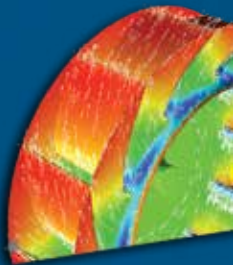


Fan Arrays

Models HPA and MOA

Direct Drive



 **GREENHECK**
Building Value in Air.

December
2023

Quiet & Efficient Fan Array

Fan arrays are designed and engineered to provide superior performance and reliability in commercial or industrial applications. Our products are manufactured with state-of-the-art laser, forming, spinning and welding equipment, and endure our quality control testing to ensure trouble-free start-up. They are designed for unhooused operation, resulting in a savings of the space normally occupied by the fan housing. Additional space savings are realized when multiple duct takeoffs are required. Ductwork is connected directly to the pressurized plenum without intermediate transitions.

Typical applications include:

- Mission critical thermal management systems
- Data centers or critical IT spaces
- Custom Air Handler
- Replacement array for existing air handler



Certified data for model HPA may be found in Greenheck's Computer Aided Product Selection program (CAPS®).
FEI - Fan Energy Index



Manufactured in the USA

Greenheck fan arrays are designed and built in one of two manufacturing locations, Schofield, WI and Shelby, NC. Multiple manufacturing locations enable us to build fans and get them to you, our customer, faster.



Greenheck Fan Array Benefits

- Designed, engineered, and tested prior to shipment to provide years of smooth, vibration-free operation with minimal maintenance.
- Various array designs provide flexibility in size, performance, and construction, matching the appropriate model to your application.
- Fan arrays can be selected based on the features required for the application and the features that are most important to you.
- Easy installation with integral lifting points.
- Arrangement 4, horizontal airflow.
- Quick and easy selection options along with AutoCAD® and Revit® models available for download and integration into plan drawings, custom equipment schedules and specifications.
- CAPS® selection software leads the industry in providing selection details, options, accessories, and full submittal packages. CAPS® will optimize your selection for open array configurations allowing you to select the array to fit your application.

Motor on Base



Motor on Frame

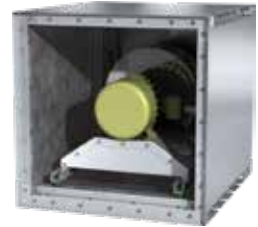


Multiple solutions for your fan array design needs

Modular Solutions:

HPA housed plenum fans are designed and engineered to provide superior performance and reliability in commercial or industrial applications. The HPA can be used as a single fan in a sound critical application or in parallel to construct a fan array system. The HPA features a modular design with a structural housing that allows multiple modules to stack side-by-side and on top of one another to form an array.

- 900 – 45,000 cfm, up to 7 in. wg
- Bolted galvanized frame
- 12-bladed aluminum airfoil wheel
- Direct drive



MOA modular array is designed and optimized for a specific opening dimension (H x W) providing laboratory tested and proven performance. The MOA is constructed of galvanized panels that are lightweight and easy to handle, ideal for retrofit or new build-up applications. The array ships knocked down for easy build-up and installation on the jobsite; each component is manageable without special rigging or lifting. The modular array is a factory-wired and programmed turnkey package with integrated controls.

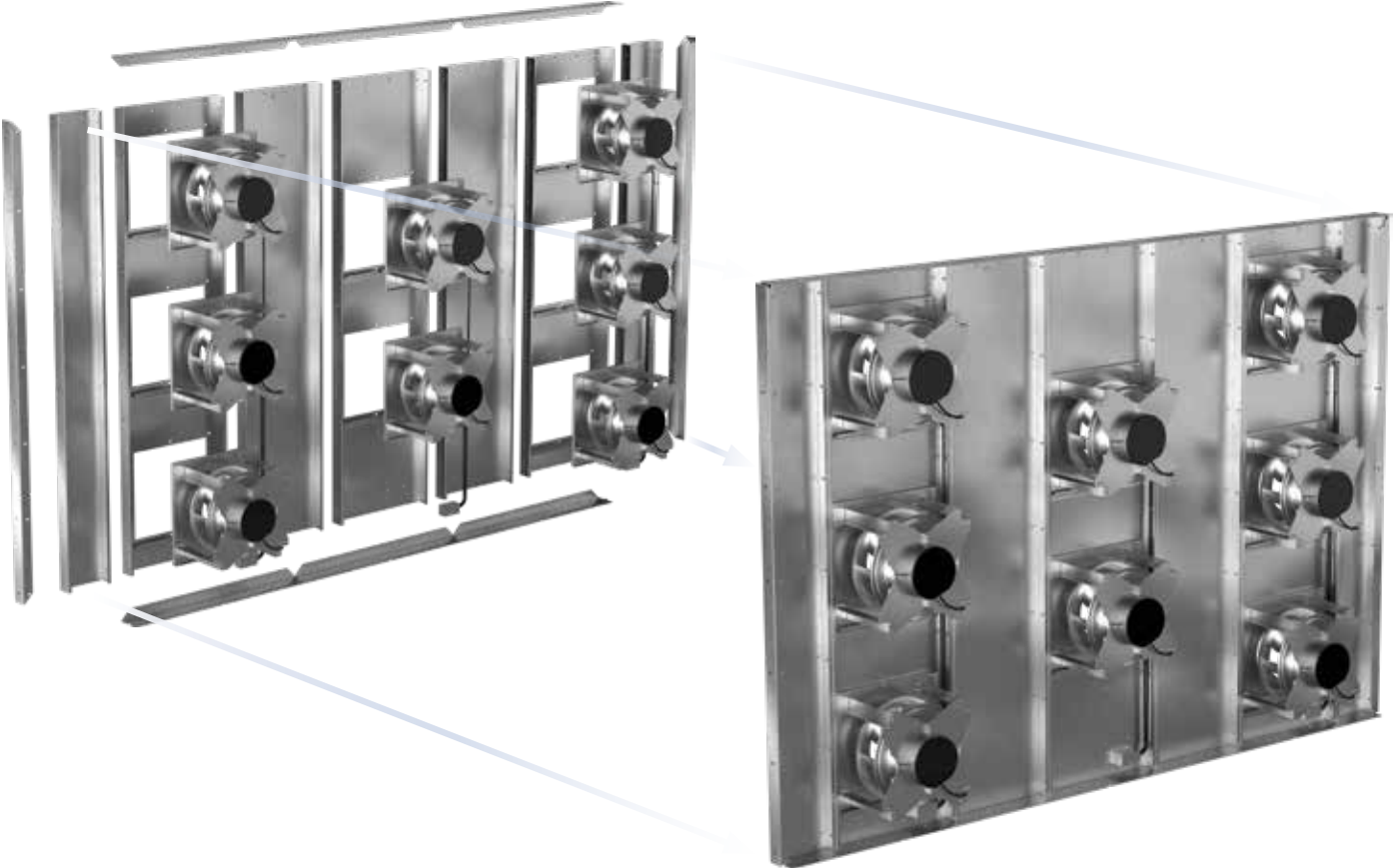
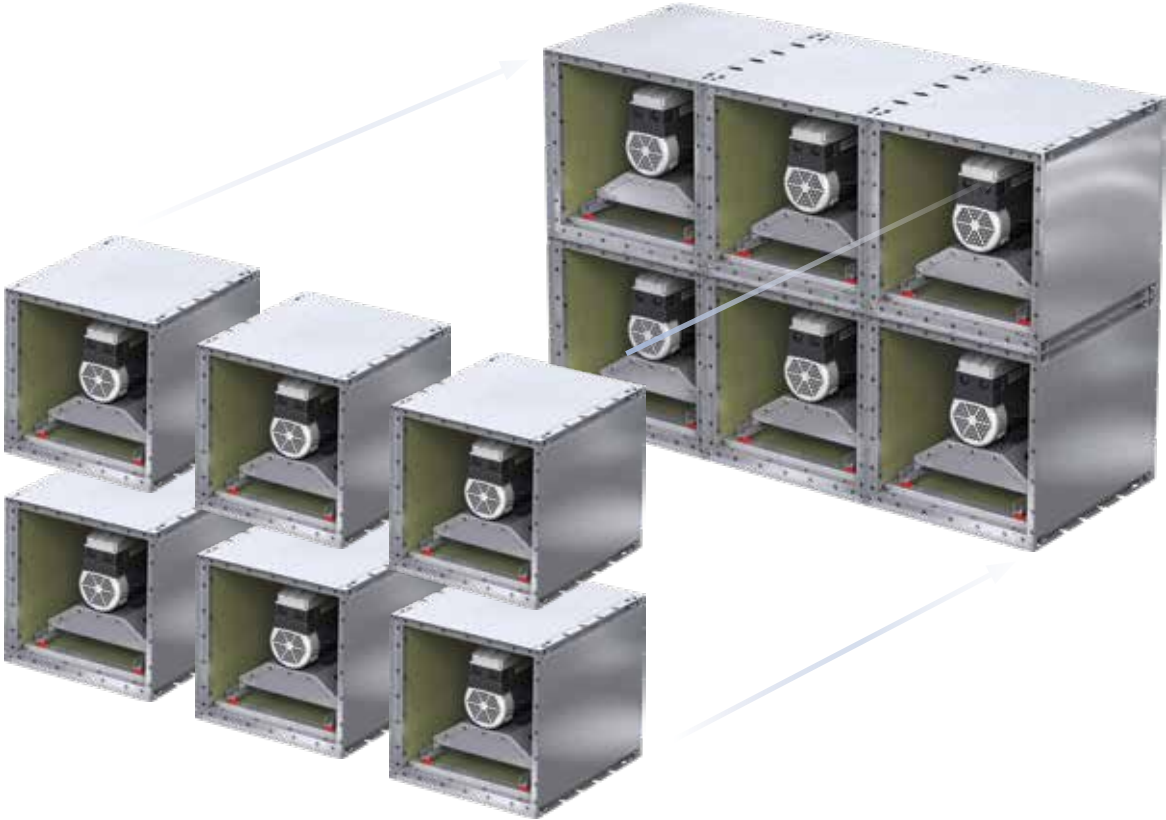
The built-in Carel® controller takes a building management system (BMS) signal providing a set point and manages the array to provide performance, even with the loss of a fan. An optional touch screen is also available for user interface.



Power and Control Panel (MOA)

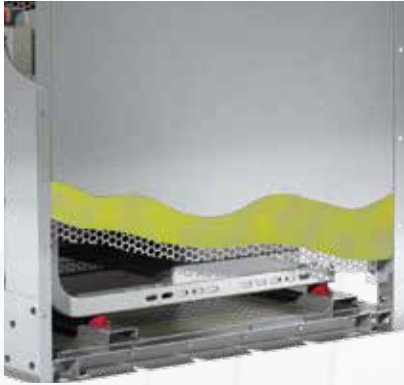
- Power panel, factory-wired, shipped loose, for field mounting
- NEMA-3R enclosure
- Overload protection – integral fused
- Set point control – static pressure
- BACnet® MSTP – communication protocol
- Array to controls wiring
- Control panel, factory-wired, shipped loose for field mounting
- Factory-wired – *Hand/Off/Auto*
- Factory-mounted *Ready* status light
- Factory-mounted *Alarm* status light





Sound-Attenuating Housing (HPA)

The fan assembly is mounted inside a sound-attenuating housing. The housing has a perforated galvanized inner liner that directs sound waves into two inches of sound-absorbing fiberglass between the inner liner and solid outer shell. The result is a reduction of sound levels.



Internal Vibration Isolation (HPA)

Neoprene isolators mounted between the fan assembly and the sound-attenuating housing reduce vibration, eliminate the need for isolators and gaskets between modules. Flexible gasket material between the inlet cone and sound-attenuating housing creates an airtight seal.



Wheels



7-Bladed (MOA)

The 7-bladed high-efficiency curved wheel is made of composite construction.



12-Bladed (HPA)

Backward inclined airfoil centrifugal wheel constructed from an aluminum material. The design saves energy and improves overall sound quality by reducing low frequency tones that are difficult to attenuate.

Drives

All fan arrays are available with a direct drive fan. There are no belts to tension, sheaves to replace or fan bearings to lubricate. Lubricating the motor bearings is the only maintenance required.

Housing Options (HPA)

Three different sound-attenuating housing sizes make sizing the HPA extremely flexible. The standard housing is sized for optimum performance versus footprint. The compact housing offers a smaller footprint for applications with space constraints and the large housing offers increased air performance for higher efficiencies.

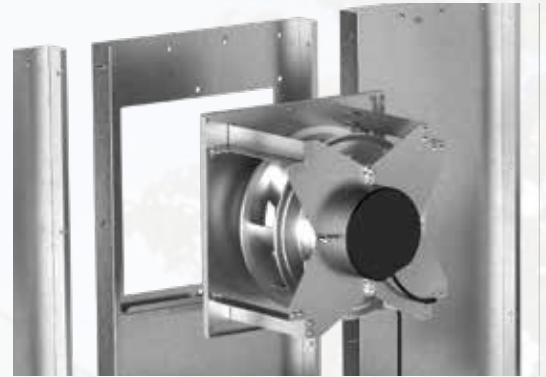
Construction - Galvanized (HPA)

The fan assembly and sound-attenuating housing are constructed of laser cut and die-formed heavy-gauge galvanized material.



(MOA)

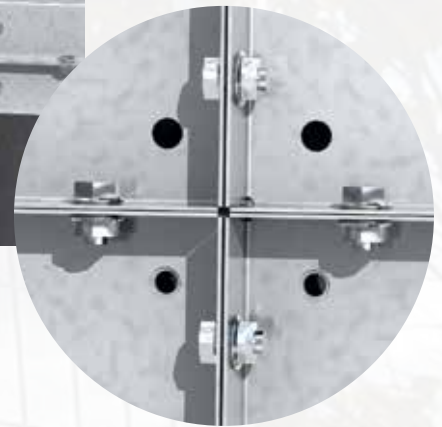
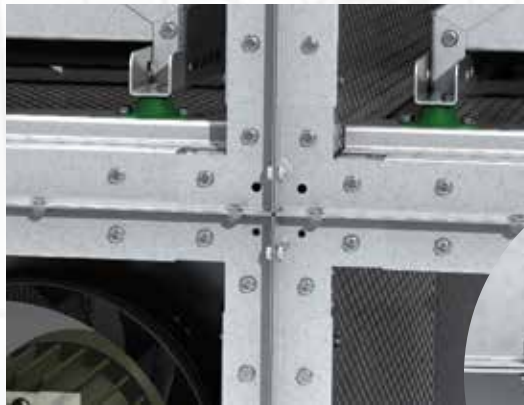
The fan array is constructed of lightweight galvanized panels, easy to assemble.



Modular Construction

The lightweight design makes the **HPA** plenum fans easy to transport and stack. There are no fasteners on the external casing, making it clean and easy to install. Inlet and outlet flanges make connecting adjacent units quick and easy.

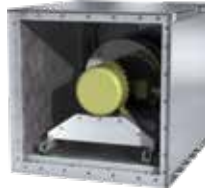
The **MOA** ships knocked down in small pieces. Lightweight, but strong structure. Assembly is as easy as a Lego® model. As a pre-engineered, turnkey package – all array wiring to the controls is provided.



Array Controls

The power panel is a 3R enclosure designed and listed to UL508A standards featuring integral fuses for each fan circuit (up to a 10-fan array) with a lockable disconnect. The control panel contains a Carel® c.pCO controller featuring run enable/status, alarm and BACnet® MSTP. The factory-programmed controls take a set point from a BMS and maintain the set point while monitoring differential pressure. The panel features an HOA, ready status light, alarm status light and an optional 7 in. touch screen as an advanced U/I. Wire connections from the array to controls are simple plug and play with enough wire to mount the controls up to 10 ft. from the array.



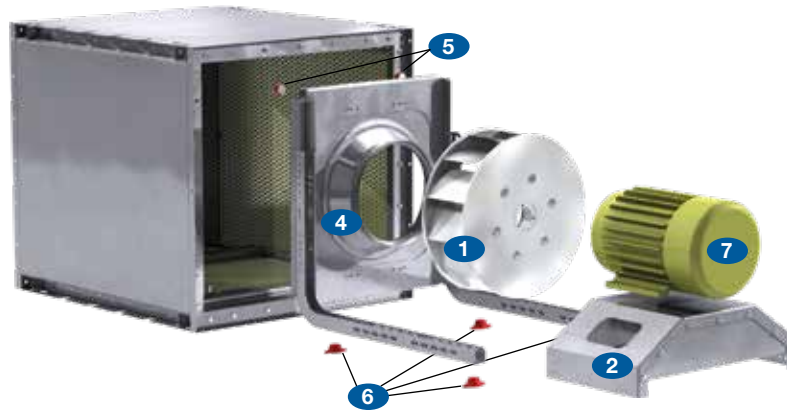


MODEL COMPARISON		HPA	MOA
Performance	Volume (CFM max (m ³ /hr))	45,000 (76,500)	
	Static Pressure (Ps max)	7 in. wg (1,740 Pa)	8 in. wg (1,990 Pa)
	Sizes	15 - 36	16 and 22
	Max Height x Max Width	-	-
Standard Construction	Arrangement, Configuration	4, Horizontal	4, Horizontal
	Drive Type	Direct	Direct
	Wheel	12 Blades	7 Blades
	Wheel Type	Airfoil	Airfoil
	Wheel Material	Aluminum	Composite
	Wheel Construction	Welded	-
	Frame Material	Galvanized Steel	Galvanized Steel
	Frame Construction	Bolted	Bolted
	Single Pressure Tap	Included	Included
	Factory Vibration Test	Yes	Yes
		BV-4	BV-4
AMCA Certification	Sound and Air	-	
Accessories	Extended Lube Lines Kit	Yes	-
	Inlet Guard	Yes	Yes
	Outlet Guard / Safety Screen	Yes	-
	Inlet Damper	Yes	-
	Blank-off Panel	Yes	Yes
	Sure-Aire™ Airflow Measurement	Yes, with Electronics	Yes, with Electronics
	Vibration Isolators	Yes	-
Options	Warranty	1, 2 or 3 years	1, 2 or 3 years
	High Voltage UL Panel	-	Yes
	Low Voltage Control Panel	-	Yes

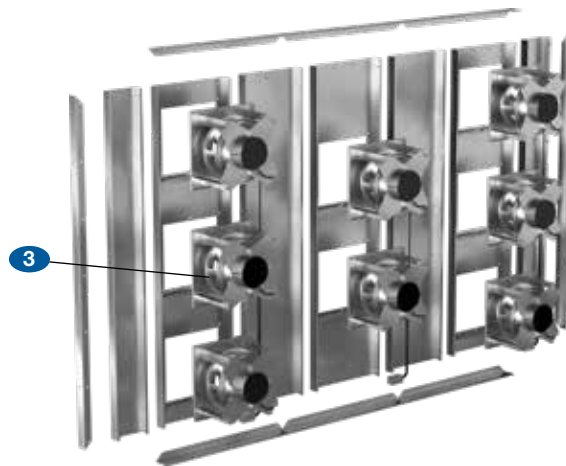
- 1. Wheel
- 2. Drive Frame
- 3. Fan

- 4. Inlet Cone
- 5. Thrust Isolators

- 6. Isolators
- 7. Motor

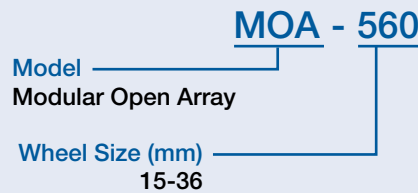
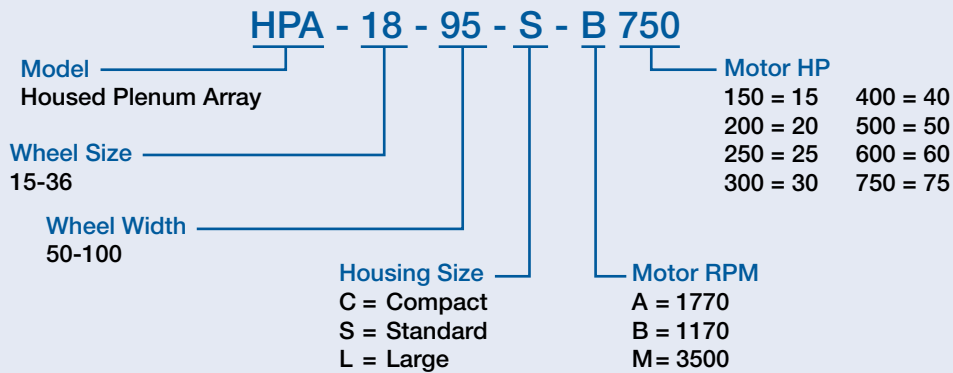


HPA



MOA

Model Number Codes:



Vibration Analysis

HPA fans are tested at the design speed in the factory after final assembly. They are checked for amp draw with levels recorded. HPA fans are also subjected to a complete vibration analysis in three planes. The recorded filter-in vibration levels at the FRPM meet the requirements of AMCA/ANSI Standard 204-05 (Balance Quality and Vibration Levels for Fans). A permanent record of the test is kept on file at the factory for future reference. A copy of the test report is available upon request.

The following vibration limits apply to an assembled fan tested in Greenheck's factory.



Fan Category	Rigidly Mounted in./s	Flexibly Mounted in./s
BV-1	.50	.60
BV-2	.20	.30
BV-3	.15	.20
BV-4	.10	.15
BV-5	.08	.10

HPA – a direct drive plenum fan mounted inside a sound attenuating housing, designed and engineered to provide superior performance and reliability in commercial and industrial applications. Model HPA can be used as a single fan in a sound critical application or in parallel to construct a fan array system. The HPA features a modular design with a structural housing that allows multiple modules to stack side-by-side and on top of one another to form an array or fan wall. Typical applications include packaged, built-up and custom air handlers, general supply and return systems and retrofit projects.

Maximum Volume	45,000 cfm
Maximum Pressure	7 in. wg
AMCA FE1, Sound and Air Performance	

MOA – an optimized array configuration designed for a user’s width and height. Construction of the MOA is galvanized panels that are lightweight and easy to handle, ideal for retrofit or new build-up applications. The array ships knocked down for easy build-up and installation on the jobsite; each component is manageable without special rigging or lifting. The modular array is a factory-wired and programmed turnkey package with integrated controls. The built-in Carel® controller takes a BMS signal providing a set point and manages the array to provide performance even with the loss of a fan. An optional touch screen for user interface is also available.

Configurable Height	
Configurable Width	
Maximum Pressure	8 in. wg



Enjoy Greenheck's extraordinary service, before, during and after the sale.

Greenheck offers added value to our wide selection of top performing, energy-efficient products by providing several unique service programs.



- Our Quick Delivery program ensures shipment of in-stock products within 24 hours of placing your order. Our Quick Build made-to-order products are manufactured in 1-3-5-10-15-20 or 25-day production cycles, depending upon its complexity.



- eCAPS® online selection guides you to choose the best value products for your building projects. eCAPS® includes fan, louver, make-up air, energy recovery preconditioner, and dedicated outdoor air system (DOAS) selections, as well as a damper guide and toolbox.



- Greenheck's free Computer Aided Product Selection program CAPS®, rated by many as the best in the industry, helps you conveniently and efficiently select the right products for the challenge at hand.



- Our 3D service allows you to download, at no charge, easy-to-use AutoDesk® Revit® 3D drawings for many of our ventilation products.

Find out more about these special services at greenheck.com



Our Commitment

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

Product warranties can be found online at Greenheck.com, either on the specific product page or in the literature section of the website at Greenheck.com/Resources/Library/Literature.

