



Chiltrix Air-To-Water Heat Pump CX34
www.chiltrix.com EPA Award Winner

ENERGY STAR 2019
Emerging Technology Award

What is an ERV?



An ERV is an Energy Recovery Ventilator. They are similar to an HRV which is a heat recovery ventilator. HRVs and ERVs both supply fresh air to the home and exhaust stale air while recovering energy from the exhaust air in the process. The main difference between them is that an HRV transfers only heat while an ERV transfers both heat and moisture.

Ventilators are needed for highly efficient structures to make sure that indoor air remains fresh and healthy. But ventilation can lose heat in winter, and reduce net cooling and cause humidity control problems in summer. These problems can be handled by recovery ventilators.

While not a dehumidifier, ERV systems transfer moisture from incoming humid air into the indoor air that is being vented to the outside, mitigating the infiltration of humidity. ERVs are preferred over HRVs in areas where both cooling and heating are used. HRVs can be used in heating-only applications.

Ventilator Sizing

Typically you use $\text{ft}^2 \times \text{average ceiling height} \times .85$ (dampened to account for inside objects that take up volume such as furniture etc.) Then multiply this number by the # of needed air changes per hour) for example, .35, and then divide by 60 (to get back to minutes).

Example:

$1000 \text{ ft}^2 \times 9' = 9,000 \text{ ft}^3 \times .85 = 7650 \times .30 = 2677 / 60 = 38.25 \text{ CFM needed.}$

Chiltrix recommends but does not provide ERV systems. Here is an example ERV:

<http://business.panasonic.com/FV-04VE1.html>