**23 81 26.3 UPFLOW/DOWNFLOW EEV CASED COILS**

**Part 1 – GENERAL**

* 1. **SECTION INCLUDES**
1. Indoor cased coil **CAPE –** Cased Upflow/Downflow Indoor Coils with Electronic Expansion Valve (EEV).
	1. Size Range: 3.5 to 5 Tons Nominal.
	2. Model Numbers:
* CAPE4860C4\*\*
* CAPE4860D4\*\*
* CAPE4961C4\*\*
* CAPE4961D4\*\*
	1. **QUALITY ASSURANCE**
1. The unit(s) shall be tested by a Nationally Recognized Testing Laboratory (NRTL), in accordance with ANSI/UL 1995 – Heating and Cooling Equipment and bear the Listed Mark These meets the National Electric Code (NEC) and Canadian Electrical Code (CEC) requirements.
2. The unit(s) will be produced in an ISO 9001 and ISO 14001 facility, which are standards set by the International Standard Organization (ISO). The unit(s) shall be factory tested for safety and function.
	1. **DELIVERY, STORAGE AND HANDLING**
3. The unit(s) shall be stored and handled according to the manufacturer’s recommendations.
	1. **WARRANTY**
		1. NON-OWNER OCCUPIED RESIDENCE WARRANTY
			1. This warranty is provided to you by Daikin Manufacturing Company, L.P. (“Daikin”), which warrants all parts of this heating or air conditioning unit, as described below.
			2. This warranty applies to heating and air conditioning units installed in residences not occupied by the owner.
			3. This warranty covers defects in materials and workmanship that appear under normal use and maintenance.
			4. Warranty coverage begins on the “installation date.” The installation date is one of two dates:

(1) The installation date is the date that the unit is originally installed.

(2) If the date the unit is originally installed cannot be verified, the installation date is three months after the manufacture date. The first four digits of the serial number (YYMM) on the unit indicate the manufacture date. For example, a serial number beginning with “1306” indicates the unit was manufactured in June 2013.

* + - 1. Registration is not required to obtain warranty coverage, but registration entitles the owner to the Registered Additional Term Warranty described in the following paragraph. If the unit is not registered, the warranty lasts for a period up to 5 YEARS after the installation date (the “Initial Term Warranty”). If the unit is properly registered online within 60 days after the installation date, an additional warranty (the “Registered Additional Term Warranty”) is provided an lasts for as long as the original registered owner (“registered owner”) owns the residence in which the unit was originally installed for a period up to 10 YEARS after the installation date. To register, go to www.daikincomfort.com and click “PRODUCT Registration.” Neither of these warranties continues after the unit is removed from the location where it was originally installed. The replacement of a part under this warranty does not extend the warranty period. In other words, Daikin warrants a replacement part only for the period remaining in the warranty that commenced on the installation date
			2. Complete warranty details available from your local Daikin representative or at [www.daikincomfort.com](http://www.daikincomfort.com).

**Part 2 – PERFORMANCE**

**2.01 DESIGN BASIS**

The HVAC equipment basis of design is Daikin. All bidders shall furnish the minimum system standards as defined by the base bid model numbers, model families or as otherwise specified herein (see Appendix A for general information on HVAC equipment alternate supplier). In any event the contractor shall be responsible for all specified items and intents of this document without further compensation.

**Part 3 – PRODUCTS**

**3.01 CAPE – CASED UPFLOW/DOWNFLOW INDOOR COILS**

1. General:

The upflow/downflow cased coil shall be operable with refrigerant R-410A, equipped with factory installed electronic expansion valve. The cased coil shall be available in nominal capacities from 3.5-ton to 5-ton.

The cased coil shall have connectivity with the Daikin FIT outdoor unit, model DX17VSS air-conditioning outdoor, the Daikin communicating furnace families D\*80SC, D\*80VC, D\*96SC,D\*96VC, D\*97MC, and the Daikin modular blower MBVC.

Computerized PID control shall be used to control superheat to deliver a comfortable room temperature condition.

General product specifications:

|  |  |  |  |
| --- | --- | --- | --- |
| **MODEL** | **NOMINALTONS** | **CONNECTION** | **SHIP WEIGHT (LBS)** |
| **LIQUID** | **SUCTION** |
| CAPE4860C4 | 3.5 - 4 | 3/8" | 7/8" | 71 |
| CAPE4860D4 | 3.5 - 4 | 3/8" | 7/8" | 73 |
| CAPE4961C4 | 4 - 5 | 3/8" | 7/8" | 78 |
| CAPE4961D4 | 4 - 5 | 3/8" | 7/8" | 80 |

1. Performance:

The air handler unit performance shall range from 40,000 Btu/h to 54,000 Btu/h based on rated combinations in accordance with Air Conditioning, Heating and Refrigeration Institute’s (AHRI) Standard 210/240.

1. Indoor Unit:
2. The cased coil components shall be completely factory assembled and tested. Included in the unit is factory wiring, piping, electronic expansion valve, control circuit board, and brazed connections.
3. The cased coil shall be charged with nitrogen prior to shipment from the factory.
4. Suction lines shall be insulated between the outdoor and the cased coil.
5. A condensate draining shall be made via gravity or external condensate pump.
6. Unit Cabinet:
7. The cabinet shall be constructed with sound absorbing, foil-faced insulation.
8. The installer must select an installation location with adequate structural support, space for service access and clearance for air return and supply duct connections.
9. A field supplied secondary drain pan shall be installed where required by national, state, or local code.
10. Dimensions:

|  |  |
| --- | --- |
| **MODEL** | **CABINET DIMENSIONS** |
| **W** | **D** | **H** |
| CAPE4860C4\*\* | 21" | 21" | 30" |
| CAPE4860D4\*\* | 241/2" | 21" | 30" |
| CAPE4961C4\*\* | 21" | 21" | 30" |
| CAPE4961D4\*\* | 241/2" | 21" | 30" |

1. The cased coil shall have a DecaBDE-free thermoplastic drain pan with secondary drain connections.
2. The cased coil shall have a galvanized, leather grain-embossed finish
3. The cased coil shall have a UV-resistant drain pan.
4. Coil:
5. The cased coils shall be of the direct expansion type constructed from aluminum tubes expanded into aluminum fins to form a mechanical bond, completely factory tested.
6. The cased coils shall be 3/8” evaporator coil tube size.
7. The cased coil shall be of a waffle louver fin and high heat exchange, rifled bore tube design to ensure highly efficient performance.
8. The refrigerant connections shall be brazed connections and the condensate will be 3/4 inch outside diameter PVC.
9. A thermistor shall be located on the liquid and gas line.
10. Control:
11. The cased coil shall have controls provided by Daikin to perform input functions necessary to operate the system.
12. The cased coil shall be compatible with Daikin communicating outdoor units interfacing with ClimateTalk protocol.
13. The cased coil shall be compatible with the Daikin *One*+ Smart Thermostat.
14. The cased coil shall have a fault recall of the six most recent faults
15. Optional accessories available:
	1. Drain pan insulation kit:
		* DPICX-C and DPICX-CA (for 21” cabinet width)
		* DPICX-D and DPICX-DA (for 241/2” cabinet width)
	2. Downflow Kit:
		* DKFE-001

**APPENDIX A**

**HVAC EQUIPMENT ALTERNATE (GENERAL INFORMATION)**

1. The alternate equipment supplier shall provide to the bidding mechanical contractor a complete equipment data package.
	1. This package shall include, but is not limited to, equipment capacities at the design condition, power requirements, indoor units CFM/static pressures, fan curves, installation requirements, and physical dimensions. Nominal performance data is not acceptable.
	2. The mechanical contractor shall request and receive the equipment data package \_\_ days prior to bid date and submit this package with the alternate bid.
	3. The mechanical contractor shall list the equipment supplier and submit the required data package with the bid detailing a complete comparison of the proposed alternate equipment to the specified equipment and the associated cost reduction of the alternate equipment. The contractor bids an alternate manufacturer with full knowledge that that manufactures product may not be acceptable or approved.
	4. All equipment must have visible and permanent label clearly identifying the original manufacturer of the equipment. These labels shall have original manufacturer’s name and contact information and be located both inside and outside the equipment and on all equipment-related literature. Submittals shall include the above statement as confirmation by supplier that all conditions are agreed to and complied to. Failure to comply with these requirements shall be sufficient cause for rejection of the submittal and product with no further consideration.
2. The alternate equipment supplier shall furnish a complete drawing package to the mechanical contractor \_\_ days prior to bid day for bidding and installation.
	1. The drawing format shall be .dxf or equivalent, on 30"x42" sheets.
	2. The HVAC and electrical series design documents will be made available in electronic format for use by the equipment supplier in preparing their drawings.
	3. The alternate equipment supplier shall prepare the following drawings:
		1. XXX HVAC Floor Plan
		2. XXX HVAC Refrigerant Piping/Controls Details
		3. XXX HVAC Details
		4. XXX HVAC Schedules
	4. The alternate equipment supplier shall draft all refrigerant piping components, overall building control schematic, detailed control wiring diagrams, system details and schedules for their system. The drawings shall convey all requirements to successfully install the alternate equipment suppliers system.
	5. Provide (2) drawing package sets plotted on 20 lb. vellum. Provide (1) drawing package in electronic format (.dxf files) on CD.
	6. The submitted documents shall be complete system designs and show no less information than the HVAC equipment/controls contract bid documents.
3. The equipment supplier shall submit, as part of the equipment data package, outdoor unit data sheets. Data sheets to include the following:
	1. COOLING capacities at project design conditions:
		1. Cooling (Btu/h)
		2. Cooling Input Power (kW)
		3. SEER
		4. EER
	2. HEATING capacities at project design conditions:
		1. Heating (Btu/h)
		2. Heating Input Power (Btu/h)
	3. The submitted capacity and efficiency performance must meet or exceed the listed performance on the schedule at the designed outdoor ambient and indoor space temperature conditions including de-rate factors for defrost.
		1. HSPF
		2. COP
		3. OPERATING TEMPERATURE RANGE:
			1. Cooling
			2. Heating
		4. POWER SUPPLY:
			1. Maximum Circuit Amps (MCA)
			2. Maximum Overcurrent Protection Amps (MOP)
			3. Maximum Starting Current (MSC)
			4. Outdoor Fan Motor
		5. UNIT DATA:
			1. Sound pressure level at 3.3 ft (dBA)
			2. Weight (lbs)
			3. Dimensions
4. The equipment supplier shall guarantee the performance of their system and all published data submitted. Performance shall be based on the design criteria below.
	1. Room Temperature (Cooling)
	2. Room Temperature (Heating)
	3. Ambient Temperature (Summer)
	4. Ambient Temperature (Winter)
5. The alternate equipment supplier shall submit with bid, indoor unit data sheets. Data sheets to include the following:
	1. Capacities at project design conditions:
		1. Cooling (Btu/h)
		2. Heating (Btu/h)
		3. Air Flow (CFM)
		4. SEER
		5. EER
		6. HSPF
		7. COP
	2. External Static Pressure (ESP)
	3. Electrical Data (MCA, MOP, MSC, RLA)
	4. Weight (lbs)
	5. Dimensions