

Product Specification Guide**Commercial Centrifugal High Induction Car Park Ventilator, Model IV 50 EC****Facility Services Subgroup: Division 23**

Specifier Notes: This product specification guide is written in accordance with the Construction Specifications Institute (CSI) Format. Please review to ensure the information set forth meets the requirements of the project and applicable local building codes.

1. GENERAL**1.1 WORK INCLUDED**

- A. Direct drive, electronically commutated centrifugal high induction car park ventilator intended for installation in underground and above-ground parking structures to facilitate ventilation.

Model: IV 50 EC.

1.2 RELATED SECTIONS

- A. All sections, drawing plans, specifications, and contract documents.

1.3 CERTIFICATIONS AND TESTING

- A. Unit shall be tested in accordance to and compliant with UL 705 and CSA 22.2 No. 113-15 and determined by Underwriters Laboratory to comply with and bear the cULus marking for Power Roof Ventilators.
- B. Unit shall be tested in accordance with and licensed to bear the AMCA Seal pertaining to AMCA 250, Laboratory Methods of Testing Jet Tunnel Fans for Performance, and comply with the requirements of the AMCA Certified Ratings Program.
- C. Each product shall be factory tested in accordance with Garage Ventilation (BV3) as listed in AMCA 204, Balance Quality and Vibration Levels for Fans.

1.4 SUBMITTALS

- A. Manufacturer shall provide the product's specification submittal sheet, installation instructions, dimensional drawings, and Revit model on each high induction car park ventilator.

- B. Manufacturer shall provide CFD Analysis Report verifying ventilator rated Thrust (N) with a measured length of throw and area of spread at a minimum terminal velocity of 1m/s. The CFD Report shall also include a measured volume of induced airflow.
- C. Manufacturer shall provide a CFD CO Simulation Analysis, ensuring the designed ventilation system for the parking area achieves optimal performance. Induction fans are evaluated on their location, quantity, and configuration required for the effective and efficient ventilation of the car parking deck for the given position of inlets and outlets so that the design will meet all regulatory of CO exposure limits.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Product shall be delivered to the job site in the manufacturer's original, unopened containers and packaging, with labels clearly indicating manufacturer, material, products included, and location of installation.
- B. Product shall be stored in a dry area protected from the elements (conditioned space is not required), protected from damage, and in accordance with manufacturer's recommendation. For long term storage, follow manufacturer's Installation, Operation and Maintenance manual.
- C. Product's handling and lifting shall be in accordance with the manufacturer's instructions. Product materials and finishes shall be protected during handling and installation to prevent damage. Ensure all members at the job site follow all safety warnings recommended by the manufacturer.

1.6 WARRANTY

- A. Submit, for Owner's acceptance, manufacturer's standard warranty document executed by an authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights the Owner may have under Contract Documents.
- B. The product shall be under warranty, free from defects in material and workmanship, for a period of 36 months from the purchase date. Any units or parts that prove defective during the warranty period will be replaced at the manufacturers' option when returned to the manufacturer with transportation costs prepaid.

2. PRODUCT

- A. Ventilator shall be model IV 50 EC (#95921) manufactured by Systemair Mfg. of Lenexa, Kansas.

2.1 PERFORMANCE

- A. Each IV 50 EC product shall be capable of producing 50N (newtons) of thrust with a measured throw of 150' length and terminal velocity of 1m/s. The Area of Positive Velocity at the throw length shall be no less than 645ft² with an Induction Factor Rating no less than 21.

2.2 CONSTRUCTION

- A. Ventilator shall use a combination of corrosion-resistant bolts and rivets as the primary fastening methods during the construction process to ensure a rigid yet serviceable product.
- B. The exterior housing shall be comprised of no thinner than 16 gauge (G90) galvanized steel with integrated outlet deflectors and minimum 12 gauge (G90) galvanized steel mounting brackets.
- C. The electrical compartment shall comply with NEC volume requirements and be made of sheet steel.

- D. The product nameplate shall be of a polyester label stock using a thermal transfer file in compliance with UL product nameplate requirements and shall indicate the fan RPM and motor ratings including voltage, amperage, power, frequency, and phase.
- E. The ventilator housing profile shall not exceed 10.25" height.

2.3 WHEEL

- A. Wheel shall be a single inlet, centrifugal backward incline, riveted assembly constructed of aluminum which shall be secured to the motor via taper lock hub and bushing.
- B. Wheel inlet shall overlap an aerodynamic steel inlet cone to provide maximum performance and efficiency.
- C. Unit shall be factory tested in accordance with Parking Garage Fans (BV3) as listed in AMCA 204-05, Balance Quality and Vibration Levels for Fans.

2.4 MOTOR

- A. The electronically commutated motor shall be controlled on/off or variably by a 0-10Vdc, 4-20mA, or PWM input signal. Insulation class shall be a minimum of class F and rated for continuous duty (S1). Maximum temperature of transferred air shall be 45°C.

2.5 INLET AND OUTLET GUARDS

- A. Safeguards shall be employed in compliance with section 6.5 of UL705 for accessibility of moving parts.

3. EXECUTION

3.1 EXAMINATION

- A. Installers shall examine areas to receive fans and immediately notify the Engineer of conditions that could negatively impact installation or proper operation and maintenance of fans. Do not proceed with installation until impacted conditions are corrected.

3.2 INSTALLATION

- A. Install ventilators where indicated on the contract drawings and in accordance with manufacturer's Installation, Operation, and Maintenance manual.

4. ACCEPTABLE MANUFACTURERS

- A. Systemair, Inc. 10048 Industrial Blvd, Lenexa, KS 66215, www.systemair.com/na/north-america/