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.

**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.

**Ordering Information**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRS21</td>
<td>Intelligent Road Surface Sensor with 75 ft (25 m) cable.</td>
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<tr>
<td>18080</td>
<td>Interface that connects the IRS21 to an SDM-SIO4.</td>
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<tr>
<td>SDM-SIO4</td>
<td>4-Channel Serial Data Interface Module</td>
</tr>
</tbody>
</table>

**Specifications**

- Operating Humidity: 100% RH
- Temperature Range: -40º to +70ºC operating; -50º to +70ºC 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: -40º to +70ºC (-40º to +158ºF)

- Road Temperature Accuracy: ±0.2ºC (-10º to 10ºC); ±0.5ºC (-40º to 70ºC)
- Road Temperature Resolution: -0.1ºC
- Freezing Point Range: -20º to 0ºC (-4º to +32ºF)
- Freezing Point Accuracy: ±0.1ºC
- Freezing Point Resolution: -0.1ºC
- Dimensions: 5” (13 cm) diameter, 2” (5 cm) height
- Weight: 2 lbs (0.9 kg)