

VRF System Emerging Technology Field Test



Purpose

The purpose of this limited-availability field test is to gain experience, answer research questions and gather field data on this emerging technology in order to develop a cost effective measure. Brief surveys of the HVAC technician, Utility staff and owner will be required.

Technology

Variable refrigerant flow (VRF) systems for commercial buildings promise deeper savings than standard HVAC systems, including fan, ventilation and part-load heating and cooling savings. These field tests will focus on developing a methodology to verify VRF system savings, over traditional HVAC systems.



Limits

This field test will be limited to the first 10 VRF systems, requested and approved using the online ET Field Test request, between June 1, 2012 and November 30, 2012. This field test may be extended in additional 6-month increments, as needed and appropriate, to meet the goals of the field test.

Requirements

All projects meeting the following minimum requirements are eligible:

Minimum Requirements

- Existing, electrically heated commercial building;
- A minimum of 24 months of pre-VRF system electricity billing data available;
- No other significant change affecting electricity use;
- VRF system, either heat-pump or heat-recovery, with inverter driven compressor(s) and fans, minimum 12.3 IEER and 3.4 COP at 47 F;
- Optimized ventilation loads, through dedicated outside air system (DOAS), heat recovery or other strategies; and
- The VRF and ventilation systems serve over 90% of the building area, and will be commissioned.

Approved Manufacturers

- Daikin
- LG
- Mitsubishi
- or approved equal

Documentation Requirements

- Prior to purchase, complete ET Field Test request
- All Option 1 Custom Project required documentation
- HVAC technician, Utility staff and owner brief surveys
- Pre- (baseline) and post- VRF system electric billing data will be required

B O N N E V I L L E
P O W E R A D M I N I S T R A T I O N



Savings and Incentives

The VRF system savings and reimbursement shall be calculated using the following table based on the VRF system cooling capacity, in tons, and the commercial facility occupied hours per year:

VRF System Field Test Savings		
Occupied hours per year	Savings (kWh/ton*)	Incentive (\$/ton*)
2,000 - 4,000	750	\$150
4,001 - 8,760	1,000	\$200

Reimbursements to the serving utility will be per the BPA Implementation Manual.

Good applications include existing, commercial buildings with electric heat, a minimum of 24 months of pre-VRF system electricity billing data, no other significant change affecting electricity use and optimized ventilation loads