Section 23 34 00

HVAC Fans

Part 1 General

1. 1.1 Summary
   1. Section Includes
      1. The ceiling-mounted circulation fan is the model scheduled with the capacities indicated. The fan shall be furnished with mounting hardware and a remote control as manufactured by Big Ass Fans.
   2. Summary of Work
      1. Installation of the fan, wireless network (optional), miscellaneous or structural metal work (if required), field electrical wiring, cable, conduit, fuses and disconnect switches, other than those addressed in the installation scope of work, shall be provided by others. Installation services are available through Big Ass Fans. Consult the appropriate installation scope of work for information on the available installation options, overview of customer and installer responsibilities, and details on installation site requirements.
2. 1.2 Related Sections
   1. 21 00 00 Fire Suppression
   2. 23 00 00 Heating, Ventilating, and Air Conditioning (HVAC)
   3. 26 00 00 Electrical
3. 1.3 References
   1. Canadian Standards Association (CSA)
   2. International Organization for Standardization (ISO)
   3. National Electrical Code (NEC)
   4. National Fire Protection Association (NFPA)
   5. Underwriters Laboratories (UL)
   6. European Community (CE)
   7. UK Conformity Assessed (UKCA)
4. 1.4 Submittals
   1. Shop Drawings: Drawings detailing product dimensions, weight, and attachment methods.
   2. Product Data: Specification sheets on the ceiling-mounted fan, specifying electrical and installation requirements, features and benefits, and controller information.
   3. Revit Files: Files provided for architectural design.
   4. Product Documentation: The manufacturer shall furnish a copy of all installation, operation, and maintenance instructions for the fan. All data is subject to change without notice.
   5. Schedule
5. 1.5 Quality assurance
   1. Certifications
      1. Safety
         1. The fan assembly, as a system, shall be Nationally Recognized Testing Laboratory (NRTL)-certified and built pursuant to the guidelines set forth by UL standard 507 and CSA standards 22.2 No. 60335-1 and 22.2 No. 113.
         2. The fan assembly, as a system, shall be CE- and UKCA-compliant.
         3. The fan motor shall be NRTL-certified and built pursuant to the following standards.
            1. Canada

CSA C22.2 No. 100. Standard for Safety for Motors and Generators.

CSA C22.2 No. 77. Standard for Safety for Motors with Inherent Overheating Protection.

* + - * 1. United States

UL 1004-1. Standard for Safety for Rotating Electrical Machines - Part 1 General Requirements.

UL 1004-3. Standard for Safety for Thermally Protected Motors.

UL 1004-7. Standard for Safety for Electronically Protected Motors.

* 1. Manufacturer Qualifications
     1. The fan and any accessories shall be supplied by Big Ass Fans which has a minimum of twenty (20) years of product experience.

1. 1.6 Delivery, storage, and handling
   1. Deliver product in original, undamaged packaging with identification labels intact. The fan shall be new, free from defects, and factory tested.
   2. The fan and its components must be stored in a safe, dry location until installation.
2. 1.7 Warranty
   1. The manufacturer shall replace any products or components defective in material or workmanship for the customer free of charge (including transportation charges within the USA, FOB Lexington, KY), pursuant to the complete terms and conditions of the Big Ass Fans Warranty in accordance to the following schedule:

**Product Period of Coverage**

Indoor Fans 5 years

Outdoor Fans 3 years

†Labor to repair the defect will be provided free of charge at the Big Ass Fans service center for defects arising during the Warranty Period.

††See the complete warranty for more details.

Part 2 Product

1. 2.1 Manufacturer
   1. Delta T LLC, dba Big Ass Fans, PO Box 11307, Lexington, Kentucky 40575.   
      Phone (877) 244-3267. Fax (859) 233-0139. Website: www.bigassfans.com
2. 2.2 Haiku® L
   1. Complete Unit
      1. Regulatory Requirements: The entire fan assembly, as a system, shall be NRTL-certified and built pursuant to relevant safety standards as described above.
      2. Quality: The fan shall display good workmanship in all aspects of its construction. Field balancing of the airfoils shall not be necessary.
      3. Colors: Airfoil colors may be selected by the architect or owner as described in 2.2.C, “Airfoils.”
      4. Optional Accessories
         1. A wall-mounted Bluetooth controller (in addition to the standard remote control) may be selected at the time of order.
            1. The Bluetooth wall control shall control both the fan and light (on/off and variable speed/brightness).
         2. A 0–10 V module may be selected at the time of order. The module shall enable the fan to be integrated with a home or building automation system or a 3rd party 0–10 V dimmer using an industry-standard protocol.
   2. Mounting System
      1. Indoor Fans: The fan shall be suitable for flat or sloped ceilings with heights of 8 ft (2.4 m) or taller.
      2. Outdoor Fans: The fan shall be suitable for flat ceilings with heights of 8 ft (2.4 m) or taller.
      3. The fan shall be equipped with a mounting bracket, control box, wiring cover, mounting ball and wedge, motor cover and trim, downrod, motor unit, airfoils, mounting hardware, and an LED light.
         1. Outdoor fans shall be equipped with a fan stabilizer.
      4. A 5-inch (128.5-mm) extension tube shall be included with the fan.
      5. Indoor Fans: The fan shall have a diameter of 44 in. (112 cm) or 52 in. (132 cm).
      6. Outdoor Fans: The fan shall have a diameter of 52 in. (132 cm).
   3. Airfoils
      1. Indoor Fans: The fan shall be equipped with three airfoils spanning a total diameter of 44 in. (112 cm) or 52 in. (132 cm).
         1. 44 in. (112 cm) fans: Airfoils shall be available in a black or white finish as specified by the architect or owner.
         2. 52 in. (132 cm) fans: Airfoils shall be available in a black, white, caramel, or cocoa finish as specified by the architect or owner.
      2. Outdoor Fans: The fan shall be equipped with three airfoils spanning a total diameter of 52 in.  
         (132 cm). Airfoils shall be available in a black, white, caramel, or cocoa finish as specified by the architect or owner.
      3. Airfoils shall be made of hybrid resin.
   4. Motor
      1. The fan shall have an electronically commutated motor (ECM) rated for 100–120 VAC, single-phase or 200–240 VAC, single-phase.
      2. The fan shall draw a maximum of 20.3 watts.
      3. The fan shall be designed for continuous operation in ambient temperatures of 32–104°F (0–40°C) and a humidity range of 20–90% (non-condensing).
      4. The fan’s motor unit and motor unit trim shall be available in black or white as specified by the architect or owner.
   5. Safety Cable
      1. The fan shall be equipped with a safety cable that provides an additional means of securing the fan assembly to the building structure. The safety cable shall be 1.5 mm in diameter and fabricated of aircraft steel.
      2. Field construction of safety cables is not permitted.
   6. LED Light
      1. The LED light settings shall include on/off, Sleep Mode, and 16 dimmable light levels.
      2. A clear lens shall be installed on the LED light.
   7. Remote Control
      1. The fan shall be equipped with a compact IR remote control that allows intuitive operation of the fan in the following modes:
         1. Speeds 0 (Off) through 7 (High).
         2. Sleep Mode: Sleep Mode shall reduce the fan speed by one increment every hour until the lowest speed is reached. When the programmed time period ends, the fan automatically turns off. Sleep Mode is only active when Timer mode is used.
         3. Timer Mode: In Timer Mode, the fan runs at a set speed until the programmed time period ends.
         4. Whoosh® Mode: Silently varies fan speed to mimic cooling natural breezes.
      2. The remote shall control both the fan and light. Light brightness shall be increased or decreased by pressing the Up or Down Light button on the remote, and the light shall be turned on or off by pressing the Light On/Off button.
      3. Each operating mode shall be indicated by a pattern on the fan mode indicators, which shall be located on the bottom of the fan and shall be visible from the ﬂoor. All indicators shall automatically turn off approximately five seconds after the last control button is pressed.
      4. The remote shall be 1.6 in. wide × 5.5 in. tall × 0.9 in. thick (40 mm wide x 140 mm tall x 23 mm thick) and shall operate on two AAA batteries (included).
   8. Wi-Fi Module (Optional)
      1. The fan shall be equipped with a Wi-Fi module, as specified by the architect or owner.
      2. The module shall be installed in the fan’s control box.
      3. Install and set up the mobile app according to the manufacturer’s instructions.
      4. The module shall provide basic control of the fan and light using the mobile app.
      5. Activate Fan Eco to fully leverage the energy savings from your ceiling fan.
   9. Bluetooth Wall Control (Optional)
      1. The fan shall be equipped with a Bluetooth wall control in addition to the standard remote control, as specified by the architect or owner.
      2. The Bluetooth wall control shall control both the fan and light. Fan speed shall be increased or decreased by pressing the Up or Down Fan buttons on the wall control, and the fan shall be turned on or off by pressing the Fan On/Off button. Light brightness shall be increased or decreased by pressing the Up or Down Light buttons on the wall control, and the light shall be turned on or off by pressing the Light On/Off button.
   10. 0–10 V Module (Optional)
       1. The fan shall be equipped with a 0–10 V module, as specified by the architect or owner.
       2. The module shall be installed in the fan’s control box.
       3. The module shall provide independent control of fan speed and light intensity and shall support daisy chaining for one or up to 10 fans.
       4. The module shall be compatible with any 0–10 V sinking/sourcing dimmer and with most home or building automation systems.

Part 3 Execution

1. 3.1 Preparation
   1. The fan location must have an appropriate ceiling-mounted outlet box marked, “Acceptable for Fan Support.” If there is not an appropriate outlet box already installed at the location, one must be installed on a ceiling joist or beam and be properly wired. Additional mounting options may be available. Consult the installation guide for additional details.
   2. Wet-rated fans installed in exposed outdoor locations must have fixed/permanent coverage above the fan wiring cover and must be installed in a GFCI protected branch circuit.
   3. The fan location must be free from obstacles such as lights, cables, or other building components.
   4. Check the fan location for proper electrical requirements. Consult the installation guide for appropriate circuit requirements.
2. 3.2 Installation
   1. Install the fan and optional Bluetooth wall control according to the manufacturer’s installation guide, which includes acceptable mounting methods.
   2. Required Distances
      1. Airfoils must be at least 7 ft (2.1 m) above the floor.
      2. The airfoils must have at least 2 ft (0.6 m) clearance from all obstructions.
      3. Indoor Fans: The fan shall not be located where it will be subjected to rain or continuous wind gusts or in close proximity to the outputs of HVAC systems or radiant heaters. Consult the installation guide for additional details.
      4. Outdoor Fans: The fan shall not be located in close proximity to the outputs of HVAC systems or radiant heaters. Consult the installation guide for additional details.

End of Section