

Certificate of Product Ratings

AHRI Certified Reference Number: 3885942

Date: 2/14/2016

Product: Variable Speed Multi-Split Heat Pump

Outdoor Unit Model Number: MXZ-4B36NA

Indoor Unit Type: Non-Ducted Indoor Units

Manufacturer: MITSUBISHI ELECTRIC COOLING & HEATING

Trade/Brand name: MR. SLIM

Series name:

Manufacturer responsible for the rating of this system combination is MITSUBISHI ELECTRIC COOLING & HEATING

Rated as follows in accordance with AHRI Standard 210/240-2008 for Unitary Air-Conditioning and Air-Source Heat Pump Equipment and subject to verification of rating accuracy by AHRI-sponsored, independent, third party testing:

Cooling Capacity (Btuh):	35400
EER Rating (Cooling):	9.40
SEER Rating (Cooling):	18.00
Heating Capacity(Btuh) @ 47 F:	36000
Region IV HSPF Rating (Heating):	9.30
Heating Capacity(Btuh) @ 17 F:	22000

CERTIFIED RATINGS FOR VARIABLE-SPEED, MINI- AND MULTI-SPLIT SYSTEMS ARE VALID FOR ALL COMBINATIONS OF INDOOR UNITS (BASED ON COMBINATION TYPES) WITH THE SPECIFIC OUTDOOR UNIT LISTED ABOVE AND IN THE AHRI DIRECTORY OF CERTIFIED EQUIPMENT. VISIT WWW.AHRIDIRECTORY.ORG TO VERIFY THAT THIS COMBINATION IS AN ACTIVE LISTING AND THE DATA LISTED ON THIS CERTIFICATE IS ACCURATE. SEARCH ON THE AHRI REFERENCE # TO QUICKLY LOCATE THIS COMBINATION IN THE DIRECTORY.

* Ratings followed by an asterisk (*) indicate a voluntary rerate of previously published data, unless accompanied with a WAS, which indicates an involuntary rerate.

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we make life better™

CERTIFICATE NO.:

130999619703137808

Mechanical Properties

Cells	6 x 10
Cell vendor	LG
Cell type	Monocrystalline
Cell dimensions	156.5 x 156.5 mm / 6 x 6 in
# of busbar	3
Dimensions (L x W x H)	1640 x 1000 x 35 mm 64.57 x 39.37 x 1.38 in
Static snow load	5400 Pa / 113 psf
Static wind load	2400 Pa / 50 psf
Weight	16.8 ± 0.5 kg / 36.96 ± 1.1 lb
Connector type	MC4 connector IP 67
Junction box	IP 67 with 3 bypass diodes
Length of cables	1000 mm / 39.37 in
Glass	High transmission tempered glass
Frame	Anodized aluminum

Certifications and Warranty

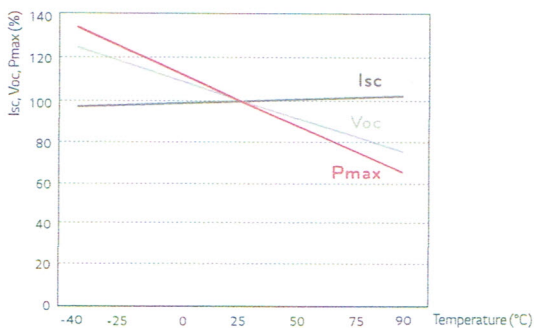
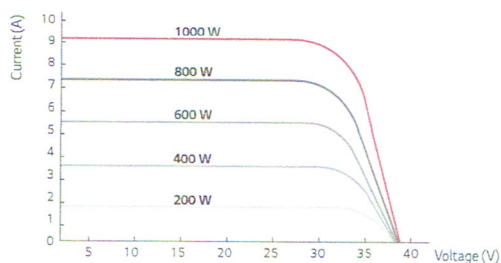
Certifications (In Progress)	IEC 61215, IEC 61730-1/-2, IEC 61701, DLG-Fokus Test "Ammonia Resistance", UL 1703, ISO 9001
Product warranty	10 years
Output warranty of Pmax (measurement Tolerance ± 3%)	Linear warranty*

* 1) 1st year: 97%, 2) After 2nd year: 0.7% annual degradation, 3) 80.2% for 25 years

Temperature Coefficients

NOCT	45.0 ± 2 °C
Pmpp	-0.43 %/°C
Voc	-0.31 %/°C
Isc	0.04%/°C

Characteristic Curves



Electrical Properties (STC*)

	LG275S1C-B3	LG270S1C-B3	LG265S1C-B3
Maximum power at STC (Pmpp)	275	270	265
MPP voltage (Vmpp)	31.7	31.5	31.3
MPP current (Impp)	8.68	8.58	8.49
Open circuit voltage (Voc)	38.7	38.5	38.3
Short circuit current (Isc)	9.26	9.17	9.11
Module efficiency (%)	16.8	16.5	16.2
Operating temperature (°C)	-40 ~ +90		
Maximum system voltage (V)	1000 (IEC), 600 (UL)		
Maximum series fuse rating (A)	15		
Power tolerance (%)	0 ~ +3		

* STC (Standard Test Condition): Irradiance 1000 W/m², module temperature 25 °C, AM 1.5

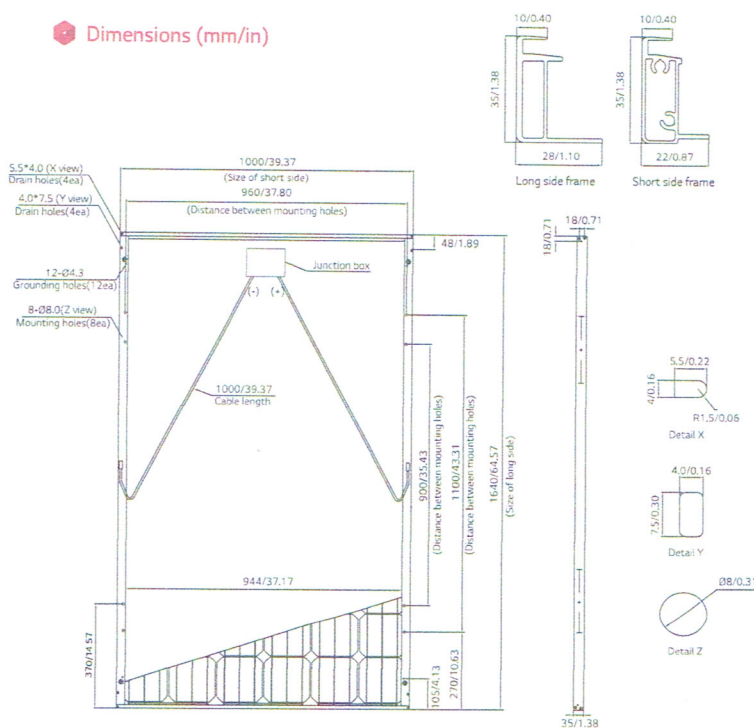
* The nameplate power output is measured and determined by LG Electronics at its sole and absolute discretion.

Electrical Properties (NOCT*)

	LG275S1C-B3	LG270S1C-B3	LG265S1C-B3
Maximum power (Pmpp)	202	198	195
MPP voltage (Vmpp)	29.1	29.0	28.8
MPP current (Impp)	6.92	6.84	6.77
Open circuit voltage (Voc)	35.9	35.7	35.5
Short circuit current (Isc)	7.46	7.39	7.34
Efficiency reduction (from 1000 W/m² to 200 W/m²)	< 4.5 %		

* NOCT (Nominal Operating Cell Temperature): Irradiance 800 W/m², ambient temperature 20 °C, wind speed 1 m/s

Dimensions (mm/in)

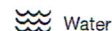


* The distance between the center of the mounting/grounding holes





The new degree of comfort.™



Residential Solar Electric
Solaide HE Water Heaters
& Storage Tanks

Solaide™ HE tanks are available as electric backup water heaters and as storage tanks, designed for use with closed loop solar water heating systems

Features & Benefits

- Double wall heat exchanger includes copper tubing wrapped around the tank and secured within the jacket for positive leak protection
- Two well insulated models to choose from...a storage tank or a high efficiency 4500 Watt backup electric water heater
- Electric backup model provides at least 40-gallons of stored hot water

Easy Installation and Maintenance

- Collector feed and return fittings conveniently located on front of tank for easy installation
- A special 1/2" NPT opening is provided for installation of a "probe type" thermostat
- Durable brass drain valve for easy maintenance

Tank Design & Construction

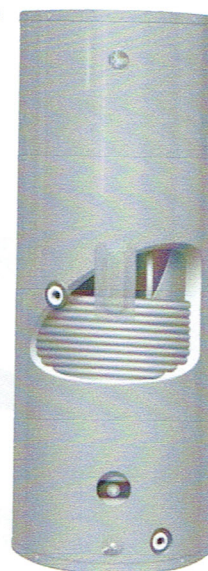
- Cold water inlet brings cold water to tank bottom to prevent mixing with heated water
- Rheemglas® tank lining resists corrosion and prolongs tank life
- Anode rod equalizes aggressive action for prolonged tank life
- Temperature and pressure relief valve included
- Electric backup model has automatic temperature control and over heat protection

Warranty

- 6-Year limited tank and parts warranty*

*See Residential Warranty Certificate for complete information

Units meet or exceed ANSI requirements and have been tested according to D.O.E. procedures. Units meet or exceed the energy efficiency requirements of NAECA, ASHRAE standard 90, ICC Code and all state energy efficiency performance criteria.



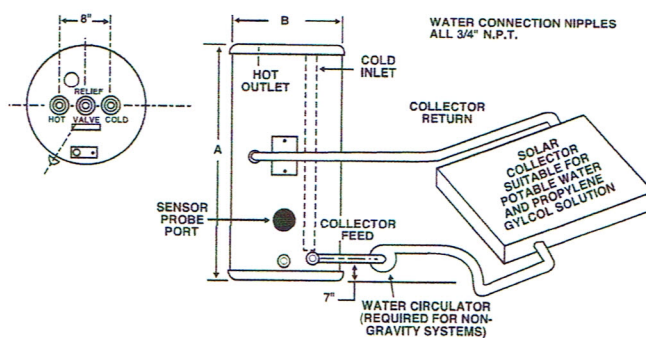
Solaide HE Tanks 80 and 120-Gallon Capacities Heat Exchanger Electric WHs and Storage Tanks



Copper Heat Exchanger Coil Type L Copper 5/8" I.D.

Solaide HE Tank Capacity	Coil Capacity Gallons	Length of Tubing Around Tank (ft)
80 Gallons	2.2	120
120 Gallons	2.6	143

PRESSURE DROP THROUGH COIL (Feet of H ₂ O)		
Flow Rate	Head Loss (Feet)	
	80-Gallon	120-Gallon
1 GPM	1.3	1.6
2 GPM	4.8	5.7
3 GPM	10.0	12.0



DESCRIPTION				ROUGHING IN DIMENSIONS (SHOWN IN INCHES)			ENERGY INFORMATION
TYPE	GAL. CAP.	MODEL NUMBER	ELEMENT WATTAGE UPPER	HEIGHT A	DIAMETER B	APPROX. SHIP WT. (LBS.)	APPROX. R- FACTOR
TALL	80	81V80HE-1	4500 W*	58-3/4	24-1/2	222	R-17.3
	80	81V80HE-T	Storage only	58-3/4	24-1/2	222	R-17.3
	120	82V120HE-1	4500 W*	62	28-1/4	380	R-17.3
	120	82V120HE-T	Storage only	62	28-1/4	380	R-17.3

*Heaters furnished with standard 240 volt AC, single phase non-simultaneous wiring and 4500 watt heating element. If heating elements of different wattages than those shown are demanded by zone requirements, they must be specifically requested. To prevent corrosion, proper pH levels in transfer fluid must be maintained. Solaide models meet all current state requirements for solar storage tanks. The tanks are Rheemglas lined and are designed to operate up to 150 PSI.

In keeping with its policy of continuous progress and product improvement, Rheem reserves the right to make changes without notice.

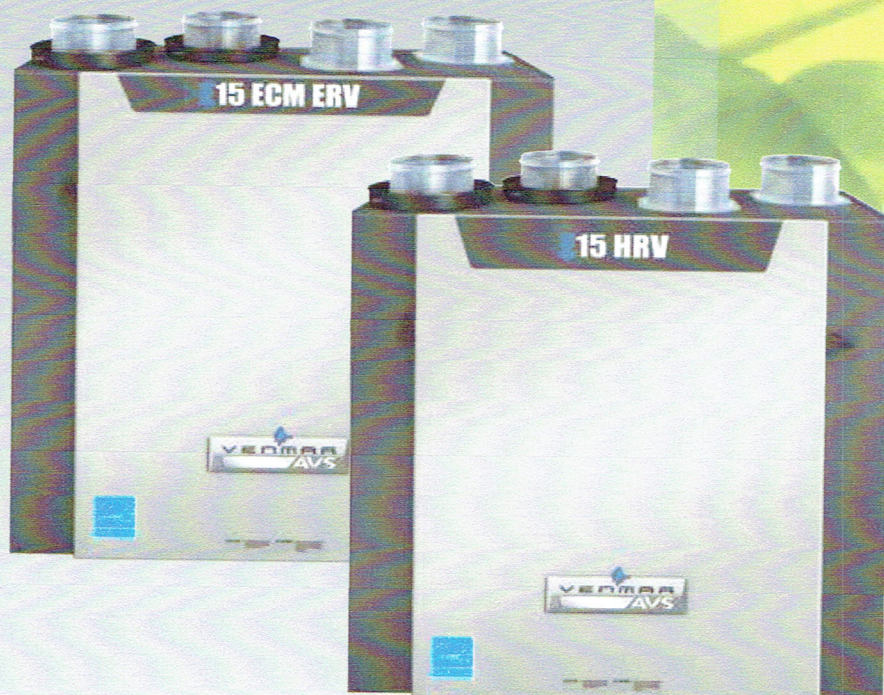
Rheem Water Heating • 101 Bell Road
Montgomery, Alabama 36117-4305 • www.rheem.com

Rheem Canada Ltd./Ltée • 125 Edgeware Road, Unit 1
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INTEGRATED HOME COMFORT

Powerful. Eco-friendly. Highly-Efficient.



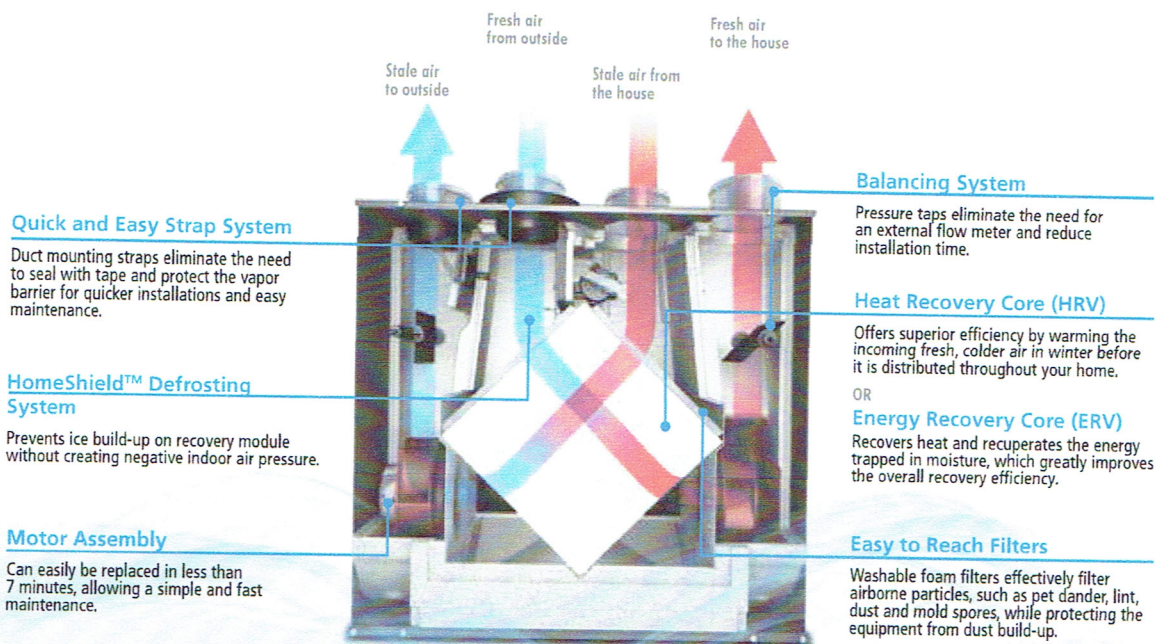
Venmar AVS introduces its new E Series: A family of Energy Efficient units that is growing with more choices.

Get the maximum builder package points from HRV category!

The E Series has been developed with energy efficient home building cost optimization in mind. In addition to providing high performances, this series offers environmentally-friendly air exchangers.

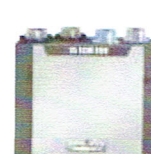
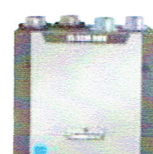
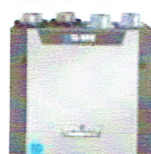
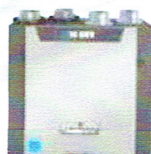
- With an exceptional sensible recovery efficiency of 75% SRE @ 0°C and 70% SRE @ -25°C, these units allow reaching builder option package points required to obtain energy efficient program certification
- Equipped with 2 powerful and reliable motors providing best in class fan efficacy
- Quick installation with airflow balancing system
- Can comply with highest requirements of efficient home programs such as ENERGY STAR® in Canada and Novoclimat 2.0
- 5-year warranty





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AVS
THE PROFESSIONALS' CHOICE



NEW

NEW



Specifications	E10 HRV	E15 HRV	E15 ECM HRV	E15 ECM ERV
Part number	41126	43135	43901	43911
Maximum continuous air flow (at 0.2 in. w.g.)	139 CFM	183 CFM	177 CFM	157 CFM
Maximum continuous air flow (at 0.4 in. w.g.)	105 CFM	155 CFM	156 CFM	140 CFM
Sensible Recovery Efficiency @ 0°C (64 CFM nominal)	75%	75%	74%	67%
Sensible Recovery Efficiency @ -25°C (64 CFM nominal)	70%	70%	64%	60%
Total Recovery Efficiency @ 35°C (51 CFM nominal)	n/a	n/a	n/a	52%
Dimensions	Height: 25.625 in. (65.087 cm) • Width: 24.4375 in. (62.071 cm) • Depth: 15.125 in. (38.417 cm)			
Pressure taps to balance air flow	Yes	Yes	Yes	Yes
Balancing dampers	Yes	Yes	Yes	Yes
Fan efficacy	1.2 CFM/W	1.2 CFM/W	2.5 CFM/W	2.2 CFM/W
Electrical consumption (low speed)	54 W	54 W	26 W	30 W
Wall control compatibility	Lite-Touch, Simple-Touch, Constructo, Altitude	Lite-Touch, Simple-Touch, Constructo, Altitude	Deco-Touch, Altitude	Deco-Touch, Altitude
Warranty on parts	5 years	5 years	5 years	5 years
Warranty on core	Limited lifetime	Limited lifetime	Limited lifetime	5 years
 	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes

These specifications are subject to change without notice, please see the specification sheet on www.venmar.ca.

* This product earned the ENERGY STAR® by meeting strict energy efficiency guidelines set by Natural Resources Canada and the US EPA. It meets ENERGY STAR® requirements only when used in Canada.

Available at this authorized dealer:

VENMAR
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Venmar Ventilation Inc., Residential Group
550 Lemire Blvd., Drummondville (Quebec) Canada J2C 7W9
Toll-free: 1-800-567-3855 (Canada and USA)
www.venmar.ca



Venmar E15 ECM HRV

Part no. 43901

80 to 157 CFM (0.4 in. w.g.)

66 to 132 CFM (0.4 in. w.g.)

53 to 106 CFM (0.4 in. w.g.)

40 to 80 CFM (0.4 in. w.g.)



VB0210

DISCOVER THE NEW GENERATION OF VENMAR AIR EXCHANGERS: ULTRA-EFFICIENT AND ENVIRONMENTALLY-FRIENDLY

The E15 ECM HRV has been designed to be one of the most eco-friendly HRV air exchangers on the market. Its innovative design incorporates extremely high performance ECM* motors, which enable the E15 ECM HRV to significantly lower energy costs without affecting its performance. Additional energy efficiency is achieved through its advanced heat recovery core, which can retain up to 80% of the home's heating. The E15 ECM HRV surpasses energy-saving standards while providing effective heat recovery, ventilation and quiet operation. All aspects have been designed to facilitate balancing of air flow and simplify uses and installation.

- High performance ECM* motors
- Faster and easier installation of insulated flexible ducts with practical straps
- Integrated balancing dampers
- Integrated electronic board on motors
- Homeshield™ defrosting system
- Heat recovery core with superior capacity
- Optimized drainage system
- ENERGY STAR® qualified

REPAIRS AND MAINTENANCE

The E15 ECM HRV high output ECM* motors are permanently lubricated. The electronic circuit board eliminates electromechanical parts, reducing repair time to a minimum.

WARRANTY

The E15 ECM HRV unit is protected by a complete 5-year warranty on all parts. The heat recovery core is covered by a limited lifetime warranty, with the original proof of purchase.

*Electronically Commutated Motor.

HEAT RECOVERY VENTILATOR

Controls

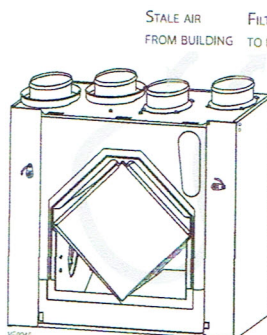
- This unit is very simple to operate. Once the unit is installed, press on its push button, located under the unit, to activate it. Press once for low speed, once again for high speed, and once more to stop it.
- For more convenience, this unit can also be controlled by an optional main control. For a complete list of optional main and auxiliary controls available, refer to the **Wall Control Compatibility Chart** on last pages of wall controls specification sheet, available at www.venmar.ca.
- For more details about controls, refer to the **Main and auxiliary wall controls** user guide, also available at www.venmar.ca.

Options

- Complete line of registers and diffusers
- Electric duct heater

Homeshield™ Defrosting System

The E15 ECM HRV uses a unique defrosting method. No negative pressure is created by air exhausted to the outside, as the air is recirculated into the house, helping to prevent any backdraft.



OUTSIDE TEMPERATURE		DEFROST CYCLE MIN./
°C	°F	OPERATING MIN.
WARMER THAN -5	WARMER THAN 23	NO DEFROST
-5 TO -15	23 TO 5	7/25
-15 TO -27	5 TO -17	7/25
-27 AND LESS	-17 AND LESS	10/22

Heat Recovery Core

Dimensions: 10" x 10" x 14.25" (25.4 cm x 25.4 cm x 36.2 cm)

Exchange surface: 110 ft.² (10.2 m²)

Weight: 7.36 lb. (3.3 kg)

Material: Polypropylene

Type: Cross Flow

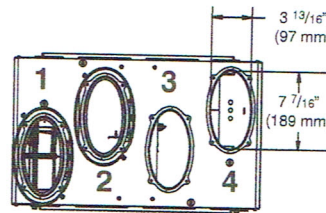
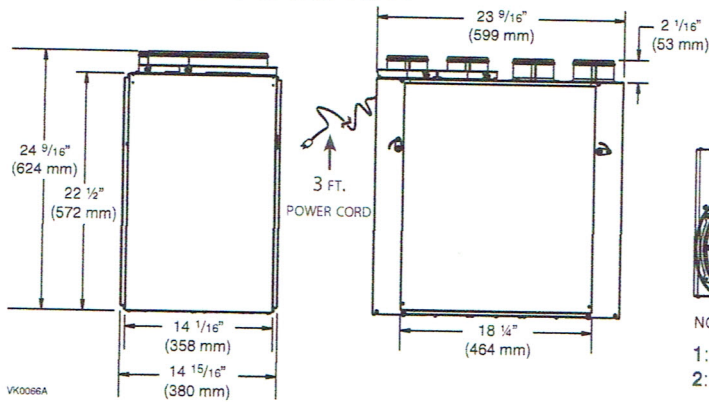
Warranty: Limited lifetime

Requirements and standards

- Complies with the UL 1812 requirements regulating the installation of Heat Recovery Ventilators
- Complies with the CSA C22.2 no. 113 Standard applicable to ventilators
- Complies with CSA C444 requirements regulating the installation of Heat Recovery Ventilators
- Technical data was obtained from published results of tests relating to CSA C439 Standards
- HVI certified and ENERGY STAR® qualified

Available at:

DIMENSIONS: E15 ECM HRV



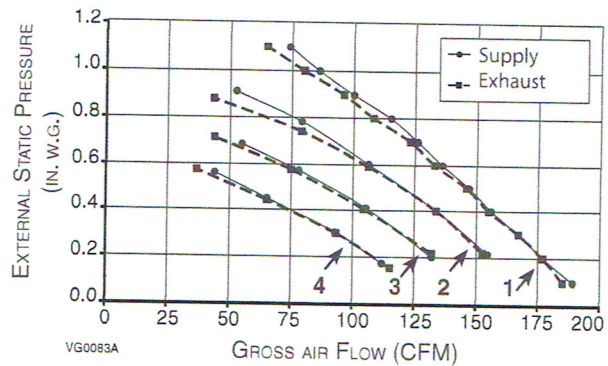
NOTE: ALL UNITS PORTS WERE CREATED TO BE CONNECTED TO DUCTS HAVING A MINIMUM OF 6" DIAMETER, BUT IF NEEDED, THEY CAN BE CONNECTED TO BIGGER SIZED DUCTS BY USING AN APPROPRIATE TRANSITION (E.G.: 6" DIAMETER TO 7" DIAMETER TRANSITION).

NOTE: Every port fits 6" round duct.

- 1: EXHAUST AIR TO OUTSIDE PORT 3: EXHAUST AIR FROM BUILDING PORT
2: FRESH AIR FROM OUTSIDE PORT 4: FRESH AIR TO BUILDING PORT

VENTILATION PERFORMANCE

EXTERNAL STATIC PRESSURE	PA	IN. W.G.	NET SUPPLY AIR FLOW			GROSS AIR FLOW					
			L/S	CFM	M ³ /H	SUPPLY			EXHAUST		
						L/S	CFM	M ³ /H	L/S	CFM	M ³ /H
25	0.1		89	189	320	89	190	320	87	185	313
50	0.2		83	177	299	84	179	302	83	177	299
75	0.3		79	167	284	79	169	284	79	167	284
100	0.4		74	156	266	74	158	266	73	155	263
125	0.5		69	147	248	69	148	248	68	146	245
150	0.6		64	136	230	64	137	230	63	133	227
175	0.7		59	126	212	60	127	216	58	123	209
200	0.8		54	115	194	54	116	194	51	108	184
225	0.9		47	110	169	47	101	169	45	96	162
250	1.0		40	86	144	41	87	148	38	80	137
275	1.1		35	74	126	35	75	126	31	65	112



SPEED RANGE* 1: 80 TO 157 CFM

SPEED RANGE* 2: 66 TO 132 CFM

SPEED RANGE* 3: 53 TO 106 CFM

SPEED RANGE* 4: 40 TO 80 CFM

*At 0.4 IN. W.G.

ENERGY PERFORMANCE

SUPPLY TEMPERATURE		NET AIR FLOW			POWER CONSUMED	SENSIBLE RECOVERY	APPARENT SENSIBLE	LATENT RECOVERY/MOISTURE
°C	°F	L/S	CFM	M ³ /H	WATTS	EFFICIENCY	EFFECTIVENESS	TRANSFER
HEATING								
0	32	23	49	83	24	75	83	0.01
0	32	30	64	109	26	74	80	0.01
0	32	38	81	138	32	73	78	0.01
0	32	57	122	207	54	67	72	0.01
-25	-13	29	61	104	40	64	89	0.02

NOTE: All specifications are subject to change without notice.

SPECIFICATIONS

- Model: E15 ECM HRV
- Part Number: 43901
- Total Assembled Weight (including polypropylene core): 52.4 lb. (23.8 kg)
- Oval shaped ports; fit 6" round ducts
- Drains: 1/2" (1.2 cm) fittings with 10 ft (3 m) PVC drain
- Core Filters: 2 washable Merv 9 filters, 9.2" x 14.25" x 0.38" (23.4 cm x 36.2 cm x 1 cm)
- Insulation: Expanded polystyrene
- Mounting: Suspension by chains and springs
- Supply and Exhaust Blower Motors: 2 ECM motors
 - Protection type: Thermally protected
 - Insulation class: B
- Speed Control on Unit:
 - Low speed and high speed
 - Other modes available with Altitude or Deco-Touch main control
- Heat Recovery Core:
 - Heat Exchange Surface Area: 110 ft.² (10.2 m²)
 - Type: Crossflow
 - Material: Polypropylene
- Housing: Pre-painted steel
- Unit Electrical Characteristics:

Volts	Frequency	Ampere	Watts
120	60 Hz	1.3	98

Project:	REMARKS
Location:	
Part no.: 43901	
Qty.:	
Submitted by: _____ Date: _____	



Residential Products Group, 550 Lemire Blvd., Drummondville, Qc, Canada J2C 7W9 - Tel.: 1-800-567-3855 Fax: 1-800-567-1715



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