



**PENNBARRY™**

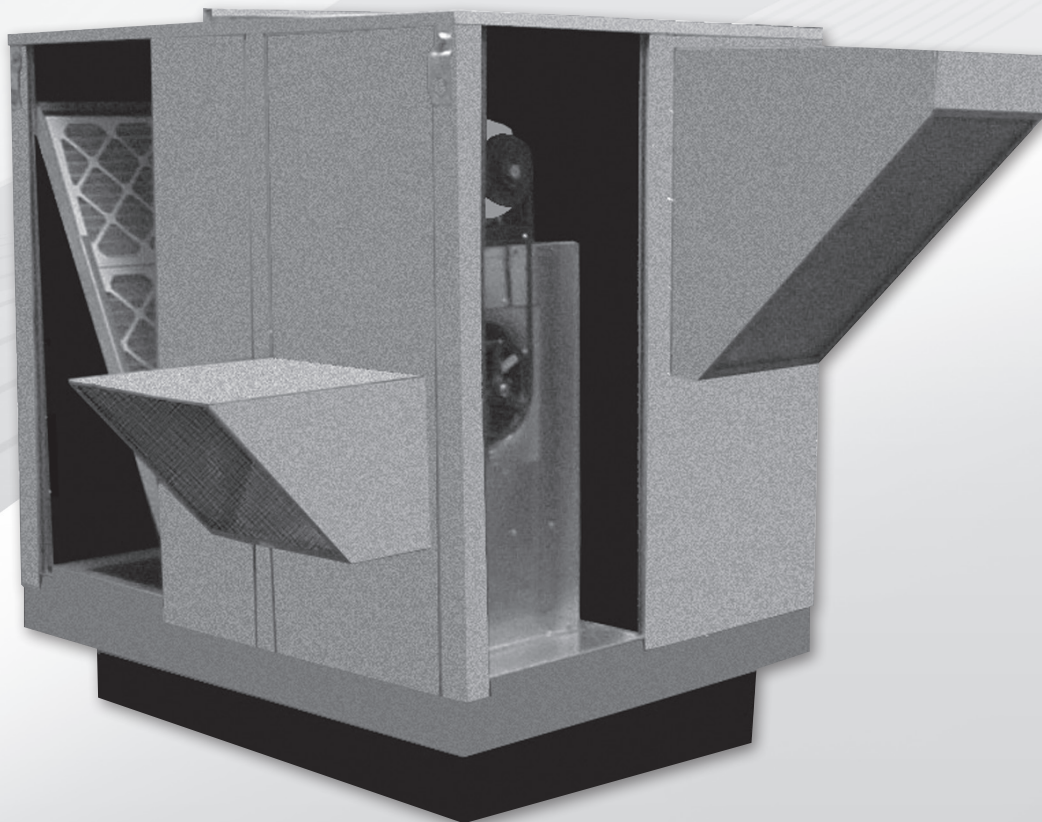
*Moving Your Way*

# STANDARD-SERIES

Energy Recovery Units

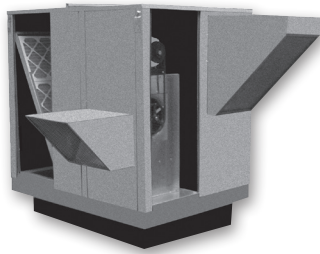
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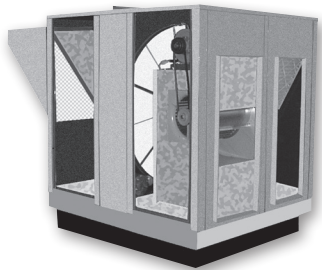


**BULLETIN ERV14**

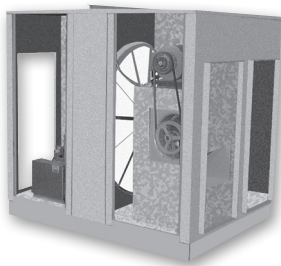
D-Series



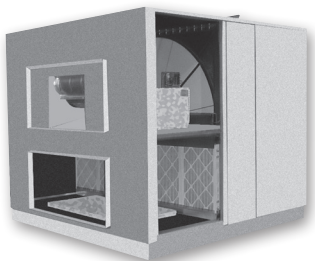
S-Series



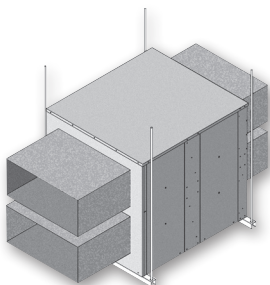
M-Series



O-Series



N-Series



## INTRODUCTION

### Energy Recover Ventilators

Energy Recovery Ventilators (ERV) are used to recover exhaust air energy and reintroduce it into the conditioned space. The recovery wheel provides sensible and latent energy exchange between the entering and exhaust air streams of a building. This allows a substantial amount of the energy which is normally lost in the exhaust air stream to be returned into the entering air. Ideal applications are areas that have cold or hot temperatures with high occupancy loads or high ventilation requirements. Areas that have high humidity or very low humidity (recover exhaust air humidity from buildings that have humidifiers) are good applications. ERV's also reduce the design loads due to outside air, which can mean downsizing the air conditioning equipment. Application software is available to calculate the load reductions and provide the energy and dollar savings for all areas of the United States and Canada.

The ERV enthalpy wheel contains parallel layers of a polymeric material that are impregnated with silica gel (desiccant). The wheel is located in the entering (intake) air and exhaust air streams of the ventilation equipment. As the wheel rotates through each air stream, the wheel surface captures sensible and latent energy. In the heating mode, the wheel rotates to provide a constant transfer of heat from the exhaust air stream to the colder intake air stream. During the cooling season, the process is reversed. For applications that do not need to recover energy during mild outside weather conditions, an option is provided to stop the wheel from rotating, thereby providing cooling without energy recovery.

### Series Overview

#### D-Series (Outdoor)

Stand-alone for downward discharge duct arrangements in rooftop applications.

#### ERV S-Series (Outdoor)

Stand-alone for outdoor, side-by-side duct arrangements.

#### ERV M-Series (Indoor)

Stand-alone for indoor, side-by-side applications.

#### ERV O-Series (Outdoor)

Stand-alone for outdoor, over-and-under duct arrangements.

#### ERV N-Series (Indoor)

Stand-alone for indoor, over-and-under applications.

## CERTIFICATIONS

### AHRI Standard 1060-2005

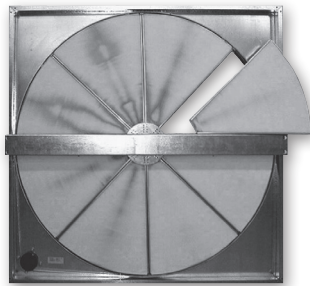
The Air-Conditioning and Refrigeration Institute (ARI) issued Standard 1060-2005 to certify air-to-air energy recovery ventilators. This standard deals specifically with the ratings of the Energy Recovery Wheel that is incorporated into the ERV. All of the energy recovery units have an ARI certified wheel. The data shown in the specification charts are the ARI certified data for the wheel. Actual performance may vary.

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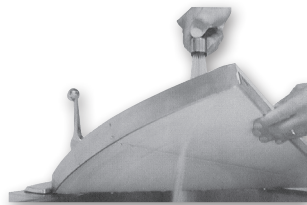
## FEATURES & BENEFITS

### Enthalpy Wheel

The heart of the Unitary Energy Recovery Ventilator is the Energy Recovery Wheel (defined by ARI as a rotary heat exchanger). The wheel has a patented design of parallel layers of wrapped polymeric material that is impregnated with a silica gel (desiccant). This unique design makes it the only truly cleanable wheel on the market today. All wheels are slide out cassettes, and all wheels have pie segments that are removable for cleaning.



Segmented Enthalpy Wheel



Clean the entire wheel, or a "pie" segment.

### Key Terminology

#### Effectiveness

The measured energy recovery effectiveness not adjusted to account for that portion of the psychrometric change in the leaving supply air (Station 2) that is the result of leakage of entering exhaust air (Station 3) rather than exchange of heat or moisture between the air streams.

#### Net Effectiveness

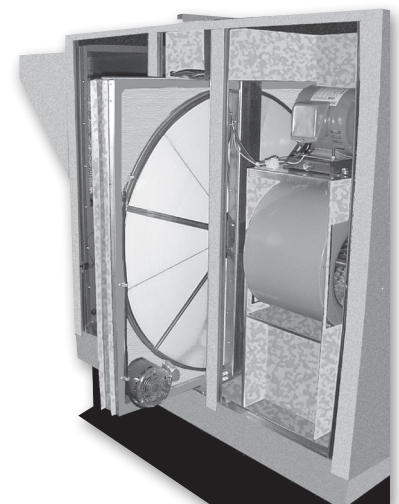
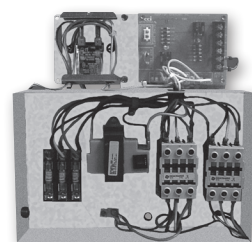
The measured recovery effectiveness adjusted to account for that portion of the psychrometric change in the leaving supply air (Station 2) that is the result of leakage of the entering exhaust air (Station 3) rather than exchange of heat or moisture between the air streams.

#### Exhaust Air Transfer Ratio (EATR)

The tracer gas concentration difference between the leaving supply air (Station 2) and entering supply (outdoor) air stream (Station 1) divided by the tracer gas concentration in the entering exhaust (return) air (Station 3) at the 100% rated air-flow, expressed as a percentage.

#### Outdoor Air Correction Factor (OACF)

The entering supply (outdoor) airflow (Station 1) divided by the measured (gross) leaving supply airflow (Station 2).



All enthalpy wheels slide out for ease of cleaning.

Units are supplied with filters before the enthalpy wheel as well as fully tested control systems and blower assemblies.

## OPTIONS & ACCESSORIES

### Roof Mounting Frame

A 14 or 24 inch (355 or 610 mm) roof curb is required to match supply and exhaust openings of the ERV with the rooftop ERV units. PennBarry provides a full line of roof curbs to match the specified unit.

### Low Ambient Control Kit

Prevents frost formation on energy wheel heat transfer surfaces by terminating the intake blower operation when discharge air temperature falls below a field selectable temperature setting. Intake blower operation resumes operation after temperature rises above the adjustable temperature differential.

### Pressure Sensor

Measurement device on the ERV to determine airflow across the Enthalpy Wheel. The control test ports are on the Intake portion of the ERV, but can easily be moved to the Exhaust portion.

### Motorized Intake Air Damper

Damper mounts in the outdoor air intake hood. It opens when the ERV is energized and closes when de-energized.

### Stop-Start-Jog

Function that rotates the enthalpy wheel on a preset timer to prevent contamination of the wheel during economizer operation.

### Rotation Sensor

A Control is used to provide a method of a 24 volt signal for notification should the ERV wheel not rotate during normal operation. This includes bad motors, broken belts, etc.

### Disconnect with GFI Plug

The ERV is provided with a factory mounted disconnect switch. The option comes complete with a factory mounted GFI plug. The plug must be field wired.

### VFD

Variable Frequency Drives are provided for both the intake and exhaust blowers. This allows the system to be perfectly balanced to the building requirements.



## D-SERIES

“D” Series energy recovery ventilators are utilized in applications that require a rooftop installation. These units may be installed as a stand-alone unit with a separate and distinct duct system from other air conditioning equipment. In many applications the supply (intake) air duct is connected to the return air duct of an air conditioning system (or multiple systems). By doing this the enthalpy wheel is able to provide preconditioned outside air to the air conditioning system(s).

### Application & Construction

- Dry energy transfer. Moisture in supply (intake) air stream is transferred to exhaust air stream in a vapor state, eliminating condensate plumbing in the ventilator.
- Units can be used in rooftop applications.
- Reduces cooling load at design temperatures up to 4 tons per 1000 cfm of outside air.
- Reduces heating load up to 12,000 Btuh per 400 cfm of outside air.
- Enthalpy wheel made of polymeric material with silica gel impregnated into the material.
- Centrifugal blowers (both intake and exhaust) for high static capability and low sound levels.
- Heavy gauge galvanized steel cabinets.
- Separate fused power supply.
- Insulated cabinet.
- Roof curbs have duct supports.

### Operation & Maintenance

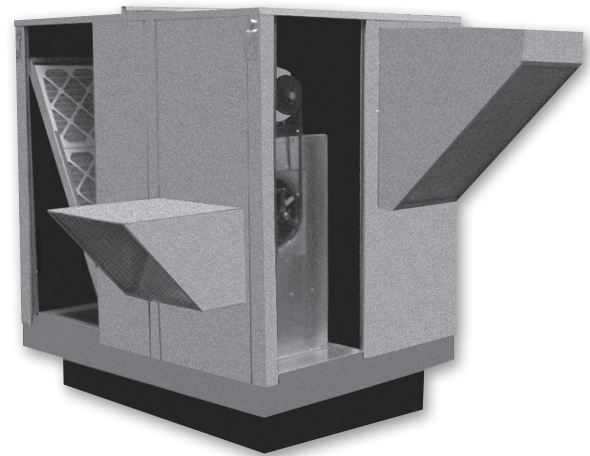
- Internal enthalpy wheel made of polymeric material with silica gel impregnated into the material. The enthalpy wheel has a five year limited warranty.
- Internal enthalpy wheels are easily cleanable. All wheels are segmented into easily removable pie segments.
- All wheels are designed to easily slide in and out of the ERV for servicing.
- Continuous operation down to 10° F (-12° C) without defrost at indoor relative humidity up to 40%. For temperatures below 10° F (-12° C), Optional Low Ambient Control Kit is required. Kit includes temperature sensor to shutoff power to ERV before frost build up can occur on recovery wheel.

### Certification

- ARI 1060-2000 certified internal enthalpy wheel is provided.

### Filter

- Unit is supplied with an aluminum mist eliminator filter for the intake air and a 2” pleated filter for the exhaust air.



### Blower Assembly

- Blowers are housed within a sheet metal frame to insure reliable performance.
- Blower motor is mounted on an adjustable motor mount that provides an easy method of adjusting the belts.
- Blowers are equipped with adjustable sheave pulleys.
- Blower pulley and the motor pulley are aligned by a state of the art “laser” alignment system.
- All blowers are shipped with low-speed belts installed. The units are shipped with the specified belt kit for field installation for medium-speed and high-speed.

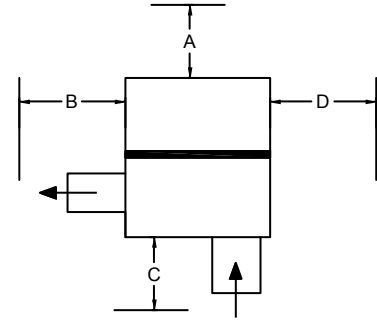
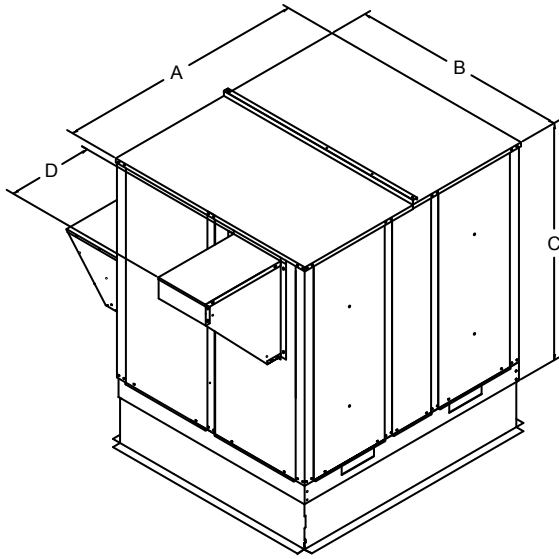
### Control System

- Control enclosures provided with internal fuses.
- Electronic control board.
- Fully wired.
- Independently fused.
- Color coded wires.
- Provides own 24 volt circuit.
- All options are “plug-in” modules.

### Optional Accessories

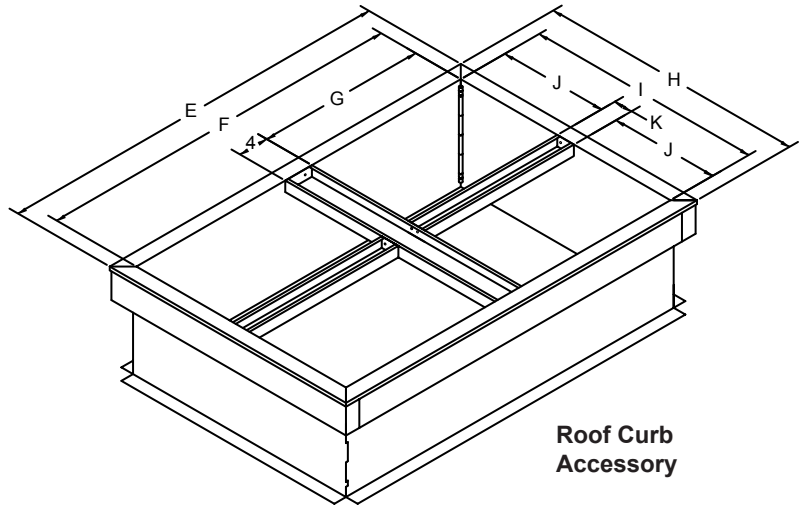
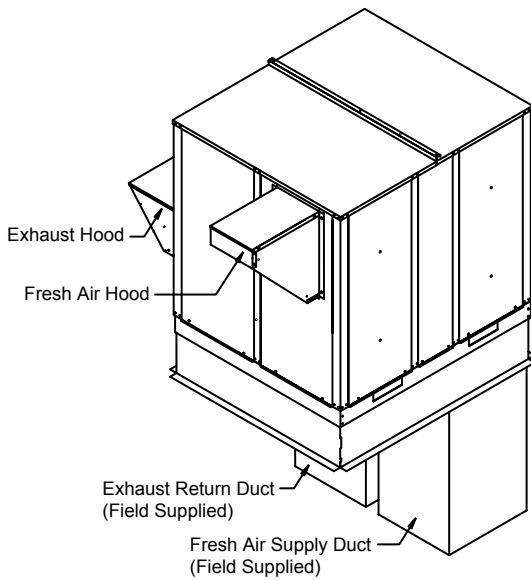
- Roof Mounting Frame (Curb)
- Low Ambient Control Kit
- Pressure Sensor
- Motorized Intake Air Damper
- Stop-Start-Jog
- Rotation Sensor
- Disconnect with GFI Plug
- VFD

D-SERIES | DIMENSIONAL DATA



Clearances

Size	A	B	C	D
D11	36	60	48	36
D20	36	60	60	36
D28	36	60	60	48
D36	36	60	60	48
D46	36	60	72	60
D62	36	60	72	60



Roof Curb Accessory

Size	Min CFM	Max CFM	Duct Size (G x J)	ERV				Roof Curb						
				A	B	C	D	E	F	G	H	I	J	K
D11	300	1100	17.00 x 11.38	44.75	32.13	33.50	14.38	43.00	39.00	17.50	30.25	26.25	11.88	2.50
D20	1200	2000	21.88 x 14.00	54.36	37.25	37.50	17.50	52.75	48.75	22.38	35.50	31.50	14.50	2.50
D28	1200	2800	20.25 x 17.00	52.25	42.63	43.56	25.50	49.50	45.50	20.75	41.00	37.00	17.50	2.00
D36	2000	3600	23.38 x 17.38	60.00	46.69	57.37	25.50	55.75	51.75	23.88	41.81	37.81	17.91	2.00
D46	3000	4600	23.38 x 20.38	60.00	52.69	57.37	28.06	55.75	51.75	23.88	47.81	43.81	20.91	2.00
D62	4600	6200	29.38 x 30.00	72.00	70.88	63.63	37.75	67.75	63.75	29.88	66.00	62.00	30.50	2.00

Dimensions are labeled in inches.

D-SERIES | DIMENSIONAL & ELECTRICAL DATA

Filter Sizes

Size	Return Filter				Intake Filter			
	Qty	Width	Height	Type	Qty	Width	Height	Type
D11	1	14	20	2" PLT	1	16.25	10.375	1" ME
D20	2	16	20		1	12.5	20	
D28	2	20	10		1	14.75	32.25	
D36	3	16	20		1	16.5	32.25	
D46	2	24	24		1	20	36	
D62	5	14	20		1/1	20/20	36/12.5	

PLT is Pleated Filter. ME is Mist Eliminator Filter.

Electrical Data

	Phase	300-1100 CFM				1200-2000 CFM			1200-2800 CFM			2000-3600 CFM			3000-4600 CFM			4600-6200 CFM		
		1	3			3			3			3			3					
		208/230v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v
Fresh Air Blower	Motor (hp)	1.5				2			3			3			5			5		
	Wheel Size - DxW (in)	9 x 4				9 x 9			10 x 10			12 x 9			12 x 12			15 x 15		
	Motor Speed (rpm)	1725				1725			1725			1725			1725			1725		
	FLA	9.1	5.6	2.8	2.0	6.0	2.6	2.4	9.4	4.3	3.2	9.4	4.3	3.2	14.0	7.0	5.1	14.0	7.0	5.1
	Service Factor	1.15				1.15			1.15			1.15			1.15			1.15		
Exhaust Air Blower	Motor (hp) Stationary	1.5				2			3			3			5			5		
	Wheel Size - DxW (in)	9 x 4				9 x 9			10 x 10			12 x 9			12 x 12			15 x 15		
	Motor Speed (rpm)	1725				1725			1725			1725			1725			1725		
	FLA (Stationary)	9.1	5.6	2.8	2.0	6.0	2.6	2.4	9.4	4.3	3.2	9.4	4.3	3.2	14.0	7.0	5.1	14.0	7.0	5.1
	Service Factor	1.15				1.15			1.15			1.15			1.15			1.15		
Enthalpy Wheel Data	Depth (in)	3				3			3			3			3			3		
	Diameter (in)	25.3				30.346			37.759			41.825			46.776			52.026		
	Construction	One-Piece				One-Piece			Segmented			Segmented			Segmented			Segmented		
	Potential Volts	208 - 230				208 - 230			200 / 208 - 230			200 / 208 - 230			200 / 208 - 230			200 / 208 - 230		
	Motor Speed (rpm)	1050				1050			825			1075			1075			1075		
	Motor (hp) 1 Phase	< .08				< .08			0.05			0.17			0.17			0.17		
	FLA	0.3				0.3			0.6			1.2			1.2			1.2		
Total Electrical	MCA (Stationary)	20.8	12.9	6.6	4.8	13.8	6.2	5.7	21.8	10.3	7.8	22.4	10.9	8.4	32.7	17.0	12.7	32.7	17.0	12.7
	OCPD (Stationary)	30.0	15.0	9.0	7.0	20.0	9.0	8.0	30.0	12.0	10.0	30.0	15.0	10.0	40.0	25.0	15.0	40.0	25.0	15.0
Curb	Curb Height (in)	14				14			14			14			14			14		
Weights	Shipping Weight (lbs)	318				425			470			571			920			1250		
	Net Weight (lbs)	245				345			395			475			805			1075		

See pages 35 and 36 for ARI Certified Rating information.

D-SERIES | PERFORMANCE

Low Speed Med. Speed High Speed

Supply Blower RPM (1.5HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
300	n/a	n/a	1175	1350	1450	1605	1730
500	n/a	1170	1340	1540	1655	1725	1840
700	1295	1425	1600	1625	1795	1960	2035
900	1540	1660	1720	1790	2030	2110	2195
1100	1785	1915	2025	2185	n/a	n/a	n/a

D11

Exhaust Blower RPM (1.5HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
300	n/a	n/a	1030	1225	n/a	n/a	n/a
500	n/a	1025	1180	1265	1425	1535	n/a
700	1120	1190	1340	1445	1540	1645	1720
900	1285	1525	1500	1575	1670	1785	1865
1100	1570	1665	1670	1775	1860	1920	n/a

Supply Blower RPM (2HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	1055	1135	1295	1420	1540	1650	1725
1400	1140	1240	1340	1490	1600	1690	1795
1600	1200	1330	1460	1565	1645	1740	1830
1800	1320	1405	1525	1615	1705	1785	1885
2000	1415	1515	1605	1690	1775	1875	1960

D20

Exhaust Blower RPM (2HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	1010	1195	1350	1445	1580	1685	1735
1400	1125	1315	1435	1545	1620	1730	1800
1600	1185	1370	1500	1610	1695	1790	1965
1800	1305	1485	1600	1685	1781	1955	2030
2000	1410	1550	1670	1765	1855	n/a	n/a

Supply Blower RPM (3HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	n/a	790	960	1110	1210	1315	1380
1600	750	900	1005	1145	1230	1365	1410
2000	900	1005	1105	1210	1275	1400	1450
2400	1005	1125	1210	1275	1365	1450	1500
2800	1125	1230	1315	1380	1450	1535	1600

D28

Exhaust Blower RPM (3HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	750	885	1015	1145	1260	1350	1485
1600	870	1015	1125	1215	1325	1410	1500
2000	1015	1145	1240	1345	1410	1485	1560
2400	1125	1250	1345	1430	1500	1575	1630
2800	1250	1410	1485	1520	1630	1650	1675

Performance can vary depending on ambient conditions. Drive losses included in tables. Blower RPMs are for reference only.

D-SERIES | PERFORMANCE

Low Speed Med. Speed High Speed

Supply Blower RPM (3HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
2000	725	825	900	1000	1070	1180	1250
2400	800	900	1000	1070	1160	1250	1275
2800	900	1000	1070	1160	1250	1275	1340
3200	1000	1070	1160	1250	1275	1340	1400
3600	1055	1180	1250	1300	1360	n/a	n/a

D36

Exhaust Blower RPM (3HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
2000	750	865	950	1030	1100	1200	1265
2400	820	950	1035	1100	1200	1265	1300
2800	925	1035	1150	1200	1265	1315	1350
3200	1035	1160	1215	1265	1325	1350	1390
3600	1100	1215	1300	1350	1390	n/a	n/a

Supply Blower RPM (5HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
3000	900	1030	1100	1165	1240	1285	1350
3400	975	1085	1175	1240	1290	1350	1400
3800	1070	1175	1240	1290	1350	1400	1465
4200	1165	1240	1320	1350	1430	1465	1515
4600	1240	1320	1375	1430	1500	1515	1580

D46

Exhaust Blower RPM (5HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
3000	955	1100	1160	1245	1280	1360	1425
3400	1055	1185	1245	1300	1375	1425	1480
3800	1160	1300	1360	1400	1425	1530	1585
4200	1245	1375	1450	1480	1500	1585	1650
4600	1360	1450	1500	1585	1600	1650	1700

Supply Blower RPM (5HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
4600	815	900	975	1045	1085	1125	1175
5000	880	940	1015	1060	1135	1175	1215
5400	915	975	1045	1125	1150	1195	1250
5800	975	1045	1085	1175	1250	1260	n/a
6200	1000	1075	1165	1200	n/a	n/a	n/a

D62

Exhaust Blower RPM (5HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
4600	825	915	1000	1025	1100	1140	1170
5000	890	975	1025	1100	1140	1170	1240
5400	925	1000	1085	1140	1170	1240	1280
5800	975	1025	1140	1170	1240	n/a	n/a
6200	1025	1120	1170	n/a	n/a	n/a	n/a

Performance can vary depending on ambient conditions. Drive losses included in tables. Blower RPMs are for reference only.



**D-SERIES | ENGINEERING SPECIFICATIONS**

**Paint Designation**

56 = Off White

**Model & Size**

- D11 = D-Series, Unit Size 11
- D20 = D-Series, Unit Size 20
- D28 = D-Series, Unit Size 28
- D36 = D-Series, Unit Size 36
- D46 = D-Series, Unit Size 46
- D62 = D-Series, Unit Size 62

**Unit Cabinet Size**

02X = Standard Cabinet

**Blower Speed**

- L = Low
- M = Medium
- H = High

**Voltage**

- 21 = 208/230 volt, 1 Phase
- 23 = 208/230 volt, 3 Phase
- 33 = 460 volt, 3 Phase
- 43 = 575 volt, 3 Phase

**Options**

- L = Low Ambient Kit
- M = Motorized Outside Air
- S = Stop-Start-Jog
- P = Pressure Sensor
- R = Wheel Rotational Sensor
- D = Disconnect with GFI
- V = Variable Frequency Drive

**ERV D-Series**

Energy recovery ventilators shall be manufactured by PennBarry. Energy recovery ventilators shall include an ARI 1060-2000 certified enthalpy wheel which contains parallel layers of polymeric material that are impregnated with silica gel. All enthalpy wheels shall consist of removable 'pie' segments mounted in a slide-out track for easy inspection and cleaning.

Fan blowers shall be of the forward curve, centrifugal type, with separate motors with adjustable sheaves for the exhaust air stream and supply air stream allowing for independent balancing. Motors and blower assemblies shall have permanently lubricated ball bearings. All blower wheels shall be balanced.

Provide aluminum mist eliminator filter for the intake air and a minimum 2" pleated filter for the exhaust air on all outdoor applications. Provide minimum 2" pleated filter for both the exhaust and intake air on all indoor applications.

Unit casing shall be constructed of heavy gage galvanized steel. All sections designed for conditioned air shall be internally insulated using 1" dual density fiberglass liner. All components shall be easily accessible through removable panels for both exhaust and supply compartments.

Energy recovery ventilators shall be ETL listed as a complete assembly. All electrical components shall be UL listed or recognized and installed in accordance with the National Electric Code. All electrical components shall be mounted in sheet metal control enclosures with fused single point electrical connections.



## S-SERIES

“S” Series energy recovery ventilators are designed for outside use in rooftop or “pad” installations where the application requires a “side-by-side” duct system. One of the benefits of this design is the ability to easily be connected to the horizontal duct work of an air conditioning system. Field supplied balancing dampers should be utilized to help control the air volumes.

### Application & Construction

- Dry energy transfer. Moisture in supply (intake) air stream is transferred to exhaust air stream in a vapor state, eliminating condensate plumbing in the ventilator.
- Units can be used in a rooftop application or ground application.
- Reduces cooling load at design temperatures up to 4 tons per 1000 cfm of outside air.
- Reduces heating load up to 12,000 Btuh per 400 cfm of outside air.
- Enthalpy wheel made of polymeric material with silica gel impregnated into the material.
- Centrifugal blowers (both intake and exhaust) for high static capability and low sound levels.
- Heavy gauge galvanized steel cabinets.
- Separate fused power supply.
- Insulated cabinet.
- Roof curbs have duct supports.

### Operation & Maintenance

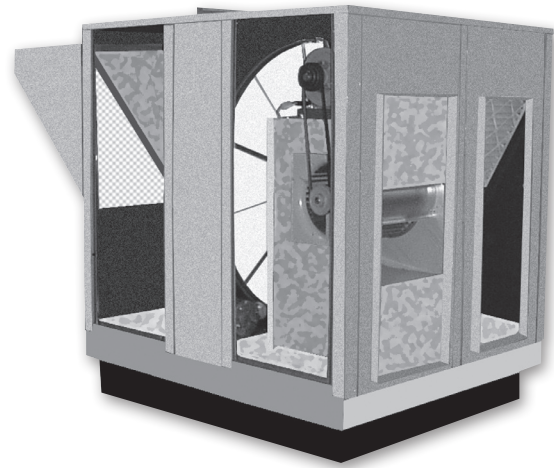
- Internal enthalpy wheel made of polymeric material with silica gel impregnated into the material. The enthalpy wheel has a five year limited warranty.
- Internal enthalpy wheels are easily cleanable. All wheels are segmented into easily removable pie segments.
- All wheels are designed to easily slide in and out of the ERV for servicing.
- Continuous operation down to 10° F (-12° C) without defrost at indoor relative humidity up to 40%. For temperatures below 10° F (-12° C), Optional Low Ambient Control Kit is required. Kit includes temperature sensor to shutoff power to ERV before frost build up can occur on recovery wheel.

### Certification

- ARI 1060-2000 certified internal enthalpy wheel is provided.

### Filter

- Unit is supplied with an aluminum mist eliminator filter for the intake air and a 2” pleated filter for the exhaust air.



### Blower Assembly

- Blowers are housed within a sheet metal frame to insure reliable performance.
- Blower motor is mounted on an adjustable motor mount that provides an easy method of adjusting the belts.
- Blowers are equipped with adjustable sheave pulleys.
- Blower pulley and the motor pulley are aligned by a state of the art “laser” alignment system.
- All blowers are shipped with low-speed belts installed. The units are shipped with the specified belt kit for field installation for medium-speed and high-speed.

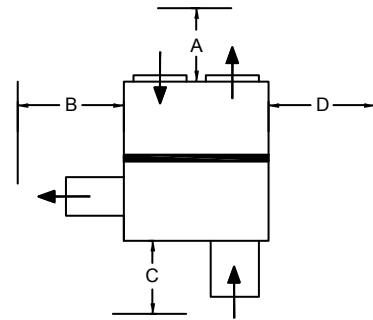
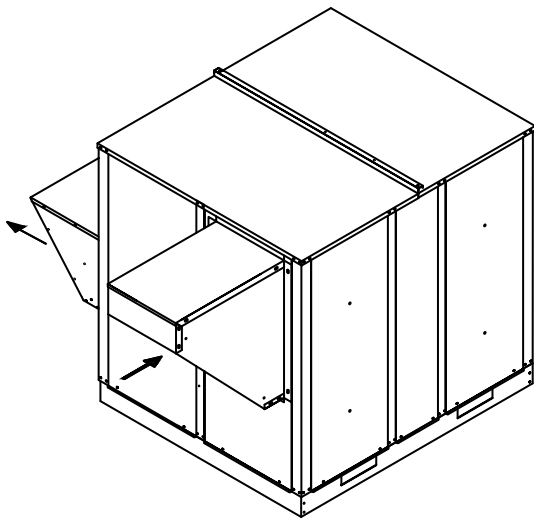
### Control System

- Control enclosures provided with internal fuses.
- Electronic control board.
- Fully wired.
- Independently fused.
- Color coded wires.
- Provides own 24 volt circuit.
- All options are “plug-in” modules.

### Optional Accessories

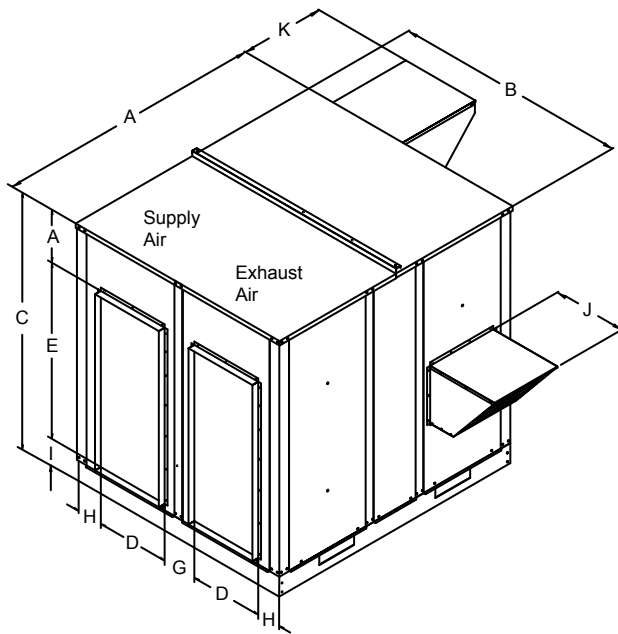
- Roof Mounting Frame (Curb)
- Low Ambient Control Kit
- Pressure Sensor
- Motorized Intake Air Damper
- Stop-Start-Jog
- Rotation Sensor
- Disconnect with GFI Plug
- VFD

S-SERIES | DIMENSIONAL DATA



Clearances

Size	A	B	C	D
S11	12	60	48	36
S20	12	60	60	36
S28	12	60	60	48
S36	12	60	60	48
S46	12	60	72	60
S62	12	60	72	60



Size	Min CFM	Max CFM	A	B	C	D	E	F	G	H	I	J	K
S11	300	1100	44.75	32.13	33.50	11.00	27.00	4.00	4.25	2.88	2.50	20.75	14.38
S20	1200	2000	54.38	37.25	37.50	12.00	30.00	5.87	5.13	4.06	1.63	20.75	17.50
S28	1200	2800	52.25	42.62	43.56	14.00	32.00	8.69	5.25	4.25	2.88	20.75	25.50
S36	2000	3600	60.00	46.69	57.37	16.50	39.50	12.00	5.50	4.05	5.88	20.75	25.50
S46	3000	4600	60.00	52.69	57.37	16.50	39.50	12.00	8.69	5.50	5.88	20.75	28.06
S62	4600	6200	72.00	70.88	63.63	19.50	39.50	17.53	14.50	8.70	6.60	20.75	37.75

Dimensions are labeled in inches.

**S-SERIES | DIMENSIONAL & ELECTRICAL DATA**

**Filter Sizes**

Size	Return Filter				Intake Filter			
	Qty	Width	Height	Type	Qty	Width	Height	Type
S11	1	14	20	2" PLT	1	16.25	10.375	1" ME
S20	2	16	20		1	12.5	20	
S28	2	20	10		1	14.75	32.25	
S36	3	16	20		1	16.5	32.25	
S46	2	24	24		1	20	36	
S62	5	14	20		1/1	20/20	36/12.5	

PLT is Pleated Filter. ME is Mist Eliminator Filter.

**Electrical Data**

Phase	300-1100 CFM				1200-2000 CFM			1200-2800 CFM			2000-3600 CFM			3000-4600 CFM			4600-6200 CFM				
	1	3	1	3	3			3			3			3			3				
	208/230v	208/230v	460v	460v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v		
Fresh Air Blower	Motor (hp)		1.5		2			3			3			5			5				
	Wheel Size - DxW (in)		9 x 4		9 x 9			10 x 10			12 x 9			12 x 12			15 x 15				
	Motor Speed (rpm)		1725		1725			1725			1725			1725			1725				
	FLA		9.1	5.6	2.8	2.0	6.0	2.6	2.4	9.4	4.3	3.2	9.4	4.3	3.2	14.0	7.0	5.1	14.0	7.0	5.1
	Service Factor		1.15		1.15			1.15			1.15			1.15			1.15				
Exhaust Air Blower	Motor (hp) Stationary		1.5		2			3			3			5			5				
	Wheel Size - DxW (in)		9 x 4		9 x 9			10 x 10			12 x 9			12 x 12			15 x 15				
	Motor Speed (rpm)		1725		1725			1725			1725			1725			1725				
	FLA (Stationary)		9.1	5.6	2.8	2.0	6.0	2.6	2.4	9.4	4.3	3.2	9.4	4.3	3.2	14.0	7.0	5.1	14.0	7.0	5.1
	Service Factor		1.15		1.15			1.15			1.15			1.15			1.15				
Enthalpy Wheel Data	Depth (in)		3		3			3			3			3			3				
	Diameter (in)		25.3		30.346			37.759			41.825			46.776			52.026				
	Construction		One-Piece		One-Piece			Segmented			Segmented			Segmented			Segmented				
	Potential Volts		208 - 230		208 - 230			200 / 208 - 230			200 / 208 - 230			200 / 208 - 230			200 / 208 - 230				
	Motor Speed (rpm)		1050		1050			825			1075			1075			1075				
	Motor (hp) 1 Phase		< .08		< .08			0.05			0.17			0.17			0.17				
	FLA		0.3		0.3			0.6			1.2			1.2			1.2				
Total Electrical	MCA (Stationary)		20.8	12.9	6.6	4.8	13.8	6.2	5.7	21.8	10.3	7.8	22.4	10.9	8.4	32.7	17.0	12.7	32.7	17.0	12.7
	OCPD (Stationary)		30.0	15.0	9.0	7.0	20.0	9.0	8.0	30.0	12.0	10.0	30.0	15.0	10.0	40.0	25.0	15.0	40.0	25.0	15.0
Curb	Curb Height (in)		14		14			14			14			14			14				
Weights	Shipping Weight (lbs)		318		425			470			571			920			1250				
	Net Weight (lbs)		245		345			395			475			805			1075				

See pages 35 and 36 for ARI Certified Rating information.

S-SERIES | PERFORMANCE

Low Speed Med. Speed High Speed

Supply Blower RPM (1.5HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
300	n/a	n/a	1020	1205	1365	1480	1590
500	n/a	1015	1200	1320	1460	1565	1670
700	990	1190	1315	1455	1560	1665	1715
900	1150	1310	1450	1555	1660	1680	1795
1100	1305	1440	1550	1655	1740	1815	1895

S11

Exhaust Blower RPM (1.5HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
300	n/a	n/a	1150	1285	1415	1515	1640
500	n/a	1145	1275	1410	1510	1545	1720
700	1140	1270	1405	1505	1590	1715	1815
900	1320	1435	1585	1665	1705	1810	1930
1100	1495	1580	1660	1755	1880	n/a	n/a

Supply Blower RPM (2HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	1065	1285	1375	1415	1495	1580	1685
1400	1140	1330	1410	1440	1555	1660	1760
1600	1290	1400	1480	1545	1670	1745	1835
1800	1395	1470	1540	1665	1735	1800	1880
2000	1460	1530	1650	1725	1795	1870	1960

S20

Exhaust Blower RPM (2HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	1175	1290	1430	1520	1680	1765	1850
1400	1245	1425	1515	1675	1755	1830	1920
1600	1400	1505	1670	1750	1825	1910	1980
1800	1495	1660	1740	1820	1900	1975	2090
2000	1645	1730	1815	1895	1965	2080	2170

Supply Blower RPM (3HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	n/a	955	1070	1210	1370	1465	1550
1600	n/a	1065	1205	1305	1460	1540	1595
2000	1060	1200	1290	1445	1530	1585	1680
2400	1190	1335	1440	1490	1575	1670	1755
2800	1300	1460	1550	1645	1705	1750	1800

S28

Exhaust Blower RPM (3HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	n/a	n/a	1025	1170	1270	1355	1400
1600	n/a	1020	1155	1240	1330	1390	1490
2000	1015	1150	1235	1325	1380	1475	1590
2400	1140	1285	1365	1420	1510	1595	1640
2800	1280	1345	1455	1540	1575	1670	1745

Performance can vary depending on ambient conditions. Drive losses included in tables. Blower RPMs are for reference only.



S-SERIES | PERFORMANCE

Low Speed Med. Speed High Speed

Supply Blower RPM (3HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
2000	815	925	1020	1105	1155	1255	1325
2400	920	1060	1130	1215	1250	1355	1385
2800	1010	1140	1240	1285	1370	1425	1470
3200	1125	1235	1340	1385	1455	1465	n/a
3600	1225	1375	1440	1460	1500	n/a	n/a

S36

Exhaust Blower RPM (3HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
2000	755	890	970	1060	1125	1215	1280
2400	985	1035	1085	1140	1240	1275	1325
2800	1020	1115	1175	1230	1270	1335	1370
3200	1105	1200	1225	1285	1300	1390	1430
3600	1155	1265	1295	1335	1385	n/a	n/a

Supply Blower RPM (5HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
3000	965	1085	1150	1230	1295	1345	1420
3400	1035	1145	1250	1290	1335	1415	1475
3800	1120	1245	1285	1315	1440	1470	1535
4200	1215	1305	1355	1430	1465	1530	1595
4600	1300	1375	1450	1460	1540	1590	1650

S46

Exhaust Blower RPM (5HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
3000	1010	1105	1195	1255	1300	1375	1415
3400	1100	1190	1250	1320	1370	1410	1480
3800	1185	1245	1360	1410	1440	1475	1540
4200	1240	1355	1425	1465	1530	1590	1630
4600	1345	1410	1485	1520	1585	1650	1700

Supply Blower RPM (5HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
4600	795	900	1030	1075	1160	1220	1255
5000	855	920	1070	1130	1190	1250	1275
5400	880	950	1095	1155	1245	1270	1290
5800	915	1035	1115	1175	1255	1280	n/a
6200	985	1080	1135	1225	1265	n/a	n/a

S62

Exhaust Blower RPM (5HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
4600	705	885	985	1045	1100	1155	1215
5000	825	950	1025	1095	1150	1210	1245
5400	875	980	1080	1140	1190	1240	1275
5800	935	995	1130	1180	1230	n/a	n/a
6200	985	1095	1165	n/a	n/a	n/a	n/a

Performance can vary depending on ambient conditions. Drive losses included in tables. Blower RPMs are for reference only.

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**S-SERIES | ENGINEERING SPECIFICATIONS**

**Paint Designation**

56 = Off White

**Model & Size**

- S11 = S-Series, Unit Size 11
- S20 = S-Series, Unit Size 20
- S28 = S-Series, Unit Size 28
- S36 = S-Series, Unit Size 36
- S46 = S-Series, Unit Size 46
- S62 = S-Series, Unit Size 62

**Unit Cabinet Size**

02X = Standard Cabinet

**Blower Speed**

- L = Low
- M = Medium
- H = High

**Voltage**

- 21 = 208/230 volt, 1 Phase
- 23 = 208/230 volt, 3 Phase
- 33 = 460 volt, 3 Phase
- 43 = 575 volt, 3 Phase

**Options**

- L = Low Ambient Kit
- M = Motorized Outside Air
- S = Stop-Start-Jog
- P = Pressure Sensor
- R = Wheel Rotational Sensor
- D = Disconnect with GFI
- V = Variable Frequency Drive

**ERV S-Series**

Energy recovery ventilators shall be manufactured by PennBarry. Energy recovery ventilators shall include an ARI 1060-2000 certified enthalpy wheel which contains parallel layers of polymeric material that are impregnated with silica gel. All enthalpy wheels shall consist of removable 'pie' segments mounted in a slide-out track for easy inspection and cleaning.

Fan blowers shall be of the forward curve, centrifugal type, with separate motors with adjustable sheaves for the exhaust air stream and supply air stream allowing for independent balancing. Motors and blower assemblies shall have permanently lubricated ball bearings. All blower wheels shall be balanced.

Provide aluminum mist eliminator filter for the intake air and a minimum 2" pleated filter for the exhaust air on all outdoor applications. Provide minimum 2" pleated filter for both the exhaust and intake air on all indoor applications.

Unit casing shall be constructed of heavy gage galvanized steel. All sections designed for conditioned air shall be internally insulated using 1" dual density fiberglass liner. All components shall be easily accessible through removable panels for both exhaust and supply compartments.

Energy recovery ventilators shall be ETL listed as a complete assembly. All electrical components shall be UL listed or recognized and installed in accordance with the National Electric Code. All electrical components shall be mounted in sheet metal control enclosures with fused single point electrical connections.



## M-SERIES

“M” Series energy recovery ventilators are designed for use inside a building for applications that require “side-by-side” duct. Typically these units are installed in a mechanical room or mounted above a ceiling. Both the outside air intake and the exhaust air have duct systems to an outside source. The return air and supply air also are ducted. Field provided balancing dampers should be utilized to help control the air volumes.

### Application & Construction

- Dry energy transfer. Moisture in supply (intake) air stream is transferred to exhaust air stream in a vapor state, eliminating condensate plumbing in the ventilator.
- Units can be used in a mechanical room application or plenum application.
- Reduces cooling load at design temperatures up to 4 tons per 1000 cfm of outside air.
- Reduces heating load up to 12,000 Btuh per 400 cfm of outside air.
- Enthalpy wheel made of polymeric material with silica gel impregnated into the material.
- Centrifugal blowers (both intake and exhaust) for high static capability and low sound levels.
- Heavy gauge galvanized steel cabinets.
- Separate fused power supply.
- Insulated cabinet.
- Roof curbs have duct supports.

### Operation & Maintenance

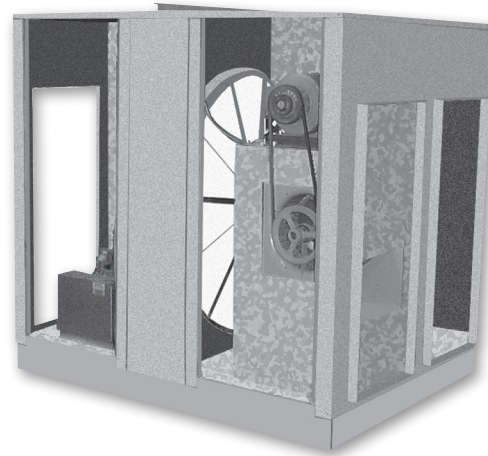
- Internal enthalpy wheel made of polymeric material with silica gel impregnated into the material. The enthalpy wheel has a five year limited warranty.
- Internal enthalpy wheels are easily cleanable. All wheels are segmented into easily removable pie segments.
- All wheels are designed to easily slide in and out of the ERV for servicing.
- Continuous operation down to 10° F (-12° C) without defrost at indoor relative humidity up to 40%. For temperatures below 10° F (-12° C), Optional Low Ambient Control Kit is required. Kit includes temperature sensor to shutoff power to ERV before frost build up can occur on recovery wheel.

### Certification

- ARI 1060-2000 certified internal enthalpy wheel is provided.

### Filter

- Unit is supplied with a 2” pleated filter for both the intake air and exhaust air.



### Blower Assembly

- Blowers are housed within a sheet metal frame to insure reliable performance.
- Blower motor is mounted on an adjustable motor mount that provides an easy method of adjusting the belts.
- Blowers are equipped with adjustable sheave pulleys.
- Blower pulley and the motor pulley are aligned by a state of the art “laser” alignment system.
- All blowers are shipped with low-speed belts installed. The units are shipped with the specified belt kit for field installation for medium-speed and high-speed.

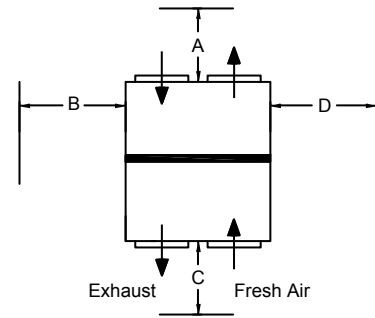
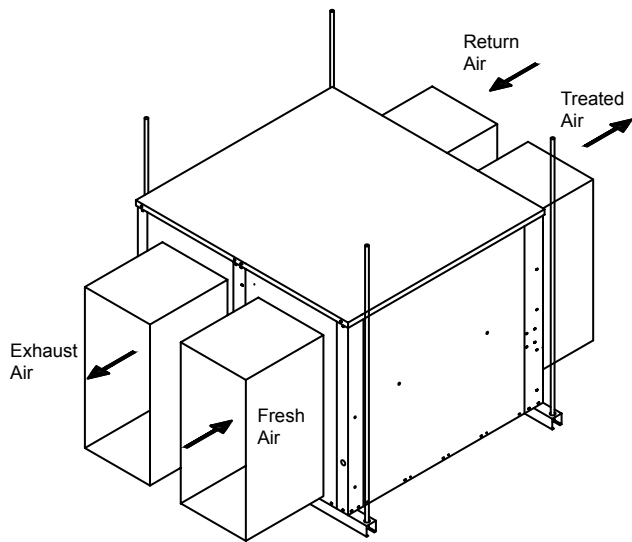
### Control System

- Control enclosures provided with internal fuses.
- Electronic control board.
- Fully wired.
- Independently fused.
- Color coded wires.
- Provides own 24 volt circuit.
- All options are “plug-in” modules.

### Optional Accessories

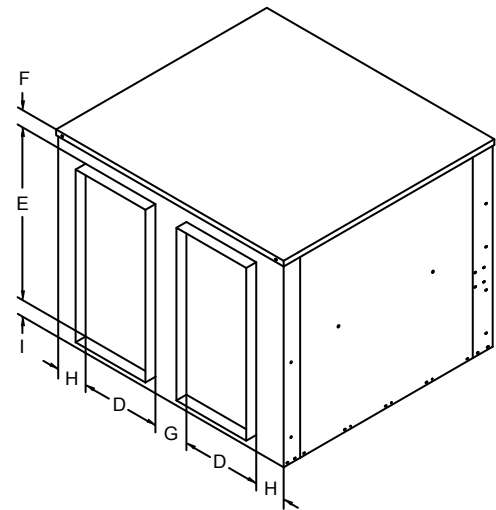
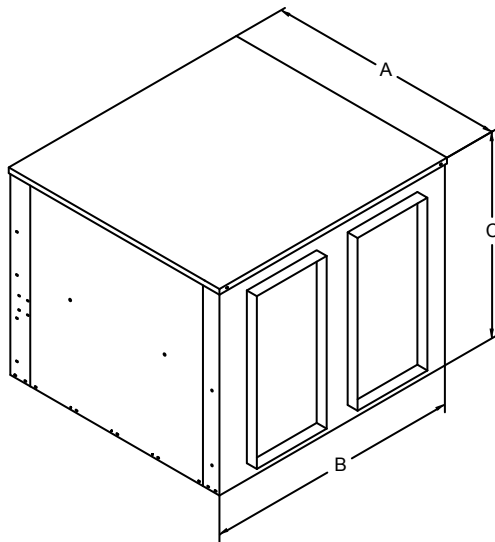
- Low Ambient Control Kit
- Pressure Sensor
- Motorized Intake Air Damper
- Stop-Start-Jog
- Rotation Sensor
- Disconnect with GFI Plug
- VFD

M-SERIES | DIMENSIONAL DATA



Clearances

Size	A	B	C	D
M11	12	36	36	36
M20	12	36	36	36
M28	12	36	36	48
M36	12	36	36	48
M46	12	36	36	60
M62	12	36	36	60



Size	Min CFM	Max CFM	A	B	C	D	E	F	G	H	I
M11	300	1100	44.75	32.13	33.50	11.00	27.00	4.00	4.25	2.88	2.50
M20	1200	2000	54.38	37.25	37.50	12.00	30.00	5.87	5.13	4.06	1.63
M28	1200	2800	52.25	42.62	43.56	14.00	32.00	8.69	5.25	4.25	2.88
M36	2000	3600	60.00	46.69	57.37	16.50	39.50	12.00	5.50	4.05	5.88
M46	3000	4600	60.00	52.69	57.37	16.50	39.50	12.00	8.69	5.50	5.88
M62	4600	6200	72.00	70.88	63.63	19.50	39.50	17.53	14.50	8.70	6.60

Dimensions are labeled in inches.

M-SERIES | DIMENSIONAL & ELECTRICAL DATA

Filter Sizes

Size	Return Filter				Intake Filter			
	Qty	Width	Height	Type	Qty	Width	Height	Type
M11	1	14	20	2" PLT	1	14	20	2" PLT
M20	2	16	16		2	16	16	
M28	2	20	10		2	20	10	
M36	3	16	20		3	16	20	
M46	2	24	24		2	24	24	
M62	5	14	20		5	14	20	

PLT is Pleated Filter.

Electrical Data

Phase		300-1100 CFM				1200-2000 CFM			1200-2800 CFM			2000-3600 CFM			3000-4600 CFM			4600-6200 CFM		
		1	3	1	3	3			3			3			3					
Line Voltage 60 Hz		208/230v	208/230v	460v	460v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v
Fresh Air Blower	Motor (hp)	1.5				2			3			3			5			5		
	Wheel Size - DxW (in)	9 x 4				9 x 9			10 x 10			12 x 9			12 x 12			15 x 15		
	Motor Speed (rpm)	1725				1725			1725			1725			1725			1725		
	FLA	9.1	5.6	2.8	2.0	6.0	2.6	2.4	9.4	4.3	3.2	9.4	4.3	3.2	14.0	7.0	5.1	14.0	7.0	5.1
	Service Factor	1.15				1.15			1.15			1.15			1.15			1.15		
Exhaust Air Blower	Motor (hp) Stationary	1.5				2			3			3			5			5		
	Wheel Size - DxW (in)	9 x 4				9 x 9			10 x 10			12 x 9			12 x 12			15 x 15		
	Motor Speed (rpm)	1725				1725			1725			1725			1725			1725		
	FLA (Stationary)	9.1	5.6	2.8	2.0	6.0	2.6	2.4	9.4	4.3	3.2	9.4	4.3	3.2	14.0	7.0	5.1	14.0	7.0	5.1
	Service Factor	1.15				1.15			1.15			1.15			1.15			1.15		
Enthalpy Wheel Data	Depth (in)	3				3			3			3			3			3		
	Diameter (in)	25.3				30.346			37.759			41.825			46.776			52.026		
	Construction	One-Piece				One-Piece			Segmented			Segmented			Segmented			Segmented		
	Potential Volts	208 - 230				208 - 230			200 / 208 - 230			200 / 208 - 230			200 / 208 - 230			200 / 208 - 230		
	Motor Speed (rpm)	1050				1050			825			1075			1075			1075		
	Motor (hp) 1 Phase	< .08				< .08			0.05			0.17			0.17			0.17		
	FLA	0.3				0.3			0.6			1.2			1.2			1.2		
Total Electrical	MCA (Stationary)	20.8	12.9	6.6	4.8	13.8	6.2	5.7	21.8	10.3	7.8	22.4	10.9	8.4	32.7	17.0	12.7	32.7	17.0	12.7
	OC PD (Stationary)	30.0	15.0	9.0	7.0	20.0	9.0	8.0	30.0	12.0	10.0	30.0	15.0	10.0	40.0	25.0	15.0	40.0	25.0	15.0
Curb	Curb Height (in)	14				14			14			14			14			14		
Weights	Shipping Weight (lbs)	318				425			470			571			920			1250		
	Net Weight (lbs)	245				345			395			475			805			1075		

See pages 35 and 36 for ARI Certified Rating information.



M-SERIES | PERFORMANCE

Low Speed Med. Speed High Speed

Supply Blower RPM (1.5HP, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
300	n/a	n/a	1075	1280	1390	1535	1635
500	n/a	1065	1275	1355	1505	1615	1670
700	1060	1270	1370	1525	1610	1660	1790
900	1310	1455	1520	1605	1655	1820	1960
1100	1445	1515	1625	1725	1815	1955	2035

M11

Exhaust Blower RPM (1.5HP, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
300	n/a	1075	1180	1290	1445	1565	1645
500	n/a	1170	1285	1375	1470	1605	1725
700	1065	1280	1370	1465	1600	1680	1800
900	1255	1360	1460	1590	1675	1755	1865
1100	1445	1455	1585	1670	1750	1860	1935

Supply Blower RPM (2HP, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	n/a	1225	1315	1405	1440	1695	1725
1400	1220	1275	1400	1480	1620	1730	1790
1600	1225	1345	1475	1615	1715	1775	1890
1800	1335	1465	1610	1710	1765	1880	1930
2000	1380	1585	1680	1755	1815	1920	n/a

M20

Exhaust Blower RPM (2HP, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	1045	1170	1380	1475	1635	1720	1805
1400	1115	1330	1470	1570	1725	1745	1850
1600	1320	1460	1565	1680	1790	1840	1940
1800	1415	1560	1725	1780	1885	1930	2045
2000	1490	1660	1770	1875	1920	1985	n/a

Supply Blower RPM (3HP, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	n/a	n/a	985	1115	1255	1390	1445
1600	n/a	975	1090	1190	1320	1320	1525
2000	960	1085	1185	1315	1410	1410	1550
2400	1080	1240	1310	1405	1485	1485	1650
2800	1230	1395	1505	1535	1595	1595	1775

M28

Exhaust Blower RPM (3HP, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	n/a	n/a	1050	1210	1315	1375	1465
1600	n/a	1020	1200	1285	1365	1465	1545
2000	1010	1190	1320	1355	1540	1580	1660
2400	1155	1315	1425	1545	1660	1735	1785
2800	1290	1450	1600	1725	1755	1825	1880

Performance can vary depending on ambient conditions. Drive losses included in tables. Blower RPMs are for reference only.

**M-SERIES | PERFORMANCE**

Low Speed Med. Speed High Speed

**Supply Blower RPM (3HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
2000	820	930	1015	1095	1160	1245	1315
2400	920	1010	1090	1155	1240	1305	1405
2800	1000	1085	1150	1235	1295	1410	1500
3200	1130	1200	1260	1395	1430	1495	1565
3600	1190	1385	1420	1455	1510	n/a	n/a

**M36**

**Exhaust Blower RPM (3HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
2000	780	890	970	1065	1130	1235	1275
2400	885	965	1060	1125	1230	1270	1340
2800	945	1055	1120	1225	1265	1355	1405
3200	1050	1135	1255	1325	1350	1415	1460
3600	1125	1250	1305	1340	1415	n/a	n/a

**Supply Blower RPM (5HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
3000	925	1035	1110	1140	1235	1315	1350
3400	1030	1120	1185	1225	1310	1345	1385
3800	1100	1150	1240	1335	1385	1420	1455
4200	1165	1245	1375	1435	1460	1505	1550
4600	1230	1315	1335	1470	1525	1585	1655

**M46**

**Exhaust Blower RPM (5HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
3000	985	1085	1155	1280	1325	1370	1440
3400	1060	1150	1270	1320	1365	1430	1480
3800	1145	1265	1335	1400	1450	1475	1505
4200	1240	1330	1375	1460	1470	1515	1560
4600	1305	1400	1420	1485	1525	1550	1650

**Supply Blower RPM (5HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
4600	820	910	990	1020	1135	1165	1225
5000	885	965	1040	1100	1160	1225	1280
5400	910	1000	1095	1155	1215	1275	n/a
5800	960	1060	1145	1205	1265	1290	n/a
6200	1020	1110	1195	1255	1275	n/a	n/a

**M62**

**Exhaust Blower RPM (5HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
4600	875	935	1000	1025	1140	1175	1190
5000	910	975	1040	1130	1190	1200	1280
5400	945	1015	1095	1150	1230	1275	n/a
5800	990	1060	1125	1175	1265	n/a	n/a
6200	1010	1110	1195	1200	n/a	n/a	n/a

Performance can vary depending on ambient conditions. Drive losses included in tables. Blower RPMs are for reference only.

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**M-SERIES | ENGINEERING SPECIFICATIONS**

**Paint Designation**  
56 = Off White

**Model & Size**  
M11 = M-Series, Unit Size 11  
M20 = M-Series, Unit Size 20  
M28 = M-Series, Unit Size 28  
M36 = M-Series, Unit Size 36  
M46 = M-Series, Unit Size 46  
M62 = M-Series, Unit Size 62

**Unit Cabinet Size**  
02X = Standard Cabinet

**Blower Speed**  
L = Low  
M = Medium  
H = High

**Voltage**  
21 = 208/230 volt, 1 Phase  
23 = 208/230 volt, 3 Phase  
33 = 460 volt, 3 Phase  
43 = 575 volt, 3 Phase

**Options**  
L = Low Ambient Kit  
M = Motorized Outside Air  
S = Stop-Start-Jog  
P = Pressure Sensor  
R = Wheel Rotational Sensor  
D = Disconnect with GFI  
V = Variable Frequency Drive

**ERV M-Series**

Energy recovery ventilators shall be manufactured by PennBarry. Energy recovery ventilators shall include an ARI 1060-2000 certified enthalpy wheel which contains parallel layers of polymeric material that are impregnated with silica gel. All enthalpy wheels shall consist of removable 'pie' segments mounted in a slide-out track for easy inspection and cleaning.

Fan blowers shall be of the forward curve, centrifugal type, with separate motors with adjustable sheaves for the exhaust air stream and supply air stream allowing for independent balancing. Motors and blower assemblies shall have permanently lubricated ball bearings. All blower wheels shall be balanced.

Provide aluminum mist eliminator filter for the intake air and a minimum 2" pleated filter for the exhaust air on all outdoor applications. Provide minimum 2" pleated filter for both the exhaust and intake air on all indoor applications.

Unit casing shall be constructed of heavy gage galvanized steel. All sections designed for conditioned air shall be internally insulated using 1" dual density fiberglass liner. All components shall be easily accessible through removable panels for both exhaust and supply compartments.

Energy recovery ventilators shall be ETL listed as a complete assembly. All electrical components shall be UL listed or recognized and installed in accordance with the National Electric Code. All electrical components shall be mounted in sheet metal control enclosures with fused single point electrical connections.



## O-SERIES

“O” Series energy recovery ventilators are designed for outside use in rooftop or “pad” installations where the application requires a “over and under” duct system. One of the benefits of this design is the ability to be ducted directly to the back of a rooftop air conditioning unit. Another use is for “through the wall” applications. The horizontal return duct connection can be converted to bottom return in the field. Field supplied balancing dampers should be utilized to help control the air volumes.

### Application & Construction

- Dry energy transfer. Moisture in supply (intake) air stream is transferred to exhaust air stream in a vapor state, eliminating condensate plumbing in the ventilator.
- Units can be used in a rooftop application or ground application.
- Reduces cooling load at design temperatures up to 4 tons per 1000 cfm of outside air.
- Reduces heating load up to 12,000 Btuh per 400 cfm of outside air.
- Enthalpy wheel made of polymeric material with silica gel impregnated into the material.
- Centrifugal blowers (both intake and exhaust) for high static capability and low sound levels.
- Heavy gauge galvanized steel cabinets.
- Separate fused power supply.
- Insulated cabinet.
- Roof curbs have duct supports.

### Operation & Maintenance

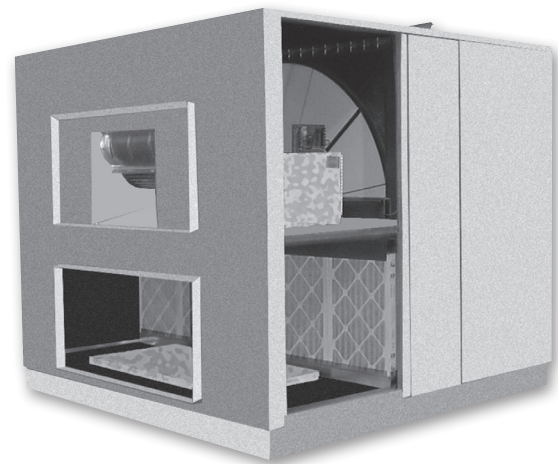
- Internal enthalpy wheel made of polymeric material with silica gel impregnated into the material. The enthalpy wheel has a five year limited warranty.
- Internal enthalpy wheels are easily cleanable. All wheels are segmented into easily removable pie segments.
- All wheels are designed to easily slide in and out of the ERV for servicing.
- Continuous operation down to 10° F (-12° C) without defrost at indoor relative humidity up to 40%. For temperatures below 10° F (-12° C), Optional Low Ambient Control Kit is required. Kit includes temperature sensor to shutoff power to ERV before frost build up can occur on recovery wheel.

### Certification

- ARI 1060-2000 certified internal enthalpy wheel is provided.

### Filter

- Unit is supplied with an aluminum mist eliminator filter for the intake air and a 2” pleated filter for the exhaust air.



### Blower Assembly

- Blowers are housed within a sheet metal frame to insure reliable performance.
- Blower motor is mounted on an adjustable motor mount that provides an easy method of adjusting the belts.
- Blowers are equipped with adjustable sheave pulleys.
- Blower pulley and the motor pulley are aligned by a state of the art “laser” alignment system.
- All blowers are shipped with low-speed belts installed. The units are shipped with the specified belt kit for field installation for medium speed and high-speed.

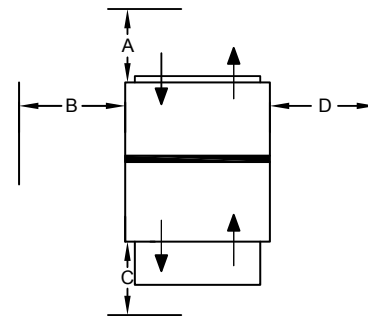
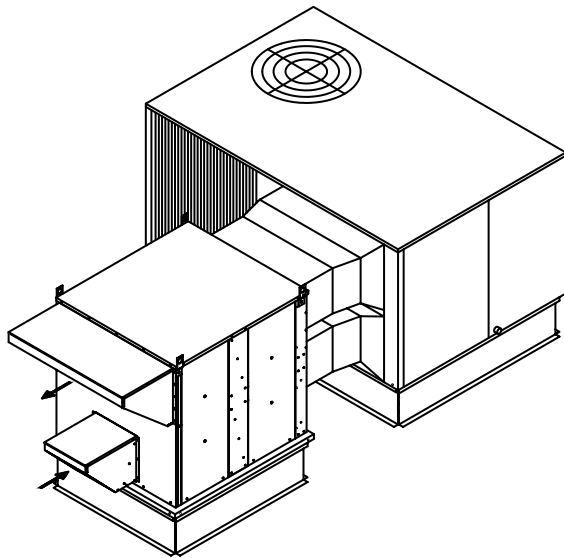
### Control System

- Control enclosures provided with internal fuses.
- Electronic control board.
- Fully wired.
- Independently fused.
- Color coded wires.
- Provides own 24 volt circuit.
- All options are “plug-in” modules.

### Optional Accessories

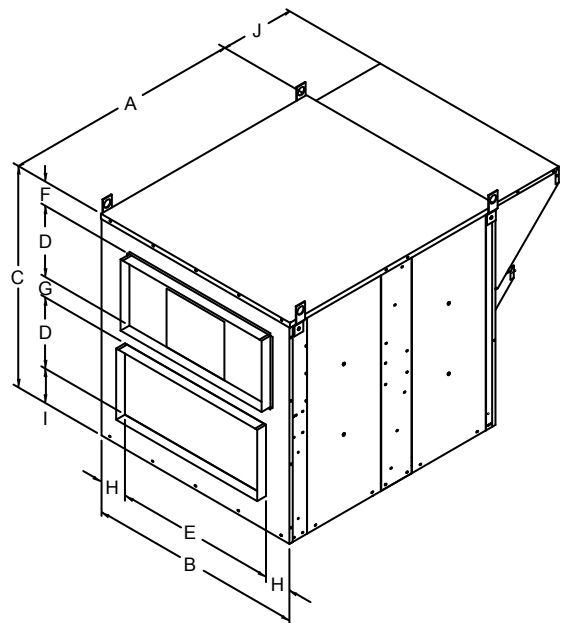
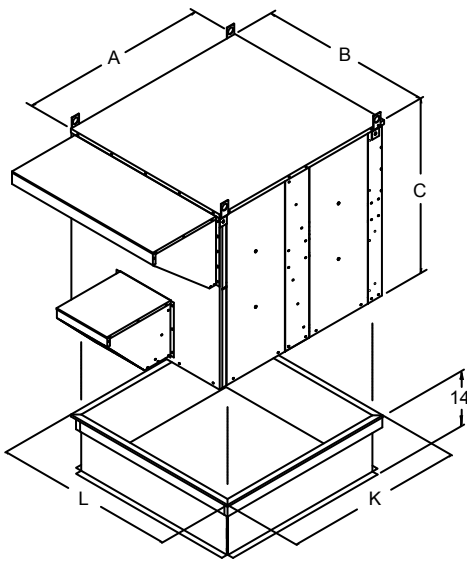
- Roof Mounting Frame (Curb)
- Low Ambient Control Kit
- Pressure Sensor
- Motorized Intake Air Damper
- Stop-Start-Jog
- Rotation Sensor
- Disconnect with GFI Plug
- VFD

O-SERIES | DIMENSIONAL DATA



Clearances

Size	A	B	C	D
O11	12	36	48	36
O20	12	36	60	36
O28	12	36	60	36
O36	12	36	60	36
O46	12	36	60	36
O62	12	36	60	36



Size	Min CFM	Max CFM	A	B	C	D	E	F	G	H	I	J	K	L
O11	300	1100	56.75	32.13	39.50	11.00	27.00	6.50	10.00	2.56	1.00	11.00	55.00	30.25
O20	1200	2000	54.38	37.25	37.50	12.00	30.00	8.00	4.00	3.63	1.50	20.32	52.75	35.50
O28	1200	2800	60.00	42.62	43.56	14.00	32.00	9.56	4.50	5.31	1.50	18.32	49.50	41.00
O36	2000	3600	60.00	46.69	57.37	16.50	39.50	12.13	6.38	3.59	5.88	18.32	55.75	41.81
O46	3000	4600	60.00	52.69	57.37	16.50	39.50	12.13	6.38	6.59	5.88	18.32	55.75	47.81
O62	4600	6200	72.00	70.88	63.63	19.50	39.50	12.13	6.50	15.69	5.88	18.32	67.75	66.00

Dimensions are labeled in inches.



O-SERIES | DIMENSIONAL & ELECTRICAL DATA

Filter Sizes

Size	Return Filter				Intake Filter			
	Qty	Width	Height	Type	Qty	Width	Height	Type
O11	1	18	25	2" PLT	1	27.5	10	1" ME
O20	2	16	16		1	32.25	18.5	
O28	2	20	20		1	40.25	21.5	
O36	3	16	20		1	40.25	21.5	
O46	2	24	24		1	40.25	21.5	
O62	3	18	25		1	40.25	25.5	

PLT is Pleated Filter. ME is Mist Eliminator Filter.

Electrical Data

Phase	300-1100 CFM				1200-2000 CFM			1200-2800 CFM			2000-3600 CFM			3000-4600 CFM			4600-6200 CFM			
	1	3			3			3			3			3						
	208/230v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	
Fresh Air Blower	Motor (hp)	1.5				2			3			3			5			5		
	Wheel Size - DxW (in)	9 x 4				9 x 9			10 x 10			12 x 9			12 x 12			15 x 15		
	Motor Speed (rpm)	1725				1725			1725			1725			1725			1725		
	FLA	9.1	5.6	2.8	2.0	6.0	2.6	2.4	9.4	4.3	3.2	9.4	4.3	3.2	14.0	7.0	5.1	14.0	7.0	5.1
	Service Factor	1.15				1.15			1.15			1.15			1.15			1.15		
Exhaust Air Blower	Motor (hp) Stationary	1.5				2			3			3			5			5		
	Wheel Size - DxW (in)	9 x 4				9 x 9			10 x 10			12 x 9			12 x 12			15 x 15		
	Motor Speed (rpm)	1725				1725			1725			1725			1725			1725		
	FLA (Stationary)	9.1	5.6	2.8	2.0	6.0	2.6	2.4	9.4	4.3	3.2	9.4	4.3	3.2	14.0	7.0	5.1	14.0	7.0	5.1
	Service Factor	1.15				1.15			1.15			1.15			1.15			1.15		
Enthalpy Wheel Data	Depth (in)	3				3			3			3			3			3		
	Diameter (in)	25.3				30.346			37.759			41.825			46.776			52.026		
	Construction	One-Piece				One-Piece			Segmented			Segmented			Segmented			Segmented		
	Potential Volts	208 - 230				208 - 230			200 / 208 - 230			200 / 208 - 230			200 / 208 - 230			200 / 208 - 230		
	Motor Speed (rpm)	1050				1050			825			1075			1075			1075		
	Motor (hp) 1 Phase	< .08				< .08			0.05			0.17			0.17			0.17		
	FLA	0.3				0.3			0.6			1.2			1.2			1.2		
Total Electrical	MCA (Stationary)	20.8	12.9	6.6	4.8	13.8	6.2	5.7	21.8	10.3	7.8	22.4	10.9	8.4	32.7	17.0	12.7	32.7	17.0	12.7
	OC PD (Stationary)	30.0	15.0	9.0	7.0	20.0	9.0	8.0	30.0	12.0	10.0	30.0	15.0	10.0	40.0	25.0	15.0	40.0	25.0	15.0
Curb	Curb Height (in)	14				14			14			14			14			14		
Weights	Shipping Weight (lbs)	318				425			470			571			920			1250		
	Net Weight (lbs)	245				345			395			475			805			1075		

See pages 35 and 36 for ARI Certified Rating information.

O-SERIES | PERFORMANCE

Low Speed Med. Speed High Speed

Supply Blower RPM (1.5HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
300	n/a	n/a	995	1045	1300	1440	1525
500	n/a	930	1030	1210	1385	1480	1605
700	n/a	1025	1205	1335	1435	1560	1635
900	945	1200	1325	1430	1555	1625	1720
1100	1195	1320	1420	1550	1620	1715	1795

O11

Exhaust Blower RPM (1.5HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
300	n/a	915	1070	1275	1385	1500	1625
500	n/a	1065	1155	1330	1475	1565	1685
700	940	1165	1325	1470	1520	1675	1730
900	1160	1320	1465	1555	1665	1720	1855
1100	1305	1460	1580	1660	1715	1810	1955

Supply Blower RPM (2HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	840	1020	1190	1260	1465	1565	1685
1400	945	1135	1265	1360	1485	1595	1720
1600	1040	1210	1310	1420	1535	1625	1745
1800	1145	1290	1395	1465	1570	1690	1765
2000	1250	1385	1450	1525	1630	1760	1820

O20

Exhaust Blower RPM (2HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	935	1125	1275	1410	1525	1640	1760
1400	1015	1220	1320	1460	1570	1690	1795
1600	1120	1270	1405	1565	1655	1745	1830
1800	1250	1400	1535	1650	1745	1820	1880
2000	1305	1530	1645	1735	1815	1870	1930

Supply Blower RPM (3HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	n/a	905	975	1075	1185	1345	1430
1600	n/a	950	1070	1170	1325	1420	1485
2000	945	1095	1145	1260	1385	1435	1525
2400	1065	1175	1280	1380	1460	1515	1610
2800	1195	1300	1400	1455	1520	1605	1665

O28

Exhaust Blower RPM (3HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	n/a	975	1115	1225	1310	1395	1475
1600	945	1105	1205	1300	1385	1460	1560
2000	1150	1285	1315	1395	1490	1575	1620
2400	1275	1425	1485	1515	1605	1685	1765
2800	1415	1520	1595	1640	1720	1825	1935

Performance can vary depending on ambient conditions. Drive losses included in tables. Blower RPMs are for reference only.

O-SERIES | PERFORMANCE

Low Speed Med. Speed High Speed

Supply Blower RPM (3HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
2000	680	805	890	975	1065	1125	1220
2400	780	885	1000	1060	1120	1190	1260
2800	880	995	1080	1110	1200	1250	1300
3200	990	1075	1145	1190	1255	1290	1360
3600	1070	1155	1220	1305	n/a	n/a	n/a

O36

Exhaust Blower RPM (3HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
2000	805	930	1020	1080	1150	1290	1330
2400	925	1015	1100	1145	1280	1325	1415
2800	1010	1125	1255	1300	1350	1395	1435
3200	1135	1250	1295	1345	1430	1475	1545
3600	1245	1340	1420	1445	1500	1575	n/a

Supply Blower RPM (5HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
3000	750	965	1045	1115	1185	1270	1325
3400	900	1035	1105	1190	1260	1315	1385
3800	975	1095	1195	1255	1305	1380	1440
4200	1080	1185	1250	1315	1385	1445	1500
4600	1105	1245	1330	1395	1450	1480	1560

O46

Exhaust Blower RPM (5HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
3000	920	1035	1125	1230	1270	1320	1400
3400	995	1120	1225	1295	1360	1425	1460
3800	1060	1220	1320	1385	1455	1485	1555
4200	1175	1295	1385	1450	1500	1545	1615
4600	1240	1370	1470	1525	1600	1630	1675

Supply Blower RPM (5HP, Mist Eliminator Filter in Intake Hood)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
4600	735	835	935	980	1050	1110	1140
5000	775	890	975	1015	1075	1135	1170
5400	830	930	1010	1070	1130	1160	1220
5800	880	970	1040	1100	1155	1215	1250
6200	920	1000	1095	1150	1210	1240	1275

O62

Exhaust Blower RPM (5HP, Barometric Hood, 2" Pleated Filters)

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
4600	825	935	1020	1075	1125	1170	1225
5000	885	995	1070	1100	1165	1220	1235
5400	925	1015	1090	1150	1200	1275	1315
5800	985	1065	1135	1175	1265	1305	n/a
6200	1025	1100	1150	1250	n/a	n/a	n/a

Performance can vary depending on ambient conditions. Drive losses included in tables. Blower RPMs are for reference only.

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**O-SERIES | ENGINEERING SPECIFICATIONS**

**Paint Designation**

56 = Off White

**Model & Size**

- O11 = O Series, Unit Size 11
- O20 = O Series, Unit Size 20
- O28 = O Series, Unit Size 28
- O36 = O Series, Unit Size 36
- O46 = O Series, Unit Size 46
- O62 = O Series, Unit Size 62

**Unit Cabinet Size**

02X = Standard Cabinet

**Blower Speed**

- L = Low
- M = Medium
- H = High

**Voltage**

- 21 = 208/230 volt, 1 Phase
- 23 = 208/230 volt, 3 Phase
- 33 = 460 volt, 3 Phase
- 43 = 575 volt, 3 Phase

**Options**

- L = Low Ambient Kit
- M = Motorized Outside Air
- S = Stop-Start-Jog
- P = Pressure Sensor
- R = Wheel Rotational Sensor
- D = Disconnect with GFI
- V = Variable Frequency Drive

**ERV O-Series**

Energy recovery ventilators shall be manufactured by PennBarry. Energy recovery ventilators shall include an ARI 1060-2000 certified enthalpy wheel which contains parallel layers of polymeric material that are impregnated with silica gel. All enthalpy wheels shall consist of removable 'pie' segments mounted in a slide-out track for easy inspection and cleaning.

Fan blowers shall be of the forward curve, centrifugal type, with separate motors with adjustable sheaves for the exhaust air stream and supply air stream allowing for independent balancing. Motors and blower assemblies shall have permanently lubricated ball bearings. All blower wheels shall be balanced.

Provide aluminum mist eliminator filter for the intake air and a minimum 2" pleated filter for the exhaust air on all outdoor applications. Provide minimum 2" pleated filter for both the exhaust and intake air on all indoor applications.

Unit casing shall be constructed of heavy gage galvanized steel. All sections designed for conditioned air shall be internally insulated using 1" dual density fiberglass liner. All components shall be easily accessible through removable panels for both exhaust and supply compartments.

Energy recovery ventilators shall be ETL listed as a complete assembly. All electrical components shall be UL listed or recognized and installed in accordance with the National Electric Code. All electrical components shall be mounted in sheet metal control enclosures with fused single point electrical connections.



## N-SERIES

“N” Series energy recovery ventilators are designed for use inside a building for applications that require “over and under” duct. Typically these units are installed in a mechanical room or mounted above a ceiling. Both the outside air intake and the exhaust air have duct systems to an outside source. The return air and supply air also are ducted. The horizontal return duct connection can be converted to bottom return in the field. Field provided balancing dampers should be utilized to help control the air volumes.

### Application & Construction

- Dry energy transfer. Moisture in supply (intake) air stream is transferred to exhaust air stream in a vapor state, eliminating condensate plumbing in the ventilator.
- Units can be used in a mechanical room application or plenum application.
- Reduces cooling load at design temperatures up to 4 tons per 1000 cfm of outside air.
- Reduces heating load up to 12,000 Btuh per 400 cfm of outside air.
- Enthalpy wheel made of polymeric material with silica gel impregnated into the material.
- Centrifugal blowers (both intake and exhaust) for high static capability and low sound levels.
- Heavy gauge galvanized steel cabinets.
- Separate fused power supply.
- Insulated cabinet.
- Roof curbs have duct supports.

### Operation & Maintenance

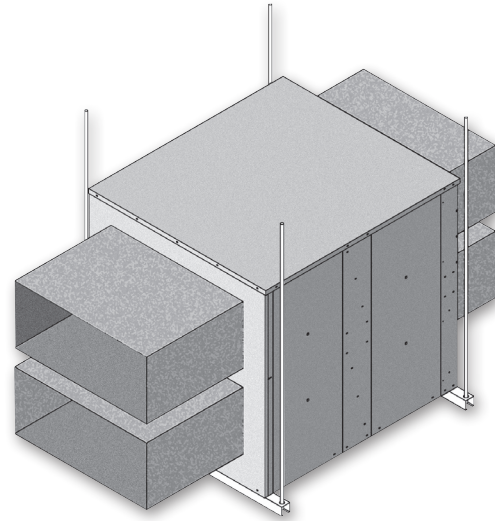
- Internal enthalpy wheel made of polymeric material with silica gel impregnated into the material. The enthalpy wheel has a five year limited warranty.
- Internal enthalpy wheels are easily cleanable. All wheels are segmented into easily removable pie segments.
- All wheels are designed to easily slide in and out of the ERV for servicing.
- Continuous operation down to 10° F (-12° C) without defrost at indoor relative humidity up to 40%. For temperatures below 10° F (-12° C), Optional Low Ambient Control Kit is required. Kit includes temperature sensor to shutoff power to ERV before frost build up can occur on recovery wheel.

### Certification

- ARI 1060-2000 certified internal enthalpy wheel is provided.

### Filter

- Unit is supplied with a 2” pleated filter for both the intake air and exhaust air.



### Blower Assembly

- Blowers are housed within a sheet metal frame to insure reliable performance.
- Blower motor is mounted on an adjustable motor mount that provides an easy method of adjusting the belts.
- Blowers are equipped with adjustable sheave pulleys.
- Blower pulley and the motor pulley are aligned by a state of the art “laser” alignment system.
- All blowers are shipped with low-speed belts installed. The units are shipped with the specified belt kit for field installation for medium speed and high-speed.

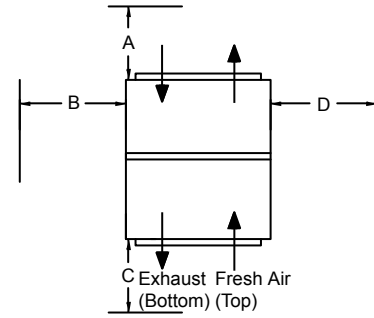
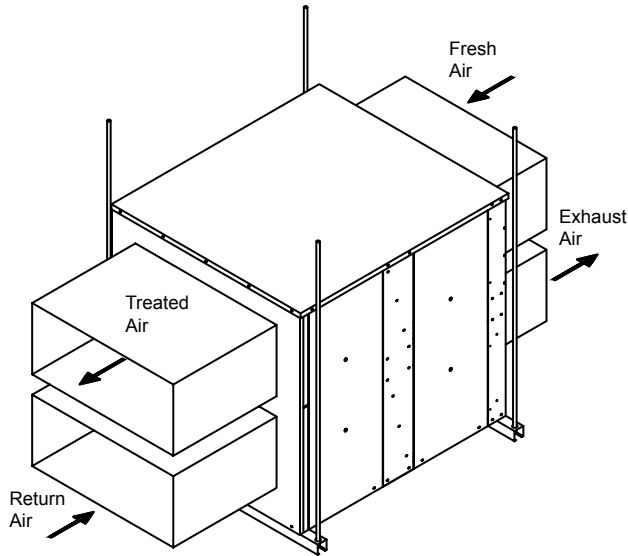
### Control System

- Control enclosures provided with internal fuses.
- Electronic control board.
- Fully wired.
- Independently fused.
- Color coded wires.
- Provides own 24 volt circuit.
- All options are “plug-in” modules.

### Optional Accessories

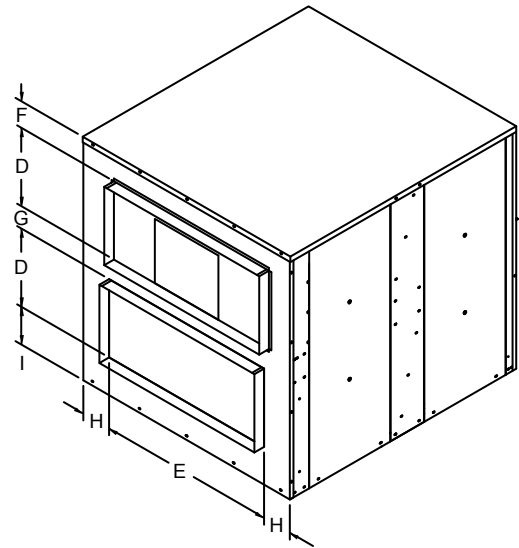
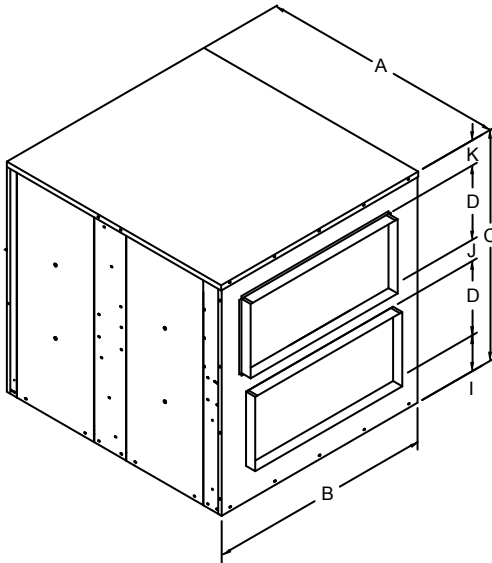
- Low Ambient Control Kit
- Pressure Sensor
- Motorized Intake Air Damper
- Stop-Start-Jog
- Rotation Sensor
- Disconnect with GFI Plug
- VFD

**N-SERIES** | DIMENSIONAL DATA



**Clearances**

Size	A	B	C	D
N11	12	36	36	36
N20	12	36	36	36
N28	12	36	36	36
N36	12	36	36	36
N46	12	36	36	36
N62	12	36	36	36



Size	Min CFM	Max CFM	A	B	C	D	E	F	G	H	I	J	K
N11	300	1100	56.75	32.13	39.50	11.00	27.00	6.50	10.00	2.56	1.00	10.00	6.50
N20	1200	2000	54.38	37.25	37.50	12.00	30.00	8.00	4.00	3.63	1.50	7.00	5.00
N28	1200	2800	60.00	42.62	43.56	14.00	32.00	9.56	4.50	5.31	1.50	8.81	5.25
N36	2000	3600	60.00	46.69	57.37	16.50	39.50	12.13	6.38	3.59	5.88	11.75	6.75
N46	3000	4600	60.00	52.69	57.37	16.50	39.50	12.13	6.38	6.59	5.88	11.75	6.75
N62	4600	6200	72.00	70.88	63.63	19.50	39.50	12.13	6.50	15.69	5.88	12.00	6.75

Dimensions are labeled in inches.



**N-SERIES | DIMENSIONAL & ELECTRICAL DATA**

**Filter Sizes**

Size	Return Filter				Intake Filter			
	Qty	Width	Height	Type	Qty	Width	Height	Type
N11	1	18	25	2" PLT	1	18	25	2" PLT
N20	2	16	16		2	16	16	
N28	2	20	20		2	20	20	
N36	3	16	20		3	16	20	
N46	2	24	24		2	24	24	
N62	3	18	25		3	18	25	

PLT is Pleated Filter.

**Electrical Data**

Phase	300-1100 CFM				1200-2000 CFM			1200-2800 CFM			2000-3600 CFM			3000-4600 CFM			4600-6200 CFM			
	1	3			3			3			3			3			3			
	208/230v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	208/230v	460v	575v	
Fresh Air Blower	Motor (hp)	1.5				2			3			3			5			5		
	Wheel Size - DxW (in)	9 x 4				9 x 9			10 x 10			12 x 9			12 x 12			15 x 15		
	Motor Speed (rpm)	1725				1725			1725			1725			1725			1725		
	FLA	9.1	5.6	2.8	2.0	6.0	2.6	2.4	9.4	4.3	3.2	9.4	4.3	3.2	14.0	7.0	5.1	14.0	7.0	5.1
	Service Factor	1.15				1.15			1.15			1.15			1.15			1.15		
Exhaust Air Blower	Motor (hp) Stationary	1.5				2			3			3			5			5		
	Wheel Size - DxW (in)	9 x 4				9 x 9			10 x 10			12 x 9			12 x 12			15 x 15		
	Motor Speed (rpm)	1725				1725			1725			1725			1725			1725		
	FLA (Stationary)	9.1	5.6	2.8	2.0	6.0	2.6	2.4	9.4	4.3	3.2	9.4	4.3	3.2	14.0	7.0	5.1	14.0	7.0	5.1
	Service Factor	1.15				1.15			1.15			1.15			1.15			1.15		
Enthalpy Wheel Data	Depth (in)	3				3			3			3			3			3		
	Diameter (in)	25.3				30.346			37.759			41.825			46.776			52.026		
	Construction	One-Piece				One-Piece			Segmented			Segmented			Segmented			Segmented		
	Potential Volts	208 - 230				208 - 230			200 / 208 - 230			200 / 208 - 230			200 / 208 - 230			200 / 208 - 230		
	Motor Speed (rpm)	1050				1050			825			1075			1075			1075		
	Motor (hp) 1 Phase	< .08				< .08			0.05			0.17			0.17			0.17		
	FLA	0.3				0.3			0.6			1.2			1.2			1.2		
Total Electrical	MCA (Stationary)	20.8	12.9	6.6	4.8	13.8	6.2	5.7	21.8	10.3	7.8	22.4	10.9	8.4	32.7	17.0	12.7	32.7	17.0	12.7
	OC PD (Stationary)	30.0	15.0	9.0	7.0	20.0	9.0	8.0	30.0	12.0	10.0	30.0	15.0	10.0	40.0	25.0	15.0	40.0	25.0	15.0
Curb	Curb Height (in)	14				14			14			14			14			14		
Weights	Shipping Weight (lbs)	318				425			470			571			920			1250		
	Net Weight (lbs)	245				345			395			475			805			1075		

See pages 35 and 36 for ARI Certified Rating information.

**N-SERIES | PERFORMANCE**

Low Speed

Med. Speed

High Speed

**Supply Blower RPM (1.5HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
300	n/a	n/a	980	1065	1320	1400	1520
500	n/a	905	1050	1215	1360	1495	1595
700	865	1035	1210	1330	1440	1535	1620
900	1030	1205	1325	1435	1530	1615	1725
1100	1200	1320	1430	1525	1605	1720	1800

**N11**

**Exhaust Blower RPM (1.5HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
300	n/a	815	1030	1185	1305	1450	1535
500	n/a	950	1075	1220	1375	1490	1610
700	810	1070	1195	1295	1445	1510	1645
900	995	1125	1290	1405	1500	1600	1690
1100	1120	1280	1400	1495	1595	1685	1770

**Supply Blower RPM (2HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	990	1075	1220	1380	1480	1605	1720
1400	1030	1165	1280	1410	1520	1620	1740
1600	1135	1250	1340	1445	1570	1665	1760
1800	1240	1330	1425	1550	1625	1720	1785
2000	1295	1405	1540	1615	1705	1760	1830

**N20**

**Exhaust Blower RPM (2HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	900	1085	1235	1380	1495	1585	1680
1400	1050	1220	1345	1490	1535	1630	1715
1600	1205	1335	1430	1520	1625	1705	1790
1800	1315	1425	1510	1580	1655	1775	1850
2000	1390	1490	1570	1650	1735	1750	n/a

**Supply Blower RPM (3HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	n/a	900	1045	1135	1255	1395	1410
1600	880	1035	1130	1245	1385	1405	1450
2000	1045	1145	1235	1325	1400	1440	1555
2400	1135	1300	1375	1435	1505	1550	1590
2800	1295	1365	1435	1515	1580	1625	1695

**N28**

**Exhaust Blower RPM (3HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
1200	n/a	955	1075	1185	1285	1355	1495
1600	945	1055	1175	1265	1335	1445	1635
2000	1045	1170	1330	1395	1440	1570	1695
2400	1210	1325	1435	1510	1580	1620	1675
2800	1315	1475	1500	1595	1710	1755	1790

Performance can vary depending on ambient conditions. Drive losses included in tables. Blower RPMs are for reference only.

**N-SERIES | PERFORMANCE**

Low Speed Med. Speed High Speed

**Supply Blower RPM (3HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
2000	735	860	920	1005	1075	1150	1220
2400	850	945	1030	1090	1110	1215	1265
2800	935	1020	1080	1145	1200	1255	1335
3200	1015	1075	1105	1195	1285	1325	1380
3600	1065	1125	1220	1305	n/a	n/a	n/a

**N36**

**Exhaust Blower RPM (3HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
2000	740	855	930	970	1080	1155	1240
2400	800	925	1015	1075	1145	1225	1280
2800	885	1010	1070	1140	1235	1255	1330
3200	950	1065	1135	1230	1290	1325	n/a
3600	1055	1130	1235	1280	1310	n/a	n/a

**Supply Blower RPM (5HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
3000	840	990	1065	1135	1215	1265	1335
3400	875	1060	1130	1205	1255	1320	1385
3800	1015	1120	1200	1245	1315	1365	1450
4200	1080	1195	1240	1350	1395	1445	1510
4600	1120	1200	1315	1380	1460	1515	1560

**N46**

**Exhaust Blower RPM (5HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
3000	850	995	1065	1135	1220	1270	1335
3400	925	1060	1130	1225	1265	1330	1375
3800	1020	1120	1220	1285	1325	1370	1430
4200	1100	1215	1280	1345	1400	1435	1480
4600	1150	1275	1340	1415	1475	1520	1565

**Supply Blower RPM (5HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
4600	795	900	960	1010	1090	1135	1165
5000	835	945	1000	1060	1135	1155	1230
5400	895	985	1040	1130	1155	1220	1265
5800	940	1025	1085	1145	1225	1250	1300
6200	990	1070	1105	1210	1245	1290	n/a

**N62**

**Exhaust Blower RPM (5HP, 2" Pleated Filters)**

CFM	External Static Pressure (in water)						
	0	0.25	0.5	0.75	1	1.25	1.5
4600	780	910	900	1045	1085	1135	1185
5000	825	945	1015	1075	1125	1180	1230
5400	890	990	1065	1105	1170	1220	1270
5800	940	1025	1085	1165	1215	1250	1310
6200	980	1060	1150	1205	1235	1305	n/a

Performance can vary depending on ambient conditions. Drive losses included in tables. Blower RPMs are for reference only.

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**N-SERIES** | ENGINEERING SPECIFICATIONS

**Paint Designation**

56 = Off White

**Model & Size**

- N11 = N-Series, Unit Size 11
- N20 = N-Series, Unit Size 20
- N28 = N-Series, Unit Size 28
- N36 = N-Series, Unit Size 36
- N46 = N-Series, Unit Size 46
- N62 = N-Series, Unit Size 62

**Unit Cabinet Size**

02X = Standard Cabinet

**Blower Speed**

- L = Low
- M = Medium
- H = High

**Voltage**

- 21 = 208/230 volt, 1 Phase
- 23 = 208/230 volt, 3 Phase
- 33 = 460 volt, 3 Phase
- 43 = 575 volt, 3 Phase

**Options**

- L = Low Ambient Kit
- M = Motorized Outside Air
- S = Stop-Start-Jog
- P = Pressure Sensor
- R = Wheel Rotational Sensor
- D = Disconnect with GFI
- V = Variable Frequency Drive

**ERV N-Series**

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Fan blowers shall be of the forward curve, centrifugal type, with separate motors with adjustable sheaves for the exhaust air stream and supply air stream allowing for independent balancing. Motors and blower assemblies shall have permanently lubricated ball bearings. All blower wheels shall be balanced.

Provide aluminum mist eliminator filter for the intake air and a minimum 2" pleated filter for the exhaust air on all outdoor applications. Provide minimum 2" pleated filter for both the exhaust and intake air on all indoor applications.

Unit casing shall be constructed of heavy gage galvanized steel. All sections designed for conditioned air shall be internally insulated using 1" dual density fiberglass liner. All components shall be easily accessible through removable panels for both exhaust and supply compartments.

Energy recovery ventilators shall be ETL listed as a complete assembly. All electrical components shall be UL listed or recognized and installed in accordance with the National Electric Code. All electrical components shall be mounted in sheet metal control enclosures with fused single point electrical connections.



### AHRI CERTIFIED RATINGS

#### D11, S11, M11, O11, N11

##### ARI Certified Ratings for 300 - 1100 CFM

Thermal Ratings @ 0" Pressure Difference		Sensible	Latent	Total
Total Effectiveness	100% Airflow Heating	76%	68%	73%
	75% Airflow Heating	81%	73%	78%
	100% Airflow Cooling	76%	68%	72%
	75% Airflow Cooling	81%	73%	76%
Net Effectiveness	100% Airflow Heating	76%	68%	73%
	75% Airflow Heating	81%	73%	78%
	100% Airflow Cooling	76%	68%	72%
	75% Airflow Cooling	81%	73%	76%

Enthalpy Wheel ARI Rating Data	
Nominal Airflow CFM	900 @ 1.0D
EATR: -1.00 H2O	9.30%
EATR: 0.00 H2O	0.70%
EATR: +1.00 H2O	0.00%
OACF: -1.00 H2O	0.97
OACF: 0.00 H2O	1.19
OACF: +1.00 H2O	1.34

#### D20, S20, M20, O20, N20

##### ARI Certified Ratings for 1200 - 2000 CFM

Thermal Ratings @ 0" Pressure Difference		Sensible	Latent	Total
Total Effectiveness	100% Airflow Heating	68%	61%	65%
	75% Airflow Heating	72%	67%	71%
	100% Airflow Cooling	68%	61%	64%
	75% Airflow Cooling	72%	67%	70%
Net Effectiveness	100% Airflow Heating	68%	61%	65%
	75% Airflow Heating	72%	67%	71%
	100% Airflow Cooling	68%	61%	64%
	75% Airflow Cooling	72%	67%	70%

Enthalpy Wheel ARI Rating Data	
Nominal Airflow CFM	1600 @ 1.0D
EATR: -1.00 H2O	7.80%
EATR: 0.00 H2O	0.40%
EATR: +1.00 H2O	0.00%
OACF: -1.00 H2O	0.97
OACF: 0.00 H2O	1.16
OACF: +1.00 H2O	1.29

#### D28, S28, M28, O28, N28

##### ARI Certified Ratings for 1200 - 2800 CFM

Thermal Ratings @ 0" Pressure Difference		Sensible	Latent	Total
Total Effectiveness	100% Airflow Heating	68%	60%	65%
	75% Airflow Heating	74%	67%	71%
	100% Airflow Cooling	68%	60%	63%
	75% Airflow Cooling	74%	67%	70%
Net Effectiveness	100% Airflow Heating	68%	60%	65%
	75% Airflow Heating	74%	67%	71%
	100% Airflow Cooling	68%	60%	63%
	75% Airflow Cooling	74%	67%	70%

Enthalpy Wheel ARI Rating Data	
Nominal Airflow CFM	1600 @ 1.0D
EATR: -1.00 H2O	7.80%
EATR: 0.00 H2O	0.40%
EATR: +1.00 H2O	0.00%
OACF: -1.00 H2O	0.97
OACF: 0.00 H2O	1.16
OACF: +1.00 H2O	1.29



Energy recovery component certified to ARI Air-to-Air Energy Recovery Ventilation Equipment Certification Program in accordance with ARI Standard 1060-2005. Actual performance in packaged equipment may vary.

## AHRI CERTIFIED RATINGS

### D36, S36, M36, O36, N36 ARI Certified Ratings for 2000 - 3600 CFM

Thermal Ratings @ 0" Pressure Difference		Sensible	Latent	Total
Total Effectiveness	100% Airflow Heating	68%	60%	65%
	75% Airflow Heating	74%	67%	71%
	100% Airflow Cooling	68%	60%	63%
	75% Airflow Cooling	74%	67%	70%
Net Effectiveness	100% Airflow Heating	68%	60%	65%
	75% Airflow Heating	74%	67%	71%
	100% Airflow Cooling	68%	60%	63%
	75% Airflow Cooling	74%	67%	70%

Enthalpy Wheel ARI Rating Data	
Nominal Airflow CFM	3100 @ 0.9D
EATR: -1.00 H2O	4.90%
EATR: 0.00 H2O	1.30%
EATR: +1.00 H2O	0.30%
OACF: -1.00 H2O	0.99
OACF: 0.00 H2O	1.07
OACF: +1.00 H2O	1.12

### D46, S46, M46, O46, N46 ARI Certified Ratings for 3000 - 4600 CFM

Thermal Ratings @ 0" Pressure Difference		Sensible	Latent	Total
Total Effectiveness	100% Airflow Heating	68%	60%	65%
	75% Airflow Heating	73%	67%	71%
	100% Airflow Cooling	68%	60%	63%
	75% Airflow Cooling	73%	67%	70%
Net Effectiveness	100% Airflow Heating	68%	60%	65%
	75% Airflow Heating	73%	67%	71%
	100% Airflow Cooling	68%	60%	63%
	75% Airflow Cooling	73%	67%	70%

Enthalpy Wheel ARI Rating Data	
Nominal Airflow CFM	3900 @ 0.95D
EATR: -1.00 H2O	4.40%
EATR: 0.00 H2O	1.10%
EATR: +1.00 H2O	0.20%
OACF: -1.00 H2O	0.99
OACF: 0.00 H2O	1.06
OACF: +1.00 H2O	1.11

### D62, S62, M62, O62, N62 ARI Certified Ratings for 4600 - 6200 CFM

Thermal Ratings @ 0" Pressure Difference		Sensible	Latent	Total
Total Effectiveness	100% Airflow Heating	68%	60%	65%
	75% Airflow Heating	73%	67%	71%
	100% Airflow Cooling	68%	60%	63%
	75% Airflow Cooling	73%	67%	70%
Net Effectiveness	100% Airflow Heating	68%	60%	65%
	75% Airflow Heating	73%	67%	71%
	100% Airflow Cooling	68%	60%	63%
	75% Airflow Cooling	73%	67%	70%

Enthalpy Wheel ARI Rating Data	
Nominal Airflow CFM	5500 @ 0.95D
EATR: -1.00 H2O	4.00%
EATR: 0.00 H2O	1.00%
EATR: +1.00 H2O	0.20%
OACF: -1.00 H2O	0.99
OACF: 0.00 H2O	1.06
OACF: +1.00 H2O	1.10



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## PennBarry Product Solutions

### COMMERCIAL

Roof & Wall Exhaust Centrifugal Fans  
Ceiling, Wall, & Inline Centrifugal Fans  
Roof Supply Centrifugal Fans  
Square & Round Centrifugal Fans  
Wall Mounted Axial Fans  
Hooded Roof Axial Fans  
Upblast Roof Axial Fans  
Gravity Ventilators  
Roof Curbs

### INDUSTRIAL

Utility Vent Sets  
Freestanding Centrifugal Fans  
Industrial & Material Handling Fans  
Tubular Centrifugal Inline Fans  
Mixed Flow Centrifugal Fans  
Plug & Plenum Fans  
Wall Mounted Propeller Fans  
Tube Axial Fans  
Vane Axial Fans  
Bifurcator Fans  
Fume Exhaust

### ENERGY RECOVERY

Outdoor Units  
Indoor Units

### KITCHEN VENTILATION

Kitchen Hoods  
Make-Up Air Units  
Exhaust Fans



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