

SECTION 23 7416
PACKAGED ROOFTOP AIR-CONDITIONING UNITS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Packaged, intermediate-capacity, rooftop air-conditioning units.

1.02 RELATED REQUIREMENTS

- A. Section 23 0548 - Vibration Controls for HVAC.

1.03 REFERENCE STANDARDS

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide capacity and dimensions of manufactured products and assemblies required for this project. Indicate electrical service with electrical characteristics and connection requirements, and duct connections.
- C. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing.
- D. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements for additional provisions.
 - 2. Extra Filters: One set for each unit.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect units from physical damage by storing off site until roof mounting curbs are in place and ready for immediate installation of units.

1.06 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Provide a five year warranty to include coverage for refrigeration compressors.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Daikin.
- B. Johnson Controls International, PLC: www.johnsoncontrols.com/#sle.
- C. Lennox.
- D. Trane Technologies, PLC: www.trane.com/#sle.

2.02 PACKAGED, INTERMEDIATE-CAPACITY, ROOFTOP AIR-CONDITIONING UNITS

- A. General: Roof mounted or ground mounted units having gas burner and electric refrigeration that are 6.0 tons to 25 tons in capacity.
- B. Description: Self-contained, packaged, factory assembled and prewired, consisting of cabinet and frame, supply fan, heat exchanger and burner, heat recovery coil, controls, air filters, refrigerant cooling coil and compressor, condenser coil and condenser fan.
- C. Refrigerant: Use only refrigerants that have ozone depletion potential (ODP) of zero and global warming potential (GWP) no greater than that allowed by federal code.

2.03 CASING

- A. Cabinet: Steel with baked enamel finish, including access panels with screwdriver-operated flush, cam type fasteners. Structural members to be minimum 18 gauge, 0.0478 inch (1.21 mm), with access doors or panels of minimum 20 gauge, 0.0359 inch (0.91 mm).

- B. Insulation: One-inch (25 mm) thick, neoprene-coated glass fiber with edges protected from erosion.

2.04 FANS

- A. Supply Fan: Forward curved centrifugal type, resiliently mounted with direct drive, and rubber isolated hinge mounted. Provide with high efficiency motor. Isolate complete fan assembly. See Section 23 0548.

2.05 BURNERS

- A. Gas Burner: Atmospheric type burner with adjustable combustion air supply, pressure regulator, gas valves, manual shut-off, intermittent spark or glow coil ignition, flame-sensing device, and automatic 100 percent shutoff pilot.
- B. Gas Burner Safety Controls: Energize ignition, limit time for establishment of flame, prevent opening of gas valve until pilot flame is proven, stop gas flow on ignition failure, energize blower motor, and after airflow proven and slight delay, allow gas valve to open.

2.06 EVAPORATOR COIL

- A. Provide copper tube aluminum fin coil assembly with galvanized drain pan and connection.
- B. Provide capillary tubes or thermostatic expansion valves for units of 6 tons (21 kw) capacity and less, and thermostatic expansion valves and alternate row circuiting for units 7.5 tons (26 kw) cooling capacity and larger.

2.07 CONDENSER COIL

- A. Provide copper tube aluminum fin coil assembly with subcooling rows and coil guard.
- B. Provide direct drive propeller fans, resiliently mounted with fan guard, motor overload protection, wired to operate with compressor. Provide high efficiency fan motors.

2.08 HEAT RECOVERY COIL

- A. Provide copper tube aluminum fin coil assembly arranged to provide heat recovery.

2.09 COMPRESSORS

- A. Provide scroll compressors, 3600 rpm maximum, resiliently mounted with positive lubrication, crankcase heater, high and low pressure safety controls, motor overload protection, suction and discharge service valves and gauge ports, and filter drier.

2.10 AIR FILTERS:

- A. 2-inch (50 mm) thick, MERV 8, glass fiber disposable media in metal frames.

2.11 ROOF CURBS

- A. Refer to equipment schedules.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Mount units on factory built plenum mounting curb (where scheduled) providing watertight enclosure to protect ductwork and utility services. Install roof mounting curb level.

3.02 SYSTEM STARTUP

- A. Prepare and start equipment. Adjust for proper operation.

END OF SECTION