

IRS21

Intelligent Road Surface Sensor



Lufft's IRS21 is a passive sensor that monitors actual road conditions. This intelligent road surface sensor is a primary component of our Road Weather Information Stations (RWIS). When used in an RWIS application, the IRS21 is connected to a CR800, CR850, CR1000, or CR10X datalogger via the 18080 Lufft Interface and our SDM-SIO4 Serial Data Interface Module.

The IRS21 measures the following parameters:

- Road surface temperature
- Water film level (up to 4 mm)
- Freezing temperature for NaCl (others on request)
- Road condition (dry/damp/wet/ice or snow/residual salt/freezing)

The sensors use radar techniques to measure water film.



Ordering Information

Model	Description
IRS21	Intelligent Road Surface Sensor with 75 ft (25 m) cable.
18080	Interface that connects the IRS21 to an SDM-SIO4.
SDM-SIO4	4-Channel Serial Data Interface Module

Installation

Two IRS21 sensors are typically installed at the measurement site. Each sensor is placed inside a hole in the road and then the hole is filled with epoxy. To provide accurate measurements and prevent damage to the sensor, the IRS21 must be installed flush to the road surface.

Specifications

Operating Humidity: 100% RH

Temperature Range: -40° to +70°C operating;
-50° to +70°C storage

Power Requirements: 9 to 14 Vdc; less than 200 mA

Interface: RS-485

Road Condition Output: dry, damp, wet, snow,
freezing wetness, ice

Road Temperature Range: -40° to +70°C
(-40° to +158°F)

Road Temperature Accuracy:
 $\pm 0.2^{\circ}\text{C}$ (-10° to 10°C); $\pm 0.5^{\circ}\text{C}$ (-40° to 70°C)

Road Temperature Resolution: -0.1°C

Freezing Point Range: -20° to 0°C (-4° to +32°F)

Freezing Point Accuracy: $\pm 0.1^{\circ}\text{C}$

Freezing Point Resolution: -0.1°C

Dimensions: 5" (13 cm) diameter, 2" (5 cm) height

Weight: 2 lbs (0.9 kg)

