

# Diagnostic Energy Audit

## Blower Door Test

## Infrared Camera

First Electric Cooperative offers a comprehensive residential energy audit utilizing a blower door and infrared camera diagnostic tools. These technologies allow First Electric's energy auditor to accurately identify thermal deficiencies that cause high energy consumption and an uncomfortable home.

A detailed report will be provided which will include; heating and cooling system load calculation, the measured air tightness of the home and duct system, infrared camera results and specific recommendations for improvements that will reduce your energy usage.

### The diagnostic energy audit is available as follows:

- A primary residence served by First Electric.
- The highest month's electric bill must be above \$.09 per square foot of heated and cooled area of the home.
  - For example ( $\$200 \div 2000 \text{ sq/ft} = \$.10 \text{ per sq/ft}$ )

### Other guidelines include:

- Member/homeowner or designated adult must be present for the audit.
- Audits are conducted between 9:00 a.m. and 2:00 p.m.; Monday through Friday.

### Fee:

- \$100
- Paid to First Electric prior to audit scheduling.
- Reimbursement of the \$100 fee will be made upon providing copies of at least \$100 in repair receipts within six months of the audit.



For more information or to schedule a Diagnostic Energy Audit, call First Electric Cooperative's Marketing Department at 800-489-7405, extension 4543.



First Electric  
Cooperative

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# The Diagnostic Energy Audit

## The Blower Door

The easiest way to measure your home's airtightness is with a diagnostic tool called a Blower Door. The Blower Door consists of a powerful, calibrated fan that is temporarily sealed into an exterior doorway. The fan blows air out of the house to create a slight pressure difference between inside and outside. This pressure difference forces air through all holes and penetrations in the building envelope.

By simultaneously measuring the air flow through the fan and its effect on the air pressure in the building, the Blower Door system measures the airtightness of the entire building envelope. The tighter the building (e.g. fewer holes), the less air you need from the Blower Door fan to create a change in building pressure. And because the Blower Door forces air through all holes and penetrations, these problem spots are easier to find using chemical smoke, an infrared camera or simply feeling with your hand.



In addition to assessing the overall airtightness level of the building envelope, the Blower Door can be used to estimate the amount of leakage in your duct system.

Leaks in forced air duct systems are recognized as a major source of energy waste in both new and existing houses. Studies indicate that duct leakage can account for as much as 25% of total house energy loss, and in many cases has a greater impact on energy use than air infiltration through the building shell. Just as important, duct leakage can prevent heating and cooling systems from doing their job properly, resulting in hot or cold rooms, and humidity problems. Worse yet, duct leaks can create air quality problems by pulling pollutants and irritants directly into the house.

## The Infrared Camera

How do you detect what your eye can't see? With an Infrared Camera, also known as a thermal imaging camera. The infrared camera can detect the variations in temperature that can signal air infiltration, mechanical or electrical problems.

