]	-756.5 [171.9]	-757.8 [172.2]	-759.1 [172.5]	-760.4 [172.8]	-761.7 [173.1]	-763 [173.4]	-764.3 [173.7]	-765.6 [174]	-766.9 [174.3]	-768.2 [174.6]	-769.5 [174.9]	-770.8 [175.2]	-772.1 [175.5]	-773.4 [175.8]	-774.7 [176.1]	-776 [176.4]	-777.3 [176.7]	-778.6 [177]	-779.9 [177.3]	-781.2 [177.6]	-782.5 [177.9]	-783.8 [178.2]	-785.1 [178.5]	-786.4 [178.8]	-787.7 [179.1]	-789 [179.4]	-790.3 [179.7]	-791.6 [180]	-792.9 [180.3]	-794.2 [180.6]	-795.5 [180.9]	-796.8 [181.2]	-798.1 [181.5]	-799.4 [181.8]	-800.7 [182.1]	-802 [182.4]	-803.3 [182.7]	-804.6 [183]	-805.9 [183.3]	-807.2 [183.6]	-808.5 [183.9]	-809.8 [184.2]	-811.1 [184.5]	-812.4 [184.8]	-813.7 [185.1]	-815 [185.4]	-816.3 [185.7]	-817.6 [186]	-818.9 [186.3]	-820.2 [186.6]	-821.5 [186.9]	-822.8 [187.2]	-824.1 [187.5]	-825.4 [187.8]	-826.7 [188.1]	-828 [188.4]	-829.3 [188.7]	-830.6 [189]	-831.9 [189.3]	-833.2 [189.6]	-834.5 [189.9]	-835.8 [190.2]	-837.1 [190.5]	-838.4 [190.8]	-839.7 [191.1]	-841 [191.4]	-842.3 [191.7]	-843.6 [192]	-844.9 [192.3]	-846.2 [192.6]	-847.5 [192.9]	-848.8 [193.2]	-850.1 [193.5]	-851.4 [193.8]	-852.7 [194.1]	-854 [194.4]	-855.3 [194.7]	-856.6 [195]	-857.9 [195.3]	-859.2 [195.6]	-860.5 [195.9]	-861.8 [196.2]	-863.1 [196.5]	-864.4 [196.8]	-865.7 [197.1]	-867 [197.4]	-868.3 [197.7]	-869.6 [198]	-870.9 [198.3]	-872.2 [198.6]	-873.5 [198.9]	-874.8 [199.2]	-876.1 [199.5]	-877.4 [199.8]	-878.7 [200.1]	-880 [200.4]	-881.3 [200.7]	-882.6 [201]	-883.9 [201.3]	-885.2 [201.6]	-886.5 [201.9]	-887.8 [202.2]	-889.1 [

COOLING PERFORMANCE DATA - EMRHRX096AV

wbE CFM [L/s]	Entering Indoor Air @ 80°F [26.7°C] dbE ①														
	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			61°F [16.1°C]			59°F [15.0°C]		
	3900 [1841]	3300 [1557]	2500 [1180]	3900 [1841]	3300 [1557]	2500 [1180]	3900 [1841]	3300 [1557]	2500 [1180]	3900 [1841]	3300 [1557]	2500 [1180]	3900 [1841]	3300 [1557]	2500 [1180]
DR ①	0.12	0.08	0.01	0.12	0.08	0.01	0.12	0.08	0.01	0.12	0.08	0.01	0.12	0.08	0.01
75°F [23.9°C]	106.2 [31.1]	102.8 [30.1]	98.2 [28.8]	103.5 [30.3]	100.2 [29.4]	96.8 [28.1]	99.2 [29.1]	96 [28.1]	91.8 [26.9]	89.2 [26.2]	86.3 [25.3]	93.3 [27.3]	90.3 [26.5]	88.8 [26]	86.3 [25.3]
Sens BTUH [kW]	74.4 [21.8]	68.5 [20.1]	60.8 [17.8]	84.1 [24.6]	77.5 [22.7]	68.7 [20.1]	91.4 [26.8]	84.3 [24.7]	74.7 [21.9]	77 [22.6]	68.8 [20]	94.1 [27.6]	88.8 [26]	83.3 [24.2]	78.7 [23.1]
Power	6.4	6.3	6.2	6.3	6.2	6.1	6.3	6.2	6.1	6	6.1	6.2	6.1	6.1	6
80°F [26.7°C]	104.6 [30.6]	101.2 [29.7]	96.7 [28.4]	101.9 [29.9]	98.6 [28.9]	94.3 [27.6]	97.6 [28.6]	94.5 [27.7]	90.3 [26.5]	87.7 [25.7]	84.8 [24.9]	91.7 [26.9]	88.7 [26]	85.8 [25.2]	82.9 [24.4]
Sens BTUH [kW]	73.7 [21.6]	68 [19.9]	60.3 [17.7]	83.5 [24.5]	76.9 [22.5]	68.2 [20]	90.8 [26.6]	83.7 [24.5]	74.2 [21.7]	76.4 [22.4]	68.2 [20]	93.5 [27.4]	88.2 [25.8]	82.9 [24.2]	78.2 [22.9]
Power	6.6	6.5	6.4	6.6	6.5	6.3	6.5	6.4	6.3	6.2	6.3	6.4	6.3	6.2	6.2
86°F [29.4°C]	102.8 [30.1]	99.5 [29.2]	95.1 [27.9]	100.1 [29.3]	96.9 [28.4]	92.7 [27.2]	95.8 [28.1]	92.8 [27.2]	88.7 [26]	86.1 [25.2]	83.2 [24.4]	89.9 [26.3]	87 [25.5]	84.1 [24.7]	81.2 [23.9]
Sens BTUH [kW]	73 [21.4]	67.3 [19.7]	59.7 [17.5]	82.7 [24.2]	76.2 [22.3]	67.6 [19.8]	90 [26.4]	83 [24.3]	73.6 [21.6]	75.8 [22.2]	67.6 [19.8]	89.9 [26.3]	84.8 [24.8]	78.9 [23.1]	74.6 [22.2]
Power	6.8	6.7	6.6	6.8	6.7	6.5	6.7	6.6	6.5	6.4	6.5	6.6	6.5	6.4	6.4
90°F [32.2°C]	100.9 [29.6]	97.7 [28.6]	93.4 [27.4]	98.3 [28.8]	95.1 [27.9]	90.9 [26.6]	94 [27.5]	90.9 [26.7]	86.9 [25.5]	84.4 [24.7]	81.4 [23.9]	88 [25.8]	85.2 [25]	82.4 [24.4]	79.6 [23.3]
Sens BTUH [kW]	72.2 [21.1]	66.5 [19.5]	59 [17.3]	81.9 [24]	75.5 [22.1]	67 [19.6]	89.2 [26.1]	82.2 [24.1]	72.9 [21.4]	75.2 [22]	67.7 [19.8]	88 [25.8]	83.2 [24.6]	77.6 [22.7]	73.4 [21.5]
Power	7.1	7	6.8	7	6.9	6.8	6.9	6.8	6.7	6.7	6.6	6.9	6.8	6.6	6.6
95°F [35.0°C]	98.9 [29]	95.7 [28.1]	91.5 [26.8]	96.2 [28.2]	93.2 [27.3]	89.1 [26.1]	91.9 [26.9]	89 [26.1]	85.1 [24.9]	82.5 [24.2]	79.6 [23.3]	86 [25.2]	83.2 [24.4]	80.4 [23.6]	77.6 [22.7]
Sens BTUH [kW]	71.3 [20.9]	65.7 [19.2]	58.3 [17.1]	81 [23.7]	74.7 [21.9]	66.2 [19.4]	88.3 [25.9]	81.4 [23.9]	72.2 [21.2]	74.4 [21.8]	67.2 [19.8]	86 [25.2]	81.2 [23.8]	75.4 [22.1]	71.2 [20.3]
Power	7.3	7.2	7.1	7.3	7.2	7	7.2	7.1	6.9	6.9	6.8	7.1	7	6.9	6.9
100°F [37.8°C]	96.8 [28.4]	93.7 [27.4]	89.5 [26.2]	94.1 [27.6]	91.1 [26.7]	87.1 [25.5]	89.8 [26.3]	86.9 [25.5]	83.1 [24.3]	80.5 [23.6]	77.6 [22.7]	83.9 [24.6]	81.2 [23.8]	78.4 [23]	75.6 [22.7]
Sens BTUH [kW]	70.3 [20.6]	64.8 [19]	57.4 [16.8]	80 [23.4]	73.7 [21.6]	65.4 [19.2]	87.3 [25.6]	80.5 [23.6]	71.4 [20.9]	73.6 [21.6]	66.4 [19.4]	83.9 [24.6]	79.2 [23.2]	74.6 [22.1]	70.4 [20.3]
Power	7.6	7.5	7.3	7.5	7.4	7.3	7.5	7.3	7.2	7.2	7.1	7.4	7.3	7.1	7.1
105°F [40.6°C]	94.5 [27.7]	91.4 [26.8]	87.4 [25.6]	91.8 [26.9]	88.9 [26]	85 [24.9]	87.5 [25.6]	84.7 [24.8]	81 [23.7]	78.4 [23]	75.5 [22.1]	81.6 [23.9]	79 [23.1]	76.2 [22.5]	73.4 [21.5]
Sens BTUH [kW]	69.2 [20.3]	63.8 [18.7]	56.6 [16.6]	78.9 [23.1]	72.7 [21.3]	64.5 [18.9]	86.2 [25.3]	79.5 [23.3]	70.5 [20.7]	72.7 [21.3]	65.4 [19.4]	81.6 [23.9]	77.2 [23.1]	72.8 [21.2]	68.8 [20.3]
Power	7.9	7.7	7.6	7.8	7.7	7.5	7.7	7.6	7.5	7.4	7.7	7.7	7.5	7.4	7.4
110°F [43.3°C]	92.1 [27]	89.1 [26.1]	85.2 [25]	89.4 [26.2]	86.5 [25.4]	82.7 [24.2]	85.1 [24.9]	82.4 [24.1]	78.7 [23.1]	76.2 [22.3]	73.3 [21.5]	79.2 [23.2]	76.6 [22.5]	73.9 [21.5]	71.1 [20.8]
Sens BTUH [kW]	68 [19.9]	62.7 [18.4]	55.6 [16.3]	77.7 [22.8]	71.7 [21]	63.6 [18.6]	85.1 [24.9]	78.4 [23]	69.5 [20.4]	71.8 [21]	64.6 [19.4]	79.2 [23.2]	76.6 [22.5]	73.3 [21.5]	70.9 [20.8]
Power	8.2	8	7.9	8.1	8	7.8	8	7.9	7.7	7.7	7.6	8	7.8	7.7	7.7
115°F [46.1°C]	89.5 [26.2]	86.7 [25.4]	82.8 [24.3]	86.9 [25.5]	84.1 [24.6]	80.4 [23.6]	82.6 [24.2]	79.9 [23.4]	76.4 [22.4]	73.8 [21.6]	71.2 [20.8]	76.6 [22.5]	74.2 [21.7]	71.6 [21]	69.2 [20.3]
Sens BTUH [kW]	66.8 [19.6]	61.5 [18]	54.6 [16]	76.5 [22.4]	70.5 [20.7]	62.5 [18.3]	82.6 [24.2]	77.2 [22.6]	68.5 [20.1]	70.8 [20.7]	63.6 [19.4]	76.6 [22.5]	74.2 [21.7]	71.6 [21]	69.2 [20.3]
Power	8.5	8.3	8.2	8.4	8.3	8.1	8.3	8.2	8	8	7.9	8.3	8.1	8	8
118.4°F [48°C]	87.7 [25.7]	84.9 [24.9]	81.2 [23.8]	85.1 [24.9]	82.3 [24.1]	78.7 [23.1]	80.8 [23.7]	78.1 [22.9]	74.7 [21.9]	72.2 [21.2]	69.2 [20.3]	74.8 [21.9]	72.4 [21.2]	69.8 [20.3]	67.2 [20.3]
Sens BTUH [kW]	65.8 [19.3]	60.7 [17.8]	53.9 [15.8]	75.6 [22.2]	69.7 [20.4]	61.8 [18.1]	80.8 [23.7]	76.4 [22.4]	67.8 [19.9]	70.1 [20.5]	63.6 [19.4]	74.8 [21.9]	72.4 [21.2]	69.8 [20.3]	67.2 [20.3]
Power	8.7	8.5	8.4	8.6	8.5	8.3	8.5	8.4	8.2	8.2	8.1	8.5	8.3	8.2	8.2
120°F [48.9°C]	86.8 [25.4]	84.1 [24.6]	80.4 [23.5]	84.2 [24.7]	81.5 [23.9]	77.9 [22.8]	79.9 [23.4]	77.3 [22.7]	73.9 [21.7]	71.4 [20.9]	68.4 [20]	73.9 [21.7]	71.6 [21]	68.4 [20]	65.8 [19.3]
Sens BTUH [kW]	65.4 [19.2]	60.3 [17.7]	53.5 [15.7]	75.2 [22]	69.3 [20.3]	61.4 [18]	79.9 [23.4]	76 [22.3]	67.4 [19.8]	69.7 [20.4]	62.5 [18.3]	74.6 [21.9]	73.9 [21.7]	71.6 [21]	68.4 [20]
Power	8.8	8.6	8.5	8.7	8.6	8.4	8.6	8.5	8.3	8.3	8.2	8.6	8.4	8.3	8.3
125°F [51.7°C]	84 [24.6]	81.3 [23.8]	77.8 [22.8]	81.4 [23.8]	78.8 [23.1]	75.3 [22.1]	77.1 [22.6]	74.6 [21.9]	71.3 [20.9]	68.8 [20.1]	65.8 [19.3]	71.1 [20.8]	68.9 [20.2]	65.8 [19.3]	63.2 [18.8]
Sens BTUH [kW]	64 [18.8]	59 [17.3]	52.3 [15.3]	73.7 [21.6]	68 [19.9]	60.3 [17.7]	77.1 [22.6]	74.6 [21.9]	66.2 [19.4]	68.5 [20.1]	61.4 [18]	74.3 [21.8]	71.1 [20.8]	68.9 [20.2]	65.8 [19.3]
Power	9.1	9	8.8	9	8.9	8.7	9	8.8	8.6	8.6	8.5	8.9	8.7	8.6	8.6

Outdoor Dry Bulb Temperature

COOLING PERFORMANCE DATA - EMRHRX120AV

wbE CFM [L/s]	Entering Indoor Air @ 80°F [26.7°C] dbE ①														
	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			61°F [16.1°C]			59°F [15.0°C]		
	4800 [2265]	4400 [2077]	3200 [1510]	4800 [2265]	4400 [2077]	3200 [1510]	4800 [2265]	4400 [2077]	3200 [1510]	4800 [2265]	4400 [2077]	3200 [1510]	4800 [2265]	4400 [2077]	3200 [1510]
DR ①	Outdoor Dry Bulb Temperature														
75°F [23.9°C]	Total BTUH [kW]	132.1 [38.7]	130 [38.1]	123.5 [36.2]	129.5 [37.9]	127.9 [37.5]	125.8 [36.9]	123.7 [36.2]	121.7 [35.7]	119.6 [35.2]	117.4 [34.6]	115.3 [34.0]	113.2 [33.5]	111.1 [33.0]	109.0 [32.5]
	Sens BTUH [kW] Power	91.5 [26.8]	87.7 [25.7]	76.6 [22.4]	100.8 [29.5]	96.7 [28.3]	84.4 [24.7]	107.8 [31.6]	103.5 [30.3]	90.3 [26.5]	7.5	7.6	7.6	7.4	7.4
80°F [26.7°C]	Total BTUH [kW]	130.5 [38.3]	128.4 [37.6]	122 [35.8]	127.9 [37.5]	125.8 [36.9]	123.7 [36.2]	121.7 [35.7]	119.6 [35.2]	117.4 [34.6]	115.3 [34.0]	113.2 [33.5]	111.1 [33.0]	109.0 [32.5]	106.9 [32.0]
	Sens BTUH [kW] Power	90.9 [26.6]	87.2 [25.5]	76.1 [22.3]	100.2 [29.4]	96.1 [28.2]	83.9 [24.6]	107.2 [31.4]	102.9 [30.1]	89.8 [26.3]	7.7	7.8	7.8	7.6	7.6
86°F [29.4°C]	Total BTUH [kW]	128.8 [37.7]	126.7 [37.1]	120.4 [35.3]	126.2 [37]	124.1 [36.4]	118 [34.6]	122 [35.7]	120 [35.2]	114 [33.4]	112.3 [32.9]	110.2 [32.4]	108.1 [31.9]	106.0 [31.4]	103.9 [30.9]
	Sens BTUH [kW] Power	90.1 [26.4]	86.5 [25.3]	75.5 [22.1]	99.5 [29.2]	95.4 [28]	83.3 [24.4]	106.5 [31.2]	102.2 [29.9]	89.2 [26.1]	7.9	8.1	8.1	7.8	7.8
90°F [32.2°C]	Total BTUH [kW]	127 [37.2]	124.9 [36.6]	118.7 [34.8]	124.3 [36.4]	122.3 [35.8]	116.2 [34.1]	120.1 [35.2]	118.1 [34.6]	112.3 [32.9]	110.4 [32.4]	108.3 [31.9]	106.2 [31.4]	104.1 [30.9]	102.0 [30.4]
	Sens BTUH [kW] Power	89.4 [26.2]	85.7 [25.1]	74.8 [21.9]	98.7 [28.9]	94.7 [27.7]	82.6 [24.2]	105.7 [31]	101.4 [29.7]	88.5 [25.9]	8.1	8.3	8.3	8.1	8.1
95°F [35.0°C]	Total BTUH [kW]	125 [36.6]	122.9 [36]	116.8 [34.2]	122.3 [35.9]	120.4 [35.3]	114.4 [33.5]	118.1 [34.6]	116.2 [34]	110.4 [32.4]	108.5 [31.9]	106.4 [31.4]	104.3 [30.9]	102.2 [30.4]	100.1 [29.9]
	Sens BTUH [kW] Power	88.5 [25.9]	84.9 [24.9]	74.1 [21.7]	97.8 [28.7]	93.9 [27.5]	81.9 [24]	104.9 [30.7]	100.6 [29.5]	87.8 [25.7]	8.5	8.7	8.7	8.5	8.5
100°F [37.8°C]	Total BTUH [kW]	122.9 [36]	120.9 [35.4]	114.9 [33.7]	120.2 [35.2]	118.3 [34.7]	112.4 [32.9]	116 [34]	114.1 [33.4]	108.5 [31.8]	106.5 [31.2]	104.4 [30.7]	102.3 [30.2]	100.2 [29.7]	98.1 [29.2]
	Sens BTUH [kW] Power	87.5 [25.7]	84 [24.6]	73.3 [21.5]	96.9 [28.4]	92.9 [27.2]	81.1 [23.8]	103.9 [30.4]	99.7 [29.2]	87 [25.5]	8.6	8.8	8.8	8.6	8.6
105°F [40.6°C]	Total BTUH [kW]	120.6 [35.3]	118.7 [34.8]	112.8 [33]	118 [34.6]	116.1 [34]	110.3 [32.3]	113.8 [33.3]	111.9 [32.8]	106.4 [31.2]	104.5 [30.7]	102.4 [30.2]	100.3 [29.7]	98.2 [29.2]	96.1 [28.7]
	Sens BTUH [kW] Power	86.5 [25.3]	83 [24.3]	72.4 [21.2]	95.8 [28.1]	91.9 [26.9]	80.2 [23.5]	102.9 [30.1]	98.7 [28.9]	86.1 [25.2]	8.9	9.1	9.1	8.9	8.9
110°F [43.3°C]	Total BTUH [kW]	118.2 [34.6]	116.3 [34.1]	110.5 [32.4]	115.6 [33.9]	113.7 [33.3]	108.1 [31.7]	111.4 [32.6]	109.6 [32.1]	104.1 [30.5]	102.2 [29.9]	100.1 [29.4]	98.0 [28.9]	95.9 [28.4]	93.8 [27.9]
	Sens BTUH [kW] Power	85.4 [25]	81.9 [24]	71.5 [20.9]	94.7 [27.8]	90.9 [26.6]	79.3 [23.2]	101.7 [29.8]	97.6 [28.6]	85.2 [25]	9.1	9.3	9.3	9.1	9.1
115°F [46.1°C]	Total BTUH [kW]	115.7 [33.9]	113.9 [33.4]	108.2 [31.7]	113.1 [33.1]	111.3 [32.6]	105.8 [31]	108.9 [31.9]	107.1 [31.4]	101.8 [29.8]	100.0 [29.3]	97.9 [28.8]	95.8 [28.3]	93.7 [27.8]	91.6 [27.3]
	Sens BTUH [kW] Power	84.2 [24.7]	80.7 [23.7]	70.5 [20.6]	93.5 [27.4]	89.7 [26.3]	78.3 [22.9]	100.5 [29.5]	96.4 [28.3]	84.2 [24.7]	9.4	9.6	9.6	9.4	9.4
118.4°F [48°C]	Total BTUH [kW]	113.9 [33.4]	112.1 [32.9]	106.5 [31.2]	111.3 [32.6]	109.5 [32.1]	104.1 [30.5]	107.1 [31.4]	105.3 [30.9]	100.1 [29.3]	98.2 [28.7]	96.1 [28.2]	94.0 [27.7]	91.9 [27.2]	89.8 [26.7]
	Sens BTUH [kW] Power	83.3 [24.4]	79.9 [23.4]	69.8 [20.5]	92.6 [27.1]	88.9 [26.1]	77.6 [22.7]	99.7 [29.2]	95.6 [28]	83.5 [24.5]	9.6	9.8	9.8	9.6	9.6
120°F [48.9°C]	Total BTUH [kW]	113.1 [33.1]	111.3 [32.6]	105.7 [31]	110.5 [32.4]	108.7 [31.8]	103.3 [30.3]	106.2 [31.1]	104.5 [30.6]	99.3 [29.1]	97.4 [28.6]	95.3 [28.1]	93.2 [27.6]	91.1 [27.1]	89.0 [26.6]
	Sens BTUH [kW] Power	82.9 [24.3]	79.5 [23.3]	69.4 [20.3]	92.2 [27]	88.5 [25.9]	77.2 [22.6]	99.3 [29.1]	95.2 [27.9]	83.1 [24.3]	9.7	9.9	9.9	9.7	9.7
125°F [51.7°C]	Total BTUH [kW]	110.3 [32.3]	108.5 [31.8]	103.2 [30.2]	107.7 [31.6]	105.9 [31.1]	100.7 [29.5]	103.5 [30.3]	101.8 [29.8]	96.8 [28.4]	94.9 [27.9]	92.8 [27.4]	90.7 [26.9]	88.6 [26.4]	86.5 [25.9]
	Sens BTUH [kW] Power	81.5 [23.9]	78.2 [22.9]	68.2 [20]	90.9 [26.6]	87.2 [25.5]	76.1 [22.3]	97.9 [28.7]	93.9 [27.5]	81.9 [24.5]	10.1	10.3	10.3	10.1	10.1

INDOOR AIRFLOW PERFORMANCE

Nominal Cooling Capacit	Motor Speed From	Manufacturer Recommended Air-Flow Range	Blower Size/ Motor HP & # of Speeds	Motor Speed	Motor Speed (Tap 2)	External Static Pressure-Inches W.C. [kPa]										
						0.1 [.02]	0.2 [.05]	0.3 [.07]	0.4 [.10]	0.5 [.12]	0.6 [.15]	0.7 [.17]	0.8 [.20]	0.9 [.22]	1.0 [.25]	
5.0	Low(Tap 2)	1750/2250	11x9 1 2 Speed (X-13 Motor)	CFM [L/s]	Low (Tap 2)	2025 [956]	1991 [940]	1959 [925]	1924 [908]	1890 [892]	1856	1821	1779	1747	1711	
				RPM	690	720	751	781	813	844	876	915	944	978		
				Watts	435	451	467	483	500	519	536	558	571	589		
5.5	Low(Tap 2)	1925/2475	11x9 1 2 Speed (X-13 Motor)	CFM [L/s]	High (Tap 1)	2191 [1034]	2160 [1019]	2128 [1004]	2090 [986]	2059 [972]	2028 [957]	1990 [939]	1955 [923]	1921 [907]	1886 [890]	
				RPM	744	767	795	826	855	887	916	947	980	1008		
				Watts	559	573	589	612	628	644	664	681	697	712		
6.0	Low(Tap 2)	2100/2250	11x9 1 2 Speed (X-13 Motor)	CFM [L/s]	Low (Tap 2)	2275 [1074]	2240 [1057]	2208 [1040]	2172 [1025]	2133 [1007]	2102 [992]	2062 [973]	2019 [953]	1983 [936]	1953 [922]	
				RPM	740	769	801	831	862	894	923	955	986	1015		
				Watts	592	612	633	654	672	695	709	727	743	759		
6.0	Low(Tap 2)	2100/2250	11x9 1 2 Speed (X-13 Motor)	CFM [L/s]	High (Tap 1)	-	2375 [1121]	2337 [1103]	2310 [1090]	2273 [1073]	2240 [1057]	2205 [1041]	2165 [1022]	2136 [1008]	2091 [987]	
				RPM	-	833	859	883	910	936	962	991	1016	1045		
				Watts	-	767	786	807	826	843	858	876	885	905		
6.0	Low(Tap 2)	2100/2250	11x9 1 2 Speed (X-13 Motor)	CFM [L/s]	Low (Tap 2)	-	2256 [1065]	2201 [1039]	2160 [1019]	2128 [1004]	2087 [985]	2052 [968]	2007 [947]	1973 [931]	1935 [913]	
				RPM	-	776	801	830	863	894	919	955	978	1006		
				Watts	-	656	674	692	714	733	746	771	781	797		
6.0	Low(Tap 2)	2100/2250	11x9 1 2 Speed (X-13 Motor)	CFM [L/s]	High (Tap 1)	-	-	-	-	2269 [1071]	2230 [1052]	2187 [1032]	2145 [1012]	2109 [995]	2068 [976]	
				RPM	-	-	-	-	891	920	949	976	1002	1027		
				Watts	-	-	-	-	844	856	876	892	902	917		

AIRFLOW PERFORMANCE

AIRFLOW PERFORMANCE - 8 TON [28.1kW] - 60 HZ - SIDEFLOW

Model EMRHR*096*		Voltage 380-400 / 3 phase / 60 Hz																													
Air Flow		External Static Pressure - Inches of Water [kPa]																													
CFM [L/s]		0.1	[.02]	0.2	[.05]	0.3	[.07]	0.4	[.10]	0.5	[.12]	0.6	[.15]	0.7	[.17]	0.8	[.20]	0.9	[.22]	1.0	[.25]	1.1	[.27]	1.2	[.30]	1.3	[.32]	1.4	[.35]		
		RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W		
2500 [1180]	—	—	—	—	—	466	567	505	619	543	681	580	751	616	831	651	920	673	799	705	852	737	907	768	965	798	1026	827	1090		
2600 [1227]	—	—	—	—	—	473	595	511	650	549	713	585	786	620	868	655	959	676	829	708	883	739	940	769	1000	799	1062	827	1127		
2700 [1274]	—	—	—	—	—	481	625	518	682	555	748	590	823	625	907	659	1001	679	860	710	916	741	975	771	1036	800	1101	828	1167		
2800 [1321]	—	—	—	—	—	489	657	525	716	561	784	596	862	630	948	663	1044	682	893	713	951	744	1012	773	1075	801	1141	829	1210		
2900 [1368]	—	—	—	—	—	460	639	497	691	533	753	568	823	602	903	635	992	654	872	686	929	716	989	746	1051	775	1116	803	1183	830	1254
3000 [1416]	—	—	—	—	—	469	673	505	728	540	791	574	864	608	946	640	1037	659	908	690	967	720	1028	749	1092	777	1159	805	1228	831	1300
3100 [1463]	—	—	—	—	—	478	710	513	766	548	832	581	907	614	992	646	1085	663	946	693	1007	723	1070	752	1136	780	1204	807	1275	833	1349
3200 [1510]	451	698	487	748	522	807	556	875	589	953	621	1039	652	1135	668	987	698	1049	727	1114	755	1181	782	1251	809	1324	835	1400			
3300 [1557]	462	737	497	789	531	850	564	921	596	1000	627	1089	658	1187	672	1029	702	1093	730	1160	758	1229	785	1299	788	1352	814	1429	839	1508	
3400 [1604]	472	777	506	832	540	895	572	968	604	1050	634	1141	684	1241	677	1074	706	1140	734	1208	762	1279	788	1352	788	1406	817	1484	841	1565	
3500 [1652]	483	820	517	876	549	942	581	1017	612	1101	641	1195	653	1056	682	1121	711	1188	739	1258	765	1331	791	1406	817	1462	819	1542	843	1624	
3600 [1699]	494	865	527	924	559	992	590	1069	620	1155	649	1251	659	1104	688	1170	716	1239	743	1311	769	1385	795	1462	819	1520	823	1602	846	1686	
3700 [1746]	505	912	537	973	568	1043	599	1123	628	1211	656	1309	665	1153	693	1221	721	1292	747	1365	773	1441	798	1520	823	1602	826	1664	849	1750	
3800 [1793]	517	961	548	1024	578	1097	608	1179	636	1270	664	1370	671	1205	699	1275	726	1347	752	1422	778	1500	802	1580	826	1664	849	1750			
3900 [1840]	528	1012	559	1078	589	1153	617	1237	645	1330	649	1190	677	1259	705	1330	731	1404	757	1481	782	1561	806	1643	829	1728	—	—	—		

NOTE: A-Drive left of bold line and B-Drive right of bold line

Drive Package	A		B									
Motor H.P. [W]	2 [1491.4]		3 [2237.1]									
Blower Sheave	AK84H		AK84H									
Motor Sheave	1VP34*7/8		1VP44*7/8									
Belt	A58		A59									
Turns Open	0	1	2	3	4	5						
RPM	659	619	580	537	495	453	848	808	769	728	685	644

- NOTES:
1. Factory sheave settings are shown in bold type.
 2. Do not set motor sheave below minimum or maximum turns open shown.
 3. Re-adjustment of sheave required to achieve rated airflow at AHRI minimum External Static Pressure
 4. [] Designates Metric Conversions

ELECTRICAL DATA

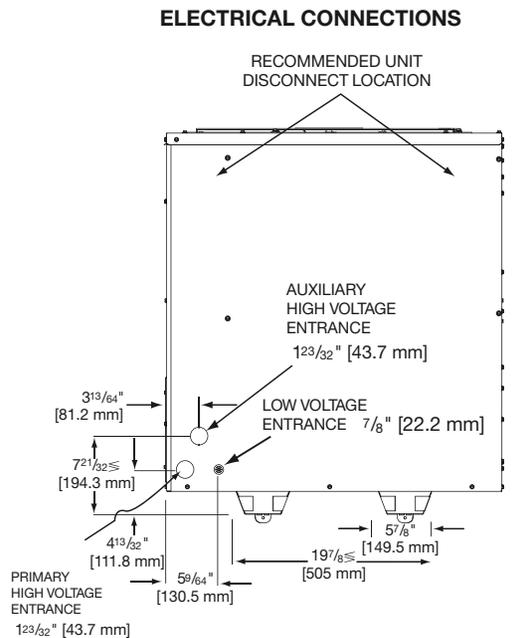
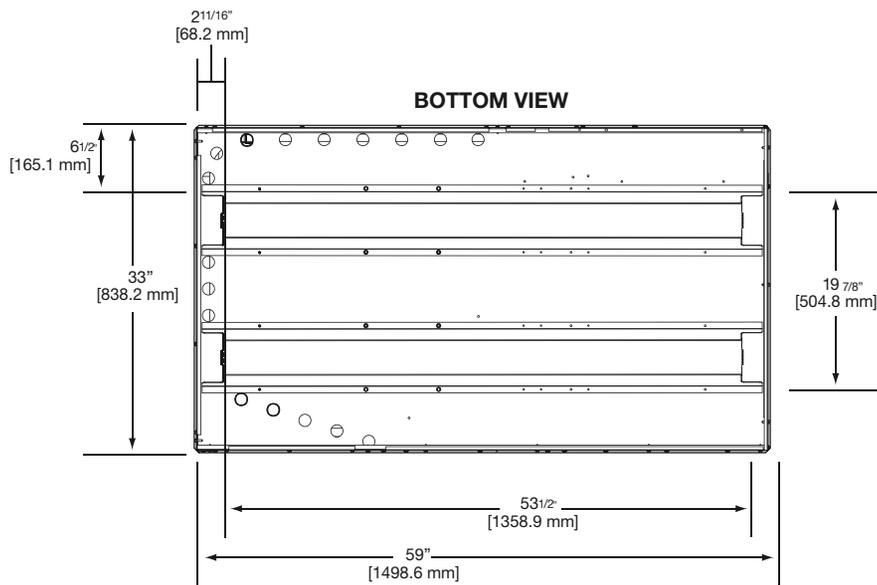
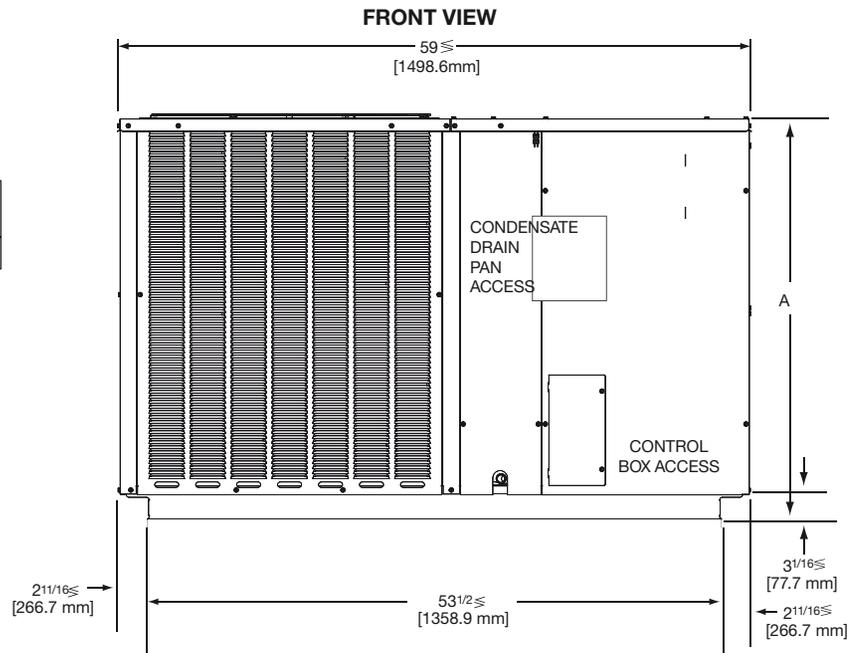
ELECTRICAL DATA - EMRHR SERIES						
		X060AVT	X066AVT	X072AVT	X096AVA	X120AVA
Unit Information	Unit Operating Voltage Range	342-440	342-440	342-440	342-440	342-440
	Volts	380-400	380-400	380-400	380/400	380/400
	Phase	3	3	3	3	3
	Hz	60	60	60	60	60
	Minimum Circuit Ampacity	16	19	20	23	28
	Minimum Overcurrent Protection Device Size	20	25	25	30	35
	Maximum Overcurrent Protection Device Size	20	25	25	35	40
Compressor Motor	No.	1	1	1	1	1
	Volts	380	380	380	380	380
	Phase	3	3	3	3	3
	RPM	3500	3500	3500	3500	3500
	Amps (RLA), Comp. 1	7.9	10.7	10.3	13.9	16.0
	Amps (LRA), Comp. 1	66	83	83	94.3	135
	HP, Compressor 2	-	-	-	-	-
	Amps (RLA), Comp. 2	-	-	-	-	-
Condenser Motor	No.	1	1	1	2	2
	Volts	380-400	380-400	380-400	380/400	380/400
	Phase	1	1	1	1	1
	HP	1/3	1/3	1/2	1/5	1/3
	Amps (FLA, each)	1.4	1.4	2.8	0.8	1.7
	Amps (LRA, each)	3.1	3.1	N/A	1.1	2.5
Evaporator Fan	No.	1	1	1	1	1
	Volts	380-400	380-400	380-400	380/400	380/400
	Phase	1	1	1	3	3
	HP	1	1	1	2	2
	Amps (FLA, each)	4.0	4.0	4.0	3.8	3.8
	Amps (LRA, each)	N/A	N/A	N/A	27.4	27.4

1. Amp Draw Per Motor. Multiply Value by Number of Motors to Determine Total Amps.

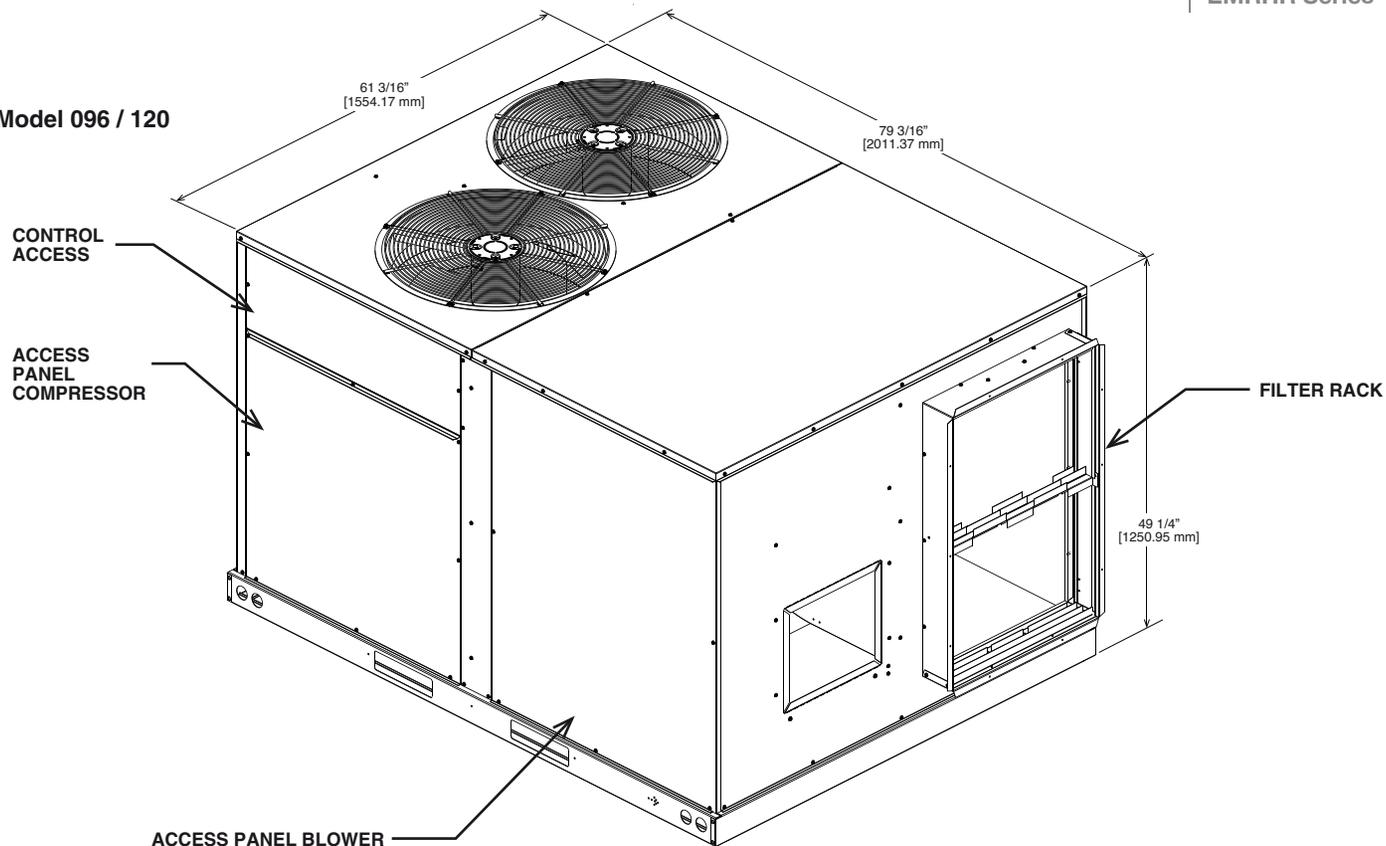
SOUND DATA 60 Hertz

Model Number	OD Fan Running	Entire Unit Running
EMRHRX120AVA	90 dB	N/A
EMRHRX096AVA	78 dB	N/A
EMRHRX072AVT	86 dB	86 dB
EMRHRX066AVT	77 dB	78 dB
EMRHRX060AVT	77 dB	78 dB

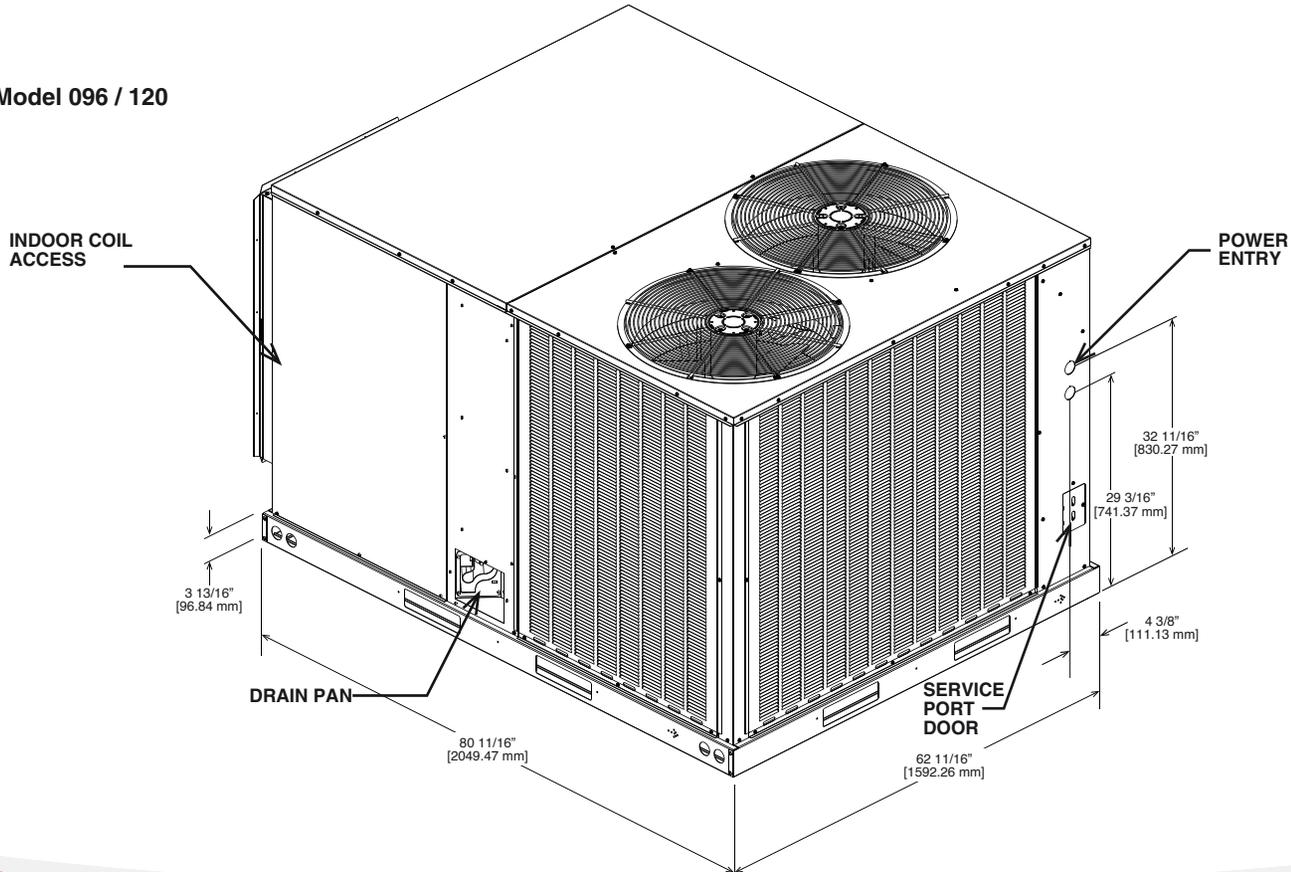
Model	Height "A"
060, 066, 072	37 1/8"



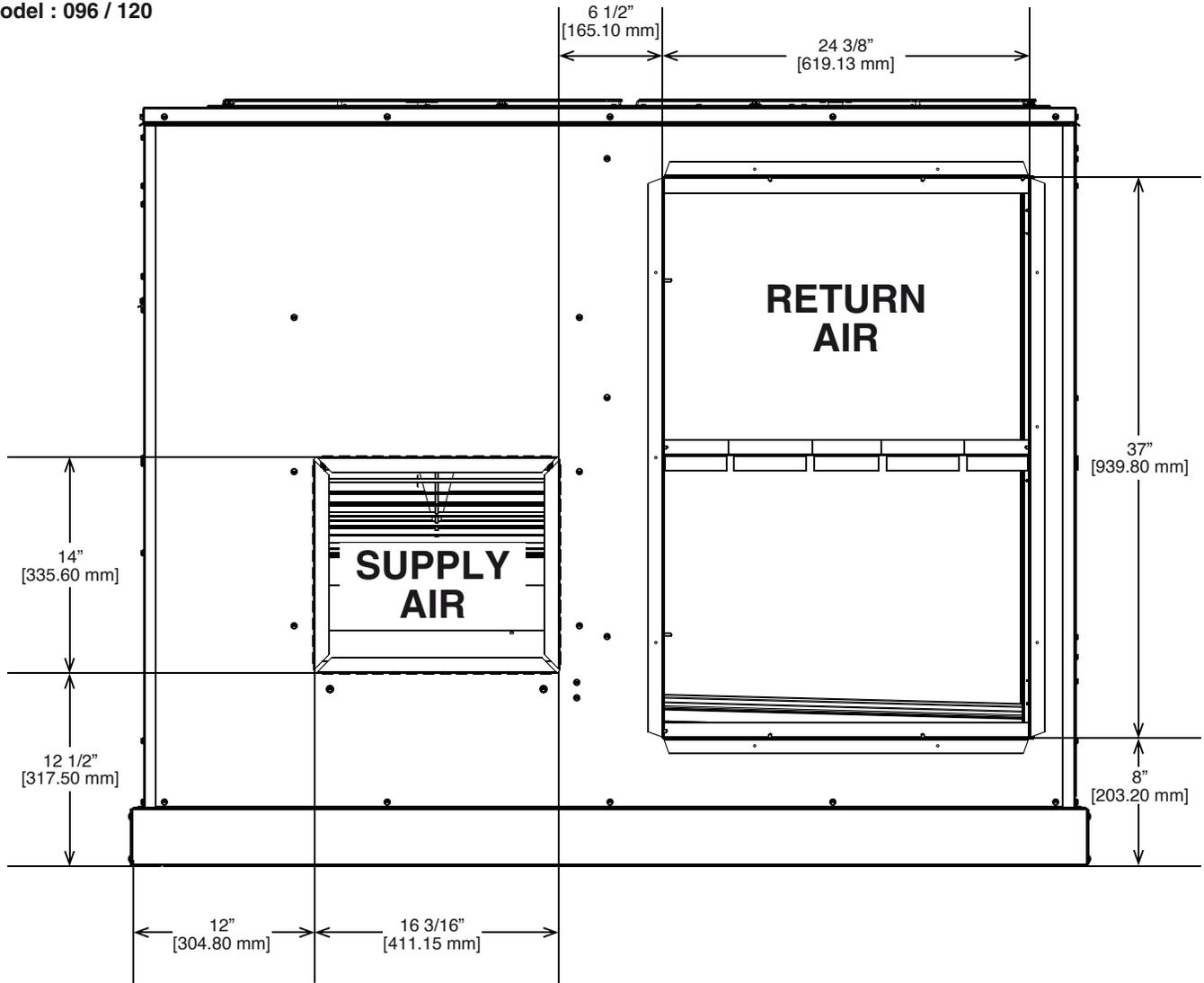
Model 096 / 120

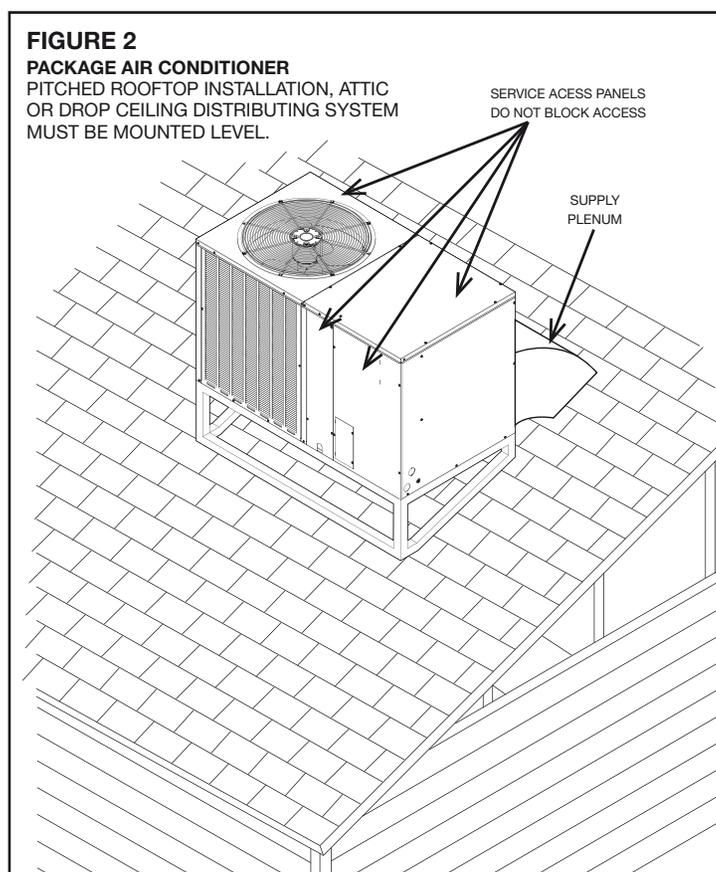
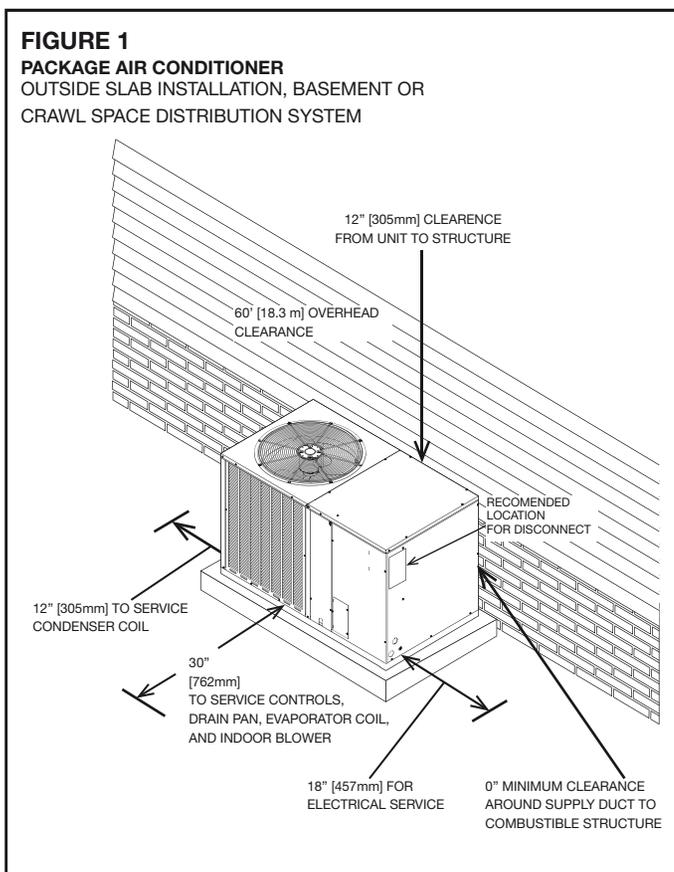


Model 096 / 120



Model : 096 / 120





CLEARANCES

The following minimum clearances must be observed for proper unit performance and serviceability.

1. Provide 30" minimum clearance at the front and 18" on the right side of the unit for service access. Provide 12" minimum clearance on the left side of the unit for air inlet.
2. Provide 60" minimum clearance from top of unit.
3. Unit is design certified for application on combustible flooring with 0" minimum clearance.
4. See Figure 1 for illustration of minimum installation-service clearances.
5. Provide 12" minimum clearance from back of unit to structure.

ROOFTOP INSTALLATION

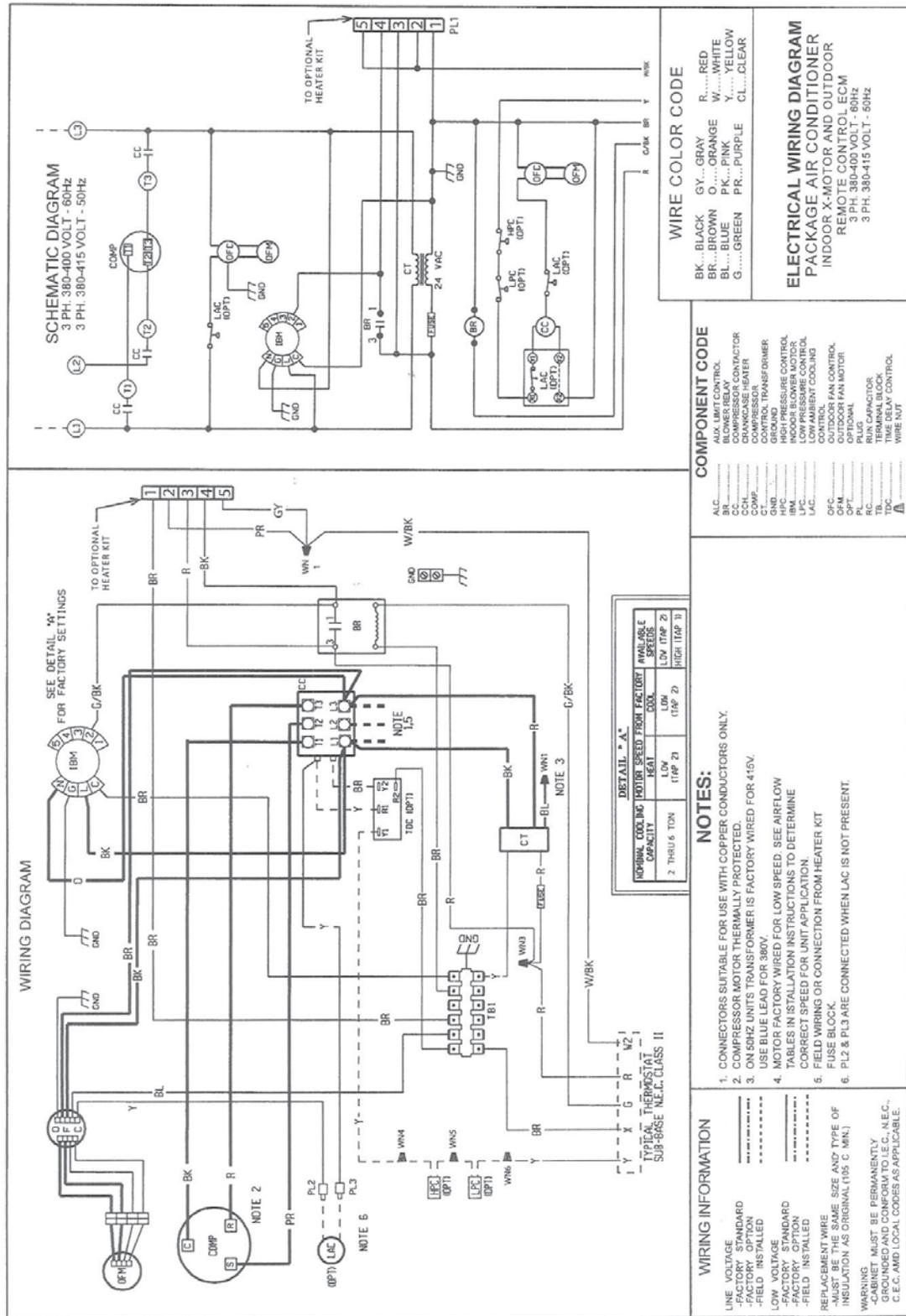
1. Before locating the unit on the roof, make sure that the strength of the roof and beams is adequate at that point to support the weight involved. (See specification sheet for weight of unit.) This is very important and user's responsibility.
2. The unit should be placed on a solid and level platform of adequate strength.
3. The location of the unit on the roof should be such as to provide proper access for inspection and servicing (Figure 2).

IMPORTANT: If unit will not be put into service immediately, cover supply and return openings to prevent excessive condensation.

DUCTWORK

Ductwork should be fabricated by the installing contractor in accordance with local codes and NFPA90A. Industry manuals may be used as a guide when sizing and designing the duct system.

EMRHR-060/066/072 Wiring Diagram



SCHEMATIC DIAGRAM
3 PH. 380-400 VOLT - 60Hz
3 PH. 380-415 VOLT - 50Hz

WIRE COLOR CODE
BK...BLACK GY...GRAY R...RED
BR...BROWN O...ORANGE W...WHITE
BL...BLUE PK...PINK Y...YELLOW
G...GREEN PR...PURPLE CL...CLEAR

ELECTRICAL WIRING DIAGRAM
INDOOR X-MOTOR AND OUTDOOR
REMOTE CONTROL ECM
3 PH. 380-400 VOLT - 60Hz
3 PH. 380-415 VOLT - 50Hz

COMPONENT CODE

- ALC.....ALX LIMIT CONTROL
- BR.....BLOWER RELAY
- CC.....COMPRESSOR CONTACTOR
- CL.....CIRCUIT BREAKER
- COMP.....COMPRESSOR
- CT.....CONTROL TRANSFORMER
- HPC.....HIGH PRESSURE CONTROL
- IBM.....INDOOR BLOWER MOTOR
- LFC.....LOW PRESSURE CONTROL
- LAC.....LOW PRESSURE CONTROL
- OFM.....OUTDOOR FAN MOTOR
- OFM.....OPTIONAL FAN MOTOR
- PL.....PLUG
- RC.....RIBN CAPACITOR
- TDC.....TYPICAL THERMOSTAT
- TRC.....TIME DELAY CONTROL
- W/NUT.....WIRE NUT

NOTES:

1. CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
2. COMPRESSOR MOTOR THERMALLY PROTECTED.
3. ON 50HZ UNITS TRANSFORMER IS FACTORY WIRED FOR 415V. USE BLUE LEAD FOR 380V.
4. MOTOR FACTORY WIRED FOR LOW SPEED. SEE AIRFLOW TABLES IN INSTALLATION INSTRUCTIONS TO DETERMINE CORRECT SPEED FOR UNIT APPLICATION.
5. FIELD WIRING OR CONNECTION FROM HEATER KIT FUSE BLOCK.
6. PL.2 & PL.3 ARE CONNECTED WHEN LAC IS NOT PRESENT.

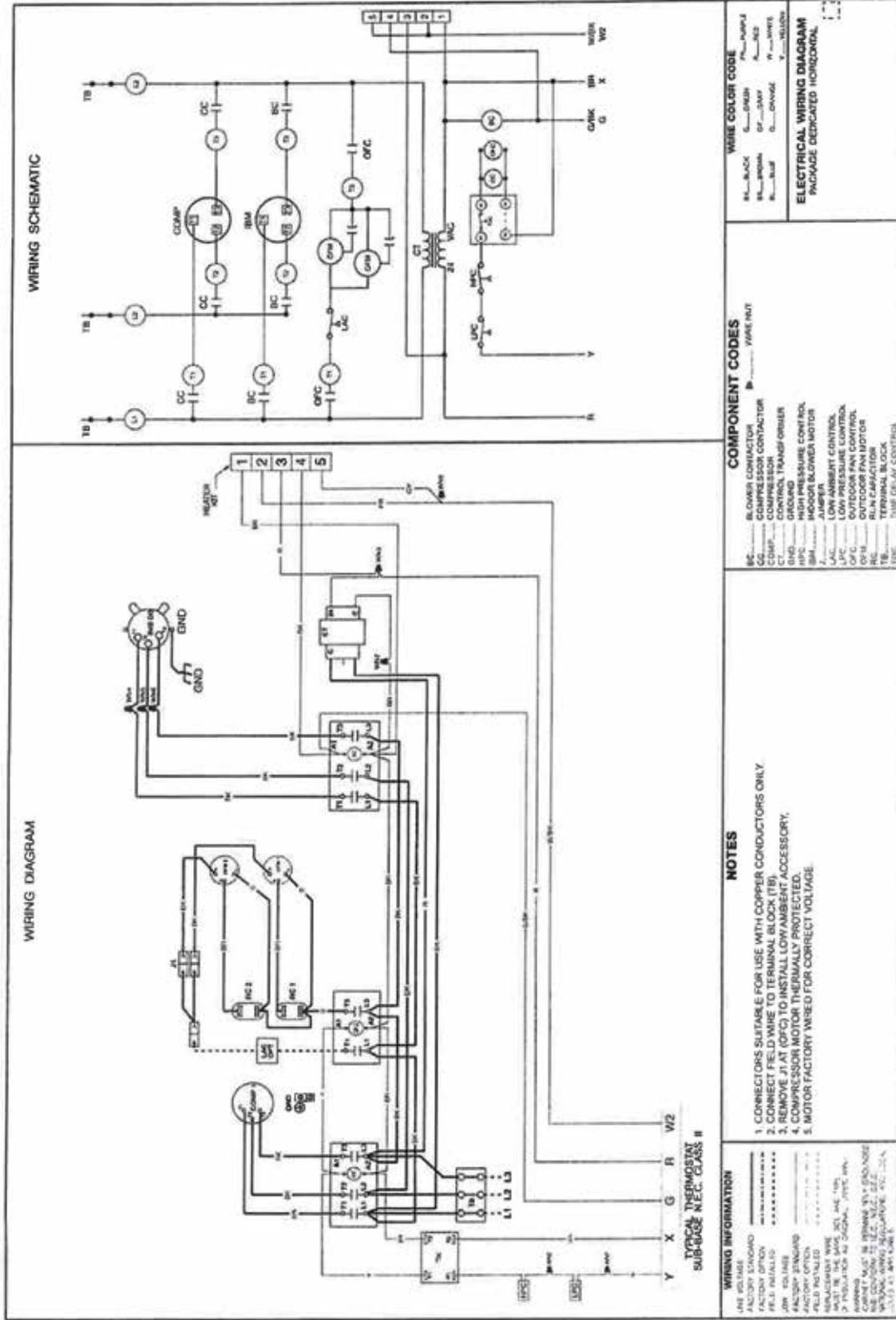
WIRING INFORMATION

- LINE VOLTAGE
- FACTORY STANDARD
- FACTORY OPTION
- FIELD INSTALLED
- LOW VOLTAGE STANDARD
- FACTORY OPTION
- FIELD INSTALLED
- REPLACEMENT WIRE
- MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (195 C MIN.)
- WARNING
- CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C. AND LOCAL CODES AS APPLICABLE.

DETAIL - A

TYPICAL THERMOSTAT SUB-BASE N.E.C. CLASS II		TYPICAL THERMOSTAT SUB-BASE N.E.C. CLASS II	
COOL	HEAT	COOL	HEAT
LOW (TAP 2)	LOW (TAP 2)	LOW (TAP 2)	LOW (TAP 2)
HIGH (TAP 3)	HIGH (TAP 3)	HIGH (TAP 3)	HIGH (TAP 3)

EMRHR-096/120Wiring Diagram



GUIDE SPECIFICATIONS – EMRHR-060 thru 072

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ELECTRIC HEAT PACKAGED ROOFTOP**HVAC Guide Specifications****Size Range: 5.0 to 6.0 Nominal Tons****Section Description****23 06 80 Schedules for Decentralized HVAC Equipment**

23 06 80.13 Decentralized Unitary HVAC Equipment Schedule

23 06 80.13.A. Rooftop unit schedule

1. Schedule is per the project specification requirements.

23 07 16 HVAC Equipment Insulation

23 07 16.00.A Decentralized, Rooftop Units:

1. Interior cabinet surfaces shall be insulated with a minimum 3/4-in. thick, minimum 1-1/2 lb. density, flexible fiberglass insulation bonded with a phenolic binder, with aluminum foil facing on the air side.
2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

23 09 13 Instrumentation and Control Devices for HVAC

23 09 13.23 Sensors and Transmitters

23 09 13.23.A. Thermostats

1. Thermostat must
 - a. have capability to energize 2 different stages of cooling, and 2 different stages of heating.
 - b. must include capability for occupancy scheduling.

23 09 33 Electric and Electronic Control System for HVAC

23 09 33.00.A. General:

1. Shall be complete with self-contained low-voltage control circuit. Transformer shall have 50VA capabilities.
2. Shall utilize color-coded wiring.

23 09 33.00.B. Safeties:

1. Compressor over-temperature, over current.
2. Low-pressure switch.
3. High-pressure switch.
4. Automatic reset, motor thermal overload protector.

23 09 93 Sequence of Operations for HVAC Controls

23 09 93.00.A INSERT SEQUENCE OF OPERATION

23 41 13 Panel Air Filters

23 41 13.00.A. Standard filter section shall

1. Shall consist of factory-installed, low velocity, cleanable 1-in. thick aluminum filters of commercially available sizes.
2. Filters shall be accessible through an access panel as described in the unit cabinet section of this specification (23 81 19.13.H).

23 81 19 Self-Contained Air Conditioners

23 81 19.13 Small-Capacity Self-Contained Air Conditioners

23 81 19.13.A. General

1. Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing a(n) hermetic scroll compressor(s) for cooling duty.
2. Factory assembled, single-piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start-up.
3. Unit shall use environmentally sound R-410a refrigerant.
4. Unit shall be installed in accordance with the manufacturer's instructions.
5. Unit must be selected and installed in compliance with local, state, and federal codes.

23 81 19.13.B. Quality Assurance

1. Unit meets applicable regional minimum efficiency requirements.
2. Unit shall be rated in accordance with AHRI Standards 210/240.
3. Unit shall be designed to conform to ASHRAE 15.
4. Unit shall be safety tested and certified in accordance with IEC-60335-1 & 2-40 Standards and UL-listed as a total package for safety requirements.
5. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
6. Unit casing shall be capable of withstanding 1000-hour salt spray exposure per ASTM B117 (scribed specimen).

7. Unit shall be designed in accordance with ISO 9001:2000, and shall be manufactured in a facility registered by ISO 9001:2000.
 8. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
 10. Unit shall be designed in accordance with IEC-60335 standard including tested to withstand rain.
- 23 81 19.13.C. Delivery, Storage, and Handling
1. Unit shall be stored and handled per manufacturer's recommendations.
 2. Lifted by crane requires either shipping top panel or spreader bars.
 3. Unit shall only be stored or positioned in the upright position.
- 23 81 19.13.E. Project Conditions
1. As specified in the contract.
- 23 81 19.13.F. Operating Characteristics
1. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 210/240 at ± 10% voltage.
 2. Compressor with standard controls shall be capable of operation from 40°F (4°C) , ambient outdoor temperatures. Accessory low ambient kit is necessary if mechanically cooling at ambient temperatures below 40°F (4°C).
 3. Unit shall discharge supply air horizontally as shown on contract drawings.
- 23 81 19.13.G. Electrical Requirements
1. Main power supply voltage, phase, and frequency must match those required by the manufacturer.
- 23 81 19.13.H. Unit Cabinet
1. Unit cabinet shall be constructed of galvanized pre-painted steel.
 2. Unit cabinet exterior paint shall be: film thickness, (dry) 0.003 inches minimum, flat (per ASTM D523, 60°F): 60, Hardness: H-2H Pencil hardness.
 3. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 210/240 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 3/4-in. thick, minimum 1-1/2 lb density, flexible fiberglass insulation bonded with a phenolic binder, with aluminum foil-faced on the air side.
 4. Base Rail
 - a. Unit shall have base rails.
 - b. Holes shall be provided in the base rail for moving the rooftop by fork truck.
 - c. Base rail shall be a minimum of 14 gauge thickness.
 5. Condensate pan and connections:
 - a. Shall be a sloped condensate drain pan made of a non-corrosive material.
 - b. Shall comply with ASHRAE Standard 62.
 - c. Shall use provided 3/4" drain trap assembly, through the side of the drain pan. Connection shall be made per manufacturer's recommendations.
 6. Top panel:
 - a. Indoor section shall be a single piece top panel.
 7. Electrical Connections
 - a. All unit power wiring shall enter unit cabinet at a single, factory-prepared, knockout location.
 8. Component access panels (standard)
 - a. Cabinet panels shall be easily removable for servicing.
- 23 81 19.13.J. Coils
1. Standard Aluminum/Copper Coils: All models except EMRHRX078ANT
 - a. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
 - b. Evaporator and Condenser coils shall be leak tested to 150 psig, pressure tested to 550 psig, and qualified to UL 1995 burst test at 2,200 psig.
 2. Standard Aluminum Micro Channel Coils: EMRHRX078ANT – Only Model
 - a. Standard evaporator and condenser coils shall have aluminum micro channel coils.
 - b. Evaporator and Condenser coils shall be leak tested to 150 psig, pressure tested to 550 psig, and qualified to UL 1995 burst test at 2,200 psig.
- 23 81 19.13.K. Refrigerant Components
1. Refrigerant circuit shall include the following control, safety, and maintenance features:
 - a. Thermal Expansion Valve (TXV) with venturi type distributor .
 - b. Refrigerant filter drier.
 - c. External service gauge connections to unit suction and liquid lines.
 2. Compressors
 - a. Unit shall use one fully hermetic, scroll compressor for each independent refrigeration circuit.
 - b. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
 - d. Compressors shall be internally protected from high discharge temperature conditions.

- e. Compressors shall be protected from an over-temperature and over-amperage conditions by an internal, motor overload device.
- f. Compressor shall be factory mounted on rubber grommets.
- g. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
- h. Crankcase heaters shall not be required for normal operating range.

23 81 19.13.L. Filter Section

- 1. Filters access is specified in the unit cabinet section of this specification.
- 2. Filters shall be held in place by a sliding filter tray, facilitating easy removal and installation.
- 3. Shall consist of factory-installed, low velocity, cleanable 1-in. thick aluminum filters.
- 4. Filters shall be standard, commercially available sizes.
- 5. Filter face velocity shall not exceed 365 fpm at nominal airflows.

23 81 19.13.M. Evaporator Fan and Motor

- 1. Evaporator Fan Motor:
 - a. Shall have permanently lubricated bearings.
 - b. Shall have inherent automatic-reset thermal overload protection or circuit breaker.
 - c. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating shall be required.
- 2. Evaporator Fan:
 - a. Blower fan shall be double-inlet type with forward-curved blades.
 - b. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.

23 81 19.13.N. Condenser Fan and Motor

- 1. Condenser Fan Motor:
 - a. Shall be a totally enclosed motor.
 - b. Shall use permanently lubricated bearings.
 - c. Shall have inherent thermal overload protection with an automatic reset feature.
 - d. Shall use a shaft-down design. Shaft-up designs including those with "rain-slinger devices" shall not be allowed.
- 2. Condenser Fan:
 - a. Shall be a direct-driven propeller type fan.
 - b. Shall have aluminum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.

23 81 19.13.O. Special Features, Options and Accessories

- 1. Low Ambient Control Package
 - a. Controller shall control coil head pressure by condenser-fan cycling.
- 2. Condenser Coil Hail Guard Assembly
 - a. Shall protect against damage from hail.
 - b. Shall be louvered design.
- 3. Electric Heat:
 - a. Heating Section
 - (1.) Heater element open coil resistance wire, nickel-chrome alloy, strung through ceramic insulators mounted on metal frame. Coil ends are staked and welded to terminal screw slots.
 - (2.) Heater assemblies are provided with integral fusing for protection of internal heater circuits not exceeding 48 amps each. Auto reset thermo limit controls, magnetic heater contactors (24 v coil) and terminal block all mounted in electric heater control box (minimum 18 ga galvanized steel) attached to end of heater assembly.

GUIDE SPECIFICATIONS – EMRHR-096 thru 120

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ELECTRIC HEAT PACKAGED ROOFTOP

HVAC Guide Specifications

Size Range: 8.0 to 10.0 Nominal Tons

Section Description

23 06 80 Schedules for Decentralized HVAC Equipment

23 06 80.13 Decentralized Unitary HVAC Equipment Schedule

23 06 80.13.A. Rooftop unit schedule

1. Schedule is per the project specification requirements.

23 07 16 HVAC Equipment Insulation

23 07 16.00.A Decentralized, Rooftop Units:

1. Interior cabinet surfaces shall be insulated with a minimum 1/2-in. thick, cross linked polyolefin foam, density of 25 +/- 3Kg/m³, with aluminum foil facing on the air side.
2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

23 09 13 Instrumentation and Control Devices for HVAC

23 09 13.23 Sensors and Transmitters

23 09 13.23.A. Thermostats

1. Thermostat must
 - a. have capability to energize 2 different stages of cooling, and 2 different stages of heating.
 - b. must include capability for occupancy scheduling.

23 09 33 Electric and Electronic Control System for HVAC

23 09 33.00.A. General:

1. Shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-v transformer side. Transformer shall have 100VA capabilities.
2. Shall utilize color-coded wiring.

23 09 33.00.B. Safeties:

1. Compressor over-temperature, over current.
2. Low-pressure switch.
3. High-pressure switch.
4. Automatic reset, motor thermal overload protector.

23 09 93 Sequence of Operations for HVAC Controls

23 09 93.00.A INSERT SEQUENCE OF OPERATION

23 41 13 Panel Air Filters

23 41 13.00.A. Standard filter section shall

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23 81 19 Self-Contained Air Conditioners

23 81 19.13 Small-Capacity Self-Contained Air Conditioners

23 81 19.13.A. General

1. Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing a(n) hermetic scroll compressor(s) for cooling duty.
2. Factory assembled, single-piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start-up.
3. Unit shall use environmentally sound R-410a refrigerant.
4. Unit shall be installed in accordance with the manufacturer’s instructions.
5. Unit must be selected and installed in compliance with local, state, and federal codes.

23 81 19.13.B. Quality Assurance

1. Unit meets applicable regional minimum efficiency requirements.
2. Unit shall be rated in accordance with AHRI Standards 340/360.
3. Unit shall be designed to conform to ASHRAE 15.
4. Unit shall be safety tested and certified in accordance with IEC-60335-1 & 2-40 Standards and UL-listed as a total package for safety requirements.
5. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
6. Unit casing shall be capable of withstanding 1000-hour salt spray exposure per ASTM B117 (scribed specimen).

7. Unit shall be designed in accordance with ISO 9001:2000, and shall be manufactured in a facility registered by ISO 9001:2000.
 8. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
 10. Unit shall be designed in accordance with IEC-60335 standard including tested to withstand rain.
- 23 81 19.13.C. Delivery, Storage, and Handling
1. Unit shall be stored and handled per manufacturer's recommendations.
 2. Lifted by crane requires either shipping top panel or spreader bars.
 3. Unit shall only be stored or positioned in the upright position.
- 23 81 19.13.E. Project Conditions
1. As specified in the contract.
- 23 81 19.13.F. Operating Characteristics
1. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 340/360 at ± 10% voltage.
 2. Compressor with standard controls shall be capable of operation from 40°F (4°C) , ambient outdoor temperatures. Accessory low ambient kit is necessary if mechanically cooling at ambient temperatures below 40°F (4°C).
 3. Unit shall discharge supply air horizontally as shown on contract drawings.
- 23 81 19.13.G. Electrical Requirements
1. Main power supply voltage, phase, and frequency must match those required by the manufacturer.
- 23 81 19.13.H. Unit Cabinet
1. Unit cabinet shall be constructed of galvanized pre-painted steel.
 2. Unit cabinet exterior paint shall be: film thickness, (dry) 0.003 inches minimum, flat (per ASTM D523, 60°F): 60, Hardness: H-2H Pencil hardness.
 3. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 340/360 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 1/2-in. thick, cross linked polyolefin foam, density of 25 +/- 3Kg/m³, aluminum foil-faced on the air side.
 4. Base Rail
 - a. Unit shall have base rails on all sides.
 - b. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
 - c. Holes shall be provided in the base rail for moving the rooftop by fork truck.
 - d. Base rail shall be a minimum of 14 gauge thickness.
 5. Condensate pan and connections:
 - a. Shall be a sloped condensate drain pan made of a non-corrosive material.
 - b. Shall comply with ASHRAE Standard 62.
 - c. Shall use a 3/4" NPT drain connection, through the side of the drain pan. Connection shall be made per manufacturer's recommendations.
 6. Top panel:
 - a. Indoor section shall be a single piece top panel.
 7. Electrical Connections
 - a. All unit power wiring shall enter unit cabinet at a single, factory-prepared, knockout location.
 8. Component access panels (standard)
 - a. Cabinet panels shall be easily removable for servicing.
- 23 81 19.13.J. Coils
1. Standard Aluminum Micro Channel Coils: on all models.
 - a. Standard evaporator and condenser coils shall have aluminum micro channel coils.
 - b. Evaporator and Condenser coils shall be leak tested to 150 psig, pressure tested to 550 psig, and qualified to UL 1995 burst test at 2,200 psig.
- 23 81 19.13.K. Refrigerant Components
1. Refrigerant circuit shall include the following control, safety, and maintenance features:
 - a. Thermal Expansion Valve (TXV) with venturi type distributor .
 - b. Refrigerant filter drier.
 - c. External service gauge connections to unit suction and liquid lines.
 2. Compressors
 - a. Unit shall use one fully hermetic, scroll compressor for each independent refrigeration circuit.
 - b. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
 - d. Compressors shall be internally protected from high discharge temperature conditions.
 - e. Compressors shall be protected from an over-temperature and over-amperage conditions by an internal, motor overload device.
 - f. Compressor shall be factory mounted on rubber grommets.

g. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.

h. Crankcase heaters shall not be required for normal operating range.

23 81 19.13.L. Filter Section

1. Filters access is specified in the unit cabinet section of this specification.
2. Filters shall be held in place by a sliding filter tray, facilitating easy removal and installation.
3. Shall consist of factory-installed, low velocity, cleanable 1-in. thick aluminum filters.
4. Filters shall be standard, commercially available sizes.
5. Filter face velocity shall not exceed 365 fpm at nominal airflows.

23 81 19.13.M. Evaporator Fan and Motor

1. Evaporator fan motor:
 - a. Shall have permanently lubricated bearings.
 - b. Shall have inherent automatic-reset thermal overload protection or circuit breaker.
 - c. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating shall be required.
2. Belt-driven Evaporator Fan:
 - a. Belt drive shall include an adjustable-pitch motor pulley.
 - b. Shall use sealed, permanently lubricated ball-bearing type.
 - c. Blower fan shall be double-inlet type with forward-curved blades.
 - d. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.

23 81 19.13.N. Condenser Fans and Motors

1. Condenser fan motors:
 - a. Shall be a totally enclosed motor.
 - b. Shall use permanently lubricated bearings.
 - c. Shall have inherent thermal overload protection with an automatic reset feature.
 - d. Shall use a shaft-down design. Shaft-up designs including those with "rain-slinger devices" shall not be allowed.
2. Condenser Fans:
 - a. Shall be a direct-driven propeller type fan.
 - b. Shall have aluminum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.

23 81 19.13.O. Special Features, Options and Accessories

1. Low Ambient Control Package
 - a. Controller shall control coil head pressure by condenser-fan cycling.
2. Condenser Coil Hail Guard Assembly
 - a. Shall protect against damage from hail.
 - b. Shall be louvered design.
3. Electric Heat:
 - a. Heating Section
 - (1.) Heater element open coil resistance wire, nickel-chrome alloy, strung through ceramic insulators mounted on metal frame. Coil ends are staked and welded to terminal screw slots.
 - (2.) Heater assemblies are provided with integral fusing for protection of internal heater circuits not exceeding 48 amps each. Auto reset thermo limit controls, magnetic heater contactors (24 v coil) and terminal block all mounted in electric heater control box (minimum 18 ga galvanized steel) attached to end of heater assembly.







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