

thermo-Q®

Non-Intrusive Pavement Temperature Sensor

Overview

Pavement temperature is an important variable to measure during winter weather events and helps decision-makers determine when pavements will freeze. QTT's *thermo-Q* provides a non-intrusive solution for measuring pavement temperature. The *thermo-Q* uses infrared technology to accurately measure pavement temperature and provides stationary, single target monitoring. QTT also offers a cutting-edge design of the *thermo-Q* with adjustable features (pan and tilt) and the ability to measure multiple surface temperatures. This version is known as the *thermo-Q* 360.

The *thermo-Q* is a smart alternative to an invasive sensor that requires lane closures and cutting of the roadway. The *thermo-Q* is easy to install and has low maintenance requirements; maintenance personnel can be safely on the side of the road while installing or maintaining it. The sensor has the ability to be mounted on an existing road weather station or other structure where a clear, unobstructed view of the pavement is available.

Benefits

- ▶ Helps determine when the surface will freeze
- ▶ Economical
- ▶ Easy to install with no lane closures required
- ▶ Low maintenance costs
- ▶ Saves chemical
- ▶ Use with existing SSI® Linux RWIS network

Applications

- ▶ Remote locations
- ▶ Bridge decks
- ▶ Problem areas
- ▶ Proactive anti-icing operations
- ▶ Runways and/or taxiways



Features

- ▶ Non-intrusive
- ▶ Accurate infrared sensor
- ▶ Stationary, single target monitoring
- ▶ Multiple surface readings available with the *thermo-Q 360*
- ▶ Measures temperatures in any weather condition
- ▶ Rugged weather shield



Key Specifications

Model Numbers	IRQ-2400 (<i>thermo-Q</i>); IRQ-2400-360 (<i>thermo-Q 360</i>)
Sensor	Radiation pyrometer measures radiation emitted from the surface target. The measured radiation is focused onto the internal thermopile.
Measuring Distance	Maximum 75 feet (22.86 meters) from lens to surface
Installation Angle	30° to 85° from horizontal line
Measuring Area Diameter ¹	2.6 feet at 33 feet (0.79 meters at 10 meters)
Lateral Scan Angle	± 53°
Sensor Cable Length	Maximum 30 feet (9.14 meters) from RPU to sensor
Power	12 VDC at 10 mA (nominal); 24 VDC at 10 mA (maximum)
Surface/Operating Temperature Range	-67°F to +140°F (-55°C to +60°C)
Lateral Area Diameter ²	Maximum 33 feet (10 meters)
Optics	Germanium precision lens
Communication Cable	Serial RS-485
Data Transmission Times	Once per second (<i>thermo-Q</i>); 10 to 45 seconds (<i>thermo-Q 360</i>)
Targets	16 maximum ³
CE Compliant	EN-61326

¹Assuming half entry angle of 3.1° at mounting height of 24.5 feet (7.47 meters at 85°).

²Under the assumption of half angle 3.1°, QTT will still meet 33 feet (10 meters) diameter spot.

³Applies to *thermo-Q 360* only. The maximum number of targets (16) will not allow for any additional surface temperature sensors or readings.



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