Venmar CES Inc.

Cost-effective ventilation for people

School Ventilation Made Easy

Here's Something To Consider…

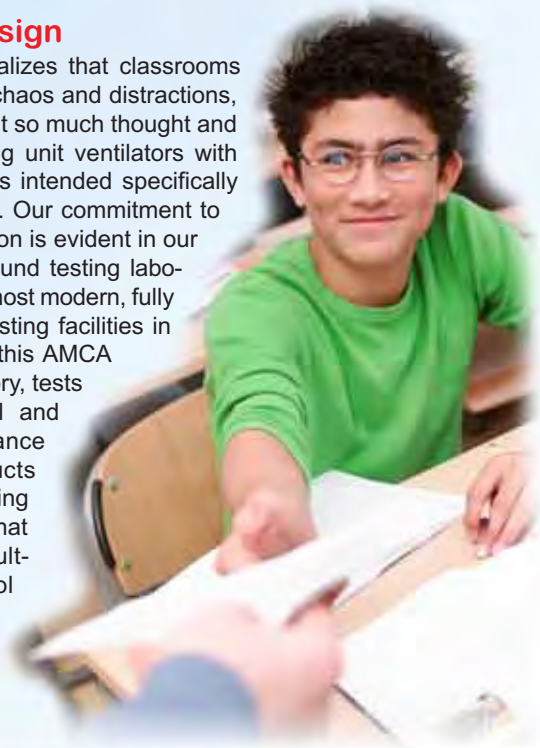
It is a well documented fact that poor indoor air quality (IAQ) negatively effects building occupants. Below average IAQ can be directly linked to: shorter attention spans, lower levels of productivity, increased asthma and asthma-related symptoms, amplified ill-effects like headaches, fatigue, shortness of breath and higher numbers of sick days. IAQ in schools has been a main area of research in the past decade. With changes to codes and standards over the years, many schools are providing only one-third or less of the now required outdoor air amounts. The conclusion to be drawn is that schools have inadequate indoor air quality due to insufficient, or even a total lack of, ventilation.

An Easy Solution

Poor air quality can be easily remedied; add fresh air through ventilation! Ventilation is the process of supplying outdoor air into occupied rooms and removing the polluted air by exhausting it outside. Schools require ventilation to remove indoor air pollutants to improve indoor air quality in classrooms, resulting in healthier, more effective teachers and students who are more willing and able to learn. For over 25 years, Venmar CES has specialized in providing cost-effective ventilation solutions using energy recovery for educational facilities. We enjoy bringing fresh air to classrooms

Sound By Design

Venmar CES realizes that classrooms are already full of chaos and distractions, which is why we put so much thought and effort into designing unit ventilators with interior components intended specifically for noise reduction. Our commitment to customer satisfaction is evident in our investment in a sound testing laboratory - one of the most modern, fully equipped HVAC testing facilities in North America. In this AMCA accredited laboratory, tests of airflow, thermal and acoustic performance of HVAC products take place, resulting in reliable data that engineers, consultants and school boards can trust.



Energy Recovery Ventilation

The process of energy recovery conditions the outside air before bringing it into the building by transferring energy from the exhaust airstream to the outdoor airstream. Energy recovery is the ultimate cost-effective solution for IAQ problems. Energy recovery units offer:

- lowered heating and cooling loads
- reduced operating costs
- low exhaust air transfer from exhaust air to supply air
- a variety of technologies to meet specific job requirements

Enthalpy Wheel

Aluminum construction offers superior sensible energy transfer and meets fire ratings required by the National Fire Protection Agency (NFPA-90A). To deliver latent energy, the enthalpy wheel features a silica gel desiccant which adsorbs moisture and transfers it to the other airstream.

Flat Plate Heat Exchanger

The construction and material of the heat exchanger does not impact the airflow effectiveness or performance. Each material has specific advantages to offer.

Polypropylene

- sensible energy transfer
- corrosive resistant material

Aluminum

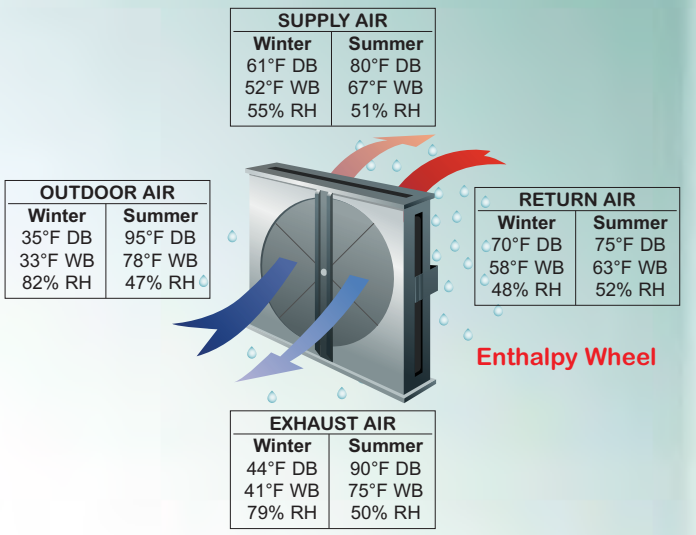
- sensible energy transfer
- meets NFPA-90A requirements

HM (Heat Moisture) Membrane

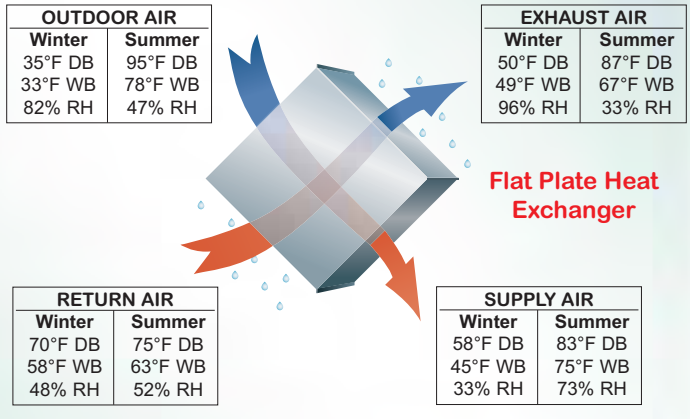
- latent (moisture) and sensible energy transfer
- ideal for dry, cool climates

AHU – No Energy Recovery Ventilation

Air handling units (AHUs) bring fresh air into a space without utilizing energy recovery. Depending on your geographic location, available capital requirements and expected future operational costs, ventilating with AHUs may be the answer for you.



Enthalpy Wheel



Flat Plate Heat Exchanger

Energy Recovery Ventilators (ERVs)

Model: ERV1100w

- 350 to 600 cfm outdoor air and up to 2000 cfm total supply air
- Water source heat pump (WSHP) for efficient, environmentally friendly heating and cooling
- Greatly reduces heating and cooling loads and annual operating costs
- Large variety of heating and cooling options available
- Quiet operation of gas heating module
- Temperature switch for safe unit operation
- Minimal installation requirements
- Enthalpy wheel on slide out track for easy maintenance

ERV1100w

HRV450w

Heat Recovery Ventilators (HRVs)

Models: HRV450w and HRV1000w

- HRV450w: 300 to 500 cfm outdoor air and 700 cfm total airflow
- HRV1000w: 400 to 700 cfm outdoor air and 1200 cfm total airflow
- Proportional electric heat for accurate temperature control
- Reduces heating and cooling loads and annual operating costs
- No moving parts in heat recovery module
- Polypropylene, aluminum or HM membrane heat exchanger options available
- Variety of heating and cooling packages available
- Molded ABS drain pans on both airstreams to eliminate moisture and prevent mold growth
- Minimal installation requirements
- Multiple speed motor operation

Air Handling Units (AHUs)

Models: AHU1100w and AHU2000w

- AHU1100w: up to 1100 cfm outdoor air or mixed airflow
- AHU2000w: up to 2000 cfm outdoor air or mixed airflow
- Lowest first cost installed package designed for your budget constraints
- High efficiency filtration for increased elimination of outdoor air contaminants
- Factory installed spring return proportional pressure balancing valve package for quick start up
- Minimal installation requirements
- Variety of heating and cooling options available
- Ideal for moderate climates with no severe winter or summer conditions
- A full range of airflow packages: 1200, 1600 or 2000 cfm available

AHU2000w

Leading Through Performance

Venmar CES is committed to providing superior unit performance by incorporating ARI certified heat exchangers into our units. Certified heat exchangers give peace of mind to system designers who must deliver performance to school boards. As a credible source of performance data, ARI certification aids in the process of obtaining LEED® building certification.

ARI PERFORMANCE CERTIFIED
ARI Standard 1060

To ensure optimum performance, demand ARI certified heat exchangers!

Easy Maintenance

- Removal of regularly maintained parts in just minutes
- No moving parts in heat recovery module in HRVs

Wall Unit Model Options

		ERV1100w	HRV450w	HRV1000w	AHU1100w	AHU2000w
CFM Range						
Nominal supply airflow range		350 to 2000	300 to 800	400 to 1400	800 to 1100	1200 to 2000
Outdoor airflow range		350 to 600	300 to 500	400 to 700	800 to 1100	1200 to 2000
Heating						
Hot water	Capacity range (MBH)	50 to 70	25 to 50	50 to 70	40 to 70	30 to 120
Steam	Capacity range (MBH)	☑	☑	☑	n/a	50 to 110
Electric post heat	Capacity range (kW)	2.5 to 15.0	2.5 to 10.0	2.5 to 15.0	☑	☑
	Control	Standard or proportional	Standard or proportional	Standard or proportional	☑	☑
Indirect gas heat	Capacity range (MBH)	40 to 60	n/a	n/a	n/a	n/a
	Control	Two stage or modulating	n/a	n/a	n/a	n/a
WSHP	Capacity range (Tons)	2.0 to 5.0	n/a	n/a	n/a	n/a
	Control	On/off	n/a	n/a	n/a	n/a
Cooling						
Split Dx	Capacity range (Tons)	3.0 to 5.0	1.5 to 2.0	3.0	2.5	3.0 to 5.0
Chilled water	Capacity range (Tons)	3.0 to 5.0	2.0	3.0	2.5	2.0 to 5.0
Voltage (VAC)						
120, 208 - 230/1/60 VAC		✓	✓	✓	✓	✓
208 - 230/3/60 VAC		✓	☑	☑	☑	☑
460/3/60 VAC		✓	☑	☑	☑	☑
Controls						
No controls package		✓	✓	✓	✓	✓
DDC package		✓	☑	☑	☑	✓
Control interface (DDC units only)		✓	☑	☑	☑	✓
Frost Control						
Non defrost		✓	✓	✓	n/a	n/a
Recirculation		✓	✓	✓	n/a	n/a
Exhaust only		✓	☑	☑	n/a	n/a
Weight (maximum lbs) *						
Base unit with plenum *		700	325	350	318	779
Cabinet Dimensions (inches) *		**D x W x H**	**D x W x H**	**D x W x H**	**D x W x H**	**D x W x H**
Base unit *		31" x 41" x 76"	21" x 32" x 74"	21" x 41" x 77"	24" x 32" x 81"	33" x 39" x 90"
Plenum - add to height *		25"	21"	25"	20"	19"
Accessories						
Available on all wall unit ventilators: duct smoke sensor, non fused disconnect, thermostat, wallcurb and wall louvers.						

✓ Standard option

☑ Option available upon request

* Unit height and weight may vary based upon options selected. Refer to Product Data Manual for exact values.

Product Features

Discharge Supply Plenums

- A variety of plenum options are available: standard, silencer, gas and top filler panel.
- Specially designed for acoustically sensitive locations.
- Eliminates the need for ductwork in retrofit projects.

DDC Controls

- Factory installed and programmed native BACnet DDC system.
- Stand-alone controls or no controls options for quick start up.

Water Source Heat Pump

- Efficient, environmentally friendly way to provide additional heating and cooling.
- Copper (fresh or cooling tower water applications) or cupronickel (ground or sea water applications) inner tubes.

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