

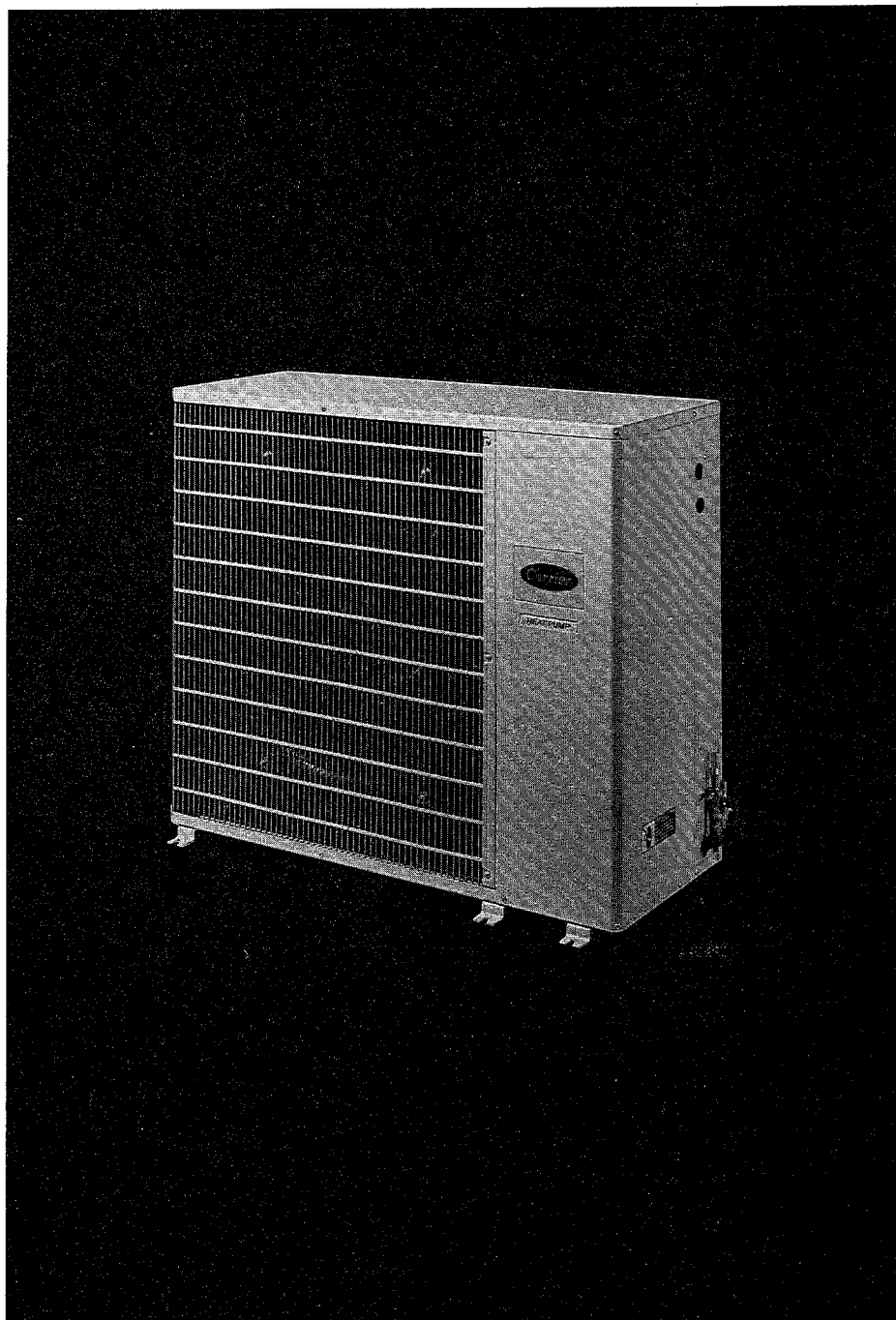


## Product Data

**FILE  
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## 38QR (60 Hz) Heat Pump

Sizes 018 thru 060



The 38QR Outdoor Sections of Split-System Heat Pumps are designed for quiet, reliable heating during the winter and cooling during the summer. These heat pump systems provide economy of operation through energy conservation. They recover heat for indoor comfort from outdoor air during the heating season and, by automatically reversing the refrigerant system, remove indoor heat and excess humidity during the cooling season. All models are listed with UL, CSA, CEC and ARI.

### FEATURES/BENEFITS

**Electrical range** — All single-phase units are offered in 208/230-volts. Three-phase units available in both 208/230-volt (036—060 sizes) and 460-volt (048—060 sizes).

**Compressor** — Designed specifically for heat pump duty, with energy efficiency during heating and cooling operation. Each compressor is hermetically sealed against contamination to assure long life and dependable performance, internally sprung and externally mounted on rubber isolators for quiet operation. Continuous compressor operation is approved down to  $-30^{\circ}\text{F}$  ( $-34^{\circ}\text{C}$ ) in the heating mode, and down to  $55^{\circ}\text{F}$  ( $12.8^{\circ}\text{C}$ ) in the cooling mode.

**Built-In-Reliability Components** — Includes a suction-tube accumulator that keeps liquid refrigerant from reaching the compressor; a high- and low-pressure switch that stops the compressor if refrigerant charge is lost or condenser coil is blocked; a crankcase heater to keep the compressor oil warm and free of refrigerant for maximum lubricity; an internal compressor relief

valve for high-pressure protection; and compressor hard start assist components on single-phase units to assure reliable operation of the units during brownout conditions and low outdoor temperatures.

#### Defrost Control Board —

Incorporates a defrost relay, defrost timer, and high- and low-voltage terminal board. The defrost control is a time/temperature initiation/termination control which includes three field-selectable time periods of 30, 50, and 90 minutes.

#### Weather-Protective Cabinet —

Steel is protected with a heavy

coating commonly called “galvanizing,” then coated with a layer of zinc phosphate to which a coat of modified polyester powder coating is applied and baked-on. This provides each unit with a hard, smooth finish that will last for many years.

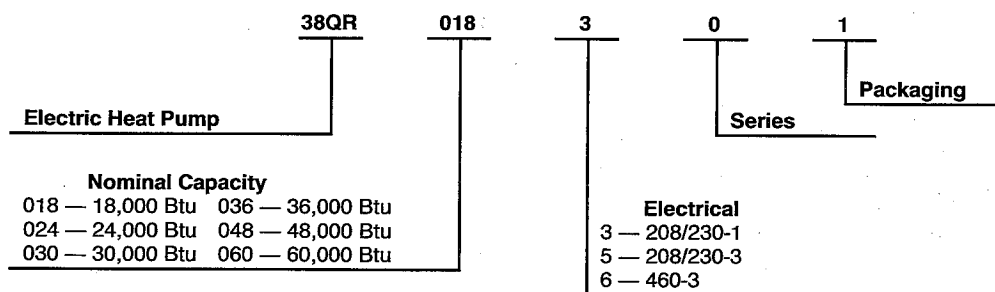
All screws on cabinet exterior are coated for a long-lasting rust-resistant, quality appearance.

**Unit Design —** All units are equipped with totally enclosed fan motors for greater reliability under rain and snow conditions. The coil uses enhanced copper tube and

aluminum fin and is designed for optimum heat transfer during heating and cooling. The horizontal air discharge carries sound and hot condenser air away from adjacent patio areas and foliage. Coil can be cleaned with a common garden hose.

**External Service Valves —** Both service valves are brass, backseating type with sweat connections on suction side and flare fittings on liquid side. Each valve has a service port for ease of checking operating refrigerant pressures.

## Model number nomenclature



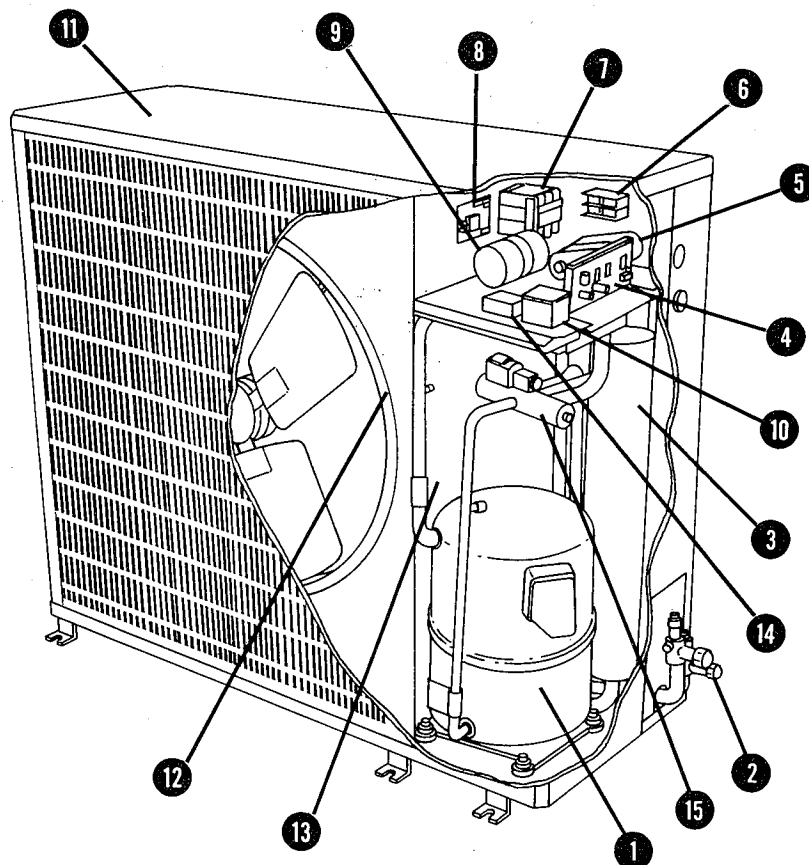
CERTIFICATION APPLIES ONLY  
WHEN THE COMPLETE SYSTEM IS  
LISTED WITH ARI.

## AccuRater®

| HEAT PUMP<br>SIZE | OUTDOOR†<br>PISTON | INDOOR*<br>PISTON |
|-------------------|--------------------|-------------------|
| 018-30            | 40                 | 52                |
| 024-30            | 51                 | 55                |
| 030-30            | 59                 | 63                |
| 036-30            | 65                 | 65                |
| 048-31            | 80                 | 82                |
| 060-30            | 84                 | 90                |

\*Piston listed is for any approved coil combination. Piston is shipped with the outdoor unit and must be installed.

†Outdoor Piston is Chatteff-type.



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- |                                             |                               |                                   |
|---------------------------------------------|-------------------------------|-----------------------------------|
| 1 High-Efficiency Compressor                | 6 High Voltage Terminal Block | 11 Polyester Powder Paint Cabinet |
| 2 Discharge and Suction Pressure Gage Ports | 7 Contactor                   | 12 Fan Orifice                    |
| 3 Accumulator                               | 8 Service Sentry              | 13 Acoustic Lining                |
| 4 Defrost Board                             | 9 Start Capacitor             | 14 Time Delay Relay               |
| 5 Run Capacitor                             | 10 Start Relay                | 15 Reversing Valve                |

## Physical data

| MODEL 38QR              | 018-30                   | 024-30 | 030-30 | 036-30 | 048-31 | 060-30 |
|-------------------------|--------------------------|--------|--------|--------|--------|--------|
| REFRIGERANT             | 22                       |        |        |        |        |        |
| Control — Cooling       | AccuRater™ (Bypass Type) |        |        |        |        |        |
| — Heating               | Chatleff Piston          |        |        |        |        |        |
| Holding Charge (lb)     |                          | 2.0    |        |        | 2.5    |        |
| Operating Charge (lb)   | 4.3                      | 6.2    | 6.1    | 8.2    | 12.0   | 15.0   |
| CONDENSER FAN           | Horizontal               |        |        |        |        |        |
| Air Discharge (cfm)     | 1835                     | 1220   | 1750   | 1700   | 3900   |        |
| Air Quantity (cfm)      |                          |        |        |        |        |        |
| CONDENSER COIL          |                          |        |        |        |        |        |
| Face Area (sq ft)/Rows  | 6.1/1.5                  | 6.1/2  | 6.1/3  |        | 12.3/2 | 12.3/3 |
| CONNECTION (ID)         |                          |        |        |        |        |        |
| Vapor (Sweat)           | 5/8                      |        | 3/4    |        | 7/8    |        |
| Liquid (Flare)          |                          |        | 3/8    |        |        |        |
| REFRIGERANT TUBES* (OD) |                          |        |        |        |        |        |
| Vapor (Sweat)           | 5/8                      |        | 3/4    |        | 7/8    | 1-1/8  |
| Liquid (Flare)          |                          |        | 3/8    |        |        |        |
| OPERATING WEIGHT (lb)   | 170                      | 173    | 188    | 192    | 257    | 277    |

NOTE: See unit Installation Instructions for proper installation.

\*Tube sizes are for runs up to 50 ft. For tube set over 50 ft, consult Long-Line Application Guideline.

# Accessories

| ORDERING NUMBER | DESCRIPTION                                 | ORDERING NUMBER | DESCRIPTION                           |
|-----------------|---------------------------------------------|-----------------|---------------------------------------|
| 38TG900521      | Motormaster Controller — 208/230V           | 38YG900111      | Bi-flow TXV (Hard Shutoff) — Size 036 |
| 38TG900531      | Motormaster Controller—460V                 | 38YG900051      | Bi-flow TXV (RPB) — Size 048          |
| 38HD90008101    | Low Ambient Motor — Sizes 018—036 208/230V  | 38YG900121      | Bi-flow TXV (Hard Shutoff) — Size 048 |
| 38HD90009101    | Low Ambient Motor — Sizes 048, 060 460V     | 38YG900061      | Bi-flow TXV (RPB) — Size 060          |
| 38HD90010101    | Low Ambient Motor — Sizes 048, 060 208/230V | 38YG900131      | Bi-flow TXV (Hard Shutoff) — Size 060 |
| 38HD90011101    | Low-Ambient Motor — Sizes 036 460V          | Standard        | Low-Pressure Switch                   |
| 38TG900551      | Evaporator Freeze Thermostat                | Standard        | High-Pressure Switch                  |
| 38TG900561      | Winter Start Control                        | Standard        | Filter Drier — Bi-flow                |
| 38YG900221      | Isolation Relay                             | 38YG900211      | Liquid Solenoid Valve                 |
| 38HD90002101    | Time Guard II                               | 38HD90003101    | Stacking Kit — Sizes 018—036          |
| Standard        | Compressor Hard Start Assist                | 38HD90004101    | Stacking Kit — Sizes 048, 060         |
| Standard        | Crankcase Heater                            | 38QR90000101    | Snow Rack — Sizes 018—036             |
| 38YG900011      | Bi-flow TXV (RPB) — Size 018                | 38QR90001101    | Snow Rack — Sizes 048, 060            |
| 38YG900081      | Bi-flow TXV (Hard Shutoff) — Size 018       | 38QR90002101    | Ice Stand — Sizes 018—036             |
| 38YG900021      | Bi-flow TXV (RPB) — Size 024                | 38QR90003101    | Ice Stand — Sizes 048, 060            |
| 38YG900091      | Bi-flow TXV (Hard Shutoff) — Size 024       | 38QR90004101    | Wind Baffle — Sizes 018—036           |
| 38YG900031      | Bi-flow TXV (RPB) — Size 030                | 38QR90005101    | Wind Baffle — Sizes 048, 060          |
| 38YG900101      | Bi-flow TXV (Hard Shutoff) — Size 030       | 38QR90006101    | Wall Mount Kit — Sizes 018—036        |
| 38YG900041      | Bi-flow TXV (RPB) — Size 036                | 38QR90007101    | Wall Mount Kit — Sizes 048, 060       |

| THERMOSTAT/SUBBASE PKG. | DESCRIPTION                                     |
|-------------------------|-------------------------------------------------|
| HH07AT175               | Thermostat—Auto/Manual— F                       |
| HH07AT165               | Thermostat—Auto/Manual— C                       |
| HH93AZ195               | Subbase-Manual                                  |
| HH93AZ196               | Subbase-Auto                                    |
| HH07AE001               | Night Setback (Includes thermostat and subbase) |

## Accessory Description and Usage

### 1. Motormaster — Low-Ambient Operation Kit

This solid state head pressure controller is a fan speed control device activated by a temperature sensor. It is specifically designed to control outdoor fan motor speed in response to saturated condensing temperature. For outdoor air temperatures between 55 F and 0 F (12.8 C and -17.8 C), it maintains condensing temperature at 100 F  $\pm$  10 F (37.8 C  $\pm$  5 C). For single-phase units a ball bearing fan motor is also required.

SUGGESTED USE: Cooling operation at outdoor temperatures below 55 F (12.8 C).

All commercial installations. (NOTE: Three-phase units have ball bearing fan motors as standard.)

### 2. Ball Bearing Fan Motor

A fan motor with ball bearings which permit speed reduction while maintaining bearing lubrication.

SUGGESTED USE: Required on all single-phase units where Motormaster (Item 1) has been added.

### 3. Evaporator Freeze Thermostat

A SPST temperature actuated switch which stops unit operation when evaporator reaches freeze-up conditions.

SUGGESTED USE: All units where Motormaster (Item 1) has been added.

### 4. Winter Start Control

A SPST delay relay which bypasses the low-pressure switch for approximately 3 minutes to permit start-up for cooling operation under low load conditions.

SUGGESTED USE: All heat pumps where Motormaster (Item 1) has been added.

### 5. Isolation Relay

A SPDT relay which switches the low-ambient controller out of the outdoor fan motor circuit when the heat pump switches to heating mode.

SUGGESTED USE: All heat pumps where Motormaster (Item 1) has been added.

### 6. Time Guard II — Compressor Short Cycle Protector

Solid state timing device which prevents compressor rapid recycling. Control provides an approximate 5-minute delay after power to the compressor has been interrupted for any reason, including normal room thermostat cycling.

SUGGESTED USE: Installations in areas where power interruptions are frequent.

Where user is likely to "play" with the room thermostat.

All commercial installations.

Installations where interconnecting tube length exceeds 50-ft.

High-rise applications.

### 7. Thermostatic Expansion Valve (TXV)

A modulating flow control valve which meters refrigerant liquid flow rate into the evaporator in response to the superheat of the refrigerant gas leaving the evaporator. Kit includes valve, adapter tubes, and external equalizer tube. Both hard shutoff and RPB type valves are available.

SUGGESTED USE: For improved system performance in cooling mode for certain combinations of indoor and outdoor units. (Refer to ARI Unitary Directory.)

**8. Liquid Solenoid Valve**

An electrically operated shutoff valve to be installed at the outdoor unit and which stops and starts refrigerant liquid flow in response to compressor operation. Maintains a column of refrigerant liquid ready for action at next compressor operation cycle.

**SUGGESTED USE:** For improved system performance in air conditioners for certain combinations of indoor and outdoor units. (Refer to ARI Unitary Directory.) In certain long-line applications. (Refer to Long-Line Application Guideline.)

**9. Stacking Kit**

Rails necessary to allow stacking of equally sized units or smaller units stacked on larger units. (Not to be used with Snow Rack/Ice Stand accessories.)

**SUGGESTED USE:** In apartment or condominium applications.

**10. Snow Rack/Ice Stand**

Utilize to raise the outdoor unit above snow and ice surfaces to permit normal air circulation, condensate drainage and maintenance clearances.

**SUGGESTED USE:** Use in areas where prolonged subfreezing temperatures or heavy snowfalls occur.

**11. Wind Baffle**

A sheet metal wrapper to provide improved unit operation during high winds.

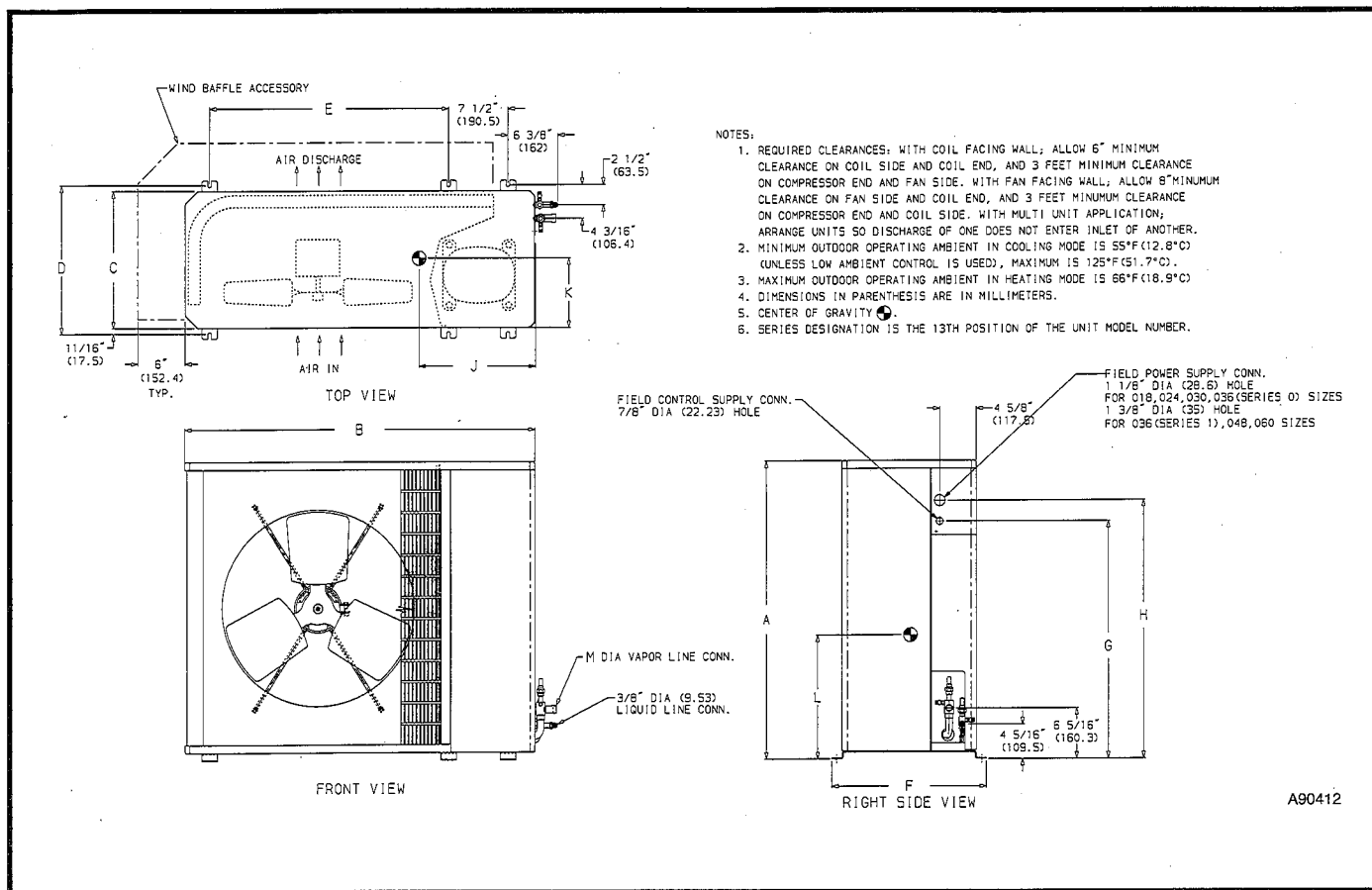
**SUGGESTED USE:** Use in areas of sustained high winds.

**12. Wall Mount Kit**

Brackets mounted to outside of structure to remove unit from ground level.

**SUGGESTED USE:** In areas where space is at a premium, such as high-rise applications and apartment complexes. In areas of heavy snowfall.

# Dimensions



| UNIT<br>SIZE | SERIES | SHIPPING WT |       | A       |       | B        |        | C       |       | D       |       | E       |       | F       |       |
|--------------|--------|-------------|-------|---------|-------|----------|--------|---------|-------|---------|-------|---------|-------|---------|-------|
|              |        | Lb          | kg    | In.     | (mm)  | In.      | (mm)   | In.     | (mm)  | In.     | (mm)  | In.     | (mm)  | In.     | (mm)  |
| 38QR018      | 0      | 159         | 72.1  | 25-1/8  | 638.2 | 36-15/16 | 938.2  | 14-9/16 | 369.9 | 16      | 406.4 | 23-7/16 | 595.3 | 17-3/16 | 436.6 |
| 38QR024      | 0      | 172         | 78.0  | 25-1/8  | 638.2 | 36-15/16 | 938.2  | 14-9/16 | 369.9 | 16      | 406.4 | 23-7/16 | 595.3 | 17-3/16 | 436.6 |
| 38QR030      | 0      | 188         | 85.3  | 25-1/8  | 638.2 | 36-15/16 | 938.2  | 14-9/16 | 369.9 | 16      | 406.4 | 23-7/16 | 595.3 | 17-3/16 | 436.6 |
| 38QR036      | 0      | 192         | 87.1  | 25-1/8  | 638.2 | 36-15/16 | 938.2  | 14-9/16 | 369.9 | 16      | 406.4 | 23-7/16 | 595.3 | 17-3/16 | 436.6 |
| 38QR048      | 1      | 257         | 116.6 | 37-3/16 | 944.6 | 44-9/16  | 1131.9 | 17-1/16 | 433.4 | 18-7/16 | 468.3 | 30-1/2  | 774.7 | 19-5/8  | 498.5 |
| 38QR060      | 0      | 277         | 125.6 | 37-3/16 | 944.6 | 44-9/16  | 1131.9 | 17-1/16 | 433.4 | 18-7/16 | 468.3 | 30-1/2  | 774.7 | 19-5/8  | 498.5 |

| UNIT<br>SIZE | SERIES | G      |       | H       |       | J        |       | K     |       | L      |       | M   |       |
|--------------|--------|--------|-------|---------|-------|----------|-------|-------|-------|--------|-------|-----|-------|
|              |        | In.    | (mm)  | In.     | (mm)  | In.      | (mm)  | In.   | (mm)  | In.    | (mm)  | In. | (mm)  |
| 38QR018      | 0      | 17-1/2 | 444.5 | 20-1/8  | 511.2 | 13       | 330.2 | 6-5/8 | 168.3 | 11-1/4 | 285.8 | 5/8 | 15.88 |
| 38QR024      | 0      | 17-1/2 | 444.5 | 20-1/8  | 511.2 | 13       | 330.2 | 6-3/4 | 171.5 | 11-5/8 | 295.3 | 5/8 | 15.88 |
| 38QR030      | 0      | 17-1/2 | 444.5 | 20-1/8  | 511.2 | 13       | 330.2 | 7     | 177.8 | 11-3/4 | 298.5 | 5/8 | 15.88 |
| 38QR036      | 0      | 17-1/2 | 444.5 | 20-1/8  | 511.2 | 13       | 330.2 | 7     | 177.8 | 11-3/4 | 298.5 | 3/4 | 19.05 |
| 38QR048      | 1      | 29-5/8 | 752.5 | 32-3/16 | 817.6 | 13-11/16 | 347.7 | 8-1/8 | 206.4 | 15-7/8 | 403.2 | 3/4 | 19.05 |
| 38QR060      | 0      | 29-5/8 | 752.5 | 32-3/16 | 817.6 | 14-1/2   | 368.3 | 8-3/8 | 212.7 | 16-1/4 | 412.8 | 7/8 | 22.22 |

# Electrical data

| OUTDOOR<br>UNIT 38QR                                     | V/PH      | OPER VOLTS* |     | COMPR                                          |                                             | FAN<br>FLA                                   | MCA                                          | MIN<br>WIRE<br>SIZE**          | MAX<br>LENGTH<br>(FT)‡           | MAX FUSE† OR<br>HACR TYPE<br>CKT BKR AMPS |
|----------------------------------------------------------|-----------|-------------|-----|------------------------------------------------|---------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------|----------------------------------|-------------------------------------------|
|                                                          |           | Max         | Min | LRA                                            | RLA                                         |                                              |                                              |                                |                                  |                                           |
| 018-30<br>024-30<br>030-30<br>036-30<br>048-31<br>060-30 | 208-230/1 | 253         | 187 | 52.0<br>60.0<br>65.0<br>82.0<br>114.0<br>135.0 | 9.4<br>12.9<br>14.9<br>19.4<br>26.9<br>31.7 | 0.70<br>0.70<br>0.70<br>0.70<br>1.45<br>1.50 | 13.0<br>17.0<br>20.0<br>25.0<br>35.0<br>42.0 | 14<br>14<br>14<br>12<br>8<br>8 | 75<br>55<br>50<br>60<br>70<br>90 | 20<br>25<br>30<br>40<br>60<br>60          |
| 036-50<br>048-51<br>060-50                               | 208-230/3 | 253         | 187 | 67.5<br>84.0<br>105.0                          | 11.8<br>17.1<br>20.4                        | 0.70<br>1.45<br>1.50                         | 16.0<br>22.8<br>27.0                         | 14<br>12<br>10                 | 70<br>75<br>100                  | 25<br>35<br>45                            |
| 036-60<br>048-61<br>060-60                               | 460/3     | 506         | 414 | 33.8<br>42.0<br>55.0                           | 5.8<br>8.4<br>10.8                          | 0.40<br>0.80<br>0.80                         | 8.00<br>11.3<br>15.0                         | 14<br>14<br>14                 | 280<br>190<br>150                | 15<br>15<br>25                            |

**FLA** —Full Load Amps

**HACR**—Heating, Air Conditioning, Refrigeration

**LRA** —Locked Rotor Amps

**MCA** —Minimum Circuit Amps

**RLA** —Rated Load Amps

\*Permissible limits of the voltage range at which unit will operate satisfactorily. Operation outside these limits may result in unit failure. Copper wire must be used from service disconnect to unit.

\*\*If other than uncoated (non-plated), 75 degree C ambient, copper wire (solid wire for 10 AWG and smaller, stranded wire for larger than 10 AWG) is used, consult applicable tables of the National Electric Code (ANSI/NFPA 70).

‡Length shown is as measured one way along wire path between unit and service panel for a maximum 2% voltage drop.

†Time-delay fuse.

**NOTE:** Control circuit is 24 v on all units and requires external power source.

All motors/compressors contain internal overload protection.

# Performance data

| OUTDOOR<br>UNIT<br>38QR | APPROVED<br>INDOOR<br>UNIT | ARI STANDARD RATINGS* |         |                     |             |                     |         |                    |        |                                |                           |     |
|-------------------------|----------------------------|-----------------------|---------|---------------------|-------------|---------------------|---------|--------------------|--------|--------------------------------|---------------------------|-----|
|                         |                            | CFM                   | Cooling |                     |             |                     | Heating |                    |        |                                | Sound<br>Rating<br>(Bels) |     |
|                         |                            |                       | TC      | Seasonal Efficiency |             | High<br>Temperature |         | Low<br>Temperature |        | Seasonal<br>Efficiency<br>HSPF |                           |     |
|                         |                            |                       |         | Without<br>LSV      | With<br>LSV | TC                  | COP     | TC                 | COP    |                                |                           |     |
| 018-30                  | 28RDS/RNS/RH018            | 625                   | 18,000  | 8.70                | 9.00        | 18,100              | 2.78    | 11,200             | 1.98   | 6.50                           | 6.8                       |     |
|                         | 28RDS019                   | 625                   | 18,000  | 8.90                | 9.20        | 18,400              | 2.88    | 11,400             | 2.04   | 6.80                           | 6.8                       |     |
|                         | 28RDS/RNS024               | 625                   | 18,000  | 8.90                | 9.20        | 18,400              | 2.88    | 11,400             | 2.04   | 6.80                           | 6.8                       |     |
|                         | 28RDS/RNS025               | 625                   | 18,200  | 8.90                | 9.20        | 18,500              | 2.90    | 11,400             | 2.04   | 6.80                           | 6.8                       |     |
|                         | 28SL024                    | 625                   | 18,000  | 8.70                | 9.00        | 18,300              | 2.84    | 11,300             | 1.94   | 6.70                           | 6.8                       |     |
|                         | 28RM024                    | 625                   | 18,000  | 8.70                | 9.00        | 18,200              | 2.88    | 11,300             | 2.02   | 6.70                           | 6.8                       |     |
|                         | 40DQ018                    | 625                   | 17,000  | 8.20                | 8.50        | 18,100              | 2.72    | 11,300             | 1.94   | 6.40                           | 6.8                       |     |
|                         | 40DQ024                    | 625                   | 17,800  | 8.90                | 9.20        | 18,200              | 2.86    | 11,300             | 2.02   | 6.70                           | 6.8                       |     |
|                         | 40YR018                    | 625                   | 17,800  | 8.70                | 9.00        | 17,800              | 2.78    | 11,000             | 1.98   | 6.50                           | 6.8                       |     |
|                         | 40YR024                    | 625                   | 18,000  | 8.70                | 9.00        | 18,100              | 2.86    | 11,100             | 2.02   | 6.70                           | 6.8                       |     |
|                         | 40YA018†                   | 625                   | 18,200  | 9.00                | —           | 18,000              | 2.84    | 11,100             | 2.00   | 6.60                           | 6.8                       |     |
|                         | 40YA024                    | 625                   | 18,200  | 9.10                | —           | 18,200              | 2.88    | 11,300             | 2.02   | 6.70                           | 6.8                       |     |
|                         | 40RC018                    | 625                   | 17,800  | 8.70                | 9.00        | 18,300              | 2.86    | 11,300             | 2.02   | 6.70                           | 6.8                       |     |
|                         | 40RC024                    | 625                   | 18,000  | 8.90                | 9.20        | 18,400              | 2.88    | 11,400             | 2.04   | 6.80                           | 6.8                       |     |
|                         | 40LT024                    | 625                   | 17,800  | 8.90                | 9.20        | 18,500              | 2.90    | 11,400             | 2.04   | 6.80                           | 6.8                       |     |
| 024-30                  | 28RDS/RNS024               | 800                   | 23,000  | 8.80                | 9.10        | 24,400              | 2.94    | 14,000             | 2.00   | 6.60                           | 6.8                       |     |
|                         | 28RDS/RNS030               | 800                   | 24,200  | 9.00                | 9.30        | 24,800              | 3.06    | 14,000             | 2.02   | 6.60                           | 6.8                       |     |
|                         | 28RDS/RNS025               | 800                   | 23,600  | 8.90                | 9.20        | 24,400              | 2.94    | 13,800             | 1.98   | 6.60                           | 6.8                       |     |
|                         | 28RM024                    | 800                   | 23,000  | 8.80                | 9.10        | 24,200              | 2.92    | 13,800             | 1.96   | 6.60                           | 6.8                       |     |
|                         | 28RM036                    | 800                   | 23,600  | 8.90                | 9.10        | 24,400              | 2.98    | 13,900             | 1.98   | 6.60                           | 6.8                       |     |
|                         | 28SL024                    | 800                   | 23,000  | 8.70                | 9.00        | 24,200              | 2.92    | 13,800             | 1.96   | 6.60                           | 6.8                       |     |
|                         | 28SL030                    | 800                   | 23,600  | 8.80                | 9.10        | 24,400              | 2.98    | 13,900             | 2.00   | 6.60                           | 6.8                       |     |
|                         | 40DQ024                    | 800                   | 23,000  | 8.80                | 9.10        | 24,200              | 2.94    | 13,700             | 1.98   | 6.60                           | 6.8                       |     |
|                         | 40DQ030                    | 800                   | 23,600  | 8.70                | 9.00        | 24,800              | 3.00    | 14,200             | 1.98   | 6.60                           | 6.8                       |     |
|                         | 40YR024                    | 800                   | 23,600  | 8.80                | 9.10        | 24,200              | 2.96    | 13,800             | 1.96   | 6.60                           | 6.8                       |     |
|                         | 40YR030                    | 800                   | 24,200  | 9.00                | 9.30        | 24,400              | 3.06    | 13,900             | 1.98   | 6.60                           | 6.8                       |     |
|                         | 40YA024†                   | 800                   | 24,200  | 9.30                | —           | 24,400              | 2.98    | 14,000             | 1.96   | 6.60                           | 6.8                       |     |
|                         | 40YA030                    | 800                   | 24,600  | 9.40                | —           | 24,400              | 3.06    | 14,200             | 2.02   | 6.60                           | 6.8                       |     |
|                         | 40LT024                    | 800                   | 23,000  | 8.70                | 9.00        | 24,600              | 3.02    | 13,900             | 2.00   | 6.60                           | 6.8                       |     |
|                         | 40LT036                    | 800                   | 24,400  | 9.00                | 9.30        | 24,800              | 3.10    | 14,100             | 2.04   | 6.60                           | 6.8                       |     |
| 40RC024                 | 800                        | 23,000                | 8.70    | 9.00                | 24,600      | 2.96                | 14,000  | 1.98               | 6.60   | 6.8                            |                           |     |
| 40RC030                 | 800                        | 23,600                | 8.70    | 9.00                | 24,800      | 3.00                | 14,000  | 1.98               | 6.60   | 6.8                            |                           |     |
| 030-30                  | 28RDS/RNS030               | 1000                  | 28,400  | 9.00                | 9.20        | 27,400              | 2.98    | 16,900             | 2.10   | 6.60                           | 6.8                       |     |
|                         | 28RDS/RNS036               | 1000                  | 28,800  | 9.10                | 9.30        | 27,600              | 3.02    | 17,000             | 2.14   | 6.70                           | 6.8                       |     |
|                         | 28RDS/RNS142               | 1000                  | 28,400  | 9.10                | 9.30        | 27,400              | 2.98    | 16,900             | 2.14   | 6.70                           | 6.8                       |     |
|                         | 28RM036                    | 1000                  | 27,600  | 8.90                | 9.10        | 27,000              | 2.88    | 16,800             | 2.10   | 6.50                           | 6.8                       |     |
|                         | 28SL030                    | 1000                  | 27,400  | 8.90                | 9.10        | 27,000              | 2.90    | 16,800             | 2.10   | 6.50                           | 6.8                       |     |
|                         | 28SL036                    | 1000                  | 28,200  | 9.20                | 9.30        | 27,600              | 3.02    | 17,000             | 2.14   | 6.70                           | 6.8                       |     |
|                         | 40RC030                    | 1000                  | 27,800  | 8.60                | 8.90        | 27,600              | 2.86    | 16,600             | 2.08   | 6.40                           | 6.8                       |     |
|                         | 40YR030                    | 1000                  | 27,600  | 8.90                | 9.10        | 26,800              | 2.86    | 16,600             | 2.03   | 6.40                           | 6.8                       |     |
|                         | 40YR036                    | 1000                  | 27,800  | 8.80                | 9.00        | 27,000              | 2.88    | 16,800             | 2.08   | 6.40                           | 6.8                       |     |
|                         | 40YA030†                   | 1000                  | 28,200  | 9.30                | —           | 28,000              | 2.86    | 17,000             | 2.02   | 6.40                           | 6.8                       |     |
|                         | 40YA036                    | 1000                  | 29,800  | 9.30                | —           | 28,000              | 3.14    | 17,500             | 2.16   | 6.70                           | 6.8                       |     |
|                         | 40DQ030                    | 1000                  | 28,600  | 8.70                | 8.90        | 27,600              | 2.92    | 17,100             | 2.10   | 6.50                           | 6.8                       |     |
|                         | 40LT036                    | 1000                  | 28,600  | 9.10                | 9.30        | 27,600              | 3.04    | 17,000             | 2.14   | 6.70                           | 6.8                       |     |
|                         | 036-30                     | 28RDS/RNS036          | 1200    | 34,200              | 9.40        | 9.70                | 34,200  | 2.98               | 19,700 | 2.10                           | 6.60                      | 7.2 |
|                         |                            | 28RDS/RNS143          | 1200    | 34,400              | 9.50        | 9.70                | 34,400  | 2.98               | 19,800 | 2.10                           | 6.60                      | 7.2 |
| 28RDS/RNS142            |                            | 1200                  | 34,000  | 9.30                | 9.60        | 33,800              | 2.92    | 19,600             | 2.08   | 6.60                           | 7.2                       |     |
| 28RDS/RNS242            |                            | 1200                  | 34,200  | 9.40                | 9.60        | 34,000              | 2.90    | 19,700             | 2.08   | 6.60                           | 7.2                       |     |
| 28RDS/RNS043            |                            | 1200                  | 34,400  | 9.50                | 9.70        | 34,400              | 2.98    | 19,800             | 2.10   | 6.60                           | 7.2                       |     |
| 28RM036                 |                            | 1200                  | 33,000  | 9.10                | 9.40        | 33,400              | 2.84    | 19,400             | 2.04   | 6.40                           | 7.2                       |     |
| 28SL036                 |                            | 1200                  | 34,000  | 9.30                | 9.60        | 34,000              | 2.94    | 19,200             | 2.08   | 6.60                           | 7.2                       |     |
| 28SL042                 |                            | 1200                  | 34,000  | 9.30                | 9.60        | 34,000              | 2.94    | 19,600             | 2.08   | 6.60                           | 7.2                       |     |
| 40YR036                 |                            | 1200                  | 33,200  | 8.90                | 9.20        | 34,000              | 2.80    | 19,800             | 2.02   | 6.30                           | 7.2                       |     |
| 40YR042                 |                            | 1200                  | 34,800  | 9.30                | 9.60        | 34,000              | 2.86    | 19,800             | 2.02   | 6.40                           | 7.2                       |     |
| 40YA036†                |                            | 1200                  | 35,400  | 9.50                | —           | 35,000              | 3.10    | 20,600             | 2.14   | 6.70                           | 7.2                       |     |
| 40YA042                 |                            | 1200                  | 35,600  | 9.50                | —           | 34,600              | 3.08    | 20,200             | 2.14   | 6.70                           | 7.2                       |     |
| 40LT036                 |                            | 1200                  | 34,000  | 9.30                | 9.60        | 34,000              | 2.96    | 19,700             | 2.10   | 6.60                           | 7.2                       |     |
| 40LT048                 |                            | 1200                  | 35,000  | 9.50                | 9.80        | 34,800              | 3.06    | 19,800             | 2.12   | 6.70                           | 7.2                       |     |

See notes on page 9.

# Performance data continued

| OUTDOOR<br>UNIT<br>38QR | APPROVED<br>INDOOR<br>UNIT | ARI STANDARD RATINGS* |         |                     |             |                     |         |                    |      |                                |                           |
|-------------------------|----------------------------|-----------------------|---------|---------------------|-------------|---------------------|---------|--------------------|------|--------------------------------|---------------------------|
|                         |                            | CFM                   | Cooling |                     |             |                     | Heating |                    |      |                                | Sound<br>Rating<br>(Bels) |
|                         |                            |                       | TC      | Seasonal Efficiency |             | High<br>Temperature |         | Low<br>Temperature |      | Seasonal<br>Efficiency<br>HSPF |                           |
|                         |                            |                       |         | Without<br>LSV      | With<br>LSV | TC                  | COP     | TC                 | COP  |                                |                           |
| 048-31                  | 28RDS/RNS248               | 1750                  | 46,000  | 9.10                | 9.40        | 45,500              | 3.14    | 28,200             | 2.28 | 7.30                           | 7.4                       |
|                         | 28RDS/RNS148               | 1750                  | 45,000  | 9.00                | 9.30        | 46,500              | 3.24    | 27,000             | 2.36 | 7.40                           | 7.4                       |
|                         | 28RDS/RNS057               | 1750                  | 47,000  | 9.00                | 9.30        | 46,000              | 3.24    | 26,800             | 2.36 | 7.40                           | 7.4                       |
|                         | 28RDS/RNS049               | 1750                  | 47,000  | 9.20                | 9.50        | 46,500              | 3.24    | 26,800             | 2.36 | 7.40                           | 7.4                       |
|                         | 28RDS/RNS061               | 1750                  | 47,500  | 9.20                | 9.70        | 47,000              | 3.32    | 27,200             | 2.40 | 7.50                           | 7.4                       |
|                         | 28RM048                    | 1750                  | 45,000  | 9.00                | 9.30        | 46,000              | 3.22    | 26,800             | 2.34 | 7.40                           | 7.4                       |
|                         | 28SL049                    | 1750                  | 44,500  | 9.00                | 9.30        | 46,000              | 3.22    | 26,800             | 2.34 | 7.40                           | 7.4                       |
|                         | 28SL061                    | 1750                  | 46,500  | 9.20                | 9.50        | 47,000              | 3.34    | 27,400             | 2.34 | 7.50                           | 7.4                       |
|                         | 40YR048                    | 1750                  | 45,500  | 8.80                | 9.00        | 46,500              | 3.14    | 27,200             | 2.28 | 7.20                           | 7.4                       |
|                         | 40YR060                    | 1750                  | 47,000  | 8.70                | 9.00        | 47,500              | 3.16    | 28,000             | 2.28 | 7.30                           | 7.4                       |
|                         | 40YA048†                   | 1750                  | 47,000  | 9.00                | —           | 48,500              | 3.14    | 28,200             | 2.28 | 7.20                           | 7.4                       |
|                         | 40YA060                    | 1750                  | 47,500  | 9.20                | —           | 48,000              | 3.34    | 29,200             | 2.32 | 7.50                           | 7.4                       |
|                         | 40LT048                    | 1750                  | 45,000  | 9.00                | 9.10        | 47,000              | 3.30    | 27,200             | 2.38 | 7.40                           | 7.4                       |
|                         | 40LT060                    | 1750                  | 46,500  | 9.10                | 9.20        | 47,500              | 3.36    | 27,400             | 2.42 | 7.50                           | 7.4                       |
| 060-30                  | 28RDS/RNS061               | 1900                  | 59,000  | 9.80                | 10.00       | 56,500              | 3.00    | 34,600             | 2.22 | 7.30                           | 7.4                       |
|                         | 28RDS/RNS057               | 1900                  | 56,000  | 9.70                | 9.90        | 55,500              | 2.92    | 33,200             | 2.24 | 7.10                           | 7.4                       |
|                         | 28SL061                    | 1900                  | 59,500  | 9.80                | 10.00       | 58,000              | 3.14    | 34,400             | 2.34 | 7.50                           | 7.4                       |
|                         | 40YR060                    | 1900                  | 57,500  | 9.70                | 9.90        | 56,500              | 2.92    | 33,600             | 2.24 | 7.10                           | 7.4                       |
|                         | 40YA060†                   | 1900                  | 60,500  | 10.00               | —           | 58,500              | 2.88    | 31,200             | 2.00 | 6.70                           | 7.4                       |
|                         | 40LT060                    | 1900                  | 56,000  | 9.70                | 9.90        | 57,000              | 3.04    | 34,000             | 2.30 | 7.30                           | 7.4                       |

**COP** —Coefficient of Performance

**HSPF**—Heating Seasonal Performance Factor

**TC** —Total Capacity (Btuh)

**LSV** —Liquid Solenoid Valve

\*Ratings are net values reflecting the effects of circulating fan heat. Supplemental electric heat is not included. Ratings are based on:

**Cooling Standard:** 80 F (27 C) db, 67 F (19 C) wb indoor entering air temperature and 95 F (35 C) db air entering outdoor unit.

**High-Temperature Heating Standard:** 70 F (21 C) db indoor entering air temperature and 47 F (29 C) db 43 F (25 C) wb air entering outdoor unit.

**Low-Temperature Heating Standard:** 70 F (21 C) db indoor entering air temperature and 17 F (– 8 C) db, 15 F (– 9 C) wb air entering outdoor unit.

†Outdoor section/indoor section combination tested in accordance with DOE test procedures for heat pumps. Ratings for other combinations are determined under DOE computer simulation procedures.

# Detailed cooling capacities\*

| EVAPORATOR                                             |             | CONDENSER ENTERING AIR TEMPERATURES F |       |                         |                     |       |                         |                     |       |                         |                     |       |                         |
|--------------------------------------------------------|-------------|---------------------------------------|-------|-------------------------|---------------------|-------|-------------------------|---------------------|-------|-------------------------|---------------------|-------|-------------------------|
| AIR                                                    |             | 85                                    |       |                         | 95                  |       |                         | 105                 |       |                         | 115                 |       |                         |
| CFM                                                    | E<br>W<br>B | Capacity<br>MBtu/h†                   |       | Total<br>System<br>Kw** | Capacity<br>MBtu/h† |       | Total<br>System<br>Kw** | Capacity<br>MBtu/h† |       | Total<br>System<br>Kw** | Capacity<br>MBtu/h† |       | Total<br>System<br>Kw** |
|                                                        |             | Total                                 | Sens‡ |                         | Total               | Sens‡ |                         | Total               | Sens‡ |                         | Total               | Sens‡ |                         |
| 38QR018-30 Outdoor Section With 40YA018 Indoor Section |             |                                       |       |                         |                     |       |                         |                     |       |                         |                     |       |                         |
| 550                                                    | 72          | 20.9                                  | 10.2  | 2.03                    | 19.7                | 9.75  | 2.14                    | 18.6                | 9.34  | 2.26                    | 17.6                | 8.95  | 2.38                    |
|                                                        | 67          | 18.9                                  | 12.7  | 1.96                    | 17.8                | 12.2  | 2.07                    | 16.8                | 11.8  | 2.18                    | 15.8                | 11.4  | 2.29                    |
|                                                        | 63††        | 17.4                                  | 12.3  | 1.92                    | 16.4                | 11.8  | 2.01                    | 15.4                | 11.4  | 2.11                    | 14.5                | 11.0  | 2.21                    |
|                                                        | 62          | 17.0                                  | 15.1  | 1.90                    | 16.1                | 14.7  | 2.00                    | 15.1                | 14.2  | 2.10                    | 14.2                | 13.8  | 2.20                    |
|                                                        | 57          | 16.3                                  | 16.3  | 1.87                    | 15.5                | 15.5  | 1.97                    | 14.8                | 14.8  | 2.08                    | 14.1                | 14.1  | 2.19                    |
| 625                                                    | 72          | 21.3                                  | 10.6  | 2.07                    | 20.1                | 10.2  | 2.19                    | 19.0                | 9.77  | 2.31                    | 17.8                | 9.36  | 2.42                    |
|                                                        | 67          | 19.3                                  | 13.4  | 2.01                    | 18.2                | 13.0  | 2.11                    | 17.1                | 12.5  | 2.22                    | 16.1                | 12.1  | 2.33                    |
|                                                        | 63††        | 17.8                                  | 12.9  | 1.96                    | 16.7                | 12.5  | 2.05                    | 15.7                | 12.1  | 2.16                    | 14.7                | 11.6  | 2.26                    |
|                                                        | 62          | 17.4                                  | 16.1  | 1.95                    | 16.5                | 15.6  | 2.04                    | 15.5                | 15.1  | 2.14                    | 14.6                | 14.6  | 2.25                    |
|                                                        | 57          | 16.9                                  | 16.9  | 1.93                    | 16.2                | 16.2  | 2.03                    | 15.4                | 15.4  | 2.14                    | 14.6                | 14.6  | 2.25                    |
| 700                                                    | 72          | 21.6                                  | 11.0  | 2.11                    | 20.4                | 10.6  | 2.23                    | 19.2                | 10.1  | 2.35                    | 18.1                | 9.74  | 2.47                    |
|                                                        | 67          | 19.6                                  | 14.1  | 2.05                    | 18.5                | 13.7  | 2.16                    | 17.4                | 13.2  | 2.27                    | 16.3                | 12.8  | 2.38                    |
|                                                        | 63††        | 18.1                                  | 13.6  | 2.00                    | 17.0                | 13.1  | 2.10                    | 16.0                | 12.7  | 2.20                    | 14.9                | 12.2  | 2.30                    |
|                                                        | 62          | 17.8                                  | 17.0  | 1.98                    | 16.8                | 16.5  | 2.09                    | 15.9                | 15.8  | 2.19                    | 15.0                | 15.0  | 2.31                    |
|                                                        | 57          | 17.5                                  | 17.5  | 1.98                    | 16.7                | 16.7  | 2.08                    | 15.9                | 15.9  | 2.19                    | 15.0                | 15.0  | 2.31                    |

Multipliers for Determining the Performance With Other Indoor Sections

| Indoor<br>Section | Size | Cooling  |       | Indoor<br>Section | Size | Cooling  |       |
|-------------------|------|----------|-------|-------------------|------|----------|-------|
|                   |      | Capacity | Power |                   |      | Capacity | Power |
| 28RDS/RNS/RH      | 018  | 0.99     | 0.97  | 40YR              | 018  | 0.98     | 0.97  |
| 28RDS             | 019  | 0.99     | 0.99  |                   | 024  | 0.99     | 0.97  |
| 28RDS/RNS         | 024  | 0.99     | 0.99  | 40YA              | 018  | 1.00     | 1.00  |
|                   | 025  | 1.00     | 0.99  |                   | 024  | 1.00     | 1.01  |
| 28SL              | 024  | 0.99     | 0.97  | 40RC              | 018  | 0.98     | 0.97  |
| 28RM              | 024  | 0.99     | 0.97  |                   | 024  | 0.99     | 0.99  |
| 40DQ              | 018  | 0.93     | 0.91  | 40LT              | 024  | 0.98     | 0.99  |
|                   | 024  | 0.98     | 0.99  |                   |      |          |       |

38QR024-30 Outdoor Section With 40YA024 Indoor Section

|     |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 700 | 72   | 27.6 | 13.4 | 2.54 | 26.1 | 12.9 | 2.69 | 24.6 | 12.3 | 2.84 | 23.0 | 11.7 | 2.99 |
|     | 67   | 25.2 | 16.8 | 2.44 | 23.7 | 16.2 | 2.58 | 22.3 | 15.6 | 2.72 | 20.8 | 15.0 | 2.86 |
|     | 63†† | 23.3 | 16.3 | 2.36 | 21.9 | 15.7 | 2.49 | 20.6 | 15.1 | 2.63 | 19.2 | 14.5 | 2.76 |
|     | 62   | 22.8 | 20.1 | 2.34 | 21.5 | 19.5 | 2.47 | 20.2 | 18.8 | 2.61 | 18.9 | 18.2 | 2.75 |
|     | 57   | 21.8 | 21.8 | 2.30 | 20.8 | 20.8 | 2.44 | 19.7 | 19.7 | 2.58 | 18.7 | 18.7 | 2.73 |
| 800 | 72   | 28.1 | 14.0 | 2.60 | 26.6 | 13.4 | 2.75 | 25.0 | 12.9 | 2.90 | 23.4 | 12.3 | 3.06 |
|     | 67   | 25.7 | 17.8 | 2.50 | 24.2 | 17.2 | 2.64 | 22.7 | 16.6 | 2.79 | 21.2 | 16.0 | 2.92 |
|     | 63†† | 23.8 | 17.2 | 2.42 | 22.4 | 16.6 | 2.56 | 20.9 | 16.0 | 2.69 | 19.5 | 15.4 | 2.83 |
|     | 62   | 23.4 | 21.4 | 2.41 | 22.0 | 20.8 | 2.54 | 20.7 | 20.1 | 2.68 | 19.4 | 19.3 | 2.82 |
|     | 57   | 22.7 | 22.7 | 2.38 | 21.6 | 21.6 | 2.53 | 20.5 | 20.5 | 2.67 | 19.3 | 19.3 | 2.81 |
| 900 | 72   | 28.6 | 14.6 | 2.66 | 27.0 | 14.0 | 2.82 | 25.3 | 13.4 | 2.96 | 23.6 | 12.8 | 3.11 |
|     | 67   | 26.0 | 18.7 | 2.56 | 24.6 | 18.1 | 2.70 | 23.0 | 17.5 | 2.84 | 21.5 | 16.9 | 2.99 |
|     | 63†† | 24.2 | 18.1 | 2.48 | 22.7 | 17.5 | 2.62 | 21.2 | 16.8 | 2.75 | 19.8 | 16.2 | 2.88 |
|     | 62   | 23.8 | 22.7 | 2.46 | 22.5 | 21.9 | 2.60 | 21.1 | 21.1 | 2.75 | 19.9 | 19.9 | 2.89 |
|     | 57   | 23.4 | 23.4 | 2.45 | 22.3 | 22.3 | 2.59 | 21.1 | 21.1 | 2.75 | 19.9 | 19.9 | 2.89 |

Multipliers for Determining the Performance With Other Indoor Sections

| Indoor<br>Section | Size | Cooling  |       | Indoor<br>Section | Size | Cooling  |       |
|-------------------|------|----------|-------|-------------------|------|----------|-------|
|                   |      | Capacity | Power |                   |      | Capacity | Power |
| 28RDS/RNS         | 024  | 0.95     | 0.95  | 40YR              | 024  | 0.98     | 0.95  |
|                   | 030  | 1.00     | 0.97  |                   | 030  | 1.00     | 0.97  |
|                   | 025  | 0.98     | 0.96  | 40YA              | 024  | 1.00     | 1.00  |
| 28RM              | 024  | 0.95     | 0.95  |                   | 030  | 1.02     | 1.01  |
|                   | 036  | 0.98     | 0.96  | 40LT              | 024  | 0.95     | 0.94  |
| 28SL              | 024  | 0.95     | 0.94  |                   | 036  | 1.01     | 0.97  |
|                   | 030  | 0.98     | 0.95  | 40RC              | 024  | 0.95     | 0.94  |
| 40DQ              | 024  | 0.95     | 0.95  |                   | 030  | 0.98     | 0.94  |
|                   | 030  | 0.98     | 0.94  |                   |      |          |       |

See notes on page 12.

# Detailed cooling capacities\* continued

| EVAPORATOR                                             |             | CONDENSER ENTERING AIR TEMPERATURES F |       |                         |                    |       |                         |                    |       |                         |                    |       |                         |
|--------------------------------------------------------|-------------|---------------------------------------|-------|-------------------------|--------------------|-------|-------------------------|--------------------|-------|-------------------------|--------------------|-------|-------------------------|
| AIR                                                    |             | 85                                    |       |                         | 95                 |       |                         | 105                |       |                         | 115                |       |                         |
| CFM                                                    | E<br>W<br>B | Capacity<br>MBtuh†                    |       | Total<br>System<br>Kw** | Capacity<br>MBtuh† |       | Total<br>System<br>Kw** | Capacity<br>MBtuh† |       | Total<br>System<br>Kw** | Capacity<br>MBtuh† |       | Total<br>System<br>Kw** |
|                                                        |             | Total                                 | Sens‡ |                         | Total              | Sens‡ |                         | Total              | Sens‡ |                         | Total              | Sens‡ |                         |
| 38QR030-30 Outdoor Section With 40YA030 Indoor Section |             |                                       |       |                         |                    |       |                         |                    |       |                         |                    |       |                         |
| 825                                                    | 72          | 31.8                                  | 15.5  | 2.80                    | 30.3               | 14.9  | 3.02                    | 28.5               | 14.2  | 3.23                    | 26.9               | 13.6  | 3.45                    |
|                                                        | 67          | 29.1                                  | 19.5  | 2.73                    | 27.5               | 18.8  | 2.93                    | 26.0               | 18.2  | 3.14                    | 24.4               | 17.5  | 3.34                    |
|                                                        | 63††        | 27.0                                  | 18.9  | 2.67                    | 25.5               | 18.2  | 2.87                    | 24.0               | 17.6  | 3.06                    | 22.6               | 16.9  | 3.24                    |
|                                                        | 62          | 26.5                                  | 23.3  | 2.66                    | 25.0               | 22.7  | 2.85                    | 23.6               | 22.0  | 3.04                    | 22.2               | 21.3  | 3.22                    |
|                                                        | 57          | 25.3                                  | 25.3  | 2.63                    | 24.2               | 24.2  | 2.82                    | 23.1               | 23.1  | 3.02                    | 22.0               | 22.0  | 3.22                    |
| 1000                                                   | 72          | 32.7                                  | 16.4  | 2.90                    | 31.0               | 15.8  | 3.12                    | 29.1               | 15.2  | 3.34                    | 27.4               | 14.6  | 3.56                    |
|                                                        | 67          | 29.8                                  | 21.1  | 2.82                    | 28.2               | 20.4  | 3.03                    | 26.5               | 19.8  | 3.24                    | 24.9               | 19.1  | 3.44                    |
|                                                        | 63††        | 27.6                                  | 20.4  | 2.77                    | 26.1               | 19.8  | 2.97                    | 24.6               | 19.1  | 3.16                    | 23.0               | 18.4  | 3.35                    |
|                                                        | 62          | 27.2                                  | 25.5  | 2.76                    | 25.8               | 24.8  | 2.95                    | 24.4               | 23.9  | 3.15                    | 23.0               | 23.0  | 3.35                    |
|                                                        | 57          | 26.7                                  | 26.7  | 2.74                    | 25.4               | 25.4  | 2.94                    | 24.2               | 24.2  | 3.15                    | 23.0               | 23.0  | 3.35                    |
| 1125                                                   | 72          | 33.1                                  | 17.1  | 2.96                    | 31.3               | 16.4  | 3.19                    | 29.4               | 15.8  | 3.41                    | 27.7               | 15.2  | 3.62                    |
|                                                        | 67          | 30.2                                  | 22.2  | 2.89                    | 28.5               | 21.5  | 3.10                    | 26.9               | 20.9  | 3.31                    | 25.2               | 20.2  | 3.51                    |
|                                                        | 63††        | 28.0                                  | 21.5  | 2.84                    | 26.4               | 20.8  | 3.03                    | 24.8               | 20.1  | 3.23                    | 23.3               | 19.4  | 3.42                    |
|                                                        | 62          | 27.8                                  | 26.9  | 2.83                    | 26.3               | 26.0  | 3.03                    | 24.9               | 24.9  | 3.23                    | 23.6               | 23.6  | 3.44                    |
|                                                        | 57          | 27.4                                  | 27.4  | 2.82                    | 26.2               | 26.2  | 3.02                    | 24.9               | 24.9  | 3.23                    | 23.6               | 23.6  | 3.43                    |

Multipliers for Determining the Performance With Other Indoor Sections

| Indoor<br>Section | Size | Cooling  |       | Indoor<br>Section | Size | Cooling  |       |
|-------------------|------|----------|-------|-------------------|------|----------|-------|
|                   |      | Capacity | Power |                   |      | Capacity | Power |
| 28RDS/RNS         | 030  | 1.01     | 0.97  | 40YR              | 030  | 0.98     | 0.96  |
|                   | 036  | 1.02     | 0.98  |                   | 036  | 0.99     | 0.95  |
|                   | 142  | 1.01     | 0.98  | 40YA              | 030  | 1.00     | 1.00  |
| 28RM              | 036  | 0.98     | 0.96  |                   | 036  | 1.06     | 1.00  |
| 28SL              | 030  | 0.97     | 0.96  | 40DQ              | 030  | 1.01     | 0.94  |
|                   | 036  | 1.00     | 0.99  |                   | 036  | 1.01     | 0.98  |
| 40RC              | 030  | 0.99     | 0.92  |                   |      |          |       |

38QR036-30 Outdoor Section With 40YA036 Indoor Section

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1050 | 72   | 40.4 | 19.7 | 3.61 | 38.3 | 18.9 | 3.88 | 36.0 | 18.1 | 4.13 | 33.8 | 17.3 | 4.37 |
|      | 67   | 36.8 | 24.9 | 3.51 | 34.9 | 24.0 | 3.76 | 32.8 | 23.2 | 3.99 | 30.8 | 22.3 | 4.22 |
|      | 63†† | 34.1 | 24.1 | 3.42 | 32.2 | 23.3 | 3.65 | 30.4 | 22.4 | 3.88 | 28.4 | 21.6 | 4.09 |
|      | 62   | 33.5 | 29.8 | 3.40 | 31.7 | 28.9 | 3.63 | 29.9 | 28.0 | 3.85 | 28.1 | 27.1 | 4.08 |
|      | 57   | 32.0 | 32.0 | 3.35 | 30.6 | 30.6 | 3.59 | 29.1 | 29.1 | 3.82 | 27.7 | 27.7 | 4.05 |
| 1200 | 72   | 41.0 | 20.5 | 3.69 | 38.8 | 19.7 | 3.96 | 36.6 | 18.9 | 4.23 | 34.3 | 18.1 | 4.47 |
|      | 67   | 37.4 | 26.2 | 3.58 | 35.4 | 25.4 | 3.84 | 33.3 | 24.5 | 4.07 | 31.2 | 23.7 | 4.31 |
|      | 63†† | 34.7 | 25.4 | 3.50 | 32.8 | 24.5 | 3.74 | 30.8 | 23.7 | 3.96 | 28.8 | 22.8 | 4.18 |
|      | 62   | 34.2 | 31.7 | 3.49 | 32.3 | 30.7 | 3.72 | 30.5 | 29.7 | 3.95 | 28.7 | 28.5 | 4.17 |
|      | 57   | 33.2 | 33.2 | 3.46 | 31.7 | 31.7 | 3.69 | 30.1 | 30.1 | 3.93 | 28.6 | 28.6 | 4.17 |
| 1350 | 72   | 41.5 | 21.2 | 3.77 | 39.2 | 20.4 | 4.04 | 36.9 | 19.5 | 4.30 | 34.6 | 18.8 | 4.56 |
|      | 67   | 38.0 | 27.5 | 3.67 | 35.8 | 26.6 | 3.91 | 33.7 | 25.8 | 4.16 | 31.5 | 24.9 | 4.39 |
|      | 63†† | 35.2 | 26.6 | 3.58 | 33.1 | 25.7 | 3.81 | 31.2 | 24.8 | 4.05 | 29.1 | 23.9 | 4.26 |
|      | 62   | 34.7 | 33.3 | 3.56 | 32.8 | 32.2 | 3.80 | 31.0 | 30.9 | 4.03 | 29.3 | 29.3 | 4.27 |
|      | 57   | 34.2 | 34.2 | 3.54 | 32.6 | 32.6 | 3.80 | 31.0 | 31.0 | 4.04 | 29.4 | 29.4 | 4.28 |

Multipliers for Determining the Performance With Other Indoor Sections

| Indoor<br>Section | Size | Cooling  |       | Indoor<br>Section | Size | Cooling  |       |
|-------------------|------|----------|-------|-------------------|------|----------|-------|
|                   |      | Capacity | Power |                   |      | Capacity | Power |
| 28RDS/RNS         | 036  | 0.97     | 0.99  | 40YR              | 036  | 0.94     | 0.94  |
|                   | 042  | 0.96     | 0.98  |                   | 042  | 0.98     | 0.98  |
|                   | 142  | 0.96     | 0.98  | 40YA              | 036  | 1.00     | 1.00  |
|                   | 242  | 0.97     | 0.99  |                   | 042  | 1.01     | 1.00  |
|                   | 043  | 0.97     | 1.00  | 40LT              | 036  | 0.96     | 0.98  |
| 28RM              | 036  | 0.93     | 0.96  |                   | 048  | 0.99     | 1.00  |
| 28SL              | 036  | 0.96     | 0.98  |                   |      |          |       |
|                   | 042  | 0.96     | 0.98  |                   |      |          |       |

See notes on page 12.

# Detailed cooling capacities continued\*

| EVAPORATOR                                             |             | CONDENSER ENTERING AIR TEMPERATURES F |       |                         |                     |       |                         |                     |       |                         |                     |       |                         |
|--------------------------------------------------------|-------------|---------------------------------------|-------|-------------------------|---------------------|-------|-------------------------|---------------------|-------|-------------------------|---------------------|-------|-------------------------|
| AIR                                                    |             | 85                                    |       |                         | 95                  |       |                         | 105                 |       |                         | 115                 |       |                         |
| CFM                                                    | E<br>W<br>B | Capacity<br>MBtuht†                   |       | Total<br>System<br>Kw** | Capacity<br>MBtuht† |       | Total<br>System<br>Kw** | Capacity<br>MBtuht† |       | Total<br>System<br>Kw** | Capacity<br>MBtuht† |       | Total<br>System<br>Kw** |
|                                                        |             | Total                                 | Sens‡ |                         | Total               | Sens‡ |                         | Total               | Sens‡ |                         | Total               | Sens‡ |                         |
| 38QR048-31 Outdoor Section With 40YA048 Indoor Section |             |                                       |       |                         |                     |       |                         |                     |       |                         |                     |       |                         |
| 1550                                                   | 72          | 54.1                                  | 26.6  | 5.23                    | 51.0                | 25.5  | 5.53                    | 47.9                | 24.3  | 5.81                    | 44.6                | 23.1  | 6.06                    |
|                                                        | 67          | 49.2                                  | 33.8  | 5.06                    | 46.3                | 32.6  | 5.34                    | 43.4                | 31.4  | 5.59                    | 40.3                | 30.2  | 5.82                    |
|                                                        | 63††        | 45.5                                  | 32.8  | 4.93                    | 42.8                | 31.5  | 5.19                    | 39.9                | 30.3  | 5.42                    | 37.0                | 29.0  | 5.64                    |
|                                                        | 62          | 44.7                                  | 40.9  | 4.91                    | 42.1                | 39.6  | 5.17                    | 39.3                | 38.1  | 5.40                    | 36.7                | 36.5  | 5.62                    |
|                                                        | 57          | 43.3                                  | 43.3  | 4.85                    | 41.2                | 41.2  | 5.13                    | 38.9                | 38.9  | 5.38                    | 36.6                | 36.6  | 5.61                    |
| 1750                                                   | 72          | 54.8                                  | 27.6  | 5.35                    | 51.7                | 26.4  | 5.66                    | 48.4                | 25.3  | 5.94                    | 45.0                | 24.1  | 6.20                    |
|                                                        | 67          | 50.0                                  | 35.6  | 5.20                    | 47.0                | 34.4  | 5.48                    | 43.9                | 33.2  | 5.73                    | 40.7                | 31.9  | 5.97                    |
|                                                        | 63††        | 46.3                                  | 34.4  | 5.07                    | 43.4                | 33.2  | 5.32                    | 40.4                | 31.9  | 5.56                    | 37.4                | 30.6  | 5.78                    |
|                                                        | 62          | 45.5                                  | 43.3  | 5.04                    | 42.9                | 41.8  | 5.30                    | 40.2                | 40.1  | 5.55                    | 37.7                | 37.7  | 5.80                    |
|                                                        | 57          | 44.7                                  | 44.7  | 5.01                    | 42.5                | 42.5  | 5.29                    | 40.1                | 40.1  | 5.55                    | 37.7                | 37.7  | 5.79                    |
| 1950                                                   | 72          | 55.5                                  | 28.5  | 5.49                    | 52.2                | 27.4  | 5.79                    | 48.9                | 26.2  | 6.07                    | 45.5                | 25.0  | 6.33                    |
|                                                        | 67          | 50.5                                  | 37.3  | 5.32                    | 47.5                | 36.1  | 5.61                    | 44.3                | 34.9  | 5.86                    | 41.1                | 33.6  | 6.09                    |
|                                                        | 63††        | 46.8                                  | 36.0  | 5.20                    | 43.9                | 34.8  | 5.45                    | 40.8                | 33.5  | 5.69                    | 37.7                | 32.2  | 5.91                    |
|                                                        | 62          | 46.3                                  | 45.3  | 5.18                    | 43.6                | 43.5  | 5.44                    | 41.1                | 41.1  | 5.71                    | 38.6                | 38.6  | 5.96                    |
|                                                        | 57          | 45.9                                  | 45.9  | 5.16                    | 43.6                | 43.6  | 5.45                    | 41.1                | 41.1  | 5.71                    | 38.6                | 38.6  | 5.95                    |

Multipliers for Determining the Performance With Other Indoor Sections

| Indoor<br>Section | Size | Cooling  |       | Indoor<br>Section | Size | Cooling  |       |
|-------------------|------|----------|-------|-------------------|------|----------|-------|
|                   |      | Capacity | Power |                   |      | Capacity | Power |
| 28RDS/RNS         | 248  | 0.98     | 1.01  | 40YR              | 048  | 0.97     | 0.98  |
|                   | 148  | 0.96     | 1.00  |                   | 060  | 1.00     | 0.97  |
|                   | 057  | 1.00     | 1.00  | 40YA              | 048  | 1.00     | 1.00  |
|                   | 049  | 1.00     | 1.02  |                   | 060  | 1.01     | 1.02  |
|                   | 060  | 1.01     | 1.02  | 40LT              | 048  | 0.96     | 1.00  |
| 28RM              | 048  | 0.96     | 1.00  |                   | 060  | 0.99     | 1.01  |
| 28SL              | 049  | 0.95     | 1.00  |                   |      |          |       |
|                   | 061  | 0.99     | 1.02  |                   |      |          |       |

38QR060-30 Outdoor Section With 40YA060 Indoor Section

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1750 | 72   | 69.3 | 34.0 | 6.13 | 65.8 | 32.7 | 6.57 | 62.3 | 31.4 | 6.98 | 58.7 | 30.1 | 7.37 |
|      | 67   | 63.0 | 43.0 | 5.94 | 59.8 | 41.6 | 6.35 | 56.6 | 40.3 | 6.73 | 53.2 | 39.0 | 7.08 |
|      | 63†† | 58.4 | 41.7 | 5.80 | 55.3 | 40.3 | 6.18 | 52.2 | 38.9 | 6.53 | 49.0 | 37.5 | 6.85 |
|      | 62   | 57.3 | 51.7 | 5.76 | 54.4 | 50.3 | 6.14 | 51.4 | 48.9 | 6.49 | 48.4 | 47.3 | 6.82 |
|      | 57   | 55.3 | 55.3 | 5.71 | 53.0 | 53.0 | 6.08 | 50.5 | 50.5 | 6.44 | 48.1 | 48.1 | 6.78 |
| 1900 | 72   | 70.1 | 34.9 | 6.21 | 66.5 | 33.6 | 6.66 | 62.9 | 32.3 | 7.08 | 59.2 | 31.0 | 7.47 |
|      | 67   | 63.8 | 44.6 | 6.04 | 60.5 | 43.2 | 6.45 | 57.1 | 41.9 | 6.84 | 53.6 | 40.5 | 7.19 |
|      | 63†† | 59.1 | 43.2 | 5.89 | 55.9 | 41.8 | 6.28 | 52.7 | 40.4 | 6.64 | 49.4 | 39.0 | 6.96 |
|      | 62   | 58.1 | 54.0 | 5.86 | 55.1 | 52.5 | 6.25 | 52.2 | 51.0 | 6.60 | 49.2 | 49.1 | 6.94 |
|      | 57   | 56.7 | 56.7 | 5.82 | 54.2 | 54.2 | 6.21 | 51.7 | 51.7 | 6.58 | 49.1 | 49.1 | 6.93 |
| 2050 | 72   | 70.8 | 35.9 | 6.31 | 67.1 | 34.5 | 6.76 | 63.4 | 33.2 | 7.18 | 59.7 | 31.9 | 7.59 |
|      | 67   | 64.5 | 46.2 | 6.14 | 61.1 | 44.8 | 6.54 | 57.6 | 43.5 | 6.94 | 54.1 | 42.1 | 7.30 |
|      | 63†† | 59.7 | 44.7 | 5.99 | 56.5 | 43.3 | 6.38 | 53.2 | 41.9 | 6.74 | 49.9 | 40.4 | 7.06 |
|      | 62   | 58.8 | 56.1 | 5.96 | 55.8 | 54.5 | 6.35 | 52.9 | 52.7 | 6.71 | 50.1 | 50.1 | 7.07 |
|      | 57   | 57.9 | 57.9 | 5.93 | 55.4 | 55.4 | 6.33 | 52.8 | 52.8 | 6.70 | 50.1 | 50.1 | 7.07 |
| 2200 | 72   | 71.3 | 36.7 | 6.40 | 67.6 | 35.4 | 6.86 | 63.9 | 34.1 | 7.28 | 60.1 | 32.8 | 7.67 |
|      | 67   | 65.0 | 47.7 | 6.23 | 61.6 | 46.4 | 6.63 | 58.0 | 45.0 | 7.02 | 54.5 | 43.6 | 7.38 |
|      | 63†† | 60.2 | 46.1 | 6.08 | 56.9 | 44.7 | 6.46 | 53.6 | 43.3 | 6.82 | 50.2 | 41.9 | 7.15 |
|      | 62   | 59.5 | 58.0 | 6.06 | 56.5 | 56.2 | 6.45 | 53.8 | 53.8 | 6.82 | 51.0 | 51.0 | 7.20 |
|      | 57   | 59.0 | 59.0 | 6.04 | 56.4 | 56.4 | 6.44 | 53.8 | 53.8 | 6.82 | 51.0 | 51.0 | 7.19 |

Multipliers for Determining the Performance With Other Indoor Sections

| Indoor<br>Section | Size | Cooling  |       | Indoor<br>Section | Size | Cooling  |       |
|-------------------|------|----------|-------|-------------------|------|----------|-------|
|                   |      | Capacity | Power |                   |      | Capacity | Power |
| 28RDS/RNS         | 061  | 0.98     | 0.98  | 40YR              | 060  | 0.95     | 0.97  |
|                   | 057  | 0.93     | 0.97  | 40YA              | 060  | 1.00     | 1.00  |
| 28SL              | 061  | 0.98     | 0.98  | 40LT              | 060  | 0.93     | 0.97  |

\*Detailed cooling capacities are based on indoor and outdoor unit at the same elevation and connected by 25 ft (7.62m) of tubing. If other than 25 ft (7.62m) of tubing is used and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.

†Total and sensible capacities are net capacities. Blower motor heat has been subtracted.

††At TVA rating indoor condition (75 F (24 C) edb/63 F (17 C) ewb). All other indoor air temperatures are at 80 F (27 C) edb.

‡Sensible capacities shown are based on 80 F (27 C) entering air at the indoor coil. For sensible capacities at other than 80 F (27 C), deduct 835 Btu/h (245 kw) per 1000 cfm (480 L/S) of indoor coil air for each degree below 80 F (27 C), or add 835 Btu/h (245 kw) per 1000 cfm (480 L/S) of indoor coil air per degree above 80 F (27 C).

\*\*System kw is total of indoor and outdoor unit kilowatts.

EWB = Entering Wet Bulb.

# Heat pump heating performance

| INDOOR                                                 |     | OUTDOOR COIL ENTERING AIR TEMPERATURE F |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
|--------------------------------------------------------|-----|-----------------------------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|
| AIR                                                    |     | - 3                                     |        |                | 7                |        |                | 17               |        |                | 27               |        |                | 37               |        |                | 47               |        |                | 57               |        |                |
| E<br>D<br>B                                            | CFM | Capacity<br>(Kw)                        |        | Total<br>Power | Capacity<br>(Kw) |        | Total<br>Power | Capacity<br>(Kw) |        | Total<br>Power | Capacity<br>(Kw) |        | Total<br>Power | Capacity<br>(Kw) |        | Total<br>Power | Capacity<br>(Kw) |        | Total<br>Power | Capacity<br>(Kw) |        | Total<br>Power |
|                                                        |     | Total                                   | Integ† | Kw‡            | Total            | Integ† | Kw‡            | Total            | Integ† | Kw‡            | Total            | Integ† | Kw‡            | Total            | Integ† | Kw‡            | Total            | Integ† | Kw‡            | Total            | Integ† | Kw‡            |
| 38QR018-30 Outdoor Section With 40YA018 Indoor Section |     |                                         |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
| 65                                                     | 550 | 6.63                                    | 6.10   | 1.35           | 9.01             | 8.28   | 1.44           | 11.3             | 10.3   | 1.53           | 13.6             | 12.1   | 1.62           | 15.8             | 14.4   | 1.72           | 18.1             | 18.1   | 1.82           | 20.2             | 20.2   | 1.92           |
|                                                        | 625 | 6.83                                    | 6.28   | 1.38           | 9.24             | 8.49   | 1.47           | 11.6             | 10.6   | 1.56           | 13.9             | 12.3   | 1.64           | 16.1             | 14.6   | 1.73           | 18.4             | 18.4   | 1.83           | 20.2             | 20.2   | 1.89           |
|                                                        | 700 | 7.01                                    | 6.45   | 1.41           | 9.44             | 8.68   | 1.50           | 11.8             | 10.8   | 1.58           | 14.1             | 12.5   | 1.66           | 16.3             | 14.9   | 1.75           | 18.7             | 18.7   | 1.84           | 20.2             | 20.2   | 1.88           |
| 70                                                     | 550 | 6.04                                    | 5.55   | 1.35           | 8.46             | 7.78   | 1.45           | 10.8             | 9.89   | 1.55           | 13.2             | 11.7   | 1.65           | 15.4             | 14.0   | 1.75           | 17.7             | 17.7   | 1.86           | 19.8             | 19.8   | 1.96           |
|                                                        | 625 | 6.21                                    | 5.72   | 1.38           | 8.68             | 7.98   | 1.48           | 11.1             | 10.1   | 1.57           | 13.4             | 11.9   | 1.67           | 15.7             | 14.3   | 1.76           | 18.0             | 18.0   | 1.86           | 20.0             | 20.0   | 1.94           |
|                                                        | 700 | 6.38                                    | 5.87   | 1.41           | 8.89             | 8.17   | 1.51           | 11.3             | 10.3   | 1.60           | 13.7             | 12.2   | 1.69           | 15.9             | 14.5   | 1.78           | 18.3             | 18.3   | 1.88           | 19.9             | 19.9   | 1.93           |
| 75                                                     | 550 | 5.40                                    | 4.97   | 1.36           | 7.89             | 7.25   | 1.46           | 10.3             | 9.41   | 1.56           | 12.7             | 11.3   | 1.67           | 15.0             | 13.7   | 1.78           | 17.3             | 17.3   | 1.89           | 19.4             | 19.4   | 2.00           |
|                                                        | 625 | 5.56                                    | 5.12   | 1.39           | 8.11             | 7.45   | 1.49           | 10.6             | 9.65   | 1.59           | 13.0             | 11.5   | 1.69           | 15.3             | 13.9   | 1.79           | 17.6             | 17.6   | 1.90           | 19.7             | 19.7   | 2.00           |
|                                                        | 700 | 5.73                                    | 5.28   | 1.42           | 8.31             | 7.63   | 1.52           | 10.8             | 9.86   | 1.61           | 13.2             | 11.7   | 1.71           | 15.6             | 14.2   | 1.81           | 17.9             | 17.9   | 1.91           | 19.9             | 19.9   | 1.99           |

Multipliers for Determining the Performance With Other Indoor Sections

| Indoor Section | Size | Heating  |       | Indoor Section | Size | Heating  |       |
|----------------|------|----------|-------|----------------|------|----------|-------|
|                |      | Capacity | Power |                |      | Capacity | Power |
| 28RDS/RNS/RH   | 018  | 1.01     | 0.98  | 40YR           | 018  | 0.99     | 0.98  |
| 28RDS          | 019  | 1.02     | 1.01  |                | 024  | 1.01     | 1.01  |
| 28RDS/RNS      | 024  | 1.02     | 1.01  | 40YA           | 018  | 1.00     | 1.00  |
|                | 025  | 1.03     | 1.02  |                | 024  | 1.01     | 1.01  |
| 28SL           | 024  | 1.02     | 1.00  | 40RC           | 018  | 1.02     | 1.01  |
| 28RM           | 024  | 1.01     | 1.01  |                | 024  | 1.02     | 1.01  |
| 40DQ           | 018  | 1.01     | 0.96  | 40LT           | 024  | 1.03     | 1.02  |
|                | 024  | 1.01     | 1.01  |                |      |          |       |

|                                                        |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------------------------------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 38QR024-30 Outdoor Section With 40YA024 Indoor Section |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 65                                                     | 700 | 8.95 | 8.24 | 1.82 | 11.5 | 10.5 | 1.93 | 14.1 | 12.9 | 2.03 | 17.0 | 15.1 | 2.12 | 20.4 | 18.5 | 2.22 | 24.5 | 24.5 | 2.34 | 28.6 | 28.6 | 2.44 |
|                                                        | 800 | 9.16 | 8.42 | 1.86 | 11.7 | 10.7 | 1.96 | 14.4 | 13.1 | 2.06 | 17.3 | 15.4 | 2.15 | 20.7 | 18.9 | 2.24 | 24.9 | 24.9 | 2.35 | 29.1 | 29.1 | 2.44 |
|                                                        | 900 | 9.35 | 8.60 | 1.91 | 11.9 | 10.9 | 2.00 | 14.6 | 13.3 | 2.09 | 17.6 | 15.6 | 2.17 | 21.0 | 19.2 | 2.26 | 25.3 | 25.3 | 2.36 | 29.6 | 29.6 | 2.45 |
| 70                                                     | 700 | 8.53 | 7.85 | 1.84 | 11.1 | 10.2 | 1.95 | 13.8 | 12.5 | 2.07 | 16.7 | 14.8 | 2.17 | 19.9 | 18.1 | 2.27 | 23.9 | 23.9 | 2.39 | 27.9 | 27.9 | 2.49 |
|                                                        | 800 | 8.74 | 8.04 | 1.89 | 11.3 | 10.4 | 1.99 | 14.0 | 12.8 | 2.09 | 16.9 | 15.1 | 2.19 | 20.3 | 18.5 | 2.28 | 24.4 | 24.4 | 2.40 | 28.5 | 28.5 | 2.49 |
|                                                        | 900 | 8.93 | 8.22 | 1.93 | 11.5 | 10.6 | 2.03 | 14.2 | 13.0 | 2.13 | 17.2 | 15.3 | 2.22 | 20.6 | 18.7 | 2.30 | 24.8 | 24.8 | 2.42 | 29.0 | 29.0 | 2.50 |
| 75                                                     | 700 | 8.08 | 7.44 | 1.86 | 10.7 | 9.80 | 1.98 | 13.4 | 12.2 | 2.10 | 16.3 | 14.4 | 2.21 | 19.5 | 17.7 | 2.32 | 23.4 | 23.4 | 2.44 | 27.3 | 27.3 | 2.55 |
|                                                        | 800 | 8.29 | 7.63 | 1.91 | 10.9 | 10.0 | 2.02 | 13.6 | 12.4 | 2.13 | 16.5 | 14.7 | 2.23 | 19.8 | 18.1 | 2.33 | 23.9 | 23.9 | 2.45 | 27.9 | 27.9 | 2.55 |
|                                                        | 900 | 8.49 | 7.81 | 1.95 | 11.1 | 10.2 | 2.06 | 13.9 | 12.6 | 2.17 | 16.8 | 14.9 | 2.26 | 20.1 | 18.3 | 2.35 | 24.2 | 24.2 | 2.47 | 28.3 | 28.3 | 2.56 |

Multipliers for Determining the Performance With Other Indoor Sections

| Indoor Section | Size | Heating  |       | Indoor Section | Size | Heating  |       |
|----------------|------|----------|-------|----------------|------|----------|-------|
|                |      | Capacity | Power |                |      | Capacity | Power |
| 28RDS/RNS      | 024  | 1.00     | 0.99  | 40YR           | 024  | 0.99     | 0.99  |
|                | 030  | 1.02     | 1.03  |                | 030  | 1.00     | 1.03  |
|                | 025  | 1.00     | 0.99  | 40YA           | 024  | 1.00     | 1.00  |
| 28RM           | 024  | 0.99     | 0.98  |                | 030  | 1.00     | 1.03  |
|                | 036  | 1.00     | 1.00  | 40LT           | 024  | 1.01     | 1.01  |
| 28SL           | 024  | 0.99     | 0.98  |                | 036  | 1.02     | 1.04  |
|                | 030  | 1.00     | 1.00  | 40RC           | 024  | 1.01     | 0.99  |
| 40DQ           | 024  | 0.99     | 0.99  |                | 030  | 1.02     | 1.01  |
|                | 030  | 1.02     | 1.01  |                |      |          |       |

|                                                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 38QR030-30 Outdoor Section With 40YA030 Indoor Section |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 65                                                     | 825  | 11.1 | 10.2 | 2.10 | 14.0 | 12.8 | 2.23 | 17.0 | 15.5 | 2.36 | 20.0 | 17.8 | 2.49 | 23.5 | 21.4 | 2.62 | 27.9 | 27.9 | 2.78 | 31.7 | 31.7 | 2.89 |
|                                                        | 1000 | 11.5 | 10.6 | 2.18 | 14.4 | 13.2 | 2.29 | 17.3 | 15.8 | 2.41 | 20.5 | 18.2 | 2.53 | 24.1 | 21.9 | 2.64 | 28.5 | 28.5 | 2.78 | 32.0 | 32.0 | 2.85 |
|                                                        | 1125 | 11.7 | 10.8 | 2.23 | 14.6 | 13.4 | 2.34 | 17.6 | 16.1 | 2.45 | 20.8 | 18.5 | 2.56 | 24.4 | 22.2 | 2.67 | 28.8 | 28.8 | 2.79 | 31.8 | 31.8 | 2.83 |
| 70                                                     | 825  | 10.6 | 9.78 | 2.14 | 13.5 | 12.4 | 2.27 | 16.6 | 15.1 | 2.42 | 19.7 | 17.5 | 2.55 | 23.1 | 21.0 | 2.69 | 27.3 | 27.3 | 2.86 | 31.4 | 31.4 | 2.99 |
|                                                        | 1000 | 11.0 | 10.1 | 2.21 | 13.9 | 12.8 | 2.34 | 17.0 | 15.5 | 2.47 | 20.1 | 17.9 | 2.59 | 23.6 | 21.5 | 2.72 | 28.0 | 28.0 | 2.87 | 31.5 | 31.5 | 2.94 |
|                                                        | 1125 | 11.3 | 10.4 | 2.26 | 14.2 | 13.0 | 2.39 | 17.3 | 15.7 | 2.51 | 20.4 | 18.1 | 2.62 | 24.0 | 21.8 | 2.74 | 28.3 | 28.3 | 2.87 | 31.5 | 31.5 | 2.93 |
| 75                                                     | 825  | 10.1 | 9.34 | 2.17 | 13.0 | 12.0 | 2.32 | 16.1 | 14.7 | 2.46 | 19.3 | 17.2 | 2.61 | 22.7 | 20.6 | 2.76 | 26.8 | 26.8 | 2.94 | 30.8 | 30.8 | 3.09 |
|                                                        | 1000 | 10.5 | 9.68 | 2.24 | 13.5 | 12.4 | 2.38 | 16.6 | 15.1 | 2.52 | 19.8 | 17.5 | 2.65 | 23.2 | 21.1 | 2.79 | 27.5 | 27.5 | 2.95 | 31.3 | 31.3 | 3.05 |
|                                                        | 1125 | 10.8 | 9.90 | 2.30 | 13.7 | 12.6 | 2.43 | 16.9 | 15.4 | 2.56 | 20.0 | 17.8 | 2.69 | 23.5 | 21.4 | 2.82 | 27.9 | 27.9 | 2.97 | 31.5 | 31.5 | 3.05 |

Multipliers for Determining the Performance With Other Indoor Sections

| Indoor Section | Size | Heating  |       | Indoor Section | Size | Heating  |       |
|----------------|------|----------|-------|----------------|------|----------|-------|
|                |      | Capacity | Power |                |      | Capacity | Power |
| 28RDS/RNS      | 030  | 0.98     | 1.04  | 40YR           | 030  | 0.96     | 1.00  |
|                | 036  | 0.99     | 1.06  |                | 036  | 0.96     | 1.01  |
|                | 142  | 0.98     | 1.04  | 40YA           | 030  | 1.00     | 1.00  |
| 28RM           | 036  | 0.96     | 1.01  |                | 036  | 1.00     | 1.10  |
| 28SL           | 030  | 0.96     | 1.01  | 40DQ           | 030  | 0.99     | 1.02  |
|                | 036  | 0.99     | 1.06  |                | 036  | 0.99     | 1.06  |
| 40RC           | 030  | 0.99     | 1.00  | 40LT           | 036  |          |       |

See notes on page 14.

# Heat pump heating performance continued

| INDOOR                                                 |      | OUTDOOR COIL ENTERING AIR TEMPERATURE F |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
|--------------------------------------------------------|------|-----------------------------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|------------------|--------|----------------|
| AIR                                                    |      | - 3                                     |        |                | 7                |        |                | 17               |        |                | 27               |        |                | 37               |        |                | 47               |        |                | 57               |        |                |
| E<br>D<br>B                                            | CFM  | Capacity<br>(Kw)                        |        | Total<br>Power | Capacity<br>(Kw) |        | Total<br>Power | Capacity<br>(Kw) |        | Total<br>Power | Capacity<br>(Kw) |        | Total<br>Power | Capacity<br>(Kw) |        | Total<br>Power | Capacity<br>(Kw) |        | Total<br>Power | Capacity<br>(Kw) |        | Total<br>Power |
|                                                        |      | Total                                   | Integ† | Kw‡            | Total            | Integ† | Kw‡            | Total            | Integ† | Kw‡            | Total            | Integ† | Kw‡            | Total            | Integ† | Kw‡            | Total            | Integ† | Kw‡            | Total            | Integ† | Kw‡            |
| 38QR036-30 Outdoor Section With 40YA036 Indoor Section |      |                                         |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |                  |        |                |
| 65                                                     | 1050 | 13.4                                    | 12.3   | 2.44           | 16.9             | 15.5   | 2.58           | 20.7             | 18.9   | 2.73           | 24.8             | 22.0   | 2.87           | 29.3             | 26.7   | 3.02           | 35.1             | 35.1   | 3.22           | 40.7             | 40.7   | 3.39           |
|                                                        | 1200 | 13.7                                    | 12.6   | 2.49           | 17.3             | 15.9   | 2.63           | 21.1             | 19.2   | 2.77           | 25.1             | 22.3   | 2.90           | 29.8             | 27.1   | 3.04           | 35.7             | 35.7   | 3.22           | 41.4             | 41.4   | 3.38           |
|                                                        | 1350 | 14.0                                    | 12.8   | 2.55           | 17.6             | 16.1   | 2.68           | 21.4             | 19.5   | 2.81           | 25.5             | 22.7   | 2.94           | 30.2             | 27.5   | 3.07           | 36.2             | 36.2   | 3.24           | 42.0             | 42.0   | 3.39           |
| 70                                                     | 1050 | 12.8                                    | 11.8   | 2.48           | 16.4             | 15.1   | 2.63           | 20.2             | 18.4   | 2.78           | 24.3             | 21.6   | 2.94           | 28.8             | 26.2   | 3.10           | 34.4             | 34.4   | 3.30           | 39.9             | 39.9   | 3.48           |
|                                                        | 1200 | 13.1                                    | 12.1   | 2.53           | 16.7             | 15.4   | 2.68           | 20.6             | 18.8   | 2.82           | 24.7             | 21.9   | 2.97           | 29.3             | 26.6   | 3.12           | 35.0             | 35.0   | 3.31           | 40.6             | 40.6   | 3.48           |
|                                                        | 1350 | 13.4                                    | 12.3   | 2.59           | 17.1             | 15.7   | 2.73           | 20.9             | 19.1   | 2.87           | 25.0             | 22.2   | 3.01           | 29.7             | 27.0   | 3.15           | 35.5             | 35.5   | 3.33           | 41.2             | 41.2   | 3.48           |
| 75                                                     | 1050 | 12.2                                    | 11.2   | 2.52           | 15.8             | 14.5   | 2.67           | 19.7             | 18.0   | 2.83           | 23.8             | 21.2   | 3.01           | 28.3             | 25.7   | 3.18           | 33.8             | 33.8   | 3.39           | 39.2             | 39.2   | 3.57           |
|                                                        | 1200 | 12.5                                    | 11.5   | 2.57           | 16.2             | 14.8   | 2.72           | 20.1             | 18.3   | 2.88           | 24.2             | 21.5   | 3.04           | 28.7             | 26.1   | 3.20           | 34.4             | 34.4   | 3.40           | 39.9             | 39.9   | 3.57           |
|                                                        | 1350 | 12.8                                    | 11.8   | 2.63           | 16.5             | 15.1   | 2.78           | 20.4             | 18.6   | 2.92           | 24.6             | 21.8   | 3.08           | 29.1             | 26.5   | 3.23           | 34.8             | 34.8   | 3.42           | 40.5             | 40.5   | 3.58           |

Multipliers for Determining the Performance With Other Indoor Sections

| Indoor<br>Section | Size | Heating  |       | Indoor<br>Section | Size | Heating  |       |
|-------------------|------|----------|-------|-------------------|------|----------|-------|
|                   |      | Capacity | Power |                   |      | Capacity | Power |
| 28RDS/RNS         | 036  | 0.98     | 0.96  | 40YR              | 036  | 0.97     | 0.90  |
|                   | 042  | 0.98     | 0.96  |                   | 042  | 0.97     | 0.92  |
|                   | 142  | 0.97     | 0.94  | 40YA              | 036  | 1.00     | 1.00  |
|                   | 242  | 0.97     | 0.94  |                   | 042  | 0.99     | 0.99  |
|                   | 043  | 0.98     | 0.96  | 40LT              | 036  | 0.97     | 0.95  |
| 28RM              | 036  | 0.95     | 0.92  |                   | 048  | 0.99     | 0.99  |
| 28SL              | 036  | 0.97     | 0.95  |                   |      |          |       |
|                   | 042  | 0.97     | 0.95  |                   |      |          |       |

38QR048-31 Outdoor Section With 40YA048 Indoor Section

|    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 65 | 1550 | 16.6 | 15.3 | 2.83 | 22.7 | 20.9 | 3.21 | 28.7 | 26.1 | 3.52 | 34.8 | 30.9 | 3.81 | 41.4 | 37.7 | 4.09 | 48.9 | 48.9 | 4.40 | 56.1 | 56.1 | 4.67 |
|    | 1750 | 17.6 | 16.2 | 2.98 | 24.2 | 22.2 | 3.32 | 29.3 | 26.8 | 3.62 | 35.6 | 31.6 | 3.89 | 42.1 | 38.3 | 4.15 | 49.6 | 49.6 | 4.44 | 57.0 | 57.0 | 4.70 |
|    | 1950 | 19.2 | 17.6 | 3.12 | 24.0 | 22.0 | 3.42 | 30.4 | 27.7 | 3.72 | 36.1 | 32.1 | 3.98 | 42.7 | 38.8 | 4.23 | 50.7 | 50.7 | 4.50 | 57.8 | 57.8 | 4.74 |
| 70 | 1550 | 15.6 | 14.4 | 2.80 | 21.4 | 19.7 | 3.19 | 27.6 | 25.2 | 3.54 | 33.6 | 29.8 | 3.85 | 40.3 | 36.7 | 4.16 | 48.7 | 48.7 | 4.46 | 54.9 | 54.9 | 4.75 |
|    | 1750 | 17.2 | 15.9 | 2.92 | 22.8 | 21.0 | 3.30 | 28.3 | 25.8 | 3.64 | 34.5 | 30.6 | 3.94 | 41.0 | 37.3 | 4.22 | 48.5 | 48.5 | 4.51 | 56.6 | 56.6 | 4.79 |
|    | 1950 | 17.2 | 15.9 | 3.07 | 23.2 | 21.4 | 3.44 | 29.5 | 26.9 | 3.74 | 35.1 | 31.2 | 4.02 | 41.6 | 37.9 | 4.29 | 49.2 | 49.2 | 4.57 | 56.6 | 56.6 | 4.83 |
| 75 | 1550 | 14.6 | 13.5 | 2.75 | 19.8 | 18.2 | 3.14 | 26.4 | 24.1 | 3.54 | 32.7 | 29.0 | 3.89 | 39.1 | 35.6 | 4.20 | 46.5 | 46.5 | 4.54 | 53.6 | 53.6 | 4.85 |
|    | 1750 | 15.0 | 13.8 | 2.86 | 21.2 | 19.5 | 3.25 | 27.0 | 24.6 | 3.64 | 33.5 | 29.8 | 3.98 | 40.0 | 36.4 | 4.28 | 47.3 | 47.3 | 4.60 | 54.6 | 54.6 | 4.89 |
|    | 1950 | 16.1 | 14.8 | 3.02 | 21.9 | 20.1 | 3.41 | 28.0 | 25.6 | 3.77 | 34.2 | 30.4 | 4.06 | 40.7 | 37.0 | 4.35 | 48.6 | 48.6 | 4.66 | 55.4 | 55.4 | 4.94 |

Multipliers for Determining the Performance With Other Indoor Sections

| Indoor<br>Section | Size | Heating  |       | Indoor<br>Section | Size | Heating  |       |
|-------------------|------|----------|-------|-------------------|------|----------|-------|
|                   |      | Capacity | Power |                   |      | Capacity | Power |
| 28RDS/RNS         | 248  | 0.94     | 1.00  | 40YR              | 048  | 0.96     | 1.00  |
|                   | 148  | 0.96     | 1.03  |                   | 060  | 0.98     | 1.01  |
|                   | 057  | 0.95     | 1.03  | 40YA              | 048  | 1.00     | 1.00  |
|                   | 049  | 0.96     | 1.03  |                   | 060  | 0.99     | 1.06  |
|                   | 060  | 0.97     | 1.06  | 40LT              | 048  | 0.97     | 1.05  |
| 28RM              | 048  | 0.95     | 1.03  |                   | 060  | 0.98     | 1.07  |
| 28SL              | 049  | 0.95     | 1.03  |                   |      |          |       |
|                   | 061  | 0.97     | 1.06  |                   |      |          |       |

38QR060-30 Outdoor Section With 40YA060 Indoor Section

|    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 65 | 1750 | 18.6 | 17.1 | 3.69 | 24.9 | 22.9 | 4.07 | 31.7 | 28.9 | 4.47 | 39.2 | 34.8 | 4.87 | 47.9 | 43.6 | 5.29 | 59.0 | 59.0 | 5.80 | 70.4 | 70.4 | 6.30 |
|    | 1900 | 18.9 | 17.4 | 3.76 | 25.2 | 23.2 | 4.13 | 32.0 | 29.2 | 4.52 | 39.6 | 35.2 | 4.91 | 48.4 | 44.1 | 5.32 | 59.7 | 59.7 | 5.81 | 71.2 | 71.2 | 6.30 |
|    | 2050 | 19.2 | 17.7 | 3.82 | 25.5 | 23.5 | 4.19 | 32.4 | 29.5 | 4.57 | 40.0 | 35.5 | 4.95 | 48.9 | 44.5 | 5.35 | 60.2 | 60.2 | 5.84 | 71.9 | 71.9 | 6.31 |
|    | 2200 | 19.5 | 17.9 | 3.88 | 25.8 | 23.7 | 4.25 | 32.7 | 29.8 | 4.62 | 40.4 | 35.8 | 5.00 | 49.3 | 44.9 | 5.39 | 60.8 | 60.8 | 5.87 | 72.5 | 72.5 | 6.33 |
| 70 | 1750 | 17.6 | 16.2 | 3.71 | 24.0 | 22.0 | 4.12 | 30.9 | 28.2 | 4.54 | 38.4 | 34.1 | 4.96 | 47.0 | 42.8 | 5.41 | 57.9 | 57.9 | 5.94 | 69.0 | 69.0 | 6.46 |
|    | 1900 | 17.9 | 16.5 | 3.78 | 24.3 | 22.3 | 4.18 | 31.3 | 28.5 | 4.59 | 38.8 | 34.5 | 5.00 | 47.5 | 43.2 | 5.44 | 58.5 | 58.5 | 5.96 | 69.8 | 69.8 | 6.46 |
|    | 2050 | 18.2 | 16.8 | 3.84 | 24.6 | 22.6 | 4.24 | 31.6 | 28.8 | 4.64 | 39.2 | 34.8 | 5.05 | 48.0 | 43.6 | 5.47 | 59.1 | 59.1 | 5.98 | 70.5 | 70.5 | 6.47 |
|    | 2200 | 18.5 | 17.0 | 3.91 | 25.0 | 22.9 | 4.30 | 31.9 | 29.1 | 4.70 | 39.5 | 35.1 | 5.10 | 48.4 | 44.0 | 5.51 | 59.6 | 59.6 | 6.01 | 71.1 | 71.1 | 6.49 |
| 75 | 1750 | 16.6 | 15.2 | 3.73 | 22.9 | 21.1 | 4.16 | 30.0 | 27.4 | 4.59 | 37.6 | 33.4 | 5.05 | 46.0 | 41.9 | 5.52 | 56.7 | 56.7 | 6.07 | 67.7 | 67.7 | 6.61 |
|    | 1900 | 16.9 | 15.5 | 3.79 | 23.3 | 21.4 | 4.22 | 30.4 | 27.7 | 4.65 | 38.0 | 33.7 | 5.09 | 46.5 | 42.4 | 5.55 | 57.3 | 57.3 | 6.09 | 68.5 | 68.5 | 6.62 |
|    | 2050 | 17.1 | 15.8 | 3.86 | 23.6 | 21.7 | 4.28 | 30.8 | 28.1 | 4.71 | 38.4 | 34.1 | 5.14 | 47.0 | 42.8 | 5.59 | 57.9 | 57.9 | 6.12 | 69.2 | 69.2 | 6.63 |
|    | 2200 | 17.4 | 16.0 | 3.92 | 23.9 | 22.0 | 4.34 | 31.1 | 28.4 | 4.76 | 38.7 | 34.4 | 5.19 | 47.4 | 43.2 | 5.63 | 58.5 | 58.5 | 6.15 | 69.8 | 69.8 | 6.65 |

Multipliers for Determining the Performance With Other Indoor Sections

| Indoor<br>Section | Size | Heating  |       | Indoor<br>Section | Size | Heating  |       |
|-------------------|------|----------|-------|-------------------|------|----------|-------|
|                   |      | Capacity | Power |                   |      | Capacity | Power |
| 28RDS/RNS         | 061  | 0.97     | 1.04  | 40YR              | 060  | 0.97     | 1.01  |
|                   | 057  | 0.95     | 1.01  |                   | 40YA | 060      | 1.00  |
| 28SL              | 061  | 0.99     | 1.09  | 40LT              | 060  | 0.97     | 1.06  |

†The Btuh heating capacity values shown are net "integrated" values from which the defrost effect has been subtracted. The Btuh heating from supplement heaters should be added to those values to obtain total system capacity.

‡The kw values include the compressor, outdoor fan motor, and indoor blower motor. The kw from supplement heaters should be added to these values to obtain total system kilowatts.

EDB = Entering Dry Bulb.

## System Design

1. Minimum outdoor operating air temperature for cooling mode without low ambient operation accessory is 55 F (12.8 C).
2. Maximum outdoor operating air temperature for cooling mode is 125 F (51.7 C).
3. Minimum outdoor operating air temperature for heating mode is -30 F (-34.4 C).
4. Maximum outdoor operating air temperature for heating mode is 66 F (18.9 C).
5. For reliable operation, unit should be level in all horizontal planes.
6. Maximum elevation of indoor coil above or below base of outdoor unit is: indoor coil above = 50 ft, indoor coil below = 150 ft. (See items 7 and 8 following.)
7. For interconnecting refrigerant tube lengths greater than 50 ft. consult Long-Line Application Guideline available from equipment distributor.
8. Not more than 36 in. of refrigerant tube should be buried in the ground. If necessary to bury tubes under a sidewalk, provide a minimum 6-in. vertical rise to the valve connections at the unit.
9. Use only copper wire for electric connection at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.
10. Mismatches of indoor coil capacity more than one size larger than outdoor unit capacity may result in inadequate indoor comfort.

## Matched systems

