HVAD fans are designed to circulate and/or de-stratify the air envelope. When strategically placed it maximizes the efficiency of the space by moving the maximum amount of air while consuming minimal electrical power.

Key Features:

- Gearless Smart Voltage Motor.
- Variable Speed 0-120 RPM.
- Available in 7' to 10' diameters.
- 45,000 CFM of Air Movement.
- Upwards of 5 MPH Breeze.
- Very Efficient - Max 264 Watts Used.
- Integrated Dimmable LED Light - 1980 Lumens.
- On-Board Controls.
- 85 lbs Assembled Weight.
- Compact Single Box Packaging.
- Quieter Than Ambient Noise.
- TUV SUD listed.

About Cook:

LOREN COOK COMPANY is proud to be a leader in the design and manufacturing of fans, blowers, gravity vents, laboratory exhaust systems, and energy recovery ventilators.

With 1,000,000 square feet of manufacturing under roof and 250 products, Cook is still innovating and expanding to meet the needs of our customers. State-of-the-art R&D, quality manufacturing and the industry's best training. Cook, an industry leader in air movement since 1941.

For assistance selecting and applying Cook products, contact your local Cook representative. Find your rep at https://lorencook.com/find-my-rep/

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes: High Volume Low Speed Fan

Specifier: Add or remove sections as needed

B. Related Sections:

1. 01 00 00 General Requirements
2. 07 00 00 Thermal and Moisture Protection
3. 09 00 00 Finishes
4. 23 00 00 Heating Ventilating and Air Conditioning
5. 26 00 00 Electrical

1.2 REFERENCE STANDARDS

Specifier: Add or remove sections as needed

A. American Bearing Manufacturers Association (ABMA):

1. ABMA 9 - Load Ratings and Fatigue Life for Ball Bearings
2. ABMA 11 - Load Ratings and Fatigue Life for Roller Bearings

B. Air Movement and Control Association International, Inc. (AMCA):

1. AMCA 99 - Standards Handbook
2. AMCA 201 - Fans and Systems
3. AMCA 202 - Troubleshooting
4. AMCA 203 - Field Performance Measurement of Fan Systems
5. AMCA 204 - Balance Quality and Vibration Levels for Fans
6. AMCA 205 - Energy Efficiency Classification for Fans
7. AMCA 207 - Fan System Efficiency and Fan System Input Power
8. AMCA 208 - Calculation of the Fan Energy Index
9. AMCA 211 - Certified Ratings Program - Product Rating Manual for Fan Air Performance
10. AMCA 230 - Laboratory Methods of Testing Air Circulating Fans for Rating and Certification
11. AMCA 300 - Reverberant Room Method for Sound Testing of Fans
12. AMCA 311 - Certified Ratings Program - Product Rating Manual for Fan Sound Performance

C. National Electrical Manufacturers Association (NEMA):

1. NEMA MG 1 - Motors and Generators

D. National Fire Protection Association (NFPA):

1. NFPA 70 - National Electrical Code

1.3 ACTION SUBMITTALS

A. Product Data:

1. Submit standard construction features and performance.
2. Submit data chart with Max RPM, Max Coverage, Fan Spacing and Fan Weight.
3. Submit dimensional drawing along with weights.
4. Submit motor information including FLA.
5. Submit accessories specified and details on accessories.

1.4 INFORMATIONAL SUBMITTALS

A. ISO-9001 Certificate

1.5 PROJECT CLOSEOUT SUBMITTALS

A. Manufacturer's IOM (Installation, Operations and Maintenance) manual, to include instructions on installation, operation, maintenance, receiving, handling, storage, safety information, cleaning, troubleshooting, parts list, electrical wiring diagrams, and warranty information.

1.6 QUALITY ASSURANCE

Specifier: Add or remove sections as needed

A. Manufacturer must be ISO 9001 certified company.

B. Motors and Electrical accessories shall comply with NEMA standards.

C. Blades and hub shall be rotationally balanced.

D. Approved manufacturer shall have 10 or more years of experience in manufacture of similar products.

Specifier: List acceptable manufacturers below

1. Acceptable Manufacturers:
    a. Loren Cook Company
2. All manufacturers not listed here shall seek pre-approval to bid.

Specifier: Retain paragraph below per substitution requirements

3. For manufacturers not listed here, submit the following in accordance with project substitution requirements, within time allowed for substitution review:
    a. Product data as indicated in Section 1.3
    b. Sample warranty

1.7 DELIVERY, STORAGE AND HANDLING

A. Carefully inspect the unit and accessories for any damage and shortage immediately upon receipt of unit.

B. If the unit is stored for any length of time prior to installation, store it in its original shipping crate and protect it from dust, debris and weather. Follow IOM instructions for maintaining product in storage.

1.8 OPERATION AND MAINTENANCE

A. Follow manufacturer's instructions for pre-start checks, start up, VFD and inspections.

B. Follow manufacturer's instructions for maintenance of various items and for troubleshooting.

C. Refer to Installation, Operation and Maintenance manual supplied with equipment. If IOM is missing, it can always be found at https://lorencook.com/products/ under Documents & Models tab after selecting desired product.

1.9 WARRANTY

A. Loren Cook Company warrants materials and workmanship per Limited Warranty section in the Installation, Operation and Maintenance manual (IO&M manual).

B. Warranty period is (1) year after the date of shipment.

C. Warranty includes replacement of any parts found to be defective without charge within warranty period, except for shipping costs, which are not included in warranty.

D. Warranty for motors is provided by the motor manufacturers and it varies, refer to IO&M for more information about warranty.

E. Any removal or installation costs are not included in the warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Loren Cook Company, Springfield, MO; (417) 869-6474; sales@lorencook.com; https://lorencook.com/

2.2 GENERAL & PERFORMANCE

Specifier: Add/Remove Specifications below for the selected fan

A. Fan shall be model HVAD. Refer to Fan Schedule on drawings for specific model, size and performance information.

B. Unit shall be constructed per AMCA Standard 99.

C. Electrical Components, Devices, and Accessories: Shall be listed and labeled as defined in NFPA 70.

D. Fans shall be provided by an ISO 9001 certified company.

2.3 CONSTRUCTION

A. General Description:
1. Nameplate indicating Tag, Serial Number and HP.

B. Propeller:
1. Propeller shall be complete with five airfoils (blades), with zinc coated steel mounting plates, surrounded by injection mold fiber filled polypropylene airfoils, painted to color.
2. Four fasteners shall attach each airfoil.
3. The fan ships pre-balanced.
4. No stabilization (guy wires) are required/necessary.

C. Light:
1. Light shall be integrated dimmable LED and provide 1980 lumens with twenty pre-programmed brightness set points.

D. Motors:
1. Motor shall be a transverse flux brushless DC motor specifically designed for low speed high torque applications.
2. The motor shall contain 60 poles and continuously produce 52 lb-ft of torque with zero backlash.

E. Controls:
1. Controls shall be contained within the fan assembly and come pre-wired from the manufacturer.
2. The controls shall accept any single-phase voltage in the range of 104-277V, either 50 or 60 Hz.

F. Interface:
1. Interface shall be provided with one low voltage keypad HMI (Human Machine Interface) and shall be complete with 100’ of Cat5 cable.
2. The HMI shall be capable of controlling fan on/off, fan speed up/down, fan rotation forward/reverse, light on/off and light brightness up/down.

G. Mounting:

1. Mount shall be 360º adjustable mounting system that is designed to prevent vibration and movement while supporting the weight of the fan.
2. A 3/32 inch braided stainless steel safety cable shall run the entire length of the fan assembly and secured to the main building structure.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas for satisfactory conditions for installation per Installation, Operation and Maintenance manual. If unsatisfactory conditions exist, take corrective measures and proceed with installation after the corrections.

3.2 INSTALLATION

A. Follow Installation, Operation and Maintenance manual for installation. Follow contract drawings if any.

B. Unit should be readily accessible for maintenance.

C. Comply with governing codes for installation.

D. If any parts are shipped loose, install shipped loose parts.

E. Connections: Connect electrical and controls per the governing codes. Connect as indicated on drawings in accordance with Contract Documents and manufacturer's published instructions.

3.3 FIELD QUALITY CONTROL (TESTS AND CHECKS)

A. Check for any incomplete connections or problems in supports or electrical connections.

B. Motor and fan should be checked for correct rotation direction.

C. Safeties and controls should be tested for correct operation.

D. Identified problems should be corrected.

3.4 STARTUP, ADJUSTING AND CLEANING

A. Per Loren Cook instruction manual complete all the checks before startup.

B. Adjust as needed per the regulating code.

C. Follow Cook instruction manual for cleaning instructions.