

 **GREENHECK**  
**ENERGY RECOVERY** 



**Model ERM**  
**Energy Recovery Module**

# Model ERM - Energy Recovery Module

Greenheck model ERM energy recovery modules offer the advantages of Greenheck's energy recovery wheel for use in built-up ventilation systems. Modules are ideal for new construction or retrofit applications where a model ERV energy recovery ventilator may not meet space limitation requirements.

The ERM consists of a cabinet and an energy recovery cassette. The fully insulated cabinet is installed as a permanent part of the duct system. For inspection or servicing, the wheel is accessed through a removable panel or duct access door. A wiring box for connection to electrical supply is a standard feature.

Eight pie-shaped sections of the wheel are easily removable, without the use of tools, if cleaning or replacement is required.

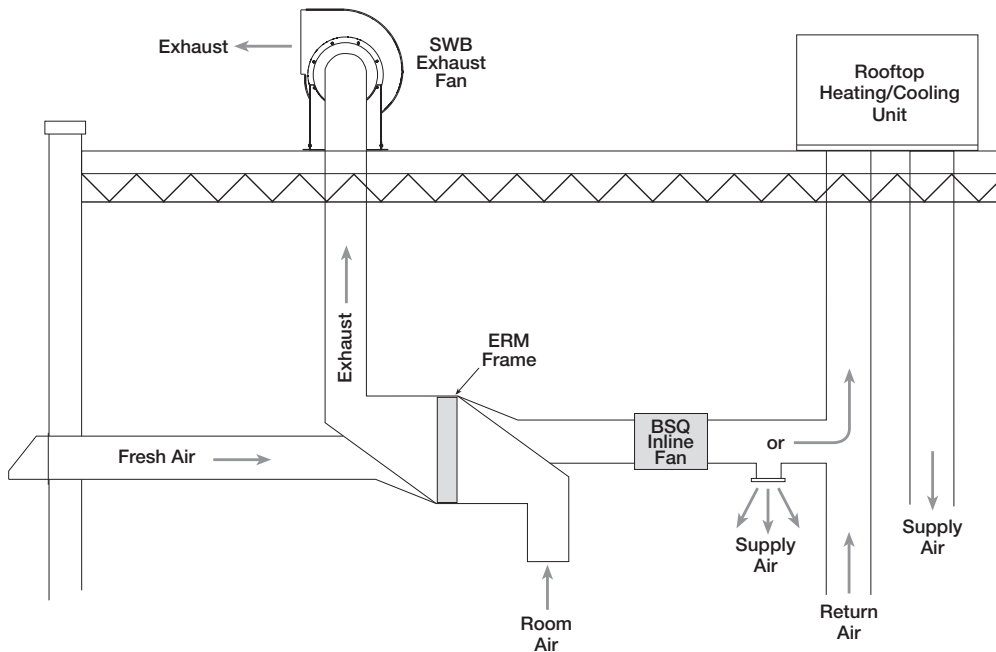
## Installations

Models ERM-36 and ERM-52 are easily installed either vertically or horizontally. Models ERM-64 and ERM-74 must be installed in the vertical position due to their size and weight. The diagram below illustrates a typical installation of a single module in the vertical position.

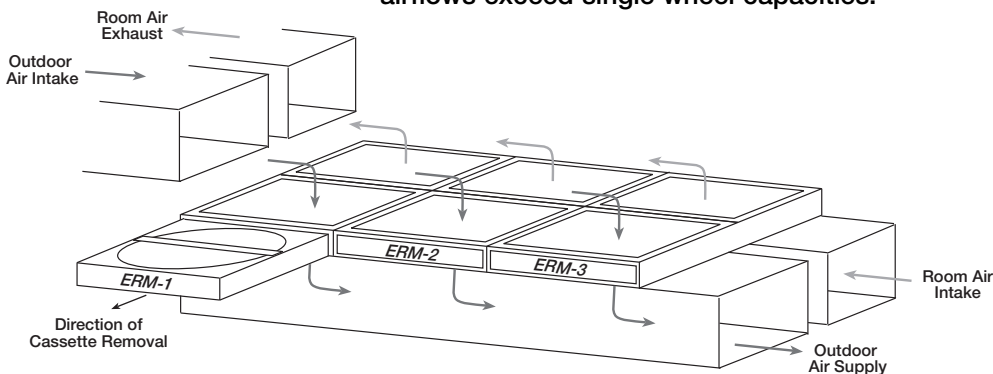


## Energy Recovery Components

A complete energy recovery system includes the ERM plus supply and exhaust fans. For best performance, the air streams should be counterflowing and the blowers in a draw through configuration. Filters and backdraft dampers are also recommended as part of a complete system.



Multiple modules are installed in parallel where airflows exceed single wheel capacities.



### CAUTION

Models ERM-36 and ERM-52 feature a slide out energy recovery wheel cassette and must be installed such that the cassette slides in and out of the cabinet parallel to the floor.

### NOTE

The energy recovery cassettes for models ERM-64 and ERM-74 DO NOT slide out, because of their size and weight. Duct access must be provided for inspection or service of the ERM-64 and ERM-74.

## Installation Clearances

Provide proper clearance for cassette inspection, service or removal. Do not install ducting, piping or wiring where it will interfere with cassette removal with ERM-36 and ERM-52.

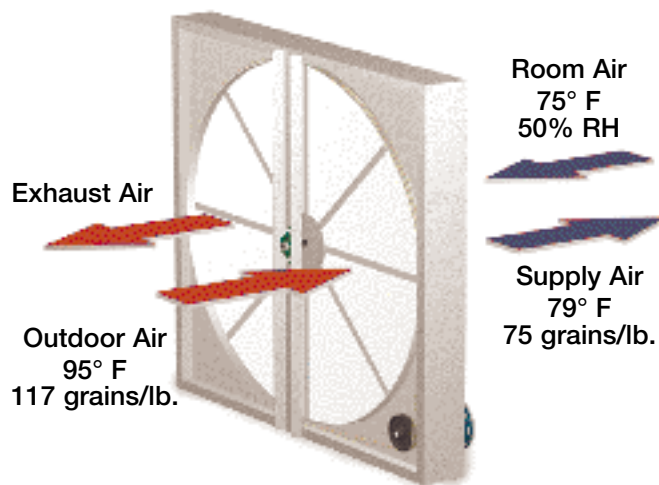
Model	Inspection or Service	Removal
ERM-36	22"	42"
ERM-52	30"	58"

Due to the size and weight of the ERM-64 and ERM-74 cassettes, access to service these cassettes is completed through doors/panels in the ductwork. See the table to the right for recommended door sizes.

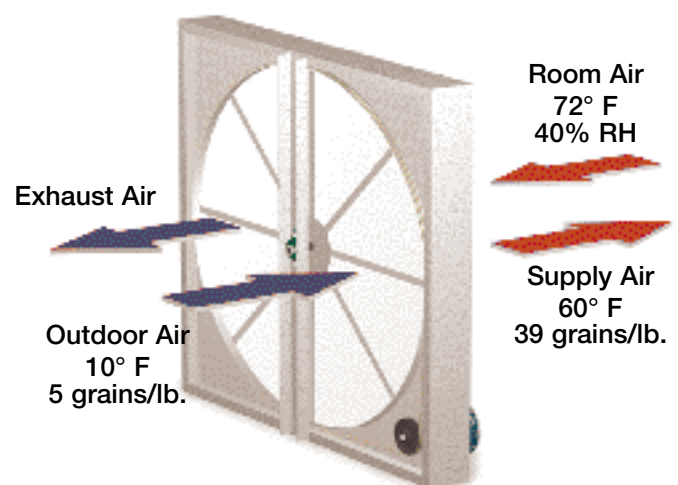
Model	Recommended Access Door Width
ERM-64	30"
ERM-74	30"

## Wheel Performance

The model ERM transfers sensible and latent energy between counterflowing air streams, pre-conditioning outdoor air to near room conditions. The drawings below illustrate this concept for summer and winter conditions with an 80% effective wheel.



During summer operation, the ERM cools and dehumidifies incoming outdoor air. This reduces the air conditioning load by up to 4 tons per 1,000 cfm and helps retard rising indoor humidity levels.



During winter operation, the ERM warms and humidifies the incoming outdoor air. This reduces the heating load and helps prevent discomfort due to overly dry indoor conditions.

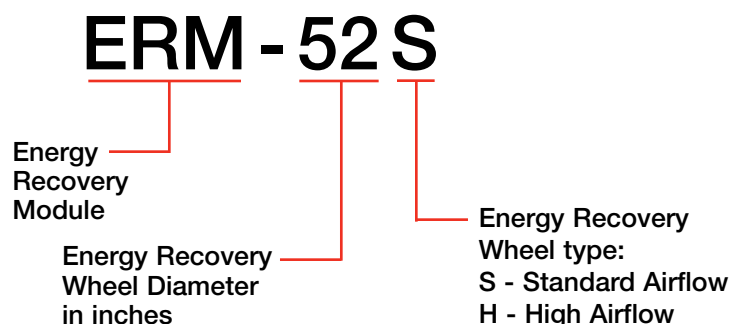
## Frost Control

The frost threshold is the outdoor temperature at which frost will begin to form on the energy wheel. For Greenheck ERMs, the frost threshold is typically below 5° F.

Frost control protection equipment and controls are to be field supplied and installed. For more on frost control concepts, refer to page 13 of the Greenheck ERV catalog.

## Model Number Code

The model number system is designed to completely identify the energy recovery module. The correct code letters must be specified to designate energy recovery wheel size and type.



# Performance Data

## ERM-36S

Air Flow (CFM)	500	600	800	1000	1200	1400	1600
Wheel Effectiveness	88	87	86	84	83	81	80
Pressure Drop (in. w.g.)	.35	.40	.50	.60	.70	.80	.90

## ERM-36H

Air Flow (CFM)	1200	1400	1600	1800	2000	2200	2300
Wheel Effectiveness	78	77	75	74	72	71	70
Pressure Drop (in. w.g.)	.51	.60	.69	.78	.86	.94	.98

## ERM-52S

Air Flow (CFM)	1750	2000	2250	2500	2750	3000	3250
Wheel Effectiveness	86	85	84	83	82	81	80
Pressure Drop (in. w.g.)	.56	.62	.70	.77	.86	.95	1.03

## ERM-52H

Air Flow (CFM)	2700	3000	3300	3600	3900	4200	4500
Wheel Effectiveness	77	76	75	74	73	72	71
Pressure Drop (in. w.g.)	.58	.64	.70	.77	.83	.90	.96

## ERM-64S

Air Flow (CFM)	3000	3500	4000	4500	5000	5500	6000
Wheel Effectiveness	83	82	81	80	79	78	77
Pressure Drop (in. w.g.)	.67	.78	.89	1.00	1.11	1.22	1.33

## ERM-64H

Air Flow (CFM)	5200	5600	5900	6300	6700	7000	7500
Wheel Effectiveness	78	77	75	74	72	71	70
Pressure Drop (in. w.g.)	.69	.74	.79	.84	.89	.94	1.00

## ERM-74S

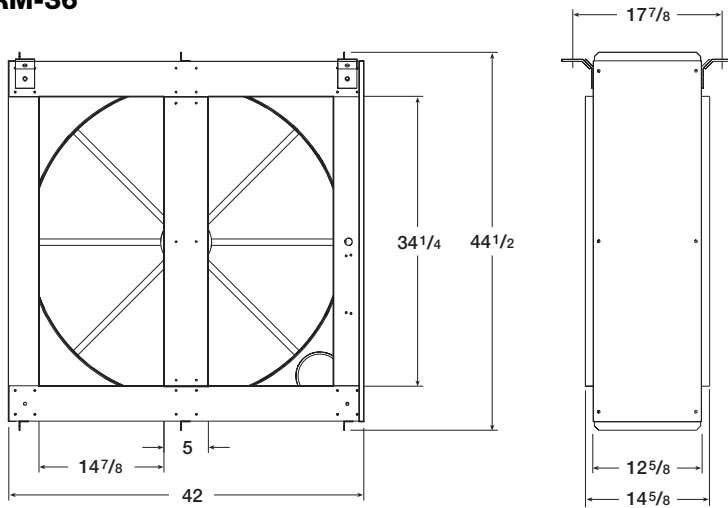
Air Flow (CFM)	4000	4500	5000	5500	6000	6500	7000
Wheel Effectiveness	84	83	82	81	80	79	78
Pressure Drop (in. w.g.)	.67	.75	.83	.92	1.00	1.08	1.17

## ERM-74H

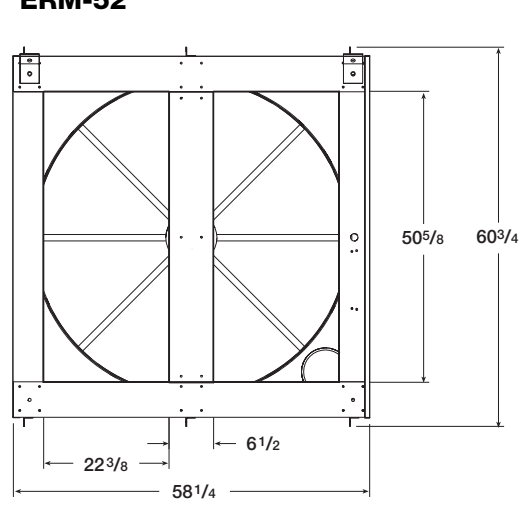
Air Flow (CFM)	7000	7500	8000	8500	9000	9500	10000
Wheel Effectiveness	79	78	77	76	75	74	70
Pressure Drop (in. w.g.)	.69	.74	.79	.84	.89	.94	1.00

# Dimensional Data

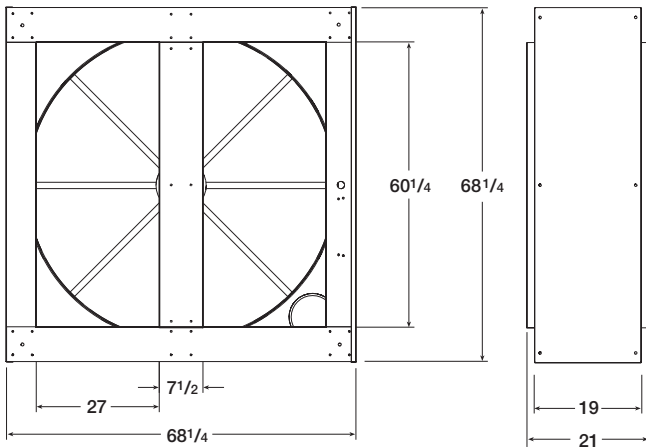
**ERM-36**



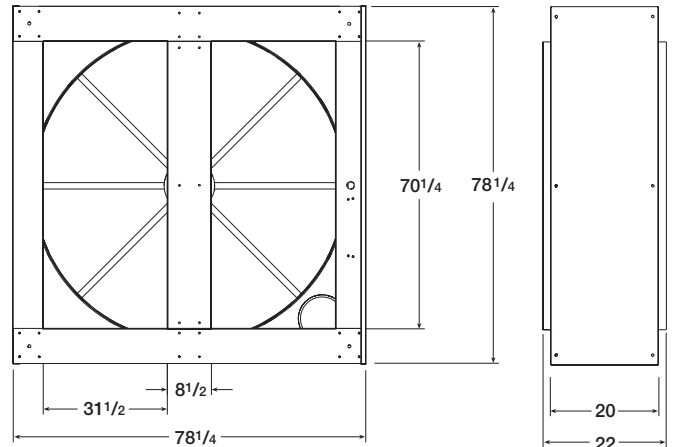
**ERM-52**



**ERM-64**



**ERM-74**



## Specifications

Model	Voltage	Hertz	Amps	Phase	Motor HP	Weight	
						Cabinet	Cassette
ERM-36S	200-208/240v	50/60	1.2	1	1/6	75	80
ERM-36H	200-208/240v	50/60	1.2	1	1/6	75	92
ERM-52S	200-208/240v	50/60	2.8	1	1/2	110	170
ERM-52H	200-208/240v	50/60	2.8	1	1/2	110	170

Model	Voltage	Hertz	Amps	Phase	Motor HP	Weight
ERM-64S	200-230/460v	60	1.3-1.2/0.6	3	1/4	700
ERM-64H	200-230/460v	60	1.3-1.2/0.6	3	1/4	700
ERM-74S	200-230/460v	60	1.3-1.2/0.6	3	1/4	870
ERM-74H	200-230/460v	60	1.3-1.2/0.6	3	1/4	870

# Typical Specifications

## ERM-36 and ERM-52

Energy Recovery Modules shall provide a cabinet having four 1" duct flanges for connection of supply and exhaust ducts. The cabinet shall be constructed of heavy gauge galvanized steel and be internally insulated to prevent condensation of water vapor on external or internal surfaces. A removable panel shall be provided to access the energy recovery cassette for service and inspection. Energy recovery wheel shall be mounted in a slide out cassette. A wiring box shall be provided for permanent connection of a power source.

The Energy Recovery Cassette shall contain a total energy recovery wheel for sensible and latent energy recovery. Sensible only energy recovery devices are not acceptable. A wheel drive motor having permanently sealed ball bearings shall be provided with plug-in connection to a receptacle mounted within the cabinet. The total enthalpy wheel shall be supplied by the module manufacturer and be constructed of a light weight polymer material with a permanently bonded silica gel desiccant coating. Eight energy transfer sections shall be removable from the energy recovery wheel without the use of tools. The units shall not require a condensation pan.

Energy Recovery Modules shall be model ERM as manufactured by Greenheck, in Schofield, WI.

## ERM-64 and ERM-74

Energy Recovery Modules shall provide a cabinet having four 1" duct flanges for connection of supply and exhaust ducts. The cabinet shall be constructed of heavy gauge galvanized steel and be internally insulated to prevent condensation of water vapor on external or internal surfaces. Duct mounted access panels shall be provided to access the energy recovery cassette for service and inspection. A wiring box shall be provided for permanent connection of a power source.

The Energy Recovery Cassette shall contain a total energy recovery wheel for sensible and latent energy recovery. Sensible only energy recovery devices are not acceptable. A wheel drive motor having permanently sealed ball bearings shall be provided with pigtail located in the service box within the cabinet. The total enthalpy wheel shall be supplied by the module manufacturer and be constructed of a light weight polymer material with a permanently bonded silica gel desiccant coating. Eight energy transfer sections shall be removable from the energy recovery wheel without the use of tools. The units shall not require a condensation pan.

Energy Recovery Modules shall be model ERM as manufactured by Greenheck, in Schofield, WI.

### WARRANTY

Greenheck warrants this equipment to be free from defects in material and workmanship for a period of five years from the purchase date. This warranty limits our responsibility to repairing or replacing, to the original purchaser, any part or parts of said equipment found to be defective upon examination by representatives of Greenheck. Additionally, said part or parts will be returned to and received by the factory only after prior authorization, with transportation charges prepaid.

Greenheck shall not be obligated under this warranty, for payment of any delivery, removal or installation charges with regard to repair or replacement of any defective part or parts.

Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by Greenheck prove defective during this period, they should be returned to the nearest authorized motor service station.

