

INTRODUCTION

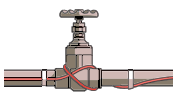
Raychem residential and light commercial self-regulating heating products are the ideal solution for pipe freeze protection, roof and gutter de-icing and crankcase heating applications. These products include WinterGard, WinterGard Plus and WinterGard Wet cut-to-length heating cable systems, FrostGuard and Gardian preassembled heating cables, and FreezGuard crankcase heaters. This application and design guide applies to these Raychem heating products only and is intended to assist in the selection of the appropriate heating cable, connection kits and accessories. Following the recommendations in this guide and those of your Pentair Thermal Building Solutions representative will result in the selection of a reliable and energy-efficient system.

HEATING CABLES SELECTION GUIDE

Application	WinterGard	WinterGard Plus	WinterGard Wet	FrostGuard 120 V	FrostGuard 240 V	Gardian 120 V	Gardian 240 V	FreezGuard
Freeze Protection								
Pipes in dry areas	•	•	•	•	•	•	•	
Pipes in wet areas			•	•	•	•	•	
Roof and Gutter De-icing			•	•		•		
Crankcase Heating								•

PRODUCT LINE

120 Volt, 3 watt



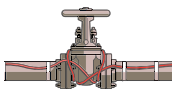
Cut-to-length for small pipes

There's a heating cable just right for the job:

WinterGard heating cable, 3 watts/ft

Catalog #	Description	Voltage	Reel Length (ft)
H311100	TruckPak*	120	100
H311250	Reel	120	250

120 Volt, 6 watt
240 Volt, 6 watt



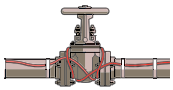
Cut-to-length for large pipes

WinterGard Plus heating cable, 6 watts/ft

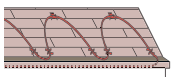
Catalog #	Description	Voltage	Reel Length (ft)
H611050	Box	120	50
H611100	TruckPak*	120	100
H611250	Reel	120	250
H621050	Box	240	50
H621100	TruckPak*	240	100
H621250	Reel	240	250

*TruckPak consists of a 100-foot cable reel, two power connections, one splice/tee kit, one roll of application tape, and 10 "Electric Traced" labels.

120 Volt, 6 watt
240 Volt, 6 watt



Large pipes



Cut-to-length for wet locations, roof de-icing, and drain lines

WinterGard Wet heating cable, 6 watts/ft

Catalog #	Description	Voltage	Reel Length (ft)
H612050	Box	120	50
H612100	TruckPak*	120	100
H612250	Reel	120	250
H612500	Reel	120	500
H6121000	Reel	120	1000
H622050	Box	240	50
H622100	TruckPak*	240	100
H622250	Reel	240	250
H622500	Reel	240	500
H6221000	Reel	240	1000

Table 12: FreezGard technical information

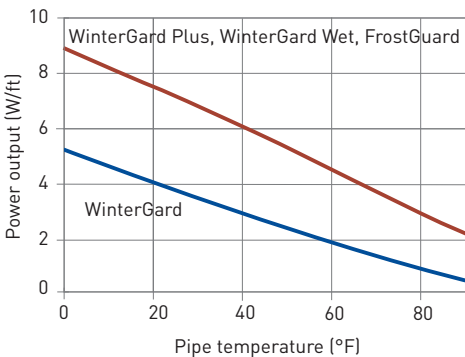
Service voltage	CCH-1C: 120; CCH-2C: 208-277
Power output at 50°F	32 watts minimum
Power output at 0°F	60 watts minimum
Cold lead wire gauge (AWG)	18
Cable width (inches)	0.615
Cable thickness (inches)	0.245
Cable length (inches)	48
Cold lead length (inches)	28
Maximum exposure temperature (intermittent)	185°F
Insulation jacket type	Modified polyolefin
Compressor girth (wraparound) dimension	40 inches or less circumference

GENERAL INFORMATION

Table 13: Product Data

	WinterGard	WinterGard Plus	
	H311100 H311250	H611050 H611100 H611250	H621 H621 H621
Nominal service voltage	120	120	208 -
Minimum power output at 40°F on pipes (W/ft)	3	6	6
Nominal power output in drains, ice and snow	n/a	n/a	n/a
Maximum circuit length (ft) for pipes	250	200	400
Maximum circuit length (ft) for roof and gutter de-icing	n/a	n/a	n/a
Maximum circuit breaker size (A)	30	30	30
Weight per 100 ft (lb)	6	6	6
Maximum exposure temp. (°F)	150	150	150
Environment*	Dry area pipes	Dry area pipes	
Approvals			
UL System Listed	(2)	(2)	(2)
CSA Certified	(4)	(4)	(4)

* Use only in ordinary (nonhazardous) areas. Do not expose to any chemicals. In wet areas:
 (1) c-CSA-us Certified to US and Canadian Standards.
 (2) 718K Pipe Heating Cable.
 (3) 877Z Roof De-Icing and Snow Melting Equipment.
 (4) CSA.



Power Output vs Pipe Temperature on Metal Pipes

	WinterGard Wet		FrostGuard (FG1 & FG2) or Gardian (W51 & W52)	
			FG1-6P FG1-12P FG1-18P FG1-24P FG1-36P FG1-50P FG1-75P FG1-100P W51-6P W51-12P W51-24P W51-50P W51-75P W51-100P	FG2-6L FG2-12L FG2-18L FG2-24L W52-6L W52-12L W52-18L W52-24L
050	H612050	H622050		
100	H612100	H622100		
250	H612250	H622250		
	H612500	H622500		
	H6121000	H6221000		
- 240	120	208 – 240	120	208 – 240
	6	6	6	6
	8	8	8	n/a
	200	400	n/a	n/a
	200	400	n/a	n/a
	30	30	30	30
	9	9	n/a	n/a
	150	150	150	150
	Dry and wet area pipes, drains and roof & gutter de-icing		Pipes only	
	[2, 3]	[2, 3]		
	[4]	[4]	[1]	[1]

as, use only WinterGard Wet, FrostGuard or Gardian.