The new degree of comfort.®

Commercial Package Air Conditioners

AMERICAN BRAND TRUSTED QUALITY

R410A REFRIGERANT

50Hz

renaissance Xcede™

INTEGRATED AIR & WATER

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GENERAL

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 12.5 through **25** Tons unit size.

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 Distributors, Dealers and end users to meet the latest application requirements. These units are designed in USA specifically for GCC market considering Gulf climate conditions.

These package air conditioners are compact, quiet, most efficient and self-contained units, ideal for commercial and top end residential applications.

These units are designed and tested in accordance with AHRI340/360 standard.
Furthermore, they are completely assembled, leak tested, vacuumed, internally factory wired and fully charged with R-410A refrigerant from factory. Each unit is fully factory tested before dispatch and is ready to install. All that is required at site is to connect duct, drain lines, main power supply and field wiring to the thermostat. This greatly reduces the installation work and cost of installation.

FEATURES AND BENEFITS

STANDARD FEATURES:

The EMRHR series Package Air Conditioners are designed incorporating many salient features which together provides a heavy duty, robust and long-lasting unit for large commercial applications.

These package units provides an extremely rugged, long life, energy efficient, self-contained package air conditioner that will provide cooling with higher efficiency and reliability over a long and extended period of unit life.
The units are special because they use

1. Highly efificient totally enclosed Scroll compressors
2. Totally enclosed highly efficient, Class F insulated condenser and evaporator motors
3. New technology, high heat transfer microchannel condenser and evaporator coils for long and maintenance free life
4. Advance engineered American design unit for trouble free operation throughout the life.

In addition to above there are many other features in this as listed below:

1 Factory Charged with R-410A Refrigerant
2 Factory wired, run tested and quality checked
3 Verified 125°F (52°C) Outdoor Ambient Operation,
4 Specifically designed in USA for Gulf climate conditions
5 Quiet Scroll Compressors with internal line break overloads
6 IP55 Evaporator Motors
7 IP54 Condenser Motors
8 Two independent refrigerant circuits
9 Thermostatic expansion valve on each circuit
10 Microchannel Condenser Coil
11 Microchannel Evaporator Coil
12 Painted G90 Galvanized Sheet Metal Cabinet
13 Painted finish meets ASTMB117 1008 hr. salt spray test
14 Easy Access door(s)
15 High Pressure Cut-out Switch
16 Low Pressure Cut-out Switch
17 Base Rails with Integral Fork Slots
18 Leak proof 2 Piece Indoor Top Cover
19 1" washable aluminium mesh Filters
20 Solid Core Refrigerant Filter Drier(s) on each circuit
21 1/2" rubber Insulation
22 Belt-Drive Blower with Adjustable Pitch Motor Sheave

23 Blower Assembly with quick belt adjust mechanism
24 Easy Indoor Blower Assembly for service convenience
25 Shaft down, internally protected, totally Closed Condenser Motors
26 Permanently Lubricated Bearings on Blower and Condenser Motors
27 Thermally protected Blower and Condenser Motors
28 Evaporator external overload protection
29 Single phase-phase reversal protection
30 15% fresh air provision
31 IAQ - Sloped Cleanable Evaporator Drain pan – ASHRAE62
32 Single Side Service Easy and safe Electrical Entrances
33 24 Volt Control System with resettable circuit breaker protection
34 Single-Point Electrical Connections
35 Coloured and Labelled Wiring
36 Labelled Polarized Plugs for Easy Accessory connections
37 Standardized Components
38 Produced in an ISO 9001 facility to stringent quality standards
39 Designed, Tested and meeting IEC 60335 standards
40 Designed and Tested to Rheem stringent reliability standards in USA
41 Tested and Rated in Accordance with AHRI 340/360
42 Stainless steel drain pan as a standard feature
43 External gauge port for easy access during service
44 100% leak tested and pressure tested from factory
45 Internal overload protection for compressor
46 Factory fitted inbuilt filter drier

OPTIONAL FEATURES:

1 Crankcase heater
2 Condenser coil coating
3 Compressor external overload
4 Medium (up to 2”) static drive option
5 Condenser coil protection guard
6 2" thick washable aluminium mesh air filters
7 Microprocessor based controller
8 Anti-short cycle timer
9 Under voltage protection
10 BMS connectivity
11 Dry Contacts
12 Low Ambient Kit

(** Check with factory before ordering options as some of them are coming soon in phase 2)

MAIN COMPONENT AND UNIT FEATURES/BENEFITS:

1. COMPRESSSORS

Compressors used in these units are totally enclosed, hermetically sealed and highly efficient which has following features.

1. State of art scroll compressor technology
2. Highly Efficient
3. Low Wear due to fewer moving parts
4. Totally enclosed
5. Internally thermally protected
6. Internally spring mounted
7. Externally rubber mounted
8. Suction cooled
9. Large sump area for liquid management
10. Reputed brand
11. Low Sound and Vibration Level

2. MICROCHANNEL CONDENSER COILS

The outdoor coil uses the advance Micro-Channel technology for efficient heat transfer and compactness. These micro-channels have better heat transfer performance than the typical copper/aluminium condenser coils and are more compact. This results in a reduction of system refrigerant charge by up to 40%, lower coil weights, and improved galvanic corrosion resistance as the micro-channel coil is all aluminium.

The coil is made of flat aluminium tubes automatically brazed to the aluminium fins in the furnace. This ensures less manual brazing and, in a way, less prone to the leakage.

There are multiple benefits of using microchannel condenser coils. Some of them are highlighted below.

1. Less prone to corrosion due to single material
2. Less refrigerant quantity, contributes to sustainability as well as less cost of service for the user
3. Higher heat transfer
4. More resistance to physical damage
5. Less brazing joint means less chances of leakage
6. Easy to re-cycle due to single material construction

3. MICROCHANNEL EVAPORATOR COILS

Similar to condenser coils, the evaporator coils of these models also use the advance Micro-Channel technology for efficient heat transfer and compactness. These micro-channels have better heat transfer performance than the typical copper/aluminium condenser coils and are more compact. The evaporator coils are designed with the advance technology of microchannel. The coil is made of flat tube aluminium tubes automatically brazed to the aluminium fins in the furnace. This ensures less manual brazing and less prone to the leakage.

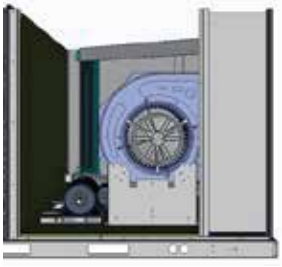
In addition to the benefits of microchannel coil when used as condenser, there are other benefits when used as evaporator which are listed below.

1. No need of distributor as flat tubes with multiple openings distributes the refrigerant uniformly thru out the coil
2. As there is no distributor, distributor tubes are not required, most of the times distributor tubes get leakage and it is very complicated to repair small diameter multiple tubes.
3. Easy to recycle due to single material construction

4. CONDENSER FAN-MOTOR

The condenser fans are axial type direct drive internal rotor type motors. The motors are totally enclosed Air Over (TEAO), 4/6 pole with class F insulation and IP 54 ingress protection. The TEAO and Class F insulation features ensure long life. The condenser fans are individually statically and dynamically balanced at the factory. The fan and motor are assembled separately and provided with suitable acrylic coated fan guard.

5. EVAPORATOR FAN-MOTOR



The evaporator fan is forward curved centrifugal DIDW, statically and dynamically balanced, complete with shaft, self-aligning and permanently lubricated ball bearings. The fan is driven by a single speed,4 pole through adjustable V belt drive, insulation class F and IP55 protection motor, rated for continuous operation at the rated conditions.
The motor is factory wired to the control panel where a dedicated contactor is located and is protected by an overload relay. The group of fan and motor is located on a rigid base which is isolated from the rest of the unit by rubber vibration isolators.

6. CASING AND STRUCTURE

The large Rheem Commercial Series identifies the brand to the customer. The sheet-metal cabinet uses nothing less than 18-gauge G90 galvanized sheet metal. The painted cabinet finish is tested per ASTMB117 to withstand a rigorous 1008-hour salt spray test. To ensure the leak-proof integrity of these units, the design utilizes a two-piece top with an overlapping joint design, along with complete insulation from inside of the panels

The evaporator side of the unit is insulated with closed cell rubber type ½" thickness insulation. The insulation meets the fire requirements of NFPA90A & 90B. The structure permits easy access to all the working parts of the unit, so the maintenance of the unit is very easy.

7. INDOOR AIR QUALITY

Non-corrosive sloped condensate pans minimize biological growth in rooftop units in accordance with ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers) Standard 62-99 (IAQ). 1" inch filters provide for greater particle reduction in the return air.
The Drain pan material used is non-corrosive stainless steel, provides extreme protection against corrosion.

8. EASY ELECTRICAL CONNECTIONS

Terminal boards, located in the unit control box, facilitate connections to room thermostat, outdoor thermostat(s) and electric heater. Service panels are quickly removable, permitting easy servicing. Both power and control connections are made on the same side of the unit to simplify installation. In addition, color-coded wires permit easy tracing and diagnostics.

9. EASY INSTALLATION

All units feature base rail design with forklift slots and rigging holes for easier manoeuvring. Durable packaging protects all units during shipment and storage. Convenient side by side openings permit installation very close to face of buildings or on roof top. The non-corrosive stainless-steel sloped condensate pan minimizes residual condensate in off cycle. An external, field-supplied P-trap is required.

10. INSTALLATION FEATURES

- Side by Side supply and Return duct arrangements
- Separate electrical control box
- External gauge port
- V-coil design
- Easy drain fixing
- Easy, single entry electrical cable connection

11. EXTERNAL GAUGE PORT

The high pressure and low pressure can be easily and accurately measured thru the 2-gauge port extended outside. This ensures that service person do not have to open the panel or stop the unit.

12. STAINLESS STEEL DRAIN PAN

Stainless steel drain pan is provided as a standard feature with all the units to avoid corrosion and provide utmost quality to the user. Non-corrosive sloped condensate pans minimize biological growth in rooftop units and provides maximum protection against corrosion.

13. 1008 HOURS SALT SPRAY TEST

Rheem package equipment uses a pre painted sheet metal, tested and rated at 1008-hour salt spray per ASTM B117 standard.

14. CONTINUOUS COOLING UP TO 52 DEG.C AMBIENT TEMPERATURE

Designed and tested in USA specifically for GCC climate condition, the system provides uninterrupted cooling even during extreme weather conditions. Unit is tested to run even at 52 deg c ambient conditions

15. INSULATION

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

16. AIR FILTER

Unit consist of factory-installed, low velocity, cleanable 1-in. thick aluminium filters of commercially available sizes. Filters are accessible through an access panel easily.

17. DUAL CIRCUIT UNITS

Dual, electrically, and mechanically independent refrigerant circuits are provided for all the units, to ensure energy savings during low load condition.

18. COMPRESSOR TIME DELAY

For enhanced compressor safety, there will always be a 3-minute time delay before the compressor can start. In case of power interruption, the system will delay the operation of the compressor in the range of 3-4 minutes in random order. This is to avoid the compressors in the entire building start together.

19. HIGH PRESSURE & LOW-PRESSURE PROTECTION SWITCHES

These standard switches ensure that the system is protected and avoid frequent breakdowns. These switches also ensures that the compressor is protected all

the times and have a longer life of operation.

20. ADJUSTABLE INDOOR AIR FLOW

The package unit provides flexibility at site to adjust the air flow based on static pressure at the site using variable motor pulley provided from the factory as a standard feature.

21. EXTERNAL OVERLOAD PROTECTION FOR INDOOR MOTOR

In addition to internal thermal overload protection inside the motor, there is an external electrical protection provided to enhance the safety of indoor electrical motor. This saves the motor from failure in case it is mishandled at site and the motor goes outside the permissible limit.

22.INBUILT FILTER DRIER

Each unit comes with a standard filter drier which cleans the system and protects from component failures.

23. PERFORMANCE FEATURES

- Environment friendly HFC R-410A refrigerant
  - A chlorine-free refrigerant from the HFC group
  - Has zero ozone depletion potential (Helps protect the environment)
  - Thermally efficient and provides high EER (energy efficiency), COP and part load efficiencies
  - In case of leakage only lost refrigerant to be added, no need to remove complete refrigerant and recharge (Saves Service cost)

- TXV refrigerant metering device for all models
- Two independent refrigerant circuits, each with a scroll compressor
- Liquid filter drier standard on each circuit
- 15% fresh air intake
- Stainless Steel non-corrosive sloped condensate drain pan in accordance to ASHRAE 62 standard
- Thermally protected and permanently lubricated condenser and evaporator fan motors
- Angle type return air section with washable type filters

24. SUPERIOR RELIABILITY, EFFICIENCY AND SAFETY

1. Robust design and Reliability endurance testing
   - Painted panels tested to ASTM B-117 1008 hours salt spray protection
   - Microchannel condenser coil for extra corrosion protection

2. Compressor Protection:
   - High- and low-pressure cut-outs
   - Compressor lockout
   - Phase protection relay
   - Crankcase heaters are optional for special applications
   - Internal over temperature protection

3. Low vibration design:
   - Leak-tight refrigerant circuit
   - Brazed refrigerant connections for increased leak tightness, also microchannel coil to ensure maximum brazingjoints are done through automated furnace.
   - Low noise scroll compressors with low vibration levels

4. Thermally protected and permanently lubricated condenser and evaporator fan motors
5. Angle type return air section with washable type filters
6. Transformer for safe 24v control circuit supply included
7. High Efficiency, High Static Blower
8. State-of-art scroll compressor technology
9. Dual, electrically and mechanically independent refrigerant circuit
10. Metallic components
11. Designed and tested in USA.
12. Reputed brand critical components

E MR H R X 150 A N A 00 0 A A X X X X

OPTION CODES
SEE SHEET E1 & E2

MINOR SERIES
A = FIRST DESIGN

CONTROL
A = NON COMMUNICATING
B = WITH COMFORT ALERT
C = DDC CONTROLLER

HEATING CONFIGURATION
0= NO HEAT

HEATING CAPACITIY
00 = NO HEAT

DRIVE PACKAGE
A = BELT LOW STATIC
B = BELT MEDIUM STATIC
T = CONSTANT TORQUE

ELECTRICAL DESIGNATION
N = 380/415 V – 3 PH – 50 HZ
V = 380/400 V – 3 PH – 60 HZ

MAJOR DESIGN VARIATIONS
A = FIRST DESIGN

COOLING CAPACITY
150 = 144,000 BTU/HR
190 = 178,000 BTU/HR
280 = 250,000 BTU/HR
281 = 254,000 BTU/HR
340 = 278,000 BTU/HR
341 = 290,000 BTU/HR

MARKET
X = GENERIC

SERIES
R = SINGLE STAGE 042 THRU 120 S = TIER 1 T = TIER 2
TWO STAGE 150 THRU 341

CABINET TYPE
H=HORIZONTAL DISCHARGE

UNIT TYPE
MR = MIDDLE EAST/ROOFTOP

TRADE BRAND
E=RHEEM EXPORT

OPTION CODES

CHARACTER 18	CHARACTER 19	CHARACTER 20	CHARACTER 21
LV = Louver protection	CEO = Compressor external overload	DRC = Dry Contacts	
CCC = Condenser Coil Coating	CCH = Crank case Heater	2F = Two inches thick Filter	
	LA = Low Ambient		

A	NONE				A	NONE				0	NONE				E	ESMA
B	LV				B	CEO				1	DRC					
C	LV	CCC			C	CEO	CCH			2	2F					
D	LV	CCC	ECC		D	CEO	CCH	LA		3	DRC	2F				
E					E					4						
F					F					5						
G					G											
H					H											
J					J											
K					K											
L					L											

UNIT PERFORMANCE DATA

COMMERCIAL PACKAGE UNIT PERFORMANCE DATA

Sr. No.	Model	AHRI Performance (26.7/19.4-35 C)			T3 Performance (29/19-46 C)			T4 Performance (26.7/19.4-48 C)		
		Cooling Capacity (BTU/HR)	Power Input (Watts)	EER (BTU/HR/W)	Cooling Capacity (BTU/HR)	Power Input (Watts)	EER (BTU/HR/W)	Cooling Capacity (BTU/HR)	Power Input (Watts)	KW/TR
1	EMRHR-150	144000	12413	11.60	122000	14698	8.30	118000	14750	1.50
2	EMRHR-190	178000	14590	12.20	152000	17272	8.80	146000	17804	1.46
3	EMRHR-280	250000	21739	11.50	216000	26666	8.10	212000	27179	1.54
4	EMRHR-281	254000	20646	12.30	218000	25500	8.55	218393	26560	1.46
5	EMRHR-340	280000	25454	11.00	240000	30769	7.80	234064	31960	1.64
6	EMRHR-341	290000	24550	11.81	254000	30200	8.41	251282	31389	1.50

GENERAL DATA

Model -MRHRX Series	150ANA	190ANA	280ANA	340ANA
Cooling Performance1				
Gross Cooling Capacity at AHRI (Btu/h)	144,000	178,000	250,000	280,000
EER	11.6	12.2	11.5	11
Nominal CFM	5033	6000	8000	10000
Net System Power kW	12.413	14.59	21.739	25.454
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)5	88	91	92	92
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.709 [18]	0.709 [18]	1 [25.4]	1.26 [32]
Face Area sq. ft. [sq. m]	26.55 [2.47]	26.55 [2.47]	26.55 [2.47]	26.55 [2.47]
Rows / FPI [FPcm]	2 / 23 [9]	2 / 23 [9]	2 / 23 [9]	2 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
Tube Size in. [mm] OD	1.26 [32]	1.26 [32]	1.26 [32]	1.26 [32]
Face Area sq. ft. [sq. m]	21.76 [2.02]	21.76 [2.02]	26.77 [2.49]	26.77 [2.49]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	3/24 [609.6]	3/24 [609.6]	3/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	10000 [4719]	12000 [5663]	16000 [7550]	20000 [9438]
No. Motors/HP	2 at 1/2 HP	3 at 1/2 HP	3 at 3/4 HP	3 at 3/4 HP
Motor RPM	895	895	895	1090
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x18 [381x457]	1/15x18 [381x457]	1/18x18 [457x457]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds	Single	Single	Single	Single
No. Motors	1	1	1	1
Motor HP	3	4	7 1/2	7 1/2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	100	100	132	132
Filter - Type	Permanent	Permanent	Permanent	Permanent
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(2)0.875x24x24 [22x610x610]	(2)0.875x24x24 [22x610x610]	(2)0.875x24x24 [22x610x610]	(2)0.875x24x24 [22x610x610]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	131.2/136 [3720/3856]	136/134.4 [3856/3810]	176/190.4 [4990/5398]	209.6/216 [5942/6124]
Weights				
Net Weight lbs. [kg]	1259 [571]	1289 [585]	1514 [687]	1648 [748]
Ship Weight lbs. [kg]	1359 [616]	1389 [630]	1614 [732]	1748 [793]

Notes:
1. Cooling Performance is rated at 95°F ambient, 80°F entering dry buld, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat.

GENERAL DATA

Model -MRHRX Series	281ANA	341ANA
Cooling Performance1		
Gross Cooling Capacity at AHRI (Btu/h)	254,000	290,000
EER	12.3	11.8
Nominal CFM	8633	10133
Net System Power kW	20.51	24.46
Compressor		
No./Type	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)5	91	92
Outdoor 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]	26.55 [2.47]	26.55 [2.47]
Rows / FPI [FPcm]	2 / 23 [9]	2 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel
Tube Size in. [mm] OD	1.26 [32]	1.26 [32]
Face Area sq. ft. [sq. m]	26.77 [2.49]	26.77 [2.49]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]
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]	3/24 [609.6]	3/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1
CFM [L/s]	16000 [7550]	20000 [9438]
No. Motors/HP	3 at 3/4 HP	3 at 3/4 HP
Motor RPM	1090	1090
Indoor Fan - Type	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x18 [381x457]	1/18x18 [457x457]
Drive Type	Belt (Adjustable)	Belt (Adjustable)
No. Speeds	Single	Single
No. Motors	1	1
Motor HP	71/2	71/2
Motor RPM	1725	1725
Motor Frame Size	132	132
Filter - Type	Permanent	Permanent
Furnished	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(2)0.875x24x24 [22x610x610]	(2)0.875x24x24 [22x610x610]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	184/190.4 [5216/5398]	206.4/200 [5851/5670]
Weights		
Net Weight lbs. [kg]	1514 [687]	1648 [748]
Ship Weight lbs. [kg]	1614 [732]	1748 [739]

GROSS SYSTEMS PERFORMANCE DATA — EMRHRX150ANA

Entering Indoor Air @ 80°F [26.7°C] dbE ①

Outdoor	wbE	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]		
DB	CFM [L/s]	5500 [2596]	4450 [2100]	3500 [1652]	5500 [2596]	4450 [2100]	3500 [1652]	5500 [2596]	4450 [2100]	3500 [1652]
	DR ①	0.03	0.07	0.12	0.03	0.07	0.12	0.03	0.07	0.12
75°F	Total BTUH [kW]	175.3 [51.4]	168.1 [49.3]	161.5 [47.3]	165.7 [48.5]	158.8 [46.5]	152.7 [44.7]	156.1 [45.7]	149.7 [43.9]	143.9 [42.2]
[23.9°C]	Sens BTUH [kW]	135.5 [39.7]	114.9 [33.7]	97.5 [28.6]	135.5 [39.7]	115.2 [33.8]	98.2 [28.8]	140.4 [41.1]	120.1 [35.2]	102.9 [30.1]
	Power	8.5	8.3	8.2	9	8.8	8.6	9.5	9.3	9.1
80°F	Total BTUH [kW]	171.1 [50.1]	164 [48.1]	157.7 [46.2]	161.5 [47.3]	154.8 [45.4]	148.8 [43.6]	151.9 [44.5]	145.6 [42.7]	140 [41.0]
[26.7°C]	Sens BTUH [kW]	133.9 [39.2]	113.5 [33.3]	96.5 [28.3]	133.9 [39.2]	113.9 [33.4]	97.1 [28.5]	138.8 [40.7]	118.7 [34.8]	101.8 [29.8]
	Power	8.9	8.7	8.6	9.4	9.2	9 9.9	9.7	9.5	
85°F	Total BTUH [kW]	166.7 [48.8]	159.8 [46.8]	153.6 [45.0]	157 [46.0]	150.6 [44.1]	144.7 [42.4]	147.5 [43.2]	141.4 [41.4]	135.9 [39.8]
[29.4°C]	Sens BTUH [kW]	131.7 [38.6]	111.7 [32.7]	95 [27.8]	131.5 [38.5]	112.1 [32.8]	95.6 [28.0]	136.5 [40.0]	116.9 [34.3]	100.3 [29.4]
	Power	9.4	9.2	9	9.9	9.7	9.5	10.4	10.2	10
90°F	Total BTUH [kW]	162 [47.5]	155.4 [45.5]	149.3 [43.7]	152.4 [44.7]	146.2 [42.8]	140.5 [41.2]	142.9 [41.9]	137 [40.1]	131.7 [38.6]
[32.2°C]	Sens BTUH [kW]	128.9 [37.8]	109.5 [32.1]	93.1 [27.3]	128.9 [37.8]	109.9 [32.2]	93.8 [27.5]	133.9 [39.2]	114.7 [33.6]	98.5 [28.9]
	Power	9.9	9.7	9.6	10.5	10.2	10	11	10.7	10.5
95°F	Total BTUH [kW]	157.2 [46.1]	150.8 [44.2]	144.9 [42.5]	147.6 [43.2]	141.6 [41.5]	136.1 [39.9]	138.1 [40.5]	132.4 [38.8]	127.3 [37.3]
[35.0°C]	Sens BTUH [kW]	125.7 [36.8]	106.8 [31.3]	90.8 [26.6]	125.7 [36.8]	107.2 [31.4]	91.6 [26.8]	130.7 [38.3]	112 [32.8]	96.2 [28.2]
	Power	10.6	10.4	10.2	11.1	10.9	10.6	11.6	11.3	11.1
100°F	Total BTUH [kW]	152.2 [44.6]	146 [42.8]	140.3 [41.1]	142.6 [41.8]	136.8 [40.1]	131.4 [38.5]	133.1 [39.0]	127.6 [37.4]	122.6 [35.9]
[37.8°C]	Sens BTUH [kW]	122 [35.7]	103.7 [30.4]	88.2 [25.8]	122 [35.7]	104.1 [30.5]	88.9 [26.0]	127 [37.2]	108.9 [31.9]	93.5 [27.4]
	Power	11.3	11	10.8	11.8	11.5	11.3	12.3	12	11.8
105°F	Total BTUH [kW]	147 [43.1]	141 [41.3]	135.5 [39.7]	137.4 [40.3]	131.8 [38.6]	126.6 [37.1]	127.9 [37.5]	122.6 [35.9]	117.8 [34.5]
[40.6°C]	Sens BTUH [kW]	117.8 [34.5]	100.1 [29.3]	85.2 [25.0]	117.8 [34.5]	100.5 [29.4]	85.8 [25.1]	122.8 [36.0]	105.3 [30.9]	90.5 [26.5]
	Power	12	11.8	11.6	12.5	12.3	12.1	13.1	12.8	12.5
110°F	Total BTUH [kW]	141.6 [41.5]	135.8 [39.8]	130.5 [38.2]	132 [38.7]	126.6 [37.1]	121.7 [35.7]	122.4 [35.9]	117.4 [34.4]	112.8 [33.1]
[43.3°C]	Sens BTUH [kW]	113 [33.1]	96 [28.1]	81.7 [23.9]	113.1 [33.1]	96.5 [28.3]	82.5 [24.2]	117.9 [34.5]	101.2 [29.7]	87 [25.5]
	Power	12.9	12.6	12.4	13.4	13.1	12.9	13.9	13.6	13.4
115°F	Total BTUH [kW]	136 [39.8]	130.4 [38.2]	125.3 [36.7]	126.4 [37.0]	121.2 [35.5]	116.5 [34.1]	116.8 [34.2]	112 [32.8]	107.7 [31.6]
[46.1°C]	Sens BTUH [kW]	107.8 [31.6]	91.5 [26.8]	77.8 [22.8]	107.8 [31.6]	91.9 [26.9]	78.5 [23.0]	112.7 [33.0]	96.7 [28.3]	83.2 [24.4]
	Power	13.8	13.5	13.3	14.3	14	13.7	14.8	14.5	14.2

"DR —Depression ratio Total —
Total capacity x 1000 BTUH
NOTES:
①dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible
wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)]. "

GROSS SYSTEMS PERFORMANCE DATA — EMRHRX190ANA

Entering Indoor Air @ 80°F [26.7°C] dbE ①

Outdoor	wbE	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]		
DB	CFM [L/s]	7000 [3304]	6500 [3068]	5000 [2360]	7000 [3304]	6500 [3068]	5000 [2360]	7000 [3304]	6500 [3068]	5000 [2360]
	DR ①	0.12	0.12	0.15	0.12	0.12	0.15	0.12	0.12	0.15
75°F	Total BTUH [kW]	206.8 [60.6]	203.9 [59.7]	195.4 [57.3]	194.4 [57.0]	191.8 [56.2]	183.7 [53.8]	184.3 [54.0]	181.8 [53.3]	174.1 [51.0]
[23.9°C]	Sens BTUH [kW]	134.6 [39.4]	127 [37.2]	105.7 [31.0]	157.2 [46.1]	149.2 [43.7]	125.9 [36.9]	174.4 [51.1]	165.9 [48.6]	141.2 [41.4]
	Power	10.6	10.5	10.3	10.5	10.4	10.2	10.3	10.3	10.1
80°F	Total BTUH [kW]	203.1 [59.5]	200.3 [58.7]	191.9 [56.2]	190.7 [55.9]	188.1 [55.1]	180.2 [52.8]	180.6 [52.9]	178.1 [52.2]	170.6 [50.0]
[26.7°C]	Sens BTUH [kW]	132.7 [38.9]	125.3 [36.7]	104.3 [30.6]	155.4 [45.5]	147.4 [43.2]	124.5 [36.5]	172.6 [50.6]	164.1 [48.1]	139.7 [40.9]
	Power	11.1	11.1	10.8	11	10.9	10.7	10.9	10.8	10.6
85°F	Total BTUH [kW]	198.9 [58.3]	196.2 [57.5]	187.9 [55.1]	186.6 [54.7]	184 [53.9]	176.3 [51.7]	176.4 [51.7]	174 [51.0]	166.7 [48.8]
[29.4°C]	Sens BTUH [kW]	130.4 [38.2]	123.2 [36.1]	102.5 [30.0]	153.2 [44.9]	145.3 [42.6]	122.8 [36.0]	170.3 [49.9]	162 [47.5]	138 [40.4]
	Power	11.7	11.6	11.4	11.6	11.5	11.3	11.5	11.4	11.2
90°F	Total BTUH [kW]	194.3 [56.9]	191.6 [56.1]	183.6 [53.8]	182 [53.3]	179.5 [52.6]	171.9 [50.4]	171.8 [50.3]	169.4 [49.6]	162.3 [47.6]
[32.2°C]	Sens BTUH [kW]	127.8 [37.4]	120.7 [35.4]	100.6 [29.5]	150.6 [44.1]	142.9 [41.9]	120.7 [35.4]	167.7 [49.1]	159.5 [46.7]	136 [39.8]
	Power	12.3	12.2	12	12.2	12.1	11.9	12.1	12	11.7
95°F	Total BTUH [kW]	189.3 [55.5]	186.6 [54.7]	178.8 [52.4]	176.9 [51.8]	174.5 [51.1]	167.2 [49.0]	166.8 [48.9]	164.5 [48.2]	157.6 [46.2]
[35.0°C]	Sens BTUH [kW]	124.9 [36.6]	117.9 [34.5]	98.2 [28.8]	147.6 [43.2]	140.1 [41.0]	118.5 [34.7]	164.8 [48.3]	156.8 [45.9]	133.8 [39.2]
	Power	12.9	12.8	12.6	12.8	12.7	12.5	12.7	12.6	12.3
100°F	Total BTUH [kW]	183.8 [53.9]	181.2 [53.1]	173.6 [50.9]	171.4 [50.2]	169.1 [49.5]	162 [47.5]	161.3 [47.3]	159.1 [46.6]	152.4 [44.7]
[37.8°C]	Sens BTUH [kW]	121.6 [35.6]	114.8 [33.6]	95.7 [28.0]	144.3 [42.3]	137 [40.1]	115.9 [34.0]	161.3 [47.3]	153.7 [45.0]	131.2 [38.4]
	Power	13.6	13.5	13.2	13.4	13.3	13.1	13.3	13.2	12.9
105°F	Total BTUH [kW]	177.8 [52.1]	175.4 [51.4]	168 [49.2]	165.5 [48.5]	163.2 [47.8]	156.4 [45.8]	155.4 [45.5]	153.2 [44.9]	146.8 [43.0]
[40.6°C]	Sens BTUH [kW]	117.9 [34.5]	111.4 [32.6]	92.8 [27.2]	140.7 [41.2]	133.5 [39.1]	113.1 [33.1]	155.4 [45.5]	150.2 [44.0]	128.3 [37.6]
	Power	14.2	14.1	13.8	14.1	14	13.7	14	13.9	13.6
110°F	Total BTUH [kW]	171.5 [50.2]	169.1 [49.5]	162 [47.5]	159.1 [46.6]	156.9 [46.0]	150.3 [44.0]	149 [43.7]	146.9 [43.0]	140.8 [41.3]
[43.3°C]	Sens BTUH [kW]	113.8 [33.3]	107.5 [31.5]	89.6 [26.3]	136.6 [40.0]	129.7 [38.0]	109.8 [32.2]	149 [43.7]	146.3 [42.9]	125.1 [36.7]
	Power	14.9	14.8	14.5	14.8	14.7	14.4	14.6	14.5	14.2
115°F	Total BTUH [kW]	164.6 [48.2]	162.4 [47.6]	155.6 [45.6]	152.3 [44.6]	150.2 [44.0]	143.9 [42.2]	142.2 [41.7]	140.2 [41.1]	134.3 [39.3]
[46.1°C]	Sens BTUH [kW]	109.4 [32.1]	103.4 [30.3]	86.2 [25.3]	132.2 [38.7]	125.5 [36.8]	106.4 [31.2]	142.2 [41.7]	140.2 [41.1]	121.6 [35.6]
	Power	15.6	15.5	15.2	15.5	15.4	15	15.3	15.2	14.9

"DR —Depression ratio Total —
Total capacity x 1000 BTUH
NOTES:
①dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible
wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)]. "

GROSS SYSTEMS PERFORMANCE DATA — EMRHRX280ANA

Entering Indoor Air @ 80°F [26.7°C] dbE ①

Outdoor	wbE	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]		
DB	CFM [L/s]	9500 [4484]	8450 [3988]	7500 [3540]	9500 [4484]	8450 [3988]	7500 [3540]	9500 [4484]	8450 [3988]	7500 [3540]
	DR ①	0.09	0.11	0.13	0.09	0.11	0.13	0.09	0.11	0.13
75°F	Total BTUH [kW]	302.2 [88.5]	295.5 [86.6]	289.4 [84.8]	284.6 [83.4]	278.4 [81.6]	272.7 [79.9]	269.8 [79.1]	263.8 [77.3]	258.4 [75.7]
[23.9°C]	Sens BTUH [kW]	193.3 [56.6]	176 [51.6]	161 [47.2]	224.7 [65.8]	206.2 [60.4]	190 [55.7]	250.2 [73.3]	230.5 [67.5]	213.3 [62.5]
	Power	15.3	15.1	15	15.1	15	14.8	14.9	14.8	14.6
80°F	Total BTUH [kW]	294.6 [86.3]	288.1 [84.4]	282.2 [82.7]	277.1 [81.2]	271 [79.4]	265.4 [77.8]	262.3 [76.9]	256.5 [75.2]	251.2 [73.6]
[26.7°C]	Sens BTUH [kW]	189.4 [55.5]	172.5 [50.5]	157.9 [46.3]	220.9 [64.7]	202.7 [59.4]	186.8 [54.7]	246.4 [72.2]	227.1 [66.5]	210.2 [61.6]
	Power	16	15.9	15.7	15.9	15.7	15.5	15.7	15.5	15.4
85°F	Total BTUH [kW]	286.8 [84.0]	280.5 [82.2]	274.7 [80.5]	269.3 [78.9]	263.3 [77.1]	258 [75.6]	254.4 [74.5]	248.8 [72.9]	243.7 [71.4]
[29.4°C]	Sens BTUH [kW]	185.4 [54.3]	168.9 [49.5]	154.5 [45.3]	217 [63.6]	199.1 [58.3]	183.6 [53.8]	242.3 [71.0]	223.4 [65.5]	206.8 [60.6]
	Power	16.9	16.7	16.5	16.7	16.5	16.4	16.5	16.4	16.2
90°F	Total BTUH [kW]	278.7 [81.7]	272.6 [79.9]	267 [78.2]	261.2 [76.5]	255.4 [74.8]	250.2 [73.3]	246.4 [72.2]	240.9 [70.6]	236 [69.1]
[32.2°C]	Sens BTUH [kW]	181.1 [53.1]	165.1 [48.4]	151.1 [44.3]	212.8 [62.3]	195.3 [57.2]	180.1 [52.8]	238.2 [69.8]	219.6 [64.3]	203.4 [59.6]
	Power	17.8	17.6	17.4	17.6	17.4	17.2	17.4	17.2	17.1
95°F	Total BTUH [kW]	270.4 [79.2]	264.4 [77.5]	259 [75.9]	252.8 [74.1]	247.3 [72.5]	242.2 [71.0]	238 [69.7]	232.7 [68.2]	228 [66.8]
[35.0°C]	Sens BTUH [kW]	176.8 [51.8]	161.1 [47.2]	147.5 [43.2]	208.3 [61.0]	191.4 [56.1]	176.5 [51.7]	233.7 [68.5]	215.6 [63.2]	199.8 [58.5]
	Power	18.7	18.5	18.3	18.6	18.4	18.2	18.4	18.2	18
100°F	Total BTUH [kW]	261.7 [76.7]	255.9 [75.0]	250.7 [73.5]	244.2 [71.5]	238.8 [70.0]	233.9 [68.5]	229.4 [67.2]	224.3 [65.7]	219.7 [64.4]
[37.8°C]	Sens BTUH [kW]	172.1 [50.4]	156.9 [46.0]	143.7 [42.1]	203.7 [59.7]	187.1 [54.8]	172.6 [50.6]	229.2 [67.2]	211.5 [62.0]	196 [57.4]
	Power	19.7	19.5	19.3	19.6	19.4	19.2	19.4	19.2	19
105°F	Total BTUH [kW]	252.8 [74.1]	247.2 [72.4]	242.2 [71.0]	235.3 [68.9]	230.1 [67.4]	225.4 [66.0]	220.4 [64.6]	215.6 [63.2]	211.2 [61.9]
[40.6°C]	Sens BTUH [kW]	167.4 [49.0]	152.6 [44.7]	139.9 [41.0]	198.9 [58.3]	182.8 [53.6]	168.8 [49.5]	220.4 [64.6]	207.2 [60.7]	192.2 [56.3]
	Power	20.8	20.6	20.4	20.7	20.4	20.2	20.5	20.3	20.1
110°F	Total BTUH [kW]	243.6 [71.4]	238.2 [69.8]	233.4 [68.4]	226.1 [66.2]	221.1 [64.8]	216.6 [63.5]	211.2 [61.9]	206.6 [60.5]	202.4 [59.3]
[43.3°C]	Sens BTUH [kW]	162.3 [47.6]	148 [43.4]	135.7 [39.8]	193.9 [56.8]	178.3 [52.2]	164.7 [48.3]	211.2 [61.9]	202.7 [59.4]	188.1 [55.1]
	Power	22	21.8	21.5	21.8	21.6	21.4	21.7	21.4	21.2
115°F	Total BTUH [kW]	234.1 [68.6]	229 [67.1]	224.3 [65.7]	216.6 [63.5]	211.8 [62.1]	207.5 [60.8]	201.8 [59.1]	197.3 [57.8]	193.3 [56.6]
[46.1°C]	Sens BTUH [kW]	157.1 [46.0]	143.4 [42.0]	131.4 [38.5]	188.6 [55.3]	173.5 [50.8]	160.3 [47.0]	201.8 [59.1]	197.3 [57.8]	183.7 [53.8]
	Power	23.2	23	22.7	23	22.8	22.6	22.9	22.6	22.4

"DR —Depression ratio Total —
Total capacity x 1000 BTUH
NOTES:
①dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible
wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)].

GROSS SYSTEMS PERFORMANCE DATA — EMRHRX340ANA

Entering Indoor Air @ 80°F [26.7°C] dbE ①

Outdoor	wbE	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]		
DB	CFM [L/s]	10000 [4720]	8500 [4012]	8000 [3776]	10000 [4720]	8500 [4012]	8000 [3776]	10000 [4720]	8500 [4012]	8000 [3776]
	DR ①	0.07	0.11	0.12	0.07	0.11	0.12	0.07	0.11	0.12
75°F	Total BTUH [kW]	341.6 [100.1]	331 [97.0]	327.5 [96.0]	321.3 [94.1]	311.3 [91.2]	308 [90.2]	301.4 [88.3]	292 [85.6]	288.9 [84.6]
[23.9°C]	Sens BTUH [kW]	218.1 [63.9]	190.9 [55.9]	182.3 [53.4]	250.7 [73.5]	221.6 [64.9]	212.3 [62.2]	276.5 [81.0]	246.1 [72.1]	236.3 [69.2]
	Power	18.9	18.6	18.5	18.6	18.3	18.2	18.4	18.1	18
80°F	Total BTUH [kW]	332.9 [97.5]	322.6 [94.5]	319.1 [93.5]	312.6 [91.6]	302.9 [88.7]	299.7 [87.8]	292.7 [85.8]	283.6 [83.1]	280.5 [82.2]
[26.7°C]	Sens BTUH [kW]	213.3 [62.5]	186.8 [54.7]	178.3 [52.2]	246 [72.1]	217.6 [63.8]	208.5 [61.1]	271.9 [79.7]	242.1 [70.9]	232.4 [68.1]
	Power	19.7	19.4	19.3	19.5	19.2	19.1	19.3	19	18.9
85°F	Total BTUH [kW]	324 [94.9]	314 [92.0]	310.6 [91.0]	303.7 [89.0]	294.3 [86.2]	291.2 [85.3]	283.8 [83.2]	275 [80.6]	272 [79.7]
[29.4°C]	Sens BTUH [kW]	208.2 [61.0]	182.4 [53.4]	174.1 [51.0]	240.9 [70.6]	213.2 [62.5]	204.3 [59.9]	266.7 [78.1]	237.6 [69.6]	228.2 [66.9]
	Power	20.7	20.4	20.3	20.4	20.1	20	20.2	19.9	19.8
90°F	Total BTUH [kW]	315 [92.3]	305.2 [89.4]	301.9 [88.5]	294.7 [86.3]	285.5 [83.7]	282.5 [82.8]	274.7 [80.5]	266.2 [78.0]	263.3 [77.1]
[32.2°C]	Sens BTUH [kW]	202.9 [59.4]	177.7 [52.1]	169.6 [49.7]	235.5 [69.0]	208.4 [61.1]	199.8 [58.5]	261.3 [76.6]	232.9 [68.2]	223.7 [65.5]
	Power	21.7	21.4	21.3	21.5	21.2	21	21.2	20.9	20.8
95°F	Total BTUH [kW]	305.7 [89.6]	296.2 [86.8]	293 [85.8]	285.4 [83.6]	276.5 [81.0]	273.6 [80.2]	265.5 [77.8]	257.2 [75.4]	254.5 [74.6]
[35.0°C]	Sens BTUH [kW]	197 [57.7]	172.5 [50.5]	164.7 [48.3]	229.7 [67.3]	203.3 [59.6]	194.9 [57.1]	255.4 [74.8]	227.7 [66.7]	218.8 [64.1]
	Power	22.8	22.5	22.4	22.6	22.2	22.1	22.3	22	21.9
100°F	Total BTUH [kW]	296.3 [86.8]	287 [84.1]	284 [83.2]	276 [80.9]	267.4 [78.3]	264.5 [77.5]	256 [75.0]	248 [72.7]	245.4 [71.9]
[37.8°C]	Sens BTUH [kW]	190.9 [55.9]	167.1 [49.0]	159.6 [46.8]	223.5 [65.5]	197.9 [58.0]	189.6 [55.6]	249.3 [73.0]	222.3 [65.1]	213.7 [62.6]
	Power	24	23.7	23.5	23.8	23.4	23.3	23.5	23.2	23.1
105°F	Total BTUH [kW]	286.6 [84.0]	277.7 [81.4]	274.7 [80.5]	266.3 [78.0]	258 [75.6]	255.3 [74.8]	246.4 [72.2]	238.7 [69.9]	236.2 [69.2]
[40.6°C]	Sens BTUH [kW]	184.2 [54.0]	161.3 [47.3]	154 [45.1]	216.8 [63.5]	192 [56.3]	184.1 [53.9]	242.7 [71.1]	216.5 [63.4]	208.1 [61.0]
	Power	25.3	24.9	24.8	25.1	24.7	24.5	24.8	24.4	24.3
110°F	Total BTUH [kW]	276.8 [81.1]	268.2 [78.6]	265.3 [77.7]	256.5 [75.2]	248.5 [72.8]	245.9 [72.0]	236.5 [69.3]	229.2 [67.2]	226.7 [66.4]
[43.3°C]	Sens BTUH [kW]	177.3 [51.9]	155.2 [45.5]	148.1 [43.4]	209.9 [61.5]	185.9 [54.5]	178.3 [52.2]	235.6 [69.0]	210.4 [61.6]	202.2 [59.2]
	Power	26.6	26.2	26.1	26.4	26	25.9	26.2	25.8	25.6
115°F	Total BTUH [kW]	266.8 [78.2]	258.5 [75.7]	255.7 [74.9]	246.5 [72.2]	238.8 [70.0]	236.3 [69.2]	226.5 [66.4]	219.5 [64.3]	217.1 [63.6]
[46.1°C]	Sens BTUH [kW]	170 [49.8]	148.8 [43.6]	142 [41.6]	202.6 [59.4]	179.5 [52.6]	172.1 [50.4]	226.5 [66.4]	204 [59.8]	196.1 [57.5]
	Power	28.1	27.6	27.5	27.8	27.4	27.3	27.6	27.2	27

"DR —Depression ratio Total —
Total capacity x 1000 BTUH
NOTES:
①dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)]. "

GROSS SYSTEMS PERFORMANCE DATA — EMRHRX281ANA

Entering Indoor Air @ 80°F [26.7°C] dbE ①

Outdoor	wbE	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]		
DB	CFM [L/s]	9500 [4484]	8450 [3988]	7500 [3540]	9500 [4484]	8450 [3988]	7500 [3540]	9500 [4484]	8450 [3988]	7500 [3540]
	DR ①	0.02	0.03	0.05	0.02	0.03	0.05	0.02	0.03	0.05
75°F	Total BTUH [kW]	308.3 [90.3]	301.5 [88.3]	295.3 [86.5]	290.8 [85.2]	284.4 [83.3]	278.5 [81.6]	275.9 [80.8]	269.8 [79.1]	264.3 [77.4]
[23.9°C]	Sens BTUH [kW]	205.1 [60.1]	187.1 [54.8]	171.4 [50.2]	236.7 [69.4]	217.3 [63.7]	200.3 [58.7]	262.1 [76.8]	241.6 [70.8]	223.7 [65.5]
	Power	14.1	14	13.8	14	13.8	13.7	13.8	13.6	13.5
80°F	Total BTUH [kW]	300.8 [88.1]	294.1 [86.2]	288.1 [84.4]	283.2 [83.0]	277 [81.2]	271.3 [79.5]	268.4 [78.6]	262.5 [76.9]	257.1 [75.3]
[26.7°C]	Sens BTUH [kW]	201.3 [59.0]	183.6 [53.8]	168.3 [49.3]	232.9 [68.2]	213.9 [62.7]	197.3 [57.8]	258.3 [75.7]	238.2 [69.8]	220.6 [64.6]
	Power	14.9	14.7	14.6	14.7	14.6	14.4	14.6	14.4	14.3
85°F	Total BTUH [kW]	292.9 [85.8]	286.5 [83.9]	280.6 [82.2]	275.4 [80.7]	269.3 [78.9]	263.8 [77.3]	260.6 [76.4]	254.8 [74.7]	249.6 [73.1]
[29.4°C]	Sens BTUH [kW]	197.2 [57.8]	180 [52.7]	165 [48.3]	228.8 [67.0]	210.2 [61.6]	194 [56.8]	254.3 [74.5]	234.6 [68.7]	217.4 [63.7]
	Power	15.7	15.5	15.4	15.5	15.4	15.2	15.4	15.2	15.1
90°F	Total BTUH [kW]	284.9 [83.5]	278.6 [81.6]	272.9 [80.0]	267.3 [78.3]	261.4 [76.6]	256.1 [75.0]	252.5 [74.0]	246.9 [72.3]	241.9 [70.9]
[32.2°C]	Sens BTUH [kW]	193.1 [56.6]	176.2 [51.6]	161.6 [47.3]	224.6 [65.8]	206.4 [60.5]	190.5 [55.8]	250.1 [73.3]	230.8 [67.6]	214 [62.7]
	Power	16.6	16.4	16.3	16.4	16.3	16.1	16.3	16.1	15.9
95°F	Total BTUH [kW]	276.5 [81.0]	270.4 [79.2]	264.9 [77.6]	259 [75.9]	253.3 [74.2]	248.1 [72.7]	244.1 [71.5]	238.7 [69.9]	233.9 [68.5]
[35.0°C]	Sens BTUH [kW]	188.6 [55.3]	172.2 [50.5]	158 [46.3]	220.3 [64.5]	202.5 [59.3]	186.9 [54.8]	244.1 [71.5]	226.8 [66.5]	210.4 [61.6]
	Power	17.6	17.4	17.2	17.4	17.2	17	17.2	17	16.9
100°F	Total BTUH [kW]	267.8 [78.5]	261.9 [76.7]	256.6 [75.2]	250.3 [73.3]	244.8 [71.7]	239.8 [70.3]	235.5 [69.0]	230.3 [67.5]	225.6 [66.1]
[37.8°C]	Sens BTUH [kW]	184 [53.9]	168 [49.2]	154.2 [45.2]	215.6 [63.2]	198.3 [58.1]	183.2 [53.7]	235.5 [69.0]	222.6 [65.2]	206.5 [60.5]
	Power	18.6	18.4	18.2	18.4	18.2	18	18.3	18.1	17.9
105°F	Total BTUH [kW]	258.9 [75.9]	253.2 [74.2]	248 [72.7]	241.4 [70.7]	236.1 [69.2]	231.3 [67.8]	226.6 [66.4]	221.6 [64.9]	217 [63.6]
[40.6°C]	Sens BTUH [kW]	179.2 [52.5]	163.7 [48.0]	150.2 [44.0]	210.8 [61.8]	193.9 [56.8]	179.2 [52.5]	226.6 [66.4]	218.3 [64.0]	202.5 [59.3]
	Power	19.7	19.5	19.3	19.5	19.3	19.1	19.3	19.1	18.9
110°F	Total BTUH [kW]	249.7 [73.2]	244.2 [71.5]	239.2 [70.1]	232.2 [68.0]	227.1 [66.5]	222.5 [65.2]	217.4 [63.7]	212.6 [62.3]	208.2 [61.0]
[43.3°C]	Sens BTUH [kW]	174.3 [51.1]	159.2 [46.6]	146.1 [42.8]	205.8 [60.3]	189.4 [55.5]	175.1 [51.3]	217.4 [63.7]	212.6 [62.3]	198.4 [58.1]
	Power	20.8	20.6	20.4	20.7	20.4	20.2	20.5	20.3	20.1
115°F	Total BTUH [kW]	240.3 [70.4]	235 [68.9]	230.2 [67.4]	222.8 [65.3]	217.8 [63.8]	213.4 [62.5]	207.9 [60.9]	203.3 [59.6]	199.2 [58.4]
[46.1°C]	Sens BTUH [kW]	169.1 [49.5]	154.5 [45.3]	141.8 [41.5]	200.7 [58.8]	184.7 [54.1]	170.8 [50.0]	207.9 [60.9]	203.3 [59.6]	194.1 [56.9]
	Power	22.1	21.8	21.6	21.9	21.6	21.4	21.7	21.5	21.3

"DR —Depression ratio Total —
Total capacity x 1000 BTUH
NOTES:
①dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible
wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)]. "

GROSS SYSTEMS PERFORMANCE DATA — EMRHRX341ANA

Entering Indoor Air @ 80ºF [26.7ºC] dbE ①

Outdoor	wbE	71ºF [21.7ºC]			67ºF [19.4ºC]			63ºF [17.2ºC]		
DB	CFM [L/s]	10000 [4720]	8500 [4012]	8000 [3776]	10000 [4720]	8500 [4012]	8000 [3776]	10000 [4720]	8500 [4012]	8000 [3776]
	DR ①	0	0.01	0.03	0	0.01	0.03	0	0.01	0.03
75ºF	Total BTUH [kW]	349.9 [102.5]	339 [99.3]	335.4 [98.3]	329.6 [96.6]	319.3 [93.6]	315.9 [92.6]	309.6 [90.7]	300 [87.9]	296.8 [87.0]
[23.9ºC]	Sens BTUH [kW]	233.5 [68.4]	204.8 [60.0]	195.7 [57.3]	266.2 [78.0]	235.6 [69.0]	225.8 [66.2]	291.8 [85.5]	260 [76.2]	249.8 [73.2]
	Power	18	17.7	17.6	17.7	17.5	17.4	17.5	17.2	17.1
80ºF	Total BTUH [kW]	341.2 [100.0]	330.6 [96.9]	327 [95.8]	320.9 [94.0]	310.9 [91.1]	307.6 [90.1]	300.9 [88.2]	291.6 [85.4]	288.5 [84.5]
[26.7ºC]	Sens BTUH [kW]	228.8 [67.0]	200.8 [58.8]	191.8 [56.2]	261.4 [76.6]	231.5 [67.8]	221.9 [65.0]	287.1 [84.1]	256 [75.0]	246 [72.1]
	Power	18.9	18.6	18.5	18.6	18.3	18.2	18.4	18.1	18
85ºF	Total BTUH [kW]	332.3 [97.4]	322 [94.3]	318.5 [93.3]	312 [91.4]	302.3 [88.6]	299.1 [87.6]	292 [85.6]	283 [82.9]	279.9 [82.0]
[29.4ºC]	Sens BTUH [kW]	223.7 [65.5]	196.4 [57.5]	187.6 [55.0]	256.3 [75.1]	227.1 [66.5]	217.8 [63.8]	282.1 [82.7]	251.6 [73.7]	241.7 [70.8]
	Power	19.8	19.5	19.4	19.6	19.3	19.2	19.3	19	18.9
90ºF	Total BTUH [kW]	323.2 [94.7]	313.2 [91.8]	309.8 [90.8]	302.9 [88.7]	293.5 [86.0]	290.4 [85.1]	283 [82.9]	274.2 [80.3]	271.2 [79.5]
[32.2ºC]	Sens BTUH [kW]	218.2 [63.9]	191.6 [56.1]	183 [53.6]	250.8 [73.5]	222.3 [65.1]	213.2 [62.5]	276.7 [81.1]	246.8 [72.3]	237.1 [69.5]
	Power	20.8	20.5	20.4	20.6	20.3	20.2	20.4	20	1 9.9
95ºF	Total BTUH [kW]	314 [92.0]	304.2 [89.1]	301 [88.2]	293.7 [86.1]	284.5 [83.4]	281.5 [82.5]	273.7 [80.2]	265.2 [77.7]	262.4 [76.9]
[35.0ºC]	Sens BTUH [kW]	212.5 [62.3]	186.5 [54.6]	178.3 [52.2]	245 [71.8]	217.2 [63.6]	208.3 [61.0]	270.8 [79.3]	241.7 [70.8]	232.3 [68.1]
	Power	22	21.6	21.5	21.7	21.4	21.3	21.5	21.1	21
100ºF	Total BTUH [kW]	304.5 [89.2]	295 [86.4]	291.9 [85.5]	284.2 [83.3]	275.4 [80.7]	272.4 [79.8]	264.3 [77.4]	256 [75.0]	253.3 [74.2]
[37.8ºC]	Sens BTUH [kW]	206.2 [60.4]	181 [53.0]	173 [50.7]	238.8 [70.0]	211.8 [62.1]	203.1 [59.5]	264.3 [77.4]	236.2 [69.2]	227.1 [66.5]
	Power	23.1	22.8	22.7	22.9	22.5	22.4	22.7	22.3	22.2
105ºF	Total BTUH [kW]	294.9 [86.4]	285.7 [83.7]	282.7 [82.8]	274.6 [80.5]	266 [77.9]	263.2 [77.1]	254.6 [74.6]	246.7 [72.3]	244.1 [71.5]
[40.6ºC]	Sens BTUH [kW]	199.6 [58.5]	175.2 [51.3]	167.5 [49.1]	232.3 [68.1]	206 [60.4]	197.6 [57.9]	254.6 [74.6]	230.5 [67.5]	221.6 [64.9]
	Power	24.4	24	23.9	24.2	23.8	23.7	23.9	23.6	23.4
110ºF	Total BTUH [kW]	285 [83.5]	276.2 [80.9]	273.2 [80.0]	264.7 [77.6]	256.5 [75.2]	253.8 [74.4]	244.8 [71.7]	237.2 [69.5]	234.6 [68.7]
[43.3ºC]	Sens BTUH [kW]	192.7 [56.5]	169.2 [49.6]	161.6 [47.3]	225.2 [66.0]	199.9 [58.6]	191.8 [56.2]	244.8 [71.7]	224.4 [65.7]	215.7 [63.2]
	Power	25.8	25.4	25.2	25.5	25.1	25	25.3	24.9	24.8
115ºF	Total BTUH [kW]	275 [80.6]	266.5 [78.1]	263.6 [77.2]	254.7 [74.6]	246.8 [72.3]	244.2 [71.5]	234.8 [68.8]	227.5 [66.7]	225 [65.9]
[46.1ºC]	Sens BTUH [kW]	185.3 [54.3]	162.7 [47.7]	155.4 [45.5]	217.9 [63.8]	193.4 [56.7]	185.6 [54.4]	234.8 [68.8]	217.9 [63.8]	209.5 [61.4]
	Power	27.2	26.8	26.6	26.9	26.5	26.4	26.7	26.3	26.2

"DR —Depression ratio Total —
Total capacity x 1000 BTUH
NOTES:
①dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)]. "

"EMRHRX150ANA" AIR FLOW

AIRFLOW PERFORMANCE — 11.4 TON [40.1kW] — 50 Hz — SIDEFLOW

Air Flow CFM [L/s]	Model EMRHR*150* Voltage 380-415 / 3 phase / 50 Hz — External Static Pressure — Inches of Water [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]		1.1 [.27]		1.2 [.30]		1.3 [.32]		1.4 [.35]		1.5 [.37]		1.6 [.40]		1.7 [.42]		1.8 [.45]		1.9 [.47]		2.0 [.50]	
	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	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W
3500 [1652]	—	—	—	—	431	722	466	782	500	847	535	919	570	996	605	1080	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3600 [1699]	—	—	—	—	435	743	470	805	504	873	539	948	573	1028	607	1114	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3700 [1746]	—	—	—	—	439	765	474	830	508	901	542	978	576	1061	610	1150	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3800 [1793]	—	—	—	—	444	789	478	857	512	930	546	1010	580	1095	614	1187	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3900 [1840]	—	—	—	—	448	814	482	885	516	961	549	1043	583	1132	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4000 [1888]	—	—	—	—	453	841	486	915	520	994	553	1078	587	1169	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4100 [1935]	—	—	—	—	457	870	491	946	524	1028	557	1115	590	1209	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4200 [1982]	—	—	—	—	462	900	495	979	528	1063	561	1154	594	1250	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4300 [2029]	—	—	434	857	467	932	500	1013	533	1100	565	1193	598	1292	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4400 [2076]	—	—	440	888	472	966	505	1050	537	1139	570	1235	602	1337	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4500 [2123]	—	—	445	921	477	1001	510	1087	542	1180	574	1278	606	1382	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4600 [2171]	—	—	450	955	483	1038	515	1127	547	1222	578	1323	610	1430	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4700 [2218]	—	—	456	990	488	1076	520	1168	551	1265	583	1369	615	1479	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4800 [2265]	430	945	462	1027	493	1116	525	1210	556	1311	588	1417	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4900 [2312]	436	981	468	1066	499	1157	530	1254	561	1357	593	1466	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5000 [2359]	442	1019	473	1107	505	1200	536	1300	567	1406	597	1518	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5100 [2407]	449	1058	479	1149	510	1245	541	1348	572	1456	602	1570	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5200 [2454]	455	1099	486	1192	516	1291	547	1396	577	1507	608	1624	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5300 [2501]	462	1142	492	1237	522	1339	552	1447	583	1561	613	1680	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5400 [2548]	468	1186	498	1284	528	1389	558	1499	588	1615	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5500 [2595]	475	1231	505	1333	534	1440	564	1553	594	1672	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

Drive Package	A					
Motor H.P. [W]	3 [2237.1]					
Blower Sheave	BK120H					
Motor Sheave	1VP44*28mm					
Belt	B75					
Turns Open	0	1	**2**	3	4	5
RPM	552	533	**509**	482	457	434

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. Drive data shown is for horizontal airflow with dry coil.
5. [ ] Designates Metric Conversions

"EMRHRX190ANA" AIR FLOW

AIRFLOW PERFORMANCE — 14.5 TON [51.0kW] — 50 Hz — SIDEFLOW

Model EMRHR*190* Voltage 380-415 / 3 phase / 50 Hz

External Static Pressure — Inches of Water [kPa]

Air Flow 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]		1.5 [.37]		1.6 [.40]		1.7 [.42]		1.8 [.45]		1.9 [.47]		2.0 [.50]	
	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	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	
5000 [2359]	—	—	—	—	—	—	—	—	490	1205	520	1309	550	1411	578	1510	604	1607	629	1702	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5100 [2407]	—	—	—	—	—	—	—	—	494	1244	524	1348	553	1450	580	1550	606	1648	630	1743	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5200 [2454]	—	—	—	—	—	—	—	—	499	1285	528	1389	556	1492	583	1592	608	1690	632	1785	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5300 [2501]	—	—	—	—	—	—	—	—	503	1327	532	1432	559	1535	585	1635	610	1734	633	1830	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5400 [2548]	—	—	—	—	—	—	—	—	508	1371	536	1476	563	1580	588	1681	612	1779	635	1876	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5500 [2595]	—	—	—	—	—	—	483	1308	512	1417	540	1522	566	1626	591	1728	614	1827	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5600 [2643]	—	—	—	—	—	—	489	1356	517	1464	544	1570	570	1674	594	1776	616	1876	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5700 [2690]	—	—	—	—	—	—	494	1404	522	1513	548	1620	573	1725	596	1827	619	1927	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5800 [2737]	—	—	—	—	—	—	499	1455	526	1564	552	1672	576	1776	599	1879	621	1980	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5900 [2784]	—	—	—	—	—	—	505	1507	531	1617	556	1725	580	1830	602	1933	623	2034	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6000 [2831]	—	—	—	—	483	1449	510	1561	536	1672	560	1780	584	1885	605	1989	625	2090	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6100 [2878]	—	—	—	—	489	1504	516	1617	541	1728	565	1836	587	1943	608	2047	628	2148	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6200 [2926]	—	—	—	—	495	1561	521	1675	546	1786	569	1895	591	2001	611	2106	630	2208	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6300 [2973]	—	—	—	—	501	1620	527	1734	551	1846	573	1955	594	2062	614	2167	633	2270	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6400 [3020]	—	—	481	1565	507	1681	532	1795	556	1907	578	2017	598	2125	617	2230	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6500 [3067]	—	—	488	1627	513	1744	538	1858	561	1971	582	2081	602	2189	621	2294	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6600 [3114]	—	—	495	1690	520	1808	543	1923	566	2036	586	2146	606	2255	624	2361	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6700 [3162]	—	—	502	1756	526	1874	549	1989	571	2102	591	2213	610	2322	627	2429	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6800 [3209]	483	1703	509	1823	532	1941	555	2057	576	2171	595	2282	613	2392	630	2499	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6900 [3256]	491	1772	516	1892	539	2011	561	2127	581	2241	600	2353	617	2463	634	2570	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7000 [3303]	499	1842	523	1963	545	2082	566	2199	586	2313	604	2426	621	2536	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

Drive Package	A					
Motor H.P. [W]	4 [2982.8]					
Blower Sheave	BK120H					
Motor Sheave	1VP50*28mm					
Belt	B76					
Turns Open	0	1	2	**3**	4	5
RPM	626	605	581	**557**	533	508

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. Drive data shown is for horizontal airflow with dry coil.
5. [ ] Designates Metric Conversions

"EMRHRX280ANA & EMRHRX 281ANA" AIR FLOW

AIRFLOW PERFORMANCE — 21.6 TON [75.9kW] — 50 Hz — SIDEFLOW

Air Flow CFM [L/s]	Model EMRHR*280* Voltage 380-415 / 3 phase / 50 Hz — External Static Pressure — Inches of Water [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]		1.1 [.27]		1.2 [.30]		1.3 [.32]		1.4 [.35]		1.5 [.37]		1.6 [.40]		1.7 [.42]		1.8 [.45]		1.9 [.47]		2.0 [.50]	
	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	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W
7500 [3539]	—	—	—	—	—	—	—	—	591	2845	605	2826	621	2858	638	2942	658	3078	680	3266	703	3505	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7600 [3586]	—	—	—	—	—	—	—	—	592	2828	607	2833	623	2889	642	2997	662	3157	684	3369	708	3633	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7700 [3633]	—	—	—	—	—	—	—	—	594	2828	609	2856	626	2937	645	3069	666	3253	688	3489	713	3777	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7800 [3681]	—	—	—	—	—	—	—	—	597	2844	612	2897	630	3001	649	3157	670	3366	693	3625	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7900 [3728]	—	—	—	—	—	—	585	2851	599	2876	615	2953	633	3082	653	3262	675	3494	699	3778	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8000 [3775]	—	—	—	—	—	—	588	2876	602	2925	619	3026	637	3179	658	3383	680	3639	704	3947	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8100 [3822]	—	—	—	—	—	—	591	2917	606	2990	623	3115	642	3292	663	3521	685	3801	710	4133	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8200 [3869]	—	—	—	—	—	—	594	2975	610	3072	627	3221	647	3422	668	3674	691	3979	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8300 [3917]	—	—	—	—	—	—	597	3049	614	3170	632	3343	652	3568	674	3845	697	4173	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8400 [3964]	—	—	—	—	587	3045	601	3139	618	3284	637	3482	657	3731	680	4031	704	4384	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8500 [4011]	—	—	—	—	590	3128	606	3246	623	3415	642	3637	663	3910	686	4235	711	4611	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8600 [4058]	—	—	—	—	594	3227	610	3369	628	3563	647	3808	669	4105	692	4454	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8700 [4105]	—	—	—	—	599	3343	615	3509	633	3726	653	3996	675	4317	699	4690	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8800 [4153]	—	—	588	3337	603	3475	620	3665	639	3907	660	4200	682	4545	707	4942	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8900 [4200]	—	—	593	3461	608	3623	626	3837	645	4103	666	4421	689	4790	714	5211	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9000 [4247]	—	—	598	3602	614	3788	632	4026	651	4316	673	4658	697	5051	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9100 [4294]	589	3600	603	3759	620	3969	638	4232	658	4546	680	4911	705	5329	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9200 [4341]	594	3750	609	3933	626	4167	645	4453	665	4791	688	5181	713	5623	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9300 [4388]	599	3916	615	4123	632	4381	652	4691	673	5054	696	5467	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9400 [4436]	605	4098	621	4329	639	4612	659	4946	681	5332	704	5770	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9500 [4483]	611	4297	627	4552	646	4859	666	5217	689	5627	713	6089	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

Drive Package	A					
Motor H.P. [W]	7.5 [5592.7]					
Blower Sheave	BK120H					
Motor Sheave	1VP60*38mm					
Belt	B76					
Turns Open	0	1	2	3	**4**	5
RPM	686	670	653	635	**613**	592

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. Drive data shown is for horizontal airflow with dry coil.
5. [ ] Designates Metric Conversions

"EMRHRX340ANA & EMRHRX 341ANA" AIR FLOW

AIRFLOW PERFORMANCE — 25.3 TON [88.9kW] — 50 Hz — SIDEFLOW

Air Flow CFM [L/s]	Model EMRHR*340* Voltage 380-415 / 3 phase / 50 Hz — External Static Pressure — Inches of Water [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]		1.1 [.27]		1.2 [.30]		1.3 [.32]		1.4 [.35]		1.5 [.37]		1.6 [.40]		1.7 [.42]		1.8 [.45]		1.9 [.47]		2.0 [.50]	
	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	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W
8000 [3775]	—	—	—	—	—	—	552	2520	569	2596	586	2695	604	2817	623	2962	643	3129	663	3319	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8100 [3822]	—	—	—	—	—	—	556	2575	573	2661	590	2769	608	2900	627	3054	646	3230	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8200 [3869]	—	—	—	—	—	—	560	2637	576	2732	594	2849	612	2989	631	3152	650	3338	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8300 [3917]	—	—	—	—	547	2623	564	2705	580	2809	598	2935	616	3085	634	3257	654	3451	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8400 [3964]	—	—	—	—	552	2688	568	2779	584	2892	602	3028	620	3186	638	3367	657	3571	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8500 [4011]	—	—	—	—	556	2759	572	2859	588	2981	606	3126	624	3294	642	3484	661	3697	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8600 [4058]	—	—	—	—	560	2837	576	2946	592	3077	610	3231	627	3408	646	3608	665	3830	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8700 [4105]	—	—	549	2825	564	2920	580	3038	596	3179	614	3342	631	3528	650	3737	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8800 [4153]	—	—	553	2906	568	3010	584	3137	601	3287	618	3460	635	3655	653	3873	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8900 [4200]	—	—	557	2993	572	3106	588	3243	605	3402	621	3583	639	3788	657	4015	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9000 [4247]	—	—	562	3086	577	3209	592	3354	609	3522	625	3713	643	3927	661	4163	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9100 [4294]	552	3076	566	3185	581	3317	596	3472	613	3649	629	3849	647	4072	665	4317	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9200 [4341]	556	3172	570	3291	585	3432	601	3596	617	3782	633	3991	651	4223	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9300 [4388]	560	3275	574	3403	589	3553	605	3726	621	3922	637	4140	655	4381	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9400 [4436]	565	3384	579	3521	594	3680	609	3862	625	4067	641	4295	658	4545	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9500 [4483]	569	3499	583	3645	598	3814	613	4005	629	4219	645	4456	662	4715	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9600 [4530]	573	3620	587	3776	602	3953	617	4154	633	4377	649	4623	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9700 [4577]	578	3748	592	3912	606	4099	621	4309	637	4541	653	4796	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9800 [4624]	582	3882	596	4055	610	4252	626	4470	641	4712	657	4976	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9900 [4672]	587	4022	600	4205	615	4410	630	4638	645	4889	661	5162	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10000 [4719]	591	4168	605	4360	619	4575	634	4812	649	5072	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

Drive Package	A					
Motor H.P. [W]	7.5 [5592.7]					
Blower Sheave	BK130H					
Motor Sheave	1VP60*38mm					
	B74					
Turns Open	0	1	2	**3**	4	5
	641	625	607	**590**	570	550

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. Drive data shown is for horizontal airflow with dry coil.
5. [ ] Designates Metric Conversions

ELECTRICAL DATA

ELECTRICAL DATA - EMRHRX SERIES

		150ANA	190ANA	280ANA	340ANA	281ANA	341ANA
Unit Information	Unit Operating Voltage Range	342-456	342-456	342-456	342-456	342-456	342-456
	Power Supply: Volts	380/415	380/415	380/415	380/415	380/415	380/415
	Power Supply: Phase	3	3	3	3	3	3
	Power Supply: Hz	50	50	50	50	50	50
	Minimum Circuit Ampacity	36	37	52	63	62	65
	Minimum Overcurrent Protection Device Size	40	40	60	70	70/80	70/80
	Maximum Overcurrent Protection Device Size	45	45	60	80	70/80	70/80
Compressor	No.	2	2	2	2	2	2
	Volts	380/415	380/415	380/415	380/415	380/415	380/415
	Phase	3	3	3	3	3	3
	RPM	2900	2900	2900	2900	2900	2900
	HP, Compressor 1	5 3/4	7	10	11 1/2	10	11 1/2
	Amps (RLA), Comp. 1	12.2	13	16	22.4	16	19.9
	Amps (LRA), Comp. 1	100	101	139	140	137	141
	HP, Compressor 2	5 1/4	6	8 1/2	11 1/2	8 1/2	11 1/2
	Amps (RLA), Comp. 2	12.2	13	18.6	22.4	20.1	19.9
	Amps (LRA), Comp. 2	100	101	118	140	147	141
Condenser Motor	No.	2	3	3	3	3	3
	Volts	380/415	380/415	380/415	380/415	380/415	380/415
	Phase	1	1	1	1	1	1
	HP	1/2	1/2	3/4	3/4	3/4	3/4
	Amps (FLA, each)	1.5	1.5	2.3	3.1	3.1	3.1
	Amps (LRA, each)	3.1	3.1	4.9	4.9	4.9	4.9
Evaporator Motor	No.	1	1	1	1	1	1
	Volts	380/415	380/415	380/415	380/415	380/415	380/415
	Phase	3	3	3	3	3	3
	HP	3	4	7 1/2	7 1/2	7 1/2	7 1/2
	Amps (FLA, each)	4.8	6.1	10.7	10.6	10.7	10.6
	Amps (LRA, each)	36.1	46.4	84.3	84.3	84.3	84.3

GENERAL ARRANGEMENT LAYOUT

FIGURE 4
UNIT DIMENSIONS AND ACCESS LOCATIONS
(-)MRHRX150/190

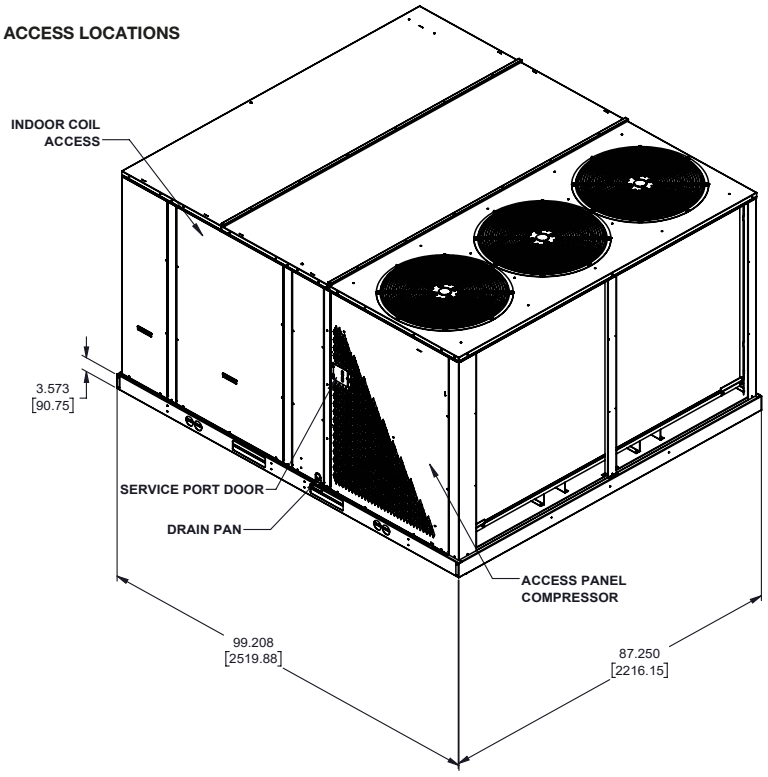


FIGURE 5
UNIT DIMENSIONS AND ACCESS LOCATIONS
(-)MRHRX150/190

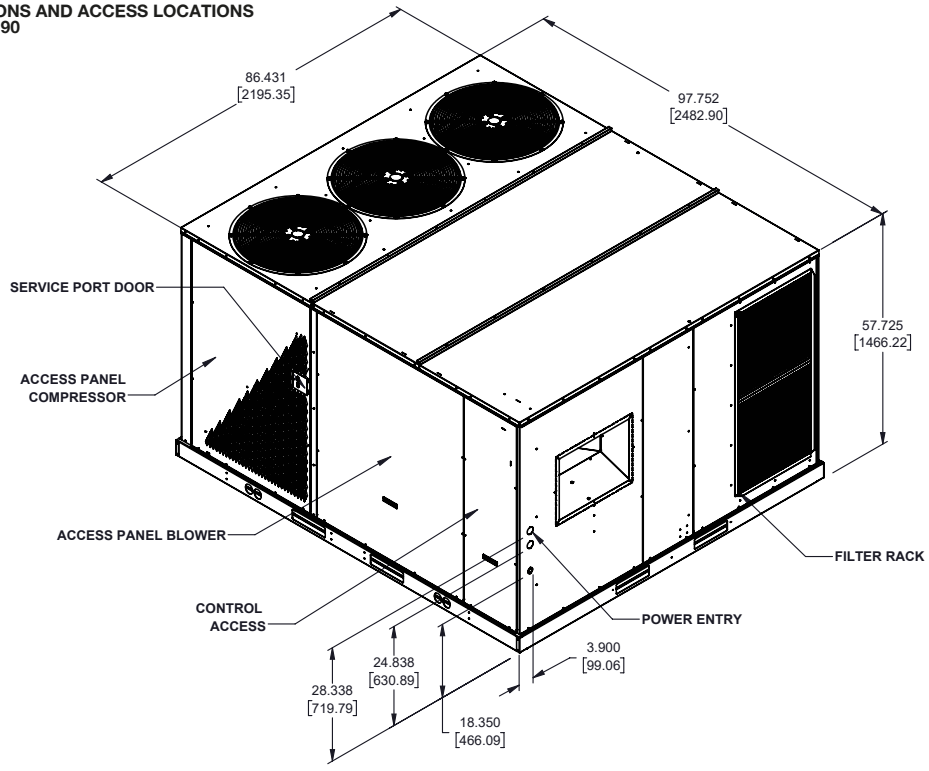


FIGURE 2
UNIT DIMENSIONS AND ACCESS LOCATIONS
(-)MRHRX280/281/340/341

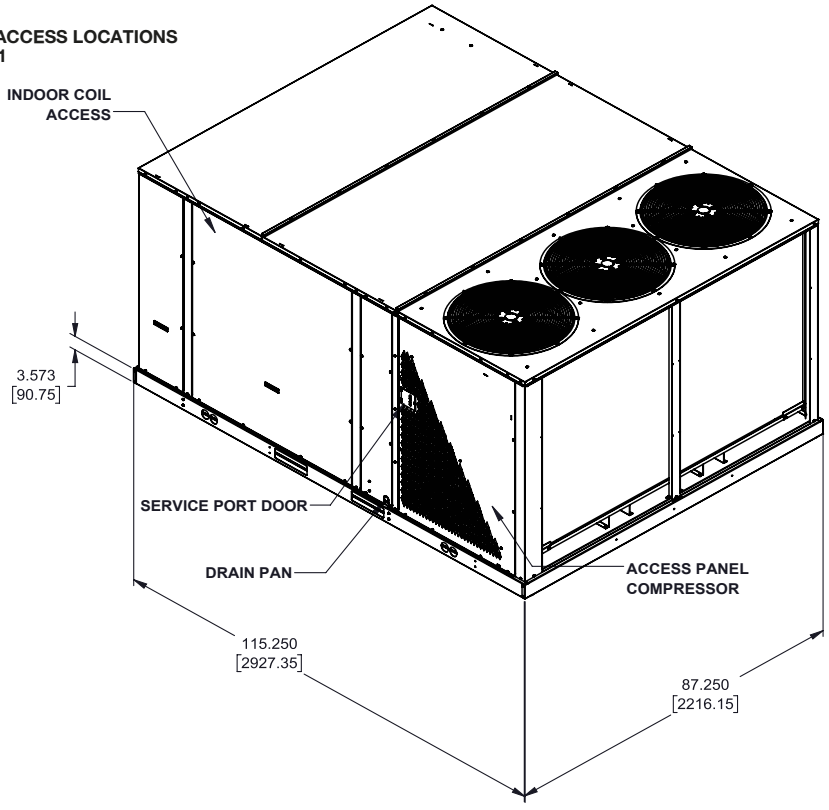


FIGURE 3
UNIT DIMENSIONS AND ACCESS LOCATIONS
(-)MRHRX280/281/340/341

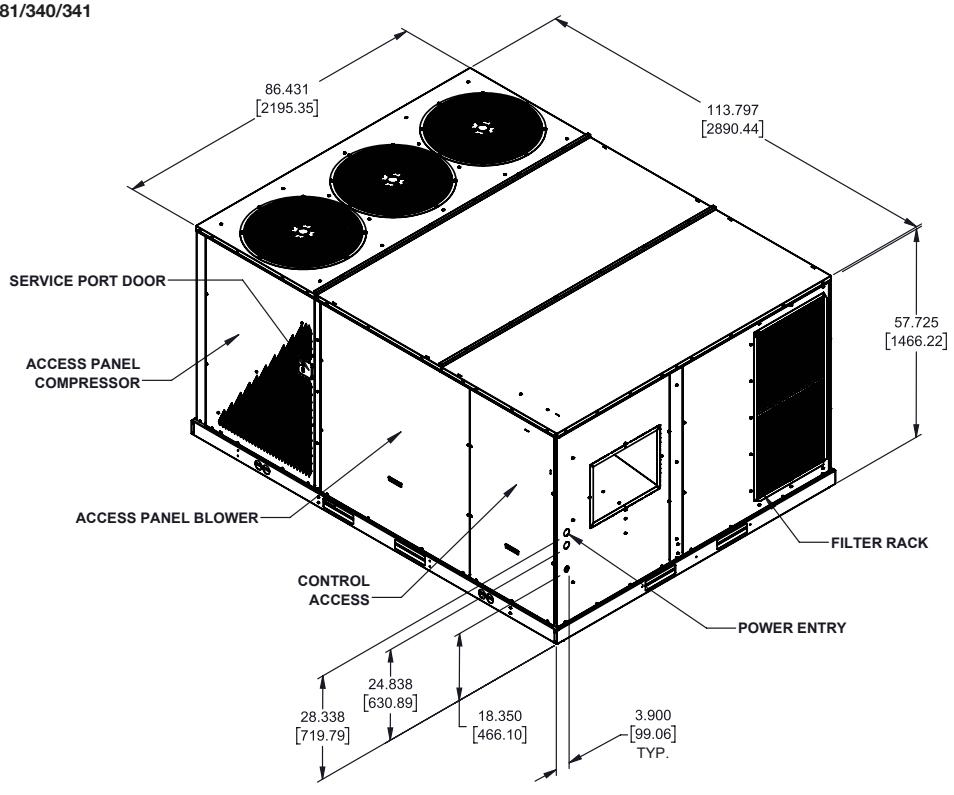


FIGURE 6
REAR VIEW ALL CABINETS.

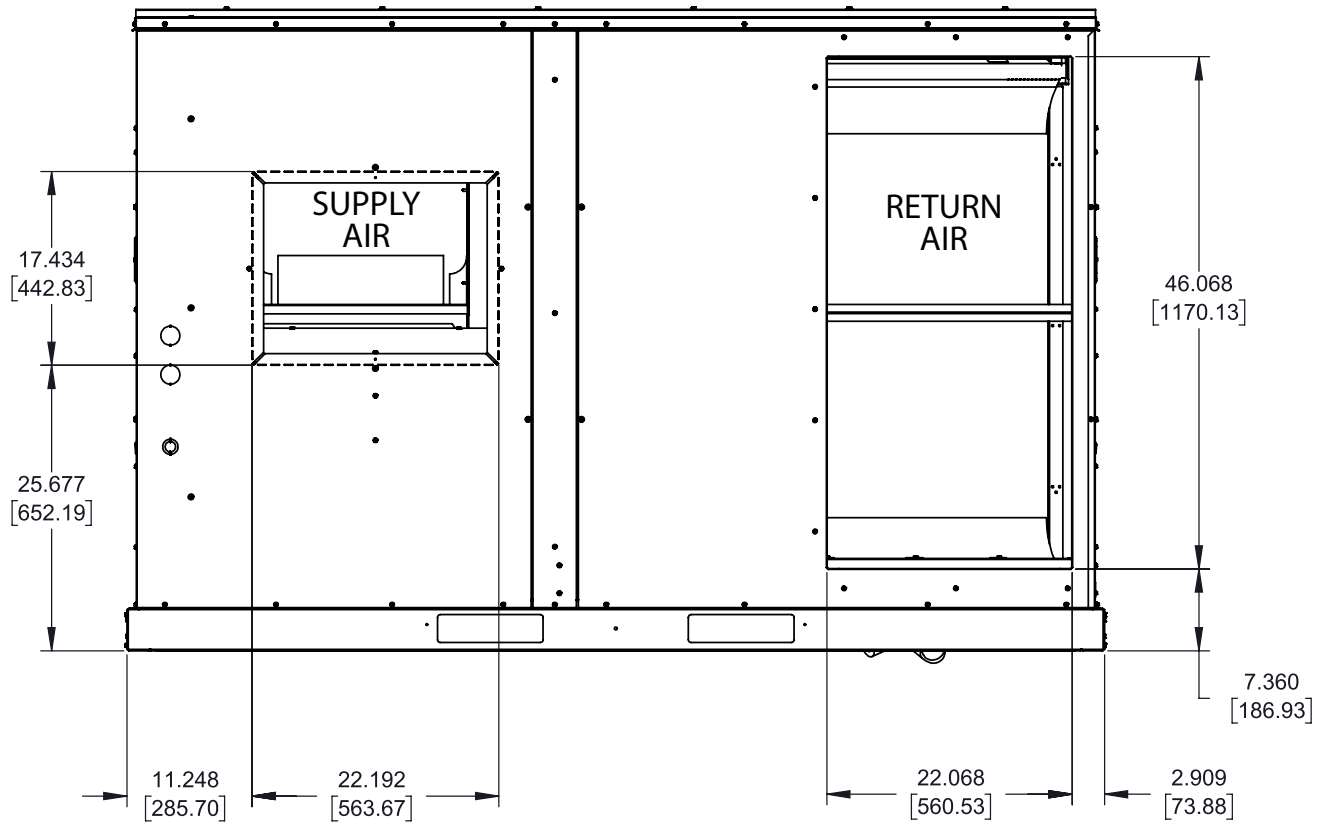


FIGURE 1
PACKAGE AIR CONDITIONER
OUTSIDE SLAB INSTALLATION, BASEMENT OR CRAWL SPACE DISTRIBUTION SYSTEM

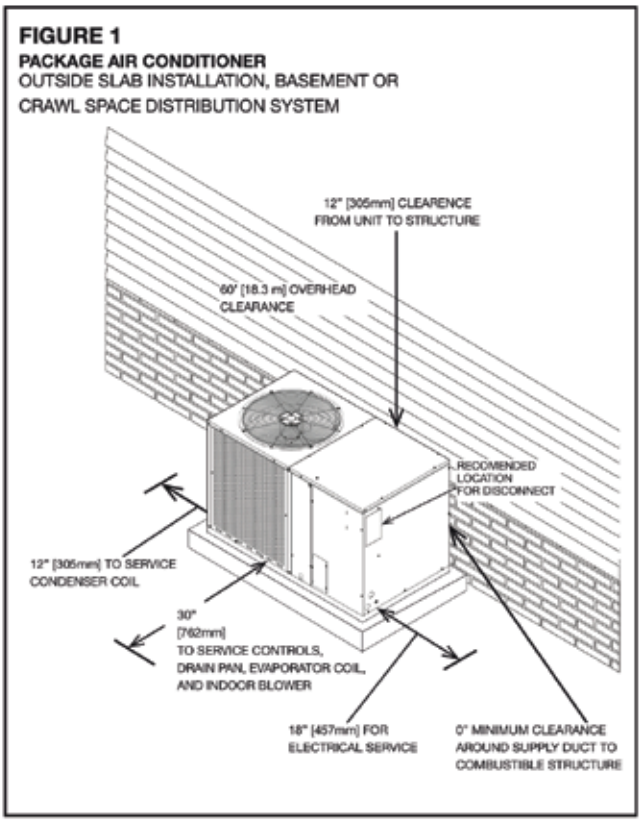
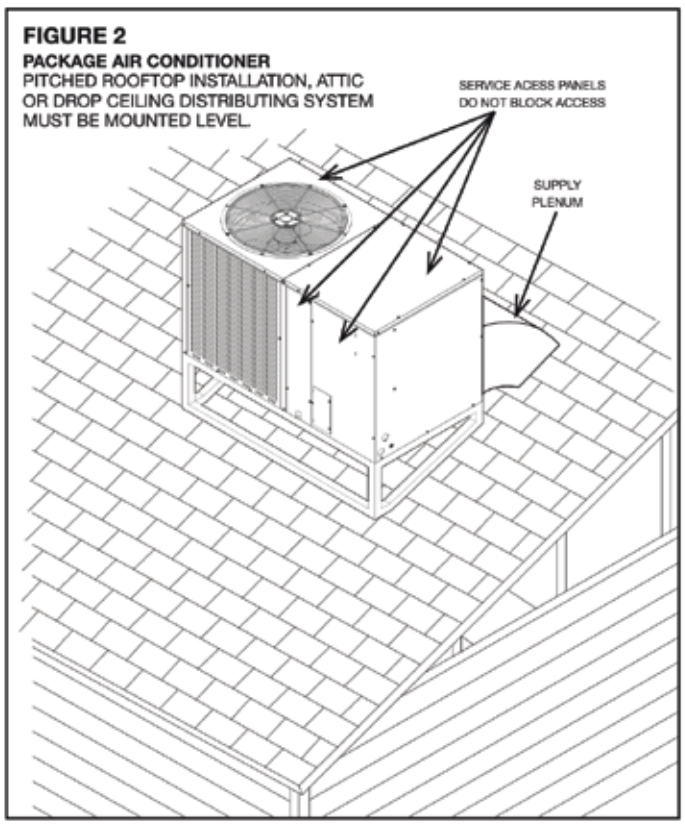


FIGURE 2
PACKAGE AIR CONDITIONER
PITCHED ROOFTOP INSTALLATION, ATTIC OR DROP CEILING DISTRIBUTING SYSTEM MUST BE MOUNTED LEVEL.



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 design is 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

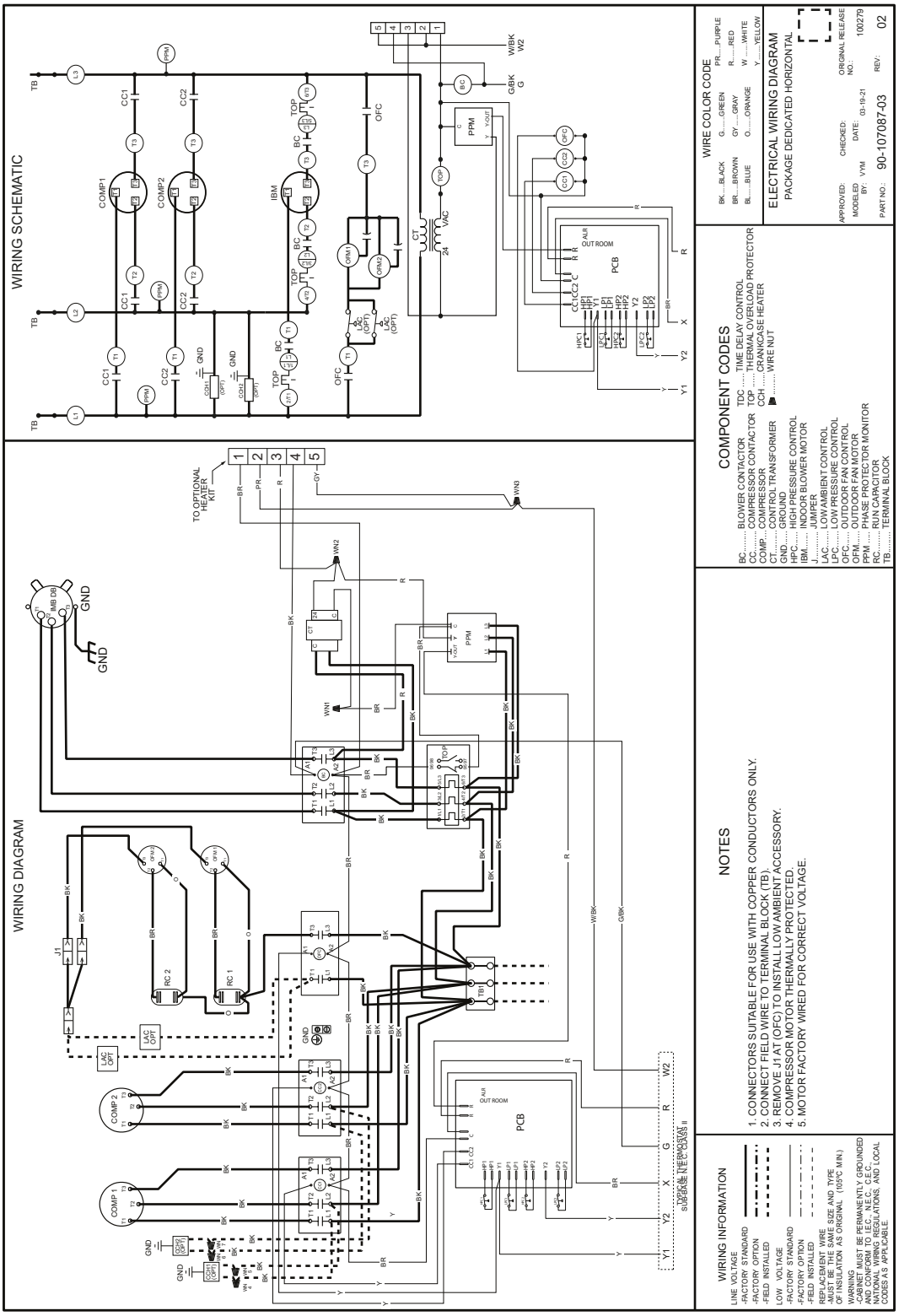
1. Before locating the unit on the roof, make sure that the strength of the roof and beams is adequate at that point to support the weight involved. (See specification sheet for weight of unit.) This is very important and user’s responsibility.
2. The unit should be placed on a solid and level platform 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.

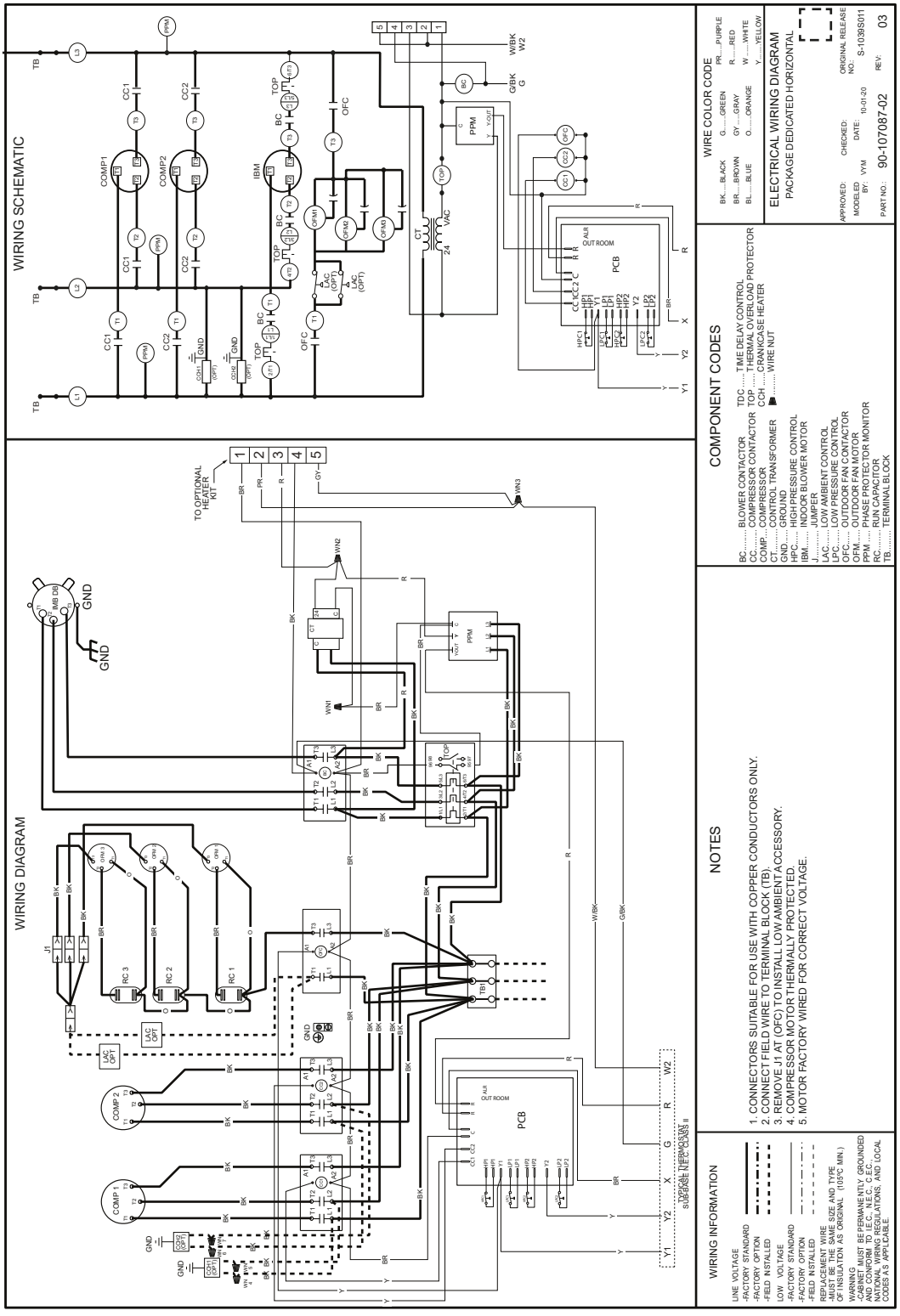
DUCTWORK

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.

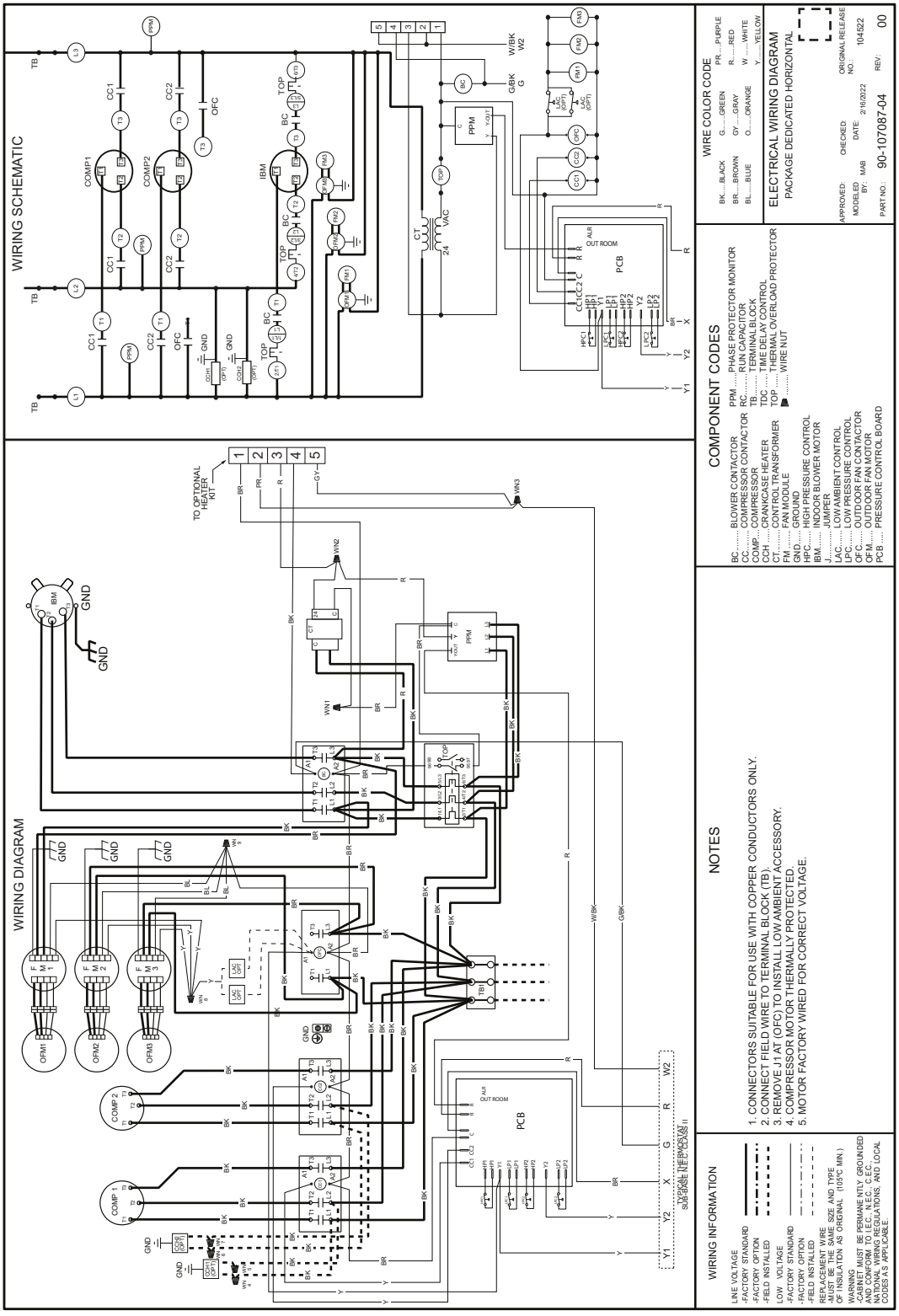
WIRING DIAGRAMS EMRHRX150ANA



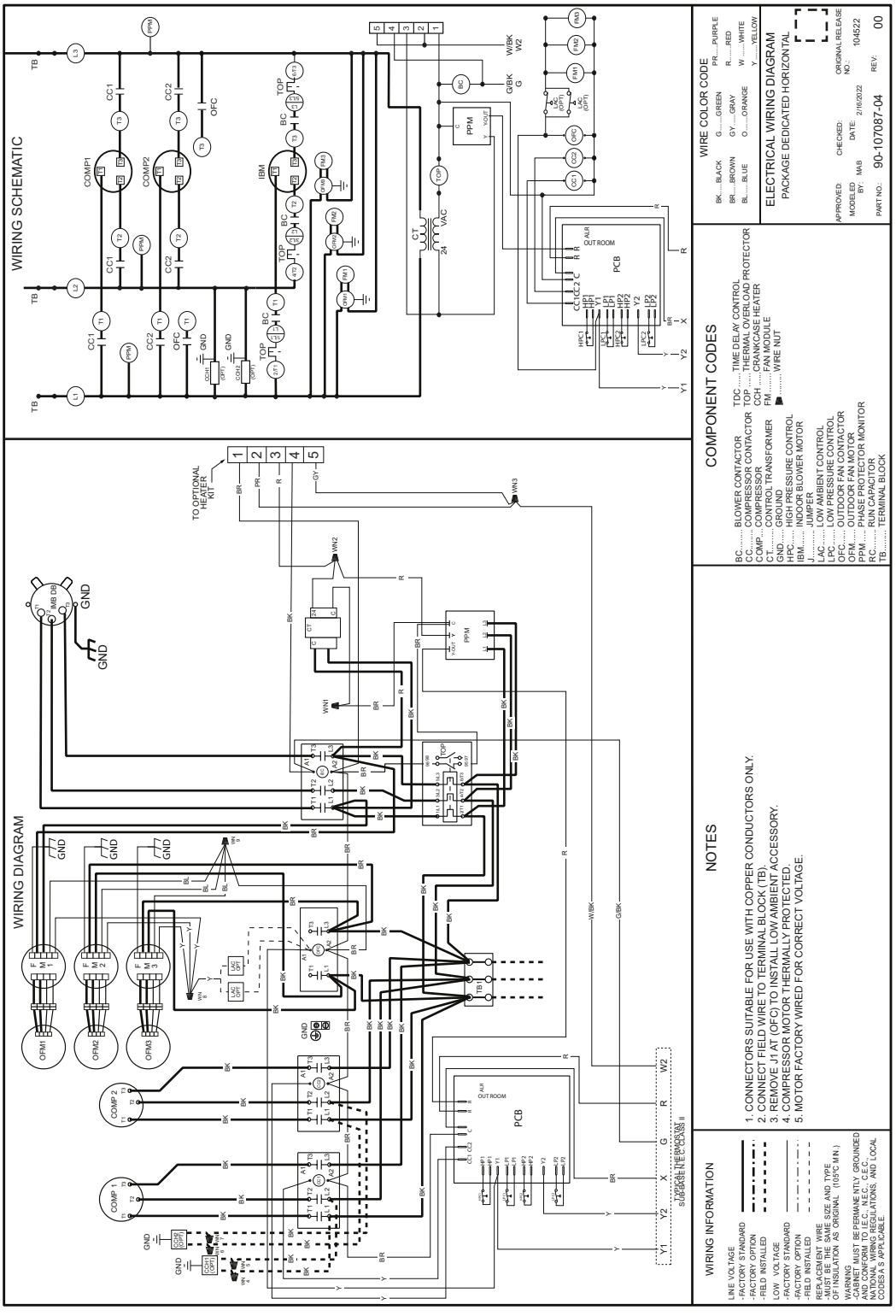
WIRING DIAGRAMS EMRHRX190_280ANA



WIRING DIAGRAMS EMRHRX_281ANA



WIRING DIAGRAMS EMRHRX340ANA EMRHRX341ANA



GUIDE SPECIFICATIONS – EMRHR 150 thru 341

UNITARY PACKAGED ROOFTOP

1.01 SYSTEM DESCRIPTION

Unit is an outdoor rooftop (or building side) mounted, electrically controlled cooling unit utilizing scroll hermetic compressors for cooling duty and electric heat. Unit is specifically designed for horizontal supply and return ducts, as shown on general arrangement drawings.

1.02 QUALITY ASSURANCE

1. Unit shall be rated in accordance with AHRI Standard 340/360.
2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
3. Unit casing shall be capable of withstanding 1008-hour salt spray exposure per ASTM B117.
4. Unit shall be designed and manufactured in a facility in accordance and registered by ISO 9001:2015.
5. 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.
6. Unit shall be designed to conform to ASHRAE 15.
7. Unit shall be safety tested and certified in accordance with IEC-60335-1 & 2-40 Standards as a total package for safety requirements.

1.03 DELIVERY, STORATGE 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.

2.01 GENERAL

The package unit shall be 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.

The package units shall be completely assembled, leak tested, vacuumed, internally factory wired and fully charged with R-410A refrigerant from factory. Each unit is fully factory tested before dispatch and is ready to install. All that is required at site is to connect duct, drain lines, main power supply and field wiring to the thermostat.

1. Outdoor, rooftop mounted, electrically controlled, cooling unit utilizing 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 environment friendly 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.

2.02 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, 60oF): 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 stainless-steel 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 two-piece top panel fixed in such a way that there is no air or water leakage and proper interlocking.
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.

2.03 EVAPORATOR FAN AND MOTOR

1. Evaporator Motor
   a. Shall have IP55 ingress protection level
   b. Shall have Class F insulation
   c. Shall have permanently lubricated bearings.
   d. Shall have inherent automatic-reset thermal overload protection or circuit breaker.
   e. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating shall be required.
   f. Shall have external thermal overload for additional safety

2. Evaporator Fan
   a. The evaporator fan shall be forward curved centrifugal DIDW, statically and dynamically balanced, complete with shaft, self-aligning and permanently lubricated ball bearings.
   b. Indoor blower (evaporator fan) shall be belt-driven, double inlet, forward-curved, centrifugal type.
   c. Belt drive shall include an adjustable-pitch motor pulley
   d. Bearings shall be of the sealed, permanently lubricated, ball-bearing type for longer life and lower maintenance

3. Condenser Motor
   a. Shall have IP54 ingress protection level
   b. Shall be a totally enclosed motor
   c. Shall have permanently lubricated bearings.
   d. Shall have inherent thermal overload protection with an automatic reset feature e. Shall use a shaft-up design.
4. Condenser Fan
   a. Shall be a direct-driven propeller type fan and shall discharge air vertically
   b. Shall have aluminum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.

2.04 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.
c. Compressors shall be internally protected from high discharge temperature conditions.
d. Compressors shall be protected from an over-temperature and over-amperage conditions by an internal, motor overload device.
e. Compressor shall be factory mounted on rubber grommets.
f. Compressor motors shall have internal line break thermal, current overload and high- pressure differential protection.
g. Crankcase heaters shall not be required for normal operating range.

2.05 CONDENSER COIL

a. Condenser coil shall be aluminum micro channel type
b. Coil material shall be only aluminum (Single material)
c. Copper material shall not be used in the coil
d. Condenser coils shall be leak tested to 250 psig, pressure tested to 550 psig, and qualified to UL 60335-1 & 2-40 burst test at 2,200 psig.
e. All the joints (Except 2 main joints) of condenser coils shall be executed automatically through furnace, manual brazing joins shall not be provided.

2.06 EVAPORATOR COIL

a. Evaporator coil shall be aluminum micro channel type
b. Coil material shall be only aluminum (Single material)

c. Copper material shall not be used in the coil
d. Evaporator coils shall be leak tested to 250 psig, pressure tested to 550 psig, and qualified to UL 60335-1 & 2-40 burst test at 2,200 psig.
e. All the joints (Except 2 main joints) of evaporator coils shall be executed automatically through furnace, manual brazing joins shall not be provided.

2.06 SYSTEM COMPONENTS

Refrigerant circuit shall include the following control, safety, and maintenance features:

a. Thermal Expansion Valve (TXV).
b. Refrigerant filter drier.
c. External service gauge connections to unit suction and liquid lines.

2.07 FILTER SECTION

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

2.08 INSULATION

a. 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.
b. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

2.09 Controls

a. An optional thermostat must have capability to energize 2 different stages of cooling, and 2 different stages of heating.
b. An optional thermostat must include capability for occupancy scheduling.

2.10 Electric and Electronic Control System for HVAC

1. General
   a. 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
   b. Shall utilize color-coded wiring

2. Safeties
   a. Compressor over-temperature, over current.
   b. Low-pressure switch.
   c. High-pressure switch.

d. Automatic reset, motor thermal overload protector
e. Compressor time delay
f. Single phase-phase reversal protection
g. External overload protection for evaporator motor

2.11 OPERATING CHARACTERISTICS

a. 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.
b.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).
c. Unit shall discharge supply air horizontally as shown on contract drawings.

2.12 ELECTRICAL REQUIRMENT

a. Main power supply voltage, phase, and frequency must match those required by the manufacturer.

2.13 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 metallic protection guard with diamond shape design
3. Compressor External Overload
   a. Shall provide additional safety to compressor apart from internal thermal overload
4. Crankcase Heaters
   a. Shall provide additional safety to compressor in special cases
5. Dry Contacts
   Shall provide following dry contacts to communicate with the unit thru external BMS program.
   a. Compressor run status feed back
   b. Evaporator fan run status feedback
   c. Common fault feedback
   d. Remote on/off
   e. Fire interlock
6. Direct-digital Control system for HVAC

A. RTU-C controller

1. Shall be ASHRAE 62-2001 compliant.
2. Shall accept 18-32VAC input power.
3. Shall have an operating temperature range from -40 ˚F (-40 ˚C) to 158 ˚F (70 ˚C), 10% - 95% RH (non-condensing).
4. Controller shall accept the following inputs: space temperature, setpoint adjustment, outdoor air temperature, indoor air quality, outdoor air enthalpy, fire shutdown, return air enthalpy, fan status, remote time clock/door switch.
5. Shall accept a CO2 sensor in the conditioned space, and be Demand Control Ventilation (DCV) ready.
6. Shall provide the following outputs: Economizer, fan, cooling stage 1, cooling stage 2, heat stage 1, heat stage 2, exhaust, occupied.
7. Unit shall provide surge protection for the controller through a circuit breaker.
8. Shall have a field installed communication card allowing the unit to be Internet capable and communicate at a Baud rate of 19.2K or faster
9. Shall have an LED display independently showing the status of activity on the communication bus, and processor operation.
10. Shall have either a field installed BACnet® plug-in communication card which includes an EIA-485 protocol communication port, or a field installed LonWorksTM plug-in communications card.
11. Software upgrades will be accomplished by local download. Software upgrades through chip replacements are not allowed.
12. Shall be shock resistant in all planes to 5G peak, 11ms during operation, and 100G peak, 11ms during storage.
13. Shall be vibration resistant in all planes to 1.5G @ 20-300 Hz.
14. Shall support a bus length of 4000 ft max, 60 devices per 1000 ft section, and 1 RS-485 repeater per 1000 ft sections.

B. Open protocol, direct digital controller:

1. Shall be ASHRAE 62-2001 compliant.
2. Shall accept 18-30VAC, 50-60Hz, and consumer 15VA or less power.
3. Shall have an operating temperature range from -40˚F (-40˚C) to 130˚F (54˚C), 10% - 90% RH (non-condensing).
4. Shall have either a field installed BACnet® plug-in communication card which includes an EIA-485 protocol communication port, or a field installed LonWorksTM plug-in communications card.
5. The BACnet® plug in communication card shall include built-in protocol for BACNET (MS/TP and PTP modes)
6. The LonWorksTM plug in communication card shall include the Echelon processor required for all Lon applications.
7. Shall allow access of up to 62 network variables (SNVT). Shall be compatible with all open controllers
8. Baud rate Controller shall be selectable through the EIA-485 protocol communication port.
9. Shall have an LED display independently showing the status of serial communication, running, errors, power, all digital out-puts, and all analog inputs.
10. Shall accept the following inputs: space temperature, setpoint adjustment, outdoor air temperature, indoor air

quality, outdoor air enthalpy, compressor lock-out, fire shutdown, enthalpy switch, and fan status/filter status/ humidity/ remote occupancy.

11. Shall provide the following outputs: economizer, fan, cooling stage 1, cooling stage 2, heat stage 1, heat stage 2, exhaust.
12. Software upgrades will be accomplished by either local or remote download. No software upgrades through chip replacements are allowed.

E-Coating of condenser coil (Option)

Exceptional flexibility and durability E-Coat adhesion properties and flexibility of the coating material provides excellent coil coverage and corrosion resistance.

Not only does the E-Coat coating provide excellent seacoast, salt environment protection it provides outstanding protection in acidic and alkaline environments ranging from 3.0-12.0 pH levels.

E-Coat coating is designed to protect the coil with less than 1% thermal performance degradation so unlike many other types of coil coatings, E-Coat protects the products heat transfer coils without an adverse effect on cooling performance.
E-Coat coated coils have been tested and passed ASTM B-117 Salt Spray tests exceeding 6000 hours.

Excellent corrosion and UV resistance.

The new degree of comfort®

In keeping with its policy of continuous progress and product improvement, Rheem reserves the right to make changes without notice.

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