



# M2 Series



## MODULAR AIR HANDLING UNITS, SELF-CONTAINED UNITS, & WATER-SOURCE/ GEOTHERMAL HEAT PUMPS



### Features:

- 1,200 to 21,600 cfm with overlapping cabinet sizes for application flexibility
- Double wall rigid polyurethane foam injected panel construction reduces air leakage and dampens resonated sound
- Direct expansion (DX) or chilled water cooling
- Air-source heat pumps available with or without factory installed gas, electric, hot water, or steam heating for dual fuel applications
- Water-source heat pump module for a packaged heating & cooling system
- Backward curved plenum supply fans
- Power return, power exhaust, and energy recovery wheel configurations
- Service access doors with removable pin hinges and lockable handles
- Labeled components for quick and easy installation
- Matching condensing units available for a complete split system solution

Application Flexibility  
Minimizes Installation Time and Reduces Cost

○ *Makeup Air Applications  
Up to 100% Outside Air*

○ *Dehumidification and Premium  
Filtration Capabilities*

○ *A Wide Variety of Factory  
Installed Features*

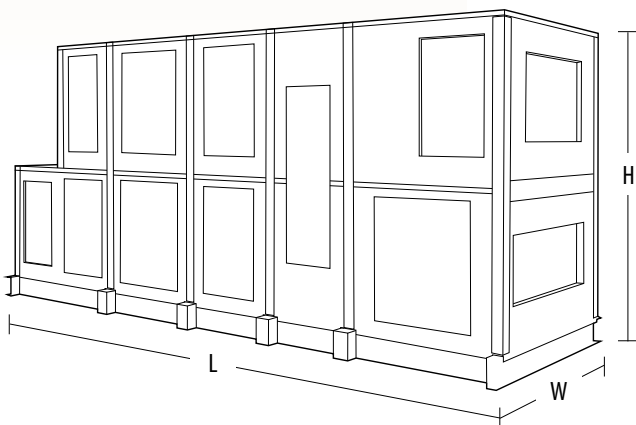
○ *Comfort or Process Heating  
and Cooling*

# M2 Series Modular Air Handlers

*AAON M2 Series air handling units provide an ideal solution for new and replacement applications with its modular construction and premier factory installed features. The serviceability, quiet operation, reliability, premium efficiency, and rugged construction allow M2 Series air handling units to expertly fit the needs of your specific job requirements. These units reflect the proven reliability and engineering excellence from AAON, the premier manufacturer of heating and cooling products.*

## Superior Features

- Double wall rigid polyurethane foam injected panel construction with thermal break reduces air leakage, dampens resonated sounds, increases thermal resistance, and offers a cleanable air tunnel ideal for demanding indoor air quality applications.
- Backward curved plenum supply fans are quieter, more energy efficient, and handle higher static pressure applications than forward curved supply fans.
- Units can be shipped factory assembled or shipped as individual modules to meet the installation demands of any application.
- Double-sloped, stainless steel drain pans eliminate standing water which can support microbial growth and prevents corrosion that can lead to water leaks and contaminants in the air stream.
- Removable pin hinges, lockable zinc cast handles, and slide out access to coils and energy recovery wheels provide easy access for maintenance and cleaning when required.
- Multiple base heights are available that allow ease of installation and can eliminate the need for a housekeeping pad for condensate drain trap.
- Labeled electrical components and color-coded wiring match the unit specific color-coded wiring diagram that is laminated and permanently affixed inside the control compartment.
- Factory run test report, wiring diagram, and Installation, Operation, and Maintenance manual with startup form are provided in the control compartment of every unit.



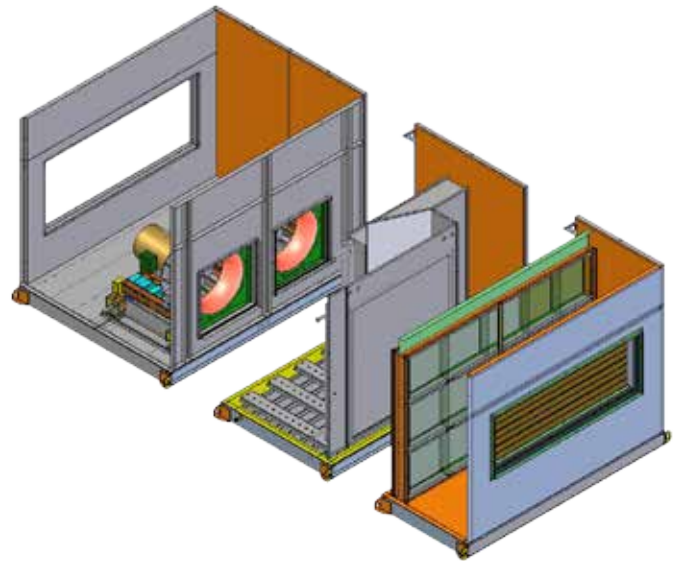
M2 Model	Nominal cfm	Width*	Height*	Length
005	2,000	50	32	Length varies depending on options selected.
008	3,200		44	
011	4,400	62	48	
014	5,600		54	
018	7,200	84	48	
022	12,500		54	
026	14,500		64	
032	16,000	96	70	
036	18,000			

*\*Dimensions may vary depending on options selected. All dimensions are in inches. Maximum cfm may be 30-50% greater than nominal cfm.*

# Application Flexibility

## Premier Options

- Available for Constant Volume, Variable Air Volume (VAV), Single Zone VAV, and Makeup Air applications with up to 100% outside air.
- Water-source or geothermal heat pump configurations with 10-100% variable capacity compressors for a packaged indoor system and energy efficient heating.
- Factory installed total or sensible AAONAIRE energy recovery wheels.
- Modulating Hot Gas Reheat humidity control for precise humidity control necessary to maintain occupant comfort without the temperature swings common with on/off reheat systems.
- Modulating gas heat with 5:1 turndown and either natural or LP gas applications with open or separated combustion.
- SCR (Silicon Controlled Rectifier) electric heat control for reduced power consumption, longer heater life, and improved occupant comfort.
- Multiple high efficiency filtration options with up to MERV 14 efficiency rating are available with or without monitoring devices.
- Multiple corrosion protection options including 6,000 hour salt spray tested polymer e-coated indoor coils, CuNi coaxial or SMO 254 brazed plate refrigerant-to-water heat exchangers, and 2,500 hour salt spray tested interior and exterior corrosion cabinet protection.
- ECM (Electronically Commutated Motor) driven or VFD controlled backward curved plenum supply fans for precise air flow control and reduced power consumption.
- Fixed Plate Heat Exchanger Energy Recovery saves heating and cooling energy and features extremely low cross contamination. Both sensible and enthalpy cross-flow heat exchangers are available and have no moving parts.



## Available Modules

**Fan Module**

**Filter Module**

**Mixing Box Module**

**Heating Module**

**Cooling Module**

**Blank Module**

**Controls Module**

**Energy Recovery Module**

**Water-Source Heat Pump Module**



*M2 Series Unit with Exterior  
Corrosion Protection*

**M2** series  
**Modular Air Handlers**

# M2 Series

## Modular Air Handlers

### Indoor Air Quality Features

- Drain pans are sloped to ensure positive drainage and constructed from stainless steel to provide resistance to corrosion.
- The cabinet interior metal liner is cleanable, and easily wiped down. The use of foam paneling rather than fiberglass insulation eliminates the potential for trapping dirt or moisture in the interior of the air handler.
- Access to the unit interior for maintenance is made easy with standard hinged doors that open against pressure. Adhering to the unit's maintenance schedule is an important element in combating mold growth and maintaining indoor air quality.
- Cabinet composite panel construction allows M2 Series to offer a low air leakage rate and aid minimizes the infiltration of unconditioned air.
- Multiple filtration options including pleated or cartridge filters up to 95% efficiency (MERV 14) in a prefilter position, final filter position, or a combination of both positions.



### Energy Efficiency

The M2 Series standard backward inclined plenum fans are more energy efficient, quieter, and can handle higher static pressures, and are easier to clean than comparable forward curved blowers. A clean fan not only requires less energy than a dirty one, but also maintains capacity and reduces stress on the unit.

AAON rigid polyurethane foam injected composite construction provides more than twice insulating value of 1/2 lb./ft<sup>3</sup> density fiberglass insulated construction. Two inch AAON foam insulated construction provides a thermal resistance of R-13 and one inch AAON foam insulated construction provides an R-6.5.

# M2 Series Features



## Acoustical Features

When compared with single wall cabinet construction, the M2 has greater sound insulation capabilities due to the composite paneling.

Additionally, vibration isolation mounts are available for fan and motor assemblies to minimize undesirable noise.

## Control Features

AAON pre-engineered factory installed controls are tested to ensure consistent quality, and reduce field labor costs associated with development and installation of unique control strategies.

AAON also features factory installed customer provided control, allowing the customer to specify the type and manufacture of unit controller. This flexibility allows the unit to match an existing building control architecture.

## Energy Recovery Wheel

The AAON AIRE is an energy recovery wheel, capable of transferring sensible and latent energy from the incoming air stream to the exhaust and preconditioning the supply air. This saves energy by reducing mechanical heating and cooling use, and also lowers costs by increasing effective system capacity by 30% or more which allows smaller equipment to be selected. Energy recovery wheels are also available as sensible only and with mechanical purge that reduces carryover to less than 1%.

## Polymer E-Coated Coils

A uniformly thick polymer coating is applied to the entire coil by an immersion process that minimizes the potential for gaps in coverage that may occur with spray coating. The polymer coil coating provides corrosion protection for more than 6,000 hours in salt spray testing, while maintaining the thermal performance of the coil.

## Modulating Hot Gas Reheat

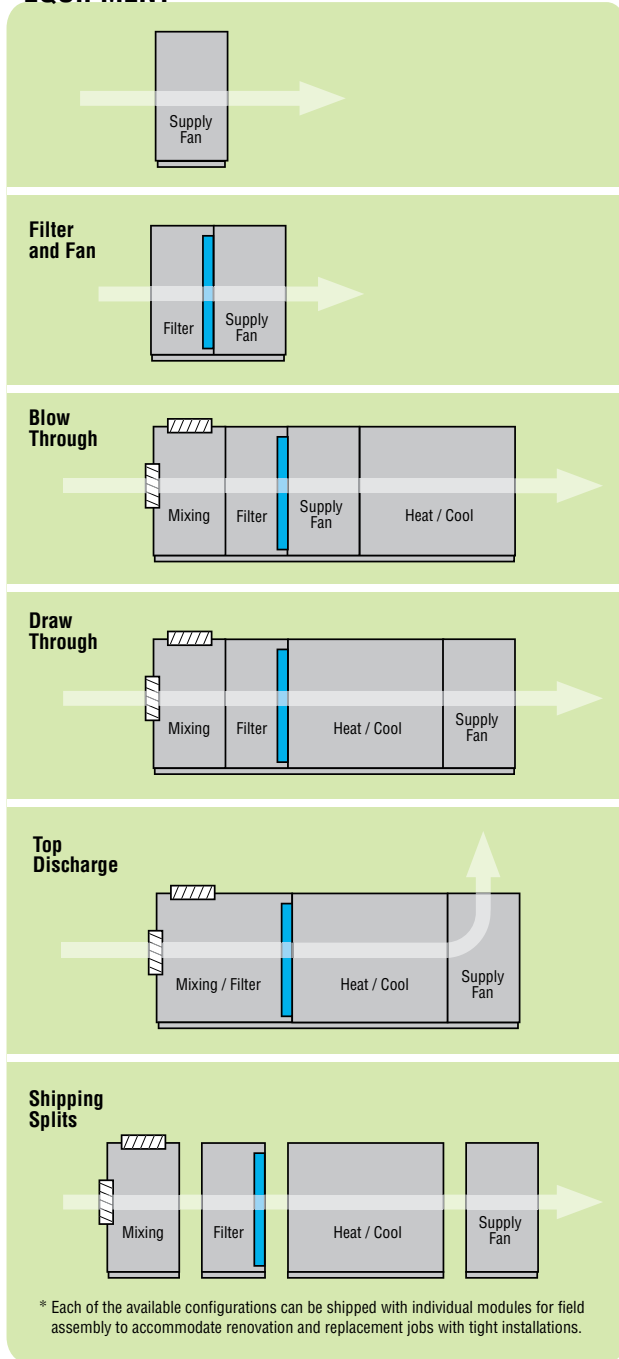
This system delivers only the amount of reheat required for space comfort, providing precise dehumidification without overcooling the space. Occupant comfort is uniform and consistent; drastic temperature swings common to on/off type reheat systems are eliminated.

**M2** series  
Modular Air Handlers

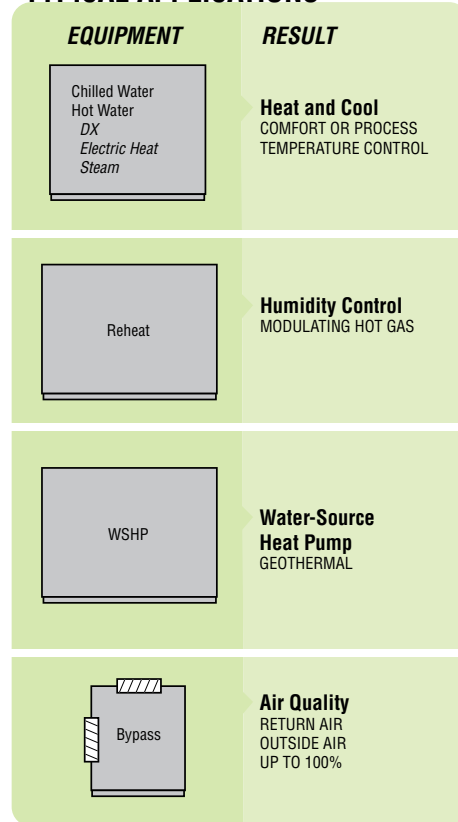
# M2 Series Typical Configurations

The AAON M2 Air Handling Unit Modules provide design flexibility and ease to meet job application requirements.

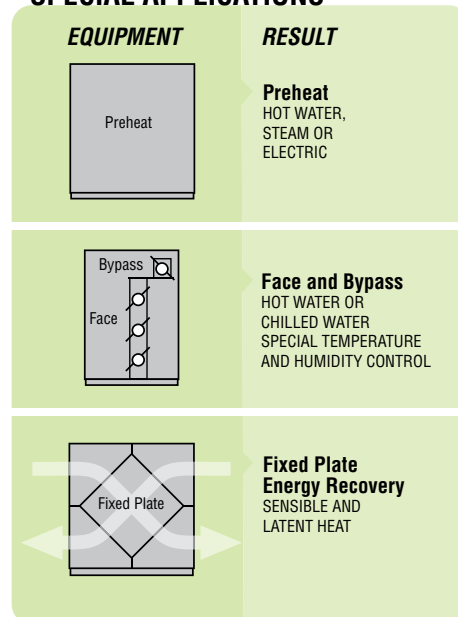
## EQUIPMENT



## TYPICAL APPLICATIONS

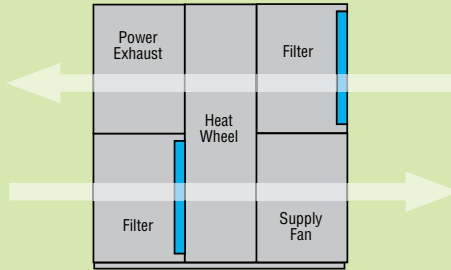


## SPECIAL APPLICATIONS

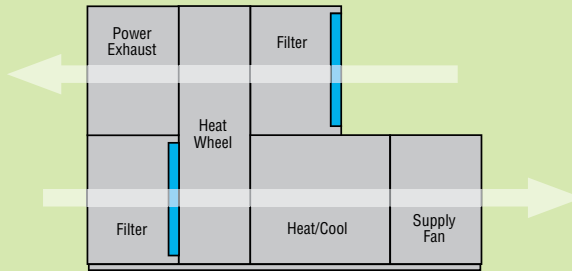


## ENERGY RECOVERY WITH AONAIRE

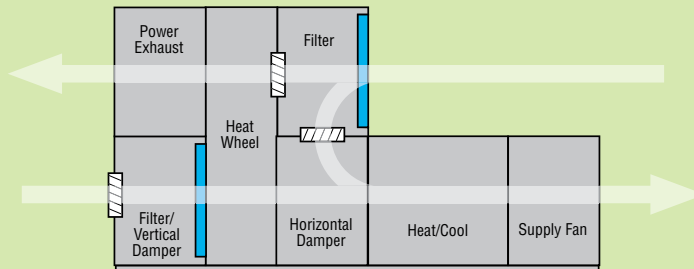
**AONAIRE  
Heat Recovery Unit (HRU)**  
• SENSIBLE AND LATENT HEAT



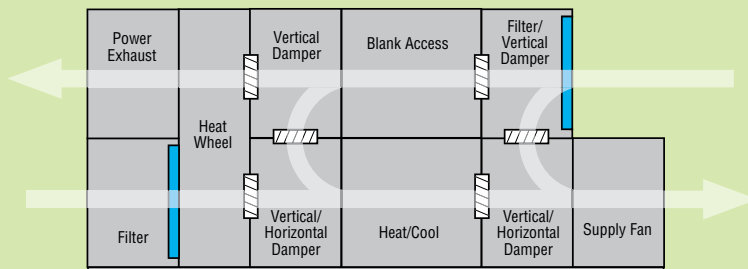
**AONAIRE HRU With:**  
• DX or CW Cool  
• HW, Steam or Electric Heat



**AONAIRE HRU With:**  
• DX or CW Cool  
• HW, Steam or Electric Heat  
• OA/RA Mixing



**AONAIRE HRU With:**  
• DX or CW Cool  
• HW, Steam or Electric Heat  
• OA/RA Mixing  
• RA Bypass



# AAON Environmentally Friendly HVAC Product Family

**Custom & Cataloged  
Air Handling Units** ■ .....  
(800-200,000+ cfm)

**Condensers & Condensing Units** ■ .....  
(2-230 tons)

**Chillers (Air-Cooled &  
Evaporative-Cooled)** ■ .....  
(5-540 tons)

**Rooftop Units** ■ .....  
(2-240 tons)

**Outdoor Equipment Rooms** ■ .....  
(Chillers, Boilers, & Pumps)

**Self-Contained Units** ■ .....  
(3-70 tons)

**Residential Systems** ■ .....  
(2-5 tons)

**Geothermal & WSHP Units** ■ .....  
(2-230 tons)

**Air-Source Heat Pumps** ■ .....  
(2-230 tons)

**Heating and Cooling Coils** ■ .....  
(Booster, Hydronic, & DX)

**Fluid Coolers** ■ .....  
(50-450 tons)

## Heating and Cooling *for...*

**Auditoriums**  
**Convenience Stores**  
**Health Clubs**  
**Healthcare Facilities**  
**Homes**  
**Lodgings**  
**Manufacturing**  
**Museums & Libraries**  
**Natatoriums**  
**Office Buildings**  
**Restaurants**  
**Retail Stores**  
**Schools**  
**Supermarkets**



**Defining Quality. Building Comfort.**

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