



SECTION 23 34 00 HVAC Fans

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. The ceiling-mounted circulation fan is the model scheduled with the capacities indicated. The fan shall be furnished with a remote control and SenseME™ Technology as manufactured by Big Ass Fans.
- B. Summary of Work
 - 1. Installation of the fan, wireless network, 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.

1.2 RELATED SECTIONS

- A. 21 00 00 Fire Suppression
- B. 23 00 00 Heating, Ventilating, and Air Conditioning (HVAC)
- C. 26 00 00 Electrical

1.3 REFERENCES

- A. Canadian Standards Association (CSA)
- B. International Organization for Standardization (ISO)
- C. National Electrical Code (NEC)
- D. National Fire Protection Association (NFPA)
- E. Underwriters Laboratory (UL)

1.4 SUBMITTALS

- A. Shop Drawings: Drawings detailing product dimensions, weight, and attachment methods
- B. Product Data: Specification sheets on the ceiling-mounted fan, specifying electrical and installation requirements, features and benefits, and controller information
- C. Revit Files: Files provided for architectural design
- D. Installation Guide: The manufacturer shall furnish a copy of all installation, operation, and maintenance instructions for the fan. All data is subject to change without notice.
- E. Schedule

1.5 QUALITY ASSURANCE

- A. Certifications
 - 1. Safety
 - a. The fan assembly, as a system, shall be Intertek/ETL-certified and built pursuant to the following standards.
 - a. Canada
 - a) CSA C22.2 No. 113. Standard for Safety for Fans and Ventilators.
 - b. United States
 - a) UL 507. Standard for Safety for Electric Fans.
 - b. The fan motor shall be Intertek/ETL-certified and built pursuant to the following standards.
 - a. Canada



- a) CSA C22.2 No. 100. Standard for Safety for Motors and Generators.
- b) CSA C22.2 No. 77. Standard for Safety for Motors with Inherent Overheating Protection.
- b. United States
 - a) UL 1004-1. Standard for Safety for Rotating Electrical Machines - Part 1 General Requirements.
 - b) UL 1004-3. Standard for Safety for Thermally Protected Motors.
 - c) UL 1004-7. Standard for Safety for Electronically Protected Motors.
- B. Manufacturer Qualifications
 - 1. The fan and any accessories shall be supplied by Big Ass Fans, which has a minimum of fifteen (15) years of product experience.
 - 2. ISO 9001-certified

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver product in original, undamaged packaging with identification labels intact. The fan shall be new, free from defects, and factory tested.
- B. The fan and its components must be stored in a safe, dry location until installation.

1.7 WARRANTY

- A. The manufacturer shall replace any products or components defective in material or workmanship, free of charge to the customer (including transportation charges within the USA, F.O.B. Lexington, KY), pursuant to the complete terms and conditions of the Big Ass Fans Warranty in accordance to the following schedule:

Application	Period of Coverage
Indoor	5 years
Outdoor	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.

PART 2 PRODUCT

2.1 MANUFACTURER

- A. 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 BIG ASS FANS i6

- A. Complete Unit
 - 1. Regulatory Requirements: The fan assembly, as a system, shall be Intertek/ETL-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
 - a. An LED light may be selected at the time of order.
 - b. 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 third-party 0–10 V dimmer using an industry-standard protocol.
- B. Mounting System
 - 1. Direct Mount
 - a. The direct mount shall be suitable for flat ceilings as low as 8 ft (2.4 m) tall.



- b. The fan shall be equipped with a mounting plate, safety clips, wiring cover, and motor unit.
- c. The fan shall be available with a diameter of 60" (1.5 m).
- 2. Universal Mount
 - a. The universal mount shall be suitable for flat or sloped ceilings with heights ranging from 9–18 ft (2.7–5.5 m).
 - b. The fan shall be equipped with a mounting bracket, wiring cover and trim, extension tube assembly, motor cover, and motor unit.
 - c. The fan shall be available with a diameter of 60" (1.5 m), 72" (1.8 m), or 84" (2.1 m).
 - d. The fan shall include one (1) extension tube. The length of the extension tube may be selected at the time of order.
 - a. Six-inch (178-mm), 12-inch (508-mm), 24-inch (813-mm), 36-inch (914-mm), 48-inch (1219-mm), and 60-inch (1524-mm) extension tubes shall be available for 60-inch (1.5-m) and 72-inch (1.8-m) fans.
 - b. Twelve-inch (508-mm), 24-inch (813-mm), 36-inch (914-mm), 48-inch (1219-mm), and 60-inch (1524-mm) extension tubes shall be available for 84-inch (2.1-m) fans.
- C. Airfoils
 - 1. The fan shall be equipped with six airfoils spanning a total diameter of 60" (1.5 m), 72" (1.8 m), or 84" (2.1 m), as specified by the architect or owner.
 - 2. Airfoils shall be made of aircraft-grade aluminum.
 - a. Airfoils shall be available in Black, White, Silver, or Oil-Rubbed Bronze.
 - b. Airfoils shall be suitable for indoor and outdoor spaces.
- D. Motor
 - 1. The fan shall have an electronically commutated motor (ECM) rated for 100–277 VAC, single phase.
 - 2. The motor shall draw 65.2–73.3 watts depending on the speed at which the fan is operated and if a light is installed.
 - 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 a Black, White, Silver, or Oil-Rubbed Bronze finish, as specified by the architect or owner.
- E. 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 2.4 mm in diameter and fabricated of aircraft stainless steel.
 - 2. Field construction of safety cables is not permitted.
- F. SenseME™ Technology
 - 1. The fan shall be equipped with SenseME Technology for smart automation and shall be able to wirelessly connect to local Ethernet networks or host a network. The fan's Wi-Fi capability shall permit over-the-air firmware updates.
 - 2. SenseME Technology control features shall be managed by users via the i6 by BAF mobile app. The i6 by BAF mobile app shall be supported by Android™ and iOS® mobile devices.
 - 3. i6 by BAF Mobile App Control Modes
 - a. Auto Mode
 - a. Motion Sensor. The fan and light automatically turn on and off depending on whether motion is detected in the room.
 - b. Temperature and Humidity Sensor. The sensor located in the Bluetooth® remote control monitors room temperature and humidity in order to automatically adjust the fan speed to achieve the user's ideal thermal comfort level.
 - c. Learning. The fan automatically learns the user's ideal temperature based on observing their manual adjustments to fan speed.



- b. Scheduling. Sets precise schedules for fan and light control modes.
- c. Whoosh[®] Mode. Silently varies fan speed to mimic cooling natural breezes.
- d. Sleep Mode. Responds to changing conditions to provide customized comfort all night long.
- e. Rooms. Enables users to group multiple fans in the same space for synchronized operation. Users shall be able to use the i6 by BAF mobile app to automate fan and light functions or adjust settings manually.
- f. Manual Speed Control. Speed settings range from 0 (Off) to 7 (High).
- g. Manual Light Control. The optional LED light has adjustable brightness and On and Off settings, as well as the ability to be controlled by the motion sensor and scheduling features. For fans with an LED light, see 2.2.1, “LED Light.”
- h. Amazon Alexa Integration. Enables the use of Amazon Alexa to control the fan and light.
- i. Google Assistant Integration. Enables the use of Google Assistant to control the fan and light.
- 4. Big Ass Fans Account. Allows for integrated controls between fans and smart thermostats located on the same Wi-Fi network.
- G. Display and Sound
 - 1. Changes to fan settings shall be confirmed with auditory feedback (a beep) and/or visual indication.
- H. Remote Control
 - 1. The fan shall be equipped with a compact Bluetooth remote control that allows intuitive operation of the fan speed and light brightness in the following modes:
 - a. Fan speeds 0 (Off) through 7 (High)
 - b. Auto Mode
 - c. Light brightness 0-100%
 - 2. The remote shall be 1.5” wide x 5.7” tall x 0.8” thick (39 mm wide x 146 mm tall x 20 mm thick) and shall operate on a CR 2450 3 V lithium battery (included).
- I. LED Light (Optional)
 - 1. The fan shall be equipped with an LED light, as specified by the architect or owner.
 - 2. The light kit shall include an LED light module with a diffused lens.
 - 3. The LED light shall attach to the fan using a twist lock mechanism.
 - 4. The LED light shall include a color shifting feature, allowing the user to adjust the color temperature between 2200–6500 K.
 - 5. The LED light shall have a standard lumen option of 1,600 lumens and shall be capable of dimming down to 1%.
- J. 0–10 V Module
 - 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 heatsink.
 - 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

3.1 PREPARATION

- A. The fan location must have an appropriate ceiling-mounted outlet box marked “Acceptable for Fan Support” of 70 lb (31.8 kg) or less. 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.
- B. The fan location must be free from obstacles such as lights, cables, or other building components.
- C. Check the fan location for proper electrical requirements.



3.2 INSTALLATION

- A. Install the fan according to the manufacturer's installation guide, which includes acceptable mounting methods.
- B. Required Distances
 - 1. For 60-inch (1.5-m) fans, the airfoils must be at least 7 ft (2.1 m) above the floor.
 - 2. For 72-inch (1.8-m) and 84-inch (2.1-m) fans, the airfoils must be at least 8 ft (2.4 m) above the floor.
 - 3. The airfoils must have at least 2 ft (0.6 m) clearance from all obstructions.
 - 4. The fan shall not be located in close proximity to the outputs of HVAC systems or radiant heaters.
- C. Install and set up the i6 by BAF mobile app according to the manufacturer's instructions.

END OF SECTION