

# HVAC Guide Specifications

## Ductless Mini-Split Heat Pump

### Section 15700 - Mechanical HVAC

#### Size Range:

- 9,000 – 12,000 BTU's Nominal Cooling
- 12,000 – 16,000 BTU's Nominal Heating

#### Fujitsu Model Number:

9RLQ & 12 RLQ (wall-mount) Heat Pump Inverter series with wireless remote and IAQ System

### Part 1 – General

#### 1-1 System Description:

The air-conditioning heat pump system shall be a Fujitsu General RLQ series mini split system. The system shall consist of a wall mount indoor evaporator section (ASU Series) with wireless remote capable of accepting a wall mount corded remote option. The wall mount evaporator will include a factory installed plasma air filter system using ionization/electrostatic technology to filter the indoor air. Evaporator shall be equipped with a dirty filter indicator. System model numbers include System 9RLQ and System 12RLQ. These systems include AOU series horizontal discharge, 208-230/1/60 condensing units.

#### 1-2 Quality Assurance:

1. These units shall be listed by ETL and bear the ETL label.
2. Units shall be rated in accordance to ARI standard 240 and bear the ARI label
3. Units shall be manufactured in a facility that has met ISO 9002 and ISO 14001 international standards.
4. A full charge of R-410A for a 25ft line set shall be provided in the condenser section.
5. A dry air holding charge will be provided in the evaporator section
6. System SEER shall meet or exceed 20 SEER

#### 1-3 Handling and Storage:

1. The wireless remote shall be packaged inside the carton with the evaporator section
2. Wired remote if required shall be shipped as a separate accessory item
3. Unit shall be handled and stored according to manufacturers specifications.

### Part 2 - Warranty:

- 2-1 The units shall have a manufacturers warranty on all parts for a period of two (2) years from date of installation. The compressor shall have a warranty of six (6) years from date of original equipment installation. If any should fail to function properly during this period, it shall be repaired or replaced at the discretion of the manufacturer. This warranty does not include labor.
- 2-2 Manufacture shall have more than nine (9) years experience in the US market.

### **Part 3 – Performance:**

**3-1** Each system shall perform in accordance to the ratings shown on the chart below.  
Performance shall be based on the following ARI standards:

Cooling - Indoor 80<sup>0</sup> FDB, 67<sup>0</sup> FWB; Outdoor 95<sup>0</sup> FDB, 75<sup>0</sup> FWB  
Heating - Indoor 70<sup>0</sup> FDB; Outdoor 47<sup>0</sup> FDB, 43<sup>0</sup> FWB

System Model Number	Net Capacity BTU/h	SEER HSPF	Power Supply	Indoor Noise Level (db) H/M/L/Q*	Outdoor Noise Level (db)
System 9RLQ (Cooling)	9,000	21	208- 230/60/1	42/37/31/22	47/48
(Heating)	12,000	11		42/37/30/22	
System 12RLQ (Cooling)	12,000	21	208- 230/60/1	42/37/31/22	47/49
(Heating)	16,000	10.55		42/37/30/22	

\*H/M/L/Q = High/Medium/Low/Quiet fan settings

### **Part 4 – Products:**

#### **4-1 Indoor Unit:**

General:

The indoor unit shall be factory assembled, wired and run tested. Contained within the unit shall be all factory wiring, piping, control circuitry and fan motor. The unit shall have in addition to the standard filter a factory installed Plasma/Electrostatic filter to clean the return air. The unit shall have self diagnostic function, 3 minute time delay, an auto restart function, dirty filter indicator, an emergency operation manual run switch. Indoor unit refrigeration piping shall be charged with a dry air holding charge instead of R-410A.

a.) Cabinet:

- The cabinet shall have a white finish smooth easy to clean surface with and indicator lights to verify functioning and trouble shooting
- Return air shall enter through the top of the cabinet
- There will be a factory supplied separate back plate for securely mounting the evaporator to the wall

b.) Fan:

- Evaporator fan shall be direct drive DC motor
- Fan shall be dynamically balanced and run with permanently lubricated bearings
- A motorized air louver (up/down) shall provide automatic changes in air direction to provide a more uniform pattern of air distribution
- Indoor fan shall provide 4 (4) speeds, High, Medium, Low and Quiet

c.) Filter:

- Return air shall be filtered by means of a washable Plasma Ionization/Electrostatic air cleaner in conjunction with a washable standard filter
- Filter shall have a have a dirty filter indicator light to alert user to clean filter after 400 hours of operation and automatically turn off if not serviced after 500 hours

d.) Coil:

- Evaporator shall be nonferrous construction with aluminum plate fins on copper tubing
- All tubing shall be factory brazed and leak checked prior to packaging at the factory

e.) Electrical:

- Power requirement shall be 208-230/60/1
- Indoor unit will not have and supplemental electric strip type heat

f.) Control:

- This unit shall have a wireless controller to perform input function necessary for operation of unit
- Unit will have a dry mode setting to help remove humidity
- Control shall be capable of auto changeover from cooling to heating mode
- Wireless handheld control shall have controls for temperature and time set, master control, air clean, auto swing louver, start/stop, fan and timer
- Temperature changes shall be from 60<sup>0</sup>F – 80<sup>0</sup>F in one (1) degree increments
- Microprocessor located in the indoor unit shall have the capability to sense return air temperature, coil temperature and process the commands from the remote to operate the outdoor unit as required. Unit shall be capable of automatic restart when power is returned after a power outage
- Control signal shall be sent between the indoor unit and outdoor unit on the same wiring delivering voltage to the indoor unit
- Indoor unit must be capable of accepting a field supplied wired controller for permanent mounting

#### 4-2 Outdoor Unit:

General:

The outdoor unit is designed specifically for the matching indoor unit. The unit is equipped with circuit board that interfaces with the indoor unit. Outdoor unit shall contain a factory installed, piped and wired reversing valve. Unit is to be factory assembled, wired, piped and run tested prior to leaving the factory.

a.) Unit Cabinet:

- Cabinet will be constructed out of galvanized metal with a baked enamel finish.
- Fan guard will be louvered to prevent entrance of foreign objects

b.) Fan:

- Unit will have a direct drive propeller type fan
- Motor for fan will be DC voltage permanently lubricated and balanced prior to assembly
- Unit will have a horizontal discharge air flow

c.) Coil:

- Condenser coil shall be nonferrous construction with aluminum plate fin on copper tubing
- Refrigerant flow leaving the condenser coil shall be controlled by a metering device

d.) Compressor:

- Compressor shall be a high efficiency inverter series rotary type mounted in such a way to prevent noise and vibration transmission outside the cabinet
- Unit will be precharged with R410A refrigerant to accommodate a 25ft line set without the addition or removal of Freon
- Unit will be capable of a maximum 66ft (49ft max lift) line set without the need to trap, change line sizes or add oil to the system

e.) Electrical:

- The unit electrical requirement shall be 208-230/60/1
- The outdoor unit shall be controlled by a microprocessor
- Control voltage to and from the indoor unit shall occur on the same wiring delivering power