Product Data

Packaged Air-Handling Units

21-106 kW, 50 Hz

ecoblue™ technology

40RFA 07-12 (Direct Expansion)
40RUA 14-30 (Direct Expansion)
Packaged Air Handling Units with Puron® Refrigerant

Features/Benefits

40RF/40RU Series air-handling units are the best choice for packaged air handlers. Model 40RFA/40RUA units have direct-expansion coils. Additionally, 40RF units come with EcoBlue™ Fan Technology. All models offer excellent fan performance, a unique combination of indoor air quality features, and easy installation. Their versatility and state-of-the-art features provides economical performance.

Carrier's easy-to install and economical 40RF/40RU units provide reliable service and versatile packaged air-handling units satisfy design requirements with:

- Multi-position design for horizontal or vertical installation without modification.
- Standard sloped drain pans and cleanable insulation treated with an immobilized anti-microbial agent to inhibit the growth of bacteria and fungi on the insulation.
- High-static design meets a wider range of applications than competitive packaged air handler lines.
- Economizer accessory provides ventilation air and "free" cooling capabilities.
- Cooling coils with mechanically bonded fins provide peak heat transfer.
- Hot water coil, steam coil, and electric heat accessories are available.
- Standard factory-installed thermostatic expansion valves (TXV) with removable power element on 40RFA/40RUA units.
- Die-formed galvanized steel casings provide durability and structural integrity. Optional paint is available.
- Upgraded unit control board with intuitive indoor fan adjustment.

Indoor air quality features

The unique combination of features in the 40RF/40RU Series air handlers ensures that clean, fresh, conditioned air is delivered to the occupied space.

Cooling coils prevent the build-up of humidity in the room, even during part-load conditions. Unit sizes 35 kW (10 tons) and above feature dual-circuit face-split coils.

Standard 51 mm (2 in.) disposable filters remove dust and airborne particles from the occupied space for cleaner air.

The pitched, non-corroding drain pan can be adjusted for a right-hand or left-hand connection to suit many applications and provide positive drainage and prevent standing condensate.

The economizer accessory precisely controls the blend of outdoor air and room air to achieve comfort levels. When the outside air is suitable, outside air dampers can fully open to provide "free" cooling. When used in conjunction with CO_2 sensors, the economizer admits fresh outdoor air to replace stale, recirculated indoor air.

Economy

The 40RF/40RU Series packaged air handlers have low initial costs, and they continue to save money by providing reduced installation expense and energy-efficient performance.

Quick installation is ensured by the multi-position design. Units can be installed in either the horizontal or vertical (upflow) configuration without modifications.

Fan motors and contactors are pre-wired and TXVs are factory-installed on 40RF/40RU models.

High-efficiency, precision balanced fans minimize air turbulence, surging, and unbalanced operation, thereby cutting operating expenses.

Rugged dependability

Die-formed galvanized steel panels ensure structural integrity under all operating conditions. Mechanically bonded coil fins provide improved heat transfer. Galvanized steel fan housings are securely mounted to a die-formed galvanized steel deck.

Rugged pillow-block bearings (40RU sizes 14-30) are securely fastened to the solid steel fan shaft with split collets and clamp locking devices. 40RF units (sizes 07-12) have spider-type bearings.

These units have thermal insulation containing an immobilized anti-microbial agent to inhibit the growth of bacteria and fungi on the insulation.

Coil flexibility

Model 40RF/40RU air handling units have galvanized steel casings; inlet and outlet connections are on the same end.

Direct-expansion (DX) coils are designed for use with Puron® R-410A refrigerant and have copper tubes mechanically bonded to aluminum sine-wave fins.

Direct-expansion coils include matched, factory-installed thermostatic expansion valves (TXVs) with matching distributor nozzles.

Table of contents

Features/Benefits (cont)

Easier installation and service

For 40RF units with the new EcoBlue™ Vane Axial fan system, there is no longer a need to adjust belts or pulleys as in past designs. This frees up maintenance and installation time.

The multi-position design and component layout allow for quick unit installation and operation. The DX coils have factory-installed TXVs with matching distributor nozzles. Units can be converted from horizontal to vertical operation by simply repositioning the unit. Simple, fast plug-in connections to the standard integrated unit control board (UCB). Clearly labeled connection points to reduce installation time. Also, a large control box provides room to work and room to mount Carrier accessory controls.

Drain pan connections are duplicated on both sides of the unit. The filters, motor, drive, TXVs, and coil connections are easily accessed by removing a single side panel.

EcoBlue™ Technology

Direct drive EcoBlue Technology indoor fan system uses Vane Axial fan design and electrically commutated motors on 40RF units.

This new Vane Axial design over past belt drive systems has 75% fewer moving parts, uses up to 40% less energy and has no fan belts, blower bearings and shaft.

Easy to use

The newly re-designed Unit Control Board by Carrier puts all connections and troubleshooting points in one convenient place. Most low voltage connections are made to the same board and make it easy to access it. Setting up the fan is simple by an intuitive switch and rotary dial arrangement.

Model number nomenclature

40RF-7-12 — 18.3 kW to 29.1 kW — Model Number Nomenclature

Position:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Example:	4	0	R	F	A	A	1	2	A	2	A	9	–	0	A	0	A	0

Model Type
40RF = Vane Axial Fan Packaged Air-Handling Unit with Puron® R-410A Refrigerant

Type of Coil
A = Standard 4 Row DX

Refrigeration Options
A = None

Nominal Kilowatts (Tonage)
07 = 18.3 kW (5.2 Ton)
08 = 23.2 kW (6.6 Ton)
12 = 29.1 kW (8.3 Ton)

Factory Assigned
A = Standard

Indoor Fan Motor Options — ECM Motor
2 = Medium Static
3 = High Static

Coil Options
A = Standard Aluminum Fin/Copper Tube

Packaging
0 = Standard

Future Use
A = Standard

Cabinet Paint
0 = None
1 = Painted

Future Use
A = Standard

Control Box
0 = Standard

Design Revision
– = Factory Design Revision

Voltage
9 = 400-3-50

Model number nomenclature (cont)

40RU-14-16 — 35.2 kW to 45.8 kW — Model Number Nomenclature

Position:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Example:	4	0	R	U	A	A	1	4	A	1	A	9	–	0	A	0	A	0

Model Type
40RU = Packaged Air-Handling Unit with Puron® R-410A Refrigerant

Type of Coil
A = Standard 4 Row DX

Refrigeration Options
A = None

Nominal Kilowatts (Tonage)
14 = 35.2 kW (10.0 Ton)
16 = 45.8 kW (12.5 Ton)

Factory Assigned
A = Standard

Indoor Fan Motor Options – Belt Drive
1 = Standard Motor / Standard Drive
2 = Standard / Alternate Motor / Medium Drive
3 = High Motor / High Drive

Coil Options
A = Standard Aluminum Fin / Copper Tube

Voltage
9 = 400-3-50

Design Revision
– = Factory Design Revision

Control Box
0 = Standard

Future Use
A = Standard

Cabinet Paint
0 = None
1 = Painted

Future Use
A = Standard

Packaging
0 = Standard

40RU-25-30 — 59.2 kW to 106 kW — Model Number Nomenclature

Position:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Example:	4	0	R	U	A	A	2	5	A	1	A	9	–	0	A	0	A	0

Model Type
40RU = Carrier Fan Coil Puron® R-410A Refrigerant

Type of Coil
A = Standard DX Coil

Refrigerant Options
A = None

Nominal Kilowatts (Tonnage)
25 = 59.2 kW (15.0 Tons)
28 = 67.9 kW (20.0 Tons)
30 = No combined ratings available with 38AUD condenser. 106 kW nominal.

Factory Assigned
A = Standard

IndoorFanOptions
1 = Standard Motor, Standard Drive
2 = Standard / Alternate Motor, Medium Drive
3 = High Motor, High Drive

CoilOptions
A = Al/Cu

Voltage
9 = 400-3-50

Design Revision
– = Factory Design Revision

Control Box
0 = Standard

Future Use
A = Standard

Cabinet Paint
0 = None
1 = Painted

Future Use
A = Standard

Packaging
0 = Standard

Physical data

40RF/40RU 18.3-35.2 kW Direct Expansion with Puron Refrigerant Units

UNIT	40RFAA07	40RFAA08	40RFAA12	40RUAA14
NOMINAL CAPACITY (kW [tons])	18.3 [5.2]	23.2 [6.6]	29.1 [8.3]	35.2 [10.0]
OPERATING WEIGHT (kg [lb])				
Base Unit with TXV — 4 Row	181 [399]	183 [404]	193 [425]	315 [695]
Plenum	79 [175]	79 [175]	79 [175]	102 [225]
Economizer	84 [185]	84 [185]	84 [185]	154 [340]
Hot Water Coil[a]	89 [195]	89 [195]	89 [195]	129 [285]
Steam Coil[a]	98 [215]	98 [215]	98 [215]	154 [340]
FANS				
Qty / Diam. (mm [in.])	1 / 584 [23]	1 / 584 [23]	1 / 584 [23]	2 / 381 [15]
Nominal Airflow (L/s [cfm])	1133 [2400]	1416 [3000]	1888 [4000]	2360 [5000]
Airflow Range (L/s [cfm])	850-1416 [1800-3000]	1062-1770 [2250-3750]	1416-2360 [3000-5000]	1770-2950 [3750-6250]
Nominal Motor HP (Standard Motor)[b,c]	2.4	2.4	2.4	2.9
Motor Speed (rps [rpm])	28 [1667]	28 [1667]	28 [1667]	24 [1425]
REFRIGERANT[d]	Puron® R-410A	Puron® R-410A	Puron® R-410A	Puron® R-410A
Shipping charge (kg [lb])	Nitrogen Purge	Nitrogen Purge	Nitrogen Purge	Nitrogen Purge
Metering Device	TXV	TXV	TXV	TXV
Operating Charge (kg [lb]) (approx per circuit)	1.4 [3.0]	1.4 [3.0]	0.7/0.7 [1.5/1.5]	0.9/0.9 [2.0/2.0]
DIRECT-EXPANSION COIL	Enhanced Copper Tubes, Aluminum Sine-Wave Fins			
Max Working Pressure (kPa [psig])	4482 [650]	4482 [650]	4482 [650]	4482 [650]
Material	Al / Cu	Al / Cu	Al / Cu	Al / Cu
Coil Type	RTPF	RTPF	RTPF	RTPF
Face Area (m^2 [ft^2])	0.62 [6.67]	0.77 [8.33]	0.93 [10.01]	1.23 [13.25]
No. of Splits	1	1	2	2
Split Type...Percentage	—	—	Face...50/50	Face...50/50
No. of Circuits per Split	12	15	9	12
Rows / Fins/in.	4 / 15	4 / 15	4 / 15	4 / 15
STEAM COIL[a]				
Max Working Press. (kPa at 127°C [psig at 260°F])	138 [20]	138 [20]	138 [20]	138 [20]
Total Face Area (m^2 [ft^2])	0.62 [6.67]	0.62 [6.67]	0.62 [6.67]	1.24 [13.33]
Rows / Fins/in.	1 / 9	1 / 9	1 / 9	1 / 10
HOT WATER COIL[a]				
Max Working Pressure (kPa [psig])	1034 [150]	1034 [150]	1034 [150]	1034 [150]
Total Face Area (m^2 [ft^2])	0.62 [6.67]	0.62 [6.67]	0.62 [6.67]	1.24 [13.33]
Rows / Fins/in.	2 / 8.5	2 / 8.5	2 / 8.5	2 / 8.5
Water Volume				
(L [gal])	31.4 [8.3]	31.4 [8.3]	31.4 [8.3]	52.6 [13.9]
(m^3 [ft^3])	0.031 [1.1]	0.031 [1.1]	0.031 [1.1]	0.052 [1.85]
PIPING CONNECTIONS				
Quantity / Size (in.)				
DX Coil—Suction (ODF)	1 / 1-1/8	1 / 1-1/8	2 / 1-1/8	2 / 1-1/8
DX Coil — Liquid Refrig, (ODF)	1 / 5/8	1 / 5/8	2 / 5/8	2 / 5/8
Steam Coil, In (MPT)	1 / 2-1/2	1 / 2-1/2	1 / 2-1/2	1 / 2-1/2
Steam Coil, Out (MPT)	1 / 1-1/2	1 / 1-1/2	1 / 1-1/2	1 / 1-1/2
Hot Water Coil, In (MPT)	1 / 1-1/2	1 / 1-1/2	1 / 1-1/2	1 / 2
Hot Water Coil, Out (MPT)	1 / 1-1/2	1 / 1-1/2	1 / 1-1/2	1 / 2
Condensate (PVC)	1 / 5/8 ODM / 1 1/4 IDF	1 / 5/8 ODM / 1 1/4 IDF	1 / 5/8 ODM / 1 1/4 IDF	1 / 5/8 ODM / 1 1/4 IDF
FILTERS	Throwaway — Factory-Supplied	Throwaway — Factory-Supplied	Throwaway — Factory-Supplied	Throwaway — Factory-Supplied
Quantity / Size (mm [in.])	4 / 406 x 610 x 51 [16 x 24 x 2]	4 / 406 x 610 x 51 [16 x 24 x 2]	4 / 406 x 610 x 51 [16 x 24 x 2]	4 / 406 x 508 x 51 [16 x 20 x 2] 4 / 406 x 610 x 51 [16 x 24 x 2]
Access Location	Right or Left Side	Right or Left Side	Right or Left Side	Right or Left Side

NOTE(S):

a. Field-installed accessory only.
b. 40RF units are medium static option.
c. Refer to Alternate Fan Motor Data table for alternate motor data (page 7).
d. Units are shipped without refrigerant charge.

Physical data (cont)

40RU 45.8-106 kW Direct Expansion with Puron Refrigerant Units

UNIT	40RUAA16	40RUAA25	40RUAA28	40RUAA30
NOMINAL CAPACITY (kW [tons])	45.8 [12.5]	59.2 [15.0]	67.9 [20.0]	106 [30]
OPERATING WEIGHT (kg [lb])				
Base Unit with TXV — 4 Row	323 [713]	331 [730]	476 [1050]	482 [1062]
Plenum	102 [225]	102 [225]	147 [325]	147 [325]
Economizer	154 [340]	154 [340]	154 [340]	154 [340]
Hot Water Coil[a]	129 [285]	129 [285]	156 [345]	156 [345]
Steam Coil[a]	154 [340]	154 [340]	184 [405]	184 [405]
FANS				
Qty / Diam. (mm [in.])	2 / 381 [15]	2 / 381 [15]	2 / 457 [18]	2 / 457 [18]
Nominal Airflow (L/s [cfm])	2832 [6000]	3775 [8000]	4719 [10000]	5663 [12000]
Airflow Range (L/s [cfm])	2124-3539 [4500-7500]	2832-4719 [6000-10,000]	3539-5899 [7500-12,500]	4247-7079 [9000-15,000]
Nominal Motor HP (Standard Motor)[b]	3.7	5.0	7.5	10.0
Motor Speed (rps [rpm])	24 [1425]	24 [1460]	24 [1465]	24 [1465]
REFRIGERANT[c]	Puron® R-410A	Puron® R-410A	Puron® R-410A	Puron® R-410A
Shipping charge (kg [lb])	Nitrogen Purge	Nitrogen Purge	Nitrogen Purge	Nitrogen Purge
Metering Device	TXV	TXV	TXV	TXV
Operating Charge (kg [lb]) (approx per circuit)	1.1/1.1 [2.5/2.5]	1.6/1.6 [3.5/3.5]	2.0/2.0 [4.5/4.5]	2.3/2.3 [5.0/5.0]
DIRECT-EXPANSION COIL				
Max Working Pressure (kPa [psig])	4482 [650]	4482 [650]	4482 [650]	4482 [650]
Material	Al / Cu	Al / Cu	Al / Cu	Al / Cu
Coil Type	RTPF	RTPF	RTPF	RTPF
Face Area (m^2 [ft^2])	1.64 [17.67]	1.85 [19.88]	2.31 [24.86]	2.77 [29.83]
No. of Splits	2	2	2	2
Split Type...Percentage	Face...50/50	Face...50/50	Face...50/50	Face...50/50
No. of Circuits per Split	16	18	20	24
Rows / Fins/in.	4 / 15	4 / 15	4 / 15	4 / 15
STEAM COIL[a]				
Max Working Press. (kPa at 127°C [psig at 260°F])	138 [20]	138 [20]	138 [20]	138 [20]
Total Face Area (m^2 [ft^2])	1.24 [13.33]	1.24 [13.33]	1.39 [15.0]	1.39 [15.0]
Rows / Fins/in.	1 / 10	1 / 10	1 / 10	1 / 10
HOT WATER COIL[a]				
Max Working Pressure (kPa [psig])	1034 [150]	1034 [150]	1034 [150]	1034 [150]
Total Face Area (m^2 [ft^2])	1.24 [13.33]	1.24 [13.33]	1.39 [15.0]	1.39 [15.0]
Rows / Fins/in.	2 / 8.5	2 / 8.5	2 / 12.5	2 / 12.5
Water Volume				
(L [gal])	52.6 [13.9]	52.6 [13.9]	54.1 [14.3]	54.1 [14.3]
(m^3 [ft^3])	0.052 [1.85]	0.052 [1.85]	0.054 [1.90]	0.054 [1.90]
PIPING CONNECTIONS				
Quantity / Size (in.)				
DX Coil—Suction (ODF)	2 / 1-1/8	2 / 1-1/8	2 / 1-3/8	2 / 1-3/8
DX Coil — Liquid Refrig, (ODF)	2 / 5/8	2 / 5/8	2 / 5/8	2 / 5/8
Steam Coil, In (MPT)	1 / 2-1/2	1 / 2-1/2	1 / 2-1/2	1 / 2-1/2
Steam Coil, Out (MPT)	1 / 1-1/2	1 / 1-1/2	1 / 1-1/2	1 / 1-1/2
Hot Water Coil, In (MPT)	1 / 2	1 / 2	1 / 2	1 / 2
Hot Water Coil, Out (MPT)	1 / 2	1 / 2	1 / 2	1 / 2
Condensate (PVC)	1 / 5/8 ODM / 1 1/4 IDF	1 / 5/8 ODM / 1 1/4 IDF	1 / 5/8 ODM / 1 1/4 IDF	1 / 5/8 ODM / 1 1/4 IDF
FILTERS	Throwaway — Factory-Supplied	Throwaway — Factory-Supplied	Throwaway — Factory-Supplied	Throwaway — Factory-Supplied
Quantity / Size (mm [in.])	4 / 406 x 508 x 51 [16 x 20 x 2] 4 / 406 x 610 x 51 [16 x 24 x 2]	4 / 406 x 508 x 51 [16 x 20 x 2] 4 / 406 x 610 x 51 [16 x 24 x 2]	4 / 508 x 610 x 51 [20 x 24 x 2] 4 / 508 x 635 x 51 [20 x 25 x 2]	4 / 508 x 610 x 51 [20 x 24 x 2] 4 / 508 x 635 x 51 [20 x 25 x 2]
Access Location	Right or Left Side	Right or Left Side	Right or Left Side	Right or Left Side

NOTE(S):

a. Field-installed accessory only.
b. Refer to Alternate Fan Motor Data table for alternate motor data (page 7).
c. Units are shipped without refrigerant charge.

Physical data (cont)

Standard Static Drive Data

UNIT	40RUA14	40RUA16	40RU25	40RUA28	40RUA30
MOTOR DRIVE					
Motor Pulley Pitch Diameter (mm [in.])	71.1-96.5 [2.8-3.8]	71.1-96.5 [2.8-3.8]	94.0-119.4 [3.7-4.7]	109.2-134.6 [4.3-5.3]	109.2-134.6 [4.3-5.3]
Pulley Factory Setting Full Turns Open	2.5	2.5	3.0	3.0	3.0
FAN DRIVE					
Pulley Pitch Dia (mm [in.])	228.6 [9.0]	228.6 [9.0]	238.8 [9.4]	279.4 [11.0]	279.4 [11.0]
Pulley Bore (mm [in.])	36.5 [1-7/16]	36.5 [1-7/16]	36.5 [1-7/16]	49.2 [1-15/16]	49.2 [1-15/16]
Belt No. — Section	1—A	1—A	1—B	2—B[a]	2—B[a]
Belt Pitch (mm [in.])	1074.4 [42.3]	1074.4 [42.3]	1061.7 [41.8]	(2) 1087.1 [42.8] (2) 1112.5 [43.8]	(2) 1087.1 [42.8] (2) 1112.5 [43.8]
FAN SPEEDS (rps [rpm])					
Factory Settings	10.5 [632]	10.5 [632]	12.9 [771]	12.5 [752]	12.5 [752]
Range	9.0-12.1 [537-728]	9.0-12.1 [537-728]	11.3-14.4 [679-863]	11.4-14.0 [682-841]	11.2-13.9 [674-831]
Max Allowable Speed (rps [rpm])	20 [1200]	20 [1200]	20 [1200]	18 [1100]	18 [1100]
Change per 1/2 turn of Movable Motor Pulley Flange	19.1	19.1	15.3	13.1	13.1
MAX FULL TURNS FROM CLOSED POSITION	5	5	6	6	6
SHAFTS CENTER DISTANCE (mm [in.])	265.18-312.93 [10.44-12.32]	265.18-312.93 [10.44-12.32]	231.65-279.15 [9.12-10.99]	169.42-239.52 [6.67-9.43]	169.42-239.52 [6.67-9.43]

NOTE(S):

a. Four belts shipped with unit. Use correct set of 2 belts sized according to the pulley setting.

Medium Static Drive Data

UNIT	40RUA14	40RUA16	40RUA25	40RUA28	40RUA30
MOTOR DRIVE					
Motor Pulley Pitch Diameter (mm [in.])	86.4-111.8 [3.4-4.4]	94.0-119.4 [3.7-4.7]	109.2-134.6 [4.3-5.3]	109.2-134.6 [4.3-5.3]	109.2-134.6 [4.3-5.3]
Pulley Factory Setting Full Turns Open	2.5	3.0	3.0	3.0	3.0
FAN DRIVE					
Pulley Pitch Dia (mm [in.])	208.3 [8.2]	218.4 [8.6]	238.8 [9.4]	238.8 [9.4]	238.8 [9.4]
Pulley Bore (mm [in.])	36.5 [1-7/16]	36.5 [1-7/16]	36.5 [1-7/16]	49.2 [1-15/16]	49.2 [1-15/16]
Belt No. — Section	1—A	1—B	1—B	2—B[a]	2—B[a]
Belt Pitch (mm [in.])	1049.0 [41.3]	1061.7 [41.8]	1061.7 [41.8]	(2) 985.5 [38.8] (2) 1010.9 [39.8]	(2) 985.5 [38.8] (2) 1010.9 [39.8]
FAN SPEEDS (rps [rpm])					
Factory Setting	13.7 [820]	14.0 [842]	14.7 [881]	14.7 [881]	14.7 [881]
Range	11.9-15.4 [715-926]	12.4-15.7 [742-943]	13.3-16.4 [798-984]	13.3-16.4 [798-984]	13.3-16.4 [798-984]
Max Allowable Speed (rps [rpm])	20 [1200]	20 [1200]	20 [1200]	18 [1100]	18 [1100]
Change per 1/2 Turn of Movable Motor Pulley Flange	21.1	16.7	15.3	15.3	15.3
MAX FULL TURNS FROM CLOSED POSITION	5	6	6	6	6
SHAFTS CENTER DISTANCE (mm [in.])	265.18-312.93 [10.44-12.32]	265.18-312.93 [10.44-12.32]	232.66-279.15 [9.16-10.99]	169.42-239.52 [6.67-9.43]	169.42-239.52 [6.67-9.43]

NOTE(S):

a. Four belts shipped with unit. Use correct set of 2 belts sized according to the pulley setting.

Physical data (cont)

High Static Drive Data

UNIT	40RUA14	40RUA16	40RUA25	40RUA28	40RUA30
MOTOR DRIVE					
Motor Pulley Pitch Diameter (mm [in.])	94.0-119.4 [3.7-4.7]	109.2-134.6 [4.3-5.3]	109.2-134.6 [4.3-5.3]	109.2-134.6 [4.3-5.3]	109.2-134.6 [4.3-5.3]
Pulley Factory Setting Full Turns Open	3.0	3.0	3.0	3.0	3.0
FAN DRIVE					
Pulley Pitch Dia (mm [in.])	188.0 [7.4]	200.7 [7.9]	188.0 [7.4]	218.4 [8.6]	218.4 [8.6]
Pulley Bore (mm [in.])	36.5 [1-7/16]	36.5 [1-7/16]	36.5 [1-7/16]	49.2 [1-15/16]	49.2 [1-15/16]
Belt No. — Section	1—B	1—B	2—B	2—B	2—B
Belt Pitch (mm [in.])	1010.9 [39.8]	1010.9 [39.8]	934.7 [36.8]	960.1 [37.8]	960.1 [37.8]
FAN SPEEDS (rps [rpm])					
Factory Setting	16.3 [979]	17.7 [1060]	18.6 [1118]	17.1 [1024]	17.1 [1024]
Range	14.6-18.3 [873-1096]	15.8-19.5 [950-1171]	16.9-20.0 [1014-1200][a]	14.6-17.9 [873-1075]	14.6-17.9 [873-1075]
Max Allowable Speed (rps [rpm])	20 [1200]	20 [1200]	20 [1200]	18 [1100]	18 [1100]
Change per 1/2 Turn of Movable Motor Pulley Flange	19.4	18.4	19.4	16.7	16.7
MAX FULL TURNS FROM CLOSED POSITION	6	6	6	6	6
SHAFTS CENTER DISTANCE (mm [in.])	265.18-312.93 [10.44-12.32]	232.66-279.15 [9.16-10.99]	207.26-254.51 [8.16-10.02]	169.42-239.52 [6.67-9.43]	169.42-239.52 [6.67-9.43]

NOTE(S):

a. It is possible to adjust drive so that fan speed exceeds maximum allowable. DO NOT exceed 20 rps [1200 rpm].

Options and accessories

ITEM	FACTORY-INSTALLED OPTION	FIELD-INSTALLED ACCESSORY
Alternate Drive (40RU only)	X	
Alternate Fan Motor (40RU only)	X	
CO_2 Sensors		X
Condensate Drain Trap		X
Discharge Duct Adapter (40RF only)		X
Discharge Plenum		X
EconoMi$er IV Standard Leak		X
EconoMi$er X Ultra Low Leak —FDD		X
Electric Heater		X
Enthalpy Control		X
Floor Mount Base		X
Hot Water Heating Coils (2 row)		X
Overhead Suspension Package		X
Pre-Painted Units	X	
Programmable Thermostats		X
Return-Air Grille		X
Staged Air Volume (SAV™) System (40RF only)	X	
Steam Heating Coil (1 row)		X
Subbase		X

Factory-installed options

Alternate fan motors and drives (40RU only)

Alternate fan motors and drives are available to provide the widest possible range of performance.

Pre-painted steel units

Pre-painted units are available from the factory for applications that require painted units. Units are painted with American Sterling Gray color.

Staged Air Volume (SAV™) system (40RF only)

Our SAV units (available on the 40RF only) will automatically adjust the indoor fan motor speed in sequence with the unit's cooling operation. Per ASHRAE 90.1 2010 standard section 6.4.3.10.b, during the first stage of cooling operation, the fan motor (controlled by ECM) will adjust to provide two-thirds of the total cfm established for the unit. When a call for the second stage of cooling is required, the fan motor will allow the total cfm (100%) established for the unit. During the heating mode the fan motor will allow total design cfm (100%) operation and during the ventilation mode the fan motor will allow operation to two-thirds of total cfm.

Field-installed accessories

Two-row hot water coils

Two-row hot water coils have copper tubes mechanically bonded to aluminum plate fins and non-ferrous headers.

One-row steam coil

One-row steam coils have copper tubes and aluminum fins. The Inner Distributing Tube (IDT) design provides uniform temperatures across the coil face. The steam coil has a broad operating pressure range; up to 138 kPa (20 psi) at 126°C (260°F). The IDT steam coils are especially suited to applications where sub-freezing air enters the unit.

Electric heater

Electric heaters are available as factory-supplied, field-installed accessories for nominal 400-v, 3-phase, 50 Hz units. Electric heaters are ETL (U.S.A.) and ETL, Canada, agency-approved. They have single-point power wiring. The heater assembly includes contactors with 24-v coils, power wiring, 24- v control wiring terminal blocks, and a hinged access panel. Electric heaters should not be used with an air discharge plenum.

Economizers — temperature dry bulb controlled

Provides ventilation air and provides "free" cooling if the outside ambient temperature and humidity are suitable. The economizer can also be used in conjunction with Carrier Comfort System thermostats and CO_2 sensors to help meet indoor air quality requirements. The economizer can be used in both vertical and horizontal positions. The standard economizer accessory comes with gear driven damper blades and a W7212 controller (use p/n HH57AC078 sensor for enthalpy control).

Discharge plenum

Discharge plenum directs the air discharge directly into the occupied space; integral horizontal and vertical louvers enable redirection of airflow. This accessory is available unpainted or painted. Field assembly is required (only applicable for vertical application).

Return-air grille

The return-air grille provides a protective barrier over the return-air opening and gives a finished appearance to units installed in the occupied space. This accessory is available unpainted or painted.

Subbase

The subbase provides a stable, raised platform and room for condensate drain trap connection for vertical floor-mounted units. This accessory is available unpainted or painted.

Overhead suspension package

The overhead suspension package includes necessary brackets to support units in horizontal ceiling installations.

CO_2 sensors

CO_2 sensors can be used in conjunction with the economizer accessory to help meet indoor air quality requirements. The sensor signals the economizer to open when the CO_2 level in the space exceeds the set point. A Carrier Comfort System programmable thermostat can be used to override the sensor if the outside-air temperature is too high or too low.

Condensate drain trap

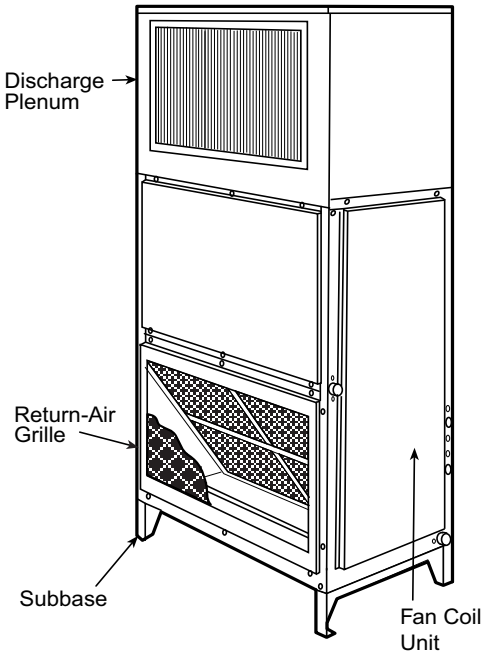
The condensate drain trap includes an overflow shutoff switch that can be wired to turn off the unit if the trap becomes plugged. Kit also includes a wire harness that can be connected to an alarm if desired. The transparent trap is designed for easy service and maintenance.

Discharge duct adapter

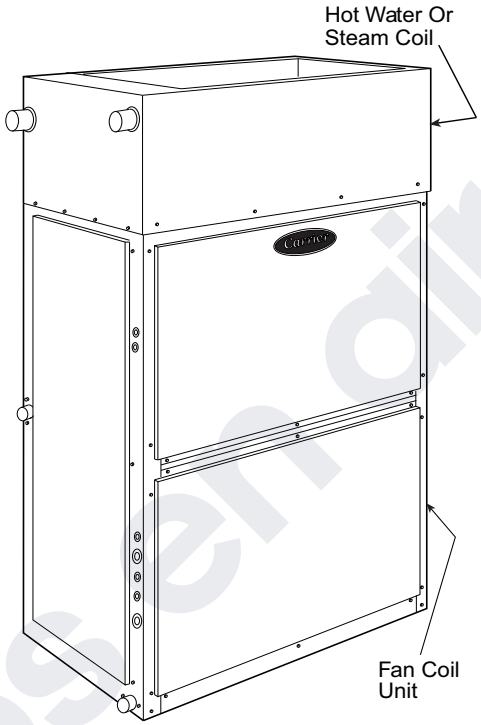
This accessory is required for replacements using 40RF units with or without electric heat. It is not required for new installations or when using steam coil, hot water coil, or discharge plenum accessories.

Options and accessories (cont)

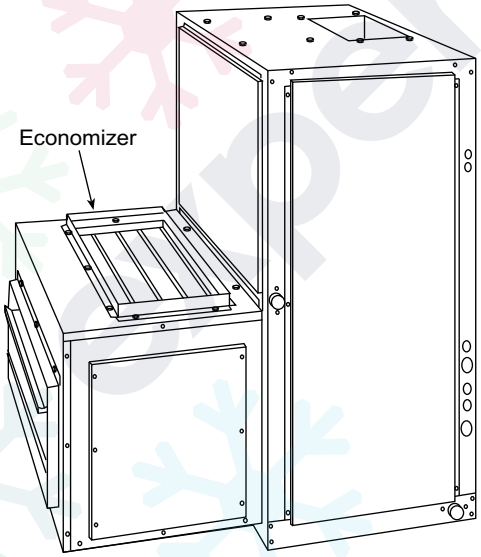
40RF/40RU with Discharge Plenum Return-Air Grille and Subbase



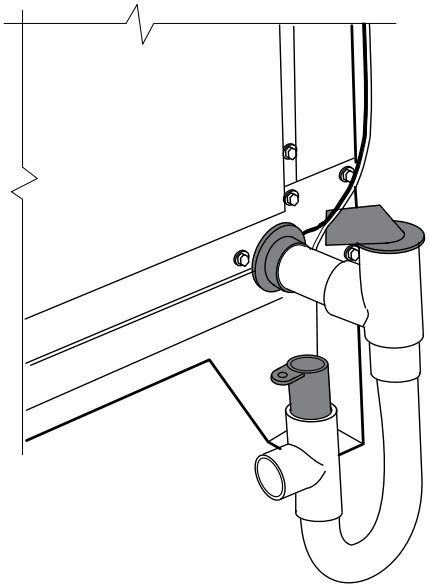
40RF/40RU with Hot Water or Steam Coil



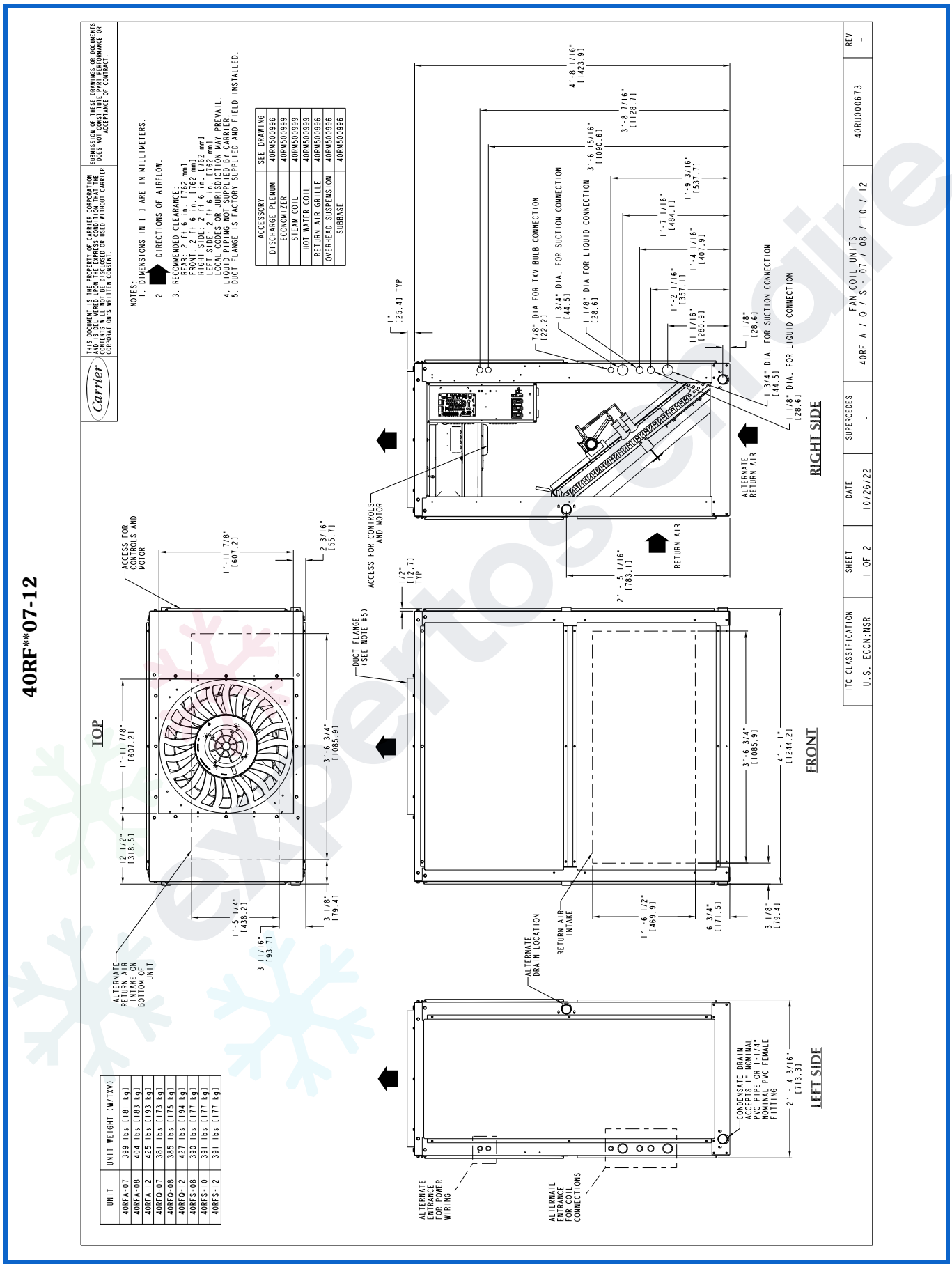
40RF/40RU with Economizer



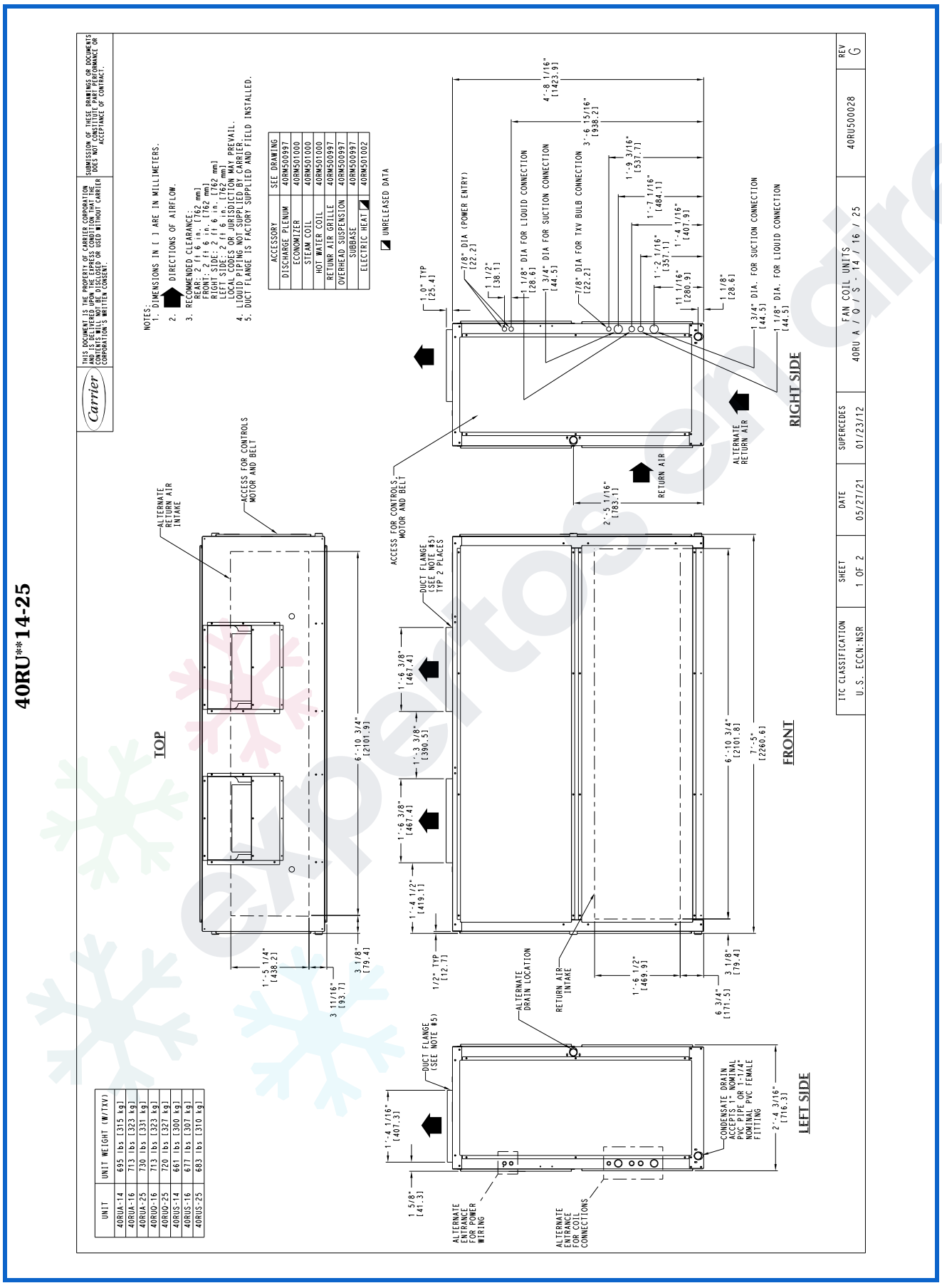
40RF/40RU with Condensate Trap



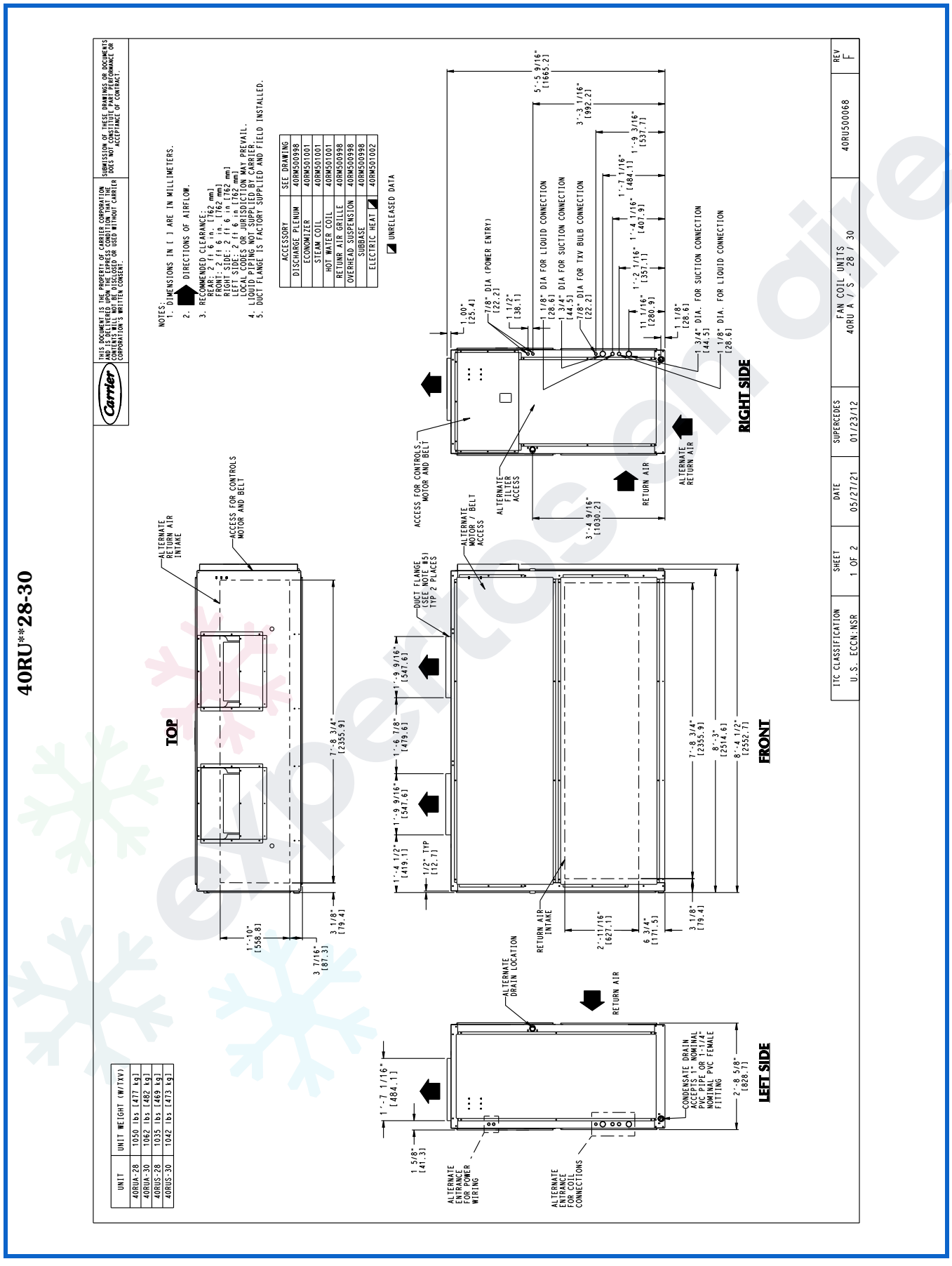
Base unit dimensions



Base unit dimensions (cont)

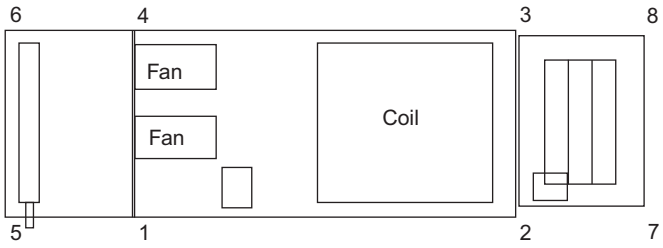


Base unit dimensions (cont)



Base unit dimensions (cont)

Corner Weights — Horizontal Position



Steam Coil or Hot Water Coil | Base Unit Fan Coil | Economizer

40RF/40RU Horizontal Position

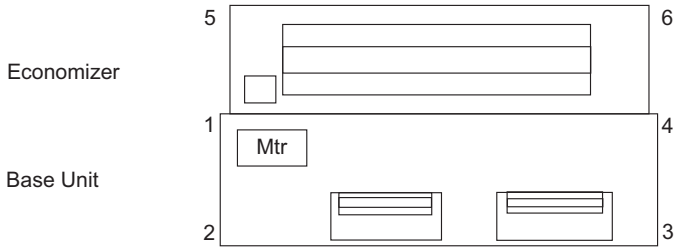
40RF/40RU UNIT SIZE	UNIT OR ACCESSORY NAME		UNIT OR ACCESSORY WEIGHT (kg [lb])	CORNER NUMBER (Weight in kg [lb])							
				1	2	3	4	5	6	7	8
40RFA*07	Fan Coil Base Unit		181 [399]	49.6 [109.3]	48.1 [106.1]	41.1 [90.6]	42.4 [93.4]	—	—	—	—
40RFA*08	Fan Coil Base Unit		183 [404]	50.2 [110.7]	48.8 [107.5]	41.6 [91.7]	42.9 [94.5]	—	—	—	—
40RFA*12	Fan Coil Base Unit		193 [425]	52.8 [116.4]	51.3 [113.0]	43.8 [96.5]	45.1 [99.4]	—	—	—	—
40RFA* 07-12	Steam Coil	Add	98 [215]	18.2 [40.2]	—	—	18.4 [40.6]	30.2 [66.5]	30.6 [67.5]	—	—
	Hot Water Coil	Add	88 [195]	16.3 [35.9]	—	—	16.6 [36.7]	27.4 [60.4]	28.1 [62.0]	—	—
	Economizer	Add	84 [185]	—	16.7 [36.8]	16.2 [35.7]	—	—	—	25.8 [56.8]	25.0 [55.1]
	Eco + Steam Coil	Add	181 [400]	17.6 [38.8]	17.5 [38.6]	17.0 [37.4]	17.8 [39.2]	29.1 [64.2]	29.6 [65.2]	27.0 [59.5]	26.2 [57.7]
	Eco + Hw Coil	Add	172 [380]	16.7 [36.9]	16.2 [35.8]	15.7 [34.6]	17.1 [37.7]	28.2 [62.1]	29.0 [63.8]	25.0 [55.1]	24.2 [53.4]
40RUA*14	Fan Coil Base Unit		315 [695]	101.6 [224.0]	80.3 [177.7]	58.5 [129.8]	74.3 [163.7]	—	—	—	—
40RUA*16	Fan Coil Base Unit		323 [713]	104.2 [229.8]	82.7 [182.3]	60.4 [133.2]	76.2 [167.9]	—	—	—	—
40RUA*25	Fan Coil Base Unit		331 [730]	106.9 [235.6]	84.5 [186.4]	61.9 [136.5]	77.8 [171.5]	—	—	—	—
40RUA* 14-25	Steam Coil	Add	154 [340]	27.9 [61.4]	—	—	28.1 [62.0]	48.9 [107.8]	49.4 [108.8]	—	—
	Hot Water Coil	Add	129 [285]	23.5 [51.7]	—	—	23.3 [51.3]	41.5 [91.5]	41.1 [90.6]	—	46.3 [102.0]
	Economizer	Add	154 [340]	—	30.3 [66.9]	28.1 [62.0]	—	—	—	49.8 [109.8]	44.0 [97.1]
	Eco + Steam Coil	Add	308 [680]	29.2 [64.4]	28.9 [63.7]	26.8 [59.0]	29.5 [65.0]	51.3 [113.0]	51.8 [114.1]	47.4 [104.5]	39.8 [87.8]
	Eco + Hw Coil	Add	283 [625]	27.2 [60.0]	26.1 [57.6]	24.2 [53.4]	27.0 [59.5]	48.2 [106.2]	47.7 [105.1]	42.9 [94.6]	—
40RUA*28	Fan Coil Base Unit		476 [1050]	153.5 [338.4]	121.8 [268.5]	88.9 [196.1]	112.1 [247.2]	—	—	—	—
40RUA*30	Fan Coil Base Unit		482 [1062]	155.3 [342.4]	123.2 [271.6]	89.9 [198.3]	113.3 [249.7]	—	—	—	—
40RUA* 28-30	Steam Coil	Add	184 [405]	33.2 [73.2]	—	—	33.5 [73.8]	58.2 [128.4]	58.8 [129.6]	—	—
	Hot Water Coil	Add	156 [345]	28.4 [62.6]	—	—	28.2 [62.1]	50.2 [110.7]	49.7 [109.6]	—	—
	Economizer	Add	204 [450]	—	40.1 [88.5]	37.2 [82.0]	—	—	—	65.9 [145.3]	60.9 [134.2]
	Eco + Steam Coil	Add	388 [855]	36.6 [80.6]	36.3 [80.1]	33.6 [74.1]	37.0 [81.6]	64.4 [142.0]	65.0 [143.4]	59.6 [131.3]	55.3 [122.0]
	Eco + Hw Coil	Add	361 [795]	34.8 [76.8]	33.4 [73.7]	30.9 [68.2]	34.3 [75.7]	61.2 [135.0]	60.6 [133.6]	54.6 [120.3]	50.7 [111.7]

LEGEND

ECO — Economizer
HW — Hot Water

Base unit dimensions (cont)

Corner Weights — Vertical Position



NOTE: Steam, Hot Water and Plenum on top of positions 1, 2, 3, 4

40RF/40RU Vertical Position

40RF.40RU UNIT SIZE	UNIT OR ACCESSORY NAME		UNIT OR ACCESSORY WEIGHT (kg [lb])	CORNER NUMBER (Weight in kg [lb])					
				1	2	3	4	5	6
40RFA*07	Fan Coil Base Unit		181 [399]	45.6 [100.5]	52.1 [114.9]	44.5 [98.0]	38.9 [85.8]	—	—
40RFA*08	Fan Coil Base Unit		183 [404]	46.1 [101.7]	52.8 [116.3]	45.0 [99.1]	39.4 [86.9]	—	—
40RFA*12	Fan Coil Base Unit		193 [425]	48.8 [107.6]	55.5 [122.3]	49.0 [108.0]	39.5 [87.1]	—	—
40RFA* 07-12	Steam Coil	Add	98 [215]	24.5 [54.1]	24.5 [54.1]	24.2 [53.4]	24.2 [53.4]	—	—
	Hot Water Coil	Add	88 [195]	22.4 [49.4]	22.4 [49.4]	21.8 [48.1]	21.8 [48.1]	—	—
	Plenum	Add	79 [175]	23 [50.8]	16.6 [36.7]	16.6 [36.7]	23.0 [50.8]	—	—
	Economizer	Add	88 [195]	17.6 [38.9]	—	—	16.8 [37.1]	27.2 [59.9]	26.4 [58.3]
	Eco + Steam Coil	Add	186 [410]	42.2 [93.0]	24.2 [53.4]	23.9 [52.6]	41.3 [91.1]	27.7 [61.0]	26.8 [59.1]
	Eco + Hw Coil	Add	177 [390]	40.3 [88.9]	23.7 [52.3]	23.1 [50.9]	39.2 [86.5]	25.7 [56.7]	24.9 [54.9]
40RUA*14	Fan Coil Base Unit		315 [695]	86.7 [191.2]	95.5 [210.5]	69.8 [153.8]	63.3 [139.5]	—	—
40RUA*16	Fan Coil Base Unit		323 [713]	89 [196.2]	98.0 [216.0]	71.6 [157.8]	64.9 [143.1]	—	—
40RUA* 14-16	Steam Coil	Add	154 [340]	38.7 [85.4]	38.7 [85.4]	38.4 [84.6]	38.4 [84.6]	—	—
	Hot Water Coil	Add	129 [285]	32.2 [70.9]	32.2 [70.9]	32.5 [71.6]	32.5 [71.6]	—	—
	Plenum	Add	102 [225]	32.9 [72.5]	18.1 [40.0]	18.1 [40.0]	32.9 [72.5]	—	—
	Economizer	Add	154 [340]	30.2 [66.5]	—	—	28.1 [62.0]	49.7 [109.5]	46.3 [102.0]
	Eco + Steam Coil	Add	308 [680]	69.4 [153.0]	40.4 [89.1]	40.2 [88.7]	67.0 [147.7]	47.4 [104.5]	44.0 [97.0]
	Eco + Hw Coil	Add	283 [625]	63.5 [139.9]	37.4 [82.5]	37.8 [83.3]	62.0 [136.7]	43.0 [94.7]	39.9 [87.9]

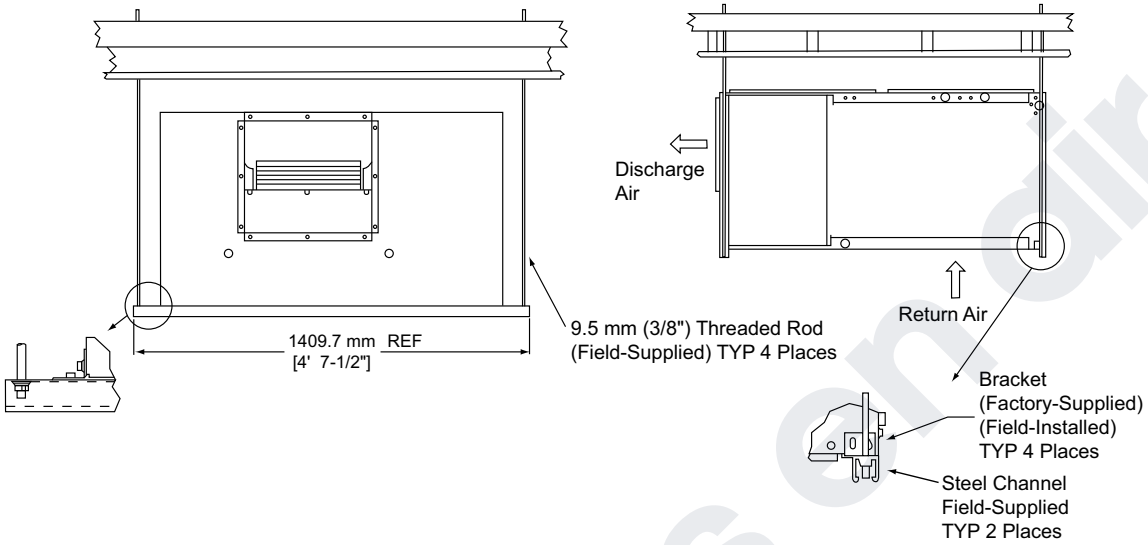
LEGEND

ECO — Economizer
HW — Hot Water

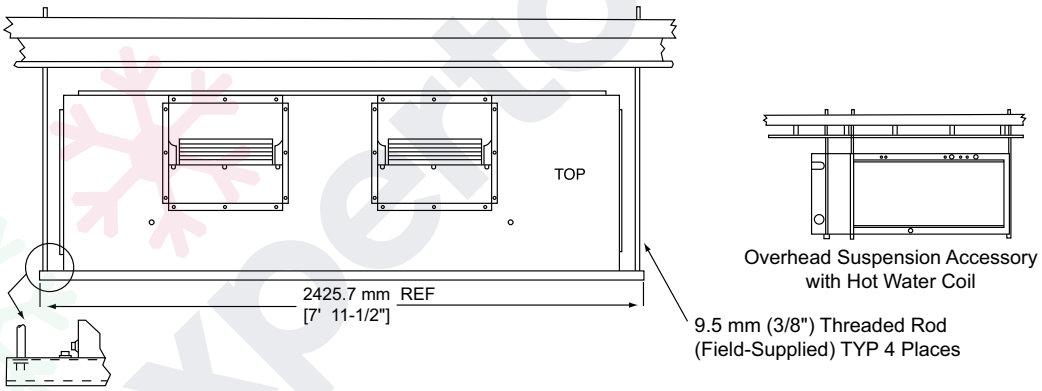
Accessory dimensions

Overhead Suspension Accessory

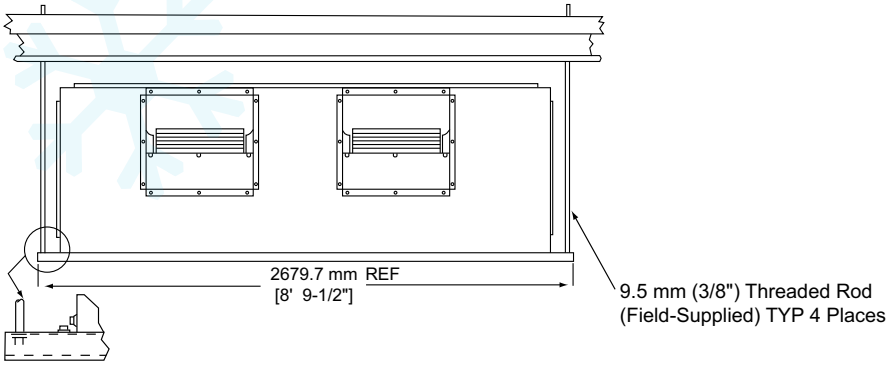
Size 07-12 Units (Front)



Size 14-16 Units (Front)



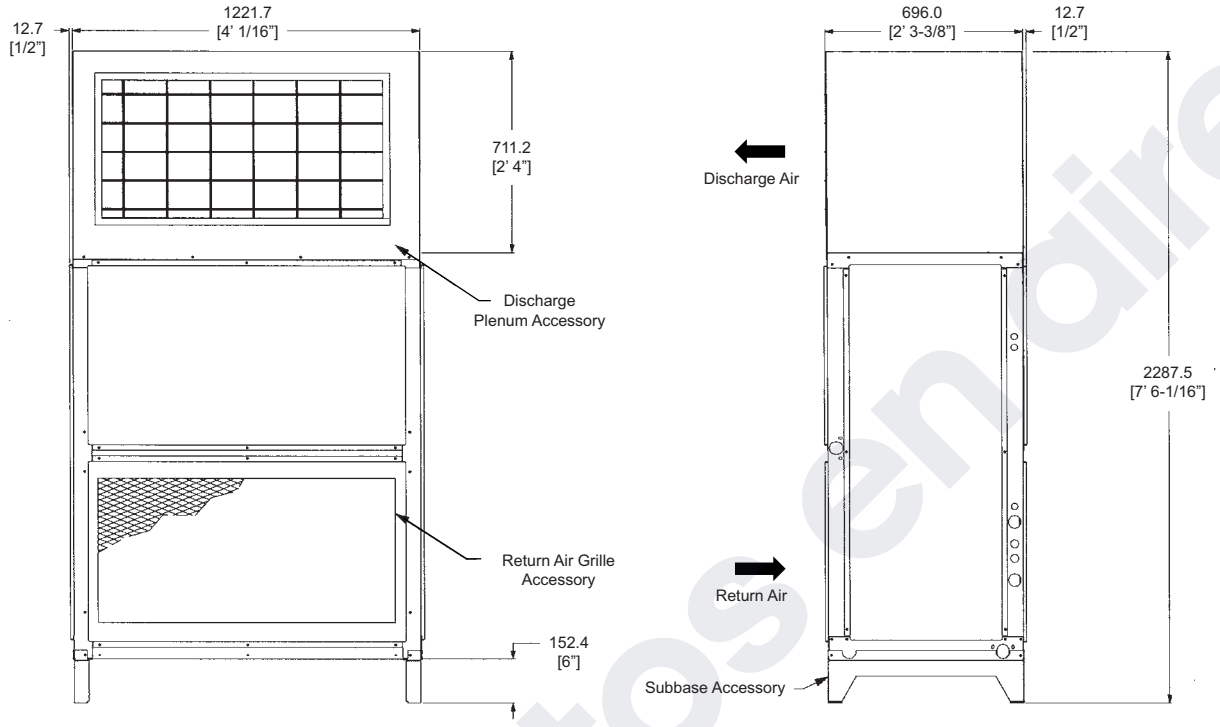
Size 25-30 Units (Front)



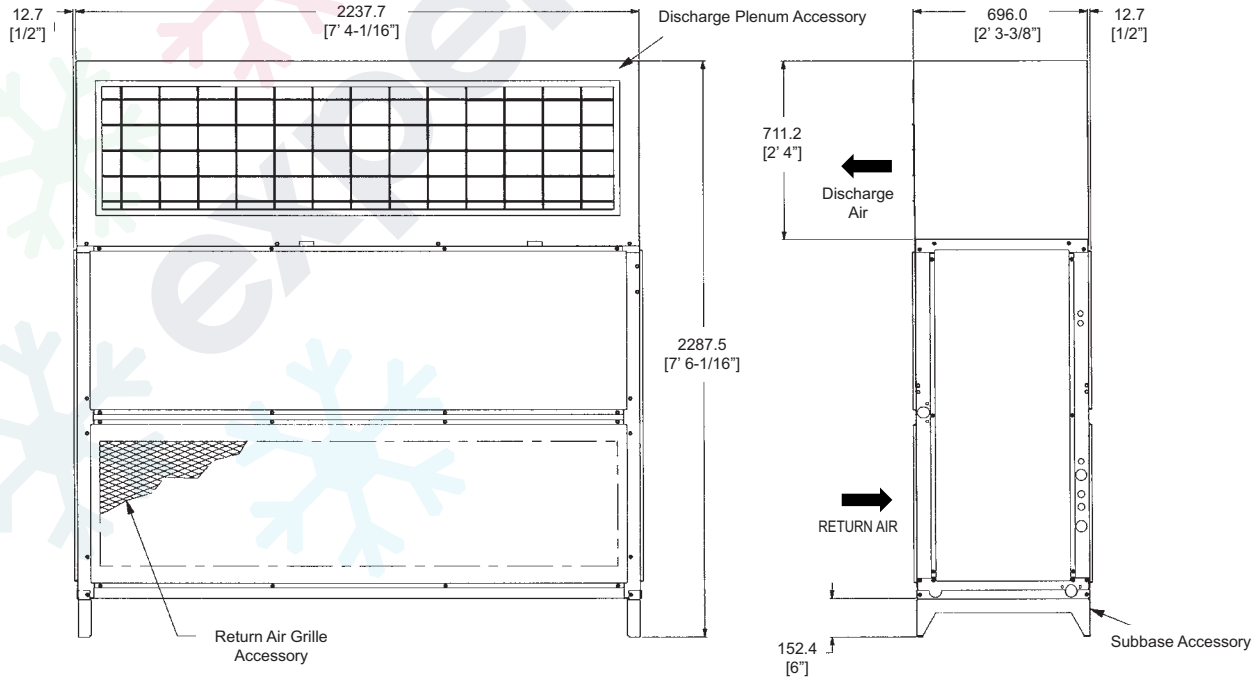
Accessory dimensions (cont)

Plenum, Return-Air Grille, and Subbase Accessories — 40RF**07-12, 40RU**14-25

40RF Size 07-12



40RU Size 14-25

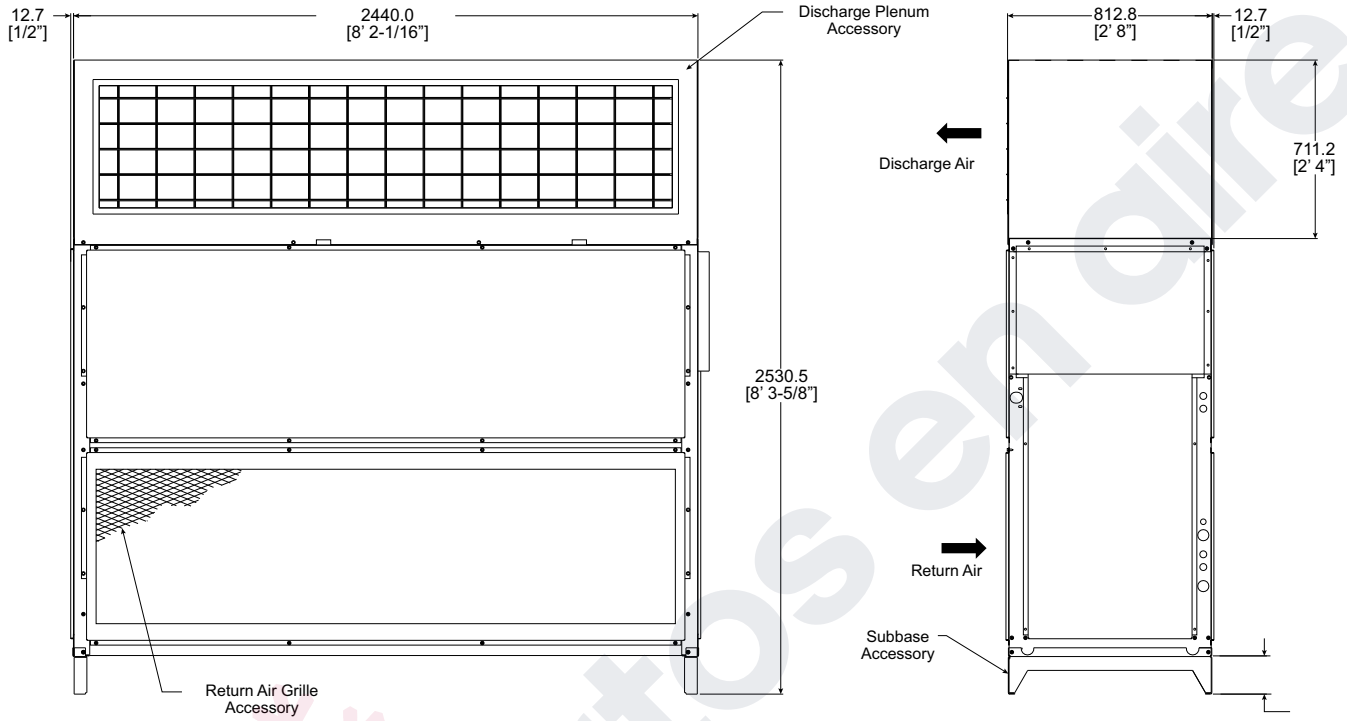


NOTE: Dimensions in millimeters [in.].

Accessory dimensions (cont)

Plenum, Return-Air Grille, and Subbase Accessories — 40RU**28-30

40RU Size 28-30

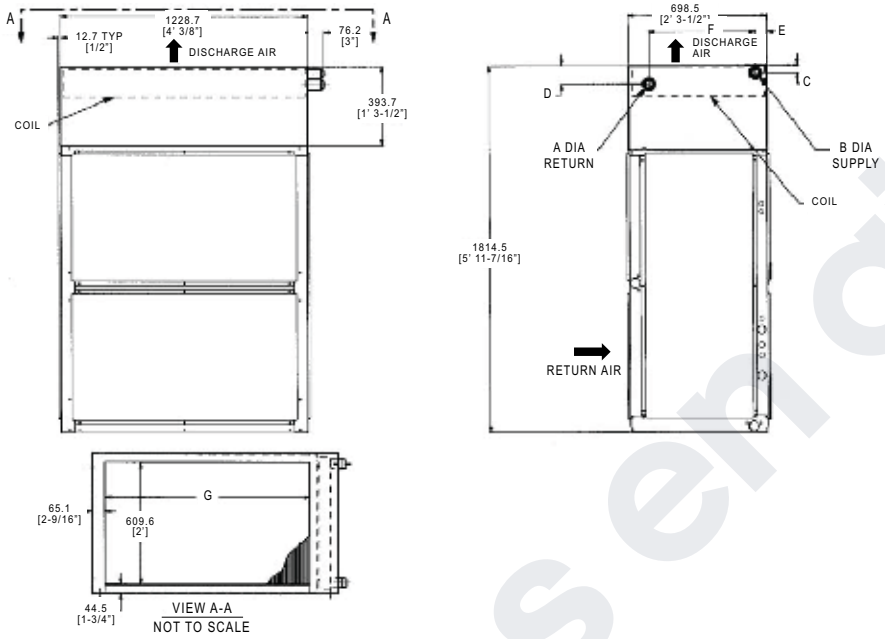


NOTE: Dimensions in millimeters [in.].

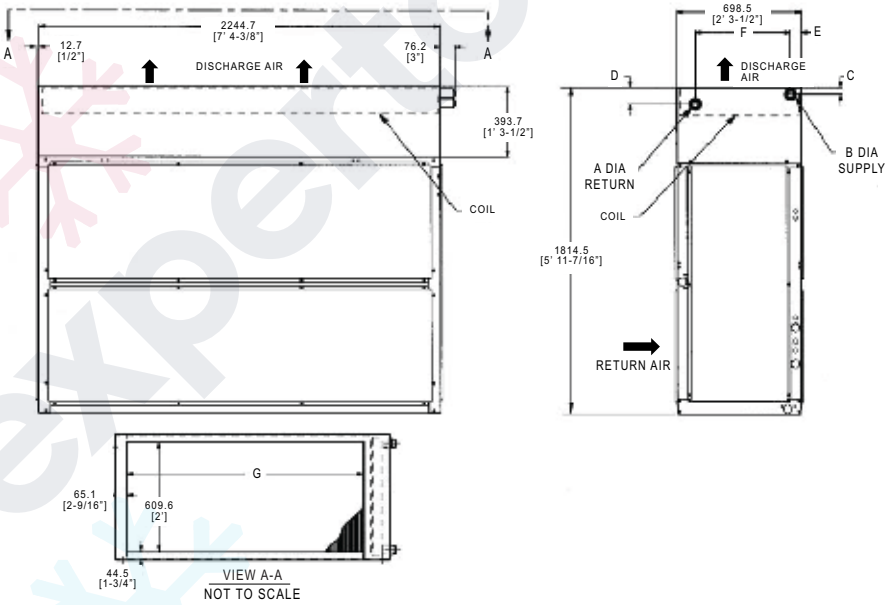
Accessory dimensions (cont)

Hot Water and Steam Coil Accessories — 40RF**07-12, 40RU**14-25

40RF Size 07-12



40RU Size 14-25



NOTE: Dimensions in millimeters [in.].

40RF**07-12

DIMENSIONS	HOT WATER COIL	STEAM COIL
A	38.1 MPT [1-1/2"]	38.1 MPT [1-1/2"]
B	38.1 MPT [1-1/2"]	63.5 MPT [2-1/2"]
C	60.3 [2-3/8"]	79.4 [3-1/8"]
D	123.8 [4-7/8"]	79.4 [3-1/8"]
E	54.0 [2-1/8"]	115.8 [4-9/16"]
F	590.6 [1' 11-1/4"]	584.2 [1' 9"]
G	1016.0 [3' 4"]	1016.0 [3' 4"]

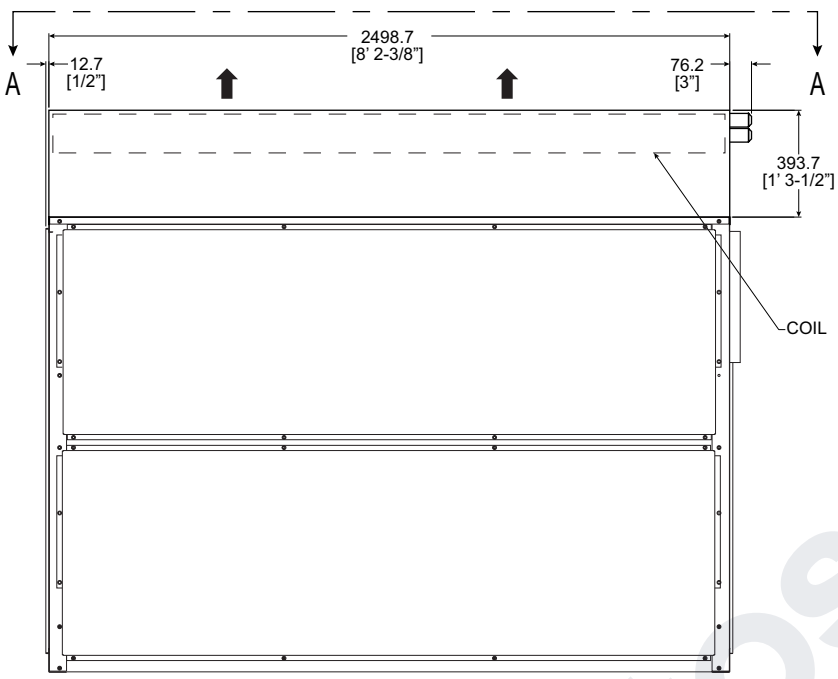
40RU**14-25

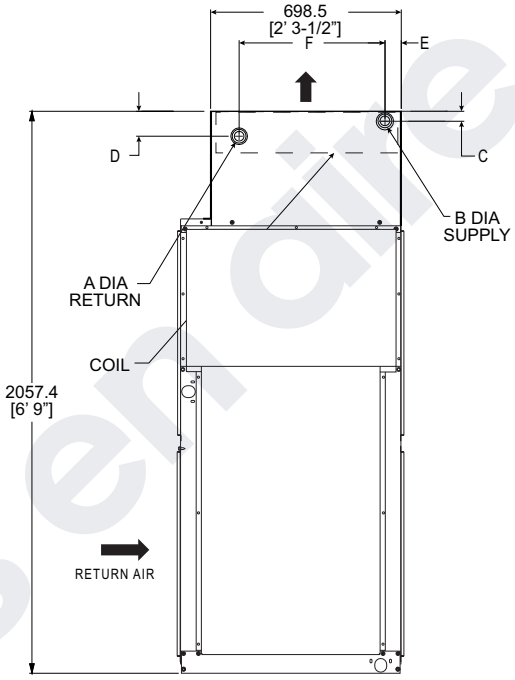
DIMENSIONS	HOT WATER COIL	STEAM COIL
A	50.8 MPT [2"]	38.1 MPT [1-1/2"]
B	50.8 MPT [2"]	63.5 MPT [2-1/2"]
C	60.3 [2-3/8"]	79.4 [3-1/8"]
D	123.8 [4-7/8"]	79.4 [3-1/8"]
E	54.0 [2-1/8"]	115.8 [4-9/16"]
F	590.6 [1' 11-1/4"]	584.2 [1' 9"]
G	2032.0 [6' 8"]	2032.0 [3' 4"]

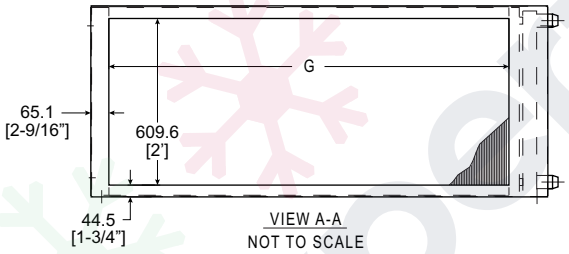
Accessory dimensions (cont)

Hot Water and Steam Coil Accessories — 40RU**28-30

40RU Size 28-30







40RU**28-30

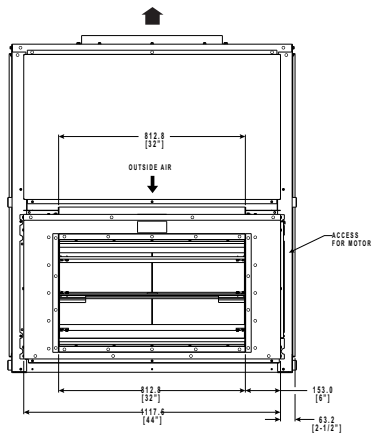
DIMENSIONS	HOT WATER COIL	STEAM COIL
A	50.8 MPT [2"]	38.1 MPT [1-1/2"]
B	50.8 MPT [2"]	63.5 MPT [2-1/2"]
C	60.3 [2-3/8"]	9.4 [3-1/8"]
D	123.8 [4-7/8"]	79.4 [3-1/8"]
E	54.0 [2-1/8"]	115.8 [4-9/16"]
F	590.6 [1' 11-1/4"]	584.2 [1' 9"]
G	2286.0 [7' 6"]	2286.0 [7' 6"]

NOTE: Dimensions in millimeters [in.].

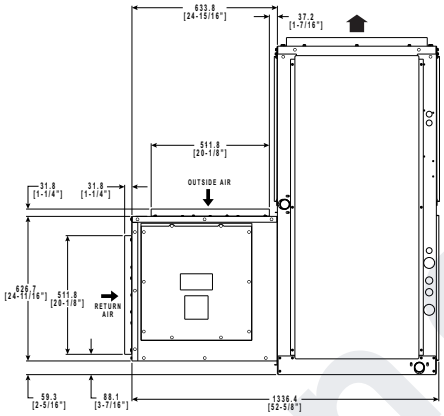
Accessory dimensions (cont)

Economizer Accessory — 40RF**07-12, 40RU**14-30

40RF Size 07-12

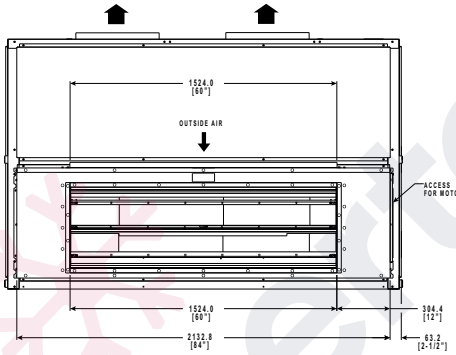


FRONT

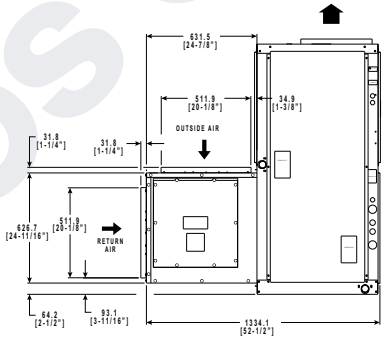


RIGHT SIDE

40RU Size 14-25

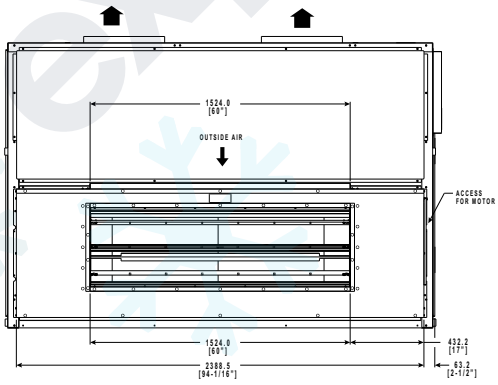


FRONT

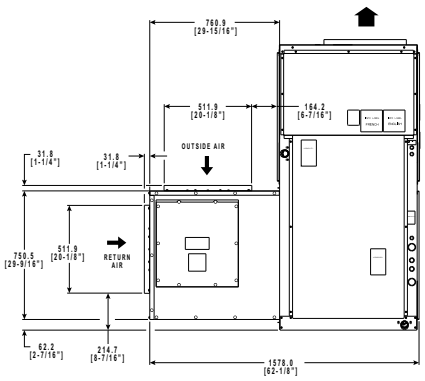


RIGHT SIDE

40RU Size 28-30



FRONT



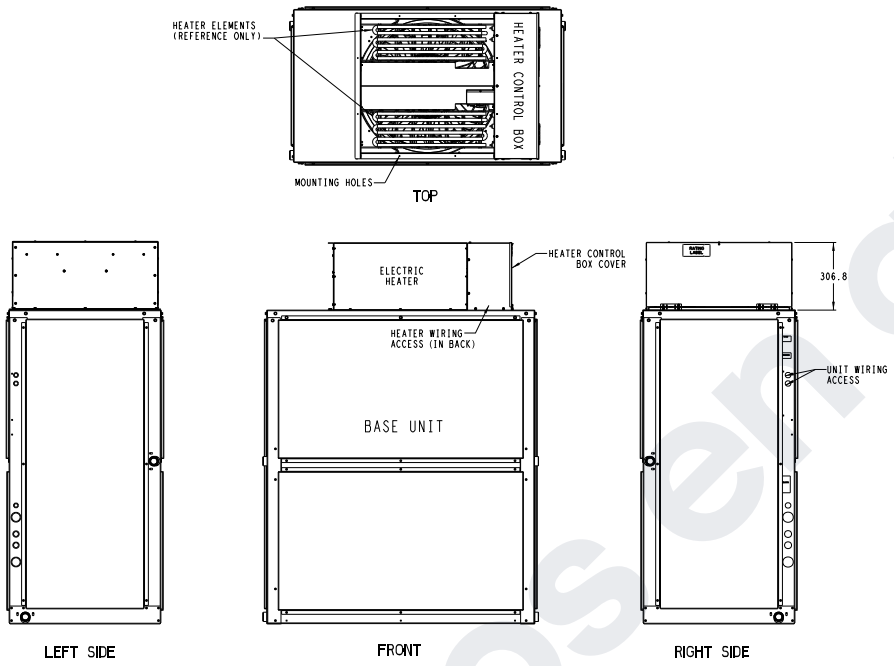
RIGHT SIDE

NOTE(S):
1. For horizontal unit applications, economizer can be attached to end of unit opposite duct connections.
2. Dimensions in millimeters [in.].

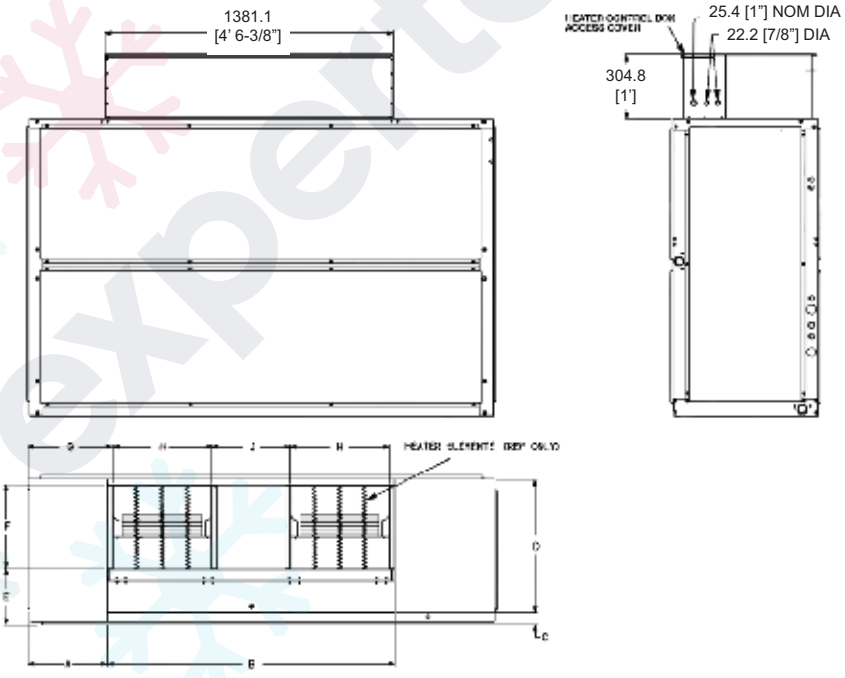
Accessory dimensions (cont)

Electric Heater Accessory — Sizes 07-30

40RF Size 07-12



40RU Size 14-30



40RU UNIT SIZE	A	B	C	D	E	F	G	H	J
14-25	387.4 [1' 3-1/4"]	1381.1 [4' 6"]	58.7 [2-5/16"]	641.4 [2' 1-1/4"]	269.9 [10-5/8"]	406.4 [1' 4"]	414.3 [1' 4-5/16"]	476.3 [1' 6-3/4"]	327.0 [1' 7/8"]
28-30	390.5 [1' 3-3/8"]	1636.8 [5' 4-7/8"]	52.4 [2-1/16"]	766.8 [2' 6-3/16"]	311.2 [1' 1/4"]	482.6 [1' 7"]	414.3 [1' 4-5/16"]	558.8 [1' 10"]	417.1 [1' 4-7/16"]

NOTE: Dimensions in millimeters [in.].

40RF**07-12 Cooling Capacities[a,b,c,d,e]

UNIT	EVAPORATOR AIR		COIL REFRIGERANT TEMP (°C)[f]									
	AIRFLOW (L/s) BF	Ewb (°C)	-1.1		1.7		4.4		7.2		10	
			TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
40RFA*07	850 0.06	22	10.5 [36]	5.0 [17]	9.7 [33]	4.7 [16]	8.5 [29]	4.1 [14]	7.3 [25]	3.8 [13]	6.2 [21]	3.2 [11]
		19	9.1 [31]	5.6 [19]	0.6 [2]	5.0 [17]	7.0 [24]	4.7 [16]	5.9 [20]	4.1 [14]	4.4 [15]	3.5 [12]
		17	7.3 [25]	5.9 [20]	6.4 [22]	5.3 [18]	5.3 [18]	4.7 [16]	4.1 [14]	4.1 [14]	3.5 [12]	3.5 [12]
	1130 0.10	22	12.3 [42]	5.9 [20]	11.1 [38]	5.6 [19]	10.0 [34]	5.0 [17]	8.8 [30]	4.4 [15]	7.0 [24]	3.8 [13]
		19	10.5 [36]	6.4 [22]	9.4 [32]	6.2 [21]	8.2 [28]	5.6 [19]	6.7 [23]	5.0 [17]	5.3 [18]	4.4 [15]
		17	8.8 [30]	7.0 [24]	0.6 [2]	6.4 [22]	6.4 [22]	5.9 [20]	5.3 [18]	5.3 [18]	4.4 [15]	4.4 [15]
	1420 0.12	22	13.5 [46]	6.7 [23]	12.3 [42]	6.2 [21]	11.1 [38]	5.6 [19]	9.7 [33]	5.0 [17]	7.9 [27]	4.4 [15]
		19	11.4 [39]	7.3 [25]	10.3 [35]	7.0 [24]	9.1 [31]	6.2 [21]	7.3 [25]	5.6 [19]	5.9 [20]	5.0 [17]
		17	9.7 [33]	8.2 [28]	8.5 [29]	7.6 [26]	7.0 [24]	6.7 [23]	5.9 [20]	5.9 [20]	5.0 [17]	5.0 [17]
40RFA*08	1060 0.06	22	13.2 [45]	6.4 [22]	12.0 [41]	5.9 [20]	10.8 [37]	5.3 [18]	9.4 [32]	4.7 [16]	7.6 [26]	4.1 [14]
		19	11.1 [38]	6.7 [23]	10.0 [34]	6.2 [21]	8.8 [30]	5.6 [19]	7.0 [24]	5.0 [17]	5.6 [19]	4.4 [15]
		17	9.4 [32]	7.3 [25]	7.9 [27]	6.7 [23]	6.7 [23]	6.2 [21]	5.3 [18]	5.3 [18]	4.4 [15]	4.4 [15]
	1420 0.10	22	15.2 [52]	7.3 [25]	14.1 [48]	6.7 [23]	12.6 [43]	6.2 [21]	10.8 [37]	5.6 [19]	8.8 [30]	4.7 [16]
		19	12.9 [44]	8.2 [28]	11.7 [40]	7.6 [26]	10.3 [35]	6.7 [23]	8.5 [29]	6.2 [21]	6.4 [22]	5.3 [18]
		17	10.8 [37]	8.8 [30]	9.4 [32]	8.2 [28]	7.9 [27]	7.3 [25]	6.4 [22]	6.4 [22]	5.6 [19]	5.6 [19]
	1770 0.12	22	17.0 [58]	8.2 [28]	15.5 [53]	7.6 [26]	13.8 [47]	7.0 [24]	12.0 [41]	6.2 [21]	10.0 [34]	5.6 [19]
		19	10.5 [36]	5.0 [17]	9.7 [33]	4.7 [16]	8.5 [29]	4.1 [14]	7.3 [25]	3.8 [13]	6.2 [21]	3.2 [11]
		17	9.1 [31]	5.6 [19]	0.6 [2]	5.0 [17]	7.0 [24]	4.7 [16]	5.9 [20]	4.1 [14]	4.4 [15]	3.5 [12]
40RFA*12	1420 0.05	22	7.3 [25]	5.9 [20]	6.4 [22]	5.3 [18]	5.3 [18]	4.7 [16]	4.1 [14]	4.1 [14]	3.5 [12]	3.5 [12]
		19	12.3 [42]	5.9 [20]	11.1 [38]	5.6 [19]	10.0 [34]	5.0 [17]	8.8 [30]	4.4 [15]	7.0 [24]	3.8 [13]
		17	10.5 [36]	6.4 [22]	9.4 [32]	6.2 [21]	8.2 [28]	5.6 [19]	6.7 [23]	5.0 [17]	5.3 [18]	4.4 [15]
	1890 0.07	22	8.8 [30]	7.0 [24]	0.6 [2]	6.4 [22]	6.4 [22]	5.9 [20]	5.3 [18]	5.3 [18]	4.4 [15]	4.4 [15]
		19	13.5 [46]	6.7 [23]	12.3 [42]	6.2 [21]	11.1 [38]	5.6 [19]	9.7 [33]	5.0 [17]	7.9 [27]	4.4 [15]
		17	11.4 [39]	7.3 [25]	10.3 [35]	7.0 [24]	9.1 [31]	6.2 [21]	7.3 [25]	5.6 [19]	5.9 [20]	5.0 [17]
	2360 0.12	22	9.7 [33]	8.2 [28]	8.5 [29]	7.6 [26]	7.0 [24]	6.7 [23]	5.9 [20]	5.9 [20]	5.0 [17]	5.0 [17]
		19	13.2 [45]	6.4 [22]	12.0 [41]	5.9 [20]	10.8 [37]	5.3 [18]	9.4 [32]	4.7 [16]	7.6 [26]	4.1 [14]
		17	11.1 [38]	6.7 [23]	10.0 [34]	6.2 [21]	8.8 [30]	5.6 [19]	7.0 [24]	5.0 [17]	5.6 [19]	4.4 [15]

NOTE(S):

a. Ratings based on approximately -9°C (15°F) superheat leaving coil.
b. Direct interpolation is permissible. Do not extrapolate.
c. Dashes indicate coil loading limits are exceeded.
d. Evaporator fan heat not deducted from ratings.
e. See dry and wet bulb formulas below.
f. SHC is based on 27°C (80°F) db temperature of air entering evaporator coil.

Dry and Wet Bulb Formulas:

$$\text{Leaving db} = \text{entering db} - \frac{\text{sensible heat capacity (kW)}}{1.23 \times 10^{-3} \times \text{(L/s)}}$$

Leaving wb = wet-bulb temperature corresponding to enthalpy of air leaving coil ($h_{|wb}$)

$$h_{|wb} = h_{ewb} - \frac{\text{total capacity (kW)}}{1.20 \times 10^{-3} \times \text{(L/s)}}$$

where $h_{|wb}$ = enthalpy of air entering coil (kJ/kg)

LEGEND

db — Dry Bulb Temperature (°C)
SHC — Sensible Heat Capacity (kW [1000 Btuh])
TC — Total Capacity (kW [1000 Btuh])
wb — Wet Bulb Temperature (°C)

Performance data (cont)

40RU**14-30 Cooling Capacities[a,b,c,d,e]

UNIT	EVAPORATOR AIR		COIL REFRIGERANT TEMP (°C)[f]									
	Airflow (L/s) BF	Ewb (°C)	-1.1		1.7		4.4		7.2		10	
			TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
40RUA*14	1770 0.06	22	21.4 [73]	10.3 [35]	19.6 [67]	9.4 [32]	17.3 [59]	8.5 [29]	14.9 [51]	7.6 [26]	12.0 [41]	6.4 [22]
		19	18.2 [62]	11.1 [38]	16.1 [55]	10.3 [35]	13.8 [47]	9.1 [31]	11.4 [39]	8.2 [28]	8.8 [30]	7.0 [24]
		17	14.9 [51]	11.7 [40]	12.9 [44]	10.8 [37]	10.8 [37]	9.7 [33]	8.5 [29]	8.5 [29]	7.3 [25]	7.3 [25]
	2360 0.08	22	24.9 [85]	12.0 [41]	22.6 [77]	11.1 [38]	19.9 [68]	10.0 [34]	17.3 [59]	8.8 [30]	13.8 [47]	7.6 [26]
		19	21.1 [72]	13.2 [45]	18.8 [64]	12.0 [41]	16.1 [55]	11.1 [38]	13.2 [45]	9.7 [33]	10.3 [35]	8.5 [29]
		17	17.6 [60]	14.4 [49]	15.2 [52]	13.2 [45]	12.6 [43]	11.7 [40]	10.3 [35]	10.3 [35]	8.8 [30]	8.8 [30]
	2980 0.10	22	27.2 [93]	13.2 [45]	24.9 [85]	12.3 [42]	22.3 [76]	11.1 [38]	19.0 [65]	10.0 [34]	15.5 [53]	8.5 [29]
		19	23.1 [79]	14.9 [51]	20.8 [71]	13.8 [47]	17.9 [61]	12.6 [43]	14.7 [50]	11.4 [39]	11.4 [39]	10.0 [34]
		17	19.3 [66]	16.4 [56]	16.7 [57]	15.2 [52]	14.1 [48]	13.8 [47]	12.0 [41]	12.0 [41]	10.0 [34]	10.0 [34]
40RUA*16	2120 0.03	22	26.7 [91]	12.9 [44]	24.0 [82]	11.7 [40]	21.4 [73]	10.5 [36]	18.5 [63]	9.4 [32]	14.9 [51]	7.9 [27]
		19	22.3 [76]	13.8 [47]	19.9 [68]	12.6 [43]	17.0 [58]	11.1 [38]	14.1 [48]	10.0 [34]	10.8 [37]	8.5 [29]
		17	18.5 [63]	14.7 [50]	16.1 [55]	13.2 [45]	13.2 [45]	12.0 [41]	10.5 [36]	10.5 [36]	8.8 [30]	8.8 [30]
	2830 0.05	22	31.1 [106]	14.9 [51]	28.1 [96]	13.8 [47]	25.2 [86]	12.6 [43]	21.4 [73]	10.8 [37]	17.6 [60]	9.4 [32]
		19	26.1 [89]	16.4 [56]	23.1 [79]	14.9 [51]	20.2 [69]	13.5 [46]	16.7 [57]	12.0 [41]	12.9 [44]	10.5 [36]
		17	21.7 [74]	17.6 [60]	19.0 [65]	16.1 [55]	15.8 [54]	14.7 [50]	12.9 [44]	12.9 [44]	10.8 [37]	10.8 [37]
	3540 0.08	22	34.6 [118]	16.7 [57]	31.4 [107]	15.5 [53]	28.7 [98]	14.1 [48]	24.9 [85]	12.6 [43]	19.6 [67]	10.8 [37]
		19	29.3 [100]	18.8 [64]	26.1 [89]	17.3 [59]	22.6 [77]	15.8 [54]	18.8 [64]	14.1 [48]	14.4 [49]	12.3 [42]
		17	24.6 [84]	20.5 [70]	21.1 [72]	19.0 [65]	17.6 [60]	17.0 [58]	14.7 [50]	14.7 [50]	12.3 [42]	12.3 [42]
40RUA*25	2830 0.03	22	35.2 [120]	17.0 [58]	31.9 [109]	15.5 [53]	28.4 [97]	14.1 [48]	23.4 [80]	12.0 [41]	19.9 [68]	10.5 [36]
		19	29.6 [101]	18.2 [62]	26.4 [90]	16.7 [57]	22.9 [78]	15.2 [52]	18.8 [64]	13.5 [46]	14.7 [50]	11.7 [40]
		17	24.6 [84]	19.6 [67]	21.4 [73]	17.9 [61]	17.9 [61]	16.1 [55]	14.1 [48]	14.1 [48]	12.0 [41]	12.0 [41]
	3780 0.06	22	40.4 [138]	19.6 [67]	36.9 [126]	18.2 [62]	32.8 [112]	16.4 [56]	28.1 [96]	14.7 [50]	23.1 [79]	12.6 [43]
		19	34.3 [117]	21.7 [74]	30.8 [105]	19.9 [68]	26.7 [91]	18.2 [62]	22.0 [75]	16.4 [56]	17.0 [58]	14.4 [49]
		17	28.7 [98]	23.7 [81]	24.9 [85]	21.7 [74]	20.8 [71]	19.6 [67]	17.3 [59]	17.3 [59]	14.7 [50]	14.7 [50]
	4720 0.07	22	44.2 [151]	21.7 [74]	40.4 [138]	20.2 [69]	36.0 [123]	18.5 [63]	31.1 [106]	16.4 [56]	25.5 [87]	14.4 [49]
		19	37.8 [129]	24.6 [84]	34.0 [116]	22.9 [78]	29.3 [100]	20.8 [71]	24.3 [83]	18.8 [64]	18.8 [64]	16.7 [57]
		17	31.6 [108]	27.2 [93]	27.5 [94]	25.2 [86]	23.1 [79]	22.9 [78]	19.9 [68]	19.9 [68]	17.0 [58]	17.0 [58]
40RUA*28	3540 0.10	22	40.4 [138]	19.3 [66]	36.6 [125]	17.9 [61]	32.5 [111]	16.1 [55]	28.1 [96]	14.4 [49]	23.1 [79]	12.3 [42]
		19	34.0 [116]	21.1 [72]	30.5 [104]	19.6 [67]	26.4 [90]	17.6 [60]	22.0 [75]	15.8 [54]	17.0 [58]	13.8 [47]
		17	28.1 [96]	22.9 [78]	24.6 [84]	21.1 [72]	20.5 [70]	19.0 [65]	16.7 [57]	16.7 [57]	14.1 [48]	14.1 [48]
	4720 0.12	22	46.0 [157]	22.3 [76]	41.9 [143]	20.5 [70]	37.2 [127]	18.8 [64]	32.2 [110]	16.7 [57]	26.7 [91]	14.7 [50]
		19	39.0 [133]	24.9 [85]	34.9 [119]	23.1 [79]	30.5 [104]	21.1 [72]	25.2 [86]	19.0 [65]	19.6 [67]	16.7 [57]
		17	32.5 [111]	27.5 [94]	28.4 [97]	25.5 [87]	24.0 [82]	23.1 [79]	20.2 [69]	20.2 [69]	17.0 [58]	17.0 [58]
	5900 0.14	22	50.1 [171]	24.6 [84]	45.7 [156]	22.9 [78]	40.7 [139]	21.1 [72]	35.5 [121]	19.0 [65]	29.3 [100]	16.7 [57]
		19	42.8 [146]	28.1 [96]	38.4 [131]	26.4 [90]	33.4 [114]	24.3 [83]	27.8 [95]	22.0 [75]	21.7 [74]	19.3 [66]
		17	36.0 [123]	31.6 [108]	31.6 [108]	29.3 [100]	26.7 [91]	26.7 [91]	23.1 [79]	23.1 [79]	19.6 [67]	19.6 [67]

NOTE(S):

a. Ratings based on approximately -9°C (15°F) superheat leaving coil.
b. Direct interpolation is permissible. Do not extrapolate.
c. Dashes indicate coil loading limits are exceeded.
d. Evaporator fan heat not deducted from ratings.
e. See dry and wet bulb formulas below.
f. SHC is based on 27°C (80°F) db temperature of air entering evaporator coil.

Dry and Wet Bulb Formulas:

$$\text{Leaving db} = \text{entering db} - \frac{\text{sensible heat capacity (kW)}}{1.23 \times 10^{-3} \times (\text{L/s})}$$

Leaving wb = wet-bulb temperature corresponding to enthalpy of air leaving coil ($h_{|wb}$)

$$h_{|wb} = h_{ewb} - \frac{\text{total capacity (kW)}}{1.20 \times 10^{-3} \times (\text{L/s})}$$

where $h_{|wb}$ = enthalpy of air entering coil (kJ/kg)

LEGEND

db — Dry Bulb Temperature (°C)
SHC — Sensible Heat Capacity (kW [1000 Btuh])
TC — Total Capacity (kW [1000 Btuh])
wb — Wet Bulb Temperature (°C)

Performance data (cont)

Hydronic Heating Capacities[a,b,c]

UNIT	AIRFLOW (L/s [cfm])	1-ROW STEAM[d]		2-ROW HOT WATER COIL[e]			
		Cap. kW [Btuh]	Ldb	Cap. kW [Btuh]	Ldb	Water Flow (l/min [gpm])	PD
40RFA*07	849 [1800]	43 [146]	134	46 [156]	140	59.1 [15.6]	103.6 [3.4]
	1133 [2400]	51 [173]	126	54 [183]	131	69.3 [18.3]	131.1 [4.3]
	1416 [3000]	61 [209]	123	60 [206]	124	78.0 [20.6]	158.5 [5.2]
40RFA*08	1062 [2250]	49 [168]	129	51 [174]	133	65.9 [17.4]	121.9 [4.0]
	1416 [3000]	61 [209]	123	60 [206]	124	78.0 [20.6]	158.5 [5.2]
	1770 [3750]	70 [240]	117	70 [238]	118	90.0 [23.8]	198.1 [6.5]
40RFA*12	1416 [3000]	61 [209]	123	88 [299]	152	113.2 [29.9]	152.4 [5.0]
	1888 [4000]	71 [243]	115	81 [275]	124	104.1 [27.5]	201.2 [6.6]
	2360 [5000]	82 [279]	111	93 [316]	119	119.6 [31.6]	249.9 [8.2]
40RUA*14	1770 [3750]	108 [370]	150	106 [362]	149	137.0 [36.2]	128.0 [4.2]
	2360 [5000]	125 [425]	137	120 [409]	136	154.8 [40.9]	155.4 [5.1]
	2950 [6250]	136 [465]	128	134 [456]	128	172.6 [45.6]	182.9 [6.0]
40RUA*16	2124 [4500]	118 [402]	141	121 [412]	145	156.0 [41.2]	137.2 [4.5]
	2832 [6000]	134 [458]	129	138 [471]	133	178.3 [47.1]	167.6 [5.5]
	3539 [7500]	140 [479]	118	155 [529]	125	200.2 [52.9]	201.2 [6.6]
40RUA*25	2832 [6000]	134 [458]	129	148 [506]	138	191.5 [50.6]	155.4 [5.1]
	3775 [8000]	143 [487]	115	171 [584]	128	221.1 [58.4]	192.0 [6.3]
	4719 [10,000]	146 [499]	105	191 [652]	120	246.8 [65.2]	228.6 [7.5]
40RUA*28	3539 [7500]	150 [511]	122	190 [649]	140	245.7 [64.9]	173.7 [5.7]
	4719 [10,000]	168 [575]	112	220 [752]	130	284.7 [75.2]	216.4 [7.1]
	5899 [12,500]	183 [626]	106	247 [842]	122	318.7 [84.2]	259.1 [8.5]
40RUA*30	4247 [9000]	164 [560]	117	215 [735]	136	278.2 [73.5]	189.0 [6.2]
	5663 [12,000]	182 [621]	107	249 [850]	126	321.8 [85.0]	237.7 [7.8]
	7079 [15,000]	196 [670]	101	278 [950]	119	359.6 [95.0]	283.5 [9.3]

NOTE(S):

a. Maximum operating limits for heating coils: 138 kPa at 126°C (20 psig at 260°F).
b. See leaving dry bulb formula.
c. See Heating Correction Factors table.
d. Based on 34 kPa (5 psig) steam, 60° F entering-air temperature. All steam coils are non-freeze type.
e. Based on 93°C (200° F) entering water, –7°C (20° F) water temperature drop, 16°C (60° F) entering-air temperature.

Leaving dry bulb formula:

$$\text{Leaving db} = \text{entering db} - \frac{\text{sensible heat capacity (kW)}}{1.23 \times 10^{-3} \times \text{(L/s)}}$$

LEGEND

Cap. — Capacity (Btuh in 1000)
Ldb — Leaving Air Dry Bulb Temp (°C)
PD — Pressure Drop (water column [ft water])

Heating Correction Factors

HOT WATER COIL						
Water Temp Drop (°C [°F])	Entering Water Temp (°C [°F])	Entering Water Temp (°C [°F])				
		4 [40]	10 [50]	16 [60]	21 [70]	27 [80]
5.6 [10]	60 [140]	0.72	0.64	0.57	0.49	0.41
	71 [160]	0.89	0.81	0.74	0.66	0.58
	82 [180]	1.06	0.98	0.90	0.83	0.75
	93 [200]	1.22	1.15	1.07	1.00	0.92
	104 [220]	1.39	1.32	1.24	1.17	1.09
11.1 [20]	60 [140]	0.64	0.57	0.49	0.41	0.33
	71 [160]	0.81	0.74	0.66	0.58	0.51
	82 [180]	0.98	0.91	0.83	0.75	0.68
	93 [200]	1.15	1.08	1.00	0.93	0.85
	104 [220]	1.32	1.25	1.17	1.10	1.02
16.7 [30]	60 [140]	0.56	0.49	0.41	0.33	0.24
	71 [160]	0.74	0.66	0.58	0.51	0.43
	82 [180]	0.91	0.83	0.76	0.68	0.60
	93 [200]	1.08	1.00	0.93	0.85	0.78
	104 [220]	1.25	1.18	1.10	1.03	0.95

Steam Coil

STEAM PRESSURE (kPa [psig])	Entering-Air Temperature (°C [°F])				
	4 [40]	10 [50]	16 [60]	21 [70]	27 [80]
0 [0]	1.06	0.98	0.91	0.85	0.78
14 [2]	1.09	1.02	0.95	0.89	0.82
34 [5]	1.13	1.06	1.00	0.93	0.87

NOTE: Multiply capacity is given in the Hydronic Heating Capacities table by the correction factor for conditions at which unit is actually operating. Correct leaving-air temperature using formula in Note b of Hydronic Heating Capacities table.

Performance data (cont)

Duct Sound Power Levels (Lw)[a,b,c]

MODEL	SIZE	L/s [cfm]	db(A)	OCTAVE BAND CENTER FREQUENCY (Hz)						
				63	125	250	500	1000	2000	4000
40RFA	07	1133 [2400]	86.3	93.2	89.2	85.2	84.2	80.2	78.2	74.2
	08	1416 [3000]	88.3	95.3	91.3	87.3	86.3	82.3	80.3	76.3
	12	1888 [4000]	91.6	98.6	94.6	90.6	89.6	85.6	83.6	79.6
40RUA	14	2360 [5000]	91.1	97.3	93.3	89.3	90.3	84.3	82.3	78.3
	16	2832 [6000]	92.7	98.9	94.9	90.9	91.9	85.9	83.9	79.9
	25	3775 [8000]	96.4	102.6	98.6	94.6	95.6	89.6	87.6	83.6
	28	4719 [10,000]	96.2	102.5	98.5	94.5	95.5	89.5	87.5	83.5
	30	5663 [12,000]	98.5	104.7	100.7	96.7	97.7	91.7	89.7	85.7

NOTE(S):

a. The estimated sound power levels are based upon the ASHRAE calculation approach from the ASHRAE 1987 HVAC Systems and Applications handbook, Chapter 52.
b. Since this data is calculated, these sound power levels may be different than the actual sound power levels.
c. The acoustic center of the unit is located at the geometric center of the unit.

LEGEND

ASHRAE — American Society of Heating, Refrigerating and Air Conditioning
HVAC — Heating, Ventilation and Air Conditioning

Factory-Supplied Filter Pressure Drops

UNIT	AIRFLOW (L/s [cfm])	PRESSURE DROP (Pa [in. wg])
40RFA*07	849 [1800]	12.44 [0.05]
	1133 [2400]	19.91 [0.08]
	1416 [3000]	27.37 [0.11]
40RFA*08	1062 [2250]	17.42 [0.07]
	1416 [3000]	27.37 [0.11]
	1770 [3750]	37.33 [0.15]
40RFA*12	1416 [3000]	27.37 [0.11]
	1888 [4000]	42.30 [0.17]
	2360 [5000]	57.23 [0.23]
40RUA*14	1770 [3750]	14.93 [0.06]
	2360 [5000]	24.88 [0.10]
	2950 [6250]	32.35 [0.13]
40RUA*16	2124 [4500]	19.91 [0.08]
	2832 [6000]	29.86 [0.12]
	3539 [7500]	42.30 [0.17]
40RUA*25	2832 [6000]	29.86 [0.12]
	3775 [8000]	47.28 [0.19]
	4719 [10,000]	64.70 [0.26]
40RUA*28	3539 [7500]	37.33 [0.15]
	4719 [10,000]	54.74 [0.22]
	5899 [12,500]	74.65 [0.30]
40RUA*30	4247 [9000]	47.28 [0.19]
	5663 [12,000]	72.16 [0.29]
	7079 [15,000]	99.54 [0.40]

Accessory Plenum Air Throw Data (m [ft])[a]

UNIT	AIRFLOW (L/s [cfm])	VANE DEFLECTION		
		Straight	21-1/2°	45°
40RFA*07	1133 [2400]	39	33	24
40RFA*08	1416 [3000]	45	38	28
40RFA*12	1888 [4000]	55	46	33
40RUA*14	2360 [5000]	45	38	28
40RUA*16	2832 [6000]	50	43	31
40RUA*25	3775 [8000]	60	51	37
40RUA*28	4719 [10,000]	76	65	47
40RUA*30	5663 [12,000]	85	72	52

NOTE(S):

a. Throw distances shown are for 75 fpm terminal velocity. Use the multipliers below to determine throw values for other terminal velocities.

TERMINAL VELOCITY (m/s [fpm])	THROW FACTOR
0.25 [50]	x 1.50
0.50 [100]	x 0.75
0.76 [150]	x 0.50

Performance data (cont)

Accessory Pressure Drop (Pa [in.wg])

UNIT	AIRFLOW (L/s [cfm])	DISCHARGE PLENUM	RETURN AIR GRILLE	HOT WATER	STEAM	ELECTRIC	ECONOMIZER
40RFA*07	849 [1800]	14.93 [0.06]	2.49 [0.01]	24.88 [0.10]	24.88 [0.10]	9.95 [0.04]	12.44 [0.05]
	1133 [2400]	24.88 [0.10]	2.49 [0.01]	39.81 [0.16]	39.81 [0.16]	14.93 [0.06]	17.42 [0.07]
	1416 [3000]	34.84 [0.14]	4.98 [0.02]	57.23 [0.23]	57.23 [0.23]	24.88 [0.10]	22.40 [0.09]
40RFA*08	1062 [2250]	22.40 [0.09]	2.49 [0.01]	37.33 [0.15]	37.33 [0.15]	14.93 [0.06]	14.93 [0.06]
	1416 [3000]	34.84 [0.14]	4.98 [0.02]	57.23 [0.23]	57.23 [0.23]	24.88 [0.10]	22.40 [0.09]
	1770 [3750]	52.26 [0.21]	7.47 [0.03]	87.09 [0.35]	87.09 [0.35]	37.33 [0.15]	37.33 [0.15]
40RFA*12	1416 [3000]	34.84 [0.14]	4.98 [0.02]	57.23 [0.23]	57.23 [0.23]	24.88 [0.10]	22.40 [0.09]
	1888 [4000]	54.74 [0.22]	9.95 [0.04]	92.07 [0.37]	92.07 [0.37]	42.30 [0.17]	42.30 [0.17]
	2360 [5000]	79.63 [0.32]	14.93 [0.06]	131.89 [0.53]	131.89 [0.53]	64.70 [0.26]	69.68 [0.28]
40RUA*14	1770 [3750]	17.42 [0.07]	2.49 [0.01]	27.37 [0.11]	27.37 [0.11]	9.95 [0.04]	12.44 [0.05]
	2360 [5000]	29.86 [0.12]	4.98 [0.02]	42.30 [0.17]	42.30 [0.17]	17.42 [0.07]	17.42 [0.07]
	2950 [6250]	42.30 [0.17]	4.98 [0.02]	62.21 [0.25]	62.21 [0.25]	27.37 [0.11]	27.37 [0.11]
40RUA*16	2124 [4500]	24.88 [0.10]	2.49 [0.01]	37.33 [0.15]	37.33 [0.15]	14.93 [0.06]	14.93 [0.06]
	2832 [6000]	39.81 [0.16]	4.98 [0.02]	57.23 [0.23]	57.23 [0.23]	24.88 [0.10]	22.40 [0.09]
	3539 [7500]	57.23 [0.23]	7.47 [0.03]	82.12 [0.33]	82.12 [0.33]	37.33 [0.15]	37.33 [0.15]
40RUA*25	2832 [6000]	39.81 [0.16]	4.98 [0.02]	57.23 [0.23]	57.23 [0.23]	24.88 [0.10]	22.40 [0.09]
	3775 [8000]	64.70 [0.26]	9.95 [0.04]	92.07 [0.37]	92.07 [0.37]	42.30 [0.17]	42.30 [0.17]
	4719 [10,000]	92.07 [0.37]	14.93 [0.06]	131.89 [0.53]	131.89 [0.53]	64.70 [0.26]	69.68 [0.28]
40RUA*28	3539 [7500]	37.33 [0.15]	4.98 [0.02]	69.68 [0.28]	69.68 [0.28]	22.40 [0.09]	14.93 [0.06]
	4719 [10,000]	59.72 [0.24]	7.47 [0.03]	109.49 [0.44]	109.49 [0.44]	39.81 [0.16]	22.40 [0.09]
	5899 [12,500]	84.61 [0.34]	12.44 [0.05]	156.77 [0.63]	156.77 [0.63]	59.72 [0.24]	34.84 [0.14]
40RUA*30	4247 [9000]	49.77 [0.20]	7.47 [0.03]	92.07 [0.37]	92.07 [0.37]	32.35 [0.13]	19.91 [0.08]
	5663 [12,000]	79.63 [0.32]	12.44 [0.05]	146.82 [0.59]	146.82 [0.59]	54.74 [0.22]	34.84 [0.14]
	7079 [15,000]	114.47 [0.46]	17.42 [0.07]	211.51 [0.85]	211.51 [0.85]	84.61 [0.34]	52.26 [0.21]

GENERAL FAN PERFORMANCE NOTES

1. Interpolation is permissible. Do not extrapolate.
2. External static pressure is the static pressure difference between the return duct and the supply duct plus the static pressure caused by any FIOPs or accessories.
3. Tabular data accounts for pressure loss due to clean filters, unit casing, wet coils, and highest gas heat exchanger (when gas heat unit).
4. Factory options and accessories may effect static pressure losses. Selection software is available, through your salesperson, to help you select the best motor/drive combination for your application.
5. The fan performance tables offer motor/drive recommendations. In cases when two motor/drive combinations would work, Carrier recommends the lower horsepower option.
6. For information on the electrical properties of Carrier motors, please see the Electrical Data section of this book.
7. For more information on the performance limits of Carrier motors, see the Application Data section of this book.

Fan data (cont)

40RFA*07 — 50 Hz — SI

L/S	Available External Static Pressure (Pa)									
	50		100		150		200		250	
	rps	kW	rps	kW	rps	kW	rps	kW	rps	kW
850	13	0.13	16	0.23	18	0.36	20	0.50	22	0.65
920	14	0.15	16	0.26	18	0.39	20	0.53	22	0.69
990	15	0.17	17	0.28	19	0.41	21	0.56	23	0.72
1060	15	0.20	17	0.31	19	0.44	21	0.59	23	0.76
1135	16	0.22	18	0.34	20	0.47	22	0.63	23	0.80
1205	17	0.26	19	0.37	20	0.51	22	0.67	24	0.84
1275	18	0.29	19	0.41	21	0.55	23	0.71	24	0.88
1345	18	0.33	20	0.45	22	0.59	23	0.75	25	0.93
1415	19	0.37	21	0.49	22	0.64	24	0.80	25	0.98

L/S	Available External Static Pressure (Pa)									
	300		350		400		450		500	
	rps	kW	rps	kW	rps	kW	rps	kW	rps	kW
850	23	0.81	25	0.98	26	1.15	27	1.34	29	1.52
920	24	0.85	25	1.03	27	1.21	28	1.39	29	1.59
990	24	0.89	26	1.07	27	1.26	28	1.45	30	1.65
1060	25	0.94	26	1.12	28	1.31	29	1.51	30	1.72
1135	25	0.98	27	1.17	28	1.37	29	1.57	30	1.78
1205	25	1.02	27	1.22	28	1.42	30	1.63	31	1.85
1275	26	1.07	27	1.27	29	1.48	30	1.69	31	1.92
1345	26	1.12	28	1.32	29	1.54	30	1.76	32	1.99
1415	27	1.18	28	1.38	30	1.60	31	1.82	32	2.06

LEGEND

	Medium Static 13 - 28 rps	1.38 Max kW
	High Static 13 - 32 rps	2.06 Max kW

40RFA*07 — 50 Hz — English

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1,800	788	0.18	942	0.31	1,081	0.48	1,202	0.67	1,308	0.88
1,950	828	0.20	973	0.34	1,107	0.52	1,227	0.71	1,333	0.92
2,100	870	0.23	1,005	0.37	1,134	0.55	1,252	0.75	1,358	0.97
2,250	914	0.26	1,040	0.41	1,163	0.59	1,278	0.80	1,383	1.02
2,400	958	0.30	1,077	0.45	1,194	0.63	1,305	0.84	1,409	1.07
2,550	1,004	0.34	1,115	0.50	1,226	0.68	1,334	0.89	1,435	1.13
2,700	1,050	0.39	1,155	0.55	1,261	0.74	1,364	0.95	1,462	1.18
2,850	1,097	0.44	1,197	0.60	1,297	0.79	1,395	1.01	1,491	1.25
3,000	1,144	0.50	1,239	0.66	1,334	0.86	1,429	1.08	1,521	1.32

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1,800	1,403	1.09	1,491	1.32	1,571	1.55	1,647	1.79	1,718	2.04
1,950	1,429	1.14	1,517	1.38	1,598	1.62	1,674	1.87	1,745	2.13
2,100	1,454	1.20	1,542	1.44	1,624	1.69	1,700	1.95	1,772	2.21
2,250	1,479	1.25	1,568	1.50	1,650	1.76	1,726	2.02	1,799	2.30
2,400	1,504	1.31	1,593	1.57	1,675	1.83	1,752	2.11	1,825	2.39
2,550	1,529	1.37	1,618	1.64	1,700	1.91	1,777	2.19	1,850	2.48
2,700	1,555	1.44	1,643	1.70	1,725	1.98	1,802	2.27	1,875	2.57
2,850	1,582	1.50	1,668	1.78	1,750	2.06	1,827	2.36	1,900	2.66
3,000	1,610	1.58	1,695	1.86	1,775	2.14	1,852	2.45	1,925	2.76

LEGEND

	Medium Static 788 - 1,695 rpm	1.86 Max bhp
	High Static 788 - 1,925 rpm	2.76 Max bhp

Fan data (cont)

40RFA*07 — Medium Static — 50 Hz — SI

L/S	Available External Static Pressure (Pa)									
	50		100		150		200		250	
	rps	vdc	rps	vdc	rps	vdc	rps	vdc	rps	vdc
850	13	3.8	16	4.6	18	5.3	20	5.9	22	6.4
920	14	4.0	16	4.7	18	5.4	20	6.0	22	6.6
990	15	4.2	17	4.9	19	5.5	21	6.2	23	6.7
1060	15	4.4	17	5.1	19	5.7	21	6.3	23	6.8
1135	16	4.6	18	5.3	20	5.9	22	6.4	23	7.0
1205	17	4.9	19	5.4	20	6.0	22	6.6	24	7.1
1275	18	5.1	19	5.7	21	6.2	23	6.7	24	7.2
1345	18	5.4	20	5.9	22	6.4	23	6.9	25	7.4
1415	19	5.6	21	6.1	22	6.6	24	7.1	25	7.5

L/S	Available External Static Pressure (Pa)									
	300		350		400		450		500	
	rps	vdc	rps	vdc	rps	vdc	rps	vdc	rps	vdc
850	23	6.9	25	7.4	—	—	—	—	—	—
920	24	7.1	25	7.5	—	—	—	—	—	—
990	24	7.2	26	7.6	—	—	—	—	—	—
1060	25	7.3	26	7.8	—	—	—	—	—	—
1135	25	7.4	27	7.9	—	—	—	—	—	—
1205	25	7.6	27	8.0	—	—	—	—	—	—
1275	26	7.7	27	8.2	—	—	—	—	—	—
1345	26	7.9	28	8.3	—	—	—	—	—	—
1415	27	8.0	28	8.4	—	—	—	—	—	—

LEGEND

Medium Static 13 - 28 rps 8.4 Max vdc

40RFA*07 — Medium Static — 50 Hz — English

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1,800	788	3.8	942	4.6	1,081	5.3	1,202	5.9	1,308	6.4
1,950	828	4.0	973	4.7	1,107	5.4	1,227	6.0	1,333	6.6
2,100	870	4.2	1,005	4.9	1,134	5.5	1,252	6.2	1,358	6.7
2,250	914	4.4	1,040	5.1	1,163	5.7	1,278	6.3	1,383	6.8
2,400	958	4.6	1,077	5.3	1,194	5.9	1,305	6.4	1,409	7.0
2,550	1,004	4.9	1,115	5.4	1,226	6.0	1,334	6.6	1,435	7.1
2,700	1,050	5.1	1,155	5.7	1,261	6.2	1,364	6.7	1,462	7.2
2,850	1,097	5.4	1,197	5.9	1,297	6.4	1,395	6.9	1,491	7.4
3,000	1,144	5.6	1,239	6.1	1,334	6.6	1,429	7.1	1,521	7.5

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1,800	1,403	6.9	1,491	7.4	—	—	—	—	—	—
1,950	1,429	7.1	1,517	7.5	—	—	—	—	—	—
2,100	1,454	7.2	1,542	7.6	—	—	—	—	—	—
2,250	1,479	7.3	1,568	7.8	—	—	—	—	—	—
2,400	1,504	7.4	1,593	7.9	—	—	—	—	—	—
2,550	1,529	7.6	1,618	8.0	—	—	—	—	—	—
2,700	1,555	7.7	1,643	8.2	—	—	—	—	—	—
2,850	1,582	7.9	1,668	8.3	—	—	—	—	—	—
3,000	1,610	8.0	1,695	8.4	—	—	—	—	—	—

LEGEND

Medium Static 788 - 1,695 rpm 8.4 Max vdc

Fan data (cont)

40RFA*07 — High Static — 50 Hz — SI

L/S	Available External Static Pressure (Pa)									
	50		100		150		200		250	
	rps	vdc	rps	vdc	rps	vdc	rps	vdc	rps	vdc
850	13	3.5	16	4.2	18	4.8	20	5.4	22	5.9
920	14	3.7	16	4.3	18	5.0	20	5.5	22	6.0
990	15	3.9	17	4.5	19	5.1	21	5.6	23	6.1
1060	15	4.1	17	4.6	19	5.2	21	5.7	23	6.2
1135	16	4.3	18	4.8	20	5.4	22	5.9	23	6.3
1205	17	4.5	19	5.0	20	5.5	22	6.0	24	6.5
1275	18	4.7	19	5.2	21	5.7	23	6.1	24	6.6
1345	18	4.9	20	5.4	22	5.8	23	6.3	25	6.7
1415	19	5.1	21	5.6	22	6.0	24	6.4	25	6.9

L/S	Available External Static Pressure (Pa)									
	300		350		400		450		500	
	rps	vdc	rps	vdc	rps	vdc	rps	vdc	rps	vdc
850	23	6.3	25	6.7	26	7.1	27	7.4	29	7.8
920	24	6.4	25	6.8	27	7.2	28	7.6	29	7.9
990	24	6.6	26	7.0	27	7.3	28	7.7	30	8.0
1060	25	6.7	26	7.1	28	7.5	29	7.8	30	8.1
1135	25	6.8	27	7.2	28	7.6	29	7.9	30	8.3
1205	25	6.9	27	7.3	28	7.7	30	8.0	31	8.4
1275	26	7.0	27	7.4	29	7.8	30	8.2	31	8.5
1345	26	7.1	28	7.5	29	7.9	30	8.3	32	8.6
1415	27	7.3	28	7.7	30	8.0	31	8.4	32	8.7

LEGEND

High Static 13 - 32 rps 8.7 Max vdc

40RFA*07 — High Static — 50 Hz — English

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1,800	788	3.5	942	4.2	1,081	4.8	1,202	5.4	1,308	5.9
1,950	828	3.7	973	4.3	1,107	5.0	1,227	5.5	1,333	6.0
2,100	870	3.9	1,005	4.5	1,134	5.1	1,252	5.6	1,358	6.1
2,250	914	4.1	1,040	4.6	1,163	5.2	1,278	5.7	1,383	6.2
2,400	958	4.3	1,077	4.8	1,194	5.4	1,305	5.9	1,409	6.3
2,550	1,004	4.5	1,115	5.0	1,226	5.5	1,334	6.0	1,435	6.5
2,700	1,050	4.7	1,155	5.2	1,261	5.7	1,364	6.1	1,462	6.6
2,850	1,097	4.9	1,197	5.4	1,297	5.8	1,395	6.3	1,491	6.7
3,000	1,144	5.1	1,239	5.6	1,334	6.0	1,429	6.4	1,521	6.9

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1,800	1,403	6.3	1,491	6.7	1,571	7.1	1,647	7.4	1,718	7.8
1,950	1,429	6.4	1,517	6.8	1,598	7.2	1,674	7.6	1,745	7.9
2,100	1,454	6.6	1,542	7.0	1,624	7.3	1,700	7.7	1,772	8.0
2,250	1,479	6.7	1,568	7.1	1,650	7.5	1,726	7.8	1,799	8.1
2,400	1,504	6.8	1,593	7.2	1,675	7.6	1,752	7.9	1,825	8.3
2,550	1,529	6.9	1,618	7.3	1,700	7.7	1,777	8.0	1,850	8.4
2,700	1,555	7.0	1,643	7.4	1,725	7.8	1,802	8.2	1,875	8.5
2,850	1,582	7.1	1,668	7.5	1,750	7.9	1,827	8.3	1,900	8.6
3,000	1,610	7.3	1,695	7.7	1,775	8.0	1,852	8.4	1,925	8.7

LEGEND

High Static 788 - 1,925 rpm 8.7 Max vdc

Fan data (cont)

40RFA*08 — 50 Hz — SI

L/S	Available External Static Pressure (Pa)									
	50		100		150		200		250	
	rps	kW	rps	kW	rps	kW	rps	kW	rps	kW
1060	15	0.17	17	0.28	19	0.40	21	0.55	23	0.71
1150	16	0.20	18	0.31	19	0.44	21	0.59	23	0.75
1240	17	0.24	18	0.35	20	0.48	22	0.63	24	0.79
1330	17	0.28	19	0.39	21	0.52	22	0.67	24	0.84
1415	18	0.32	20	0.44	22	0.57	23	0.73	25	0.90
1505	19	0.37	21	0.49	22	0.63	24	0.79	25	0.96
1595	20	0.43	22	0.55	23	0.69	25	0.85	26	1.02
1680	21	0.49	23	0.62	24	0.76	25	0.92	27	1.10
1770	22	0.56	24	0.69	25	0.84	26	1.00	27	1.18

L/S	Available External Static Pressure (Pa)									
	300		350		400		450		500	
	rps	kW	rps	kW	rps	kW	rps	kW	rps	kW
1060	24	0.88	26	1.06	27	1.25	28	1.45	30	1.65
1150	25	0.93	26	1.12	28	1.31	29	1.51	30	1.72
1240	25	0.97	27	1.17	28	1.37	29	1.58	31	1.79
1330	26	1.03	27	1.22	28	1.43	30	1.64	31	1.86
1415	26	1.08	28	1.28	29	1.49	30	1.71	31	1.94
1505	27	1.15	28	1.35	29	1.56	31	1.78	32	2.01
1595	27	1.21	29	1.41	30	1.63	31	1.86	32	2.09
1680	28	1.29	29	1.49	30	1.71	32	1.94	33	2.18
1770	29	1.37	30	1.57	31	1.79	32	2.02	33	2.26

LEGEND

	Medium Static 15 - 30 rps	1.57 Max kW
	High Static 15 - 33 rps	2.26 Max kW

40RFA*08 — 50 Hz — English

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
2,250	884	0.23	1,009	0.37	1,131	0.54	1,247	0.74	1,354	0.95
2,440	937	0.27	1,053	0.42	1,168	0.59	1,279	0.79	1,383	1.01
2,630	991	0.32	1,099	0.47	1,206	0.64	1,311	0.84	1,412	1.07
2,820	1,048	0.37	1,149	0.53	1,249	0.70	1,348	0.90	1,445	1.13
3,000	1,103	0.43	1,199	0.59	1,293	0.77	1,386	0.97	1,478	1.20
3,190	1,161	0.50	1,252	0.66	1,340	0.85	1,428	1.05	1,516	1.28
3,380	1,218	0.57	1,304	0.74	1,388	0.93	1,471	1.14	1,554	1.37
3,560	1,277	0.66	1,359	0.83	1,438	1.02	1,517	1.24	1,596	1.47
3,750	1,335	0.75	1,413	0.93	1,489	1.13	1,564	1.34	1,639	1.58

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
2,250	1,452	1.18	1,542	1.43	1,625	1.68	1,703	1.94	1,776	2.21
2,440	1,480	1.25	1,570	1.50	1,653	1.76	1,731	2.03	1,805	2.31
2,630	1,507	1.31	1,597	1.57	1,680	1.83	1,759	2.11	1,833	2.40
2,820	1,537	1.38	1,625	1.64	1,708	1.91	1,787	2.20	1,861	2.50
3,000	1,568	1.45	1,654	1.72	1,736	2.00	1,814	2.29	1,888	2.60
3,190	1,602	1.54	1,685	1.80	1,765	2.09	1,842	2.39	1,916	2.70
3,380	1,636	1.62	1,717	1.90	1,795	2.18	1,871	2.49	1,944	2.81
3,560	1,675	1.73	1,752	2.00	1,828	2.29	1,902	2.60	1,973	2.92
3,750	1,714	1.83	1,788	2.11	1,862	2.41	1,933	2.71	2,003	3.04

LEGEND

	Medium Static 884 - 1,788 rpm	2.11 Max bhp
	High Static 884 - 2,003 rpm	3.04 Max bhp

Fan data (cont)

40RFA*08 — Medium Static — 50 Hz — SI

L/S	Available External Static Pressure (Pa)									
	50		100		150		200		250	
	rps	vdc	rps	vdc	rps	vdc	rps	vdc	rps	vdc
1060	15	4.3	17	4.9	19	5.5	21	6.1	23	5.0
1150	16	4.5	18	5.1	19	5.7	21	6.3	23	5.1
1240	17	4.8	18	5.4	20	5.9	22	6.5	24	5.2
1330	17	5.1	19	5.6	21	6.1	22	6.6	24	5.3
1415	18	5.4	20	5.9	22	6.4	23	6.8	25	5.5
1505	19	5.7	21	6.2	22	6.6	24	7.1	25	5.6
1595	20	6.0	22	6.4	23	6.9	25	7.3	26	5.7
1680	21	6.3	23	6.7	24	7.1	25	7.5	27	5.9
1770	22	6.6	24	7.0	25	7.4	26	7.8	27	6.1

L/S	Available External Static Pressure (Pa)									
	300		350		400		450		500	
	rps	vdc	rps	vdc	rps	vdc	rps	vdc	rps	vdc
1060	24	5.4	26	5.7	—	—	—	—	—	—
1150	25	5.5	26	5.8	—	—	—	—	—	—
1240	25	5.6	27	5.9	—	—	—	—	—	—
1330	26	5.7	27	6.0	—	—	—	—	—	—
1415	26	5.8	28	6.1	—	—	—	—	—	—
1505	27	5.9	28	6.2	—	—	—	—	—	—
1595	27	6.1	29	6.4	—	—	—	—	—	—
1680	28	6.2	29	6.5	—	—	—	—	—	—
1770	29	6.4	30	6.6	—	—	—	—	—	—

LEGEND

Medium Static 15 - 30 rps 6.6 Max vdc

40RFA*08 — Medium Static — 50 Hz — English

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
2,250	884	4.3	1,009	4.9	1,131	5.5	1,247	6.1	1,354	5.0
2,440	937	4.5	1,053	5.1	1,168	5.7	1,279	6.3	1,383	5.1
2,630	991	4.8	1,099	5.4	1,206	5.9	1,311	6.5	1,412	5.2
2,820	1,048	5.1	1,149	5.6	1,249	6.1	1,348	6.6	1,445	5.3
3,000	1,103	5.4	1,199	5.9	1,293	6.4	1,386	6.8	1,478	5.5
3,190	1,161	5.7	1,252	6.2	1,340	6.6	1,428	7.1	1,516	5.6
3,380	1,218	6.0	1,304	6.4	1,388	6.9	1,471	7.3	1,554	5.7
3,560	1,277	6.3	1,359	6.7	1,438	7.1	1,517	7.5	1,596	5.9
3,750	1,335	6.6	1,413	7.0	1,489	7.4	1,564	7.8	1,639	6.1

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
2,250	1,452	5.4	1,542	5.7	—	—	—	—	—	—
2,440	1,480	5.5	1,570	5.8	—	—	—	—	—	—
2,630	1,507	5.6	1,597	5.9	—	—	—	—	—	—
2,820	1,537	5.7	1,625	6.0	—	—	—	—	—	—
3,000	1,568	5.8	1,654	6.1	—	—	—	—	—	—
3,190	1,602	5.9	1,685	6.2	—	—	—	—	—	—
3,380	1,636	6.1	1,717	6.4	—	—	—	—	—	—
3,560	1,675	6.2	1,752	6.5	—	—	—	—	—	—
3,750	1,714	6.4	1,788	6.6	—	—	—	—	—	—

LEGEND

Medium Static 884 - 1,788 rpm 6.6 Max vdc

Fan data (cont)

40RFA*08 — High Static — 50 Hz — SI

L/S	Available External Static Pressure (Pa)									
	50		100		150		200		250	
	rps	vdc	rps	vdc	rps	vdc	rps	vdc	rps	vdc
1060	15	3.9	17	4.5	19	5.1	21	5.6	23	6.1
1150	16	4.2	18	4.7	19	5.2	21	5.7	23	6.2
1240	17	4.4	18	4.9	20	5.4	22	5.9	24	6.4
1330	17	4.7	19	5.1	21	5.6	22	6.1	24	6.5
1415	18	4.9	20	5.4	22	5.8	23	6.2	25	6.7
1505	19	5.2	21	5.6	22	6.0	24	6.4	25	6.8
1595	20	5.5	22	5.9	23	6.3	25	6.6	26	7.0
1680	21	5.7	23	6.1	24	6.5	25	6.8	27	7.2
1770	22	6.0	24	6.4	25	6.7	26	7.1	27	7.4

L/S	Available External Static Pressure (Pa)									
	300		350		400		450		500	
	rps	vdc	rps	vdc	rps	vdc	rps	vdc	rps	vdc
1060	24	6.5	26	7.0	27	7.3	28	7.7	30	8.0
1150	25	6.7	26	7.1	28	7.5	29	7.8	30	8.2
1240	25	6.8	27	7.2	28	7.6	29	8.0	31	8.3
1330	26	6.9	27	7.3	28	7.7	30	8.1	31	8.4
1415	26	7.1	28	7.5	29	7.9	30	8.2	31	8.6
1505	27	7.2	28	7.6	29	8.0	31	8.3	32	8.7
1595	27	7.4	29	7.8	30	8.1	31	8.5	32	8.8
1680	28	7.6	29	7.9	30	8.3	32	8.6	33	9.0
1770	29	7.8	30	8.1	31	8.4	32	8.8	33	6.8

LEGEND

High Static 15 - 33 rps 6.8 Max vdc

40RFA*08 — High Static — 50 Hz — English

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
2,250	884	3.9	1,009	4.5	1,131	5.1	1,247	5.6	1,354	6.1
2,440	937	4.2	1,053	4.7	1,168	5.2	1,279	5.7	1,383	6.2
2,630	991	4.4	1,099	4.9	1,206	5.4	1,311	5.9	1,412	6.4
2,820	1,048	4.7	1,149	5.1	1,249	5.6	1,348	6.1	1,445	6.5
3,000	1,103	4.9	1,199	5.4	1,293	5.8	1,386	6.2	1,478	6.7
3,190	1,161	5.2	1,252	5.6	1,340	6.0	1,428	6.4	1,516	6.8
3,380	1,218	5.5	1,304	5.9	1,388	6.3	1,471	6.6	1,554	7.0
3,560	1,277	5.7	1,359	6.1	1,438	6.5	1,517	6.8	1,596	7.2
3,750	1,335	6.0	1,413	6.4	1,489	6.7	1,564	7.1	1,639	7.4

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
2,250	1,452	6.5	1,542	7.0	1,625	7.3	1,703	7.7	1,776	8.0
2,440	1,480	6.7	1,570	7.1	1,653	7.5	1,731	7.8	1,805	8.2
2,630	1,507	6.8	1,597	7.2	1,680	7.6	1,759	8.0	1,833	8.3
2,820	1,537	6.9	1,625	7.3	1,708	7.7	1,787	8.1	1,861	8.4
3,000	1,568	7.1	1,654	7.5	1,736	7.9	1,814	8.2	1,888	8.6
3,190	1,602	7.2	1,685	7.6	1,765	8.0	1,842	8.3	1,916	8.7
3,380	1,636	7.4	1,717	7.8	1,795	8.1	1,871	8.5	1,944	8.8
3,560	1,675	7.6	1,752	7.9	1,828	8.3	1,902	8.6	1,973	9.0
3,750	1,714	7.8	1,788	8.1	1,862	8.4	1,933	8.8	2,003	6.8

LEGEND

High Static 884 - 2,003 rpm 6.8 Max vdc

Fan data (cont)

40RFA*12 — 50 Hz — SI

L/S	Available External Static Pressure (Pa)									
	50		100		150		200		250	
	rps	kW	rps	kW	rps	kW	rps	kW	rps	kW
1415	18	0.30	20	0.41	21	0.54	23	0.68	24	0.85
1535	19	0.36	21	0.48	22	0.61	24	0.76	25	0.92
1650	20	0.43	22	0.55	23	0.69	25	0.84	26	1.01
1770	22	0.51	23	0.64	24	0.78	26	0.93	27	1.10
1890	23	0.60	24	0.74	25	0.88	27	1.04	28	1.21
2005	24	0.70	25	0.84	27	1.00	28	1.16	29	1.34
2125	26	0.81	27	0.96	28	1.12	29	1.29	30	1.47
2240	27	0.94	28	1.10	29	1.26	30	1.43	31	1.62
2360	28	1.08	29	1.24	30	1.42	31	1.59	32	1.78

L/S	Available External Static Pressure (Pa)									
	300		350		400		450		500	
	rps	kW	rps	kW	rps	kW	rps	kW	rps	kW
1415	26	1.03	27	1.22	29	1.43	30	1.64	31	1.87
1535	26	1.10	28	1.30	29	1.51	30	1.73	32	1.95
1650	27	1.19	29	1.39	30	1.60	31	1.82	32	2.05
1770	28	1.29	29	1.49	31	1.70	32	1.92	33	2.16
1890	29	1.40	30	1.60	31	1.81	32	2.04	34	2.27
2005	30	1.52	31	1.72	32	1.94	33	2.16	—	—
2125	31	1.66	32	1.86	33	2.08	34	2.31	—	—
2240	32	1.82	33	2.02	34	2.24	—	—	—	—
2360	33	1.98	34	2.19	—	—	—	—	—	—

LEGEND

	Medium Static 18 - 32 rps	1.86 Max kW
	High Static 18 - 34 rps	2.31 Max kW

40RFA*12 — 50 Hz — English

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
3,000	1,080	0.40	1,175	0.55	1,268	0.72	1,361	0.92	1,453	1.14
3,250	1,154	0.48	1,243	0.64	1,329	0.81	1,415	1.01	1,501	1.24
3,500	1,229	0.57	1,312	0.74	1,393	0.92	1,473	1.13	1,553	1.35
3,750	1,305	0.68	1,384	0.86	1,459	1.04	1,534	1.25	1,609	1.48
4,000	1,381	0.80	1,456	0.99	1,527	1.18	1,598	1.40	1,668	1.63
4,250	1,458	0.94	1,529	1.13	1,597	1.34	1,664	1.56	1,730	1.79
4,500	1,535	1.09	1,603	1.29	1,668	1.50	1,731	1.73	1,794	1.97
4,750	1,613	1.26	1,678	1.47	1,740	1.69	1,800	1.92	1,860	2.17
5,000	1,691	1.45	1,753	1.67	1,813	1.90	1,870	2.14	1,927	2.39

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
3,000	1,543	1.38	1,629	1.64	1,712	1.91	1,791	2.20	1,866	2.50
3,250	1,586	1.48	1,668	1.74	1,748	2.02	1,825	2.31	1,899	2.62
3,500	1,632	1.59	1,711	1.86	1,787	2.14	1,862	2.44	1,935	2.75
3,750	1,683	1.73	1,757	1.99	1,830	2.27	1,902	2.58	1,972	2.89
4,000	1,738	1.88	1,807	2.14	1,877	2.43	1,945	2.73	2,013	3.05
4,250	1,795	2.04	1,861	2.31	1,927	2.60	1,992	2.90	—	—
4,500	1,856	2.23	1,918	2.50	1,980	2.79	2,042	3.09	—	—
4,750	1,919	2.43	1,977	2.71	2,036	3.00	—	—	—	—
5,000	1,983	2.66	2,039	2.94	—	—	—	—	—	—

LEGEND

	Medium Static 1,080 - 1,918 rpm	2.5 Max bhp
	High Static 1,712 - 2,042 rpm	3.09 Max bhp

Fan data (cont)

40RFA12 — Medium Static — 50 Hz — SI

L/S	Available External Static Pressure (Pa)									
	50		100		150		200		250	
	rps	vdc	rps	vdc	rps	vdc	rps	vdc	rps	vdc
1415	18	5.3	20	5.8	21	6.2	23	6.7	24	7.2
1535	19	5.6	21	6.1	22	6.5	24	7.0	25	7.4
1650	20	6.0	22	6.5	23	6.9	25	7.3	26	7.7
1770	22	6.4	23	6.8	24	7.2	26	7.6	27	8.0
1890	23	6.8	24	7.2	25	7.6	27	7.9	28	8.3
2005	24	7.2	25	7.6	27	7.9	28	8.3	29	8.6
2125	26	7.6	27	8.0	28	8.3	29	8.6	30	8.9
2240	27	8.0	28	8.3	29	8.7	30	9.0	31	9.3
2360	28	8.4	29	8.7	30	9.0	31	9.3	32	9.6

L/S	Available External Static Pressure (Pa)									
	300		350		400		450		500	
	rps	vdc	rps	vdc	rps	vdc	rps	vdc	rps	vdc
1415	26	7.6	27	8.1	—	—	—	—	—	—
1535	26	7.9	28	8.3	—	—	—	—	—	—
1650	27	8.1	29	8.5	—	—	—	—	—	—
1770	28	8.4	29	8.8	—	—	—	—	—	—
1890	29	8.7	30	9.0	—	—	—	—	—	—
2005	30	8.9	31	9.3	—	—	—	—	—	—
2125	31	9.3	32	9.6	—	—	—	—	—	—
2240	32	9.6	—	—	—	—	—	—	—	—
2360	—	—	—	—	—	—	—	—	—	—

LEGEND

Medium Static 18 - 32 rps 9.6 Max vdc

40RFA12 — Medium Static — 50 Hz — English

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
3,000	1,080	5.3	1,175	5.8	1,268	6.2	1,361	6.7	1,453	7.2
3,250	1,154	5.6	1,243	6.1	1,329	6.5	1,415	7.0	1,501	7.4
3,500	1,229	6.0	1,312	6.5	1,393	6.9	1,473	7.3	1,553	7.7
3,750	1,305	6.4	1,384	6.8	1,459	7.2	1,534	7.6	1,609	8.0
4,000	1,381	6.8	1,456	7.2	1,527	7.6	1,598	7.9	1,668	8.3
4,250	1,458	7.2	1,529	7.6	1,597	7.9	1,664	8.3	1,730	8.6
4,500	1,535	7.6	1,603	8.0	1,668	8.3	1,731	8.6	1,794	8.9
4,750	1,613	8.0	1,678	8.3	1,740	8.7	1,800	9.0	1,860	9.3
5,000	1,691	8.4	1,753	8.7	1,813	9.0	1,870	9.3	1,927	9.6

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
3,000	1,543	7.6	1,629	8.1	—	—	—	—	—	—
3,250	1,586	7.9	1,668	8.3	—	—	—	—	—	—
3,500	1,632	8.1	1,711	8.5	—	—	—	—	—	—
3,750	1,683	8.4	1,757	8.8	—	—	—	—	—	—
4,000	1,738	8.7	1,807	9.0	—	—	—	—	—	—
4,250	1,795	8.9	1,861	9.3	—	—	—	—	—	—
4,500	1,856	9.3	1,918	9.6	—	—	—	—	—	—
4,750	1,919	9.6	—	—	—	—	—	—	—	—
5,000	—	—	—	—	—	—	—	—	—	—

LEGEND

Medium Static 1,080 - 1,919 rpm 9.6 Max vdc

Fan data (cont)

40RFA*12 — High Static — 50 Hz — SI

L/S	Available External Static Pressure (Pa)									
	50		100		150		200		250	
	rps	vdc	rps	vdc	rps	vdc	rps	vdc	rps	vdc
1415	18	4.8	20	5.3	21	5.7	23	6.1	24	6.6
1535	19	5.2	21	5.6	22	6.0	24	6.4	25	6.8
1650	20	5.5	22	5.9	23	6.3	25	6.6	26	7.0
1770	22	5.9	23	6.2	24	6.6	26	6.9	27	7.3
1890	23	6.2	24	6.6	25	6.9	27	7.2	28	7.5
2005	24	6.6	25	6.9	27	7.2	28	7.5	29	7.8
2125	26	6.9	27	7.2	28	7.5	29	7.8	30	8.1
2240	27	7.3	28	7.6	29	7.9	30	8.2	31	8.4
2360	28	7.7	29	7.9	30	8.2	31	8.5	32	8.7

L/S	Available External Static Pressure (Pa)									
	300		350		400		450		500	
	rps	vdc	rps	vdc	rps	vdc	rps	vdc	rps	vdc
1415	26	7.0	27	7.4	29	7.7	30	8.1	31	8.5
1535	26	7.2	28	7.5	29	7.9	30	8.3	32	8.6
1650	27	7.4	29	7.7	30	8.1	31	8.4	32	8.8
1770	28	7.6	29	8.0	31	8.3	32	8.6	33	8.9
1890	29	7.9	30	8.2	31	8.5	32	8.8	34	9.1
2005	30	8.1	31	8.4	32	8.7	33	9.0	—	—
2125	31	8.4	32	8.7	33	9.0	34	9.3	—	—
2240	32	8.7	33	9.0	34	9.2	—	—	—	—
2360	33	9.0	34	9.3	—	—	—	—	—	—

LEGEND

High Static 18 - 34 rps 9.3 Max vdc

40RFA*12 — High Static — 50 Hz — English

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
3,000	1,080	4.8	1,175	5.3	1,268	5.7	1,361	6.1	1,453	6.6
3,250	1,154	5.2	1,243	5.6	1,329	6.0	1,415	6.4	1,501	6.8
3,500	1,229	5.5	1,312	5.9	1,393	6.3	1,473	6.6	1,553	7.0
3,750	1,305	5.9	1,384	6.2	1,459	6.6	1,534	6.9	1,609	7.3
4,000	1,381	6.2	1,456	6.6	1,527	6.9	1,598	7.2	1,668	7.5
4,250	1,458	6.6	1,529	6.9	1,597	7.2	1,664	7.5	1,730	7.8
4,500	1,535	6.9	1,603	7.2	1,668	7.5	1,731	7.8	1,794	8.1
4,750	1,613	7.3	1,678	7.6	1,740	7.9	1,800	8.2	1,860	8.4
5,000	1,691	7.7	1,753	7.9	1,813	8.2	1,870	8.5	1,927	8.7

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
3,000	1,543	7.0	1,629	7.4	1,712	7.7	1,791	8.1	1,866	8.5
3,250	1,586	7.2	1,668	7.5	1,748	7.9	1,825	8.3	1,899	8.6
3,500	1,632	7.4	1,711	7.7	1,787	8.1	1,862	8.4	1,935	8.8
3,750	1,683	7.6	1,757	8.0	1,830	8.3	1,902	8.6	1,972	8.9
4,000	1,738	7.9	1,807	8.2	1,877	8.5	1,945	8.8	2,013	9.1
4,250	1,795	8.1	1,861	8.4	1,927	8.7	1,992	9.0	—	—
4,500	1,856	8.4	1,918	8.7	1,980	9.0	2,042	9.3	—	—
4,750	1,919	8.7	1,977	9.0	2,036	9.2	—	—	—	—
5,000	1,983	9.0	2,039	9.3	—	—	—	—	—	—

LEGEND

High Static 1,080 - 2,042 rpm 9.3 Max vdc

Fan data (cont)

Fan Performance Data — 40RUA*14-30 — ESP (0-600 Pa) — 50 Hz — SI

UNIT	AIRFLOW (L/s)	EXTERNAL STATIC PRESSURE (Pa)													
		0		50		100		150		200		250		300	
		rps	kW	rps	kW	rps	kW	rps	kW	rps	kW	rps	kW	rps	kW
40RUA*14	1770	**6.57**	**0.30**	**7.54**	**0.39**	9.31	0.60	10.72	0.82	11.95	1.04	13.09	1.27	14.13	1.52
	2030	**7.27**	**0.43**	**8.11**	**0.52**	9.76	0.75	11.16	1.00	12.36	1.25	13.44	1.50	14.45	1.76
	2360	**8.20**	**0.64**	**8.92**	**0.74**	10.38	0.98	11.73	1.26	12.91	1.55	13.97	1.84	14.93	2.13
	2690	9.16	0.92	9.79	1.02	11.07	1.27	12.33	1.58	13.48	1.90	14.53	2.23	15.48	2.56
	2950	9.93	1.18	10.50	1.30	11.66	1.56	12.83	1.87	13.95	2.22	14.98	2.58	15.92	2.94
40RUA*16	2120	**7.13**	**0.44**	**7.91**	**0.52**	9.50	0.74	10.94	0.99	12.17	1.25	13.26	1.51	14.26	1.77
	2500	**8.13**	**0.68**	**8.80**	**0.78**	10.15	1.00	11.48	1.27	12.70	1.57	13.78	1.87	14.76	2.18
	2830	**9.03**	**0.96**	9.63	1.07	10.81	1.30	12.01	1.58	13.18	1.90	14.25	2.24	15.23	2.58
	3210	10.07	1.37	10.62	1.48	11.66	1.73	12.70	2.01	13.77	2.35	14.80	2.71	15.76	3.09
	3540	10.99	1.81	11.50	1.93	12.45	2.20	13.40	2.49	14.35	2.83	15.31	3.20	16.24	3.60
40RUA*25	2830	**8.86**	**0.94**	**9.48**	**1.04**	**10.65**	**1.26**	**11.84**	**1.53**	13.01	1.85	14.10	2.19	15.08	2.53
	3300	**10.14**	**1.44**	**10.69**	**1.56**	**11.70**	**1.81**	12.71	2.08	13.73	2.41	14.74	2.77	15.71	3.15
	3780	11.43	2.11	11.93	2.25	12.84	2.52	13.71	2.81	14.60	3.14	15.49	3.51	16.39	3.91
	4250	12.74	2.96	13.19	3.12	14.02	3.43	14.81	3.74	15.59	4.08	16.37	4.45	17.17	4.85
	4720	14.05	4.01	14.47	4.19	15.23	4.54	15.96	4.88	16.66	5.24	17.36	5.62	18.07	6.03
40RUA*28	3540	**7.93**	**1.04**	**8.50**	**1.18**	**9.65**	**1.48**	**10.73**	**1.79**	11.68	2.10	12.53	2.45	13.40	2.95
	4130	**9.08**	**1.60**	**9.57**	**1.75**	**10.55**	**2.10**	11.52	2.45	12.45	2.81	13.28	3.17	14.03	3.55
	4720	**10.25**	**2.33**	**10.68**	**2.51**	11.53	2.89	12.38	3.29	13.23	3.70	14.05	4.11	14.80	4.51
	5310	11.42	3.26	11.82	3.46	12.57	3.88	13.33	4.32	14.08	4.77	14.85	5.23	15.58	5.70
	5900	12.60	4.41	12.97	4.64	13.65	5.09	14.33	5.57	15.02	6.07	15.70	6.58	16.38	7.10
40RUA*30	4250	**8.98**	**1.63**	**9.48**	**1.78**	**10.43**	**2.13**	11.38	2.49	12.32	2.86	13.18	3.22	13.95	3.59
	4955	**10.33**	**2.51**	**10.77**	**2.70**	11.58	3.08	12.40	3.49	13.22	3.91	14.03	4.35	14.80	4.78
	5665	11.68	3.68	12.07	3.89	12.82	4.33	13.52	4.77	14.23	5.25	14.95	5.73	15.67	6.23
	6370	13.05	5.18	13.40	5.42	14.07	5.90	14.72	6.39	15.33	6.91	15.97	7.43	16.60	7.99
	7080	14.42	7.05	14.73	7.32	15.35	7.84	15.93	8.38	16.52	8.93	17.08	9.51	17.65	10.10

UNIT	AIRFLOW (L/s)	EXTERNAL STATIC PRESSURE (Pa)											
		350		400		450		500		550		600	
		rps	kW	rps	kW	rps	kW	rps	kW	rps	kW	rps	kW
40RUA*14	1770	15.15	1.77	16.13	2.04	17.10	2.33	**18.00**	**2.62**	**18.85**	**2.92**	**19.68**	**3.22**
	2030	15.41	2.04	16.34	2.32	17.40	2.62	**18.07**	**2.92**	**18.92**	**3.24**	**19.73**	**3.56**
	2360	15.84	2.43	16.70	2.74	**17.54**	**3.05**	**18.35**	**3.38**	**19.14**	**3.71**	**19.83**	**4.06**
	2690	16.36	2.89	17.19	3.23	**17.98**	**3.57**	**18.75**	**3.92**	**19.49**	**4.27**	—	—
	2950	16.79	3.30	**17.61**	**3.66**	**18.39**	**4.03**	**19.13**	**4.40**	**19.84**	**4.77**	—	—
40RUA*16	2120	15.20	2.05	16.12	2.33	**16.98**	**2.62**	**17.83**	**2.92**	**18.67**	**3.24**	**19.47**	**3.57**
	2500	15.67	2.49	16.53	2.80	**17.35**	**3.12**	**18.13**	**3.44**	**18.90**	**3.77**	**19.65**	**4.12**
	2830	16.13	2.92	16.97	3.27	**17.77**	**3.62**	**18.53**	**3.97**	**19.26**	**4.33**	**19.97**	**4.69**
	3210	16.66	3.48	**17.50**	**3.87**	**18.29**	**4.26**	**19.03**	**4.65**	**19.75**	**5.04**	—	—
	3540	**17.13**	**4.02**	**17.97**	**4.45**	**18.75**	**4.88**	**19.50**	**5.30**	—	—	—	—
40RUA*25	2830	15.90	2.86	16.75	3.18	17.53	3.52	18.30	3.89	19.03	4.23	—	—
	3300	16.50	3.53	17.33	3.91	18.17	4.32	18.92	4.70	19.60	5.10	—	—
	3780	17.13	4.32	17.97	4.76	18.83	5.22	19.55	5.67	—	—	—	—
	4250	17.88	5.30	18.67	5.76	19.48	6.24	—	—	—	—	—	—
	4720	18.77	6.52	19.43	6.99	—	—	—	—	—	—	—	—
40RUA*28	3540	14.57	3.97	14.95	4.41	15.67	5.07	16.50	5.59	—	—	—	—
	4130	14.77	4.00	15.50	4.71	16.37	5.46	17.00	6.04	—	—	—	—
	4720	15.50	4.92	16.15	5.22	16.78	5.88	17.42	6.50	—	—	—	—
	5310	16.27	6.15	16.90	6.61	17.52	7.08	**18.10**	**7.58**	—	—	—	—
	5900	17.05	7.61	17.68	8.11	**18.28**	**8.62**	—	—	—	—	—	—
40RUA*30	4250	14.68	4.00	15.38	4.50	16.12	5.14	17.00	6.15	—	—	—	—
	4955	15.50	5.20	16.17	5.63	16.80	6.09	17.42	6.61	—	—	—	—
	5665	16.35	6.73	17.02	7.21	—	—	—	—	—	—	—	—
	6370	17.25	8.54	—	—	—	—	—	—	—	—	—	—
	7080	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

kW — Kilowatt Input to Fan
rps — Revolutions per Second
ESP — External Static Pressure
Bold — Bold text indicates field-supplied drive is required.
Plain — Plain text (not bold or italic) indicates standard motor and standard drive.
Underline — Underlined text indicates a different motor and drive combination other than the standard motor and standard drive combination is required. Refer to fan motor and drive tables to complete selection.

NOTE(S):
Maximum allowable fan speed is 18 rps (1,100 rpm) for unit sizes 28 and 30; 20 rps (1,200 rpm) for all other sizes. Fan performance is based on deductions for wet coil, clean 51 mm (2-in.) filters, and unit casing. See table on page 26 for factory-supplied filter pressure drop.

Fan data (cont)

Fan Performance Data — 40RUA*14-30 — ESP (0-2.4 in. wg) — 50 Hz — English

UNIT	AIRFLOW (cfm)	EXTERNAL STATIC PRESSURE (in. wg)													
		0.0		0.2		0.4		0.6		0.8		1.0		1.2	
		rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
40RUA*14	3,750	**394.20**	**0.40**	**452.40**	**0.52**	558.60	0.80	643.20	1.10	717.00	1.39	785.40	1.70	847.80	2.04
	4,300	**436.20**	**0.58**	**486.60**	**0.70**	585.60	1.01	669.60	1.34	741.60	1.68	806.40	2.01	867.00	2.36
	5,000	**492.00**	**0.86**	**535.20**	**0.99**	622.80	1.31	703.80	1.69	774.60	2.08	838.20	2.47	895.80	2.86
	5,700	549.60	1.23	587.40	1.37	664.20	1.70	739.80	2.12	808.80	2.55	871.80	2.99	928.80	3.43
	6,250	595.80	1.58	630.00	1.74	699.60	2.09	769.80	2.51	837.00	2.98	898.80	3.46	955.20	3.94
40RUA*16	4,490	**427.80**	**0.59**	**474.60**	**0.70**	570.00	0.99	656.40	1.33	730.20	1.68	795.60	2.02	855.60	2.37
	5,300	**487.80**	**0.91**	**528.00**	**1.05**	609.00	1.34	688.80	1.70	762.00	2.11	826.80	2.51	885.60	2.92
	6,000	**541.80**	**1.29**	577.80	1.43	648.60	1.74	720.60	2.12	790.80	2.55	855.00	3.00	913.80	3.46
	6,800	604.20	1.84	637.20	1.98	699.60	2.32	762.00	2.70	826.20	3.15	888.00	3.63	945.60	4.14
	7,500	659.40	2.43	690.00	2.59	747.00	2.95	804.00	3.34	861.00	3.80	918.60	4.29	974.40	4.83
40RUA*25	6,000	**531.60**	**1.26**	**568.80**	**1.39**	**639.00**	**1.69**	**710.40**	**2.05**	780.60	2.48	846.00	2.94	904.80	3.39
	6,990	**608.40**	**1.93**	**641.40**	**2.09**	**702.00**	**2.43**	762.60	2.79	823.80	3.23	884.40	3.71	942.60	4.22
	8,010	685.80	2.83	715.80	3.02	770.40	3.38	822.60	3.77	876.00	4.21	929.40	4.71	983.40	5.24
	9,010	764.40	3.97	791.40	4.18	841.20	4.60	888.60	5.02	935.40	5.47	982.20	5.97	1,030.20	6.50
	10,000	843.00	5.38	868.20	5.62	913.80	6.09	957.60	6.54	999.60	7.03	1,041.60	7.54	1,084.20	8.09
40RUA*28	7,500	**476.00**	**1.39**	**510.00**	**1.58**	**579.00**	**1.99**	**644.00**	**2.40**	701.00	2.81	752.00	3.29	804.00	3.96
	8,750	**545.00**	**2.14**	**574.00**	**2.35**	**633.00**	**2.81**	691.00	3.29	747.00	3.77	797.00	4.25	842.00	4.76
	10,000	**615.00**	**3.12**	**641.00**	**3.36**	692.00	3.87	743.00	4.41	794.00	4.96	843.00	5.51	888.00	6.05
	11,250	685.00	4.37	709.00	4.64	754.00	5.20	800.00	5.79	845.00	6.40	891.00	7.02	935.00	7.64
	12,500	756.00	5.92	778.00	6.22	819.00	6.83	860.00	7.47	901.00	8.14	942.00	8.83	983.00	9.52
40RUA*30	9,010	**539.00**	**2.18**	**569.00**	**2.39**	**626.00**	**2.85**	683.00	3.34	739.00	3.83	791.00	4.32	837.00	4.82
	10,500	**620.00**	**3.37**	**646.00**	**3.62**	695.00	4.13	744.00	4.68	793.00	5.25	842.00	5.83	888.00	6.41
	12,000	701.00	4.94	724.00	5.22	769.00	5.80	811.00	6.40	854.00	7.04	897.00	7.69	940.00	8.36
	13,500	783.00	6.95	804.00	7.27	844.00	7.91	883.00	8.57	920.00	9.26	958.00	9.97	996.00	10.71
	15,000	865.00	9.45	884.00	9.81	921.00	10.52	956.00	11.24	991.00	11.98	1,025.00	12.75	1,059.00	13.54

UNIT	AIRFLOW (cfm)	EXTERNAL STATIC PRESSURE (in. wg)											
		1.4		1.6		1.8		2.0		2.2		2.4	
		rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
40RUA*14	3,750	909.00	2.37	967.80	2.74	1,026.00	3.12	**1,080.00**	**3.51**	**1,131.00**	**3.92**	**1,180.80**	**4.32**
	4,300	924.60	2.74	980.40	3.11	1,044.00	3.51	**1,084.20**	**3.92**	**1,135.20**	**4.34**	**1,183.80**	**4.77**
	5,000	950.40	3.26	1,002.00	3.67	**1,052.40**	**4.09**	**1,101.00**	**4.53**	**1,148.40**	**4.98**	**1,189.80**	**5.44**
	5,700	981.60	3.88	1,031.40	4.33	**1,078.80**	**4.79**	**1,125.00**	**5.26**	**1,169.40**	**5.73**	—	—
	6,250	1,007.40	4.43	**1,056.60**	**4.91**	**1,103.40**	**5.40**	**1,147.80**	**5.90**	**1,190.40**	**6.40**	—	—
40RUA*16	4,490	912.00	2.75	967.20	3.12	**1,018.80**	**3.51**	**1,069.80**	**3.92**	**1,120.20**	**4.34**	**1,168.20**	**4.79**
	5,300	940.20	3.34	991.80	3.75	**1,041.00**	**4.18**	**1,087.80**	**4.61**	**1,134.00**	**5.06**	**1,179.00**	**5.52**
	6,000	967.80	3.92	1,018.20	4.39	**1,066.20**	**4.85**	**1,111.80**	**5.32**	**1,155.60**	**5.81**	**1,198.20**	**6.29**
	6,800	999.60	4.67	**1,050.00**	**5.19**	**1,097.40**	**5.71**	**1,141.80**	**6.24**	**1,185.00**	**6.76**	—	—
	7,500	**1,027.80**	**5.39**	**1,078.20**	**5.97**	**1,125.00**	**6.54**	**1,170.00**	**7.11**	—	—	—	—
40RUA*25	6,000	954.00	3.84	1,005.00	4.26	1,051.80	4.72	1,098.00	5.22	1,141.80	5.67	—	—
	6,990	990.00	4.73	1,039.80	5.24	1,090.20	5.79	1,135.20	6.30	1,176.00	6.84	—	—
	8,010	1,027.80	5.79	1,078.20	6.38	1,129.80	7.00	1,173.00	7.60	—	—	—	—
	9,010	1,072.80	7.11	1,120.20	7.72	1,168.80	8.37	—	—	—	—	—	—
	10,000	1,126.20	8.74	1,165.80	9.37	—	—	—	—	—	—	—	—
40RUA*28	7,500	874.00	5.33	897.00	5.91	940.00	6.80	990.00	7.50	—	—	—	—
	8,750	886.00	5.36	930.00	6.31	982.00	7.32	1,020.00	8.10	—	—	—	—
	10,000	930.00	6.60	969.00	7.00	1,007.00	7.89	1,045.00	8.71	—	—	—	—
	11,250	976.00	8.25	1,014.00	8.86	1,051.00	9.49	**1,086.00**	**10.17**	—	—	—	—
	12,500	1,023.00	10.20	1,061.00	10.88	**1,097.00**	**11.56**	—	—	—	—	—	—
40RUA*30	9,010	881.00	5.37	923.00	6.03	967.00	6.89	1,020.00	8.25	—	—	—	—
	10,500	930.00	6.97	970.00	7.55	1,008.00	8.17	1,045.00	8.86	—	—	—	—
	12,000	981.00	9.02	1,021.00	9.67	—	—	—	—	—	—	—	—
	13,500	1,035.00	11.45	—	—	—	—	—	—	—	—	—	—
	15,000	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

bhp — Brake Horsepower Input to Fan
rpm — Revolutions per Minute
ESP — External Static Pressure
Bold — Bold text indicates field-supplied drive is required.
Plain — Plain text (not bold or italic) indicates standard motor and standard drive.
Underline — Underlined text indicates a different motor and drive combination other than the standard motor and standard drive combination is required. Refer to fan motor and drive tables to complete selection.

NOTE(S):
Maximum allowable fan speed is 1,100 rpm for unit sizes 28 and 30; 1,200 rpm for all other sizes. Fan performance is based on deductions for wet coil, clean 2-in. filters, and unit casing. See table on page 26 for factory-supplied filter pressure drop.

Electrical data

40RF/40RU, 18.3 kW-106 kW (5.2-30 Tons), 50 Hz Electrical Data, Two-Speed Motors

UNIT[a,b]	NOM. V-Ph-Hz[c]	IFM TYPE	UNIT VOLTAGE LIMITS		FAN MOTOR			POWER SUPPLY[d]	
			MIN	MAX	HP	kW	FLA[e]	Minimum Circuit Amps (MCA)	Maximum Overcurrent Protection (MOCP)
40RFA*07	400-3-50	MED	360	440	2.4	1.76	3.0	4.0	15
		HIGH	360	440	3.0	2.24	3.5	5.0	15
40RFA*08	400-3-50	MED	360	440	2.4	1.76	3.0	4.0	15
		HIGH	360	440	3.0	2.24	3.5	5.0	15
40RFA*12	400-3-50	MED	360	440	2.4	1.76	3.0	4.0	15
		HIGH	360	440	3.0	2.24	3.5	5.0	15
40RUA*14	400-3-50	STD	360	440	2.9	2.16	3.4	4.3	15
		MED	360	440	2.9	2.16	3.4	4.3	15
		HIGH	360	440	5.0	3.73	7.6	9.5	15
40RUA*16	400-3-50	STD	360	440	2.9	2.16	3.4	4.3	15
		MED	360	440	2.9	2.16	3.4	4.3	15
		HIGH	360	440	5.0	3.73	7.6	9.5	15
40RUA*25	400-3-50	STD	360	440	5.0	3.73	7.6	9.5	15
		MED	360	440	5.0	3.73	7.6	9.5	15
		HIGH	360	440	7.5	5.60	11.4	14.3	25
40RUA*28	400-3-50	STD	360	440	7.5	5.60	11.4	14.3	25
		MED	360	440	10.0	7.46	16.8	21.0	35
		HIGH	360	440	10.0	7.46	16.8	21.0	35
40RUA*30	400-3-50	STD	360	440	10.0	7.46	16.8	21.0	35
		MED	360	440	10.0	7.46	16.8	21.0	35
		HIGH	360	440	10.0	7.46	16.8	21.0	35

NOTE(S):

a. Unbalanced 3-Phase Supply Voltage: Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the formula in the example below to determine the percentage of voltage imbalance.
b. Installation with Accessory Electric Heaters: Size the Field Power Wiring between the heater TB1 and the 40RU indoor fan motor per NEC Article 430-28 (1) or (2) (depends on length of conduit between heater enclosure and 40RF/40RU power entry location). Install wires in field-installed conduit.
c. Motors are designed for satisfactory operation within 10% of normal voltage shown. Voltages should not exceed the limits shown in the Voltage Limits column.
d. Minimum circuit amps (MCA) and MOCP values are calculated in accordance with The NEC. Article 440.
e. Motor FLA values are established in accordance with Underwriters' Laboratories (UL). Standard 1995.

$$\%\text{Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 400-3-50

AB = 394-v
BC = 401-v
AC = 396-v

$$\text{Average Voltage} = \frac{(394 + 401 + 396)}{3} = \frac{1191}{3} = 397$$

Determine maximum deviation from average voltage.

(AB) 397-394 = 3 v

(BC) 401-397 = 4 v

(AC) 397-396 = 1 v

Maximum deviation is 4 v.

Determine percent of voltage imbalance.

$$\%\text{ Voltage Imbalance} = 100\text{x} \frac{4}{397} = 1\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

Electrical data (cont)

40RF, 18.3 kW-29.1 kW (5.2-8.3 Ton), 50 Hz Electrical Heater Data[a,b]

UNIT	NOM. VOLTS	IFM TYPE	UNIT VOLTAGE Range		FAN MOTOR (QTY 1)			ELECTRIC HEATER(S)[c]							POWER SUPPLY[d]	
			Min	Max	HP	kW	FLA	CAEL HEAT ****00	Heater Voltage	Nom. Cap. (kW)	Actual Capacity (kW) Stage 1	Stage 2	Total	FLA	MCA	MOCP
40RF**07	400	Med	360	440	2.4	1.76	3.0	051A	400	5	3.5	—	3.5	5.0	10.0	15
			360	440	2.4	1.76	3.0	053A	400	10	6.9	—	6.9	10.0	16.3	20
			360	440	2.4	1.76	3.0	056A	400	15	10.4	—	10.4	15.0	22.5	25
			360	440	2.4	1.76	3.0	059A	400	25	10.4	7.0	17.4	25.1	35.1	40
		High	360	440	3.0	2.24	3.5	051A	400	5	3.5	—	3.5	5.0	10.6	15
			360	440	3.0	2.24	3.5	053A	400	10	6.9	—	6.9	10.0	16.9	20
			360	440	3.0	2.24	3.5	056A	400	15	10.4	—	10.4	15.0	23.1	25
			360	440	3.0	2.24	3.5	059A	400	25	10.4	7.0	17.4	25.1	35.8	40
40RF**08	400	Med	360	440	2.4	1.76	3.0	051A	400	5	3.5	—	3.5	5.0	10.0	15
			360	440	2.4	1.76	3.0	053A	400	10	6.9	—	6.9	10.0	16.3	20
			360	440	2.4	1.76	3.0	056A	400	15	10.4	—	10.4	15.0	22.5	25
			360	440	2.4	1.76	3.0	059A	400	25	10.4	7.0	17.4	25.1	35.1	40
			360	440	2.4	1.76	3.0	062A	400	35	13.9	10.4	24.3	35.1	47.6	50
		High	360	440	3.0	2.24	3.5	051A	400	5	3.5	—	3.5	5.0	10.6	15
			360	440	3.0	2.24	3.5	053A	400	10	6.9	—	6.9	10.0	16.9	20
			360	440	3.0	2.24	3.5	056A	400	15	10.4	—	10.4	15.0	23.1	25
			360	440	3.0	2.24	3.5	059A	400	25	10.4	7.0	17.4	25.1	35.8	40
			360	440	3.0	2.24	3.5	062A	400	35	13.9	10.4	24.3	35.1	48.3	50
40RF**12	400	Med	360	440	2.4	1.76	3.0	051A	400	5	3.5	—	3.5	5.0	10.0	15
			360	440	2.4	1.76	3.0	053A	400	10	6.9	—	6.9	10.0	16.3	20
			360	440	2.4	1.76	3.0	056A	400	15	10.4	—	10.4	15.0	22.5	25
			360	440	2.4	1.76	3.0	059A	400	25	10.4	7.0	17.4	25.1	35.1	40
			360	440	2.4	1.76	3.0	062A	400	35	13.9	10.4	24.3	35.1	47.6	50
		High	360	440	3.0	2.24	3.5	051A	400	5	3.5	—	3.5	5.0	10.6	15
			360	440	3.0	2.24	3.5	053A	400	10	6.9	—	6.9	10.0	16.9	20
			360	440	3.0	2.24	3.5	056A	400	15	10.4	—	10.4	15.0	23.1	25
			360	440	3.0	2.24	3.5	059A	400	25	10.4	7.0	17.4	25.1	35.8	40
			360	440	3.0	2.24	3.5	062A	400	35	13.9	10.4	24.3	35.1	48.3	50

NOTE(S):

a. The following equation converts kW of heat energy to Btuh: kW x 3412 = Btuh.
b. Heater contactor coils are 24-v and require 8-va holding current.
c. Electric heaters are tested and UL approved at maximum total external static pressure of 1.9 in. wg.
d. MCA and MOCP Values shown are for single-point connection of electric heat accessory and air handler.

LEGEND

FLA — Full Load Amps
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection (Amps)

40RU, 35.2 kW-106 kW (10-30 Ton), 50 Hz Electrical Heater Data[a,b]

UNIT	NOM. VOLTS	IFM TYPE	UNIT VOLTAGE Range		FAN MOTOR (QTY 1)			ELECTRIC HEATER(S)[c]							POWER SUPPLY[d]	
			Min	Max	HP	kW	FLA	CAEL HEAT ****00	Heater Voltage	Nom. Cap. (kW)	Actual Capacity (kW) Stage 1	Stage 2	Total	FLA	MCA	MOCP
40RU**14	400	STD	360	440	2.9	2.16	3.8	017A	400	10	6.9	—	6.9	10	17.3	20
								020A	400	20	13.9	—	13.9	20	29.8	30
								023A	400	30	13.9	6.9	20.8	30.1	42.4	50
								026A	400	50	20.8	13.9	34.7	50.1	67.4	70
		MED	360	440	2.9	2.16	3.8	017A	400	10	6.9	—	6.9	10	17.3	20
								020A	400	20	13.9	—	13.9	20	29.8	30
								023A	400	30	13.9	6.9	20.8	30.1	42.4	50
								026A	400	50	20.8	13.9	34.7	50.1	67.4	70
		HIGH	360	440	3.7	2.76	4.9	017A	400	10	6.9	—	6.9	10	18.6	20
								020A	400	20	13.9	—	13.9	20	31.1	35
								023A	400	30	13.9	6.9	20.8	30.1	43.8	50
								026A	400	50	20.8	13.9	34.7	50.1	68.8	70

Electrical data (cont)

40RU, 35.2 kW-106 kW (10-30 Ton), 50 Hz Electrical Heater Data[a,b] (cont)

UNIT	NOM. VOLTS	IFM TYPE	UNIT VOLTAGE Range		FAN MOTOR (QTY 1)			ELECTRIC HEATER(S)[c]							POWER SUPPLY[d]	
			Min	Max	HP	kW	FLA	CAEL HEAT ****00	Heater Voltage	Nom. Cap. (kW)	Actual Capacity (kW) Stage 1	Stage 2	Total	FLA	MCA	MOCP
40RU**16	400	STD	360	440	3.7	2.76	4.9	017A	400	10	6.9	—	6.9	10	18.6	20
								020A	400	20	13.9	—	13.9	20	31.1	35
								023A	400	30	13.9	6.9	20.8	30.1	43.8	50
								026A	400	50	20.8	13.9	34.7	50.1	68.8	70
		MED	360	440	3.7	2.76	4.9	017A	400	10	6.9	—	6.9	10	18.6	20
								020A	400	20	13.9	—	13.9	20	31.1	35
								023A	400	30	13.9	6.9	20.8	30.1	43.8	50
								026A	400	50	20.8	13.9	34.7	50.1	68.8	70
		HIGH	360	440	5.0	3.73	9.1	017A	400	10	6.9	—	6.9	10	23.9	25
								020A	400	20	13.9	—	13.9	20	36.4	40
								023A	400	30	13.9	6.9	20.8	30.1	49	50
								026A	400	50	20.8	13.9	34.7	50.1	74	80
40RU**25	400	STD	360	440	5.0	3.73	9.1	017A	400	10	6.9	—	6.9	10	23.9	25
								020A	400	20	13.9	—	13.9	20	36.4	40
								023A	400	30	13.9	6.9	20.8	30.1	49	50
								026A	400	50	20.8	13.9	34.7	50.1	74	80
		MED	360	440	5.0	3.73	9.1	017A	400	10	6.9	—	6.9	10	23.9	25
								020A	400	20	13.9	—	13.9	20	36.4	40
								023A	400	30	13.9	6.9	20.8	30.1	49	50
								026A	400	50	20.8	13.9	34.7	50.1	74	80
		HIGH	360	440	7.5	5.60	15.0	017A	400	10	6.9	—	6.9	10	31.3	35
								020A	400	20	13.9	—	13.9	20	43.8	50
								023A	400	30	13.9	6.9	20.8	30.1	56.4	60
								026A	400	50	20.8	13.9	34.7	50.1	81.4	90
40RU**28	400	STD	360	440	7.5	5.60	15.0	029A	400	20	13.9	—	13.9	20	43.8	50
								032A	400	40	13.9	13.9	27.8	40.1	68.9	70
								035A	400	50	20.8	13.9	34.7	50.1	81.4	90
								038A	400	70	27.8	20.8	48.6	70.2	106.5	110
		MED	360	440	10.0	7.46	16.0	029A	400	20	13.9	—	13.9	20	45	50
								032A	400	40	13.9	13.9	27.8	40.1	70.1	80
								035A	400	50	20.8	13.9	34.7	50.1	82.6	90
								038A	400	70	27.8	20.8	48.6	70.2	107.8	110
		HIGH	360	440	10.0	7.46	16.0	029A	400	20	13.9	—	13.9	20	45	50
								032A	400	40	13.9	13.9	27.8	40.1	70.1	80
								035A	400	50	20.8	13.9	34.7	50.1	82.6	90
								038A	400	70	27.8	20.8	48.6	70.2	107.8	110
40RU**30	400	STD	360	440	10.0	7.46	16.0	029A	400	20	13.9	—	13.9	20	45	50
								032A	400	40	13.9	13.9	27.8	40.1	70.1	80
								035A	400	50	20.8	13.9	34.7	50.1	82.6	90
								038A	400	70	27.8	20.8	48.6	70.2	107.8	110
		MED	360	440	10.0	7.46	16.0	029A	400	20	13.9	—	13.9	20	45	50
								032A	400	40	13.9	13.9	27.8	40.1	70.1	80
								035A	400	50	20.8	13.9	34.7	50.1	82.6	90
								038A	400	70	27.8	20.8	48.6	70.2	107.8	110
		HIGH	360	440	10.0	7.46	16.0	029A	400	20	13.9	—	13.9	20	45	50
								032A	400	40	13.9	13.9	27.8	40.1	70.1	80
								035A	400	50	20.8	13.9	34.7	50.1	82.6	90
								038A	400	70	27.8	20.8	48.6	70.2	107.8	110

NOTE(S):

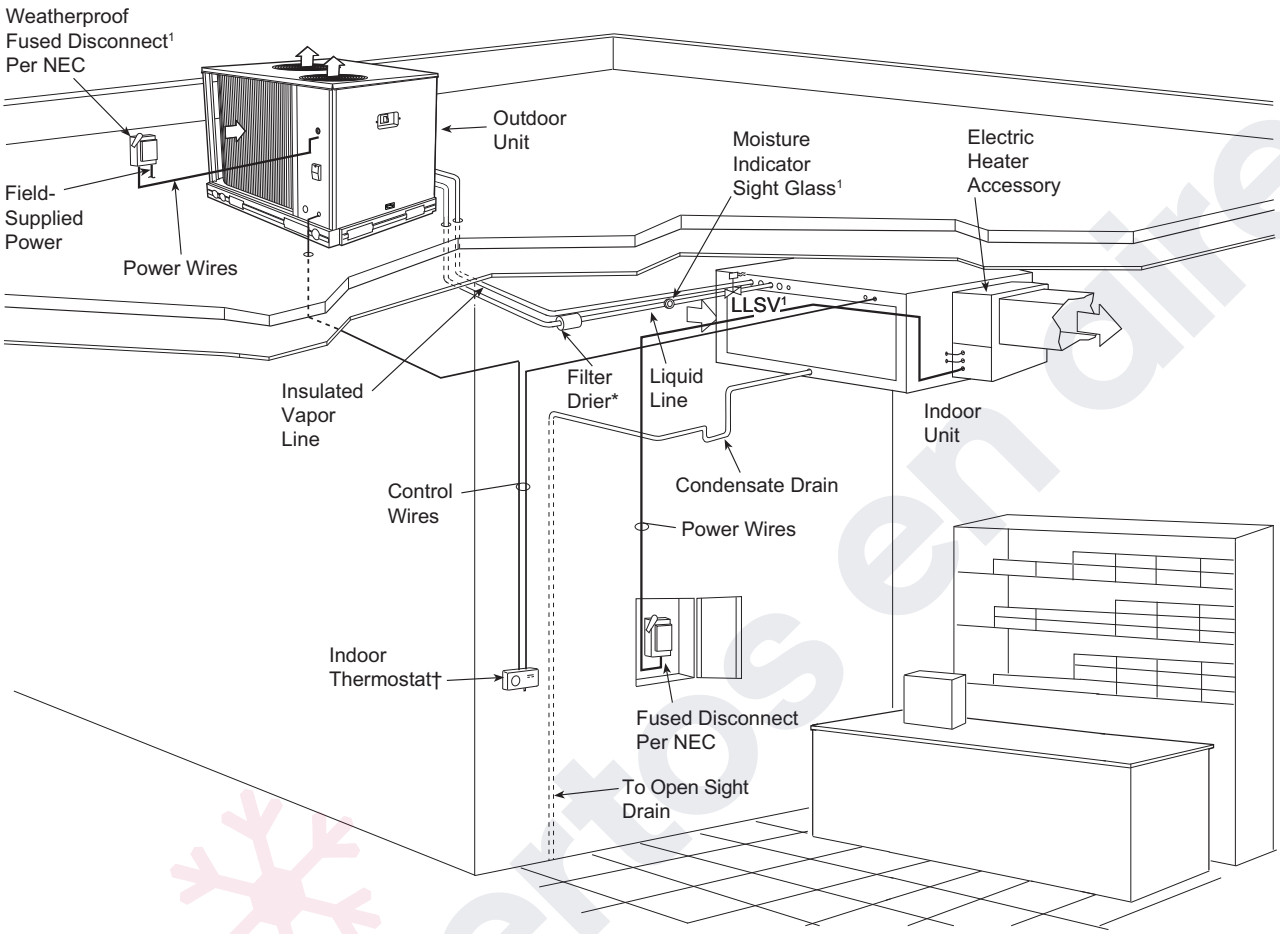
a. The following equation converts kW of heat energy to Btuh: kW x 3412 = Btuh.
b. Heater contactor coils are 24 v and require 8 va holding current.
c. Electric heaters are tested and ETL approved at maximum total external static pressure of 1.9 in. wg.
d. MCA and MOCP values apply to both standard and alternate factory supplied motors.

LEGEND

FLA — Full Load Amps
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection (Amps)

Electrical data (cont)

Horizontal Installation — 40RF/40RU



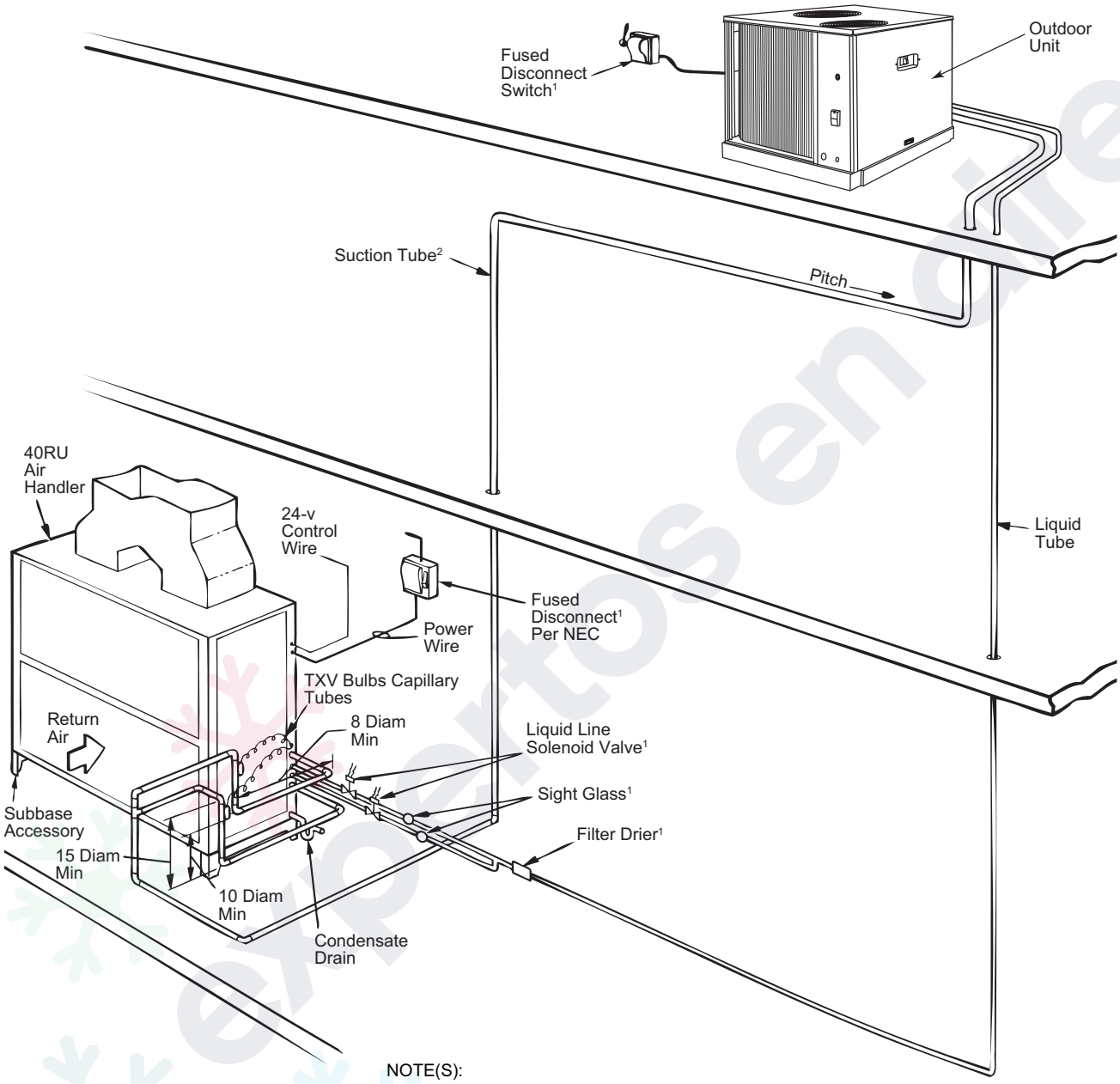
NOTE(S):
1. This is field-supplied.
2. Double riser may be required. Consult condensing unit product data catalog for details.

LEGEND
NEC — National Electrical Code
TXV — Thermostatic Expansion Valve

NOTE(S):
1. All piping must follow standard refrigerant piping techniques. Refer to Carrier System Design Manual for details.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.
4. Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
5. Internal factory-supplied TXVs not shown.

Electrical data (cont)

Vertical Installation — 40RF/40RU



NOTE(S):
1. This is field-supplied.
2. Double riser may be required. Consult condensing unit product data catalog for details.

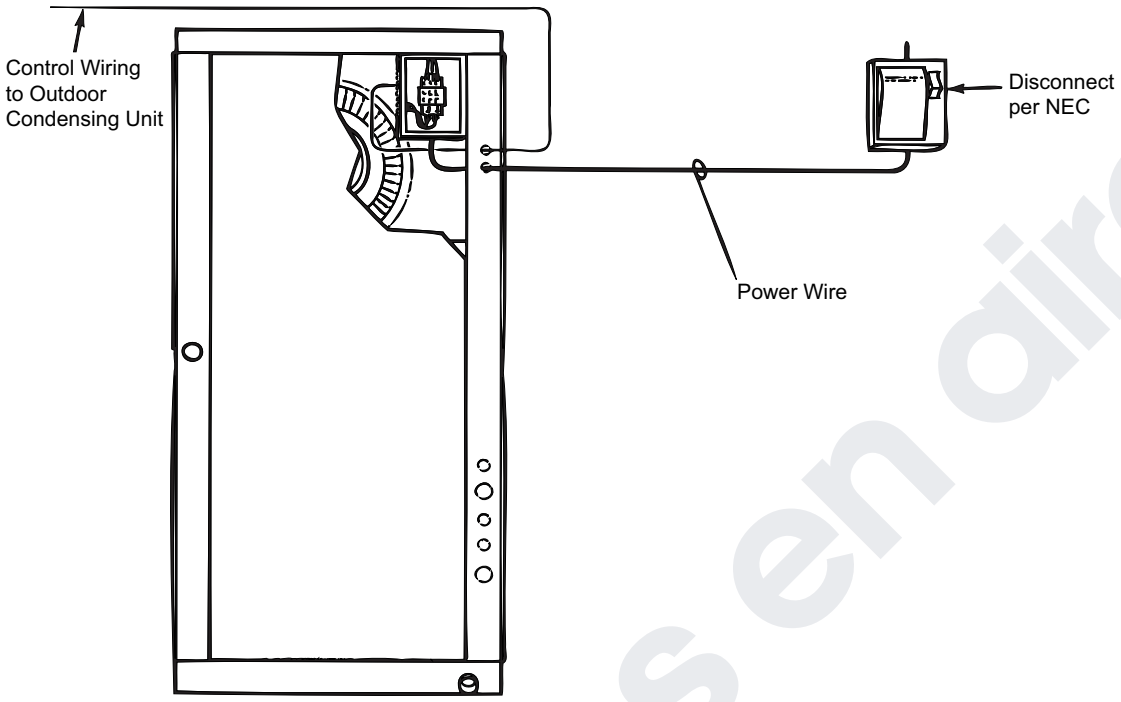
LEGEND

NEC — National Electrical Code
TXV — Thermostatic Expansion Valve
LLSV — Liquid Line Solenoid Valve

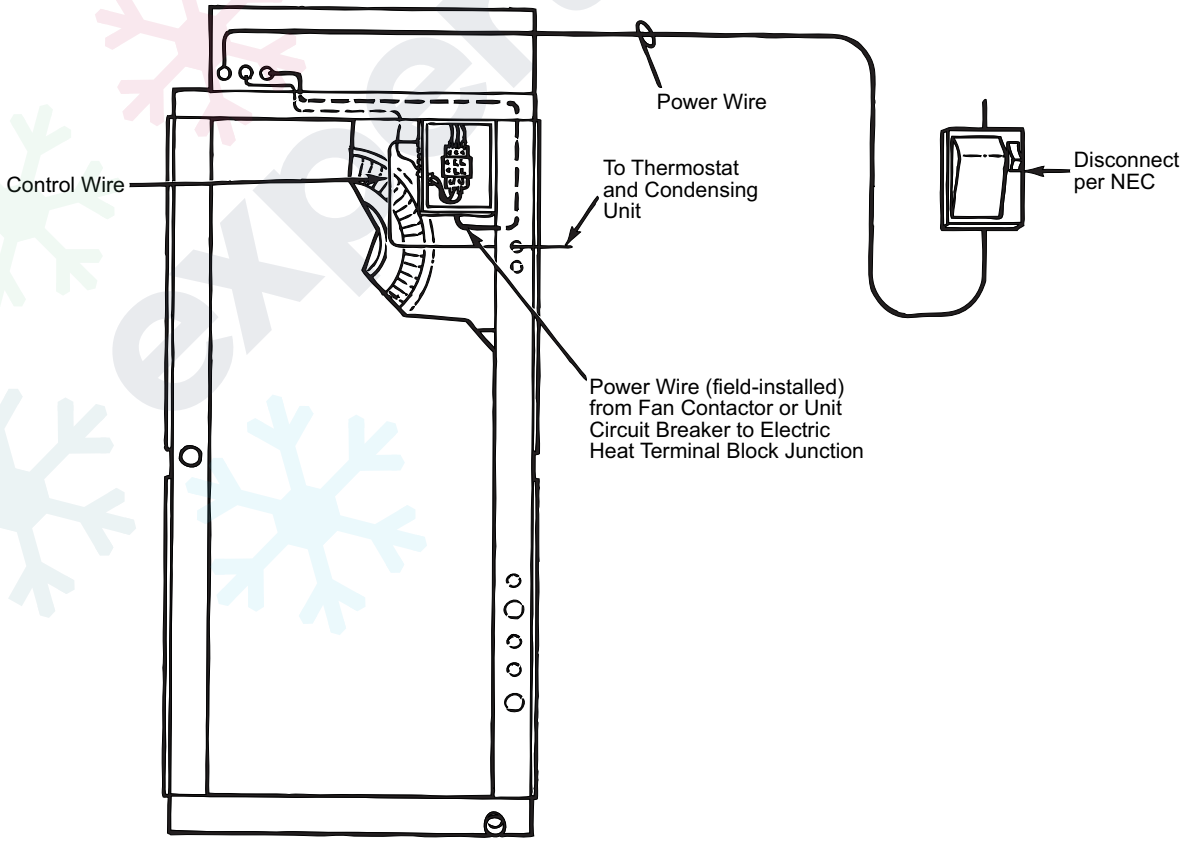
NOTE(S):
1. All piping must follow standard refrigerant piping techniques. Refer to Carrier System Design Manual for details.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.

Typical piping and wiring diagrams

Wire Routing, Base Unit — 40RF/40RU

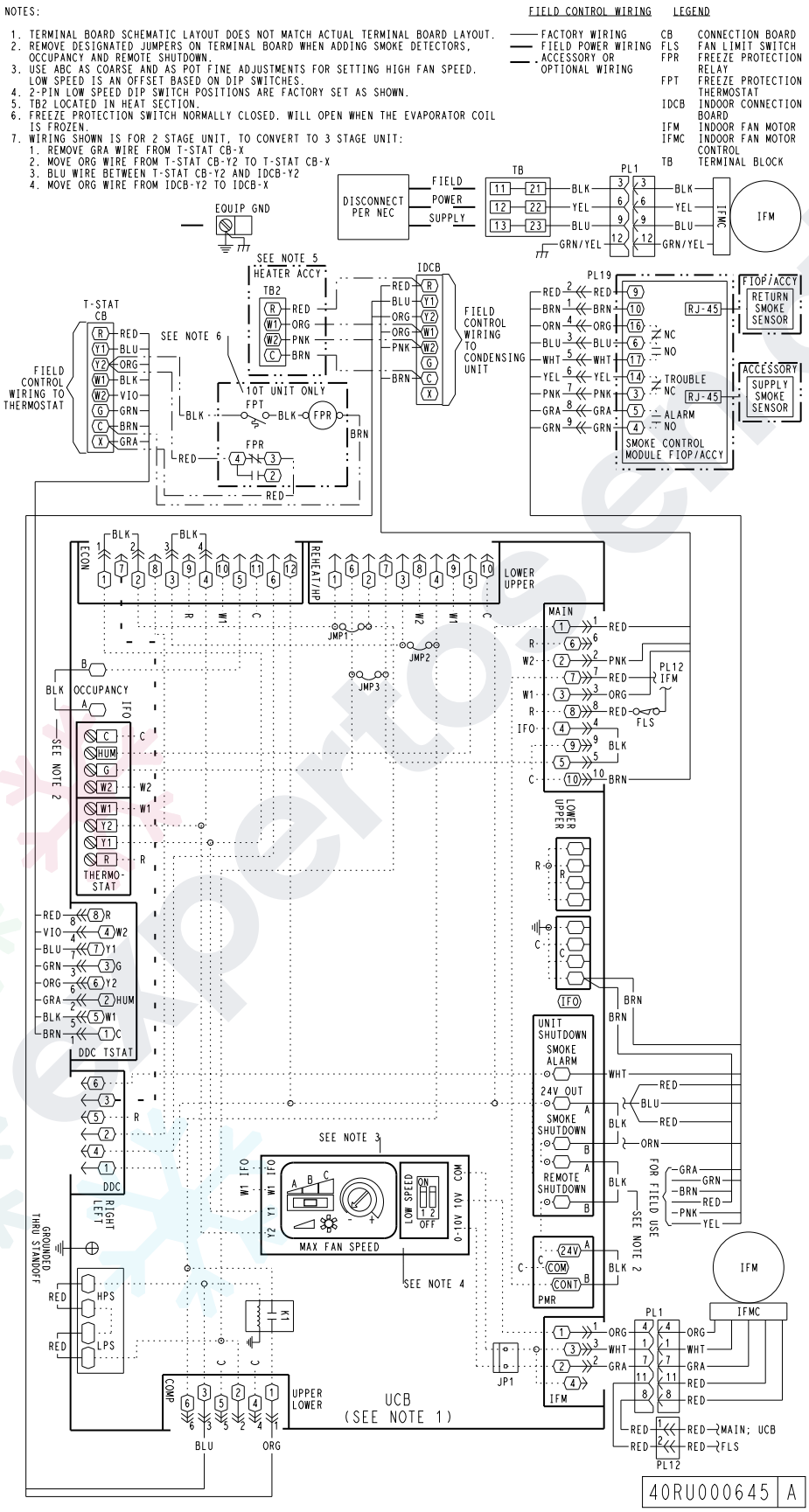


Wire Routing, Unit with Electrical Heat — 40RF/40RU



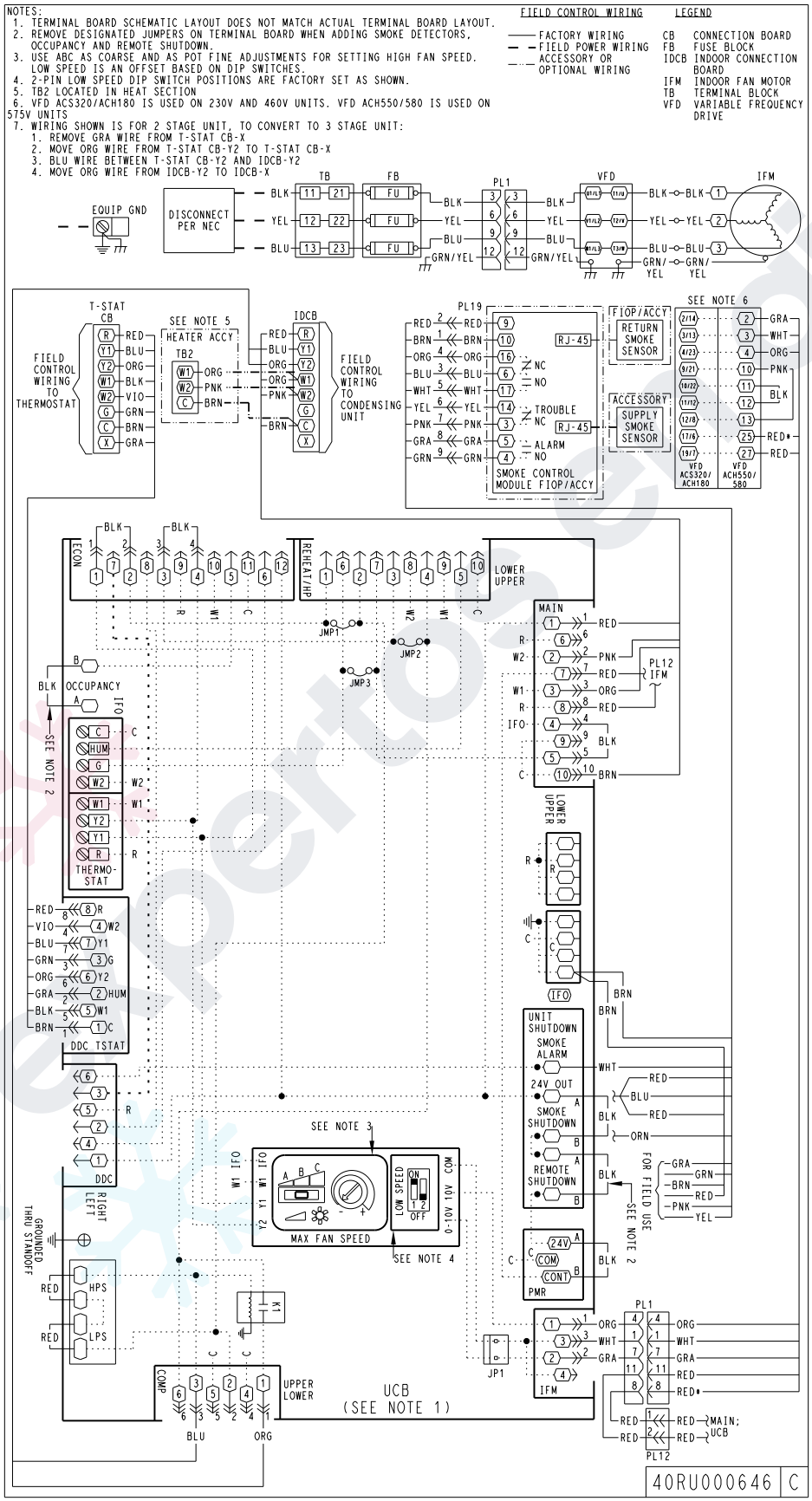
Typical piping and wiring diagrams (cont)

Unit Wiring Diagram — 40RF**07-12 — 50 Hz



Typical piping and wiring diagrams (cont)

Unit Wiring Diagram — 40RU**14-30 — 50 Hz



Application data

General

IMPORTANT: Do not bury refrigerant piping underground.

Select equipment to match or to be slightly less than peak load. This provides better humidity control, less unit cycling, and less part-load operation. Equipment should be selected to perform at no less than 40 L/s per kW (300 cfm/ton).

The air handler fan must always be operating when the condensing unit is operating.

Ductwork should be sized according to unit size, not building load. For larger units with two fans, a split duct transition is recommended at the fan outlets, but a plenum can be used with slight reduction in external static pressure capability.

Auxiliary Side Connector Data

UNIT	CARRIER P/N	INLET/OUTLET DIAMETER — ODF (in.)	AUXILIARY (HOT GAS) DIAMETER — ODF (in.)
40RFA*07	EA19BA705	1-1/8	5/8
40RFA*08	EA19BA905	1-3/8	7/8
40RFA*12	EA19BA705	1-1/8	5/8
40RUA*14	EA19BA705	1-1/8	5/8
40RUA*16	EA19BA705	1-1/8	5/8
40RUA*25	EA19BA705	1-1/8	5/8
40RUA*28	EA19BA905	1-3/8	7/8
40RUA*30	EA19BA905	1-3/8	7/8

Factory-Installed Nozzle and Distributor Data[a]

UNIT	COIL TYPE	TXV QTY / P/N	DISTRIBUTOR QTY / P/N	FEEDER TUBES PER DISTRIBUTOR[b] QTY / SIZE (in.)	NOZZLE QTY / P/N
40RFA*07	4 Row	1 / BBIZE-5-GA	1 / 1135	12 / 1/4	1 / G4
40RFA*08	4 Row	1 / BBIZE-6-GA	1 / 1136	15 / 1/4	1 / G5
40RFA*12	4 Row	2 / HXAE-5-KX	2 / 1135	9 / 1/4	2 / G3
40RUA*14	4 Row	2 / HXAE-6-KX	2 / 1113	12 / 3/16	2 / G3
40RUA*16	4 Row	2 / BBIZE-6-GA	2 / 1136	16 / 3/16	2 / G4
40RUA*25	4 Row	2 / BBIZE-8-GA	2 / D196-18-3/16	18 / 3/16	2 / G6
40RUA*28	4 Row	2 / BBIZE-15-GA	2 / 1126	20 / 3/16	2 / C15
40RUA*30	4 Row	2 / BBIZE-15-GA	2 / 1126	24 / 3/16	2 / C17

NOTE(S):

a. For 40RUA*14-30 units, hot gas bypass applications require field-supplied auxiliary side connector.
b. Feeder tube size is 6.35 mm (1/4 in.).

LEGEND

TXV — Thermostatic Expansion Valve

Commercial Packaged Air-Handling Unit

HVAC Guide Specifications

Size Range: **1133 to 1888 L/s (2400 to 4000 cfm) Nominal Airflow, 21 to 35 kW (6 to 10 tons) Nominal Cooling**

Carrier Model Numbers: **40RFA (Direct-Expansion Coil)**

Part 1 — General

1.01 System Description

A. Indoor, packaged air-handling unit for use in commercial split systems. Unit shall have a multi-position design and shall be capable of horizontal or vertical installation on a floor or in a ceiling, with or without ductwork. (Only vertical units are to be applied without ductwork.)

B. Unit with direct-expansion coil shall be used in a refrigerant circuit with a matching air-cooled condensing unit. Unit with chilled water coil shall be used in a chilled water circuit.

1.02 Quality Assurance

A. Coils shall be designed and tested in accordance with ASHRAE 15 Safety Code for Mechanical Refrigeration (U.S.A.), latest edition.

B. Unit shall be constructed in accordance with ETL (U.S.A.) and ETL, Canada, standards and shall carry the ETL and ETL, Canada, labels.

C. Unit insulation and adhesive shall comply with NFPA-90A (U.S.A.) requirements for flame spread and smoke generation. Insulation shall be treated with an immobilized antimicrobial agent to inhibit the growth of bacteria and fungi on the insulation as proven by tests in accordance with ASTM standards G21 and 22 (U.S.A.).

D. Unit shall be manufactured in a facility registered to the ISO 9001 manufacturing quality standard.

E. Direct-expansion and chilled water coils shall be burst and leak tested at 435 psi.

1.03 Delivery And Storage

A. Units shall be stored and handled per manufacturer's recommendations.

Part 2 — Products

2.01 Equipment

A. Indoor mounted, draw-thru, packaged air-handling unit that can be used in a suspended horizontal configuration or a vertical configuration. Unit shall consist of a direct drive vane axial fan and motor assembly, pre-wired fan motor controller, factory-installed refrigerant metering devices (direct-expansion coil units), cooling coil, 51 mm (2 in.) disposable air filters, and condensate drain pans for vertical or horizontal configurations.

1. Cabinet shall be constructed of mill-galvanized steel.
2. Cabinet panels shall be fully insulated with 1/2 in. (12.7 mm) fire-retardant material. Insulation shall be treated with an immobilized antimicrobial agent to inhibit the growth of bacteria and fungi on the insulation as proven by tests in accordance with ASTM standards G21 and 22 (U.S.A.).
3. Unit shall contain non-corroding condensate drain pans for both vertical and horizontal applications. Drain pans shall have connections on right and left sides of unit to facilitate field connection. Drain pans shall have the ability to be sloped toward the right or left side of the unit to prevent standing water from accumulating in pans.
4. Unit shall have factory-supplied 51 mm (2 in.) throwaway-type filters installed upstream from the cooling coil. Filter access shall be from either the right or left side of the unit.

B. Evaporator Fan and Motor with EcoBlue™ Technology:

1. Direct Drive Evaporator fan motor:
   a. Shall be an ECM motor design.
   b. Shall have permanently lubricated bearings.
   c. Shall have inherent automatic-reset thermal overload protection.
   d. Shall have slow ramp up to speed capabilities.
   e. Shall require no fan/motor belts for operation, adjustments and or initial fan speed set up.
   f. Shall be internally protected from electrical phase reversal and loss.
2. Evaporator Fan:
   a. Shall be easily set with dedicated selection switch and adjustment pot on unit control board.
   b. Shall provide two stage cooling capacity control, the indoor fan speed is automatically controlled to meet the code-compliant <66% low fan speed and 100% at full fan speed operation.
   c. Blower fan shall be a Vane Axial fan design with 75% less moving parts than a conventional belt drive system.
   d. Shall be constructed of a high impact composite material on stator, rotor and air inlet casing.
   e. Shall be a patented / pending design with a corrosion resistant material and dynamically balanced.
   f. Shall have slow ramp up to speed capabilities to help reduce sound and comfort issues typically associated with single speed belt drive systems.

3. Shall include an easily accessible Unit Control Board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, economizer, thermostat, and low and high pressure switches. Controller shall also provide an intuitive means to adjust the indoor fan speed through a simple switch and pot adjustment design.

C. Coils:

DX coil is 4-row and consists of copper tubes with sine-wave aluminum fins bonded to the tubes by mechanical expansion. Suction and liquid line connections or supply and discharge connections shall be made on the same side of the coil.

1. Direct-expansion coils shall feature factory-installed thermostatic expansion valves (TXVs) for refrigerant control. The TXVs shall be Puron® R-410A compatible and capable of external adjustment. Coil tubing shall be internally rifled to maximize heat transfer.
2. Chilled water coils shall be rated for an operating pressure of not less than 2069 kPa (300 psig).

D. Operating Characteristics:

1. When combined with matching 38AU condensing unit the system shall be capable of starting and running at ambient outdoor temperatures from 2°C (35°F) to 52°C (125°F) in cooling mode.
2. Unit shall operate at ±10% from rated voltage.

E. Motor:

1. Fan motor of the size and electrical characteristics specified on the equipment schedule shall be factory supplied and installed.
2. Evaporator motors are designed specifically for Carrier and do not have conventional horsepower (hp) ratings listed on the motor nameplate. Motors are designed and qualified in the "air-over" location downstream of the cooling coil and carry a maximum continuous bhp rating that is the maximum application bhp rating for the motor; no "safety factors" above that rating may be applied.

F. Staged Air Volume System (SAV™) for 2-stage cooling models (40RF only - standard):

1. Evaporator fan motor.
   a. Shall have permanently lubricated bearings.
   b. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating.

G. Special Features:

1. Alternate Motor and Drive:

   An alternate high-static motor shall be available to meet the airflow and external static pressure requirements specified on the equipment schedule.
2. External Paint:

   Where conditions require, units shall be painted with an American Sterling Gray finish.
3. Hot Water Coil:

   Coil shall be 2-row, U-bend coil with copper tubes and aluminum plate fins bonded to the tubes by mechanical expansion. Coil shall be mounted in a galvanized steel housing that shall be fastened to the unit's fan deck for blow-thru heating operation. Coil shall have maximum working pressure of 1034 kPa (150 psig).
4. Steam Distributing Coil:

   Coil shall consist of one row of copper tubes with aluminum plate fins, and shall have inner steam distributing tubes. Coil shall be mounted in a galvanized steel housing and shall be fastened to the unit's fan deck for blow-thru heating operation. Coil shall have maximum working pressure of 138 kPa at 126°C (20 psig at 260°F).
5. Electric Heaters:

   Heaters for nominal 400-v, 3-phase, 50 Hz shall be factory-supplied and field-installed as shown on the equipment drawings. Electric heat assembly shall be either ETL (U.S.A.) and ETL (Canada) or UL (U.S.A.) and cUL (Canada) agency approved, and shall have single-point power wiring. Heater assembly shall include contactors with 24-v coils, power wiring, 24-v control wiring terminal blocks, and a hinged access panel. Electric heaters shall not be used with air discharge plenum.
6. Air Discharge Plenum:

   Plenum shall be factory-supplied for field installation to provide free-blow air distribution for vertical floor-mounted units. A grille with movable vanes for horizontal or vertical airflow adjustment shall be included. Plenum shall be field-assembled and field-installed on the unit's fan deck for blow-thru air distribution. Plenum shall not be used with electric heaters.
7. Return-Air Grille:

   Grille shall be factory-supplied for field installation on the unit's return air opening.

8. Unit Subbase:

   Subbase assembly shall be factory-supplied for field installation. Subbase shall elevate floor-mounted vertical units to provide access for correct condensate drain connection.

9. Economizers:

   a. Accessory Ultra Low Leak EconoMi$er X. (Field-installed) Economizer for ventilation or "free" cooling shall be factory provided for field installation on either return air opening of air handler.

      1) Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.

      2) Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.

      3) Shall include all hardware, actuator and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.

      4) Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.

      5) Ultra Low Leak design meets California Title 24 section 140.4 and ASHRAE90.1 requirements for 2 L/s per square meter (4 cfm/ft^2) on the outside air dampers and 5 L/s per square meter (10 cfm/ft^2) on the return dampers.

      6) Economizer controller on EconoMi$er X models shall be the Honeywell W7220 that provides:

         a) 2-line LCD interface screen for setup, configuration and troubleshooting.

         b) On-board Fault Detection and Diagnostics (FDD) that senses and alerts when the economizer is not operating properly, per California Title 24.

         c) Sensor failure loss of communication identification.

         d) Automatic sensor detection.

         e) Capabilities for use with multiple-speed indoor fan systems.

         f) Utilizing digital sensors: Dry bulb and Enthalpy. Accessory comes standard with dry bulb sensing.

         g) Field installing enthalpy sensor required.

   b. Accessory Standard Leak EconoMi$er IV (field-installed) Economizer for ventilation or "free" cooling shall be factory provided for field installation on either return air opening of air handler.

      1) Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.

      2) Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.

      3) Shall include all hardware, actuator and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.

      4) Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.

      5) Standard leak rate shall be equipped with dampers not to exceed 2% leakage at 1 in. wg pressure differential.

      6) Economizer controller on EconoMi$er IV models shall be Honeywell W7212 that provides:

         a) Combined minimum and DCV maximum damper position potentiometers with compressor staging relay.

         b) Functions with solid state analog enthalpy or dry bulb changeover control sensing.

         c) Contains LED indicates for when free cooling is available, when module is in DCV mode, when exhaust fan is closed.

10. Overhead Suspension Package:

    Package shall include necessary brackets to support units in a horizontal ceiling installation.

11. CO_2 Sensor:

    Sensor shall provide the ability to signal the economizer to open when the space CO_2 level exceeds the predetermined setpoint.

12. Condensate Drain Trap:

    Trap shall have transparent, serviceable design for easy cleaning. Kit shall include overflow shutoff switch and wiring harness for connection to an alarm if desired.

Commercial Packaged Air-Handling Unit

HVAC Guide Specifications

Size Range: **2360 to 5663 L/s (5000 to 12,000 cfm) Nominal Airflow, 44 to 106 kW (12.5 to 30 tons) Nominal Cooling**

Carrier Model Numbers: **40RUA (Direct-Expansion Coil)**

Part 1 — General

1.01 System Description

A. Indoor, packaged air-handling unit for use in commercial split systems. Unit shall have a multi-position design and shall be capable of horizontal or vertical installation on a floor or in a ceiling, with or without ductwork. (Only vertical units are to be applied without ductwork.)

B. Unit with direct-expansion coil shall be used in a refrigerant circuit with a matching air-cooled condensing unit. Unit with chilled water coil shall be used in a chilled water circuit.

1.02 Quality Assurance

A. Coils shall be designed and tested in accordance with ASHRAE 15 Safety Code for Mechanical Refrigeration (U.S.A.), latest edition.

B. Unit shall be constructed in accordance with ETL (U.S.A.) and ETL, Canada, standards and shall carry the ETL and ETL, Canada, labels.

C. Unit insulation and adhesive shall comply with NFPA-90A (U.S.A.) requirements for flame spread and smoke generation. Insulation shall be treated with an immobilized antimicrobial agent to inhibit the growth of bacteria and fungi on the insulation as proven by tests in accordance with ASTM standards G21 and 22 (U.S.A.).

D. Unit shall be manufactured in a facility registered to the ISO 9001 manufacturing quality standard.

E. Direct-expansion and chilled water coils shall be burst and leak tested at 435 psi.

1.03 Delivery And Storage

A. Units shall be stored and handled per manufacturer's recommendations.

Part 2 — Products

2.01 Equipment

A. Indoor mounted, draw-thru, packaged air-handling unit that can be used in a suspended horizontal configuration or a vertical configuration. Unit shall consist of forward-curved belt-driven centrifugal fan(s), motor and drive assembly, pre-wired fan motor contactor, factory-installed refrigerant metering devices (direct-expansion coil units), cooling coil, 51 mm (2 in.) disposable air filters, and condensate drain pans for vertical or horizontal configurations.

1. Cabinet shall be constructed of mill-galvanized steel.
2. Cabinet panels shall be fully insulated with 12.7 mm (1/2 in.) fire-retardant material. Insulation shall be treated with an immobilized antimicrobial agent to inhibit the growth of bacteria and fungi on the insulation as proven by tests in accordance with ASTM standards G21 and 22 (U.S.A.).
3. Unit shall contain non-corroding condensate drain pans for both vertical and horizontal applications. Drain pans shall have connections on right and left sides of unit to facilitate field connection. Drain pans shall have the ability to be sloped toward the right or left side of the unit to prevent standing water from accumulating in pans.
4. Unit shall have factory-supplied 51 mm (2 in.) throwaway-type filters installed upstream from the cooling coil. Filter access shall be from either the right or left side of the unit.

B. Coils:

DX coil is 4-row and consists of copper tubes with sine-wave aluminum fins bonded to the tubes by mechanical expansion. Suction and liquid line connections or supply and discharge connections shall be made on the same side of the coil.

1. Direct-expansion coils shall feature factory-installed thermostatic expansion valves (TXVs) for refrigerant control. The TXVs shall be Puron® R-410A compatible and capable of external adjustment. Coil tubing shall be internally rifled to maximize heat transfer. The 40RUAA28 and 30 have EA36UZ031 TXVs. These are Sporlan™[1] BBIZE-15-GA-BP5, which have a 5% bleed.
2. Chilled water coils shall be rated for an operating pressure of not less than 2069 kPa (300 psig).

C. Operating Characteristics:

1. When combined with matching 38AU condensing unit the system shall be capable of starting and running at ambient outdoor temperatures from 2°C (35°F) to 52°C (125°F) in cooling mode and from –23°C (–10°F) to 16°C (60°F) in heating mode.
2. Unit shall operate at ±10% from rated voltage.

D. Motor:

1. Fan motor of the size and electrical characteristics specified on the equipment schedule shall be factory supplied and installed.
2. Motors rated at 1.3 through 3.7 hp shall have inherent thermal overload protection. Motors rated at 5 hp shall be protected by a circuit breaker.
3. Evaporator-fan motor shall have permanently lubricated, sealed bearings and inherent automatic-reset thermal overload protection or manual reset calibrated circuit breakers. Evaporator motors are designed specifically for Carrier and do not have conventional horsepower (hp) ratings

1. Third-party trademarks and logos are the property of their respective owners.

listed on the motor nameplate. Motors are designed and qualified in the "air-over" location downstream of the cooling coil and carry a maximum continuous bhp rating that is the maximum application bhp rating for the motor; no "safety factors" above that rating may be applied.

4. All evaporator-fan motors 5 hp and larger shall meet the minimum efficiency requirements as established by the Energy Policy Act of 1992 (EPACT), effective October 24, 1997.

E. Control Box:

1. Shall include an easily accessible Unit Control Board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, economizer, thermostat, and low and high pressure switches. Controller shall also provide an intuitive means to adjust the indoor fan speed through a simple switch and pot adjustment design.

F. Special Features:

1. Alternate Motor and Drive:

   An alternate motor and/or medium-static or high-static drive shall be available to meet the airflow and external static pressure requirements specified on the equipment schedule.

2. External Paint:

   Where conditions require, units shall be painted with an American Sterling Gray finish.

3. Hot Water Coil:

   Coil shall be 2-row, U-bend coil with copper tubes and aluminum plate fins bonded to the tubes by mechanical expansion. Coil shall be mounted in a galvanized steel housing that shall be fastened to the unit's fan deck for blow-thru heating operation. Coil shall have maximum working pressure of 1034 kPa (150 psig).

4. Steam Distributing Coil:

   Coil shall consist of one row of copper tubes with aluminum plate fins, and shall have inner steam distributing tubes. Coil shall be mounted in a galvanized steel housing and shall be fastened to the unit's fan deck for blow-thru heating operation. Coil shall have maximum working pressure of 138 kPa (20 psig) at 126°C (260°F).

5. Electric Heaters:

   Heaters for nominal 400-v, 3-phase, 50 Hz shall be factory-supplied and field-installed as shown on the equipment drawings. Electric heat assembly shall be ETL (U.S.A.) and ETL, Canada, agency approved, and shall have single-point power wiring. Heater assembly shall include contactors with 24-v coils, power wiring, 24-v control wiring terminal blocks, and a hinged access panel. Electric heaters shall not be used with air discharge plenum.

6. Air Discharge Plenum:

   Plenum shall be factory-supplied to provide free-blow air distribution for vertical floor-mounted units. A grille with movable vanes for horizontal or vertical airflow adjustment shall be included. Plenum shall be field-assembled and field-installed on the unit's fan deck for blow-thru air distribution. Plenum shall not be used with electric heaters.

7. Return-Air Grille:

   Grille shall be factory-supplied for field installation on the unit's return air opening.

8. Unit Subbase:

   Subbase assembly shall be factory-supplied for field installation. Subbase shall elevate floor-mounted vertical units to provide access for correct condensate drain connection.

9. Economizers:

   a. Accessory Ultra Low Leak EconoMi$er X. (Field-installed) Economizer for ventilation or "free" cooling shall be factory provided for field installation on either return air opening of air handler.

      1) Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.

      2) Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.

      3) Shall include all hardware, actuator and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.

      4) Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.

      5) Ultra Low Leak design meets California Title 24 section 140.4 and ASHRAE90.1 requirements for 2 L/s per square meter (4 cfm/ft^2) on the outside air dampers and 5 L/s per square meter (10 cfm/ft^2) on the return dampers.

      6) Economizer controller on EconoMi$er X models shall be the Honeywell W7220 that provides:

         a) 2-line LCD interface screen for setup, configuration and troubleshooting.

         b) Onboard Fault Detection and Diagnostics (FDD) that senses and alerts when the economizer is not operating properly, per California Title 24.

         c) Sensor failure loss of communication identification.

d) Automatic sensor detection.

e) Capabilities for use with multiple-speed indoor fan systems.

f) Utilizing digital sensors: Dry bulb and Enthalpy. Accessory comes standard with dry bulb sensing.

g) Field installing enthalpy sensor required.

b. Accessory Standard Leak EconoMi$er IV (field-installed) Economizer for ventilation or "free" cooling shall be factory provided for field installation on either return air opening of air handler.

1) Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.

2) Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.

3) Shall include all hardware, actuator and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.

4) Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.

5) Standard leak rate shall be equipped with dampers not to exceed 2% leakage at 0.25 kPa (1 in. wg) pressure differential.

6) Economizer controller on EconoMi$er IV models shall be Honeywell W7212 that provides:

a) Combined minimum and DCV maximum damper position potentiometers with compressor staging relay.

b) Functions with solid state analog enthalpy or dry bulb changeover control sensing.

c) Contains LED indicates for when free cooling is available, when module is in DCV mode, when exhaust fan is closed.

10. Overhead Suspension Package:

Package shall include necessary brackets to support units in a horizontal ceiling installation.

11. CO_2 Sensor:

Sensor shall provide the ability to signal the economizer to open when the space CO_2 level exceeds the predetermined setpoint.

12. Condensate Drain Trap:

Trap shall have transparent, serviceable design for easy cleaning. Kit shall include overflow shutoff switch and wiring harness for connection to an alarm if desired.

Pg 56 Catalog No. 04-52400014-01 Printed in U.S.A. Form 40RF-RU-7-30-C01PD
Replaces: 40RU-C11PD