



## Application Note

HERS is a scale of how much energy a home consumes. A standard new home is 100 on the scale, and a zero-energy home is a 0; older homes are likely to have a rating higher than 100 unless they've been retrofitted to reduce energy consumption. The lower the rating is the more energy efficient your home is, so a lower score is more desirable. Having a lower energy home will save you money on your utility bills and depending on where you live it may also qualify you for a tax credit or rebate.

To determine the confirmed rating of your home it is necessary for a certified RESNET (Residential Energy Services Network) contractor to perform some tests. The HERS rating covers many factors including insulation, window efficiency, water heating system and heating and cooling system efficiency. Each part has a test or tests to determine the efficiency of the home and the total result determines the score. For the purpose of this article we're going to focus on the heating and cooling system efficiency tests as Kanomax has several instruments to help a contractor perform these.



*A certified RESNET HERS rater can determine if your home is energy efficient or if money-saving improvements can be made*

**Whole House Ventilation Rate:** To determine if the air handler is moving the actual CFMs of air it's rated for the CFMs are measured at the internal exhausts with a capture hood. These measurements are then summed and compared to the outside exhaust (again by using a capture hood). If the system is working properly the exhaust from inside the house will be equal to the exhaust outside the house and based on the CFMs being moved we can verify if the air handler is performing within specification.

**Bathroom Exhaust Fan:** An airflow capture hood is also used to check the performance of bathroom exhaust fans. The fan needs to be moving more than 50 CFMs when running intermittently or more than 20 CFMs when running constantly.



*Ensuring comfort and maximizing energy efficiency are both key concepts of the HERS rating*

**Supply & Return Duct Static Pressure:** Using a manometer and a pitot tube, the contractor will check the pressure in the supply and return ducts to ensure they are within 110% of the installer's specifications. This test involves inserting the pitot tube into the duct using the same ports that the installer used to test the ducts when they were installed. Inches of water column (or Pascals) are then measured and compared to the installers number.

**Bedroom Pressure Balance:** To perform this test a manometer is used to compare the differential pressure between a closed bedroom and the rest of the house while the air handler is running. The pressure differential needs to be less than 0.12 inches of water column (3 Pascals).



*Kanomax has a great selection of tools to help you with HERS rating projects as well as many other HVAC contractor applications*

Kanomax is a great place for HERS raters to get their equipment from because we offer two capture hoods, the affordable model 6710 and an all new Bluetooth-compatible model 6715 that comes complete with a removable micromanometer. Both versions are compatible with five different sized hoods that can accommodate standard as well as non-standard duct sizes. We also have a wide selection of pitot tubes available for static pressure testing. In addition to selling HERS equipment we also have a calibration lab in our New Jersey facility that can perform annual calibrations on our equipment so you can always ensure your readings are accurate. If you have any questions about how our equipment can help make your job as a rater or contractor easier give us a call. Our technical team is always happy to help answer any questions or help you find a distributor in your area.

### Useful Links:

<http://www.resnet.us/hers-index>  
<http://www.hersindex.com>

### About Kanomax USA, Inc.

Kanomax has delivered the best measurement solutions in its products and services that adapt precision measurement technology for fluids and particles. Kanomax product lines include anemometers, particle counters, dust monitors, and IAQ monitors. Kanomax is contributing to technological innovation and quality improvement for the processes of quality management, environment management, and technology development in the areas of environment, health, and energy, which are essential to sustain human well-being, as well as in other industrial areas including automobile, aerospace, semiconductor, electronics manufacture, heavy industry, steel, shipbuilding, pharmaceutical, biotechnology, food-processing, medical, construction, and civil engineering.



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