

# HEATIZON SYSTEMS

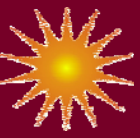
RADIANT HEATING AND SNOW MELTING SYSTEMS

## **Radiant Trak**

**PORTABLE SNOW MELTING MATS**

# Radiant Trak Design & Installation Manual

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Congratulations on your purchase of Heatizon Radiant Trak portable snow melting products, which will provide a convenient and effective solution to snow and ice accumulation in discrete areas around the home or workplace. Heatizon Radiant Trak portable mats are ideal for walkways, driveways, stairs, loading docks, handicap ramps and many other surfaces. Radiant Trak provides a clean and safe passageway for foot, wheelchair or automobile access. Mats have a 15 ft. power lead, and either plug directly into a standard 120V or 240V outlet, or can be hardwired into an electrical junction box. Radiant Trak is UL Listed and comes with a 2 year warranty.

**EFFECTIVE**

Radiant Trak mats melt up to 2" of falling snow per hour, and cost as little as 60 cents a day to operate, depending on local cost per kilowatt hour.

**CONVENIENT**

Heatizon Radiant Trak portable radiant snow and ice melting mats melt snow without the effort of shoveling or snow blowing, and preserve surfaces from harsh chemicals. Their convenient portability allows them to be used in virtually any place where snow and ice are problematic.

**RELIABLE**

Heatizon Radiant Trak products are extremely durable and are designed to be left outside for the entire winter season. The electrically operated heating element is sandwiched between two protective surfaces of non-slip rubber. The Radiant Trak products either plug directly into any standard 120V or 240V outlet using an equipment leakage circuit interrupter (ELCI) or they can be hardwired into an electrical junction box.

**SAFE**

Radiant Trak products are built and tested according to UL Standard 499 and CSAE33501 electrical standards, and all components are UL Listed and come with a 2-year warranty.



**Radiant Trak Portable Snow Melting Mat Limited Warranty**



Heatizon Systems warrants all Radiant Trak Portable Snow Melting Mats against faulty workmanship and use of defective materials for two (2) years from the date of purchase. Buyer's exclusive remedy under this warranty shall be to have Heatizon Systems, within a reasonable time, repair such goods or supply replacements goods or credit Buyer's account for such goods and accept their return, whichever Heatizon Systems may elect at its sole discretion. Heatizon Systems shall in no event be liable for the cost of removal or installation, for shipping and freight costs associated with the return and replacement, for loss or damage to or loss of use of facilities

or other property, loss of revenue, loss of use of revenue, loss of anticipated profits, or other damages or costs of any kind whatsoever, whether direct, indirect, incidental or consequential.

To claim this warranty, Buyer must do the following: (a) Buyer must promptly notify Heatizon Systems in writing after discovery of an alleged non-conformity, and include a detailed explanation of the alleged nonconformity; (b) Buyer must promptly return goods to Heatizon Systems, postage prepaid, to 4137 South 500 West, Murray, UT 84123, USA; and © Heatizon Systems examination of such goods must establish that alleged non-conformities actually exist and occurred in the cause of normal and proper use, and were not caused by accident, misuse, neglect, alternation or improper installation, repair or testing or such other cause outside of the responsibility of Heatizon Systems under this Limited Warranty.

THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER REPRESENTATIONS, WARRANTIES, OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, AND OF ANY OTHER OBLIGATION OR LIABILITY ON THE PART OF HEATIZON SYSTEMS, WHETHER BY STATUTE, CONTRACT, STRICT LIABILITY, TORT OR OTHERWISE.

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# MAT INSTRUCTIONS

## 1. Unpacking

Review the safety warnings below, then take the Radiant Trak mat to the spot where it is going to be used and unpack it there. Save the packaging materials for storing the mat off-season. Save these instructions in case you need to look at them again.

## 2. Installing the Radiant Trak Mat

The Radiant Trak mat should be installed on flat surfaces only. The mat can be installed at air temperatures down to -20°F. *Note: The Radiant Trak mat is not recommended for use on stairs. For snow and ice removal on stairs, use the Radiant Trak StairTread product. For more information on the Radiant Trak StairTread product, visit our website at [www.radiantrak.com](http://www.radiantrak.com) or call 888-239-1232.*

## 3. Clearing the Area

Clear all pre-existing ice and snow from the area where you will be using the Radiant Trak mat. Make sure the surface is free of any sharp objects such as rocks, glass or loose nails, which could cause damage to the bottom of the mat. If there is a lot of hard packed ice in the area you wish to treat, use the Radiant Trak mat to melt the ice away. Simply roll out the mat over the snow and/or ice and plug it in. Depending upon the amount of ice and the outside temperature this could take a full day or more. Once the ice has melted, roll the mat back up and clean the area of sharp items.

## 4. Orienting your power cord

You will want the power cord to be on the side of the mat closest to the outlet. If the cord is on the opposite side, lift up the power end of the mat. Underneath the cord is routed through a channel. Gently pull the cord out of the channel and it will now be on the appropriate side.

## 5. Rolling out the Mat

Align the powered end of the mat correctly so it will roll out in a straight line over the area you wish to keep free of ice and snow. Roll the mat out and adjust it to fit exactly as you want it. At cold temperatures the mat is less flexible and may not lay perfectly flat. Power the mat, and as it heats up, it will flatten and can be adjusted to the final position before being secured.

## 6. Securing the Mat

The mat was designed with a series of 5/16" diameter brass grommets along each edge to make securing the mat both simple and effective. Securing the mat minimizes tripping and keeps it from moving. To secure the mat you must use these grommets. We recommend different methods of securing the mat depending on the nature of the surface:

Surface	What to Use
Concrete, brick, or asphalt	Concrete drill, masonry anchors and washers
Wood	Wood screws or lag bolts and washers
Steel	Nuts, bolts and washers

## 7. Testing the Power Cord and Safety Device

For general safety, the Radiant Trak mat comes with a built-in Equipment Leakage Circuit Interrupter (ELCI). This device turns off the power and prevents fire if the mat is damaged. It is important to test the ELCI to be certain it is working properly- both after the mat is installed and before seasonal use.

Here is all you need to do:

- Locate the test and reset buttons on the device.
- Plug the power cord into the outlet. Press the reset button. The light should go on.
- Press the test button. The light should go out.
- Press the reset button again and the light should come back on.
- If the light does not come on, make sure there is voltage at the outlet.
- If the safety device still does not work, call **(888) 239-1232** for customer service.

Note: Depending on the size of the mat being installed, a dedicated circuit without GFCI protection may be required. To disconnect the GFCI protected outlet, call a certified electrician or call (888)239-1232.

## 8. Operation and Storage

Power the Radiant Trak mat whenever there is a threat of snow or ice. It is a good idea to unplug it for storage when there is no snow or ice. Before storing the mat clean it with soap and water, and place it in the original packaging. Roll the mat back up and place the power cord and safety device inside the rolled mat.

# SAFETY WARNINGS

## WARNING: Electrical Hazard

This mat must be installed per Radiant Trak instructions. Follow these important warnings to avoid the risk of fire or shock.

- Do not remove or modify the safety device or the plug connected to the mat.
- Do not plug in a mat while rolled up.
- Do not use extension cords.
- Do not drive any form of nails, screws, fasteners, or other objects through the rubber surface of the mat. Use only the brass grommets for attachment.
- Do not cut, slice, trim or otherwise alter the mat.
- Do not walk on the mat before it is completely installed.
- Do not plug the mat into an improperly wired or rated outlet.
- Do not install the mat on a rough dirt or gravel surface
- Periodically examine the mat for any signs of damage or excessive wear. If found, unplug and remove the mat immediately and call (888) 239-1232 for assistance.



## RADIANT TRAK TRACTION MAT

Radiant Trak Traction Mat is designed to act as an entrance mat. Radiant Trak Traction Mat is built with non-slip, UV protected rubber, and is designed to be left out for the entire winter season.



Product Specifications	
Surface Thickness	1/4"
Chevron Height	1/8"
Surface Material	Reinforced UV stabilized, natural rubber
Heating Element Voltage	120Vac or 240Vac
Power Density	Up to 40 Watts/SF
Power Cord Service Voltage	120Vac or 240Vac
Circuit Breaker Rating	15A
GFCI Trip Level	6mA
Power Cord Length	6 ft
Cord Gauge	14/3 SJTW
Cord Location	Bottom Left or Bottom Right
Connection Options	Standard Outlet Plug or Hardwire to Junction Box

Product No.	Size	Volts	Watts	Amps	Lbs.	Approx Watts/Ft. <sup>2</sup>
RT24-5	24" X 5'	120	263	2.2	20	26.3
RT24-5B	24" X 5'	240	263	1.1	20	26.3
RT24-10	24" X 10'	120	554	4.6	39	27.7
RT24-10B	24" X 10'	240	554	2.3	39	27.7
RT24-15	24" X 15'	120	846	7.0	59	28.2
RT24-15B	24" X 15'	240	846	3.5	59	28.2
RT24-20	24" X 20'	120	1138	9.5	78	28.5
RT24-20B	24" X 20'	240	1138	4.7	78	28.5
RT36-5	36" X 5'	120	420	3.5	33	28.0
RT36-5B	36" x 5"	240	420	1.8	33	28.0
RT36-10	36" X 10'	120	887	7.4	66	29.6
RT36-10B	36" X 10'	240	887	3.7	66	29.6
RT36-15	36" X 15'	240	1353	5.6	99	30.1
RT36-20	36" X 20'	240	1820	7.6	132	30.4



## RADIANT TRAK RUBBER STAIR TREADS

Radiant Trak Rubber Stair Treads are built with non-slip, UV protected rubber, and is designed to endure harsh wear. Radiant Trak Rubber Stair Treads are designed to be left out for the entire winter season.



Product Specifications	
Surface Thickness	1/4"
Chevron Height	1/8"
Surface Material	Reinforced UV stabilized, natural rubber
Heating Element Voltage	120Vac or 240Vac
Power Density	Up to 30 Watts/SF
Power Cord Service Voltage	120Vac or 240Vac
Circuit Breaker Rating	15A
GFCI Trip Level	6mA
Power Cord Length	6 ft
Cord Length Between Treads	1.5 ft
Cord Gauge	14/3 SJTW
Connection Options	Standard Outlet Plug or Hardwire to Junction Box

Product No.	Size	Volts	Watts	Amps	Lbs.	Max Connect*	Approx Watts/ Ft. <sup>2</sup>
RTRST11-31	11" X 31"	120V	100	0.8	8	10	42
RTRST11-48	11" X 48"	120V	123	1.0	11	10	34
RTRST11-48B	11" X 48"	240V	123	.05	11	10	34
RTRST11-60	11" X 60"	120V	149	1.2	12	10	33
RTRST11-60B	11" X 60"	240V	149	0.6	12	10	33
RTRST11-72	11" X 72"	120V	180	1.5	13	10	33
RTRST11-72B	11" X 72"	240V	180	0.8	13	8	33
RTRST11-84	11" X 84"	120V	210	1.8	14	8	33
RTRST11-84B	11" X 84"	240V	210	0.9	14	10	33
RTRST11-96	11" X 96"	120V	240	2.0	15	10	33
RTRST11-96B	11" X 96"	240V	240	1.0	15	10	33

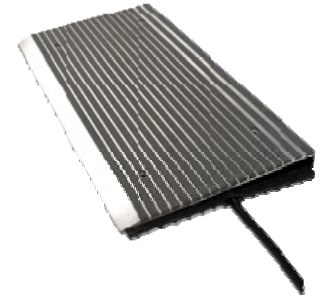


\*Total number of stair treads that can be connected together in series as a group. See Frequently Asked Questions for details on total Amps that can be connected.



## RADIANT TRAK ALUMINUM STAIR TREADS

Radiant Trak Aluminum Stair Treads are designed to endure extra heavy foot traffic. Radiant Trak Aluminum Stair Treads are made of extruded aluminum with abrasive filler to provide extra traction, and are designed to be left out for the entire year.



Product Specifications	
Surface Thickness	3/8"
Surface Material	Extruded aluminum with abrasive filler
Heating Element Voltage	120Vac or 240Vac
Power Density	Up to 30 Watts/SF
Power Cord Service Voltage	120Vac or 240Vac
Circuit Breaker Rating	15A
GFCI Trip Level	6mA
Power Cord Length	6 ft
Cord Length Between Treads	1.5 ft
Cord Gauge	14/3 SJTW
Connection Options	Standard Outlet Plug or Hardwire to Junction Box

Product No.	Size	Volts	Watts	Amps	Lbs.	Max Connect*	Approx Watts/ Ft. <sup>2</sup>
RTRAST11-36	11" X 36"	120V	100	0.8	18	10	36
RTRAST11-48	11" X 48"	120V	123	1.0	24	10	34
RTRAST11-48B	11" X 48"	240V	123	.05	24	10	34
RTRAST11-60	11" X 60"	120V	149	1.2	30	10	33
RTRAST11-60B	11" X 60"	240V	149	0.6	30	10	33
RTRAST11-72	11" X 72"	120V	180	1.5	36	10	33
RTRAST11-72B	11" X 72"	240V	180	0.8	36	8	33
RTRAST11-84	11" X 84"	120V	210	1.8	42	8	33
RTRAST11-84B	11" X 84"	240V	210	0.9	42	10	33
RTRAST11-96	11" X 96"	120V	240	2.0	48	10	33
RTRAST11-96B	11" X 96"	240V	240	1.0	48	10	33



\*Total number of stair treads that can be connected together in series as a group. See Frequently Asked Questions for details on total Amps that can be connected.



## RADIANT TRAK ACTIVATION OPTIONS

Automatic activation options can turn your mat on and off when Mother Nature says “it’s time to perform.” Radiant Trak sells two types of automatic activation controllers. First, a thermostat controller (M307) that plugs directly into the outlet and requiring no professional installation. This controller will power the Radiant Trak whenever the temperature drops below 38 degrees Fahrenheit.

Second, a snow sensing controller or snow switch, such as the M319, M319-120, M326A or M326ARS. These devices will turn Radiant Trak on whenever it senses both moisture AND a temperature conducive to snow or freezing rain. This controller must be hardwired into the circuit by a qualified professional.

**M307**  
Thermostatically  
Controlled  
Outlet Device



**M319-120**  
Aerial Snow Switch  
120V

**M319**  
Aerial Snow Switch  
240 V



**M326A**  
Aerial Snow Switch  
120V or 240 V  
(With Manual Switch)

**M326ARS**  
Aerial Snow Switch  
120V or 240 V  
(With Manual Switch  
AND a Remote Sensor )

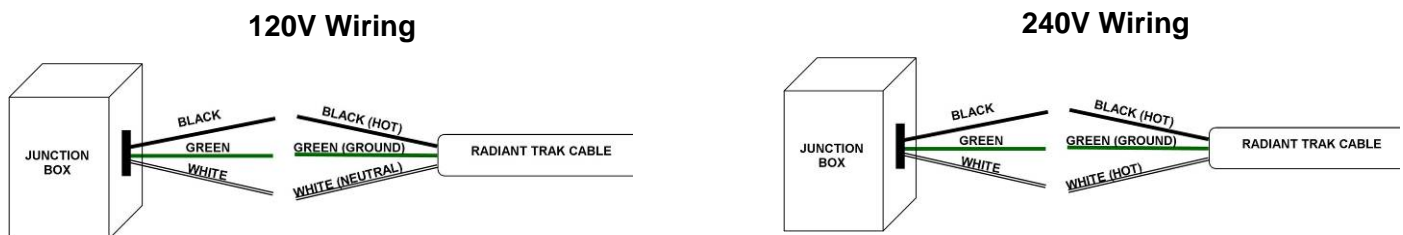


## RADIANT TRAK CONNECTION OPTIONS

Radiant Trak Mats can be customized to fit customer needs.

**Power Receptacles.** Many customers prefer Radiant Trak mats or stair treads with a standard 120V or 220V power cord, but some projects are better suited to hardwiring the electrical connection (See section below). A 120V mat CANNOT plug into a 240V receptacle and a 240V mat CANNOT plug into a 120V receptacle. See Product Specification and Sizing Tables for more information or call your nearest Heatizon Distributor.

**Hardwire.** Don’t have an electrical outlet near the area for Radiant Trak? No problem! Hardwire the cable directly to a junction box. This must be done by a qualified professional according to NEC standards.



# Frequently Asked Questions

- 1. How much does it cost to run a Radiant Trak mat?** The cost to operate the Radiant Trak mat depends on the size of the mat. On average, each mat costs approximately \$0.15 an hour to operate. Assuming the mat is on for 4-6 hours per snow day, the approximate cost per snow day to operate is between \$0.60 and \$0.90.
- 2. Do I roll the mats up after every use or can they be left outside for a long period of time?** The mats are very durable and are designed to be left outside for the entire winter season. The winter elements will not harm the mat in any way.
- 3. Do I leave the mats on all the time?** The mats only need to be left on during the snowfall and/or for a period of time after the snowfall. Best is to have an electrician wire the outlet to a switch inside the facility. This way the mats can be turned on and off from inside. It is preferable not to remove the mats from the outlet during the winter.
- 4. Will the mats wear out if I leave them on for the entire winter?** No.
- 5. Can the mats be automatically controlled?** Yes. There are automatic controllers that can turn your mat on and off. Radiant Trak sells two types of controllers (see accessories). The first is a thermostat controller (EH38) that plugs directly into the outlet. This controller will power the outlet whenever the temperature drops below 38 degrees Fahrenheit. However, once energized, the controller will stay on until the temperature rises above 50 degrees Fahrenheit (maybe not the best option depending on your climate). This controller does not require any professional installation. The second is a snow sensing controller (LCD-1). This device will turn on the mat whenever it senses moisture AND the temperature is below 38 degrees Fahrenheit. This controller must be hardwired into the circuit by a certified electrician. However this controller may not be a good option if you have snow drifts since the controller will not know to energize the mat. Best is to manually turn the mats on or off, or leave them on all season (depending on your budget).
- 6. How many mats can plug into a single outlet?** The number of mats that can plug into a single outlet depends on the mats' total amperage and the circuit breaker rating. Most household circuits can handle 15 amps. For a listing of the amperage for each mat size, refer to the "Products" page under "Product Specifications".
- 7. What type of voltage do I need to operate the mats?** The 24" wide mats can only be ordered with 120V receptacles or 240V receptacles. The 36" wide mats (5' and 10') can be ordered with 120V or 240V receptacles. The 36" wide mats (15' and 20') can be ordered with 240V only.
- 8. Will the mats work if plugged into a GFCI (Ground Fault Circuit Interrupter) outlet?** Yes.
- 9. How many stair treads can be connected with one plug?** The amount of stair treads that can be connected with one plug depends on the size of the stair tread. A good point of reference is to remember that an 11"x5' stair tread can be connected in a group of 10 stairs. Therefore, any combination of a stair tread smaller than an 11"x5' and less than a group of ten will work. For anything greater, please call Radiant Trak's customer service for assistance.
- 10. How hot does the mat get?** The mats will maintain an average temperature of 50 degrees Fahrenheit. Don't be concerned about your pets burning their feet. At the same time, don't be shocked to see your pets lying on the mats for warmth.
- 11. Do I turn on the mat before it snows or after it snows?** The best way to use the Radiant Trak mats is to turn them on before the snow begins to fall. This way, no snow will accumulate on the mats, since the snow flakes will evaporate as soon as they fall. However, you can turn on the mats after the snow has already fallen. In this case, give the mats a few hours to melt through the snow.
- 12. How long does it take to melt the snow?** The mats will melt snow at an average rate of 2" per hour.

**13. What happens to the water when the snow melts?** The best way to use the Radiant Trak mats is to turn the mat on before the snow begins to fall. This way, there will not be any water accumulation when the snow melts, because the snow flakes will evaporate as soon as they land on the mat. However, you can turn on the mats after the snow has already fallen on them. In this case, give the mat a few hours to melt through the snow. When the snow melts, there will be a slight water run-off, but the run-off will go under the snow that lines the mat. Also, there will be small puddles on the mat until the water completely evaporates. But have no fear, these small puddles will be beneath the non-slip treading, so there shouldn't be any slip hazard. Eventually, all the water will evaporate.

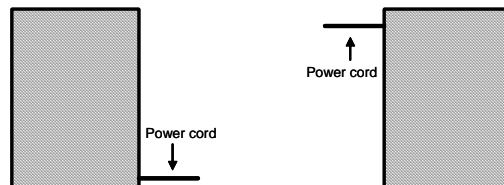
**14. Are the mats dangerous?** No. The mats have two safety mechanisms built into them. First, the products have an Equipment Leakage Circuit Interrupter (ELCI) below the plug. This ELCI will instantaneously shut off all power to the mat if it detects a current leakage of more than 27mA. Therefore, should there ever be a cut in the mat that could potentially cause harm, the ELCI will immediately detect it and shut off all power to the mat. Secondly, the mats have a ground shield between the heating element and the rubber. Should there be any tear in the mat that could potentially cause harm, and for some reason the ELCI doesn't catch it, all current will leave the mat through the ground shield. Finally, all mats are tested before leaving our facility with a Hipot machine that pumps 1000 volts through the mats. If, while 1000 volts are going through the mat, the Hipot detects any current leakage beyond a dangerous level, the mat does not get shipped.

**15. Can the mat be secured to the ground?** The Radiant Trak mats and stair treads are designed and built with grommet holes to make securing the mats both simple and effective. To secure the mats, we recommend using screws that are appropriate for the specific surface (i.e. wood screws, concrete screws, etc.)

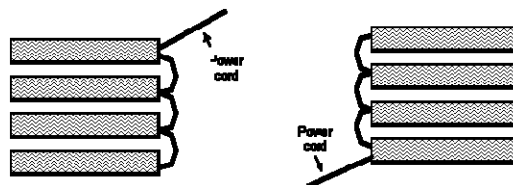
**16. Can I drive on the mats?** No. For foot traffic only.

**17. How long is the electrical cord? Can I use an extension cord?** The mat comes with a 6' long cord. You can use an extension cord as long as you properly cover the connection point of the two cords so that water does not touch the electrical pins.

**18. Where is the power cord located on the mat?** The default location of the power cord is on the lower right corner of the mat, which is also the upper left corner if you rotate the mat. See below. The power cord can be reversed to the other side if requested in the purchase order.



**19. Where is the power cord located on the stair-treads?** The default location of the power cord on the stair-treads is upper right, which is also lower left if rotated. The power cord can be reversed to the other side if requested in the purchase order.



**20. What type of outlet should I use for the mats?** The plug on the mat looks like the diagrams below. Make sure the outlet you are plugging the mat into has a similar looking receptacle.



21. **Can Radiant Trak make me a custom-sized mat?** Yes, as long as the mat is not wider than 36" and longer than 25'. There are a few other limitations, please call the Radiant Trak office for further assistance.
22. **What should I expect to pay for shipping?** Shipping can range from \$5.00 to \$125.00, depending on the size of the mat and the destination. All packages ship UPS Ground (unless otherwise specified by the customer), with an average shipping cost of approximately \$45.00.
23. **How much do the mats weigh?** For a listing of weights per size, refer to the "Products" page under "Product Specifications". The average weight per square foot (SF) is: HTM – 2 lbs/SF; HUM 1.5 lbs/SF; HRT-2.5 lbs/SF; HAT- 6 lbs/SF.
24. **How many years will the mats last?** The mats should last 3-5 years if maintained properly. For proper maintenance instructions, see the installation manual that comes with the product
25. **How long is the warranty?** All Radiant Trak products come with a 2-year manufacturer's warranty.