



## ENERGY RETROFIT: UPGRADE FROM BASEBOARD HEATING TO DUCOTERRA SOLARAY RADIANT CEILING PANELS

### BASEBOARD HEATING:

The adoption of electric baseboard heaters became increasingly common in the early 1940's, replacing radiators. A baseboard heater is a type of convection heater. It heats up and spreads its air through metal fins, warming the air directly above and around it. Today, in 2018, we know that this technology is unchanged.



Hot air spreads out, becoming less dense and rising in the air. This creates a vacuum, pulling cool air towards the baseboard heater and starting the process over again. A natural convection process takes place as cold air enters the bottom of the element, is heated and then lifted as it comes in contact with the hot element and released back into the room. While baseboard heating is inexpensive to install, it has several drawbacks.

#### Cons of Baseboard Heating:

- Heating air creates stratification, causing warm air to rise to the ceiling and cold air to pool at the floor level. The higher the ceiling the greater the stratification.
- Takes up wall space, limiting furniture placement.
- The sheet metal enclosures will be a permanent part of the room aesthetics and can be damaged easily.
- Baseboards are a perfect trap for dust mites, spider webs etc.
- The least efficient and most costly heating system, increasing your energy bills.

### What is a Radiant Ceiling Panel?

Ducoterra offers a powerful electric radiant ceiling heating panel. Our radiant heat ceiling panels are simple, lightweight enclosed half-inch thick panels that range in size from 2' x 2' up to 2' x 6'. The panels contain an electrical resistance wire that warms as current is passed through it. RCPs are very warm, but not burning hot, to the touch when in operation. They are backed with reflective material and insulation to direct the heat into the living space. Ducoterra's *Solaray* panels utilize state of the art engineering and materials to provide the maximum output for your dollar. As a result, our panels operate much more efficiently than any other electric heater on the market today, with some models producing the same heat output for nearly half the wattage of baseboard or wall heaters.

Radiant heat provides a superior comfort level. They do not produce noise, drafts or allergy-irritating dust. For increased energy efficiency, RCPs can even be turned down or off when vacating a room, for true "zone heating". When turned back on, they bring a room back to comfort levels very quickly.

#### Why Choose DUCOTERRA SOLARAY Panels:

- RCPs bring a room to comfort levels very quickly
- Ducoterra's panels operate in complete silence
- No restrictions on interior design as ceiling panels take up no floor space
- Zero maintenance because they have no moving parts
- Ability to zone different rooms
- No place for dust mites or spider webs to congregate, a clean and healthy indoor environment. Ducoterra's panels also do not circulate viruses or allergens and can eliminate incidences of asthma



## Common Questions

### Does the ceiling get hot with Radiant Ceiling Panels?

No. Counter to what we have all been taught, heat does not rise! Hot air rises. Radiant heat warms you directly and does not rely on hot air to achieve a comfortable environment. Radiant heat from the ceiling will warm the floor, but the ceiling stays cool. This produces even heat, and greater comfort at a slightly lower air temperature.

### Isn't the use of electricity the most expensive way to heat a home?

Ducoterra's panels convert electric power into effective infrared radiant heating so efficiently that a dollar's worth of electricity will produce considerably more heating comfort than a dollar's worth of gas or oil.

### How efficient are Ducoterra's *SolaRay* panels?

Tests have shown that Radiant Ceiling Panels will save over 50% compared to electric baseboards.

### How does one control temperature with Ducoterra's *SolaRay* radiant ceiling panels?

Ducoterra has the most efficient heating system on the market, with the ability to manage heat in each room just like you manage lighting in each room. Each room is separately controlled precisely as you want it with a thermostat in each room set to the desired temperature. In fact, in larger rooms one can even zone some areas to be warmer or cooler than other parts of the room. The cooking and work area in the kitchen can be set lower than the eating area in the dining area.

### Is it difficult to install Ducoterra's panels?

Ducoterra's *SolaRay* panels are only 1/2 inch thick, blend nearly invisibly, and are easily fastened to the ceiling. In single story homes it is usually easy to run wiring overhead in the attic to the rooms where the panels are to be installed.

