DISTRIBUTOR GUIDE

For Selling Quality to Contractors

nVent

RAYCHEM

Roof & Gutter De-Icing

Pipe Freeze Protection

Surface Snow Melting

Floor Heating

Table of Contents

Our Self-Regulating Heat-Tracing Cables Outperform Other Self-Regulating Cables

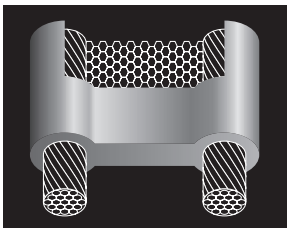
WHY CHOOSE NVENT RAYCHEM?

Other heat-tracing products may look like ours but don't be fooled. Our quality-driven manufacturing processes, combined with years of manufacturing experience allows nVent to provide the most reliable products — just see the **good** examples that represent the nVent RAYCHEM brand versus the poor examples that represent some competitive offerings. Rely on our self-regulating heat-tracing systems for your heat-tracing needs.

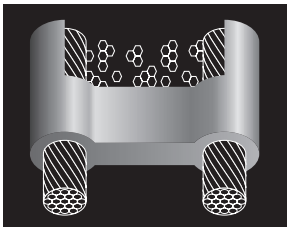
1. EVEN HEAT DISTRIBUTION

The even dispersion of conductive particles in the core of all of our brand of self-regulating heating cables means uniform heat distribution internally and along the entire length of the heating cable. This uniform distribution of carbon particles prevents localized internal overheating and maximizes the life of the cable.

Good dispersion



Poor dispersion



2. NO COLD SPOTS! NO HOT SPOTS! NO BURNOUTS!

All of our self-regulating heating cables have good contact between the conductive core and the parallel bus wires eliminating localized hot or cold spots and premature cable failure. This prevents under heating or overheating and increases reliability.

Good contact

Poor contact

3. EFFICIENT HEAT TRANSFER

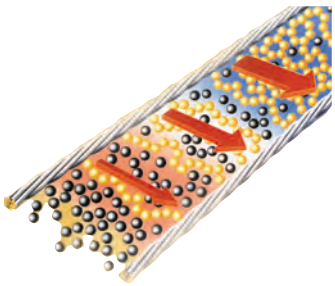
The tight fit of the insulating jacket on all of our self-regulating heating cables maximizes the transfer of heat from cable to pipe, saving energy while eliminating premature aging of the cable.

Tight jacket

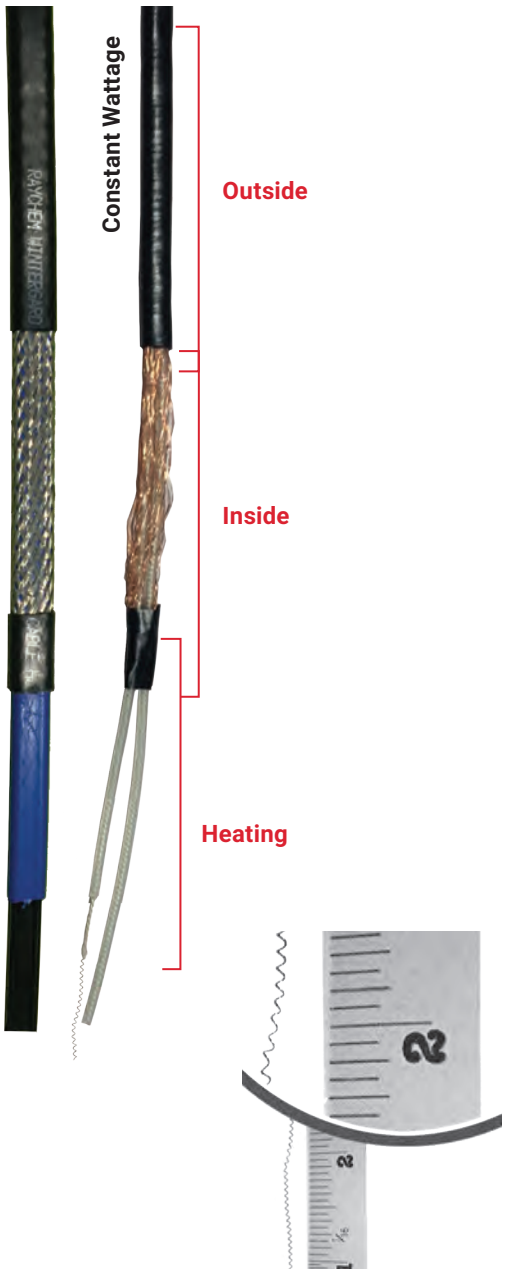
nVent RAYCHEM Self-Regulating Cables - Made in America

Loose jacket

Our Self-Regulating Heat-Tracing Cables Outperform Constant Wattage Cables



This is the typical construction of constant wattage cable, including those found at DIY Box Stores.



1. OUTSIDE

nVent RAYCHEM WinterGard Self-Regulating Cable

- Rugged cable specifically designed for easy installation and long life. Cable is crossedlinked to enhance its UV resistance and increase its flexibility in low temperatures.
- Writing on the outer jacket provides product information to the installer and the end user.

Constant Wattage Cable

- No writing or reference info on outside of cable.

2. INSIDE

WinterGard Self-Regulating Cable

- Dense ground braid offers additional protection.
- Inner, thick crosslinked polyolefin insulating jacket.

Constant Wattage Cable

- Ground weave falls away easily.

3. HEATING

WinterGard Self-Regulating Cable

- A pair of 16 AWG bus wires encased in a solid polymer heating core. If a part of the core gets damaged, the rest of the heater still works. If the cable gets cut, it is repairable.
- Cable is repairable using readily available nVent RAYCHEM Tee or Splice kits.

Constant Wattage Cable

- Extremely thin, resistive filament coiled around a nylon thread, protected by a plastic insulating jacket. This style of cable construction is extremely susceptible to field damage.
- Close up of heating filament. If this breaks, the customer loses the entire heater from beginning to end.
- Non-repairable

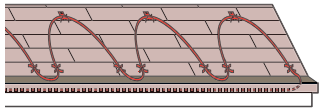
Solutions to Make a Home Winter Safe

ROOF & GUTTER DE-ICING

nVent RAYCHEM **roof & gutter de-icing systems** protect roofs and gutters from ice dams, heavy snow build-up, and icicles. The heating cable creates a continuous path for melted ice and snow to drain.

Our product range allows you to choose the right solution for your application and budget—from our basic, reliable preassembled plug-in kit, to solutions with energy-saving controllers, and our aesthetically elegant solution.

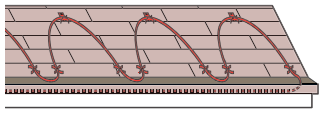
FROSTGUARD PREASSEMBLED PLUG-IN HEATING CABLE SYSTEM



nVent RAYCHEM FrostGuard self-regulating heating cable with 6-ft cold lead and lighted plug for short standard or standing seam roof & gutter de-icing applications on porches and overhangs.

- Voltage: 120 V in lengths of 6, 12, 18, 24, 36, 50, 75 & 100 feet
- Components: nVent RAYCHEM H913/H914 roof clips, H915 downspout hanger

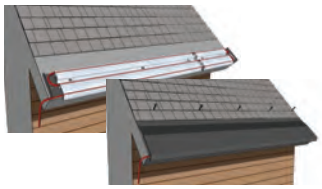
WINTERGARD WET PRE-PACKAGED IN STANDARD SPOOL SIZES AND CUT-TO-LENGTH HEATING CABLE SYSTEM



Self-regulating heating cable that can be cut and spliced to fit the layout of any standard or standing seam roof line with gutters up to 6 inches wide. Choosing the H908 Plug-in cord (for 120 V only) eliminates the need to hardwire, thus reduces installation costs.

- Voltage: 120 V or 240 V
- Control and sensor options: nVent RAYCHEM PD-Pro and GF-Pro, LCD-8, Snow Owl, GIT-1
- Components: nVent RAYCHEM H900 hardwire or H908 plug-in power connection kit; H913/H914 roof clips, H915 downspout hanger, H910 Splice/Tee kit

ROOF ICE MELT (RIM) PREMIERE CUSTOM ROOF ICE MELT PANEL SYSTEM



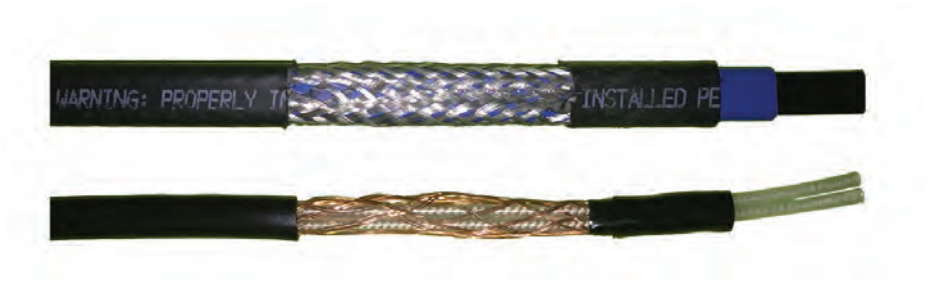
nVent RAYCHEM Roof Ice Melt (RIM) System is our premiere, highest performing, aesthetically elegant roof & gutter de-icing solution ideal for new construction or renovation of residential or commercial buildings, for ALL snow load areas. The system consists of metallic panels that embed self-regulating heat tracing cable to provide high power output. The RIM system includes panels specifically designed for eaves, valleys, channels, rakes, and flat roof sections.

- Voltage: 120 V or 240 V

ROOF & GUTTER CONTROLLER SELECTION DETAILS (RIM-SPECIFIC CONTROLLERS NOT INCLUDED IN THE TABLE BELOW)

GOOD	BETTER	BEST
EC-TS	**LCD-8**	**PD-PRO & Snow Owl / GIT-1**
• Electronic thermostat • Ambient or line sensing • Adjustable set point of 30°F to 110°F • 25' thermistor sensor • 30 A at 100 - 277 V	• Moisture/temperature sensing controller • Aerial mounted sensor • Up to 5-hour hold time (adjustable) • Compatible with external contactors • 16 A at 120 V	• Temperature and moisture sensing controller • Works w/ Snow Owl aerial and/or GIT-1 gutter snow sensors • Up to 8-hour hold time (adjustable) • LED lights to indicate power and heat cycle • Compatible with external contactors • 30 A at 100 - 277 V
		GF-PRO & Snow Owl / GIT-1
		• Temperature and moisture sensing controller • Built-in GFEP protection • Works w/ Snow Owl aerial and/or GIT-1 gutter snow sensors • Up to 8-hour hold time (adjustable) • LED lights to indicate power and heat cycle • 30 A at 100 - 277 V

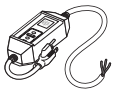
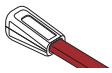
Self-Regulating Heating Cables Outperform Constant Wattage Cables



		CONSTANT WATTAGE HEATING CABLE	WINTERGARD SELF-REG HEATING CABLE
DESIGN	Contractor Grade Construction – built to withstand the construction site. Heavy-duty polyolefin outer jacket, dense ground braid, thick polyolefin inner jacket, 16 awg bus wires surrounded by a solid polymer heating core	**No**	**Yes**
	Impact Resistant	**No**	**Yes**
	Cut To Length	**No**	**Yes**
	Can be Overlapped Without causing Hotspots	**No**	**Yes**
	Repairable	**No**	**Yes**
HEAT OUTPUT	Regulates Right Amount of Heat Output - more heat in ice and snow, reduced heat when dry	**No**	**Yes**
	Saves money	**No**	**Yes**
CONNECTIONS	Tee Available	**No**	**Yes**
	Splice Available	**No**	**Yes**
ROOF TYPE COMPATIBILITY	Asphalt Shingles	**Yes**	**Yes**
	Tile	**No**	**Yes**
	Wood Shakes	**No**	**Yes**
	Metal	**No**	**Yes**
	Rubber	**No**	**Yes**
	Flat roofs	**No**	**Yes**
SOLD THROUGH	Sold through Box Stores	**Yes**	**No**

Roof & Gutter De-Icing Heat Tracing System

Select Cable Power Connection Tee's/Splices Roof Clips Downspout Hangers Controls

	Description	Cat #	Standard Package	Number of Packages Required
	FrostGuard Preassembled Lighted Plug-In Heating Cable System 120 V	FG1	120 V: 6, 12, 18, 24, 36, 50, 75, 100 Feet 6-ft cold lead and lighted plug	
	WinterGard Wet 120 V	H612	Reel Lengths: 50', 250', 500', 1000' TruckPak: includes 100' cable, (2) H900, (1) H910, (1) H903	
	WinterGard Wet 208-240 V	H622	Reel Lengths: 50', 250', 500', 1000' TruckPak: includes 100' cable, (2) H900, (1) H910, (1) H903	
	Hard-wired power connection for WinterGard Wet systems. Includes gel-filled push-on end seal. Junction box not included.	H900	1/pkg	1 kit for each circuit of WinterGard Wet heating cable. Refer to Design Guide for maximum WinterGard Wet circuit lengths for hard-wired systems
	Plug-in 120 V, 15 A power connection for WinterGard Wet. Built-in light and 27-mA GFPD. Includes gel-filled push-on end seal.	H908	1/pkg	1 kit for every 125' of 120 V WinterGard Wet cable. If used, H900 not required.
	Waterproof splice / tee kit. Includes gel-filled push-on end seal.	H910	1/pkg	1 kit for each splice or tee
	Gel-filled push-on end seal	H912	2/pkg	This kit contains two extra end seals. Note: End seals are provided in the H900, H908 and H910 accessory kits.
	Roof clip	H913	10/pkg	1 pkg per 7' of roof edge for serpentine layout.
		H914	50/pkg	1 box per 35' of roof edge for serpentine layout.
	Downspout hanger bracket	H915	1/pkg	1 hanger per cable in downspout or as required for mechanical protection

Length of heating cable = A + B + C + D

A Roof edge length (ft) x Feet of heating cable per foot of roof edge
B Roof edge (ft) x .5**
C Total gutter length (ft)
D Total downspout length (ft)
= Total Heating Cable Length

* Gutter required
** Roof extension: This length allows the heating cable to extend into the gutter to provide a continuous drain path, or where no gutters are present, extends beyond the roof edge to form a drip loop.

Note: nVent recommends a gutter and downspouts to provide a continuous path for melted water.

Length of Cable Per Foot of Roof Edge (ft)			
		Standing Seam Metal Roof	
Overhang (in)	Standard Roof	18 inch Seam	24 inch Seam
None*	2	2.5	2
12 in	2.8	2.8	2.4
24 in	3.8	3.6	2.9
36 in	4.8	4.3	3.6

Start-up Temperature, Maximum Circuit Length				
Circuit breaker rating (A)	H612	H612	H622	H622
	0°F	32°F	0°F	32°F
15	100	125	200	250
20	125	165	250	320
30	150	200	305	400

ROOF & GUTTER SYSTEM ESTIMATE FORM

Need Quote For: ❑ **HEATING CABLE SYSTEM** ❑ **RIM CONCEALED SYSTEM** ❑ **BOTH**

CHECK OUT OUR ONLINE ROOF & GUTTER DE-ICING DESIGN TOOL at **https://raychem.nvent.com/en-us/resources/design-tools/roof-gutter-de-icing-calculator.**

1. Building Type & Conditions: (check all that apply)	❑ House	❑ Small shop / strip mall	❑ High-rise residential / multi-use bldg.	❑ Commercial building
	❑ New Construction	❑ Retrofit		
	Annual Snow Fall	❑ less than 100 inches	❑ more than 100 inches	
2. Area Name:				
3. Type of Roof:	❑ Sloped Roof Shingle Metal Roof–Seams ❑ 18" ❑ 24" ❑ _____" ❑ Don't Trace Roof	❑ Sloped Roof Shingle Metal Roof–Seams ❑ 18" ❑ 24" ❑ _____" ❑ Don't Trace Roof	❑ Sloped Roof Shingle Metal Roof–Seams ❑ 18" ❑ 24" ❑ _____" ❑ Don't Trace Roof	❑ Sloped Roof Shingle Metal Roof–Seams ❑ 18" ❑ 24" ❑ _____" ❑ Don't Trace Roof
4. Roof Pitch:	❑ Less than 3/12 ❑ Equal to or more than 3/12	❑ Less than 3/12 ❑ Equal to or more than 3/12	❑ Less than 3/12 ❑ Equal to or more than 3/12	❑ Less than 3/12 ❑ Equal to or more than 3/12
5. Length of Roof Edge:	_____ feet	_____ feet	_____ feet	_____ feet
6. Eave Overhang Distance:	❑ 0" ❑ 12" ❑ 24" ❑ 36" ❑ _____"	❑ 0" ❑ 12" ❑ 24" ❑ 36" ❑ _____"	❑ 0" ❑ 12" ❑ 24" ❑ 36" ❑ _____"	❑ 0" ❑ 12" ❑ 24" ❑ 36" ❑ _____"
7. Gutters:	Total Length: _____ ft Depth: _____ inches Width: _____ Inches ❑ No Gutters ❑ Use CCB (Cable Cover Bracket) in gutters	Total Length: _____ ft Depth: _____ inches Width: _____ Inches ❑ No Gutters ❑ Use CCB (Cable Cover Bracket) in gutters	Total Length: _____ ft Depth: _____ inches Width: _____ Inches ❑ No Gutters ❑ Use CCB (Cable Cover Bracket) in gutters	Total Length: _____ ft Depth: _____ inches Width: _____ Inches ❑ No Gutters ❑ Use CCB (Cable Cover Bracket) in gutters
8. Downspouts:	Number of Downspouts: _____ Average Downspout Length: _____ ft ❑ Single Run in Downspout ❑ Loop Run in Downspout ❑ No Preference	Number of Downspouts: _____ Average Downspout Length: _____ ft ❑ Single Run in Downspout ❑ Loop Run in Downspout ❑ No Preference	Number of Downspouts: _____ Average Downspout Length: _____ ft ❑ Single Run in Downspout ❑ Loop Run in Downspout ❑ No Preference	Number of Downspouts: _____ Average Downspout Length: _____ ft ❑ Single Run in Downspout ❑ Loop Run in Downspout ❑ No Preference
9. Valleys:	Number of Valleys: _____ Average Valley Length: _____ ft	Number of Valleys: _____ Average Valley Length: _____ ft	Number of Valleys: _____ Average Valley Length: _____ ft	Number of Valleys: _____ Average Valley Length: _____ ft
10. Roof Drains:	Number of Drains: _____ Roof Drain Diameter (Largest): _____ ❑ Use RIM-DT for drains	Number of Drains: _____ Roof Drain Diameter (Largest): _____ ❑ Use RIM-DT for drains	Number of Drains: _____ Roof Drain Diameter (Largest): _____ ❑ Use RIM-DT for drains	Number of Drains: _____ Roof Drain Diameter (Largest): _____ ❑ Use RIM-DT for drains
11. Voltage:	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V
12. Circuit Breaker Size:	❑ 15 A ❑ 20 A ❑ 30 A	❑ 15 A ❑ 20 A ❑ 30 A	❑ 15 A ❑ 20 A ❑ 30 A	❑ 15 A ❑ 20 A ❑ 30 A
13. RIM Cover Panel:	❑ Kynar® Painted Aluminum ❑ Copper	❑ Kynar® Painted Aluminum ❑ Copper	❑ Kynar® Painted Aluminum ❑ Copper	❑ Kynar® Painted Aluminum ❑ Copper
14. Controllers:	❑ Ambient Temperature Only ❑ Ambient & RIM Panel Temperature (HECS) ❑ Gutter Moisture & Temperature Sensor	❑ Ambient Temperature Only ❑ Ambient & RIM Panel Temperature (HECS) ❑ Gutter Moisture & Temperature Sensor	❑ Ambient Temperature Only ❑ Ambient & RIM Panel Temperature (HECS) ❑ Gutter Moisture & Temperature Sensor	❑ Ambient Temperature Only ❑ Ambient & RIM Panel Temperature (HECS) ❑ Gutter Moisture & Temperature Sensor
15. Notes:				
16. Customer name:		**BUSINESS CARD**		
Company:				
Phone:				
Email:				
Project name:				
Project location:				

Contractor: Tear here. Offer the left side to the homeowner / building owner. Email the worksheet to your nVent RAYCHEM Sales Rep to get a complete Bill of Materials and quote!

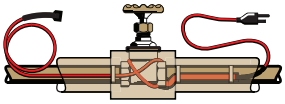
Solutions to Make a Home Winter Safe

PIPE FREEZE PROTECTION

nVent RAYCHEM **pipe freeze protection systems** are flexible and easy to attach to the exterior of the pipe to keep pipes from freezing, bursting, and causing water damage.

Our product range allows you to choose the right solution for your application and budget—from a simple preassembled plug-in kit to one that offers energy-saving control and sensing options.

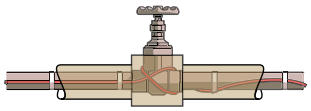
FROSTGUARD PREASSEMBLED PLUG-IN HEATING CABLE SYSTEM



Preassembled self-regulating heating cable with 6-ft cold lead and lighted plug for small piping up to 2-1/2 inches in diameter in dry or wet locations.

- Voltage: 120 V with plug, in lengths of 6, 12, 18, 24, 36, 50, 75 & 100 feet; 240 V with cold lead only, in lengths of 6, 12, 18 & 24 feet
- Control options: nVent RAYCHEM TC-3 thermostatically controlled outlet for 120 V only
- Components: nVent RAYCHEM H903 application tape

WINTERGARD SERIES PRE-PACKAGED IN STANDARD SPOOL SIZES AND CUT-TO-LENGTH HEATING CABLE SYSTEM



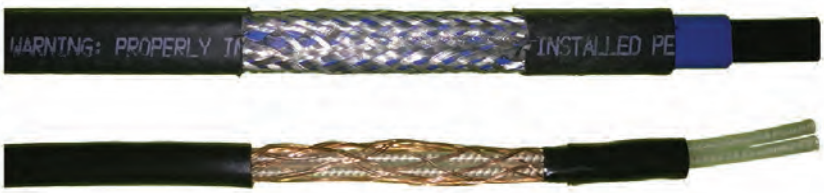
Self-regulating heating cable for piping up to 6 inches in diameter for dry and wet locations. The WinterGard series of products includes WinterGard, WinterGard Plus and WinterGard Wet. See the chart on pages 5-6 for more details on each.

- Voltage: 120 V or 240 V
- Control options: nVent RAYCHEM AMC-F5, AMC-1A, EC-TS
- Components: H900 hardwire or H908 plug-in power connection kit; H903 application tape; H910 Splice/Tee kit

PIPE FREEZE THERMOSTAT SELECTION DETAILS

GOOD	BETTER	BEST
TC-3	**AMC-F5**	**EC-TS**
• Thermostatically controlled outlet	• Mechanical thermostat • Ambient or line sensing • Fixed set point of 40°F (nonadjustable) • 3’ bulb and capillary sensor • 22 A at 125/250/480 V	• Electronic thermostat • Ambient or line sensing • Adjustable set point of 30°F to 110°F • 25’ thermistor sensor • 30 A at 100 - 277 V
	AMC-1A	
	• Mechanical thermostat • Ambient sensing • Adjustable set point of 15°F to 140°F • 22 A at 125/250/480 V	

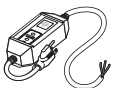
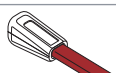
Our Self-Regulating Heating Cables Outperform Constant Wattage Cables



		CONSTANT WATTAGE HEATING CABLE	WINTERGARD SELF-REG HEATING CABLE
DESIGN	Contractor Grade Construction – built to withstand the construction site. Heavy-duty polyolefin outer jacket, dense ground braid, thick polyolefin inner jacket, 16 awg bus wires surrounded by a solid polymer heating core	**No**	**Yes**
	Impact Resistant	**No**	**Yes**
	Cut To Length	**No**	**Yes**
	Can be Overlapped Without causing Hotspots	**No**	**Yes**
	Repairable	**No**	**Yes**
HEAT OUTPUT	Regulates Right Amount of Heat Output - more heat in ice and snow, reduced heat when dry	**No**	**Yes**
	Saves money	**No**	**Yes**
CONNECTIONS	Tee Available	**No**	**Yes**
	Splice Available	**No**	**Yes**
PIPE TYPE COMPATIBILITY	Plastic drain Lines	**No**	**Yes**
	Fuel Lines	**No**	**Yes**
	Hoses	**No**	**Yes**
WARRANTY			**2-10 yrs**
SOLD THROUGH	Sold through Box Stores	**Yes**	**No**

Pipe Freeze Protection Heat Tracing System

Select Cable Power Connection Tee's/Splices Roof Clips Downspout Hangers Controls

	Description	Cat #	Standard Package	Number of Packages Required
	FrostGuard Preassembled Lighted Plug-In Heating Cable System 120/208/240 V	FG1 FG2	120 V: 6, 12, 18, 24, 36, 50, 75, 100 Feet; 6-ft cold lead and lighted plug 208-240 V: 6, 12, 18, 24 Feet; 6-ft cold lead	
	WinterGard 120 V	H311	Reel Lengths: 100', 250' TruckPak: includes 100' cable, (2) H900, (1) H910, (1) H903	
	WinterGard Plus 120 V	H611	Reel Lengths: 50', 100', 250' TruckPak: includes 100' cable, (2) H900, (1) H910, (1) H903	
	WinterGard Plus 240 V	H621	Reel Lengths: 50', 100', 250' TruckPak: includes 100' cable, (2) H900, (1) H910, (1) H903	
	WinterGard Wet 120 V	H612	Reel Lengths: 50', 100', 250', 500', 1000' TruckPak: includes 100' cable, (2) H900, (1) H910, (1) H903	
	WinterGard Wet 208-240 V	H622	Reel Lengths: 50', 100', 250', 500', 1000' TruckPak: includes 100' cable, (2) H900, (1) H910, (1) H903	
	Hard-wired power connection for WinterGard systems. Includes gel-filled push-on end seal. Junction box not included.	H900	1/pkg	1 kit for each circuit of heating cable. Refer to Design Guide for maximum WinterGard circuit lengths for hard-wired systems
	Plug-in 120 V, 15 A power connection for WinterGard. Built-in light and 27-mA GFPD. Includes gel-filled end seal.	H908	1/pkg	1 kit for every 125' of 120 V heating cable. If used, H900 not required.
	Waterproof splice / tee kit. Includes gel-filled push-on end seal.	H910	1/pkg	1 kit for each splice or tee
	Gel-filled push-on end seal.	H912	2/pkg	This kit contain two extra end seals. Note: end seals are provided in the H900, H908 and H910 accessory kits.
	Fiberglass Application Tape and "Electric Traced" labels. Included in TruckPak Kit.	H903	1 roll 10 labels	Used to attach heating cable to pipe. Includes 1 roll (66 ft) of tape and 10 warning labels

Length of heating cable = **A** + **B** + **C** + **D** + **E**

A Pipe length x spiral ratio*
B 4 ft x number of valves
C 1 ft x number of Power connections
D 2 ft x number of Splice connections
E 3 ft x number of Tee connections
= Total Heating Cable Length
Number of Power Connections **= A / B**

A Total heating cable length (ft)
B Maximum Circuit Length
= Power Connections (Round up)

Pipe Size, Spiral Ratio Adjustment Chart

Min. Ambient Temp: −20°F	Insulation Thickness	≤ 1½"	2"	2½	3"	4"	6"
Metal Pipes	1"					1.1	1.5
	1.5"						1.1
	2"						
Plastic Pipes	1"		1.1	1.2	1.4	1.8	3
	1.5"				1.1	1.3	1.7
	2"						1.4

One run of H612 or H622 unless noted

Start-up Temperature, Maximum Circuit Length

Circuit breaker rating (A)	H611/H612	H611/H612	H621/H622	H621/H622
	0°F	40°F	0°F	40°F
15	125	150	200	255
20	140	195	250	340
30	200	200	375	400

PIPE FREEZE PROTECTION SYSTEM ESTIMATE FORM

CHECK OUT TRACECALC PRO FOR BUILDINGS, OUR ONLINE PIPE TRACE DESIGN TOOL at **https://raychem.nvent.com/en-us/resources/design-tools/tracecalc-pro.**

1. Building Type:	❑ House	❑ Small shop / strip mall	❑ High-rise residential / multi-use bldg.	❑ Commercial building
2. Line Name:				
3. Application:	❑ Water Lines	❑ Water Lines	❑ Water Lines	❑ Water Lines
	❑ Fire Protection Lines	❑ Fire Protection Lines	❑ Fire Protection Lines	❑ Fire Protection Lines
	❑ Greasy Waste Lines	❑ Greasy Waste Lines	❑ Greasy Waste Lines	❑ Greasy Waste Lines
	❑ Fuel Oil Lines	❑ Fuel Oil Lines	❑ Fuel Oil Lines	❑ Fuel Oil Lines
	❑ Other: _____	❑ Other: _____	❑ Other: _____	❑ Other: _____
4. Location:	❑ Above Ground ❑ Below Ground	❑ Above Ground ❑ Below Ground	❑ Above Ground ❑ Below Ground	❑ Above Ground ❑ Below Ground
5. Minimum Ambient:	❑ –20 ❑ –10 : ❑ 0 ❑ +65 (indoor)	❑ –20 ❑ –10 : ❑ 0 ❑ +65 (indoor)	❑ –20 ❑ –10 : ❑ 0 ❑ +65 (indoor)	❑ –20 ❑ –10 : ❑ 0 ❑ +65 (indoor)
6. Maintain Temp (°F):	_____ (°F)	_____ (°F)	_____ (°F)	_____ (°F)
7. Max Pipe Temp (°F):	❑ 150 ❑ 185 ❑ Other _____	❑ 150 ❑ 185 ❑ Other _____	❑ 150 ❑ 185 ❑ Other _____	❑ 150 ❑ 185 ❑ Other _____
8. Voltage:	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V
9. Circuit Breaker Size:	❑ 15 A ❑ 20 A ❑ 30 A ❑ 40 A	❑ 15 A ❑ 20 A ❑ 30 A ❑ 40 A	❑ 15 A ❑ 20 A ❑ 30 A ❑ 40 A	❑ 15 A ❑ 20 A ❑ 30 A ❑ 40 A
10. Length of Pipe:	_____ ft	_____ ft	_____ ft	_____ ft
11. Pipe Diameter:	_____ in	_____ in	_____ in	_____ in
12. Pipe Material:	❑ Metal ❑ Plastic	❑ Metal ❑ Plastic	❑ Metal ❑ Plastic	❑ Metal ❑ Plastic
13. Number of Valves:				
14. Supports Outside Insulation?	❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No
15. Number of Flanges:				
16. Insulation Type:	❑ Fiberglass	❑ Fiberglass	❑ Fiberglass	❑ Fiberglass
	❑ CalSil	❑ CalSil	❑ CalSil	❑ CalSil
	❑ Cellular Glass	❑ Cellular Glass	❑ Cellular Glass	❑ Cellular Glass
	❑ Rigid Cellular Urethane	❑ Rigid Cellular Urethane	❑ Rigid Cellular Urethane	❑ Rigid Cellular Urethane
	❑ Foamed Elastomer	❑ Foamed Elastomer	❑ Foamed Elastomer	❑ Foamed Elastomer
	❑ Mineral Fiber Blanket	❑ Mineral Fiber Blanket	❑ Mineral Fiber Blanket	❑ Mineral Fiber Blanket
	❑ Expanded Perlite	❑ Expanded Perlite	❑ Expanded Perlite	❑ Expanded Perlite
17. Insulation Thickness:	_____ in	_____ in	_____ in	_____ in
18. Control On:	❑ Line Temperature	❑ Line Temperature	❑ Line Temperature	❑ Line Temperature
	❑ Ambient Temperature	❑ Ambient Temperature	❑ Ambient Temperature	❑ Ambient Temperature
19. Controls Provide GFPD?	❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No
20. # of Tee Connections Required?				
21. Notes:				
22. Customer name:				
Company:				
Phone:				
Email:				
Project name:				

BUSINESS CARD

Contractor: Tear here. Offer the left side to the homeowner / building owner. Email the worksheet to your RAYCHEM Sales Rep to get a complete Bill of Materials and quote!

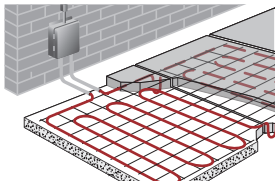
Solutions to Make a Home Winter Safe

SURFACE SNOW MELTING

nVent RAYCHEM **surface snow melting systems** keep sidewalks, stairways and driveways free of snow and ice.

Our product range allows you to choose the right solution for your application and budget — from a self-regulating system for concrete surfaces and pavers that reduces heat output automatically as the pavement warms and is ideal for smaller areas; to an MI pre-terminated system for concrete, pavers, and asphalt which provides constant power output and is ideal for larger jobs.

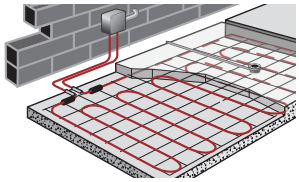
ELECTROMELT CUT-TO-LENGTH HEATING CABLE SYSTEM



nVent RAYCHEM ElectroMelt self-regulating heating cable for surface snow melting and anti-icing in concrete pavement.

- Voltage: 208 V; 240 V; 277 V; 347 V
- Control and sensor options: PD-Pro and GF-Pro, LCD-8 Snow Switch, SIT-6E
- Components: EMK heat shrinkable fittings

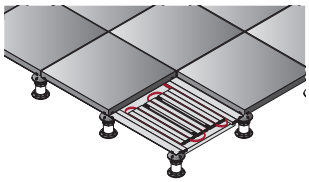
MI PRE-TERMINATED HEATING CABLE SYSTEM



nVent RAYCHEM Mineral Insulated (MI) LSZH jacketed copper sheathed heating cable for snow melting in concrete, mastic asphalt slab or road-grade asphalt slab.

- Voltage: 120 V to 600 V; Single or 3-Phase design;
- Control options: PD-Pro, GF-Pro, LCD-8, SIT-6E
- Components: n/a

PMPH AND SMH SYSTEMS



nVent RAYCHEM snow melting solutions can be designed to be installed under pedestal mounted pavers (PMPH) and under suspended metal surfaces such as stairs and walkways (SMH). The systems utilize high wattage self-regulating cable installed in an engineered aluminum tray assembly offering efficient, high performance snow melting that keeps surfaces free of snow and ice.

SURFACE SNOW MELTING CONTROLLER SELECTION DETAILS

GOOD	BETTER	BEST
LCD-8	**EC-TS**	**PD-PRO & Snow Owl / SIT-6E**
• Moisture and temperature sensing controller • Aerial mounted sensor • Up to 5-hour hold time (adjustable) • Compatible with external contactors • 16 A at 120 V	• Mechanical thermostat • Ambient or line sensing • Adjustable set point of 30°F to 110°F • 25' thermistor sensor • 30 A at 100 - 277 V	• Temperature and moisture sensing controller • Controller works w/ Snow Owl aerial and/ or SIT-6E pavement mounted snow sensors • Up to 8-hour hold time (adjustable) • LED lights to indicate power and heat cycle • Compatible with external contactors • 30 A at 100 - 277 V
		GF-PRO & Snow Owl / SIT-6E
		• Temperature and moisture sensing controller • Controller works w/ Snow Owl aerial and/ or SIT-6E pavement mounted snow sensors • Up to 8-hour hold time (adjustable) • Built-in GFEP protection • LED lights to indicate power and heat cycle • 30 A at 100 - 277 V

SURFACE SNOW MELTING SYSTEM ESTIMATE FORM

CHECK OUT SNOCALC, OUR ONLINE SURFACE SNOW MELTING DESIGN TOOL at **https://raychem.nvent.com/en-us/resources/design-tools/snocalc.**

1. Building Type:	❑ House	❑ Small shop / strip mall	❑ High-rise residential / multi-use bldg.	❑ Commercial building
2. Project City, State:				
3. Area Name:				
4. Voltage:	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V
	❑ 347 V ❑ 480 V ❑ 600 V	❑ 347 V ❑ 480 V ❑ 600 V	❑ 347 V ❑ 480 V ❑ 600 V	❑ 347 V ❑ 480 V ❑ 600 V
5. Voltage Configuration:	❑ 1 Phase ❑ 3 Phase	❑ 1 Phase ❑ 3 Phase	❑ 1 Phase ❑ 3 Phase	❑ 1 Phase ❑ 3 Phase
6. Breaker Size:	❑ 20 A ❑ 30 A ❑ 40 A ❑ 50 A	❑ 20 A ❑ 30 A ❑ 40 A ❑ 50 A	❑ 20 A ❑ 30 A ❑ 40 A ❑ 50 A	❑ 20 A ❑ 30 A ❑ 40 A ❑ 50 A
	❑ 60 A ❑ 80 A ❑ 100 A	❑ 60 A ❑ 80 A ❑ 100 A	❑ 60 A ❑ 80 A ❑ 100 A	❑ 60 A ❑ 80 A ❑ 100 A
7. Area Type:	❑ Concrete	❑ Concrete	❑ Concrete	❑ Concrete
	❑ Asphalt	❑ Asphalt	❑ Asphalt	❑ Asphalt
	❑ Pavers	❑ Pavers	❑ Pavers	❑ Pavers
	❑ Stairs (on grade)	❑ Stairs (on grade)	❑ Stairs (on grade)	❑ Stairs (on grade)
	❑ Stairs (elevated)	❑ Stairs (elevated)	❑ Stairs (elevated)	❑ Stairs (elevated)
	❑ Wheel Tracks (concrete)	❑ Wheel Tracks (concrete)	❑ Wheel Tracks (concrete)	❑ Wheel Tracks (concrete)
	❑ Wheel Tracks (asphalt)	❑ Wheel Tracks (asphalt)	❑ Wheel Tracks (asphalt)	❑ Wheel Tracks (asphalt)
8. Number of Steps:				
9. Stair Width:	_____ ft	_____ ft	_____ ft	_____ ft
10. Stair Depth:	_____ in	_____ in	_____ in	_____ in
11. Riser Height:	_____ in	_____ in	_____ in	_____ in
12. Landing Area:	_____ sq ft	_____ sq ft	_____ sq ft	_____ sq ft
13. Total Area (not including landing):	_____ sq ft	_____ sq ft	_____ sq ft	_____ sq ft
14. Number of Expansion Joints:				
15. Feet from Junction Box to Slab:	_____ ft	_____ ft	_____ ft	_____ ft
16. Junction Box Height Above Grade:	_____ ft	_____ ft	_____ ft	_____ ft
17. If Wheel Track Design, Length of Tracks:	_____ ft	_____ ft	_____ ft	_____ ft
18. Control:	❑ Control Only	❑ Control Only	❑ Control Only	❑ Control Only
	❑ Control w/ Power Dist	❑ Control w/ Power Dist	❑ Control w/ Power Dist	❑ Control w/ Power Dist
19. Controls Provide GFPD?	❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No
20. Notes:				
21. Customer name:				
Company:				
Phone:				
Email:				
Project name:				

BUSINESS CARD

Contractor: Tear here. Offer the left side to the homeowner / building owner. Email the worksheet to your RAYCHEM Sales Rep to get a complete Bill of Materials and quote!

PMPH & SMH SYSTEM ESTIMATE FORM

Need Quote For: ❑ **PMPH** ❑ **SMH**

CHECK OUT SNOCALC, OUR ONLINE SURFACE SNOW MELTING DESIGN TOOL at **https://raychem.nvent.com/en-us/resources/design-tools/snocalc.**

Email completed form to your nVent Sales Rep for a complete Bill of Materials and quote!

1. Building Type & Conditions: (check all that apply)	❑ House	❑ Small shop / strip mall	❑ High-rise residential /multi-use bldg.	❑ Commercial building
	❑ New Construction	❑ Retrofit		
	Annual Snow Fall	❑ less than 100 inches	❑ more than 100 inches	
2. Area Name:				
3. Pavers:	Length: _____ Inches	Length: _____ Inches	Length: _____ Inches	Length: _____ Inches
	Width: _____ Inches	Width: _____ Inches	Width: _____ Inches	Width: _____ Inches
	Height: _____ Inches	Height: _____ Inches	Height: _____ Inches	Height: _____ Inches
4. Paved Area:	❑ Dimensioned sketch of heated area or Estimated Width: _____ ft Length: _____ ft	❑ Dimensioned sketch of heated area or Estimated Width: _____ ft Length: _____ ft	❑ Dimensioned sketch of heated area or Estimated Width: _____ ft Length: _____ ft	❑ Dimensioned sketch of heated area or Estimated Width: _____ ft Length: _____ ft
5. Stairs or Platforms:	Number of stairs _____	Number of stairs _____	Number of stairs _____	Number of stairs _____
	Width: _____ ft	Width: _____ ft	Width: _____ ft	Width: _____ ft
	Length: _____ ft	Length: _____ ft	Length: _____ ft	Length: _____ ft
6. Voltage:	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V	❑ 120 V ❑ 208 V ❑ 240 V ❑ 277 V
7. Circuit Breaker Size:	❑ 15 A ❑ 20 A ❑ 30 A	❑ 15 A ❑ 20 A ❑ 30 A	❑ 15 A ❑ 20 A ❑ 30 A	❑ 15 A ❑ 20 A ❑ 30 A
8. Controllers:	❑ Ambient Temperature Only	❑ Ambient Temperature Only	❑ Ambient Temperature Only	❑ Ambient Temperature Only
	❑ Snow and ice melting controller	❑ Snow and ice melting controller	❑ Snow and ice melting controller	❑ Snow and ice melting controller
	❑ Snow Sensor	❑ Snow Sensor	❑ Snow Sensor	❑ Snow Sensor
9. Notes:				

10. Customer name:		**BUSINESS CARD**
Company:		
Phone:		
Email:		
Project name:		
Project location:		

Solutions to Make a Home Comfortable

COMFORT FLOOR HEATING

Comfort is everything, especially in your home. With nVent NUHEAT **Electric Floor Heating Systems,** you can offer the comfort of a warm floor that is maintenance-free for your customers. nVent NUHEAT Electric Floor Heating Systems are ideal for both new construction or renovation projects.

CUSTOM AND STANDARD MATS

The thinnest custom-built and pre-built electric floor heating mat. Designed to precisely fit any any room.

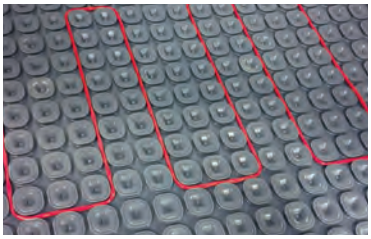
- Available in over 70 standard off -the-shelf square and rectangular sizes
- Custom Mats manufactured in only 3 days
- 12 W/ft^2; 41 BTUs (15 W/ft^2; 51 BTUs also available upon request)

CABLE

The robust floor heating cable solution. Perfect where on-site adjustments are required.

- Available in 33 sizes in both 120 and 240 V
- Flexible wire spacing and heating output
- May be installed at 12 W/ft^2 (41 BTUs), or 15 W/ft^2 (51 BTUs)

CABLE AND MEMBRANE



The integrated electric floor heating and uncoupling solution. Membrane can reduce risk of tile cracks due to subfloor movement.

- Thin profile heating cable and electrical lead
- Durable heating cable construction
- Flexible heat output (10, 12, 15 W/ft^2)

MESH

The self-adhesive electric floor heating solution. Mesh is customizable to any room shape with it's simple roll out installation method.

- 32 kit sizes; largest 120 V covers 120 ft^2 and largest 240 V covers 240 ft^2
- Thin, cold lead and connection joint
- 12 W/ft^2

THERMOSTATS

nVent NUHEAT thermostats are suitable for all floor heating systems.

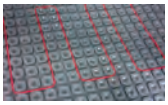
- Signature - Works with Amazon Alexa®, the Google Assistant, IFTTT®, Crestron® Control4® and more.
- Home - Easy and intuitive programmable thermostat with a high resolution touchscreen interface.
- Element - Basic electronic thermostat – simplified functionality for ease of use.

For complete specifications and other design assistance, refer to the appropriate data sheets and application design guides available on our website **Nuheat.com**

Find the Floor Heating You Need

nVent NUHEAT

THE RIGHT SYSTEM FOR EVERY APPLICATION

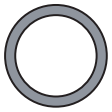
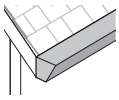
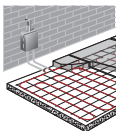
	 **Custom Mats** The thinnest custom-built electric floor heating mat	 **Standard Mats** The thinnest pre-built electric floor heating mat	 **Cable** The robust floor heating cable solution	 **Cable & Membrane** The integrated electric floor heating and un-coupling solution	 **Mesh** The self-adhesive electric floor heating solution
Ideal Use	Installations where shape of heated area is complex (features angles, curves, or multiple adjacent areas) Low product profile and ease of installation are most important	Square and rectangular shaped areas Low product profile and ease of installation are most important	Installations of all shapes (simple to complex) where on-site flexibility is most important	Tile installations of all shapes (simple to complex) where there is concern of subfloor movement and a risk of tiles cracking	Square and rectangular shaped areas where on-site flexibility is most important
Suitable floor surfaces	Tile, stone, laminate, engineered wood, luxury vinyl tile	Tile, stone, laminate, engineered wood, luxury vinyl tile	Tile, stone, laminate, engineered wood, luxury vinyl tile	Tile, stone, luxury vinyl tile	Tile, stone, laminate, engineered wood, luxury vinyl tile
Power Output	12 or 15 W/ft^2	12 W/ft^2	12 or 15 W/ft^2	10, 12 or 15 W/ft^2	12 W/ft^2
Sizes	Up to 200 ft^2 for a single mat	+70 sizes up to 200 ft^2	33 kit sizes 120 V - single kits (14) up to 120 ft^2 240 V - single kits (19) up to 240 ft^2	Membrane roll sizes Small - 54 ft^2 / Large - 161 ft^2 Cable 33 kit sizes 120 V - single kits (14) up to 120 ft^2 240 V - single kits (19) up to 240 ft^2	32 kit sizes 120 V - single kits (13) up to 120 ft^2 240 V - single kits (19) up to 240 ft^2
Floor Shape	Custom built to fit exact shape of the room	Fixed shape (rectangular or square)	Adjustable on site	Adjustable on site	Adjustable on site
Installation Method	Thinset mortar	Thinset mortar	Secure cable guides on subfloor and affix cable to cable guides	Thinset mortar for Membrane then install Cable	Apply adhesive mesh on subfloor and secure using nails, staples, or hot glue
Self-Leveling Concrete	Not needed	Not needed	Recommended	Not needed	Recommended
Thickness	1/8 in	1/8 in	3/16 in	7/32 in	3/16 in
Uncoupling	No	No	No	Yes	No
Availability	Manufactured in 3 days	Stock	Stock	Stock	Stock

All nVent NUHEAT products are backed by a 25-Year Product Warranty. An additional Total Care Warranty can also be applied if a product is installed by a nVent NUHEAT Certified PRO installer.

nVent RAYCHEM

WINTER SAFETY

SELECT THE RIGHT PRODUCTS

		AREA		APPLICATION				
		DRY	WET	PIPE	PIPE	PIPE	ROOF	SURFACE SNOW MELT
				 2" diameter or below	 Up to 2 1/2" diamter	 Up to 6" diamter	 Up to 4" gutter with 1 run Up to 6" gutter with 2 runs	
WINTERGARD	120 V; 3 W/ft @ 40°F 	•		•				
Description / **Catalog #**								
100' TruckPak*	H311100							
250' Reel	H311250							
WINTERGARD PLUS	120 V; 6 W/ft @ 40°F 	•		•	•	•		
Description / **Catalog #**								
50' Box	H611050							
100' TruckPak*	H611100							
250' Reel	H611250							
Description / **Catalog #**	240 V; 6 W/ft @ 40°F 	•		•	•	•		
50' Box	H621050							
100' TruckPak*	H621100							
250' Reel	H621250							
WINTERGARD WET	120 V; 6 W/ft @ 40°F 	•	•	•	•	•	•	
Description / **Catalog #**								
50' Box	H612050							
100' TruckPak*	H612100							
250' Reel	H612250							
500' Reel	H612500							
1000' Reel	H6121000							
Description / **Catalog #**	240 V; 6 W/ft @ 40°F 	•	•	•	•	•	•	
50' Box	H622050							
100' TruckPak*	H622100							
250' Reel	H622250							
500' Reel	H622500							
1000' Reel	H6221000							
FROSTGUARD PREASSEMBLED	120 V; 6 W/ft @ 40°F 	•	•	•	•		•	
Description / **Catalog #**								
6' Length	FG1-6P							
12' Length	FG1-12P							
18' Length	FG1-18P							
24' Length	FG1-24P							
36' Length	FG1-36P							
50' Length	FG1-50P							
75' Length	FG1-75P							
100' Length	FG1-100P							
Description / **Catalog #**	240 V; 6 W/ft @ 40°F 	•	•	•	•			
6' Length	FG2-6L							
12' Length	FG2-12L							
18' Length	FG2-18L							
24' Length	FG2-24L							
FROSTEX	120 V; 3 W/ft @ 50°F 	•		•				
Description / **Catalog #**								
50' TruckPak	5050							
100' Reel	2102							
250' Reel	2250							
500' Reel	2502							
IN-PIPE	120 V 		•	•				
Description / **Catalog #**								
Mini 14' – 34'	see price list							
Miser 14' – 240'	see price list							
Retro 40' – 150'	see price list							
Description / **Catalog #**	240 V 	•	•	•				
Retro 160' – 250'	see price list							
ELECTROMELT	208 – 277 V 		•					•
Description / **Catalog #**								
See price list for the multitude of SKUs depending upon project needs								
MI	120 – 600 V 		•					•
Description / **Catalog #**								
See price list for the multitude of SKUs depending upon project needs								

*WinterGard TruckPaks contains 100 feet of heating cable, two H900 Hardwire Power Connection Kits, one H910 Splice or Tee Kit, and one H903 roll of Application Tape.
**Although these can work with Roof & Gutter applications, they are ambient-sensing only. The PD-Pro & GF-Pro are more ideal because they work with snow and gutter sensors.

PRODUCT CHART

WINTER

ACCESSORIES											CONTROLLERS AND SENSORS									
9800 - FLEXFIT PLUG	9610 APPLICATION TAPE	H900 - POWER CONNECTION	H903 - APPLICATION TAPE	H908 - PLUG-IN CORD W/GFI	H910 - SPLICE & TEE	H912 - GEL-FILLED END SEAL	H913 - ROOF CLIPS (10)	H914 - ROOF CLIPS (50)	H915 - DOWNSPOUT HANGER	EMK FITTINGS	PIPE**	PIPE**	PIPE**	PIPE**	R&G, SM	R&G, SM	R&G, SM	R&G, SM	R&G	SM
											TC-3 • Ambient sensing • Fixed 35°F set point • 15 Amp	**AMC-F5** • Ambient or line sensing • Fixed set point 40°F • 22 A at 125/250/480 V	**AMC-1A** • Ambient sensing • Adjustable set point 15°F to 140°F • 22 A at 125/250/480 V	**EC-TS** • Ambient sensing • Adjustable set point 30°F to 110°F • 30 A at 100/277 V	**LCD-8** • Snow Switch; operates at temperatures below 38°F to 110°F • 16 A @ 100-240 V	**PD-PRO** • Snow and ice controller • Single circuit; 120 V • Works with up to 2 sensors	**GF-PRO** • Snow and ice controller • Single circuit • 30mA GFEP • Works with up to 2 sensors	**SNOW OWL** • Aerial snow sensor	**GIT-1** • Gutter sensor	**SIT-6E** • Pavement sensor
		•	•	•	•	•						•w H900	•w H900	•w H900						
		•	•	•	•	•						•w H900	•w H900	•w H900						
		•	•		•	•						•w H900	•w H900	•w H900						
		•	•	•	•	•	•	•	•			•w H900	•w H900	•w H900	•w H900	•w H900	•w H900	•	•	
		•	•	•	•	•	•	•	•			•w H900	•w H900	•w H900	•w H900	•w H900	•w H900	•	•	
			•				•	•	•		•									
			•									•	•	•						
•	•										•									
										•				•	•	•	•	•		•
														•	•	•	•	•		•

Pipe = Pipe Freeze Protection; R&G = Roof & Gutter De-Icing; SM = Surface Snow Melting.

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nvent.com

Our powerful portfolio of brands:

CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

nVent

nVent.com/RAYCHEM

RAYCHEM-SB-H59531-DistributorHandbook-EN-2010