FUJITSU

VARIABLE SPEED HEAT PUMPS

FO*20R SERIES

Efficiencies up to 20 SEER/14 EER/11.5 HSPF
Nominal Sizes 2, 3, 4 & 5 Ton
[7.03, 10.6, 14.06 & 17.6 kW]
Cooling Capacities 17.3 to 60.5 kBTU
[5.7 to 17.7 kW]

Manufactured for
Fujitsu General America, Inc.
Fairfield, NJ

Features

- **Energy** Efficiency offers up to 20 SEER and 11.5 HSPF system performance across all capacities. The FO*20R achieves these performance measurements with RHMV variable speed air handlers, R802V two-stage, variable-speed 80% furnaces, R96V two-stage, variable-speed 96% furnaces and R97V and R98V modulating furnaces.
- **Expanded Valve Space** – 3"-4"-5" service valve space – provides a minimum working area of 27-square inches for easier access
- **Triple Service Access** – 15" wide, industry leading corner service access – makes repairs easier and faster. The three fastener removable corner allows optimal access to internal unit components. Individual louver panels come out once fastener is removed, for faster coil cleaning and easier cabinet reassembly
- **EcoNet® Enabled product.** The EcoNet Smart Home System provides advanced air & water control for maximum energy savings and ideal comfort.
- New composite base pan – dampens sound, captures louver panels, eliminates corrosion and reduces number of fasteners needed
- Powder coat paint system – for a long lasting professional finish
- The Copeland Scroll™ Variable Speed Compressor has a modulating technology which provides more precise temperature control, lower humidity and greater efficiency.
- Modern cabinet aesthetics – increased curb appeal with visually appealing design
- Equipped with electronic expansion valve to precisely control variable refrigerant flow.
- Improved tubing design – reduces vibration and stress, making unit quieter and reducing opportunity for leaks
- Optimized defrost characteristics - decrease defrosting and provide better home comfort
- Optimized reversing valve sizing – improves shifting performance for quieter unit operation and increased life of the system
- Enhanced mufflers – help to dissipate vibration energy for quieter unit operation
- Integrated heat pump lift receptacle – allows standard CPVC stands to be inserted into the base
- Curved louver panels – provide ultimate coil protection, enhance cabinet strength, and increased cabinet rigidity
- Optimized fan orifice – optimizes airflow and reduces unit sound
- Rust resistant screws – confirmed through 1500-hour salt spray testing
- External gauge port access – allows easy connection of “low-loss” gauge ports
- Single-row condenser coil – makes unit lighter and allows thorough coil cleaning to maintain “out of the box” performance
- 35% fewer cabinet fasteners and fastener-free base – allow for faster access to internal components and hassle-free panel removal
- Service trays – hold fasteners or caps during service calls
- QR code – provides technical information on demand for faster service calls
- Fan motor harness with extra long wires allows unit top to be removed without disconnecting fan wire.
- High and low pressure transducers standard on all models.

“Proper sizing and installation of equipment is critical to achieve optimal performance. Split system air conditioners and heat pumps must be matched with appropriate coil components to meet ENERGY STAR criteria. Ask your Contractor for details or visit www.energystar.gov.”

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Heat Pumps

FO	24	20	R	V	J	C	A	B
Brand	**Capacity**	**SEER**	**Product**	**Type**	**Voltage**	**Controls**	**Minor Series**	**Major Series**
FO = Fujitsu	24 = 24,000 BTU/H 36 = 36,000 BTU/H 48 = 48,000 BTU/H 60 = 60,000 BTU/H	20 = 20 SEER	R = Heat Pump	V = Inverter	J = 1 ph, 208-230/60	C = Communicating	A = First Design Series	B = Second Design Series

Available SKUs

Available Models
FO2420RVJCAB
FO3620RVJCAB
FO4820RVJCAB
FO6020RVJCAB

Physical Data

Model No.	FO2420R	FO3620R	FO4820R	FO6020R
Nominal Tonnage	2.0	3.0	4.0	5.0
Valve Connections				
Liquid Line O.D. – in.	3/8	3/8	3/8	3/8
Suction Line O.D. – in.	3/4	3/4	7/8	1-1/8
Refrigerant (R-410A) furnished oz.[1]	210	212	222	252
Compressor Type	Scroll			
Outdoor Coil				
Net face area – Outer Coil	28.3	28.3	32.5	32.5
Tube diameter – in.	0.375	0.375	0.375	0.375
Number of rows	1	1	1	1
Fins per inch	20	20	20	20
Outdoor Fan				
Diameter – in.	26	26	26	26
Number of blades	3	3	3	3
Motor hp	1/2	1/2	1/2	1/2
Shipping weight – lbs.	278	298	298	301
Operating weight – lbs.	282	306	306	309

Electrical Data

Line Voltage Data (Volts-Phase-Hz)	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60
Maximum overcurrent protection (amps)[2]	30	50	60	60
Minimum overcurrent protection	25	40	50	50
Minimum circuit ampacity[3]	22	32	37	42
Compressor				
Rated load amps	15.4	24	28.1	31.7
Locked rotor amps	35	50	50	50
Condenser Fan Motor				
Full load amps	1.9	1.8	1.2	2
Locked rotor amps	N/A	N/A	N/A	N/A

[1]Refrigerant charge sufficient for 15 ft. length of refrigerant lines. For longer line set requirements see the installation instrucitons for information about set length and additional refrigerant charge required.
[2]HACR type circuit breaker of fuse.
[3]Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements.

Accessories

Model No.	FO2420R	FO3620R	FO4820R	FO6020R
EcoNet Smart Thermostat	RETST700SYS	RETST700SYS	RETST700SYS	RETST700SYS
Heat pump Riser 6 in.	686020	686020	686020	686020
Supply Return Sensor	RXHT-A02	RXHT-A02	RXHT-A02	RXHT-A02
Rheem Show Unit Shell	RXHD-CU4	RXHD-CU4	RXHD-CU4	RXHD-CU4

Weighted Sound Power Level (dBA)

FO*20R Sound Power Level									
Model	Sound Power Level [dB(A)] Low Speed/ High Speed	Full Octave Linear Sound Power Level dB - Center Frequency - Hz							Sound Power Level [dB(A)] with Sound Blanket
		125	250	500	1000	2000	4000	6300	8000	
FO2420R	59	34.8	39.7	50.8	48.4	42.5	40.2	34.6	34.5	Sound Blankets - Standard
	69	45.0	50.6	59.5	57.9	56.6	49.5	45.7	44.8	
FO3620R	60	33.6	38.3	57.6	48.2	43.6	39.7	43.0	39.3	
	70	44.8	51.1	60.8	60.1	56.2	50.3	49.9	48.3	
FO4820R	59	34.0	38.9	52.3	48.0	43.5	39.8	42.2	37.3	
	73	48.5	54.4	65.4	63.1	58.0	55.0	53.3	51.6	
FO6020R	58	36.0	39.3	51.4	46.2	43.8	43.0	41.3	40.2	
	73	49.8	54.0	68.0	59.2	55.9	53.7	50.7	49.3	

NOTE: Tested in accordance with AHRI Standard 270-08 (not listed in AHRI)

Integrated Controls

EcoNet is smart technology that allows Heating, Cooling, and Water Heating products to communicate with each other on one integrated network.

Easy to Setup, Easy to Use, Easy to Save

- Optimized for Installability™, Performance, Integration & Serviceability
- Controls 65%† or more of a typical home's energy use from a single device
- Can reduce energy costs by up to 30%††

Features

- Added support for new EEV (Electronic Expansion Valve) Air Handlers, Air Conditioners and Heat Pumps*
- Rapid installation with standard 4-wire configuration
- Automatically configures communicating equipment with optimal settings
- Adapts to home décor through interchangeable faceplates and adjustable background coloring
- Full-color, 4.7" LCD touchscreen display with easy-to-read icons and text
- Convenient date, time and indoor/outdoor temperature indications
- 5 operating modes with short-cycle protection (Heat, Cool, Auto, Emergency Heat, Fan Only)
- 7-Day programmable schedule with Smooth Arrival & Whole Home Vacation options
- Detailed operating status, alarm history, and audible alerts
- Supports humidifier accessories or over-cool based dehumidification
- One-touch access to Water Heater Management†††
- Easily manage from anywhere in the world with the compatible WiFi Module & EcoNet app for smart phones and tablets

Warranty

- 5-Year limited warranty from date of installation

† Source – Department of Energy

†† When compared to non-programmable thermostats. Source: ENERGY STAR® for Programmable Thermostats

††† Requires wired connection to EcoNet Enabled Electric or Hybrid Water Heaters

EcoNet® Control Center
Home control with intuitive LCD touchscreen navigation

FETST601SYS

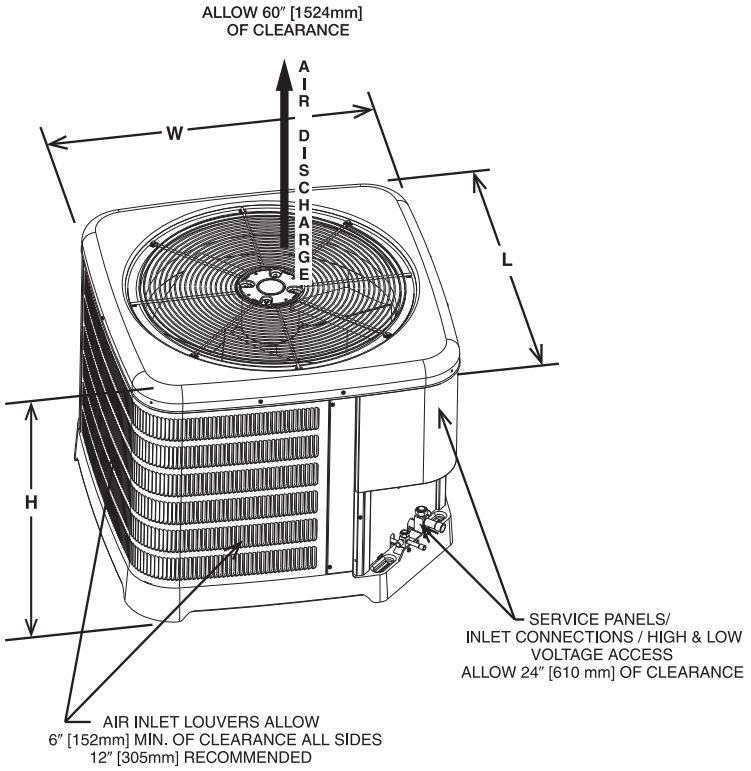
EcoNet Control Center Compatibility

OFFERINGS	HEATING & COOLING						
Product Categories	Gas Furnaces			Air Handlers		Air Conditioners	
Models	FF***LT97	FF***LT96	FF***LT80	FH**ELV	FF***TTT	FO*20C	FO*17C
FETST601SYS	√	√	√	√	√	√	√

**Electronic Expansion Valve (EEV) Models

Unit Dimensions

MODEL NO.	OPERATING						SHIPPING					
	H (Height)		L (Length)		W (Width)		H (Height)		L (Length)		W (Width)	
	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
FO2420R	39	990	35.75	908	35.75	908	41.56	1056	39.37	999	39.64	1006
FO3620R	39	990	35.75	908	35.75	908	53.56	1360	39.37	999	39.64	1006
FO4820R	51	1295	35.75	908	35.75	908	53.56	1360	39.37	999	39.64	1006
FO6020R	51	1295	35.75	908	35.75	908	53.56	1360	39.37	999	39.64	1006



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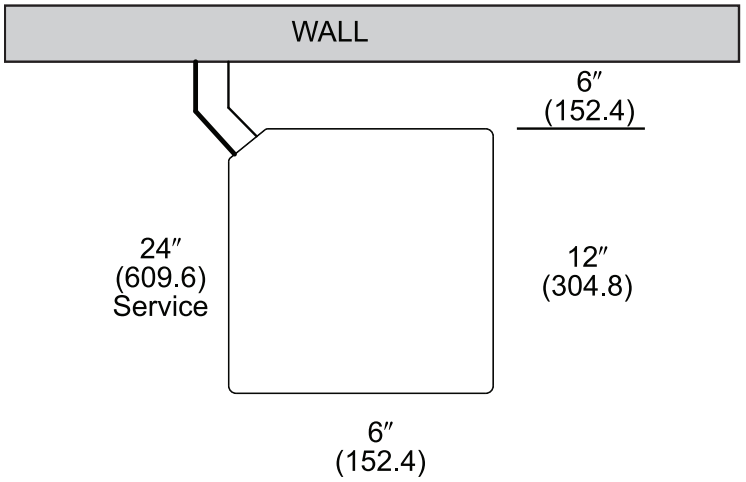
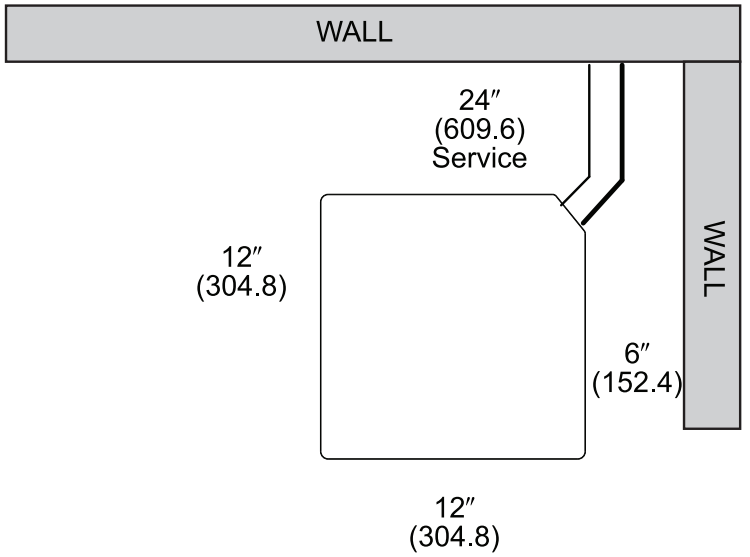
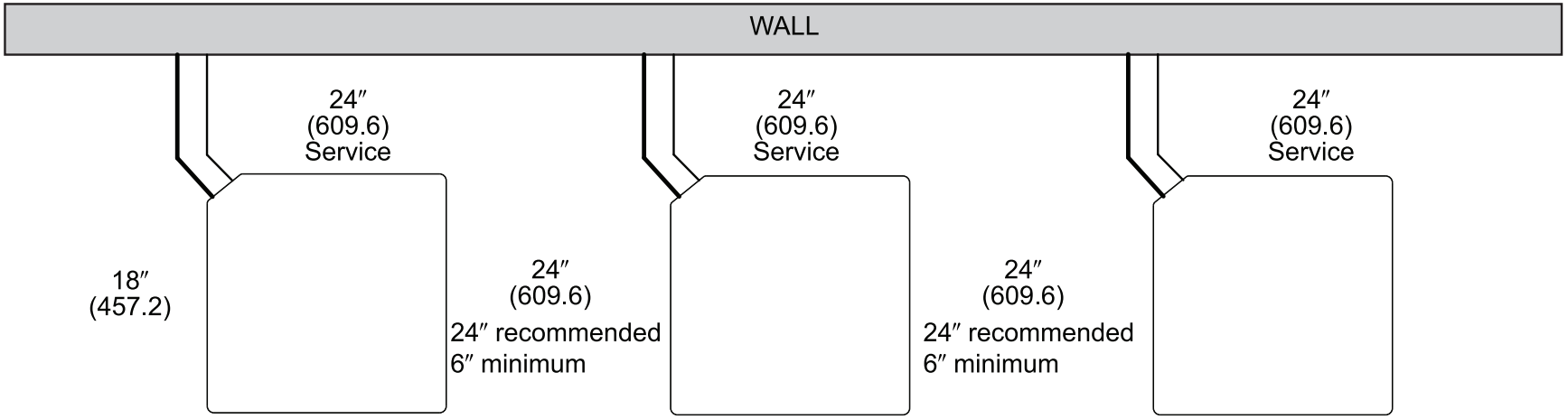
[ ] Designates Metric Conversions

CLEARANCES







NOTE: NUMBERS IN () = mm

IMPORTANT: When installing multiple units in an alcove, roof well or partially enclosed area, ensure there is adequate ventillation to prevent re-circulation of discharge air.

Refrigerant Line Sizing Chart (English Units)

20 SEER Variable Speed Heat Pumps								
Unit Size	**Allowable Liquid Line Size**	**Allowable Vapor Line Size**	**Outdoor Unit ABOVE or BELOW Indoor Unit Equivalent Length (Feet)**					
			< 25	26-50	51-75	76-100	101-125	126-150
			Maximum Vertical Separation/Capacity Multiplier					
2.0 Ton ***SEE NOTE 3**	1/4"	5/8"	25/1.00	50/0.99	33/0.98	60/0.97	**NR**	**NR**
	5/16"	5/8"	25/1.00	50/0.99	50/0.98	50/0.97	50/0.96	50/0.95
	3/8"	5/8"	25/1.00	50/0.99	50/0.98	50/0.97	50/0.96	50/0.95
	1/4"	3/4"*	25/1.00	50/1.00	33/0.99	60/0.99	**NR**	**NR**
	5/16"	3/4"*	25/1.00	50/1.00	50/0.99	50/0.99	50/0.99	50/0.98
	3/8"	3/4"*	25/1.00	50/1.00	50/0.99	50/0.99	50/0.99	50/0.98
3 Ton	5/16"	5/8"	25/0.99	50/0.97	50/0.95	50/0.93	36/0.91	**NR**
	3/8"	5/8"	25/0.99	50/0.97	50/0.95	50/0.93	50/0.91	**NR**
	5/16"	3/4"	25/1.00	50/0.99	50/0.99	50/0.98	36/0.97	20/0.96
	3/8"	3/4"	25/1.00	50/0.99	50/0.99	50/0.98	50/0.97	50/0.96
	1/2"	3/4"	25/1.00	50/0.99	50/0.99	50/0.98	50/0.97	50/0.96
4 Ton	3/8"	3/4"	25/0.99	50/0.98	50/0.96	50/0.95	50/0.93	50/0.92
	1/2"	3/4"	25/0.99	50/0.98	50/0.96	50/0.95	50/0.93	50/0.92
	3/8"	7/8"	25/1.00	50/0.99	50/0.99	50/0.98	50/0.98	50/0.97
	1/2"	7/8"	25/1.00	50/0.99	50/0.99	50/0.98	50/0.98	50/0.97
5 Ton	3/8"	3/4"	25/0.98	50/0.97	50/0.95	50/0.93	46/0.91	**NR**
	1/2"	3/4"	25/0.98	50/0.97	50/0.95	50/0.93	50/0.91	**NR**
	3/8"	7/8"	25/0.99	50/0.99	50/0.98	50/0.97	50/0.96	38/0.95
	1/2"	7/8"	25/0.99	50/0.99	50/0.98	50/0.97	50/0.96	50/0.95
	3/8"	1-1/8"**	25/1.00	50/1.00	50/1.00	50/0.99	50/0.99	38/0.99
	1/2"	1-1/8"**	25/1.00	50/1.00	50/1.00	50/0.99	50/0.99	50/0.99

NOTES:

1. Do not exceed 150 ft linear line length.
2. Do not exceed 50 ft vertical separation between indoor and outdoor units.
3. *3/4" vapor line should only be used for 2 ton systems if outdoor unit is below or at same level as indoor unit to assure proper oil return.
4. **1-1/8" vapor line should only be used for 5 ton systems if outdoor unit is below or at same level as indoor unit to assure proper oil return.
5. Always use the smallest liquid line allowable to minimize refrigerant charge.
6. Applications shaded in light gray indicate capacity multipliers between 0.90 and 0.96 which are not recommended, but are allowed.
7. Applications shaded in dark gray are not recommended due to excessive liquid or suction pressure drop.

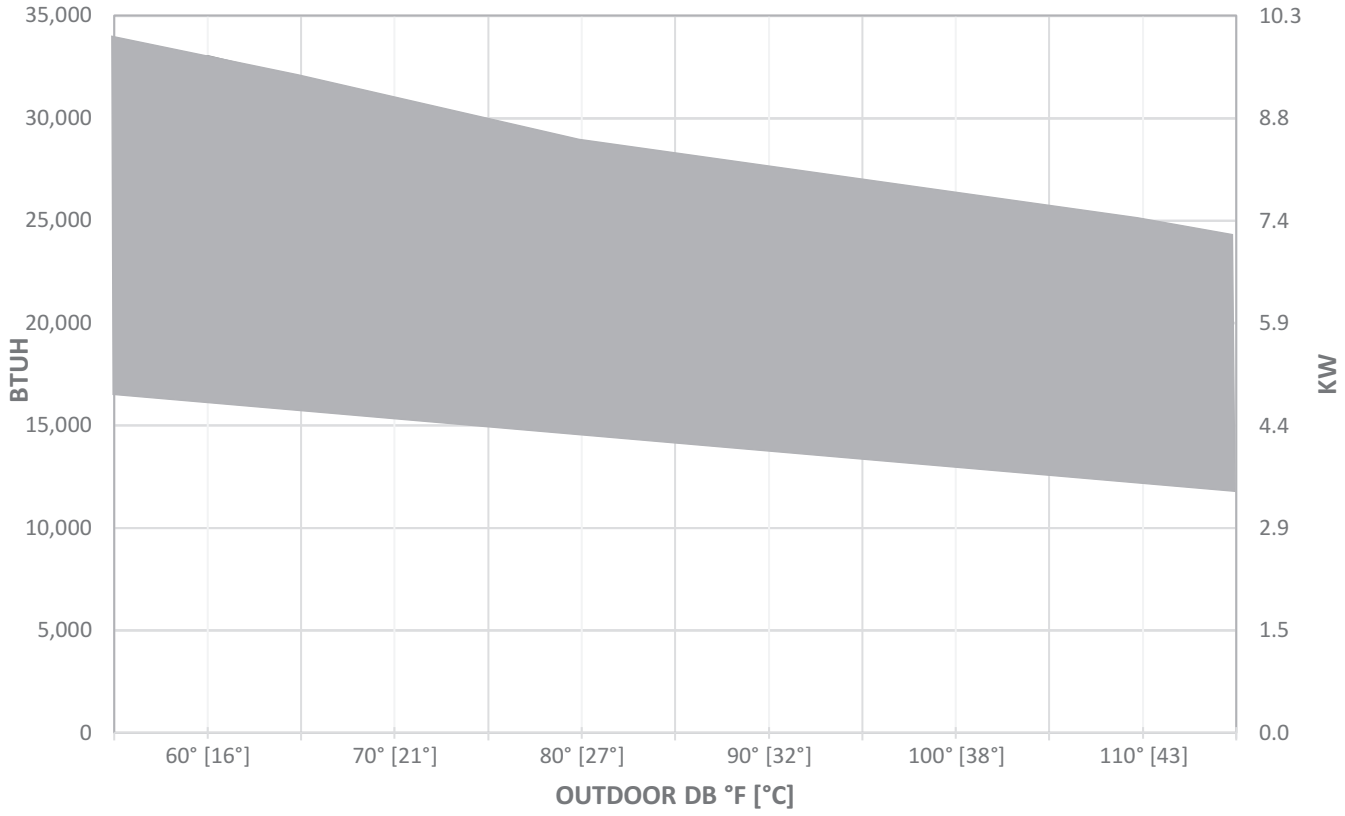
Refrigerant Line Sizing Chart (Metric Units)

20 SEER Variable Speed Heat Pumps								
Unit Size	**Allowable Liquid Line Size**	**Allowable Vapor Line Size**	**Outdoor Unit ABOVE or BELOW Indoor Unit Equivalent Length (Meters)**					
			< 8	8-15	16-23	24-30	31-38	39-46
			Maximum Vertical Separation/Capacity Multiplier					
7.0 kW [2.0 Ton] ***SEE NOTE 3**	6.35 [1/4]	15.88 [5/8]	8/1.00	15/0.99	10/0.98	20/0.97	**NR**	**NR**
	7.94 [5/16]	15.88 [5/8]	8/1.00	15/0.99	15/0.98	15/0.97	15/0.96	15/0.95
	9.53 [3/8]	15.88 [5/8]	8/1.00	15/0.99	15/0.98	15/0.97	15/0.96	15/0.95
	6.35 [1/4]	19.05 [3/4]	8/1.00	15/0.99	10/0.99	20/0.99	**NR**	**NR**
	7.94 [5/16]	19.05 [3/4]	8/1.00	15/0.99	15/0.99	15/0.99	15/0.99	15/0.98
	9.53 [3/8]	19.05 [3/4]	8/1.00	15/0.99	15/0.99	15/0.99	15/0.99	15/0.98
10.6 kW [3 Ton]	7.94 [5/16]	15.88 [5/8]	8/0.99	15/0.97	15/0.95	15/0.93	11/0.91	**NR**
	9.53 [3/8]	15.88 [5/8]	8/0.99	15/0.97	15/0.95	15/0.93	15/0.91	**NR**
	7.94 [5/16]	19.05 [3/4]	8/1.00	15/0.99	15/0.99	15/0.98	11/0.97	6/0.96
	9.53 [3/8]	19.05 [3/4]	8/1.00	15/0.99	15/0.99	15/0.98	15/0.97	15/0.96
	12.7 [1/2]	19.05 [3/4]	8/1.00	15/0.99	15/0.99	15/0.98	15/0.97	15/0.96
14.1 kW [4 Ton]	9.53 [3/8]	19.05 [3/4]	8/0.99	15/0.98	15/0.96	15/0.95	15/0.93	15/0.92
	12.7 [1/2]	19.05 [3/4]	8/0.99	15/0.98	15/0.96	15/0.95	15/0.93	15/0.92
	9.53 [3/8]	22.23 [7/8]	8/1.00	15/0.99	15/0.99	15/0.98	15/0.98	15/0.97
	12.7 [1/2]	22.23 [7/8]	8/1.00	15/0.99	15/0.99	15/0.98	15/0.98	15/0.97
17.6 kW [5 Ton]	9.53 [3/8]	19.05 [3/4]	8/0.98	15/0.97	15/0.95	15/0.93	14/0.91	**NR**
	12.7 [1/2]	19.05 [3/4]	8/0.98	15/0.97	15/0.95	15/0.93	15/0.91	**NR**
	9.53 [3/8]	22.23 [7/8]	8/0.99	15/0.99	15/0.98	15/0.97	15/0.96	12/0.95
	12.7 [1/2]	22.23 [7/8]	8/0.99	15/0.99	15/0.98	15/0.97	15/0.96	15/0.95
	9.53 [3/8]	28.58 [1-1/8]**	8/1.00	15/1.00	15/1.00	15/0.99	15/0.99	12/0.99
	12.7 [1/2]	28.58 [1-1/8]**	8/1.00	15/1.00	15/1.00	15/0.99	15/0.99	15/0.99

NOTES:

1. Do not exceed 46 meters linear line length.
2. Do not exceed 15 meters vertical separation between indoor and outdoor units.
3. *19.05mm [3/4 in.] vapor line should only be used for 2 ton systems if outdoor unit is below or at same level as indoor unit to assure proper oil return.
4. **28.58mm [1-1/8 in.] vapor line should only be used for 5 ton systems if outdoor unit is below or at same level as indoor unit to assure proper oil return.
5. Always use the smallest liquid line allowable to minimize refrigerant charge.
6. Applications shaded in light gray indicate capacity multipliers between 0.90 and 0.96 which are not recommended, but are allowed.
7. Applications shaded in dark gray are not recommended due to excessive liquid or suction pressure drop.

(-)P2024B Cooling Capacity Ranges



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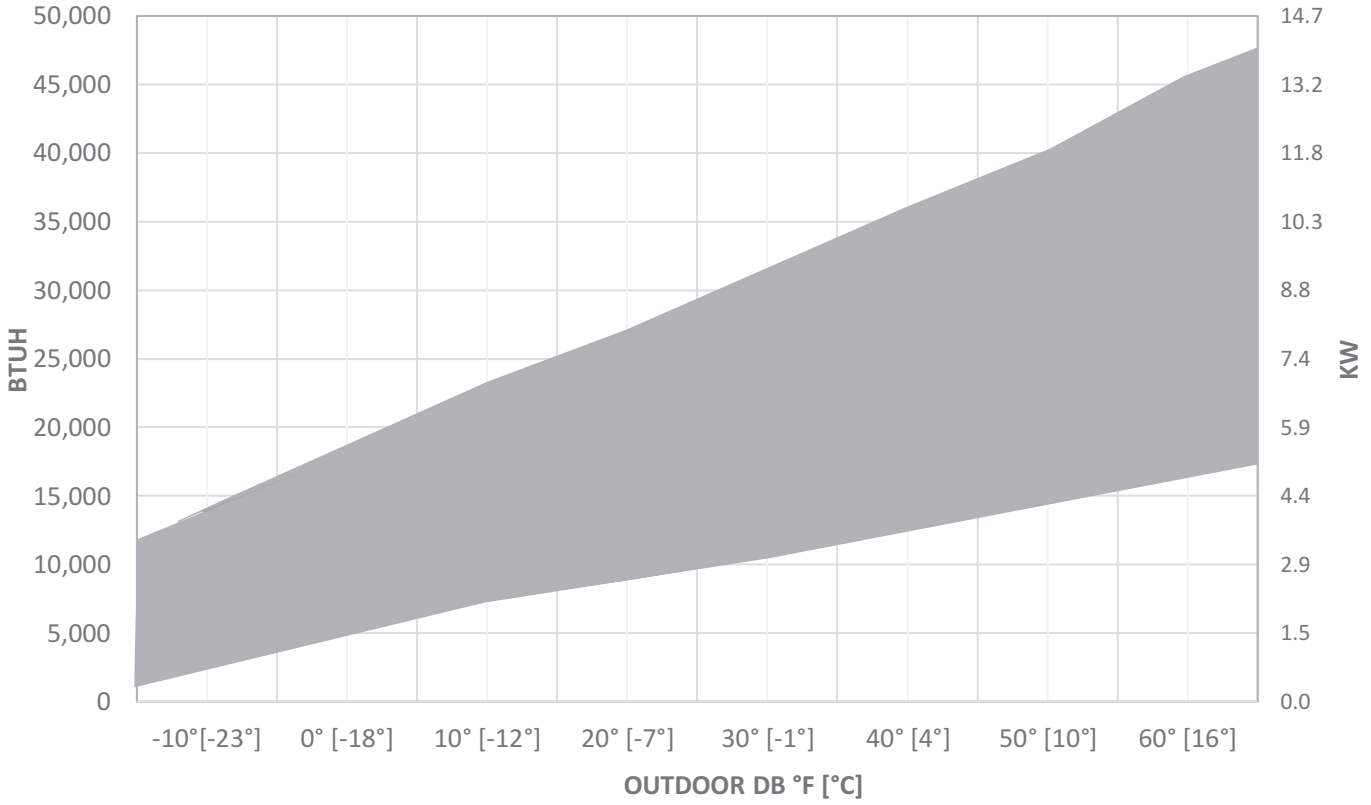

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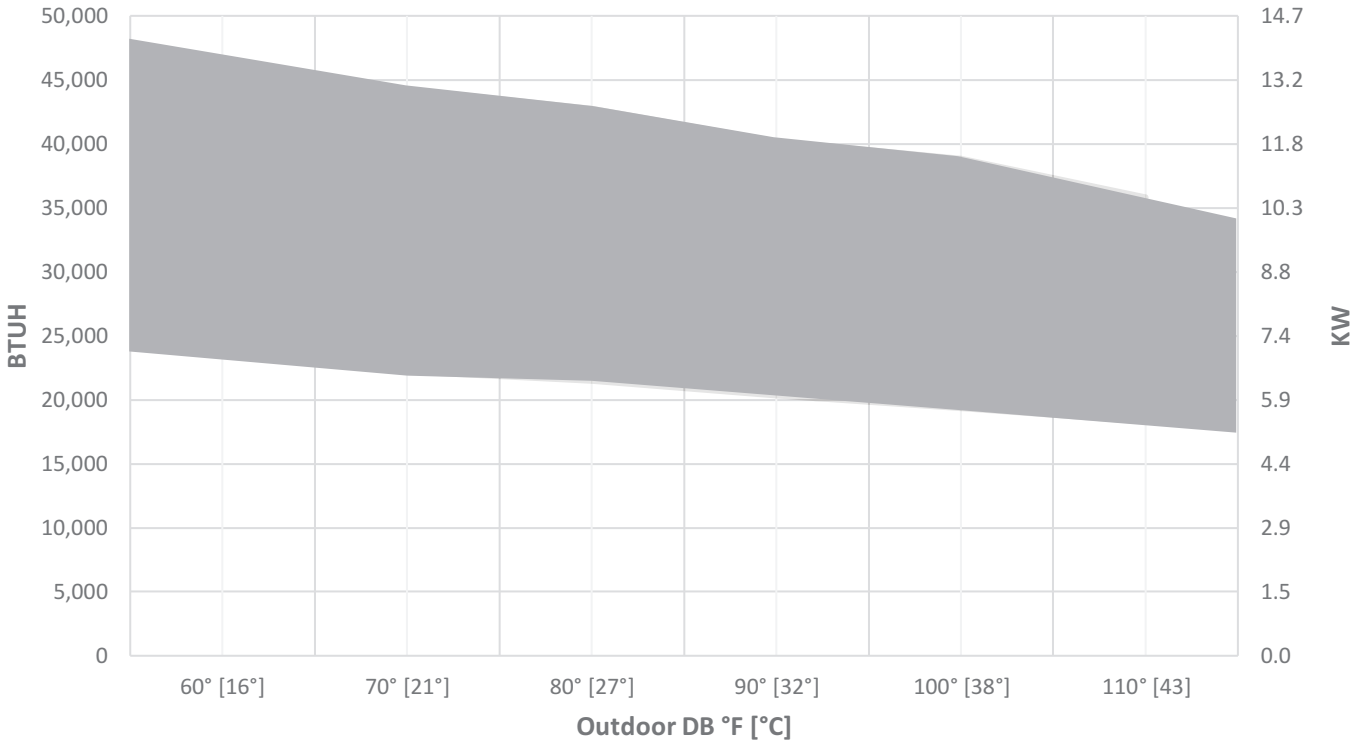

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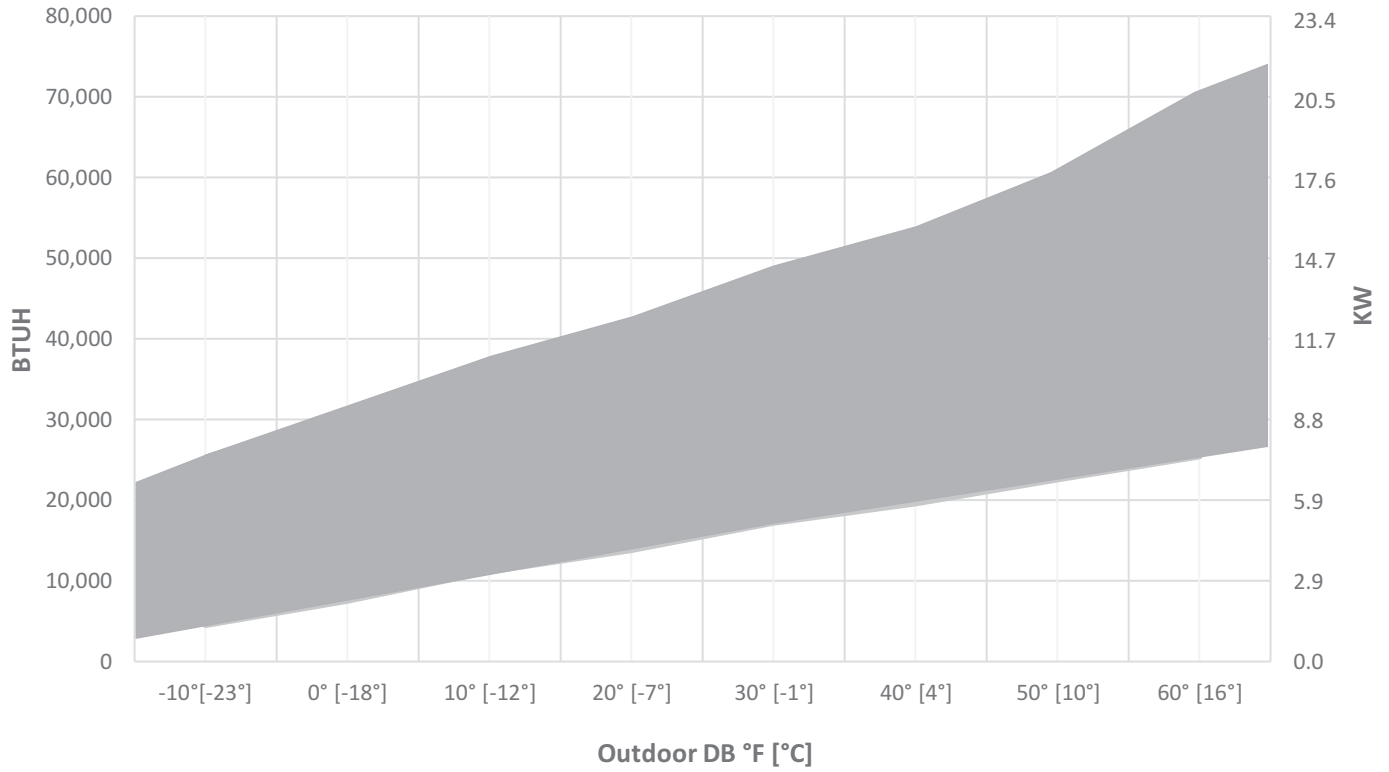

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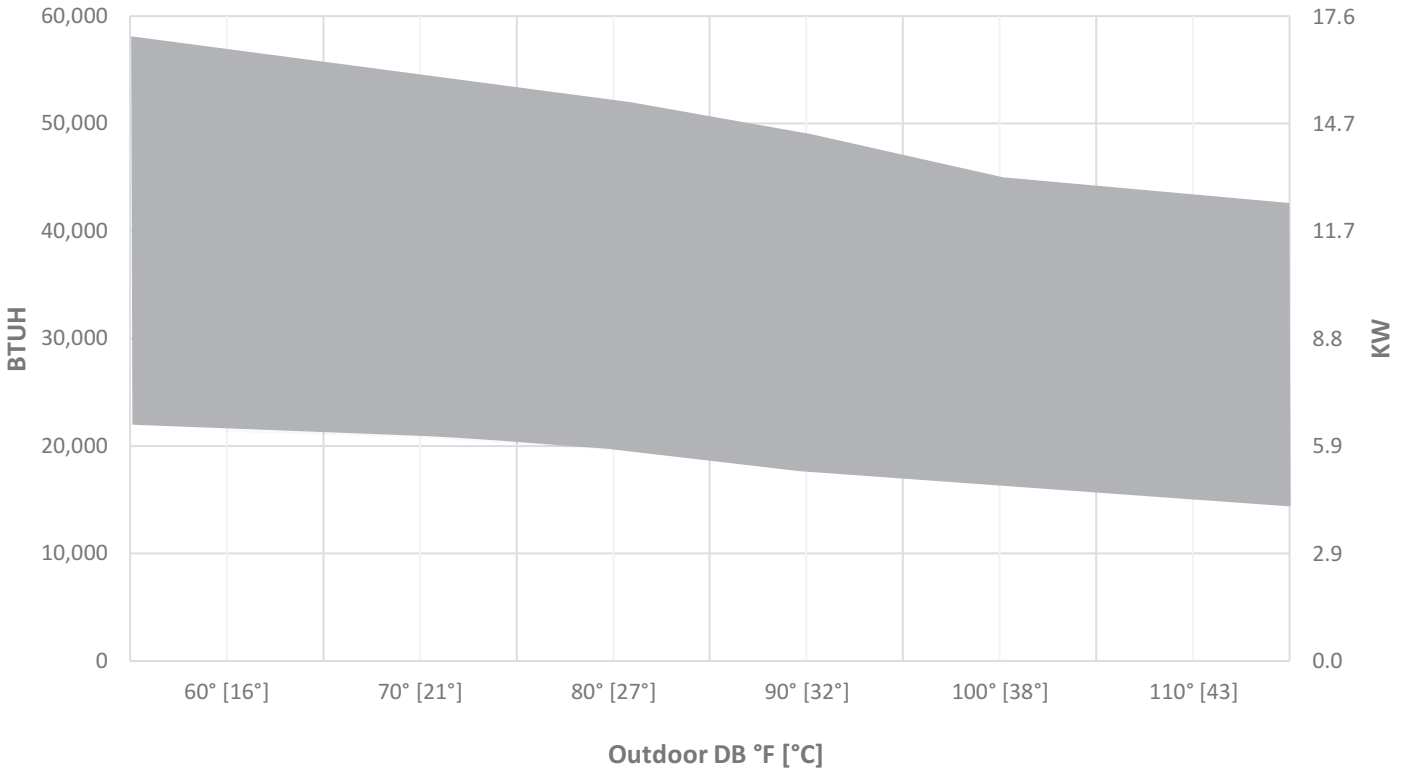

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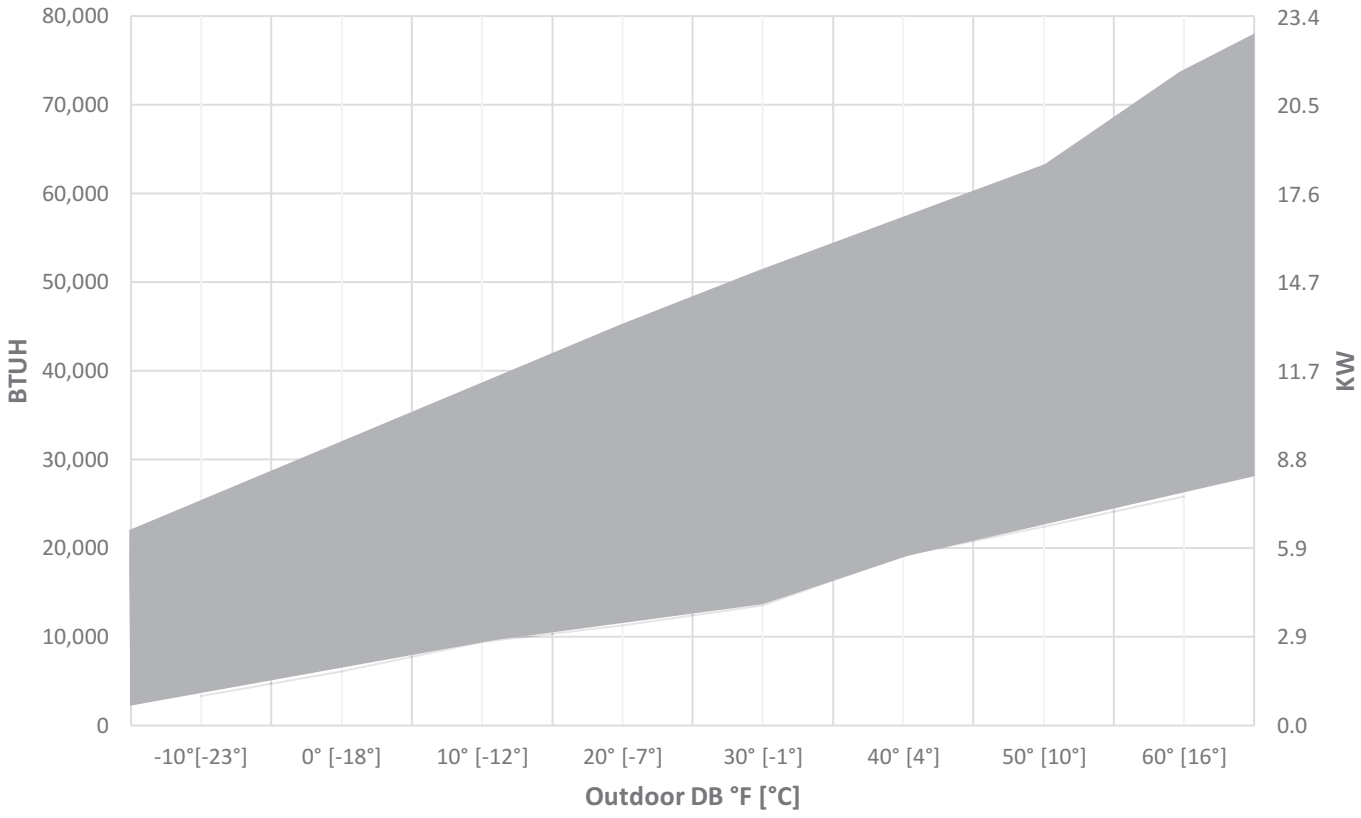

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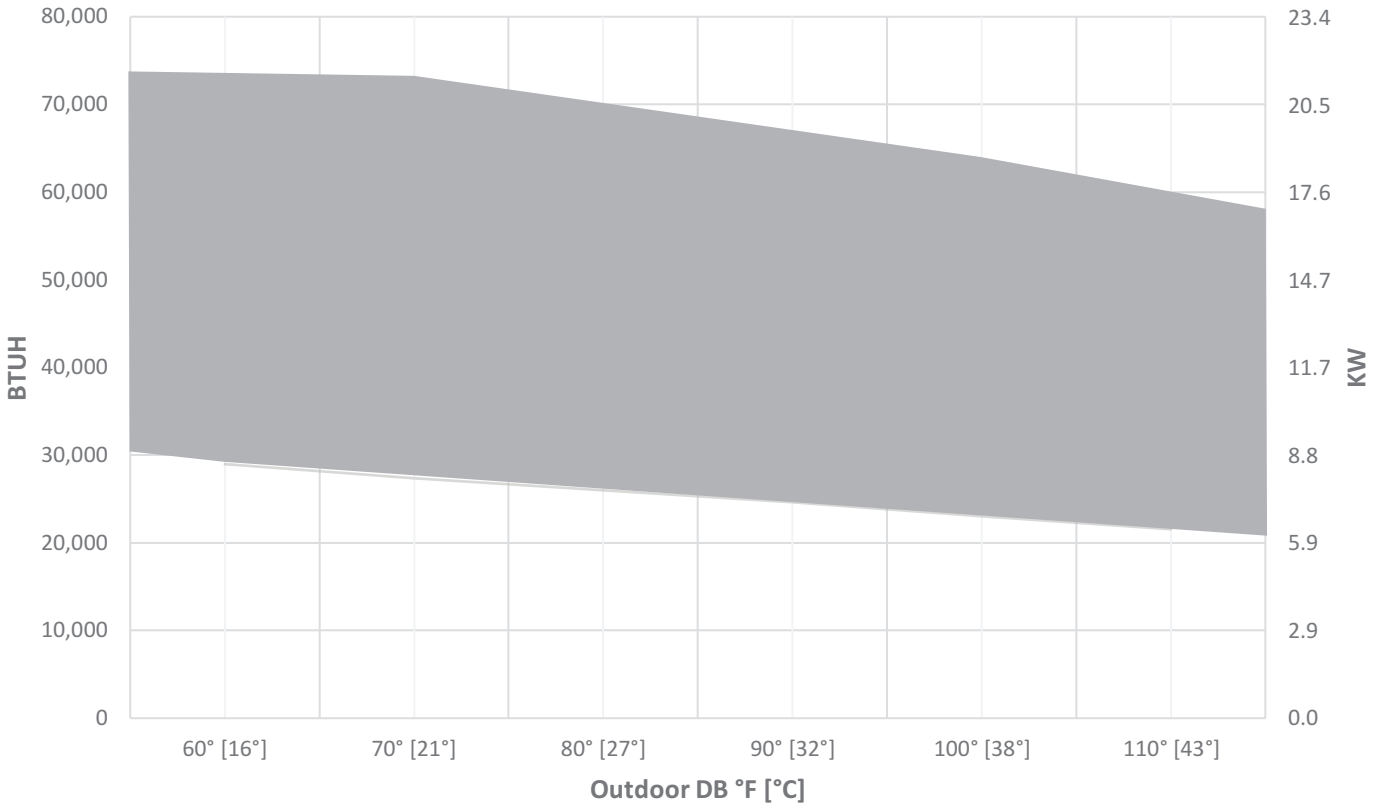

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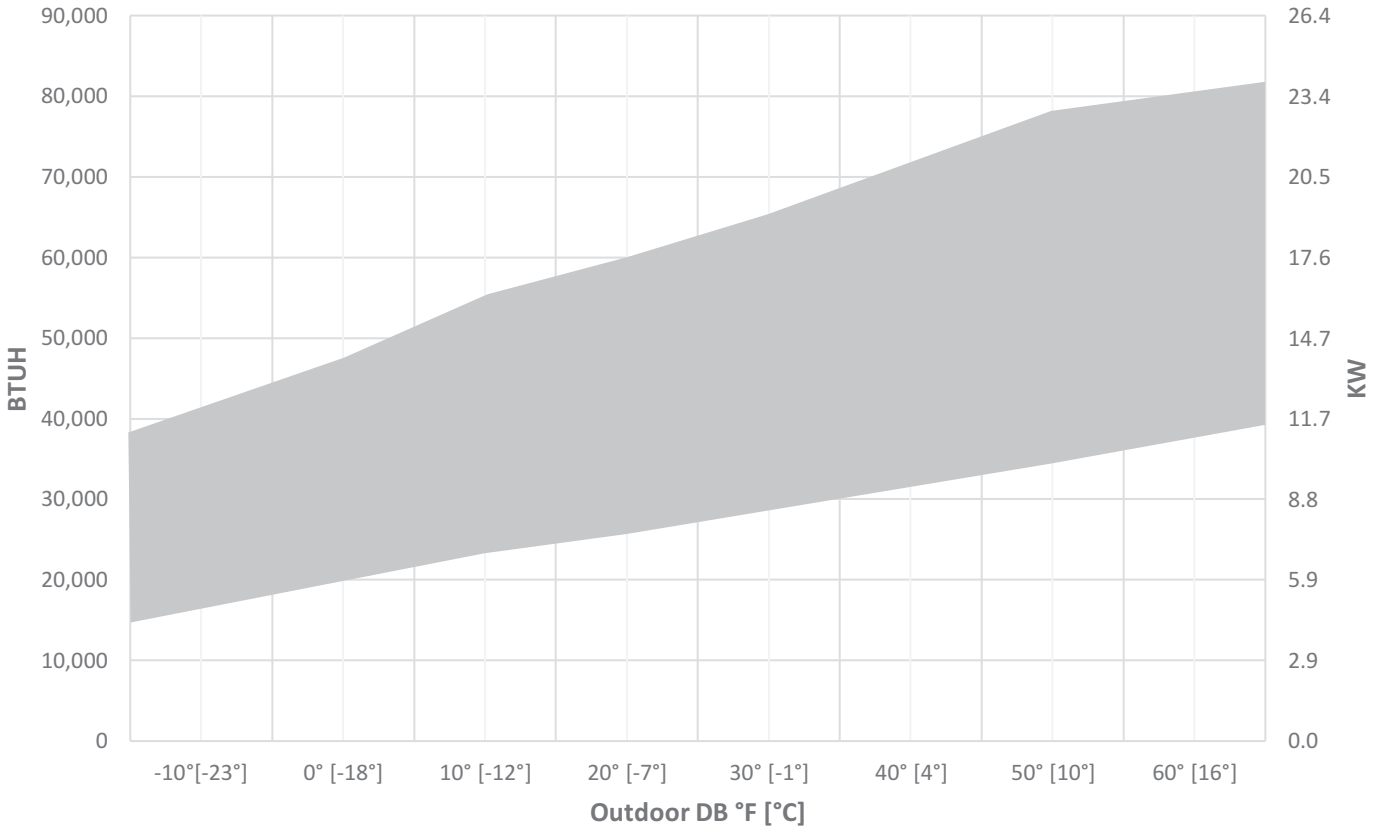

Performance Data @ AHRI Standard Conditions – Heat Pump

Designated Tested Combination												
Outdoor Unit	**Air Handler**	**Total Capacity BTU/H [kW]**	**Net Sensible BTU/H [kW]**	**Net Latent BTU/H [kW]**	**SEER**	**EER**	**Indoor CFM [L/s]**	**47 Degree Heating Capacity BTU/H [kW]**	**47 Degree COP**	**17 Degree Heating Capacity BTU/H [kW]**	**17 Degree COP**	**Region IV HSPF**
FO2420RVJCAB	FH2421ELVJUC	22800 [6.7]	16600 [4.9]	6200 [1.8]	20.00	14.00	800 [377.6]	22400 [6.6]	3.0	22800 [6.7]	2.0	11.0
FO3620RVJCAB	FH6021ELVJSC	35000 [10.3]	27400 [8.0]	7600 [2.2]	20.00	14.00	1225 [578.1]	33000 [9.7]	3.0	37400 [11.0]	2.0	11.5
FO4820RVJCAB	FH6021ELVJSC	45500 [13.3]	34200 [10.0]	11300 [3.3]	19.50	12.50	1575 [743.3]	42000 [12.3]	2.5	41000 [12.0]	2.0	11.0
FO6020RVJCAB	FH6021ELVJSC	54000 [15.8]	39000 [11.4]	15000 [4.4]	19.50	11.50	1700 [802.3]	51000 [14.9]	2.5	47000 [13.8]	1.5	11.0

Note: Additional ratings and system match ups and downloadable ratings certificates can be accessed from the AHRI website: www.ahridirectory.org

[ ] Designates Metric Conversions

GUIDE SPECIFICATIONS

General

System Description

Outdoor-mounted, air-cooled, split-system heat pump unit suitable for ground or rooftop installation. Unit consists of a hermetic compressor, composite basepan, an air-cooled coil, propeller-type condenser fan, suction and liquid line service valve, and a control box. Unit will discharge supply air upward as shown on contract drawings. Unit will be used in a refrigeration circuit to match up to a coil unit.

Quality Assurance

- — Unit will be rated in accordance with the latest edition of AHRI Standard 210.
- — Unit will be certified for capacity and efficiency, and listed in the latest AHRI directory.
- — Unit construction will comply with latest edition of ANSI/ASHRAE and with NEC.
- — Unit will be constructed in accordance with UL standards and will carry the UL label of approval. Unit will have c-UL-us approval.
- — Unit cabinet will be capable of withstanding ASTM B117 1000-hr salt spray test.
- — Air-cooled condenser coils will be leak tested at 150 psig and pressure tested at 550 psig.
- — Unit constructed in ISO9001 approved facility.

Delivery, Storage, and Handling

- — Unit will be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

Warranty (for inclusion by specifying engineer) — U.S. and Canada only.

Products

Equipment

Factory assembled, single piece, air-cooled heat pump unit. Contained within the unit enclosure is all factory wiring, piping, controls, compressor, refrigerant charge R-410A, and special features required prior to field start-up.

Unit Cabinet

- — Unit cabinet will be constructed of galvanized steel, bonderized, and coated with a powder coat paint.
- — All units constructed with louver coil protection and corner post. Louver can be removed by removing one fastener per louver panel.

AIR-COOLED, SPLIT-SYSTEM HEAT PUMP
FO*20R
2 TO 5 NOMINAL TONS

Fans

- — Condenser fan will be direct-drive propeller type, discharging air upward.
- — Condenser fan motors will be totally enclosed, 1-phase type with class B insulation and permanently lubricated bearings. Shafts will be corrosion resistant.
- — Fan blades will be statically and dynamically balanced.
- — Condenser fan openings will be equipped with coated steel wire safety guards.

Compressor

- — Compressor will be hermetically sealed.
- — Compressor will be mounted on rubber vibration isolators.
- — Compressor will be Copeland fully variable speed.

Condenser Coil

- — Condenser coil will be air cooled.
- — Coil will be constructed of aluminum fins mechanically bonded to copper tubes.

Refrigeration Components

- — Refrigeration circuit components will include liquid-line shutoff valve with sweat connections, vapor-line shutoff valve with sweat connections, system charge of R-410A refrigerant, and compressor oil.
- — Unit will be equipped with filter drier for R-410A refrigerant for field installation.

Operating Characteristics

- — The capacity of the unit will meet or exceed _____ Btuh at a suction temperature of _____ °F/°C. The power consumption at full load will not exceed _____ kW.
- — Combination of the unit and the evaporator or fan coil unit will have a total net cooling capacity of _____ Btuh or greater at conditions of _____ CFM entering air temperature at the evaporator at _____ °F/°C wet bulb and _____ °F/°C dry bulb, and air entering the unit at _____ °F/°C.
- — The system will have a SEER of _____ Btuh/watt or greater at DOE conditions.

Electrical Requirements

- — Nominal unit electrical characteristics will be _____ v, single phase, 60 hz. The unit will be capable of satisfactory operation within voltage limits of _____ v to _____ v.
- — Nominal unit electrical characteristics will be _____ v, three phase, 60 hz. The unit will be capable of satisfactory operation within voltage limits of _____ v to _____ v.
- — Unit electrical power will be single point connection.
- — Control circuit will be 24v.

Special Features

- — Refer to section of this literature identifying accessories and descriptions for specific features and available enhancements.

GENERAL TERMS OF LIMITED WARRANTY*

Fujitsu General America, Inc. will furnish a replacement for any part of this product which fails in normal use and service within the applicable period stated, in accordance with the terms of the limited warranty.

***For complete details of the Limited and Conditional Warranties, including applicable terms and conditions, contact your local contractor or the Manufacturer for a copy of the product warranty certificate.**

Conditional Unit Replacement
(Registration Required) .....Ten (10) Years
Parts .....Ten (10) Years

Before proceeding with installation, refer to installation instructions packaged with each model, as well as complying with all Federal, State, Provincial, and Local codes, regulations, and practices.

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

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