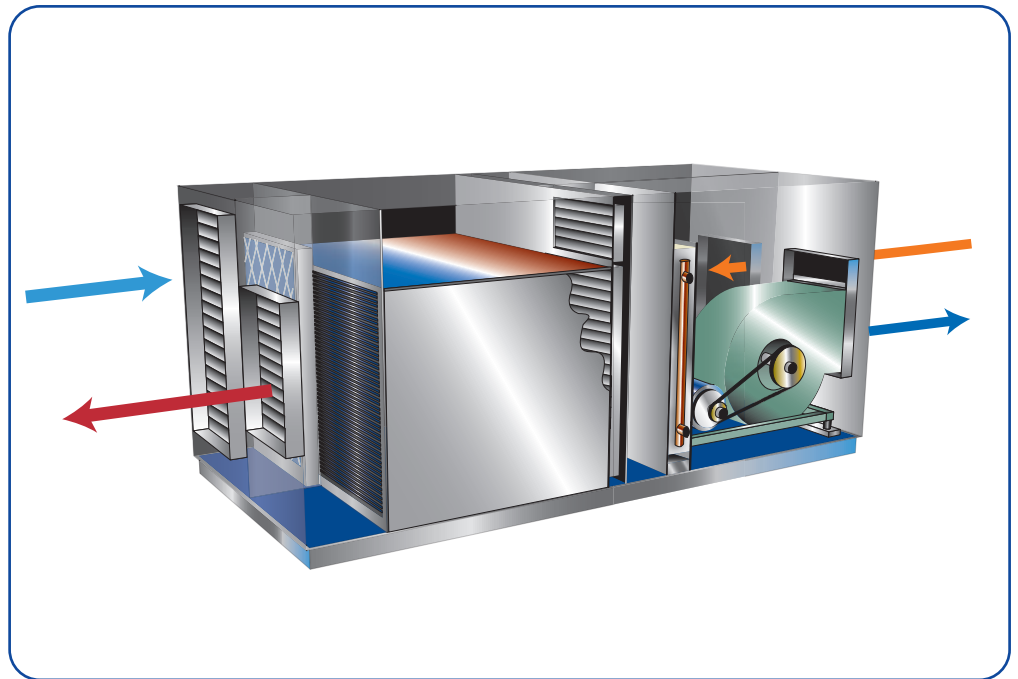


MICRO-Z[®]

High-Efficiency Energy Recovery Ventilators



MSS – Micro-Z Sensible Energy Recovery

MIC – Micro-Z Sensible Energy Recovery with
Optional Heating

MZS – Micro-Z Sensible Energy Recovery with
Optional Heating and Cooling



Micro-Z: Standard Design and Basic Options for an Economical Solution

Micro-Z is a packaged air-to-air sensible energy recovery unit designed for commercial applications. Three standard models in four or five sizes (depending upon model) are designed to handle airflows of 600 – 5,500 CFM at a nominal efficiency of 60%.

Micro-Z can efficiently deliver the fresh outdoor air that is required for ventilation. The high-efficiency Munters Z-Duct plate-type sensible heat exchanger transfers heat energy from the exhaust airstream to the supply airstream, providing significant energy savings.

Micro-Z is the most compact standard product offered in the commercial product line. A fixed design combined with basic options allows flexibility and economy.

The Model MSS Micro-Z is the basic model. It consists of a Munters Z-Duct plate-type sensible heat exchanger, supply and exhaust fans, and 2-inch filters.

The Model MIC Micro-Z can be provided with an optional hydronic or electric heating coil.

The Model MZS Micro-Z can be provided with optional hydronic or electric heating, and hydronic or direct expansion cooling coil.

Effectiveness

Micro-Z utilizes the extremely efficient Munters Z-Duct® counterflow, plate-type, sensible heat exchanger. Nominal effectiveness is 60%. If the outside air is 0°F, the return air from the space is 70°F and the relative humidity is 30%, then the 0°F outside air is heated to 42°F supply air temperature. No supplemental heating is needed to achieve this condition.

Simple Payback

When comparing the cost of conditioning a like amount of fresh, outdoor air with a conventional make-up air unit, Micro-Z will pay for itself in energy savings!

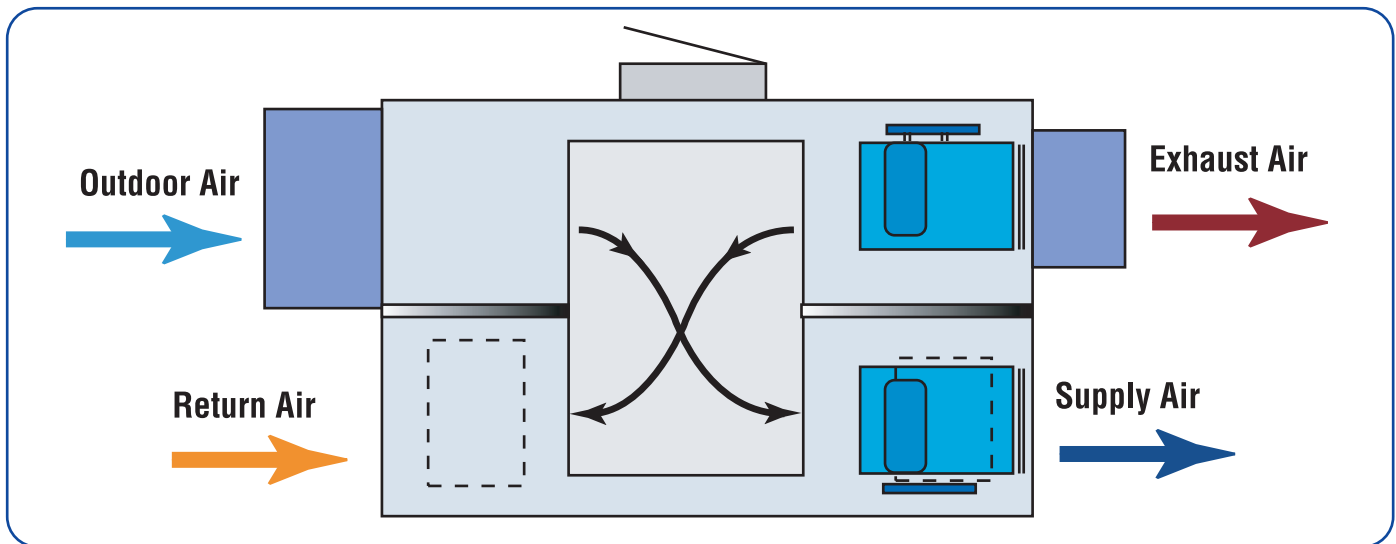
Given the average conditions below, a Micro-Z 3070 has a simple payback of less than 2 years.

Hrs. of winter operation	4827
Degree days	4211
Avg. winter temperature	41.3
Natural gas fuel cost	\$8/mm BTU
Electrical cost	0.08 KWH

IAQ and Energy Responsibility

The use of Micro-Z can enhance indoor air quality and conserve precious natural resources. Its use can help achieve economical attainment of ASHRAE 64.1 recommendations for outside air, and can exceed ASHRAE 90.1 recommendations for energy efficiency.

Micro-Z Model MSS



Model	CFM	Length	Width	Height	Weight*
MSS-015	600-1,500	92.5	58	38	1,530
MSS-025	1,500-2,500	92.5	58	46	1,720
MSS-035	2,500-3,500	92.5	58	52	1,930
MSS-045	3,500-4,500	98.5	72	58	2,220
MSS-055	4,500-5,500	117	80	70	2,490

* Base weight with no options

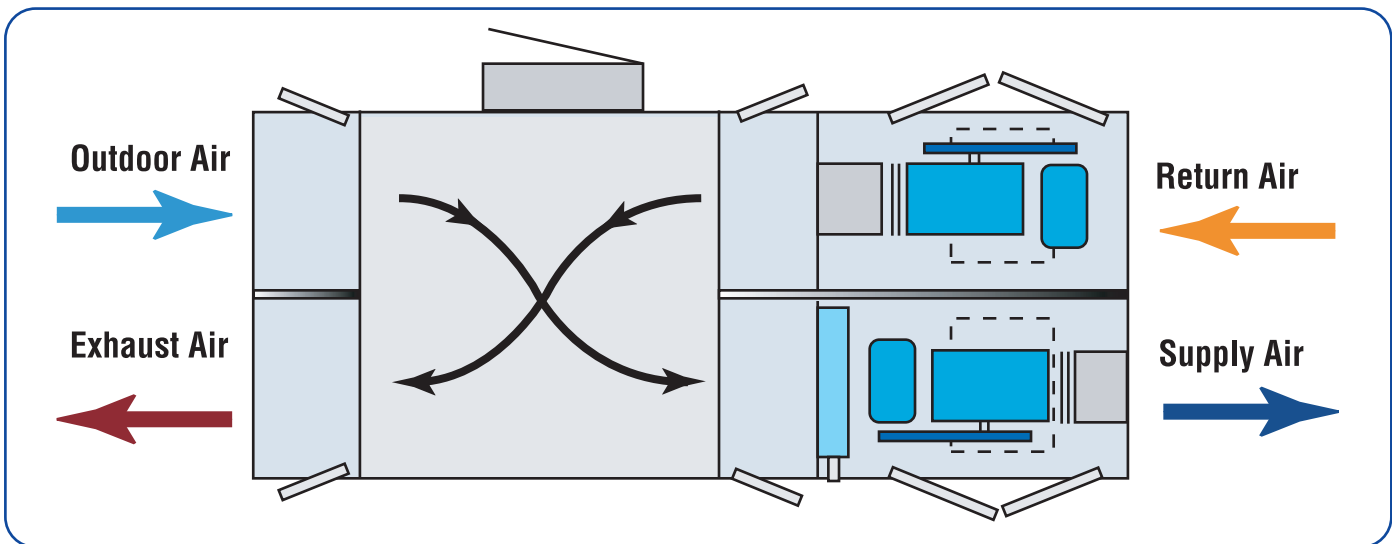
Standard Features

- Z-Duct aluminum core, plate-type heat exchanger
- Double wall construction
- Belt-driven, forward-curved centrifugal fans
- High-efficiency, ODP, single or three-phase motors
- Insulated galvanized steel housing
- Condensate drains, side or bottom
- Quick release access panels
- Unit-mounted electrical panel with motor starters, fused control transformer (if required), and service switch
- Spring isolated fan chassis
- 2" supply filters (30% pleated)
- Fan flexible connections

Options

- **Weatherization package**
- **Roof curb**
- **Frost control**
 - Traversing defrost
 - Face and bypass
- **Dampers** (furnished with or without actuators)
 - Heat exchanger face and bypass
 - Recirculation
 - Outside air shut-off
 - Exhaust air shut-off
 - Exhaust air gravity backdraft
- **Premium efficiency motors**
- **Exhaust filters**
- **Temperature and humidity controls**
 - Electronic digital control package
- **Corrosion-resistant coatings**
- **Hinged access doors**
- **Painted exterior**

Micro-Z Model MIC



Model	CFM	Length	Width	Height	Weight*
MIC-1370	600-1,200	108	42.5	27.5	1,240
MIC-2070	1,050-2,100	108	42.5	35	1,390
MIC-3070	1,500-3,000	108	42.5	47.5	1,620
MIC-4070	2,000-4,400	108	66.5	47.5	2,120

* Base weight with no options

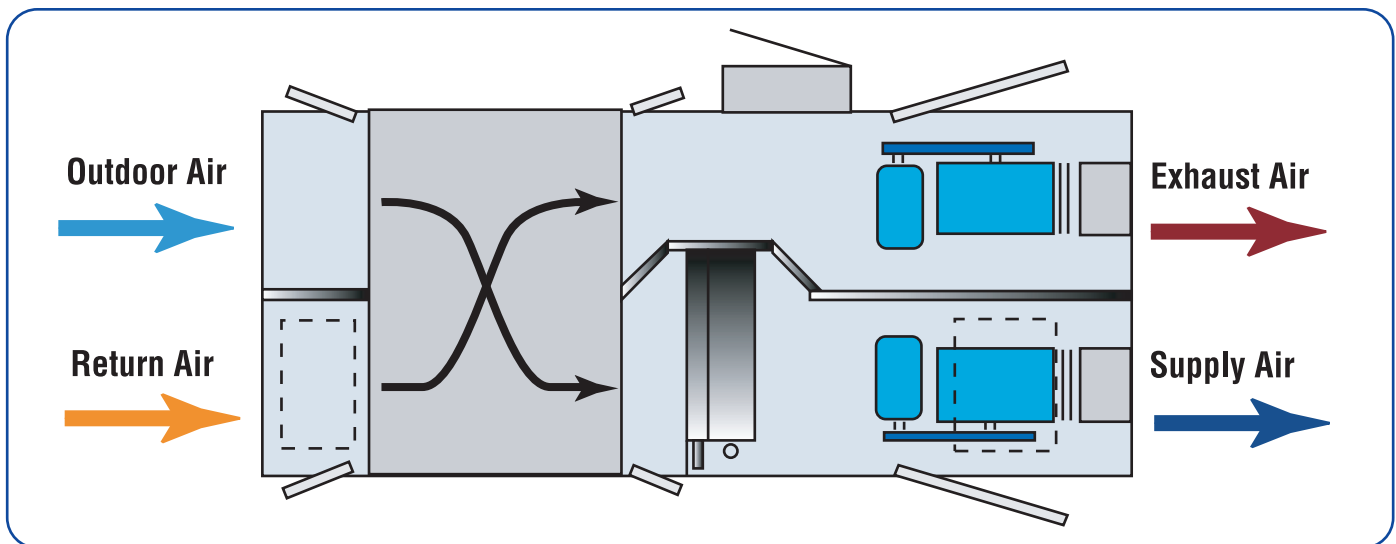
Standard Features

- Z-Duct aluminum core, plate-type heat exchanger
- 1" neoprene coated insulation
- Belt-driven, forward-curved centrifugal fans
- High-efficiency, ODP, single or three-phase motors
- Insulated galvanized steel housing
- Condensate drains, side or bottom
- Quick release access panels
- Unit-mounted electrical panel with motor starters, fused control transformer (if required), and service switch
- Spring isolated fan chassis
- 2" supply filters (30% pleated)
- Fan flexible connections

Options

- **Weatherization package**
- **Roof curb**
- **Heating**
Hydronic or Electric
- **Frost Control**
Traversing defrost
Face and bypass
- **Dampers** (furnished with or without actuators)
Heat exchanger face and bypass
Recirculation
Outside air shut-off
Exhaust air shut-off
Exhaust air gravity backdraft
- **Premium efficiency motors**
- **Exhaust filters**
- **Temperature and humidity controls**
Electronic digital control package
- **Corrosion-resistant coatings**
- **Hinged access doors**
- **Painted exterior**

Micro-Z Model MZS



Model	CFM	Length	Width	Height	Weight*
MZS-015	600-1,500	139.5	58	38	1,970
MZS-025	1,500-2,500	139.5	58	46	2,175
MZS-035	2,500-3,500	139.5	58	52	2,370
MZS-045	3,500-4,500	139.5	72	58	2,720
MZS-055	4,500-5,500	168	80	70	3,110

* Base weight with no options

Standard Features

- Z-Duct aluminum core, plate-type heat exchanger
- Double wall construction
- Belt-driven, forward-curved centrifugal fans
- High-efficiency, ODP, single or three-phase motors
- Insulated galvanized steel housing
- Condensate drains, side or bottom
- Quick release access panels
- Unit-mounted electrical panel with motor starters, fused control transformer (if required), and service switch
- Spring isolated fan chassis
- 2" supply filters (30% pleated)
- Fan flexible connections

Options

- **Weatherization package**
- **Roof curb**
- **Heating**
Hydronic or electric
- **Cooling**
Hydronic or direct expansion
- **Frost control**
Traversing defrost
Face and bypass
- **Dampers** (furnished with or without actuators)
Heat exchanger face and bypass
Recirculation
Outside air shut-off
Exhaust air shut-off
Exhaust air gravity backdraft
- **Premium efficiency motors**
- **Exhaust filters**
- **Temperature and humidity controls**
Electronic digital control package
- **Corrosion-resistant coatings**
- **Hinged access doors**
- **Painted exterior**

Easy Installation Reduces Labor Costs

Micro-Z ventilators are compact and easy to install and maintain.

- Micro-Z is factory-assembled, tested, and shipped ready to install, so there's no complicated, expensive installation process.
- Heavy-duty lifting lugs for safe and easy installation.
- Self-flashing unit base frame for easy, water-tight roof curb mounting.
- Shipped with your choice of end or bottom duct connections to fit your specific needs.
- Single-point electrical connection with optional disconnect switch.
- Easy-to-open access panels facilitate unit maintenance.

Durability That Stands Up to the Elements

Each component of the Micro-Z is designed for a long operating life.

- Formed, galvanized-steel frame provides strength while minimizing weight.
- Heavy-gauge galvanized-steel casing will withstand the elements.
- Unique intake hood design keeps out rain.
- Heat exchangers have no moving parts and require no maintenance.
- Closed-cell polyurethane insulation under floor.
- Gasketed access panels keep out rain and snow.

Ventilation for Building Occupants

The Micro-Z line of heat recovery ventilators helps keep building occupants healthier by providing plenty of fresh outdoor air to dilute and flush out volatile organic compounds, carbon dioxide, and other inside contaminants.

- Micro-Z can provide a three-fold attack against air pollutants by ventilating, filtering, and regulating air pressure.
- Micro-Z includes a recirculation option for unoccupied mode heating and cooling.
- Micro-Z heat recovery technology allows heating and cooling systems to run more efficiently and provides a healthier climate for the building's occupants all year.
- Micro-Z offers options for economizer cooling to reduce auxiliary cooling costs during favorable spring and fall conditions.

Controlling Your Climate

Based on the model and options selected, Munters' knowledgeable engineers will choose the right controls to provide easy installation, operation, and maintenance of your Micro-Z.

- Factory mounted controls provide proven, reliable operation.
- Micro-Z offers optional controls that are fully compatible with open protocols to allow full integration with existing building-wide control systems.
- Many control options are available, from electro-mechanical to full DDC.

Munters' Commitment to Excellence

Munters' team of dedicated sales engineers is ready to guide you through each step of your ventilation project.

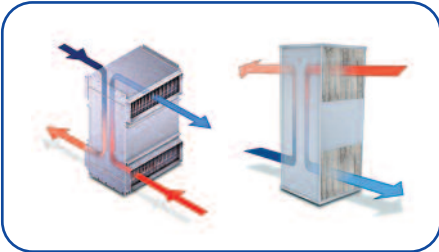
- Munters' sales group is 100% staffed by experienced engineers, ready to answer your technical questions.
- Our engineers will help you determine your ventilation and dehumidification needs.
- Our engineers can provide you with a customized payback analysis, so you can see how quickly your new Micro-Z will pay for itself.
- Munters' engineers will ensure that the Micro-Z you purchase is configured for your needs.

We Strive for Excellence --- Our Customers Deserve Nothing Less

For over 30 years, Munters has led the air conditioning industry, providing premium-quality energy-recovery, dehumidification, and precision air conditioning equipment. Munters has earned industry recognition and customer loyalty by providing innovative, pre-engineered, fully tested solutions at an economical cost. At Des Champs, our reputation for excellence is built upon our comprehensive service package: quality products, superior training, and an unprecedented extended warranty. When you purchase a product from Munters, you are assured of years of efficient, trouble-free performance.

Other Innovative Products by Munters

Quality Heat Exchangers for Quality Units



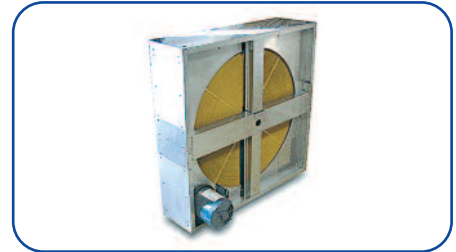
Z-Duct® & Z-Duct® SPL

- Sensible and or latent energy recovery
- High efficiency
- Minimal cross contamination



Standard Heat Pipe

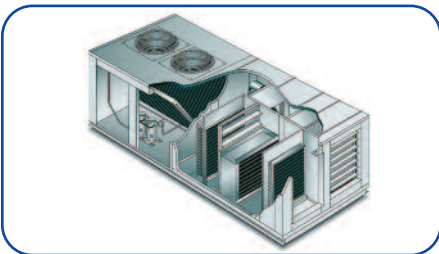
- Integral fin tubes
- Compact Design
- Size and performance flexibility



Standard Wheel

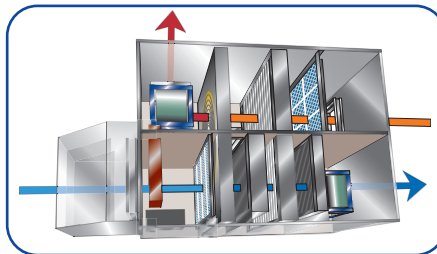
- Sensible or total air-to-air energy recovery exchangers
- Variety of sizes to meet your requirements

Energy Recovery Solutions



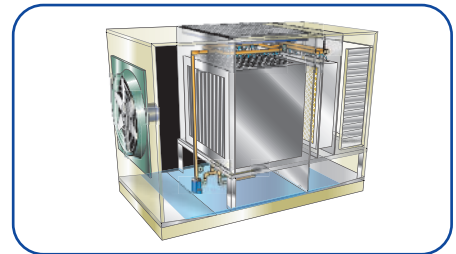
MOACS®

- Six pre-engineered models for efficient conditioning of outdoor air including heat recovery and humidity control options.



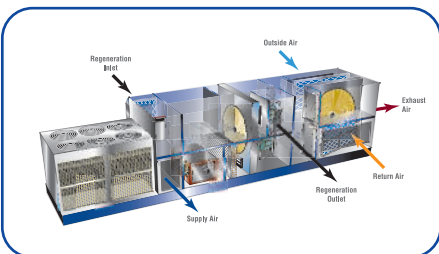
CompleVent®

- Economical, flexible, advanced performance ventilation and dehumidification for healthy IAQ



OASIS™ & EPX™

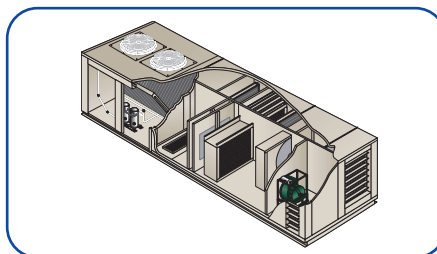
- Up to 85% wet bulb depression effectiveness indirect evaporative cooling.
- 90% direct evaporative cooling efficiency



Desi-Wringer™ Desiccant Dehumidification

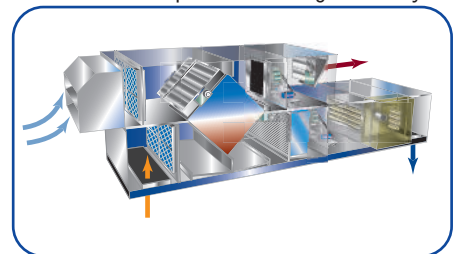
When S/A dewpoint below 40°F is required
Available Regeneration Heat Sources:

- Electric
- Indirect-Fired Gas
- Direct-Fired Gas
- Steam



Wringer® & Wringer® Plus

- Designed to dehumidify 100% outdoor air down to 40°F dewpoint.
- Heat exchanger precooling and reheat
- Total or sensible energy recovery



X-Pack™

- X-Pack energy recovery technology extracts heating or cooling energy from the outgoing exhaust air and transfers that energy to the incoming fresh air.