Everyone
Needs
Fresh Air

CERV®

SMART VENTILATION

BUILD EQUINOX
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The Value of Fresh Air

HEALTH

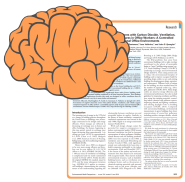
Risk of Sick Leave Associated with Outdoor Air Supply Rate, Humidification, and Occupant Complaints

FINDINGS

Cost of sick leave due to poor indoor air quality

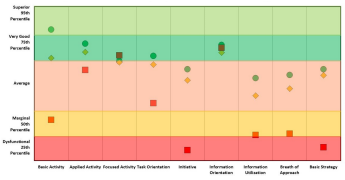
$480 Person Year or **$22.8 Billion** Nationally per Year

COGNITION



Associations of Cognitive Function Scores with Carbon Dioxide, Ventilation, and Volatile Organic Compound Exposures in Office Workers: A Controlled Exposure Study of Green and Conventional Office Environments

FINDINGS



Poor indoor air quality results in significant impairment of Cognitive Function

Sleep

The effects of bedroom air quality on sleep and next-day performance

FINDINGS

Added ventilation at night resulted in improved sleep quality and better next-day alertness and focus

PRODUCTIVITY

Economic, Environmental and Health Implications of Enhanced Ventilation in Office Buildings

FINDINGS

Enhanced ventilation results in an increase of

$6,500 Person Year **productivity**

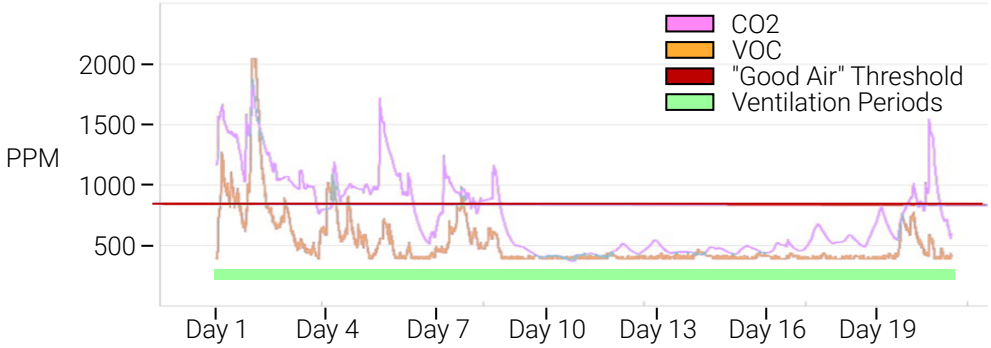
with minimal effect on energy cost

Links to full studies available at

WWW.BUILDEQUINOX.COM

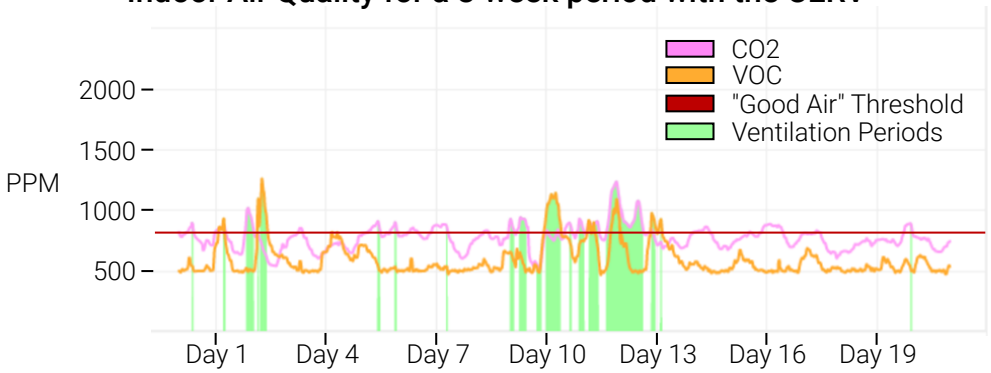
Not Your Ordinary ERV

Indoor Air Quality for a 3 week period with an ERV



With a standard ERV/HRV, you get a constant low air flow rate with no relation to actual indoor air quality or occupancy. For the first ten days, when the home is occupied, the air quality is poor - the ERV just can't keep up. When the occupants leave on vacation, the ERV keeps ventilating and wasting energy.

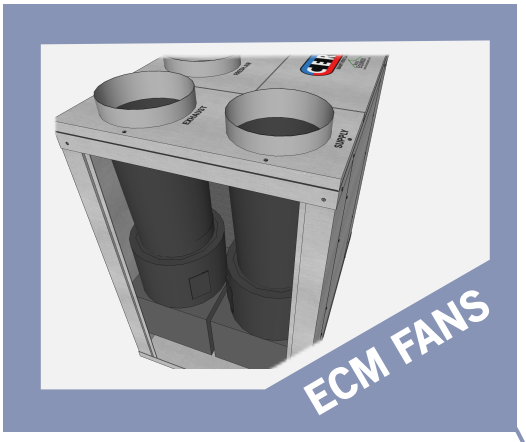
Indoor Air Quality for a 3 week period with the CERV



Since the CERV actually monitors air quality, it ventilates only when it needs to. Unlike a fixed airflow ERV, the CERV can ventilate up to 300CFM, quickly purging pollutants from the home. When no ventilation is needed, the CERV can recirculate and unify the home, providing some additional heating or cooling/dehumidification in an energy efficient manner.

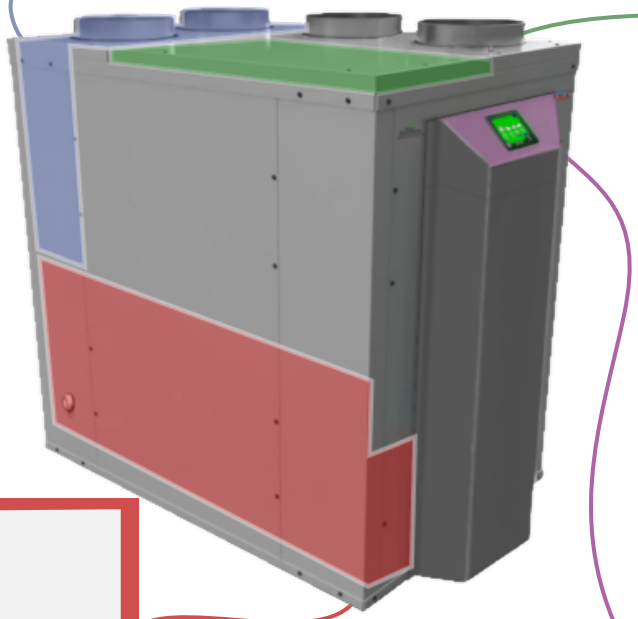
Both scenarios have good **"average"** air quality.
Which air would you prefer to breathe?

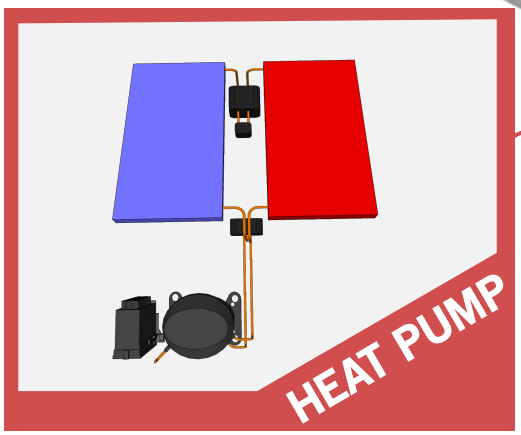
WHAT'S IN THE CERV



The CERV uses the latest ECM fan technology to deliver fresh air efficiently and quietly. The CERV's intelligent controls maximize fresh air delivery, ensuring your home stays fresh, comfortable, and healthy.

The CERV 's filter access panel allows the homeowner easy access to inspect and replace both indoor and outdoor filters. The CERV accepts standard 10x20 size, with your choice of filtration. MERV 13 comes standard with the unit.

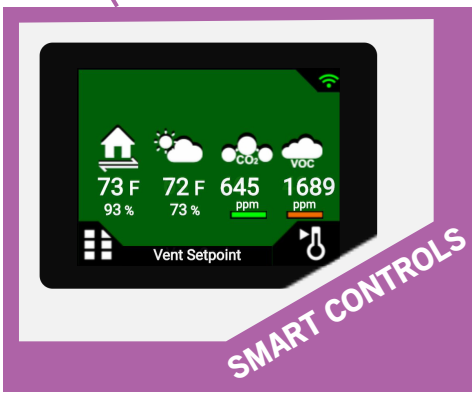




Instead of an ERV exchanger core, the CERV uses a high efficiency heat pump to exhange energy between incoming supply and outgoing exhaust air.

What does this mean?

Conditioned, comfortable air unifies the home instead of dragging exterior rooms away from comfort. In the summer, the CERV also helps with dehumidification



A built in 3.5" full color capacitive touchscreen makes interaction with the CERV a pleasure. Monitor your indoor air quality, change your setpoints, and configure the CERV to best suit your home and lifestyle with ease.

HOW THE CERV WORKS

INDOOR AIR QUALITY

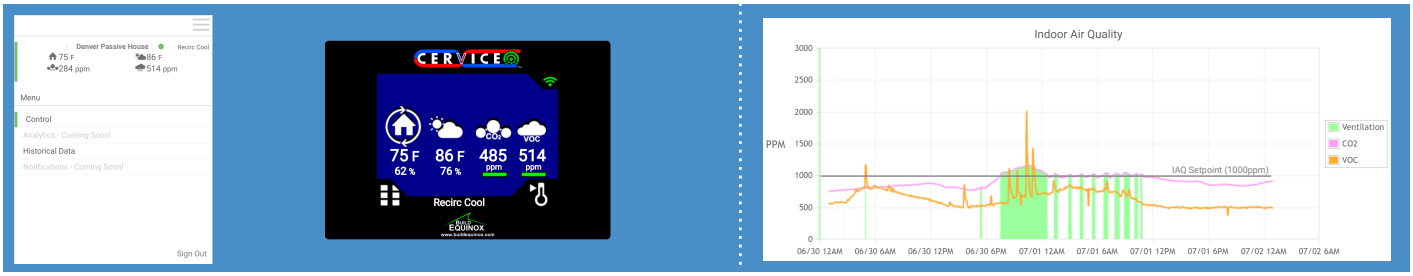
The CERV monitors both CO_2 and Volatile Organic Compound (VOC) levels inside your home to determine when ventilation is necessary. Many gasses are undetectable to the human nose, yet can cause significant impairment to health, cognition, and sleep quality. Even though you can't smell them, the CERV can.

COMFORT

While the CERV is small in capacity, it's capabilities are anything but. By measuring indoor and outdoor temperature and relative humidity levels, the CERV knows the most efficient way to keep your home healthy and comfortable

ONLINE CONTROL & MONITORING

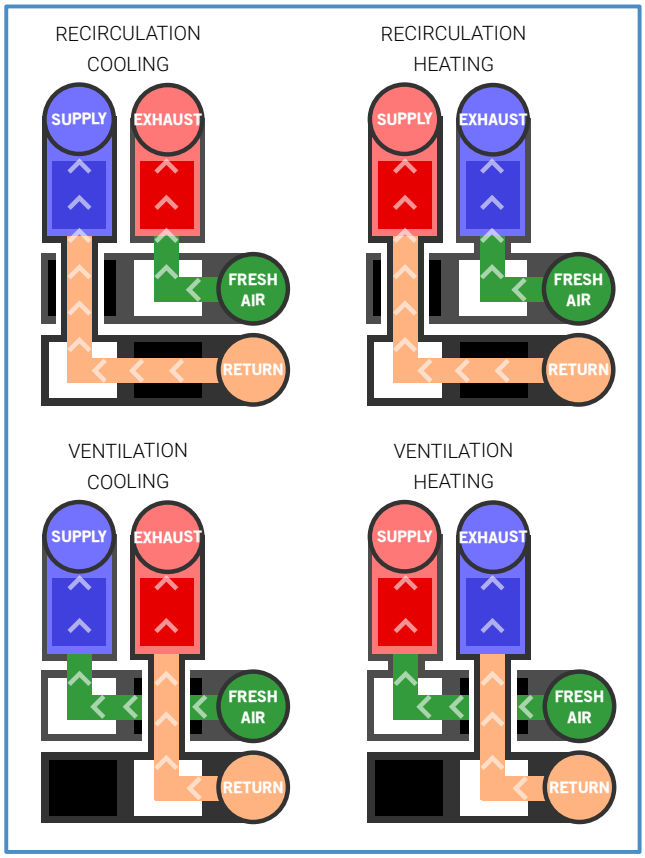
The CERV is the only system that gives you the information you need to know that your family is breathing the highest quality air. CERV-ICE online control and monitoring allows you to check your air quality and change settings and setpoints from anywhere in the world using your mobile device. You can also view and download historical temperature, relative humidity, and indoor air quality data. CERV-ICE comes standard and has no monthly fee!



CERV-ICE DASHBOARD

CERV-ICE HISTORICAL DATA

HEAT PUMP MODES



CERV OPERATION MODES

WHY THE CERV?

You wouldn't buy a car without a speedometer, so why buy a ventilation system that doesn't measure air quality? Indoor air pollutants must be measured for efficient management, and the CERV does just that. Built-in **CO2 and VOC (volatile organic compound) sensors** automatically **measure and maintain excellent air quality** in your home. Your family's health is too important for guesswork.

Energy recovery taken to a new level. The CERV's **super-efficient inverter drive heat pump** technology surpasses traditional ERV/HRV systems. When you're stuck inside on the coldest day of the year, you need fresh air the most - the CERV has **no low temperature operation restrictions**, so the fresh air can keep flowing. Home occupants in warm/humid climates will appreciate the CERV's ability supply **cool, dehumidified fresh air** to the house. If that wasn't enough, the CERV's **unique recirculation mode** provides additional conditioning when fresh air is not needed, significantly improving comfort.

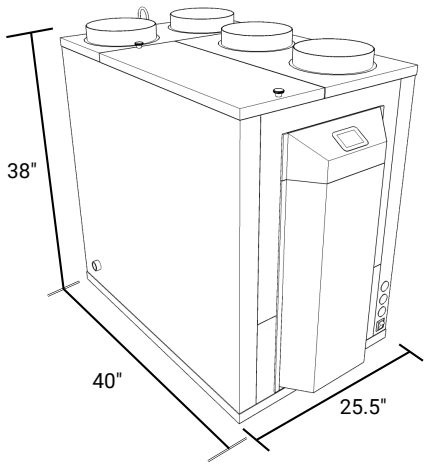
Innovative controls further set the CERV apart from other ventilators. Built with the **user experience** in mind, our color touchscreen controller is easy to read and **simple to use**. For users interested in web connected devices, the CERV's built in Wifi gateway called CERV-ICE opens up a world of **ventilation control never before seen**. Control your CERV from anywhere, access archived data, receive system notifications and updates, read your home health reports, and more! All from your computer, tablet, or mobile device.

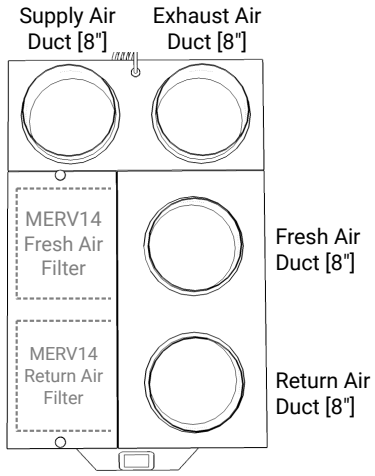
	"Natural" Ventilation	HRV Heat Recovery Ventilator	ERV Energy Recovery Ventilator	CERV2®
Sensible Energy Recovery	✗	✓	✓	✓
Conditioned Air Delivery	✗	✗	✗	✓
CO_2 Monitor & Control	✗	+$	+$	✓
VOC Monitor & Control	✗	+$	+$	✓
Recirculation & Mixing Mode	✗	✗	✗	✓
Online Control & Monitoring	✗	+$	+$	✓
Home Health Feedback Reports	✗	✗	✗	✓

The CERV isn't just an ERV (energy recovery ventilator) - it's the most advanced home air quality management system in the world. Unlike standard ERVs and HRVs, it measures and actively reduces pollutants, combats germs and viruses, and shields your home from outdoor pollutants like wildfire smoke. With smart controls, UV air sanitation, precision zone ventilation, heat pump energy recovery, and air purification, the CERV delivers the ultimate all-in-one solution for a healthier, cleaner home.

The CERV2 exceeds ASHRAE residential standard 62.2: Ventilation and Acceptable Indoor Air Quality.

System	
Input Power Supply	120 VAC 60hz (12A) 6ft Cord (NEMA 5-15P)
Dimensions	38" x 25.5" x 40"
Weight	140 lbs
Airflow	100 - 300 cfm
Filter Size	10" x 20" x 1"
Filter Type	MERV 14
Duct Openings	8" Round
Drain Outlet	3/4" PVC
Warranty	5 Years 1st Year Parts & Labor Years 2-5 Parts Only





Sensors
Temperature, Relative Humidity, Carbon Dioxide (CO2), Volatile Organic Compounds (VOC), Particulate Mass & Count

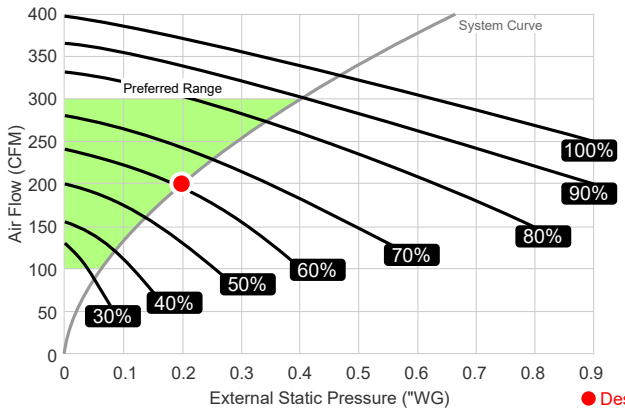
Energy Recovery			
Outdoor T	**Indoor T**	**Airflow**	**Efficiency**
95°F (35°C)	75°F (24°C)	100 CFM	1.91 TRE
32°F (0°C)	70°F (21°C)	100 CFM	1.22 SRE

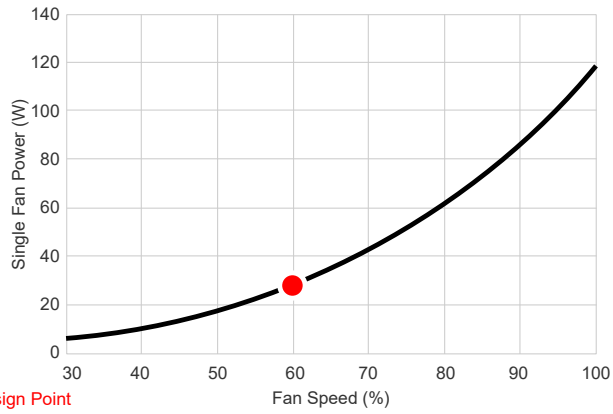
Testing performed to HVI Standard: CAN/CSA C439

Supplemental Recirc. Heating & Cooling		
Outdoor T	**Capacity**	**Efficiency**
95°F (35°C)	2230 BTU/h	3.2 (COP)
80°F (27°C)	2230 BTU/h	3.2 (COP)
47°F (8°C)	4731 BTU/h	3.6 (COP)
32°F (0°C)	3702 BTU/h	3.3 (COP)
17°F (-8°C)	2674 BTU/h	2.8 (COP)
Moisture Removal	9.6 Liters / Day	

Heating and cooling capacity relative to indoor conditions.
Excludes variable speed fan power.

Fan Performance





SPECIFICATIONS

OPTIONS & ADD-ONS

Wireless Control

The CERV comes standard with Enocean Wireless Communication, a low power protocol for interaction with local devices (902MHz). Wireless range can be up to 300m in open air and up to 30m inside buildings (depending on interfering materials). Maximum 18 wireless devices.

Remote Ventilation Switch

- Remote Switches trigger fresh air ventilation
- Individually configurable for CFM, zone, and length
- Ideal for bathroom & kitchen venting
- Available in many colors

Active Circuit Transmitter

- Monitors circuit for activity, transmits status
- Triggers Ventilation, Heating, Cooling, etc. like auxiliary input
- Individually configurable for CFM, zone, and length
- Ideal for kitchen vent hoods

Remote Sensors

- Temperature, T & RH, T & RH & CO2 options available
- Remote measurement and control for bedrooms & bathrooms
- Trigger ventilation in bathrooms with smart RH monitoring
- Solar powered, no batteries required!

Window/Door sensor

- Want the windows open on a nice day? Opening the windows automatically tells the CERV to go into standby mode.
- May also be used to trigger ventilation, heating or cooling
- Solar powered, no batteries required!

Motion Sensor

- Trigger ventilation in bathrooms automatically when motion is detected
- Individually configurable for CFM, zone, and length
- May also be used to trigger other CERV modes
- Solar powered, no batteries required!

Wireless Relay

- On/Off control like auxiliary output
- Can be used for GEO-Boost, duct heater, etc.
- 24VAC or 120-277VAC options available

CERV-IR Interface Relay (Thermostat Controller / 4 Channel Output)

- Wirelessly manage heat pumps, furnace, geothermal, etc.
- CERV Smart control determines most efficient operating modes
- Also configurable as a 4 channel NO/COM/NC relay expansion
- Control zone dampers, GEO-Boost, duct heater, etc.

Wireless CERV Controller

- Remotely monitor and control the CERV in your home
- Great for difficult to access CERV installations
- Included base for desk or wall mounting

Expanded Control and Capabilities

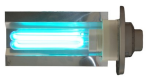
Particulate Defense

- Protection from both indoor and outdoor particulates
- Triggers ventilation when indoor particulates are elevated
- Particulate Defense Mode when outdoor particulates are unhealthy, adds extra air purification
- Great for locations with wildfire smoke, dust storms, and other outdoor pollutants.

Outdoor VOC Defense

- Measure Outdoor VOC concentration
- Prevent VOC based ventilation when outdoor VOCs are high
- Great for areas with wildfires or high outdoor pollutant events

CERV-UV: Ultraviolet Air Purification



- Reduces the probability of airborne disease transmission
- 18W UVGI light source that produces broadband 250-260nm UV-C without ozone production.
- 5W of UVGI for a single pass kill efficiency of 85%
- UVGI radiation disrupts genetic material in microorganisms, providing an additional layer of protection to the health of your home to efficiently destroy microbes in the air.

GEO-Boost Ground Loop Heat Exchanger

- Pre-heating and pre-cooling for the CERV
- Boosts capacity and efficiency
- Smart algorithms activate when beneficial

Zone Damper Control

- Optimize your home's air delivery system
- Targeted pollutant removal from areas
- Pairs well with wireless ventilation switches
- Supply fresh air to areas with greatest need

I/O Expansion Board

- Adds 6 dry contact/24VAC outputs
- Adds 3 dry contact/24VAC inputs
- Control external heating, cooling, ventilation, moisture control, GEO-Boost, and more!
- Simple installation and configuration

Inline Duct Heater

- Best for backup heat in climates with low loads
- 1kW, 2.5kW, and 5kW versions available
- Installs easily with standard ductwork

Duct Silencer

- Significantly reduces fan/duct noise
- Easy installation
- Great for large homes with extensive ductwork requiring high airflow

Specialty Filters

- 10" x 20" x 1" MERV 13 filters for fresh air and return
- Optional Carbon style for smoke and odor protection
- Optional VOC and odor absorbing filters

OPTIONS & ADD-ONS

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