improving life at its core

M-SERIES Product Manual

High-performance enthalpy plate exchangers
for energy recovery applications

CORE Energy Recovery Solutions Inc.
100-MPM-0006_1

AHRI CERTIFIED®
www.ahridirectory.org
Air-to-Air ERV
AHRI Standard 1060
Energy Recovery COMPONENT is certified. Actual performance in packaged equipment may vary.

1. Table of Contents

1. Table of Contents 2
2. About CORE 3
3. Product Overview 4
4. CORE Online Sizing Calculator 5
5. Product Description 6
6. CORE Patented Membrane Technology 9
7. M-Series Configuration 13
8. Performance Control 14
9. Installation Recommendations 20
10. Handling 22
11. Maintenance & Cleaning 23
12. Guide Specifications: Enthalpy Plate Exchanger 24
13. Standard Warranty 25
14. Appendix – Performance Chart 26

NOTE:

This document is controlled. Printed or downloaded copies are considered uncontrolled and may not reflect the latest revision.

Users are responsible for verifying they have the most current version.

2. About CORE

CORE Energy Recovery Solutions is a global supplier of air-to-air heat and humidity exchangers for energy recovery ventilation applications.

With more than 1,000,000 exchangers supplied worldwide, CORE supports both residential and commercial equipment manufacturers with reliable and high-performance energy recovery solutions.

CORE was formed through the integration of complementary expertise in polymer membrane technology and heat exchanger design, combining innovation and manufacturing capabilities to serve a growing global market.

improving life at its core

Today, CORE employs more than 400 people across four international locations: Reinsdorf (Germany), Vancouver (Canada), Waalwijk (Netherlands) and Zhongshan (China).

As a global organization, CORE understands the varying requirements for heat exchangers across different markets and applications. This international experience is continuously applied to refine product design and performance, ensuring consistent quality and reliability.

CORE is committed to delivering high-performance solutions that support energy efficiency, indoor air quality and reliable long-term system operation.

3. Product Overview

CORE M-Series enthalpy plate exchangers are designed to deliver high energy recovery performance with low pressure drop and long-term operational reliability.

Built with CORE's patented polymer membrane technology and optimized airflow design, the M-Series enables efficient transfer of both heat and moisture while maintaining complete separation between air streams and preventing the crossover of gases and other indoor air contaminants.

The product is engineered for seamless integration into a wide range of HVAC systems, offering flexible configurations across different airflow requirements and applications.

This manual provides technical guidance for installation, operation and maintenance, while outlining key performance characteristics and application considerations for system design.

3.1 Key Features

COMPLIANCE & CERTIFICATION
- Certified according to AHRI 1060 for energy recovery performance
- Complies with UL 1995 requirements for HVAC equipment safety

CORE TECHNOLOGY
- Transfers both sensible and latent energy using CORE's patented polymer membrane
- No crossover of gases and contaminants between air streams

PERFORMANCE
- Low pressure drop due to asymmetric airflow channel design

RELIABILITY & MAINTENANCE
- Proven durability with equivalent of 15 years in field operation
- Water washable membrane for simplified maintenance
- Resistant to mold growth for hygienic operation

PRODUCT RANGE
- Multiple CORE sizes available for commercial and residential applications

4. CORE Online Sizing Calculator

The CORE Online Sizing Calculator is a web-based selection and configuration tool designed to support the specification of CORE energy recovery exchangers.

By entering key operating conditions such as airflow, temperature and humidity, users can quickly evaluate product performance and identify suitable configurations for their application.

The calculator enables the generation of performance sheets, supporting system design and technical evaluation.

Users can save and manage their selections within the platform, allowing them to revisit and refine configurations as project requirements evolve.

The CORE Online Sizing Calculator is available at:
https://core.life/core-calculator-for-north-america

For further information, please contact CORE's sales team at:
sales@core.life

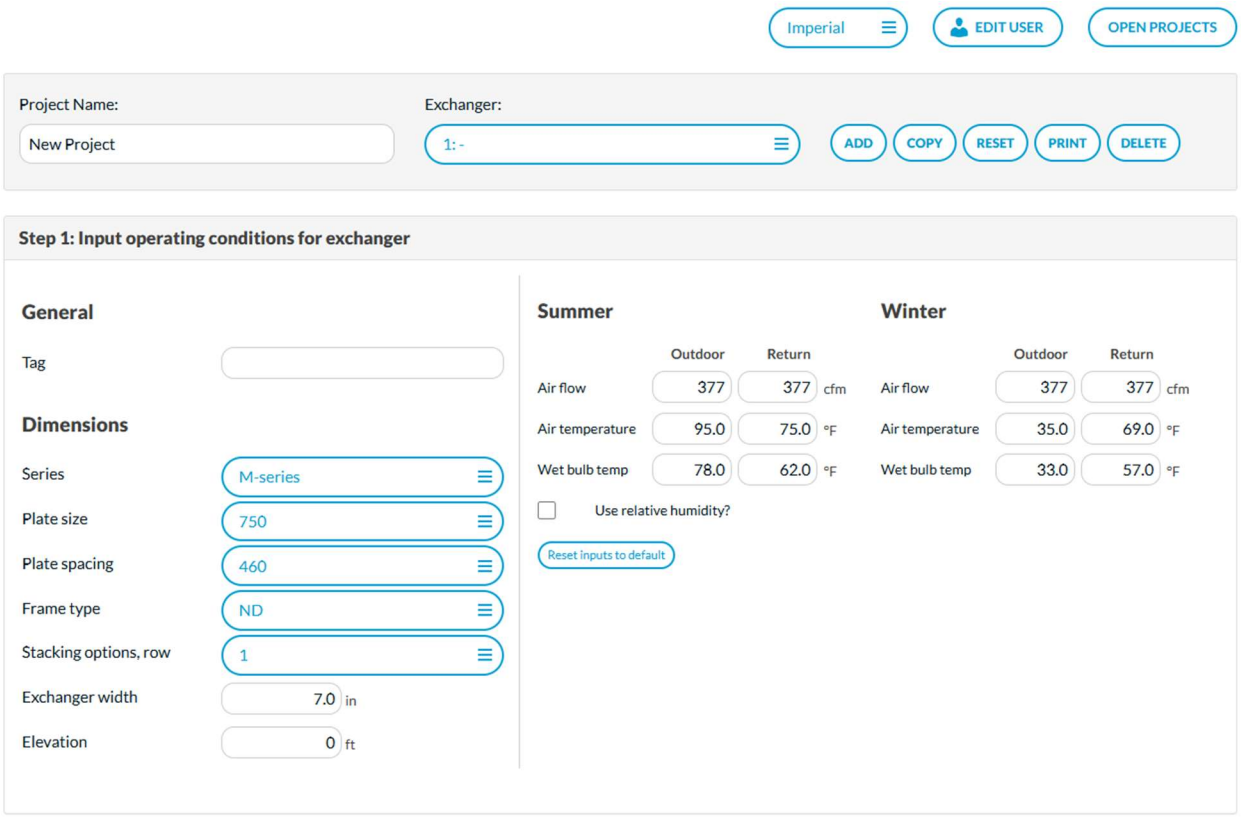


Figure 1: CORE Online Sizing Calculator

5. Product Description

CORE M-Series enthalpy plate exchangers are designed to transfer both sensible and latent energy between two air streams, supporting high energy recovery performance.

The exchangers utilize a crossflow configuration combined with advanced polymer membrane technology to enable efficient heat and moisture exchange while maintaining complete separation between air streams.

The M-Series is produced using a fully automated manufacturing process to ensure consistent quality and repeatable performance across all units.

5.1 Construction

The M-Series features a dual-channel airflow design, where the two air streams are separated by layers of CORE's patented polymer membrane.

The airflow channels are not identical. In one air stream, corrugated aluminum sheets are used to support and separate the membrane layers, while the opposing channel remains open and is supported by polymer spacers.

This asymmetric channel design is intended to minimize pressure drop while maintaining effective airflow distribution across the exchanger.

Combined with the CORE membrane technology, this construction approach enables efficient energy transfer while maintaining low airflow resistance across a wide range of operating conditions.

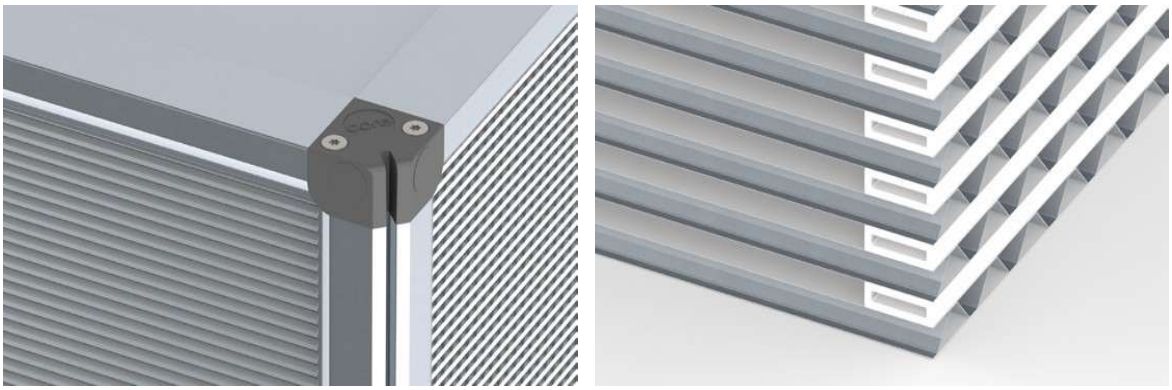


Figure 2: M-Series construction

5.2 Sizing

The M-Series is available in four commercial and two residential single CORE sizes, with multiple plate spacing combinations.

For larger airflows, commercial COREs are available in Multi-CORE arrays. Depending on the size of the unit, a total effectiveness of up to 60% is achievable.

Plate spacing options include Standard (Std), High Efficiency (HE) and Low-Pressure Drop (LP), depending on the selected configuration.

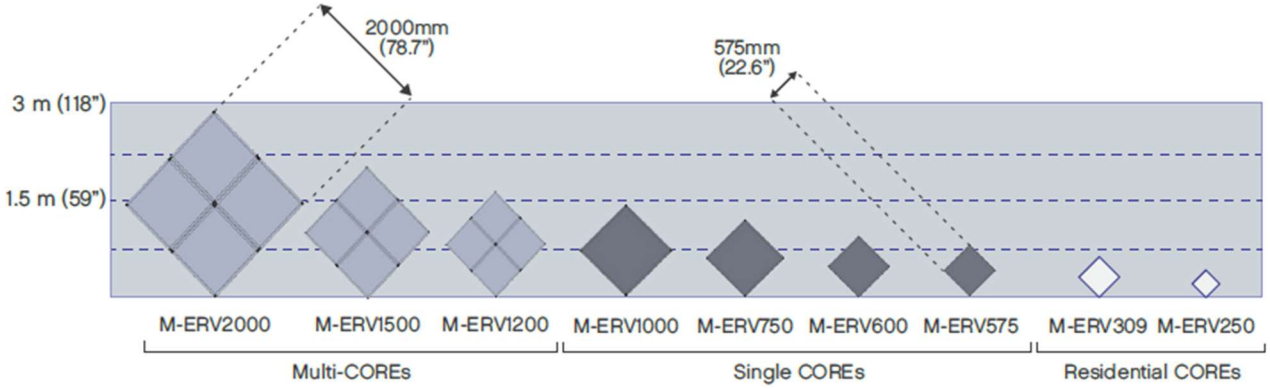


Figure 3: Size offerings for M-Series products

5.3 Framing Details

5.3.1 Commercial Framing

Commercial CORE exchangers are framed using extruded aluminum (AA 6063) along the edges, with aluminum end plates (AA 5052) enclosing the assembly.

Frame extrusions are connected using reinforced molded corner nodes to maintain structural integrity and alignment of the exchanger.

The frame includes a 3 mm wide slot along the perimeter to facilitate installation into the air handling unit and allow removal during maintenance and inspection.

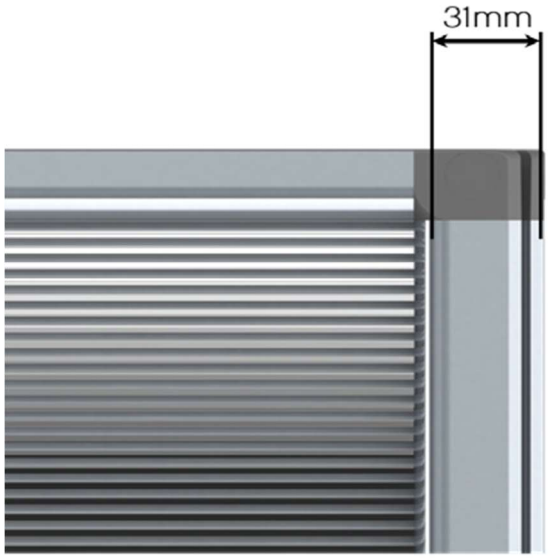


Figure 4: CORE frame details

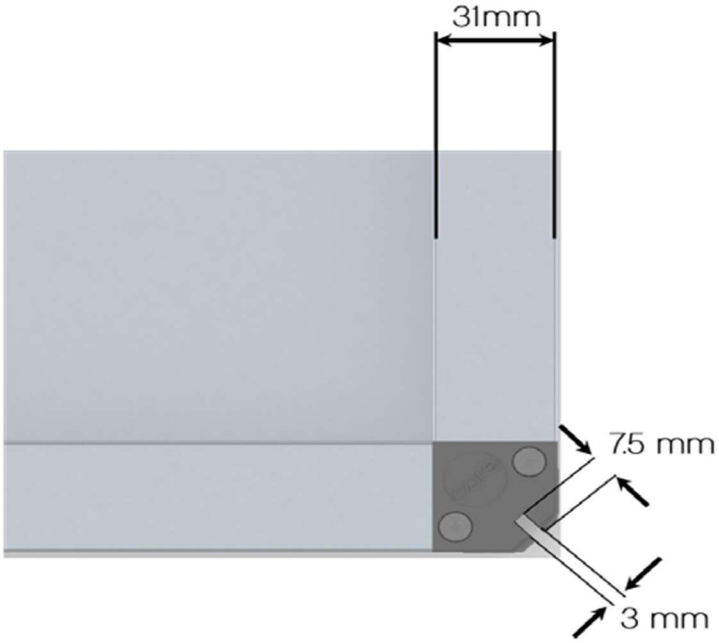


Figure 5: Corner node assembly

5.3.2 Residential Framing

Residential CORE exchangers are constructed using extruded polymer end plates and plastic frame rails, designed to accommodate a wide range of equipment configurations.

- CL – Extruded polypropylene sheets and L shaped corner extrusion
- CY – Extruded polypropylene sheets and Y shaped corner extrusion

Alternative frame configurations are available to meet specific application and installation requirements.

6. CORE Patented Membrane Technology

All CORE exchangers are made with a patented polymer membrane that transfers both sensible and latent energy, while also blocking the transfer of gases and other indoor air contaminants.

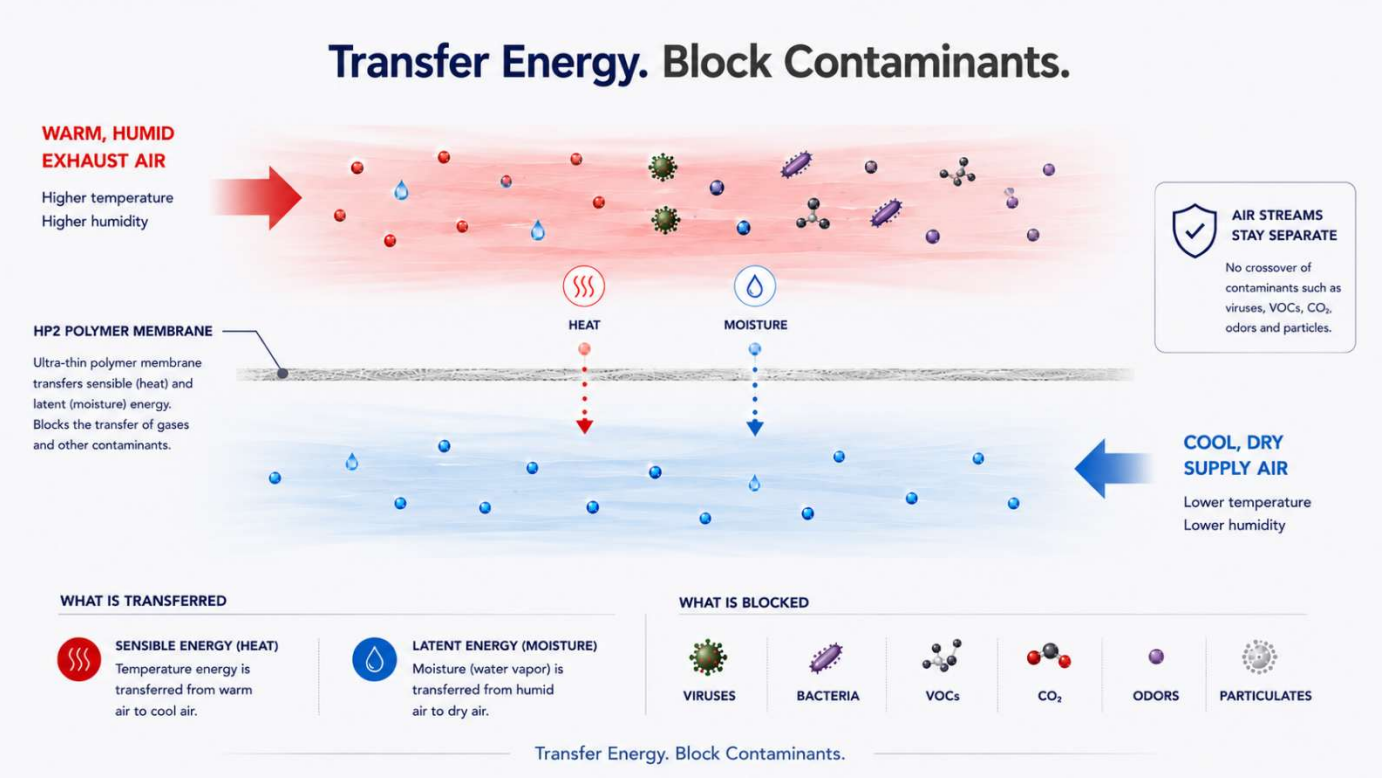


Figure 6: How the CORE membrane works

It accomplishes this with a two-part structure:

- Diffusive polymer substrate (to maximize water vapour transfer)
- Selective polymer layer (to block contaminant transfer)

6.1 Membrane Characteristics

Figure 7 shows magnified image of a cross-section of the CORE polymer membrane and illustrates the dense polymer substrate as a two-part structure.

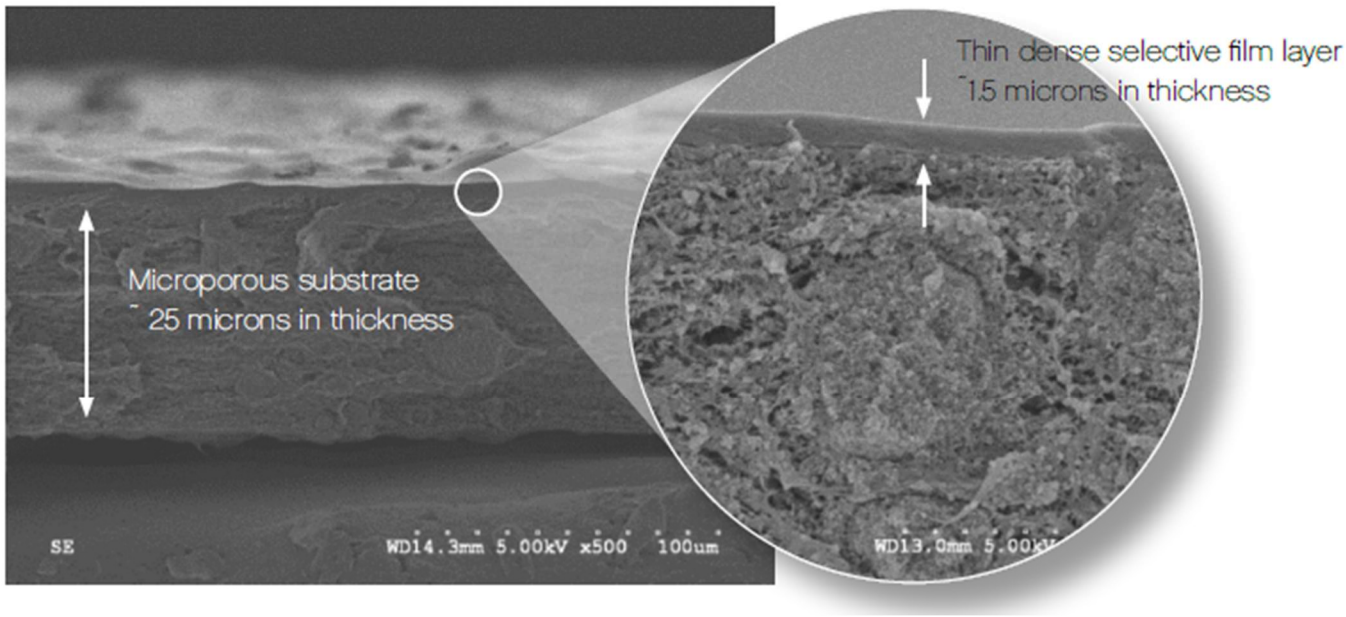


Figure 7: CORE membrane cross-section under an electron microscope

The unique, 100% polymer material and design of the CORE membrane make it both durable and hygienic.

For CORE customers this means:

- The membrane is water washable for easy maintenance (see Section 11)
- The membrane will not grow mold or bacteria
- The membrane can withstand being frozen – this means no change in structure, performance or leakage after thawing (see Section 8.1)

6.2 Odour and VOC Transfer in Energy Recovery Exchangers

Under the AHRI 1060 Certification Program, Energy Recovery Components are tested and certified for Exhaust Air Transfer Ratio (EATR). EATR provides a measure of how much exhaust air is transferred to the supply air stream through the exchanger.

The test is performed by injecting a tracer gas, Sulfur Hexafluoride (SF_6), into the exhaust air stream and measuring its concentration in the supply air stream once steady-state conditions are reached. AHRI certification requires EATR to be reported over a range of pressure differentials, typically from -2.5 to +2.5 in. H_2O.

CORE M-Series exchangers are tested and certified to achieve less than 0.5% EATR over a wide range of operating conditions and pressure differentials.

While SF_6 is an excellent tracer gas for measuring bulk leakage, it does not adsorb onto component surfaces or permeate through membrane materials. As a result, it does not accurately represent the behavior of common indoor air contaminants such as CO_2, odors, formaldehyde, and other volatile organic compounds (VOCs).

Unlike SF_6, many VOCs and odor compounds exist as vapors under normal indoor conditions. These compounds can adsorb onto or absorb into transfer media and, depending on the membrane material, may diffuse through the membrane by similar mechanisms used to transfer water vapor.

Published studies have shown that, in some cases, VOC crossover in energy recovery components such as wheels and plates can approach the latent effectiveness of the component itself. In these situations, the exchanger may recover moisture efficiently while simultaneously transferring odors and VOCs between air streams, compromising indoor air quality.

6.2.1 HP2 Membrane Selectivity

A membrane's ability to block contaminants while allowing water vapor to pass is known as selectivity. Selectivity depends on both the membrane chemistry and its physical structure.

Some membrane materials exhibit relatively low selectivity and allow VOCs and odor compounds to permeate at rates approaching their moisture transfer rate. Other membrane materials provide significantly higher selectivity, allowing efficient water vapor transport while greatly limiting contaminant transfer.

During the development of CORE's HP2 membrane, particular emphasis was placed on achieving both high latent effectiveness and high selectivity for indoor air contaminants.

The result is a membrane capable of transferring significant amounts of water vapor while minimizing the transfer of VOCs and odor compounds between air streams.
HP2 membrane performance has been evaluated against a wide range of gases, VOCs, and odor compounds, including:

Compound	Category	Odour Description / Lay Term	HP2 Crossover* (%)
Acetic Acid	Odour / VOC	Vinegar	< 0.5
Acetone	VOC	Pungent, Floral	< 0.5
Ammonia	Gas / Odour	Pungent / Urine	< 0.5
Carbon Dioxide	Gas	—	< 0.5
Chloroform	VOC	Sweet	< 0.5
Dichloromethane	VOC	Sweet	< 0.5
Ethanol	VOC	Alcohol	< 0.5
Formaldehyde	VOC	Pungent	< 0.5
Hexane	VOC	Gasoline / Petrol	< 0.5
Indole	Odour / VOC	Fecal	< 1.0
Isobutylaldehyde	Odour / VOC	Garlic / Barn	< 1.0
Isobutyric Acid	Odour / VOC	Onions / Body Odour	< 1.0
Isovaleric Acid	Odour / VOC	Feet / Cheese	< 1.0
Nitrogen	Gas	—	< 0.5
Oxygen	Gas	—	< 0.5
Sulfur Hexafluoride (SF_6)	Gas	—	< 0.5
Toluene	VOC	Pungent / Sweet	< 0.5

*Table 1: HP2 Crossover Test Results, *crossover test at 23°C, "<" is below detection limit for test.*

Measured crossover was typically below 0.5% for many compounds tested and below 1% for more challenging odor compounds under laboratory conditions.

A peer-reviewed study conducted during the development of HP2 demonstrated that properly designed membrane materials can achieve high latent effectiveness while maintaining excellent selectivity for indoor air contaminants and VOCs [1].

What This Means for Your Application

By using M-Series exchangers with CORE's HP2 membrane, building owners and occupants can benefit from effective energy recovery while minimizing the transfer of odors and VOCs between air streams.

[1] R. Huizing, H. Chen, and F. Wong, "Contaminant transport in membrane-based energy recovery ventilators," Science and Technology for the Built Environment, vol. 21, no. 1, pp. 54–66, Jan. 2015, doi: 10.1080/10789669.2014.969171.

7. M-Series Configuration

The M-Series is available in a range of standard plate sizes, from 250 mm (9.8") to 1000 mm (39.4") for single CORE exchangers. For higher airflow applications,

Multi-CORE configurations are available, with assembled units ranging up to 2000 mm (78.7") square.

There is no limitation on the overall width of the exchanger. CORE exchangers wider than 700 mm (27.5") are shipped in multiple sections for on-site assembly.

Multi-COREs will be shipped as complete four-CORE exchanger assemblies in sections up to 700 mm (27.5") wide.

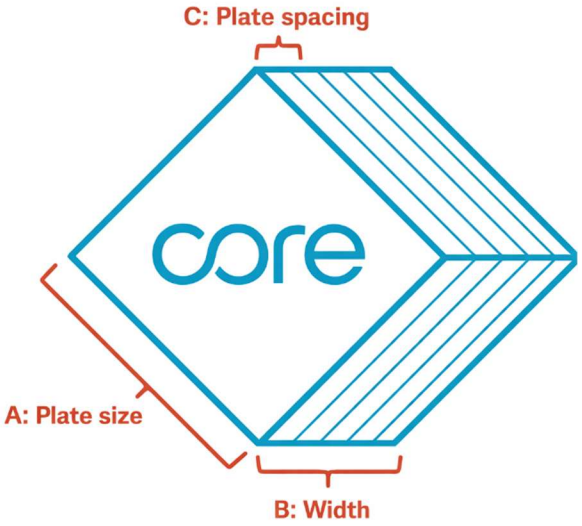


Figure 8: Exchanger dimensions

7.1 Product Configuration

Model Number: EMC-AAA-BBB-CCC-DD-S

EMC: Refers to the product M-Series

AAA: Framed plate size as a square dimension in millimetres. Available in 9 standard sizes:

BBB: Framed width of each individual CORE exchanger represented in millimetres. Maximum exchanger width per individual CORE Exchanger: 700 mm (27.5”) for commercial sizes and 450 mm (17.7”) for residential sizes.

CONFIGURATION	1	2	3	4	5	6	7	8	9
Framed Plate Size (in)	9.9	12.2	22.7	23.6	29.5	39.4	47.2	59.0	78.7
Framed Plate Size (mm)	250	309	575	600	750	1000	1200	1500	2000

Table 2: M-Series plate sizes

CCC: Height of corrugated plate spacing in mm x 100. Each base size has standard plate spacing.

DD: The frame type and corner extrusions. Available options include:

- ND - Aluminum end plates and extruded aluminum corners (Commercial only)
- CL – Extruded polypropylene sheets and L shaped corner extrusion (Residential only)
- CY – Extruded polypropylene sheets and Y shaped corner extrusion (Residential only)

For other options, please contact us at sales@core.life.

8. Performance Control

8.1 Frost Conditions

In severe winter conditions, moist exhaust air (EA) is cooled down in the CORE exchanger by cold outside air (OA). When EA reaches its dew point in the exchanger channels, condensation will occur.

Condensation will start to freeze if at any place in the exchanger temperatures are below the freezing point. This will first occur in the exhaust stream at the “cold corner”, where the EA leaves the CORE exchanger and OA enters, as it is the location where both air streams are coldest and the EA is most humid.

This is also where there is the highest temperature and humidity gradient. The OA temperature in which frost first occurs in the exchanger is called the frost threshold.

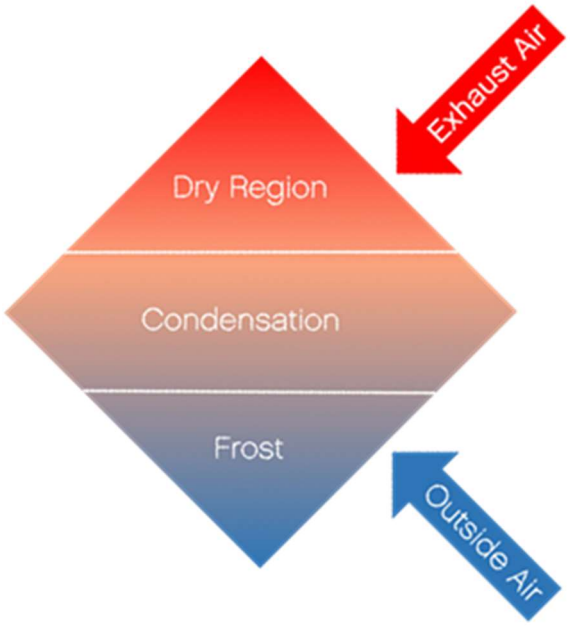


Figure 9: Cold Corner in a fixed plate exchanger

8.2 Frost Threshold

The frost threshold in a CORE exchanger depends on the return air (RA) conditions (temperature and humidity) and the performance of the exchanger.

Higher sensible performance of an exchanger or higher humidity of the EA increase the risk of frost build-up in CORE heat exchangers.

Table 3 shows the frost threshold of a typical CORE heat exchanger at different indoor air relative humidity levels

The CORE software tool may be used to predict the specific frost point of many applications.

Frost Threshold Temperature (°F) @ 50 % RH Outdoor Air				
	Indoor Air Dry Bulb Temperature			
Indoor Air RH (%)	70 °F	72 °F	75 °F	80 °F
20 %	4.1	5.7	8.1	12.2
30 %	15.5	17.2	23.9	24.1
40 %	24.1	25.9	28.6	32.0
50 %	31.1	32.0	32.0	32.0
60 %	32.0	32.0	32.0	32.0
Sensible eff. = 65 % Latent eff. = 45 % Guidelines only, contact CORE for additional information.				

Table 3: Cold Corner in a fixed plate exchanger

8.3 Frost Control Strategies

When outdoor air temperatures fall below the frost threshold of an energy recovery exchanger, frost mitigation strategies must be incorporated into the ventilator. Below is a brief overview of the most common frost control methods. For more detail on frost control, please refer to the CORE white paper “Frost Formation & Defrost Strategies” on the CORE website resources page.

8.3.1 Pre-Heat

In this strategy, a heating coil is placed up-stream of the exchanger on the outside air (OA) side to increase the entering air temperature into the CORE exchanger above the frost threshold. Since the inlet temperatures of the Exchanger are always kept above the threshold there is no risk of frost occurrence in the CORE exchanger.

In this case, the pre-heating coil must be designed to increase the OA temperature to the frost threshold at the coldest design conditions. The advantage of this method is that continuous ventilation is maintained without interruption, maintaining high IAQ.

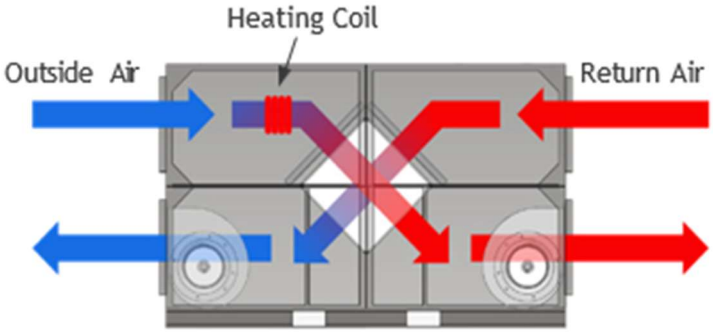


Figure 10: Pre-heat frost control

8.3.2 Exhaust Only

In this strategy, the supply fan is shut down periodically to cut the flow of cold outdoor air (OA) into the exchanger, while the warm return air (RA) flows through the exchanger, melting any frost formed inside. Since only the supply fan is turned on during the defrost period, OA ventilation to the occupied space is interrupted when defrost is happening. This may not be acceptable by ASHRAE standard 62 for minimum required ventilation rates.

Shutting off the supply air into the building while exhausting air also creates negative pressure inside. This could cause outdoor air leakage into the room where the unit is installed and may not be acceptable where sources of combustion gases/by-products/fumes are present outdoors.

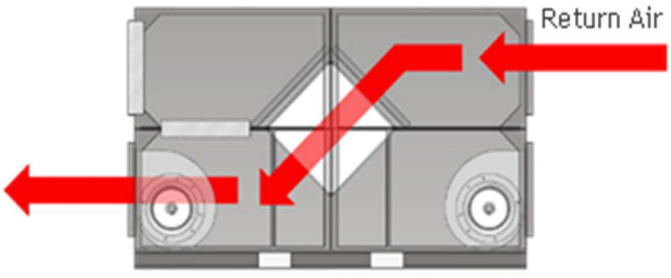


Figure 11: Exhaust-only frost control

The exhaust-only method uses a temperature set-point (frost threshold) to initiate the frost cycle. The frost cycle continues for a specific duration until the warm exhaust air defrosts the CORE exchanger. This period is defined as a constant period of defrost to a period of ventilation (where both supply and exhaust fans operate).

8.3.3 Re-Circulation Frost Control

In this method, exhaust air (EA) is re-circulated into the building using a recirculation damper instead of being exhausted outdoors. When the frost threshold temperature is reached, the supply fan is shut down, and re-circulation defrost opens to redirect exhaust air back to the exchanger. The defrost cycle would be fixed minutes of defrost versus minutes of ventilation. This strategy eliminates the depressurizing effect in the building that exhaust-only defrost creates, however; other disadvantages of the exhaust-only defrost strategies remain.

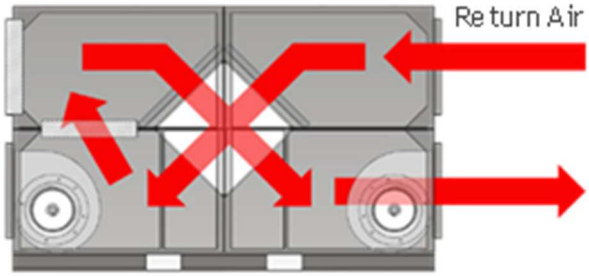


Figure 12: Recirculation frost control

8.3.4 Face and Bypass Damper

Face and bypass dampers are a preventative defrost strategy. In this method, the amount of air passing through the exchanger is modulated by a damper installed on the OA face of the exchanger. As the flow through the exchanger is blocked by the face damper, a corresponding bypass damper is opened to maintain a constant ventilation rate.

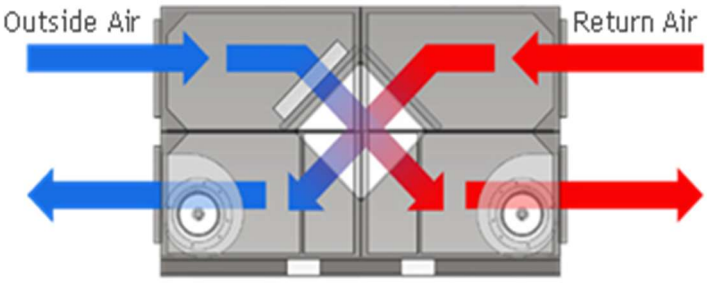


Figure 13: Face and bypass frost control

As the airflow through the exchanger decreases the temperatures inside increases above the frost threshold.

Since the supply and exhaust fans operate continuously through this process, ventilation is not interrupted and negative building pressure is avoided.

8.4 Fan and Bypass Air Damper Control Sequence

Face and bypass control is one of the most popular strategies used in commercial applications to prevent frost and take advantage of “free cooling” or economizing. On the following page is a suggested control sequence to keep the exchanger frost free and economize energy usage during shoulder season.

8.5 Recommended Control Sequence

As the temperature of the OA leaving the exchanger falls below the adjustable set point temperature of 28˚F, the Frost Control Thermostat (T-F) shall modulate the Face & Bypass Damper to the bypass position as required to maintain the frost control set point.

By keeping the EA above 28˚F (adjustable per conditions), frost is prevented from forming in the exchanger. As the temperature of the EA rises above the T-F set point, Face & Bypass Damper will modulate to the face position

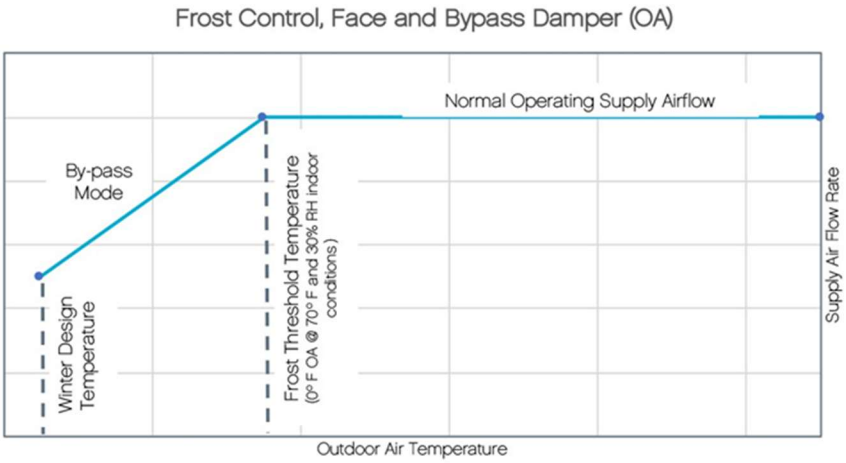


Figure 14: Outdoor air flow modulation based on outdoor air temperature

8.5.1 Economizer Control

As the temperature of the supply air stream leaving the exchanger rises above the set point (55˚F, adjustable) of the Economizer Thermostat (T-EC), T-EC shall modulate the Face & Bypass Damper to the bypass position as required to maintain the set point.

As the temperature of the discharge temperature drops below the max discharge set point, T-EC shall modulate Face & Bypass Damper to the full-face position.

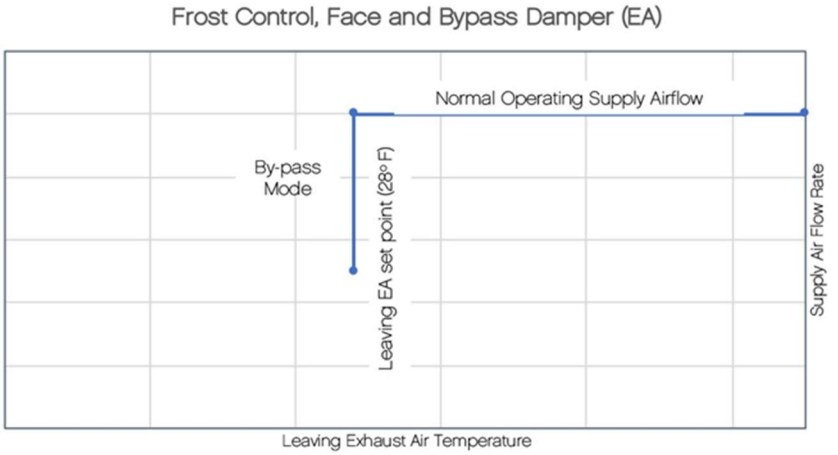


Figure 15: Outdoor air flow modulation based on leaving exhaust air temperature

8.5.2 Summer Recovery Changeover

When the temperature of the OA rises above the set point (75°F) of the summer changeover thermostat (T-SC), T-SC shall switch the unit from the economizer bypass mode to maximum energy recovery. The OA Face & Bypass Damper shall modulate to the full-face position for full energy recovery.

8.6 Pressure Differential

Pressure differential is defined as the difference in static pressure between the supply side and exhaust side of the exchanger and must not be mistaken with pressure drop. Since the pressure is different at each face of the CORE exchanger in an AHU, it may have different pressure differential in every corner. Maximum pressure differential always happens in one of the four corners of the exchanger. Figure 18 shows the pressure differential in a CORE Exchanger in an example AHU.

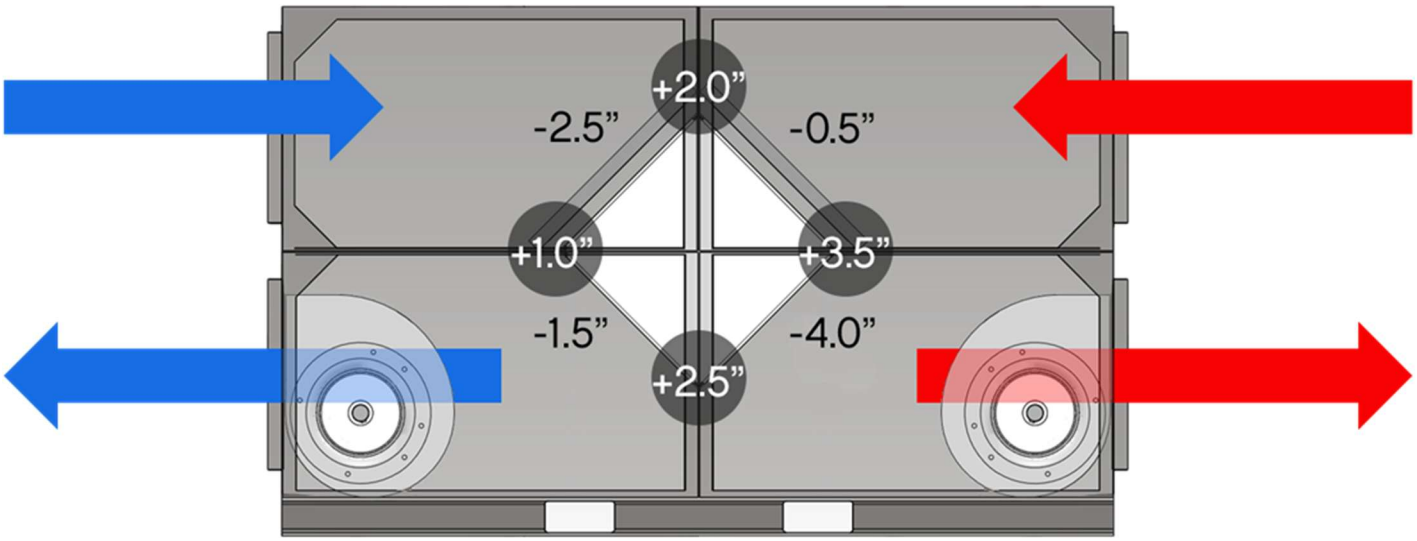


Figure 16: Pressure differential on each corner of the Exchanger

CORE Recommendations:

The maximum recommended pressure differential for M-Series Commercial CORE exchanger is 4” on both the supply and exhaust side. For residential models the maximum recommended pressure differential is 2” WC.

Core exchangers must always be installed according to the air stream indicator labels on the end plate of the exchanger (Figure 19).

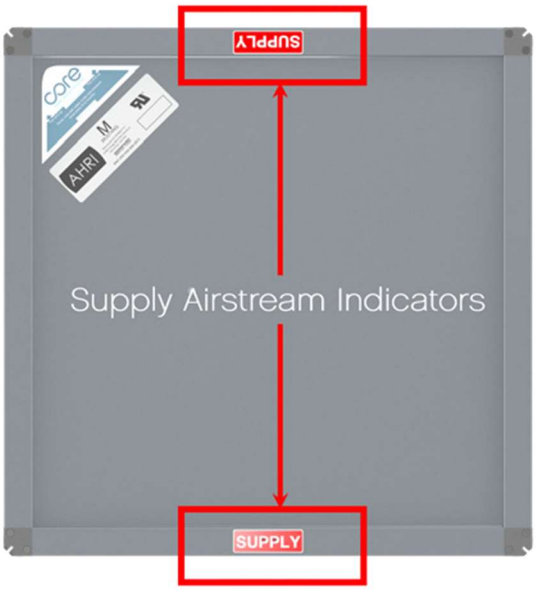


Figure 17: Supply stream indicators

All fan arrangements are acceptable with M-Series CORE exchanger except for exhaust blow through/ supply draw through configuration, as seen in Figure 20, as this configuration always creates a high-pressure differential that could damage the M-Series exchanger.

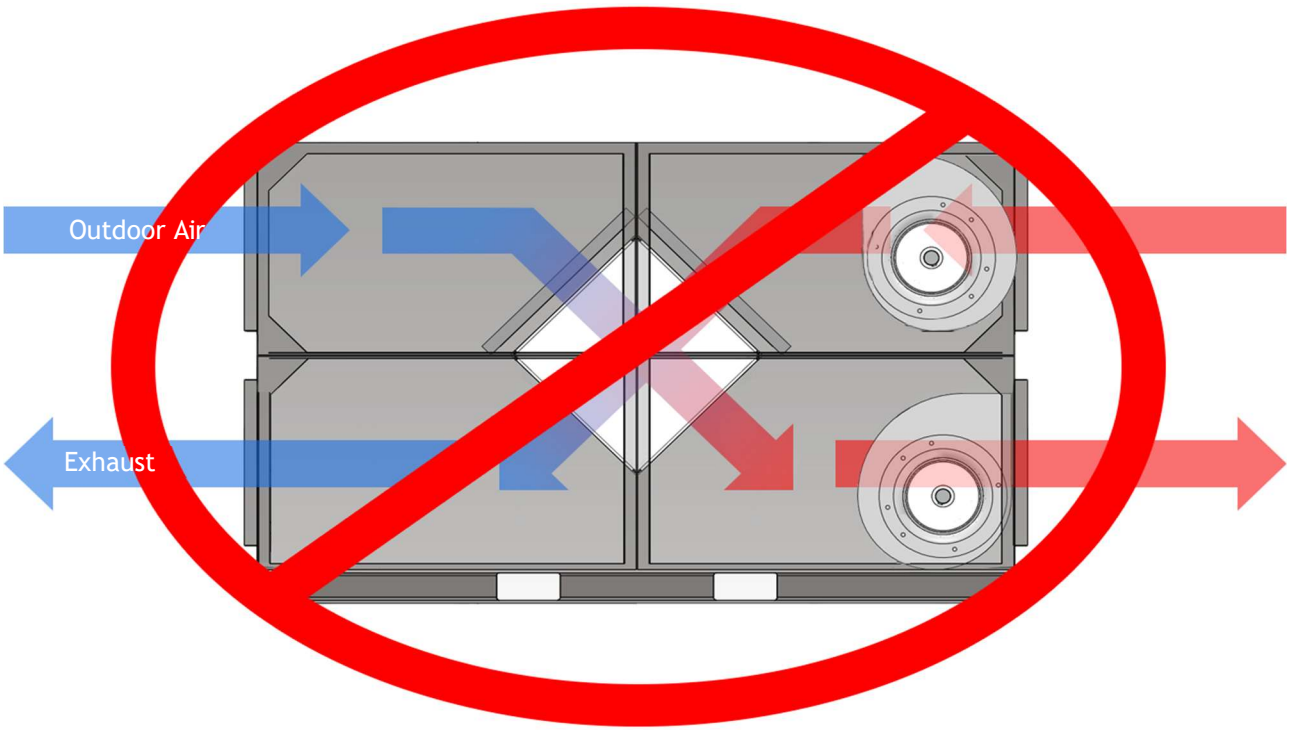


Figure 18: Unacceptable fan arrangement

9. Installation Recommendations

9.1 Installation in Air Handling Units

Single CORE and Multi-CORE M-Series exchangers are shipped in sections of 27.5” (700 mm) or less.

These exchangers can easily slide into the Air Handling Unit (AHU). For AHUs with exchangers wider than 27.5”, CORE exchangers must be installed side by side and sealed with a minimum of ¼” bead of Room Temperature Vulcanizing (RTV) sealant.

In addition, the four corners of the exchangers (where it slides into the AHU) must be sealed by a bead of RTV sealant after installation.

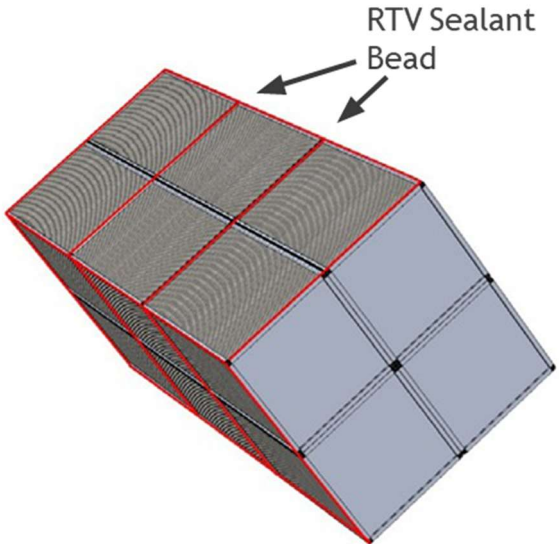


Figure 19: Sealing Exchangers

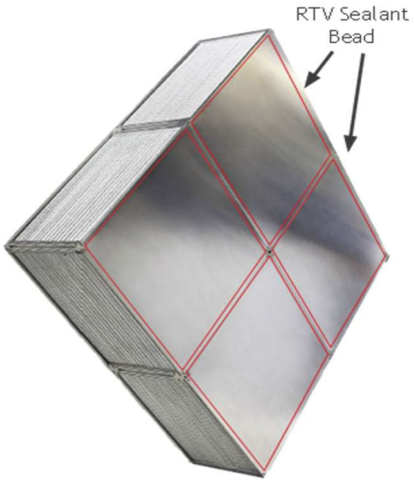


Figure 20: Multi-CORE

Multi-COREs are shipped pre-assembled in sections of 4 Exchangers and sealed. Multi-COREs can be treated as large single CORE exchangers when installing in an AHU.

Apply RTV sealant as shown in Figure 22. Locate bead 1/2” from the edges continuously over plastic nodes

9.2 Corner Screw Recommendations

Stainless Steel self drilling screws may be used only on the aluminum frames of the commercial CORE exchangers. Screws must not extend more than 3/8” into the aluminum frames.

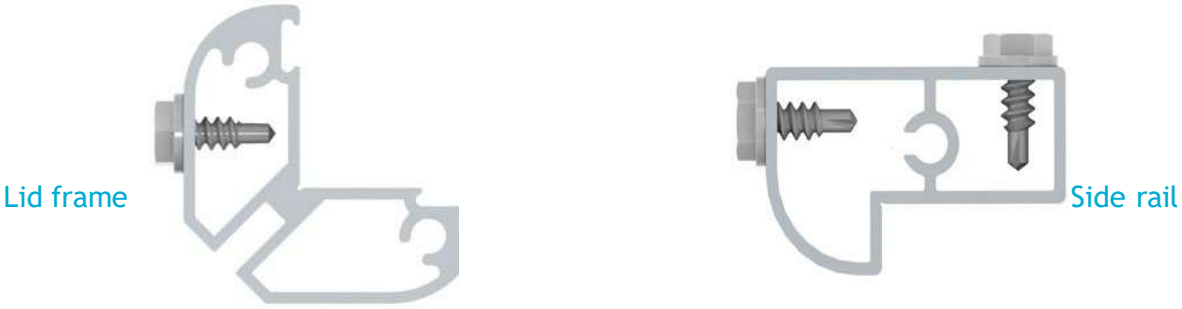
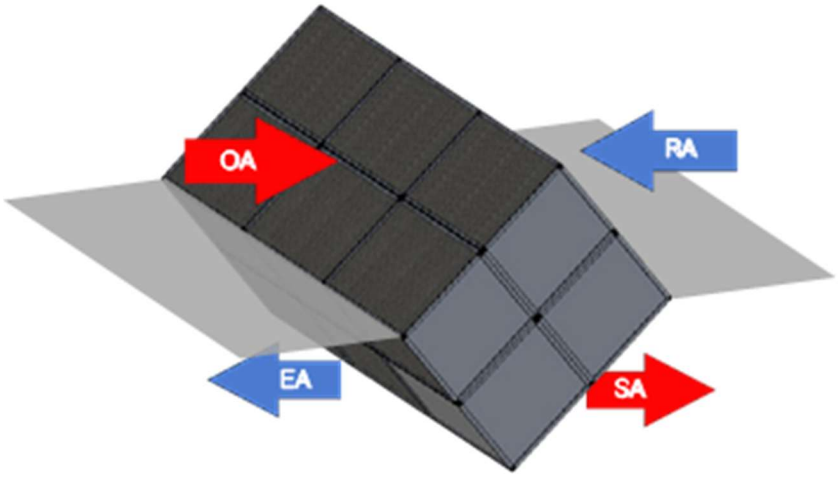


Figure 21: Cross section of Exchanger frames with fasteners

9.3 Flow Configurations

Exchangers may be installed horizontally (for top/ bottom air tunnels) or vertically (for side-by-side air tunnels).

Figure 22: Side-by-Side air tunnel configuration



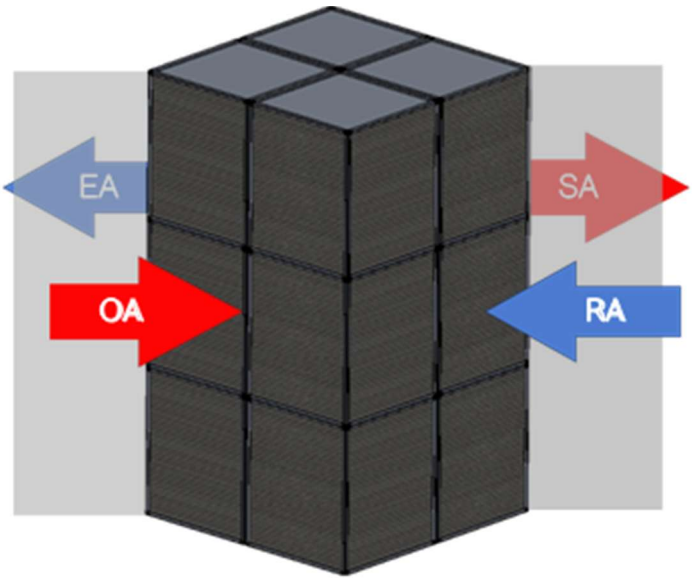
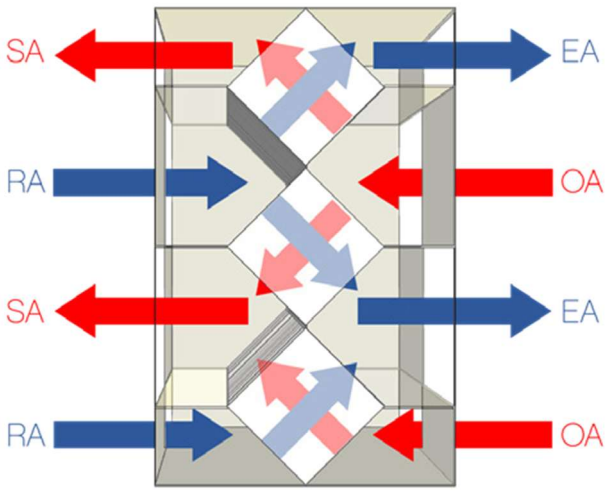


Figure 23: Top/Bottom or Over/Under air tunnel configuration

For larger air flow applications, multiple rows of exchangers may be used to reduce the pressure drop and/or the length of the ERV section.

Figure 24: Side-by-Side air tunnel configuration



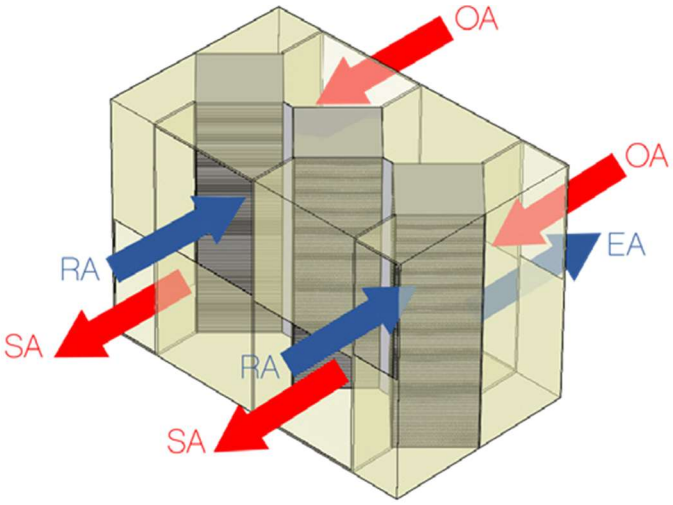


Figure 25: Top/Bottom or Over/Under air tunnel configuration

NOTICE: CORE only provides the enthalpy exchangers. The sheet metal housing must be designed and fabricated by the OEM.

WARNING: When designing multi-row CORE arrays, the following distances must be used to execute proper flow distribution in the exchangers and minimize pressure drop. Additional pressure drop due to air direction change in the manifold is estimated to be at less than ¼" of water column.

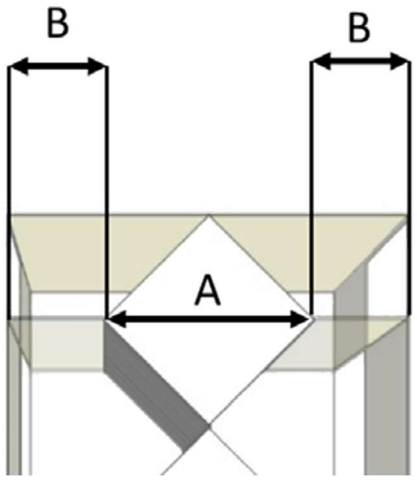


Figure 26: Blank-offs to CORE clearance recommendation

9.4 Required Filtration, Drip Pans

Both outdoor and return air streams must be filtered prior to entering the exchangers to avoid deposition of dust and other airborne particulates inside the exchanger channels. CORE recommends placement of filters with Minimum Efficiency Reporting Value (MERV) of 8, upstream of the exchanger.

Stainless Steel or polymer composite drain pans must be used beneath the exchanger if condensation is expected to occur at extreme conditions. Please consult the Core Online Sizing Calculator to determine if condensation may occur at any specific conditions.

10. Handling

Exchangers must be lifted in individual sections and assembled inside the AHU. When lifting the larger exchangers, lifting lugs may be screwed to the Aluminum framing of the exchanger.

For Multi-CORE, the lifting device must support at least ¾ of the plate size as per Figure 29 below.

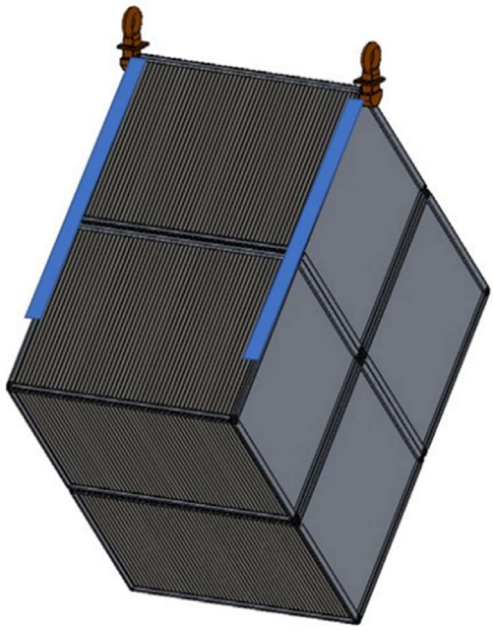


Figure 27: Handling of exchangers

11. Maintenance & Cleaning

We recommend washing the CORE exchanger at least once per year, using tap water.

While cleaning other adjacent components in the HVAC system avoid contact of the exchanger with detergents. Contact with any coil cleaning or other cleaning products is **not recommended**. If contact does occur, the CORE exchanger should be rinsed immediately as it may void the warranty.

11.1 Cleaning Instructions

1. Obtain access to a source of regular tap water. Do not use a high-pressure water source (pressure washer).
2. Remove the CORE exchanger from the system, if possible, to facilitate access to all CORE exchanger faces, otherwise wash in place. Ensure adequate drainage is available for wastewater.
3. Use only clean water for washing the exchanger.
4. Orient the plates vertically for drainage and clean water through the CORE exchanger, both Supply and Exhaust paths, ensuring exposure of all layers.
5. Allow the CORE exchanger to dry (with plates still oriented vertically) until there is no more water dripping out, then return to service.

12. Guide Specifications: Enthalpy Plate Exchanger

The ERV CORE shall transfer both sensible and latent energy between the incoming fresh air stream and the exhaust stale air stream.

The ERV CORE shall be in either a Crossflow or Counterflow orientation and have no moving parts.

The ERV CORE shall be certified by AHRI under its Standard 1060 for Energy Recovery Ventilators. Products not currently AHRI certified will not be accepted.

The ERV CORE shall achieve the minimum effectiveness value as indicated in the schedule.

The fresh air stream must have complete separation from the stale air stream to prevent cross contamination.

The ERV CORE shall have Exhaust Air Transport Ratio of less than 0.5 % as tested to AHRI 1060 (EATR) to prevent cross-over of gases, contaminants or odors.

The ERV COREs Outdoor Air Correction Factor (OACF) shall not exceed 1.0 as tested to AHRI 1060 (OACF) Standard.

The ERV CORE shall not be degraded or promote the growth of mold and bacteria with a rating of zero in testing according to ISO846 A and C.

The ERV CORE must be able to tolerate freezing temperatures of -30° C (-22° F) and not have an increase in EATR or decrease in performance after being frozen.

The ERV CORE must be able to tolerate high temperatures of +60° C (140° F) and not have an increase in EATR or decrease in performance at these elevated temperatures.

The ERV CORE must be freeze tolerant tested to 150 freeze thaw cycles from -20°C (-4°F) to +20°C (68°F) while maintaining the AHRI energy recovery effectiveness and EATR rating of less than 0.5 %.

The ERV CORE must be water washable to remove dust and contaminants.

The ERV CORE must be flame proof and comply with UL 723 with a flame spread index that shall not be over 25 and a smoke index that shall not be over 50.

The ERV CORE should have particulate filters positioned before the incoming air streams.

Accepted manufacturer: CORE Energy Recovery Solutions or approved equal, subject to compliance with requirements.

13. Standard Warranty

Schedule A
Limited Warranty
Energy Recovery Ventilator/Heat Recovery Ventilator Exchanger

Limited Warranty M-Series and X-Series Energy Recovery Ventilator/Heat Recovery Ventilator Exchanger ("ERV/HRV Exchanger") [Schedule A applies exclusively to the purchase of Energy Recovery Ventilators and Heat Recovery Ventilator Exchangers from Core and are not applicable to the purchase of other Products]

1. Core warrants to the Purchaser that for a period of five (5) years from the date of shipment of the Products, that such Products will materially conform to the Specifications and will be free from material defects in material and workmanship and the Purchaser will receive good and valid title to the Products, free and clear of all encumbrances (the "ERV/HRV Exchanger Warranty").

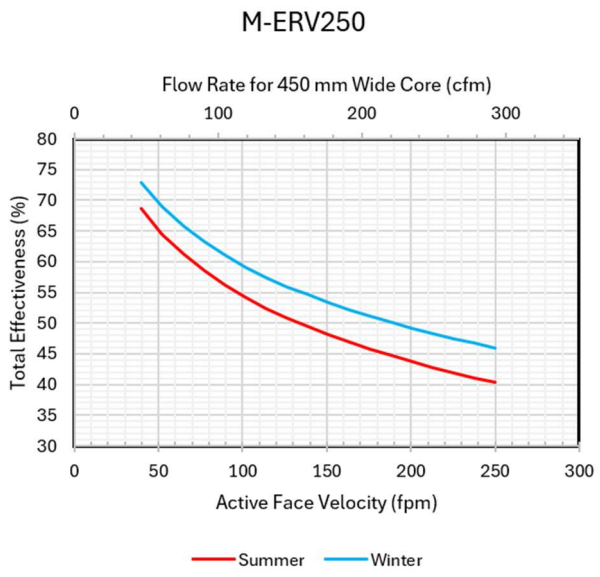
2. The ERV/HRV Exchanger Warranty does not apply to any Product that:

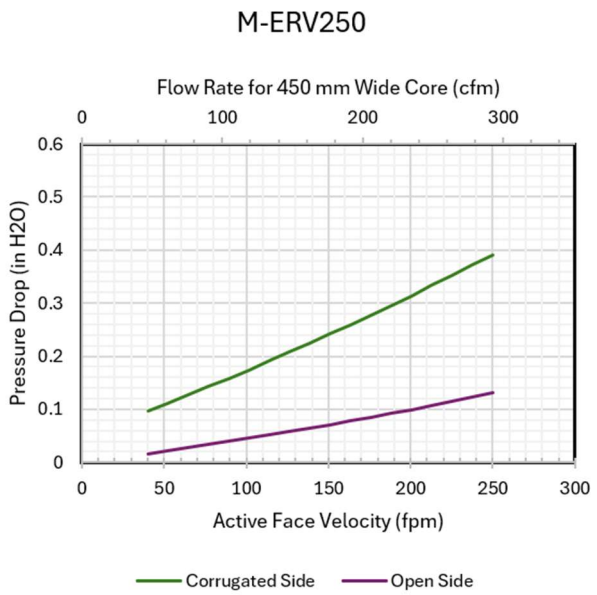
    a) has been subjected to abuse, misuse, neglect, negligence, accident, improper testing, improper installation, improper storage, improper handling, abnormal physical stress, abnormal environmental conditions, or use contrary to any instructions issued by Core;
    b) was not stored in its original undamaged packaging, was not kept indoors during storage or was not maintained within the recommended temperature range of 10°C to 30°C during storage;
    c) exhibits visible signs of damage;
    d) has been operated in a corrosive or damaging atmosphere containing any of the following:
        i. corrosive chemicals such as chlorine or fluorine;
        ii. hydrocarbons, ketones, solvents, paints, oils, greases and other organic vapours, liquids or gases;
        iii. oxidizing agents;
        iv. extended sunlight or UV exposure;
        v. acidic or basic vapours, liquids or compounds;
        vi. heat in excess of 60 degrees centigrade;
        vii. Differential pressure in excess of the recommended limit (in no event greater than 4" H2O for EMC product; or
        viii. Continuous exposure to liquid water, condensation and ice;
    e) has been reconstructed, repaired, or altered by persons other than Core or its authorized representative; or
    f) has been used with any third-party products, hardware or product that has not been previously approved in writing by Core.

For complete terms and conditions, please visit our website at www.core.life.

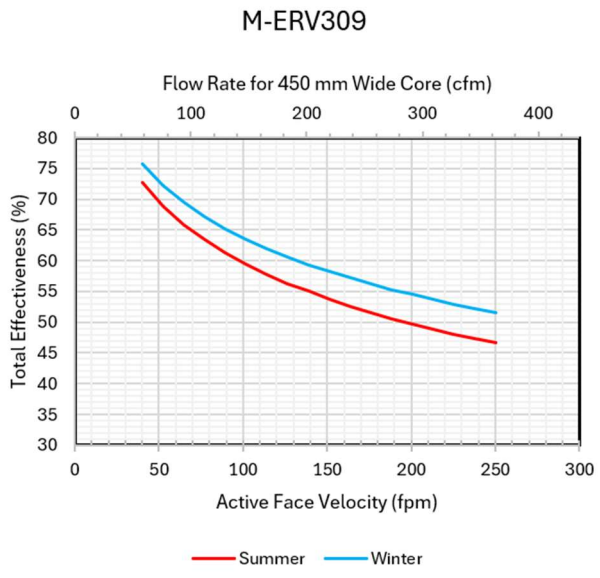
14. Appendix - Performance Chart

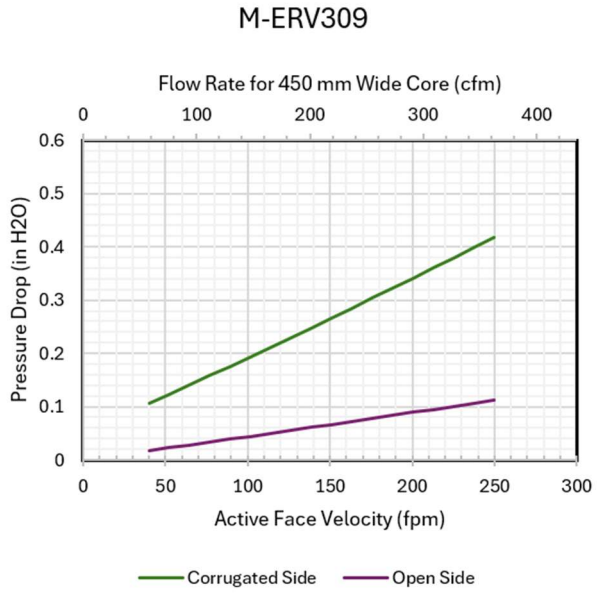
M-ERV250





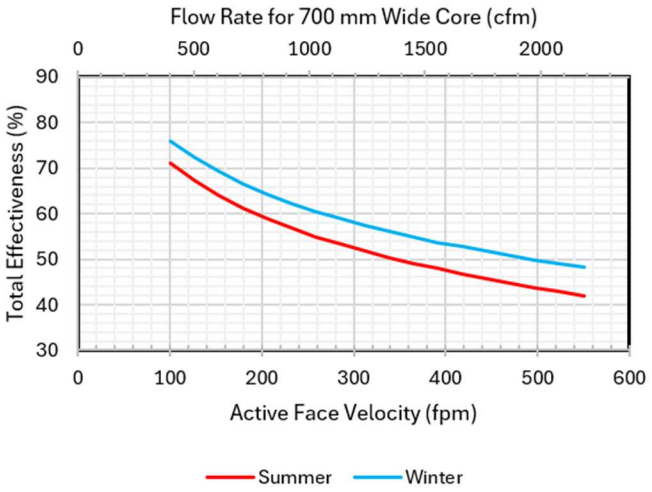
M-ERV309



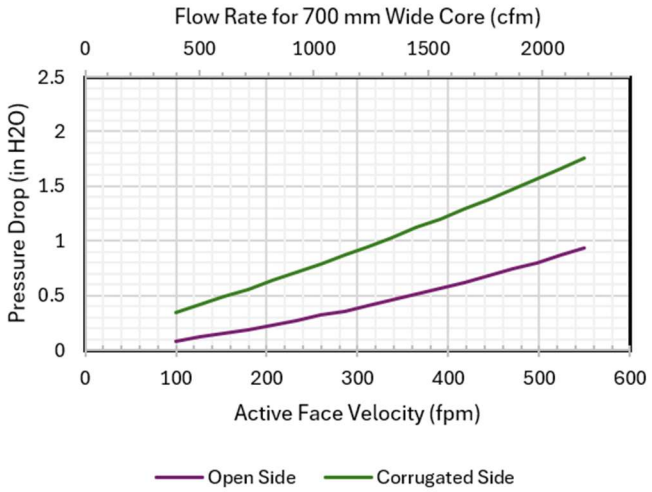


M-ERV575

M-ERV575

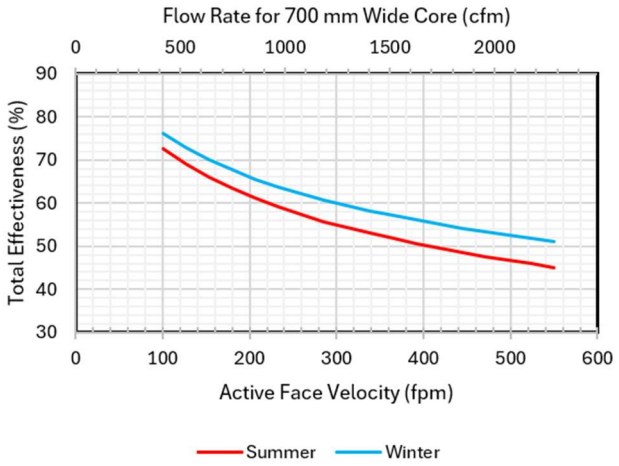


M-ERV575

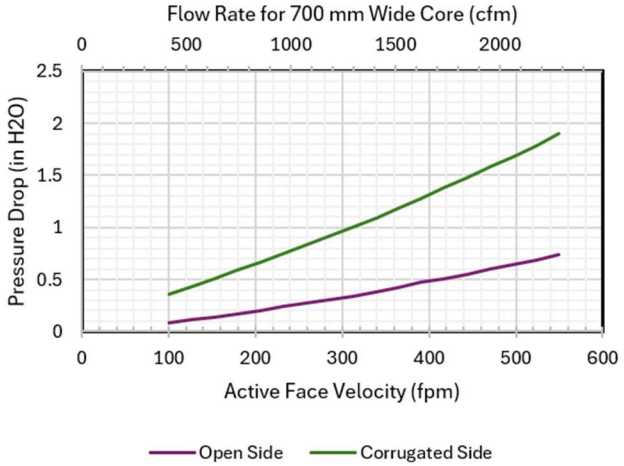


M-ERV600

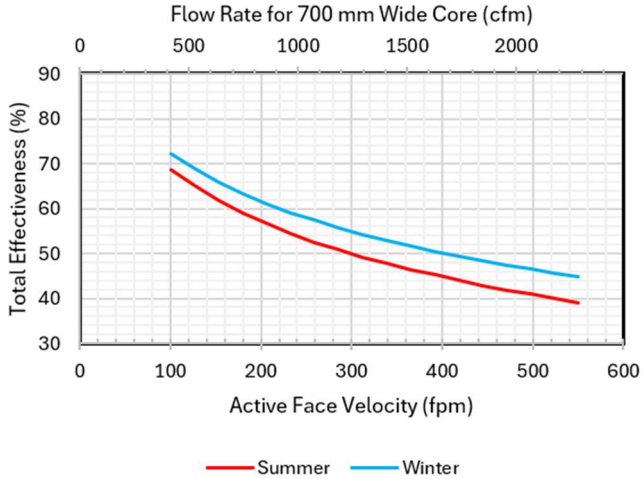
M-ERV600 - Standard



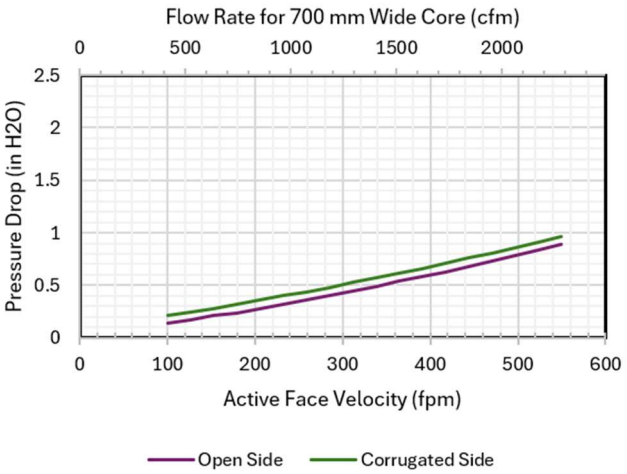
M-ERV600 - Standard



M-ERV600 - Low Pressure Drop

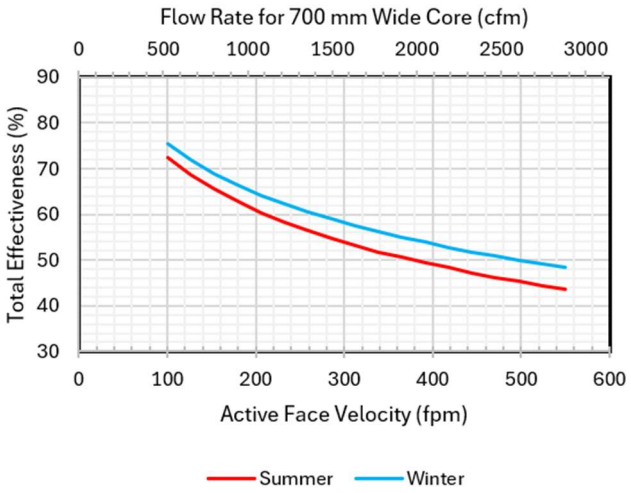


M-ERV600 - Low Pressure Drop

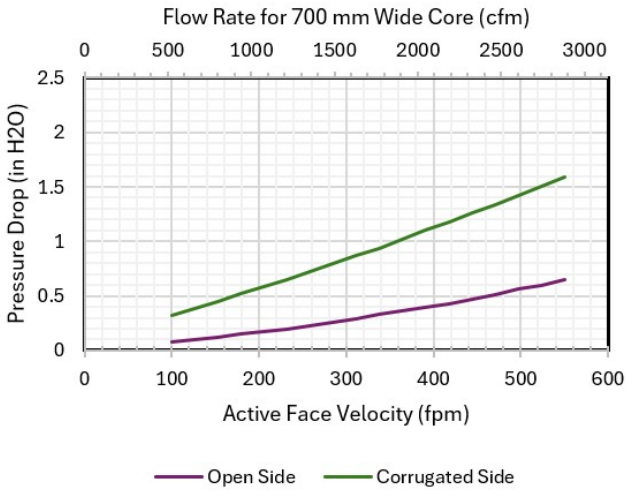


M-ERV750

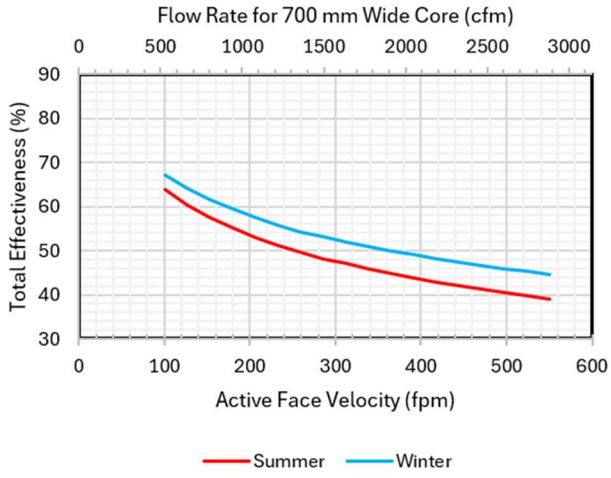
M-ERV750 - Standard



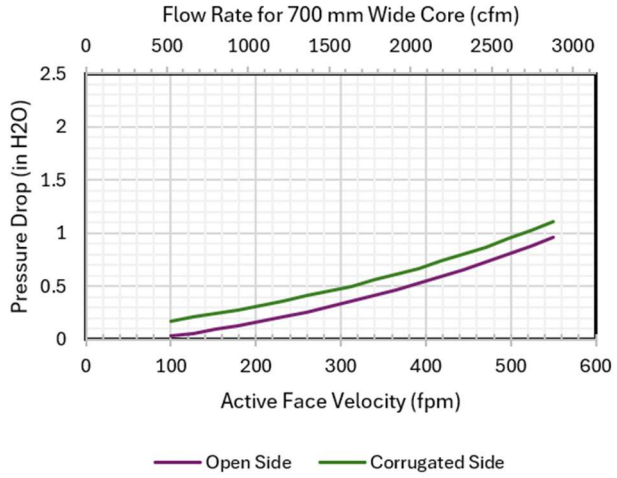
M-ERV750 - Standard



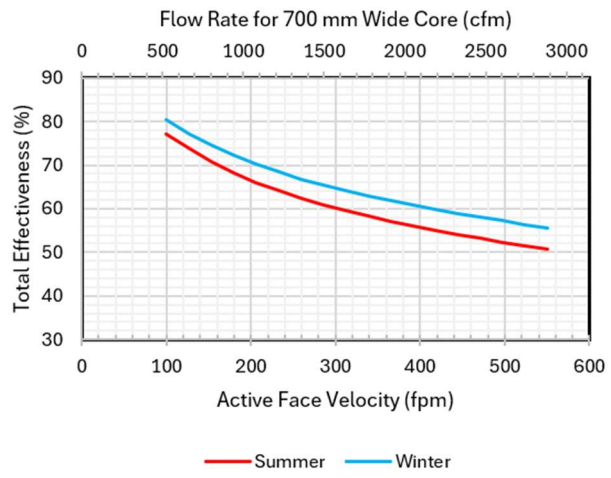
M-ERV750 - Low Pressure Drop



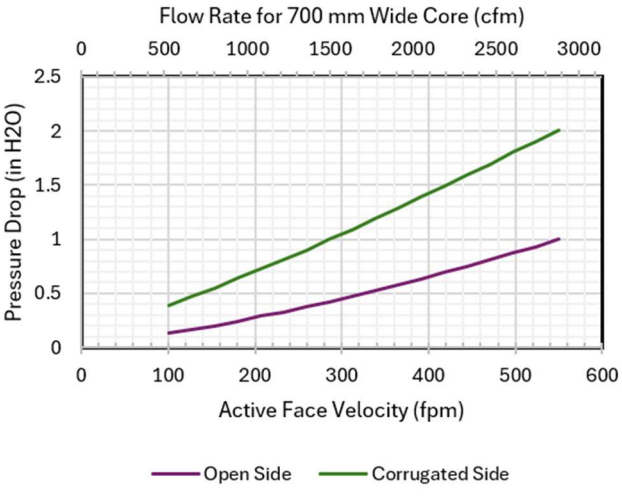
M-ERV750 - Low Pressure Drop



M-ERV750 - High Efficiency

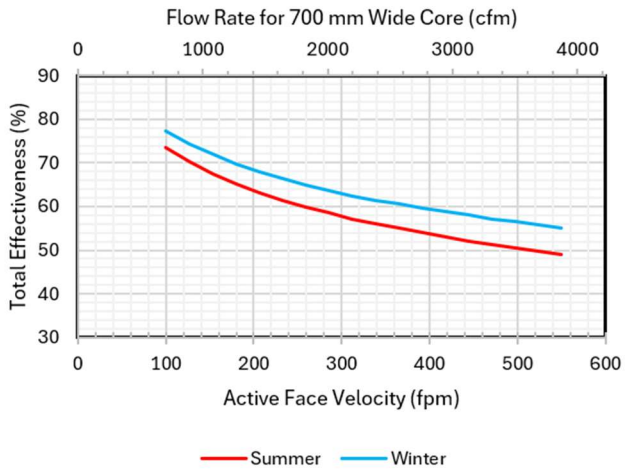


M-ERV750 - High Efficiency

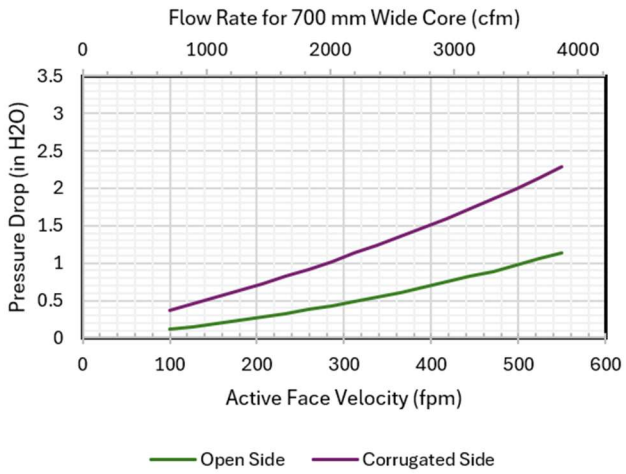


M-ERV1000

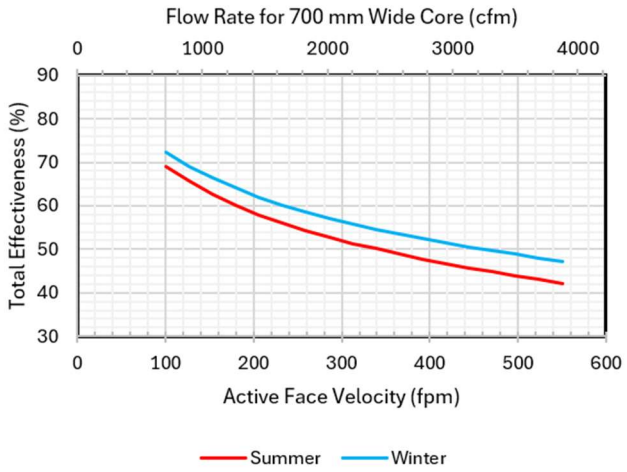
M-ERV1000 - Standard



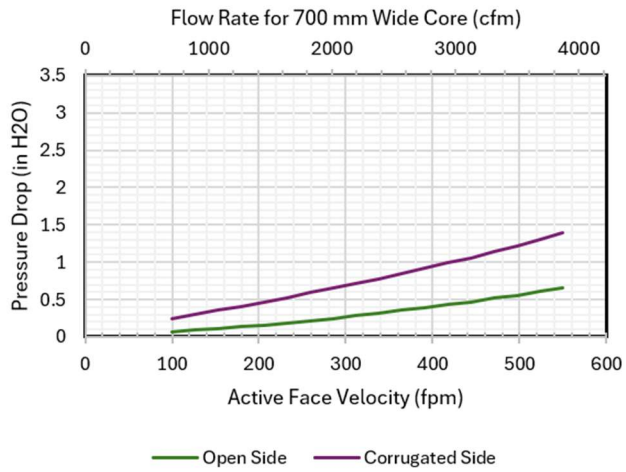
M-ERV1000 - Standard



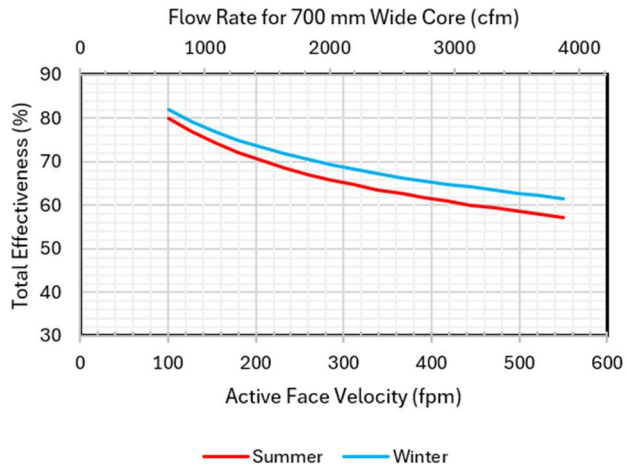
M-ERV1000 - Low Pressure Drop



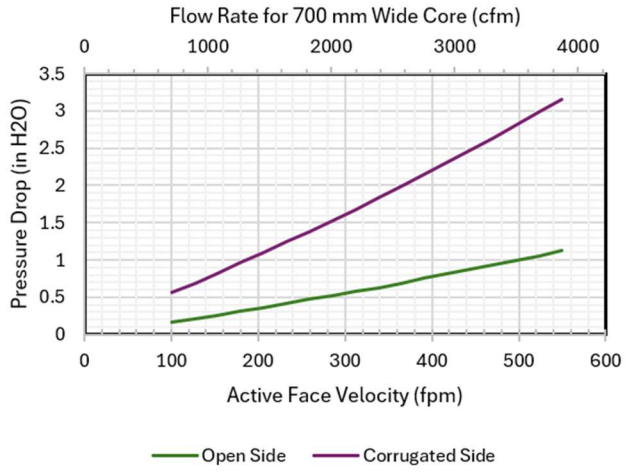
M-ERV1000 - Low Pressure Drop



M-ERV1000 - High Efficiency



M-ERV1000 - High Efficiency



improving life
at its core