# QUIETwarmth®

## INTRODUCTION TO THE WORLD'S EASIEST RADIANT FLOOR HEAT SYSTEM


FLOAT

TILE

JOIST

# REFERENCE GUIDE

Quick reference guide only,
refer to the instruction manual for full installation details

# FOR CLICK-TOGETHER FLOORS

***QuietWarmth Film Mat*** - QuietWarmth Film Mats use conductive ink heating elements that deliver an even, gentle, and energy efficient heat under click-together flooring – *laminate, floating engineered wood, floating bamboo, floating luxury vinyl 4mm or thicker.*

Thin • Flexible • Easy • Safe

**Can be CUT to fit length**

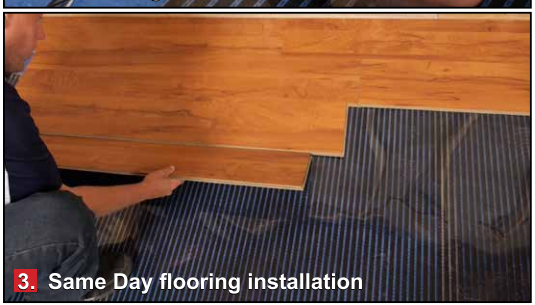
- Available in 120V or 240V
- Low cost energy consumption - 12 wts / sq ft
- Even heat distribution, safer for wood based flooring

# INSTALLING FILM FOR CLICK-TOGETHER FLOORS

The QuietWarmth Radiant Heat Film mats are thin and flexible - thinner than a credit card. This makes the system extremely easy, less expensive to install without needing any extra self leveling mortar or backer boards.

Works well over the top of *QuietWalk, BellaWood Premium, and BellaWood Platinum underlayments.* They have excellent R-Value and provide a great thermal break to the subfloor to help push the heat upwards to warm the floor.







Because of the parallel architecture of the system, the mat can be cut to fit lengthwise without compromising the system's flow of electricity to each stripe. Be careful, as you cannot cut the system to width as that will destroy the parallel architecture of the mats.

NOTE: This page refers ***ONLY*** to the **Radiant Heat Mats for Click-Together Floors**

# FOR TILE AND GLUE-DOWN WOOD

***QuietWarmth Peel & Stick Mats*** *for ceramic, porcelain, and stone tile, and glue down wood floors.–* These mats use conductive ink heating elements that are integrated in an anti-fracture membrane with a very easy to install peel and stick format.


Conductive Ink Strips

Thin design, will not raise floor height!

Anti-fracture membrane allows thin set to properly adhere

Parallel Circuitry for maintenance free life

**Can be CUT to fit length**

- Available in 120V or 240V
- Low cost energy consumption - 12 wts / sq ft
- Even heat distribution for tile floors

Easy to install quick connections with 15' factory attached lead wires for power supply

UL RECOGNIZED

# INSTALLING PEEL & STICK RADIANT HEAT




The QuietWarmth Peel & Stick mats are thin, flexible, and cleverly designed with a high end peel and stick adhesive on the striped side of the mat. This convenient design is less expensive to install without needing any extra self leveling mortar to adhere the mat to the properly prepared subfloor without raising the height of the flooring.

The conductive ink strips are configured in a parallel architecture, which allows the mat to be cut to fit to length. Peel and stick the mat to the clean sub-floor, run leads to the wall, and start tiling the same day!


NOTE: This page refers ***ONLY*** to the **Radiant Heat Peel & Stick Mats for Tile Floors**

# FOR UNDER SUBFLOORS

***QuietWarmth Radiant Heat Mats*** *for retrofitting existing floors* - Thin conductive ink mats installed under the subfloor and between the joists to add heat to almost any new or existing floor covering material.

***Retrofit Under Floors!***

Conductive Ink Strips

Parallel Circuitry for maintenance free life

Thinner than a credit card. Treated with a flame retardant for under subfloor codes

Easy to install, 15 ft factory attached lead wires for power supply

**Can be CUT to fit length**

- Available in 120V or 24
- Low cost energy consumption - 10 wts / sq ft
- Even heat distribution for existing floors

UL RECOGNIZED

# INSTALLING RETROFIT RADIANT HEAT



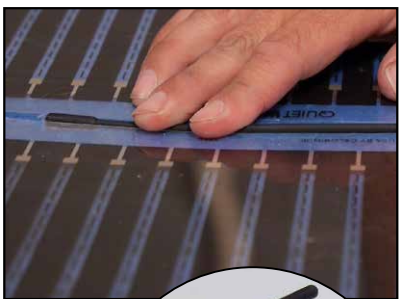

The QuietWarmth® Radiant Heat system is a retrofit heating system that is installed under the subfloor, between the joists, to provide either primary or supplementary heat. Completely unseen, under subfloor heating mat sets warm floor surfaces to about 85°F / 30°C for unparalleled comfort.

Installation is a breeze! It can be used under most floor covering types, including carpet. Once the mats are appropriately fitted and cut to length, staple them into position between the joists and complete the electrical connections. Ensure to add insulation below to push the heat upards to the flooring materials.

NOTE: This page refers ***ONLY*** to the **Retrofit Radiant Heat Product**

# THERMOSTATS

***Dual voltage thermostat with GFCI and floor sensor*** - This device controls the power to the mats. It comes with a 10' long floor sensor that is installed near the floor heat mats, and senses the temperature of the floor so that the thermostat knows when to turn the power to the mats on and off. **National Electrical Code** requires that electric radiant floor heat systems be protected by a **GFCI** (ground-fault circuit interrupter) which is already built into the QuietWarmth brand thermostat.



The thermostat is dual voltage which means it can be used with either the 120 volt or 240 volt heating mats.

***Floor Sensor***

*Place the sensor next to the mat or up to 1 inch away, for optimum sensor reading


***Wifi Smart Home Thermostat*** ***SmartTouch Programmable WiFi*** ***Programmable*** ***Non-Programmable***

# THERMOSTATS

So how many mats can run on one QuietWarmth thermostat? Really the ultimate answer is based on your system voltage.


**120 volt system = 150 sq ft per thermostat**
**240 volt system = 300 sq ft per thermostat**

***Dual voltage power module***- What happens if your system goes over 150 Sq ft for 120V or 300 Sq ft for 240V? Simple, add a power module. A power module is simply a dummy thermostat and is known as a relay. It helps to expand the system while allowing your main thermostat to control the entire area.

## HOW IT WORKS

**The Power Module takes orders DIRECTLY from the main thermostat without having a floor sensor itself.**


When the thermostat calls for more energy to heat the mat, it nudges the power module to kick on as well. The Power Module is to be treated like a regular thermostat, therefore it can only handle 150 sq ft for 120V or 300 sq ft for 240V at a time AND has to be on it's own dedicated 20 amp circuit from the main house electrical box just like the other thermostat.

# QUESTIONS & ANSWERS

## HOW IS IT WIRED INTO THE HOME'S ELECTRICAL SYSTEM?

The thin mats are available for both 120 volt or 240 volt installations, and in either case they need to be connected to a thermostat on a dedicated 20 amp circuit. Your electrician will run wire from the breaker box to a QuietWarmth thermostat located in the room where the mats are being installed. The thermostat will then supply power to the mats through the 15' lead wires attached to the mats.

## DO I NEED A THERMOSTAT FOR EACH MAT?

No, each thermostat can control multiple mats. On a 120 volt system each thermostat can control up to 150 square feet of heated mats, and on a 240 volt system each mat can control up to 300 square feet of heated mats. When installing multiple mats, simply run the lead wires (each mat has two 15' lead wires) from the mats to a junction box and connect them in parallel with a pigtail running from the junction box to the thermostat box.

## CONNECT THEM IN PARALLEL WITH A PIGTAIL?

Your electrician will know what that means. If you really want to know, see **Figure 1**.

## WHAT IF I WANT TO HEAT AN AREA LARGER THAN THE LIMIT OF THE THERMOSTAT?

Simply divide the area into heating zones (Spot Heat) no greater than 150 square feet for 120 volt installations or 300 square feet for 240 volt installations. Each heating zone will require a thermostat or power module and a dedicated 20 amp circuit.

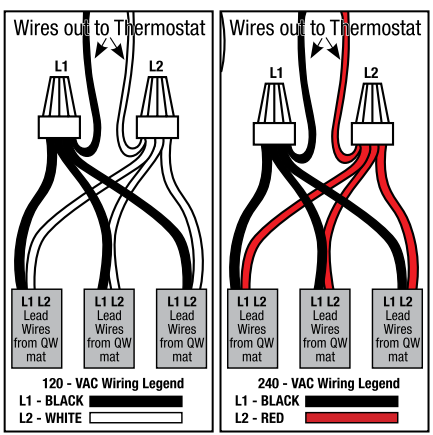



Figure 1

# QUESTIONS & ANSWERS

**WHAT IS THE WARRANTY OF THE QUIETWARMTH RADIANT HEAT FILM PRODUCTS?**
QuietWarmth Radiant Heat systems carry a limited 25 year warranty.
QuietWarmth thermostats carry a 3 year replacement warranty.

**IS THE QUIETWARMTH RADIANT HEAT SYSTEM A LOW EMF PRODUCT?**
Electromagnetic Field (EMF) is referred to as Electromagnetic radiation. Yes, all QuietWarmth mats have low output, lower than many common household products used your home, for example, a toaster oven.

**HOW LONG AFTER THE SYSTEM IS ENTIRELY CONNECTED WILL IT TAKE TO WARM THE FLOOR?**
Unlike installing other floor heating products that use self-levelers, the QuietWarmth system can be turned on immediately after the flooring is completely installed (refer to Flooring Manufacturer Guidelines on proper installation). After turned on, the floor should get up to full controlled temperature within 24-48 hours.

**WILL QUIETWARMTH HARM MY NEW FLOOR IN ANY WAY?**
QuietWarmth is engineered not to exceed 85 degrees F, so it will never heat your floor above what the floor manufacturer recommends. Temperature and comfort varies significantly based on people's lifestyle.

**CAN I PLACE FURNITURE ITEMS OVER THE TOP OF THE HEATED AREA?**
To avoid build up of excess heat, do not place solid bottom furniture items on top of the heated area. Bulky items should have a gap for air movement for the heat to escape. Items placed should have short legs beneath them.

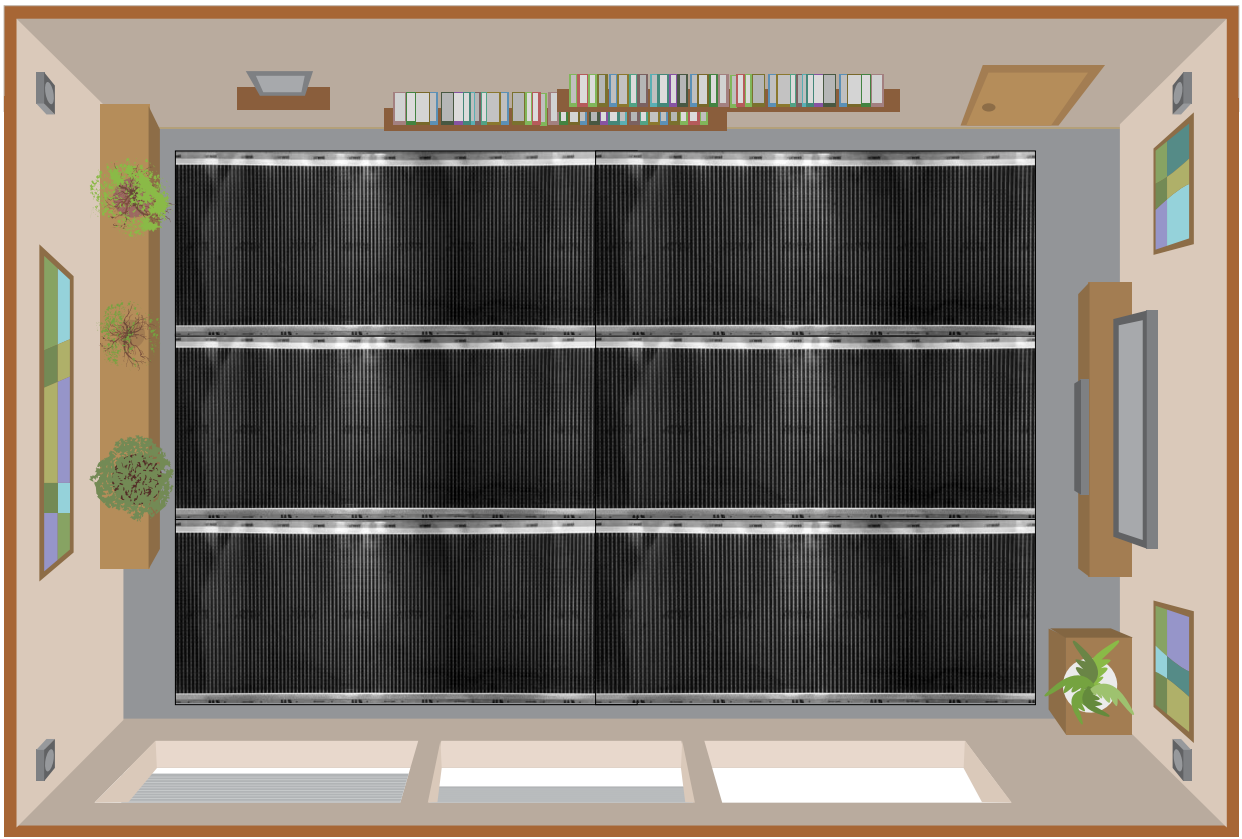
# QUOTING FULL COVERAGE

**QUOTING FULL COVERAGE**:
Take 75-80% of the total floor space your customers are buying flooring for and multiply it by your sq ft cost to the customer. Remember to add a thermostat. The only time 75-80% coverage is required is if the customer wants QuietWarmth film to heat as much of the room and flooring as possible.

**Thermostat:**
- 1 thermostat at 120 volts can handle up to 150 sq ft of heated area.
- 1 Thermostat at 240 volts can handle up to 300 sq ft of heated area.
- To double this add a power module.

**Power consumption:**
Total Sq Ft of heated area x 12/1000 x local cost per kilowatt hour electric rate.
***Example: 60 Sq Ft x 12 = 702/1000 = 0.72 x .12 cents (national average) = $0.086 for first hour to reach temp then about half of that for each hour thereafter.***

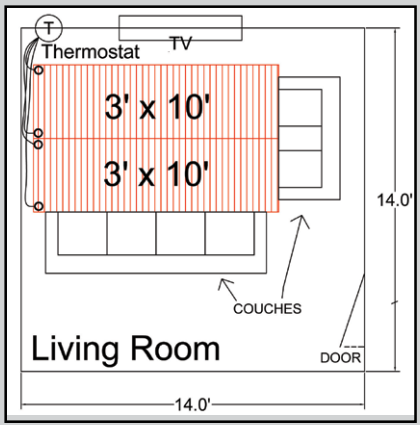
# FULL COVERAGE
## WALL TO WALL

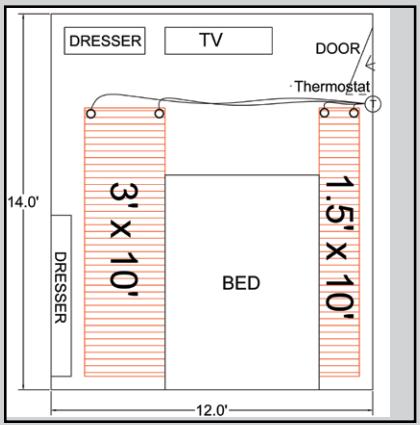


# QUOTING SPOT HEAT

**Spot Heat: place the mats in high traffic areas.**

**Living room:**
Lay mats in front of the couches to keep feet and body warm and comfortable.




**Bedroom:**
Lay mats next to the bed so your customer steps out onto a warm floor. Also in front of the mirror so your customer has a warm floor.

**QUOTING SPOT HEAT COVERAGE**:

Since Quietwarmth film is thin and light, it can be placed virtually anywhere. Place the heat where your customers will enjoy warmth the most. With it's pre-sized mats, Quietwarmth can be placed in multiple spaces and configurations.

***Example:***
***60 Sq. Ft x 12 =***
***702/1000 = 0.72 x .12***
***cents (national average)***
***$0.086 for first hour to reach temp then about half of that for each hour thereafter***

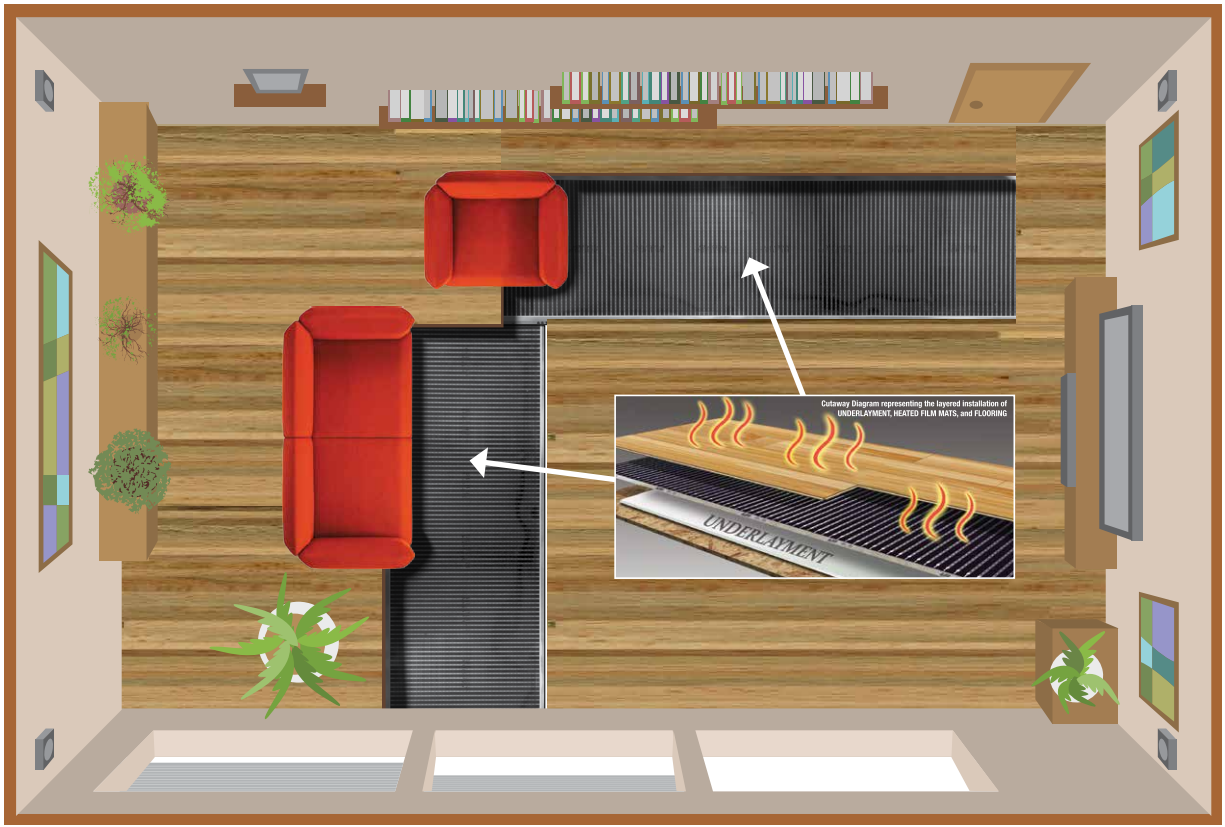
**Thermostat:**

- 1 thermostat at 120 volts can handle up to 150 sq ft of heated area.
- 1 Thermostat at 240 volts can handle up to 300 sq ft of heated area.
- To double this add a power module.

**Power consumption:**

Total Sq Ft of heated area x 12/1000 x local cost per kilowatt hour electric rate.

# SPOT COVERAGE
## ONLY WHERE HEAT IS NEEDED

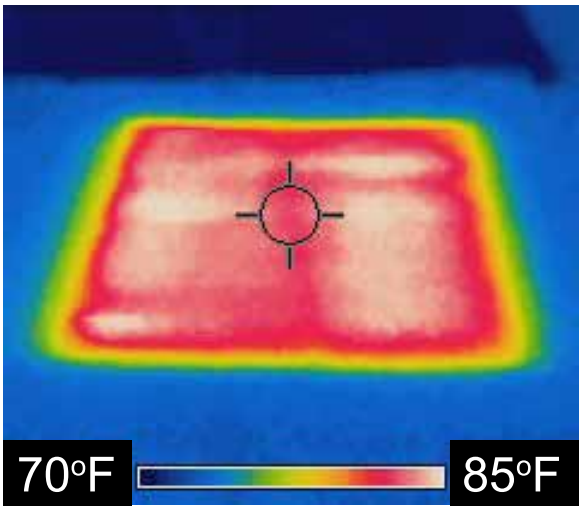


# INSTALLATION COMPARISON CHART

| | QUIETwarmth Floating Floor Mats | QUIETwarmth Tile Floor Mats | Radiant Heat Mesh Mat |
|---|---|---|---|
| **Max Uncontrolled Temperature** | ***85° F*** | ***85° F*** | 120° F |
| **Room Layout Planning** | ***Easy:*** Online Design Tool Available | ***Easy-Moderate*** Online Design Tool Available | Moderate |
| **Customizable** | ***Cut to length*** | ***Cut to length*** | *Cannot be cut* |
| **Radiant heat system retail cost** | ***$6.66*** per sq ft | ***$9.99*** per sq ft | $11.33 per sq ft |
| **Specialty Tools** | ***None***: $0 | ***None***: $0 | Circuit protection alarm: $30 |
| **Extra Installation Materials** | ***None***: $0 | ***None***: $0 | Self Leveler : $1.20/ sq ft*<br>Clean up cloths & Wall Protection Mask<br>* based on 25/sq ft spread rate |
| **Floor Sensing Thermostat** | ***$169*** | ***$169*** | $169 |
| **Radiant Heat Installation time** | ***1 hour*** | ***2 hours*** | 5-7 hours * *including recommended 2-3 hours for self leveler curing time |
| **Approximate Radiant Heat Installation labor*** | ***$65 /hr*** | ***$65 /hr*** | $65 /hr |
| **Licensed Electrician - Final Connections*** | ***2-5 hours*** | ***2-5 hours*** | 2-5 hours |
| **Licensed Electrician Average Rate*** | ***$80 / hour*** | ***$80 / hour*** | $80 / hour |
| **Approx total cost to add radiant heat to 100 sq.ft. space** | ***$8.94*** per sq ft | ***$12.19*** per sq ft | ***$15.89*** per sq ft |
| **System Operation** | ***Can turn system on immediately*** | ***Can turn system on 1 day after grout*** | Cannot turn system on for 2-4 weeks to allow sufficient curing time of the self-leveler without voiding warranty |

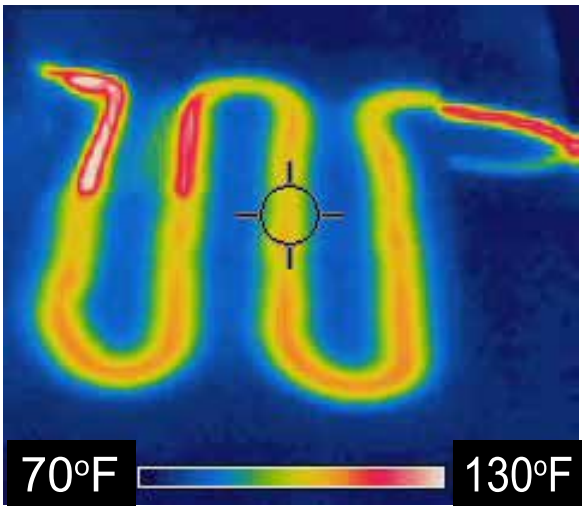
*Based on 100 sq ft installation covering 75% of the room
*All labor rates are approximate, based on national averages provided by the Bureau of Labor Statistics

# HEATING COMPARISON CHART




QUIETwarmth®

The mats heat up evenly and will ***NEVER*** create unsafe hot spots to the click together flooring.




## Radiant Heat Mesh Mat

Wire will distribute heat to uncovered areas, creating unsafe hot spots for flooring.

# NOTES FOR THE ELECTRICIAN/INSTALLER:

- The mats are available in both 120 volt and 240 volt
- The 120 volt mats require a 120 volt power supply, and the 240 volt mats require a 240 volt power supply
- The mats have two 15 ‘ lead wires connected to one end of the mat. One black wire and one white on the 120 volt mats, and one black and one red wire on the 240 volt mats
- The thermostat can be used for both 120 volt and 240 volt systems. The thermostat is not a transformer, the output voltage is the same as the input voltage


- The service tag on each mat shows the wattage, voltage, amperage, and ohms range for that mat
- The thermostats are rated at 15 amps, and must be on a 20 amp dedicated circuit from the main electrical box.
- The thermostat can control up to 150 square feet of 120 volt mats, or up to 300 square feet of 240 volt mats

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- Thermostats come with a floor sensor to properly monitor the floor temperature, ensure the placement of the probe is placed within 1 inch of the mat BEFORE the flooring is installed

- The thermostat has a built in GFCI. The circuit breaker in the breaker box SHOULD NOT BE GFCI protected. Using a GFCI breaker with a GFCI thermostat will cause nuisance tripping.

- There is no grounding conductor used since the thermostat is protected by the built in GFCI

- When wiring multiple mats together, the mats should be connected in parallel using wirenuts. All connections should be made in a junction box in the wall (please refer the installation manual for full details)

## RADIANT HEAT FILM FOR CLICK-TOGETHER FLOORS

### Standard Sizes for 120V

| PRODUCT PART # | DIMENSIONS | WATTS | AMPS |
|---|---|---|---|
| QWARM1.5X5F120 | 1.5x5 | 90 | 0.75 |
| QWARM1.5X10F120 | 1.5x10 | 180 | 1.5 |
| QWARM3X5F120 | 3x5 | 180 | 1.5 |
| QWARM3X10F120 | 3x10 | 360 | 3 |
| QWARM3X166F120* | 3x16'8 | 600 | 5 |
| QWARM3X25F120 | 3x25 | 900 | 7.5 |

### Standard Sizes for 240V

| PRODUCT PART # | DIMENSIONS | WATTS | AMPS |
|---|---|---|---|
| QWARM1.5X5F240 | 1.5x5 | 90 | 0.375 |
| QWARM1.5X10F240 | 1.5x10 | 180 | 0.75 |
| QWARM3X5F240 | 3x5 | 180 | 0.75 |
| QWARM3X10F240 | 3x10 | 360 | 1.5 |
| QWARM3X166F240* | 3x16'8 | 600 | 2.5 |
| QWARM3X25F240 | 3x25 | 900 | 3.75 |

*** 2-IN-1 SYSTEM ONLY**

## PEEL & STICK RADIANT HEAT FOR TILE FLOORS

### Standard Sizes for 120V

| PRODUCT PART # | DIMENSIONS | WATTS | AMPS |
|---|---|---|---|
| QWT1.5X5F120 | 1.5x5 | 90 | 0.75 |
| QWT1.5X10F120 | 1.5x10 | 180 | 1.5 |
| QWT3X5F120 | 3x5 | 180 | 1.5 |
| QWT3X10F120 | 3x10 | 360 | 3 |

### Standard Sizes for 240V

| PRODUCT PART # | DIMENSIONS | WATTS | AMPS |
|---|---|---|---|
| QWT1.5X5F240 | 1.5x5 | 90 | 0.375 |
| QWT1.5X10F240 | 1.5x10 | 180 | 0.75 |
| QWT3X5F240 | 3x5 | 180 | 0.75 |
| QWT3X10F240 | 3x10 | 360 | 1.5 |

## RADIANT HEAT FILM FOR UNDER SUBFLOORS

### Standard Sizes for 120V

| PRODUCT PART # | LENGTH | WATTS | AMPS |
|---|---|---|---|
| QWJOIST17X5120 | 5' | 50 | 0.416 |
| QWJOIST17X10120 | 10' | 100 | 0.833 |
| QWJOIST17X15120 | 15' | 150 | 1.250 |

# GLOSSARY OF TERMS

***Ampere*** (amp): unit of measure for an electrical current; the amount of current that flows in a circuit at an electromotive force of one Volt and at a resistance of one Ohm. The abbreviation is amp.

***Amp-Hours***: A measure of the flow of current (in amperes) over one hour.

***Available Heat***: The amount of heat energy that may be converted into useful energy from a fuel.

***Btu***: British Thermal Unit, the amount of energy needed to raise one lb. of water by one degree Fahrenheit.

***Conduction***: process by which heat transfers through a solid or liquid when there is a difference of temperature.

***Conductor***: a substance, such as a metal (e.g. copper) that is composed of atoms that easily move electrons in one direction, creating a current.

***Convection***: transfer of heat by air currents.

***Current (Electrical)***: The flow of electrical energy (electricity) in a conductor, measured in amps. Think of "current" with respect to the movement of electricity as similar to flow with respect to movement of water.

***Electric Energy***: amount of work accomplished by electrical power, typically measured in kilowatt-hours (kWh). One kWh is 1,000 Watts and is equal to 3,413 Btu.

***Electric Resistance Heating***: type of heating system where heat resulting when electric current flows through a conductor or "element" which has a high resistance is radiated to a room.

***GFCI***: ground fault circuit interrupter. A GFCI protects people from a faulty electrical circuit that could otherwise give a shock.

***Heat Transfer***: flow of heat from one area to another by conduction, convection, and/or radiation. Heat flows naturally from a warmer to a cooler material or space.

***Kilowatt (kW)***: standard unit of electrical power = to 1,000 watts. With respect to heat flow, 1 kw = 3,413 Btu/hr.

***National Electrical Code***: a set of regulations for safe installation of electrical wirirng and equipment that must be followed in most locations in the United States. It is updated every three years.

***Ohm***: a unit for measuring resistance of the flow of electrons through a circuit. One ohm = the electrical resistance whereby one ampere flows when one volt is applied.

***Power***: Energy available for doing work; the time rate at which work is performed, measured in horsepower, Watts, or Btu per hour.

***Radiant Energy***: Energy that transmits away from its source in all directions.

***Radiant Heating System***: A heating system where heat is supplied (radiated) into a room by means of heated surfaces, such as electric resistance elements, hot water (hydronic) radiators, etc.

***Radiation***: The transfer of heat through matter or space by means of electromagnetic waves.

***Resistance***: characteristic of a material to inhibit the transfer of energy, measured in ohms. In electrical conductors, electrical resistance results in the generation of heat. The heat transfer resistance properties of insulation products are quantified as the R-value.

***R-Value***: A measure of the capacity of a material to resist heat transfer. The greater the R-Value of a material, the better its insulating properties.

***Thermostat***: A device used to control temperatures; used to control the operation of heating and cooling devices by turning the device on or off when a specified temperature is reached.

***Volt***: a unit (measure) of electrical force equal to that amount of electromotive force, applied at one end of the conductor, that will cause a steady current of one ampere to flow through a resistance of one ohm.

***Voltage***: The amount of electromotive force, measured in volts, that exists between two points.

***Watt***: unit of electrical power; the rate of energy transfer equal to one ampere under an electrical pressure of one volt. One watt equals 1/746 horsepower, or one joule per second. It is the product of Voltage and Current (amperage).

***Zone***: An area within the interior space of a building, such as a room or rooms, to be heated, cooled, or ventilated. Each zone has a dedicated thermostat to control the flow of conditioned air into the space.

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Quick reference guide only,
refer to the instruction manual for full installation details

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