

QLT10-J	QLT210-J
QLT15-J	QLT215-J
QLT20-J	QLT220-J

### Description:

Nelson's Type QLT self-regulating heater cable is a parallel circuit electric heater strip. A conductive fluoropolymer core material is extruded over the multi-stranded, nickel-plated, 16-gauge copper

bus wires. A fluoropolymer jacket provides excellent dielectric strength, moisture resistance, protection from impact and abrasion damage, and a wide range of chemical resistance. A stranded

tinned copper metal braid and fluoropolymer overjacket is supplied on all heaters.

### Operating Principle:

The Parallel bus wires apply voltage along the entire length of the heater cable. The conductive core provides a continuous parallel heating element permitting the cable to be cut to any length in the field with no dead or cold zones developing. The heater cable derives its self-regulating characteristic from the inherent properties of the

conductive core material. As the core material temperature increases, the number of conductive paths in the core material decreases, automatically decreasing the heat output. As the temperature decreases, the number of conductive paths increases, causing the heat output to increase. This occurs at every point along the length of the cable,

adjusting the power output to the varying conditions along the pipe. The self-regulating effect allows the cable to be overlapped without creating hot spots or burnout. As the cable self-regulates its heat output, it limits the maximum sheath temperature, while also providing useful power for process temperature maintenance.

### Application:

Nelson's Type QLT self-regulating heater cable is ideal for maintaining fluid flow over a wide range of operating temperatures. The product is used for freeze protection and temperature maintenance for 250°F (121°C) or lower processes. Typical applications include hydrocarbon and chemical product piping. A tinned copper metal braid with a fluoropolymer overjacket is supplied for

use when the heater cable is exposed to excessive moisture, organic chemicals, solvents, etc. in hazardous (classified areas and ordinary areas.

**Performance and Rating Data:**

Catalog Number	Service Voltage	Maximum Length	Maximum Maintenance Temperature	Maximum Intermittent Exposure	T-Rating*
QLT10-J	120	190	250°F (121°C)	250°F (121°C)	T3
QLT210-J	240	375	250°F (121°C)	250°F (121°C)	T3
QLT15-J	120	135	250°F (121°C)	250°F (121°C)	T3
QLT215-J	240	270	250°F (121°C)	250°F (121°C)	T3
QLT20-J	120	105	250°F (121°C)	250°F (121°C)	T3
QLT220-J	240	210	250°F (121°C)	250°F (121°C)	T3

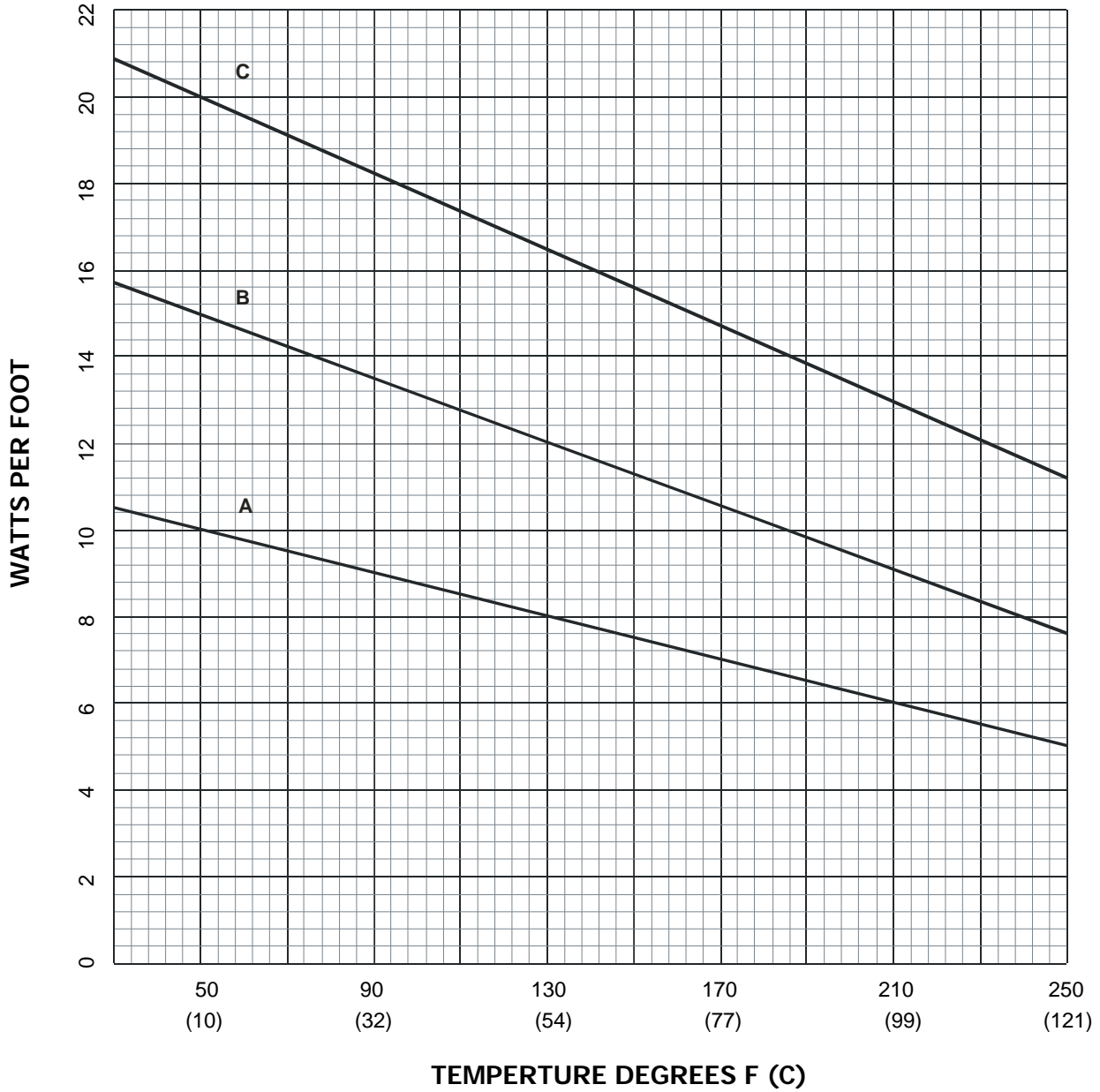
\* Electrical equipment T-rating codes define the maximum surface temperature that equipment will reach. It is used in hazardous (classified) area applications.

**Circuit Breaker Selection:**

Watts/Ft.	Max. Length (Feet) Vs. Circuit Breaker Size					
	120 Volt			240 Volt		
	15A	20A	30A	15A	20A	30A
10	115	150	190	225	300	375
15	80	110	135	160	215	270
20	65	85	105	125	170	210

**NOTES:**

1. Circuit breakers are sized per national electrical codes and are based on start-up temperatures between -20°F (-29°C) and 50°F (10°C).
2. When using 240 volt product at 208, 220 or 277 volts, use the circuit adjustment factors shown in the Voltage Adjustment Table.
3. When using 2 or more heater cables of different wattage ratings in parallel on a single circuit breaker, use the 15A column amperage of 15 amps, divide it by the maximum footage to arrive at an amps/foot figure for each cable. You can then calculate circuit breaker sizes for these combination loads. These amps/foot factors include the 125% sizing factor.
5. National electrical codes require ground-fault equipment protection for each branch circuit supplying electric heating equipment. Exceptions to this requirement can be found in the 2002 N.E.C.



**A** QLT10                      **B** QLT15                      **C** QLT20  
 QLT210                      QLT215                      QLT220

WATTS PER FOOT x 3.28 = WATTS PER METER  
 PIPE TEMPERATURE °F CONVERSION TO °C = 5/9 (°F - 32)

# NELSON™

## QLT SELF-REGULATING HEATER CABLE

## SPECIFICATION/APPLICATION INFORMATION

### Catalog Numbers:

CATALOG NUMBERS			
	Watts Per Foot		
Voltage	10	15	20
120 VAC	QLT10-J	QLT15-J	QLT20-J
240 VAC	QLT210-J	QLT215-J	QLT220-J

### Standard Feature Suffix:

-J Tinned Copper Braid and Fluoropolymer Overjacket

### Voltage Adjustment:

Use of Self-Regulating products at other than rated voltages require minor adjustments in power and maximum circuit lengths.

ADJUSTMENT MULTIPLIER							
Product	208 VAC		220 VAC		277 VAC		Absolute Max Length
	Power	Length	Power	Length	Power	Length	
QLT210-J	.80	.93	.88	.96	1.23	1.07	375 ft.
QLT215-J	.83	.93	.89	.96	1.19	1.02	270 ft.
QLT220-J	.88	1.00	.93	1.00	1.15	1.00	210 ft.

### Approvals:

UL  
**Ordinary Locations-  
 Hazardous (Classified)  
 Locations**  
 Class I, Division 2  
 Groups A, B, C, D  
 Class II, Division 2  
 Groups F, G  
 Class III, Division 2  
 Class I, Zone 1 and 2  
 Group IIC



### Accessories:

- Connection Kits for Power Connection, Tee Splice, Splices and End Seals (Nelson PLT and ALT Series)
- Thermostatic Controls (Nelson TA, TH, TE and HC Series)
- Junction Boxes, Tapes and Warning Signs
- Custom Control, Monitoring and Power Panels
- Zone 1 Connection Kits for Power Connection, Tee Splice, Splice and End Connection (Nelson Z1-PLT and Z1-ALT Series)

Nelson Heat Tracing Systems products are supplied with a limited warranty. Complete Terms and Conditions may be found on Nelson's website at [www.nelsonheaters.com](http://www.nelsonheaters.com).

