

ThermaRay AS

Radiant Ceiling Panels



Applications

- Atriums • Lobbies
- Hot Yoga Studios • Offices
- Entryways • Schools
- Wellness Centers • Warehouses
- Hospitals • Garages

What We Discovered

Electric Radiant Ceiling Panel vs Electric Baseboard

AS Series radiant panels are ideal for offsetting heat loss through exterior glass on the perimeter of a building. They help to control the problem of condensation typically found with these large exterior glass walls. Radiant panels provide improved comfort by maintaining an even temperature from floor to ceiling. There has been little research done in regards to electric radiant heating systems and there is even less on their energy costs vs other forms of heating systems.

An electric radiant heating system is 100% efficient, just like an electric baseboard. A watt in = a watt out. **But** how it delivers the heat and the comfort it provides is where the big differences lay.

The Problem:

There are 3 offices in Vancouver. These were offices constructed inside a working warehouse.

1. One office has a 1250 watt electric baseboard and is located at the exterior wall under a 6' x 6' window. The person is perpetually cold.
2. The other two offices, 80 ft², each has an AS2424-240 radiant ceiling panel installed. They are located across a standard office hallway (No exterior wall).
3. The center hallway (approximately 4' x 30') leads to an unheated commercial/industrial work shop with 8' x 15' high bay doors.

The Test

To install an electric radiant ceiling heating panel or panels in the non-heated offices to see:

1. If the comfort level is higher with the radiant panel
2. Compare the operating costs of the two systems.

Tests were conducted by an independent 3rd party: Tony De Francesco P.Eng, Aeromation Inc.

The test was from January 13—February 10, 2020. Outside air temperature was 6°C (43°F) at the time the energy plots were taken. Note that the test was not regulated. More testing is required.

There is **no** central heat. Unheated ambient air temperature is 5°C -10°C (41°F - 50°F) warmer than outside air with the bay doors open.

Both heat sources were connected to a Sinope Smart Thermostat, model: TH1123ZB



Office One

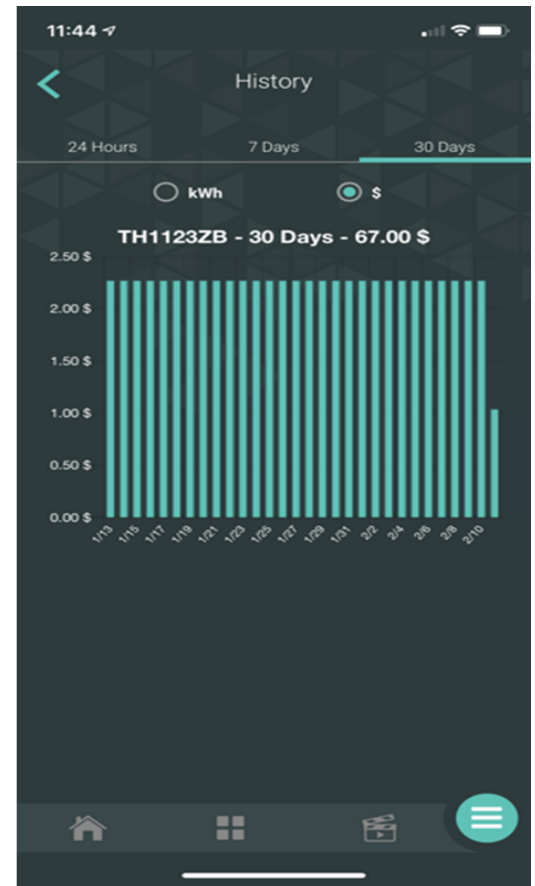
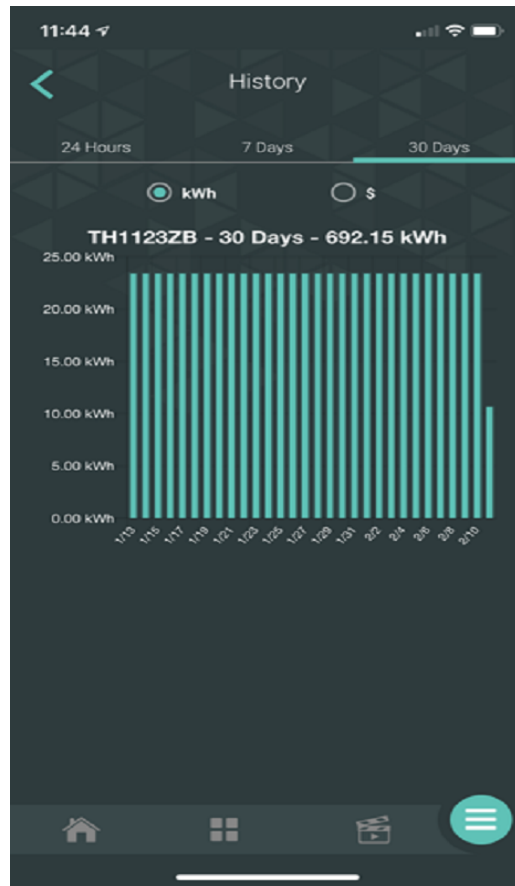
One (1) Baseboard heater - 1250 watt 240V connected to 208V resulting in 940 watts is in a 120 ft² office with a 6' x 6' window.

This = 7.8 w/ft²

The person is perpetually cold.

30 day test

692.15 kWh
\$67.00 cost to operate



Office Two

One (1) ThermaRay Architectural Series Heaters. 2' x 2' 325 watt 240V panel connected to 208V resulting in 245 watts in a 80 ft² office.

This = 3.06 w/ft²

The person in this office is comfortable.

30 day test

153.5 kWh
\$14.86 cost to operate

