

# Halio® Rooftop Sensor Kit

The Halio Rooftop Sensor enables the industry's most advanced tinting automation. It mounts on the rooftop and continuously measures precise solar irradiance levels. Sensor data is securely transmitted to the Halio Cloud where advanced analytics are used to determine optimal tint levels of Halio smart-tinting windows. The tint level of each window automatically adjusts throughout the day based on relative sun position and cloud conditions.



## KEY FEATURES

- Senses and reports light levels for advanced automatic tinting
- SPN1 Sunshine Sensor precisely measures direct and diffuse solar irradiance
- Sensor Hub reports data to the Halio Cloud for analysis and automation over an IP network
- Sensor and Sensor Hub mount on a standard rooftop mast system
- Rooftop Sensor Kit includes SPN1 Sensor, Sensor Hub, mounting hardware, and cables

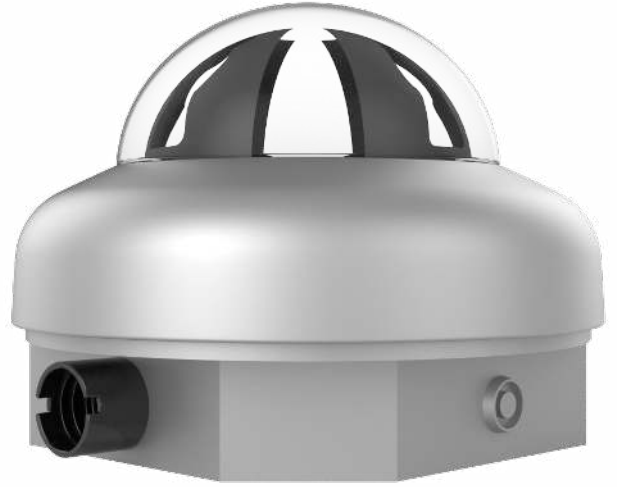
## INSTALLATION

- Mount SPN1 Sensor on standard rooftop mast
- Mount SR400 Sensor Hub near SPN1 Sensor
- Connect Sensor to Hub with supplied cables
- Connect Sensor Hub to building's Ethernet network

## SUNSHINE SENSOR (PYRANOMETER)

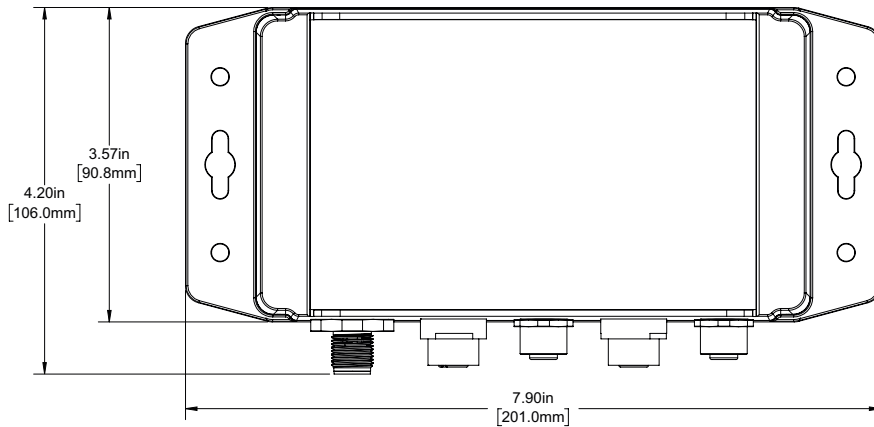


Top View

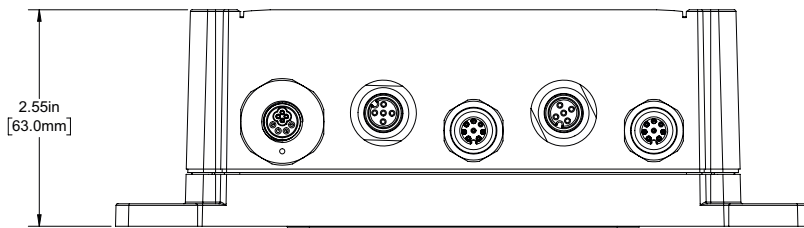


Side View

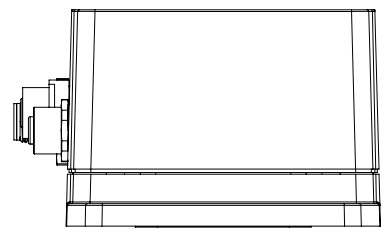
## SENSOR HUB TECHNICAL DRAWINGS



Top View

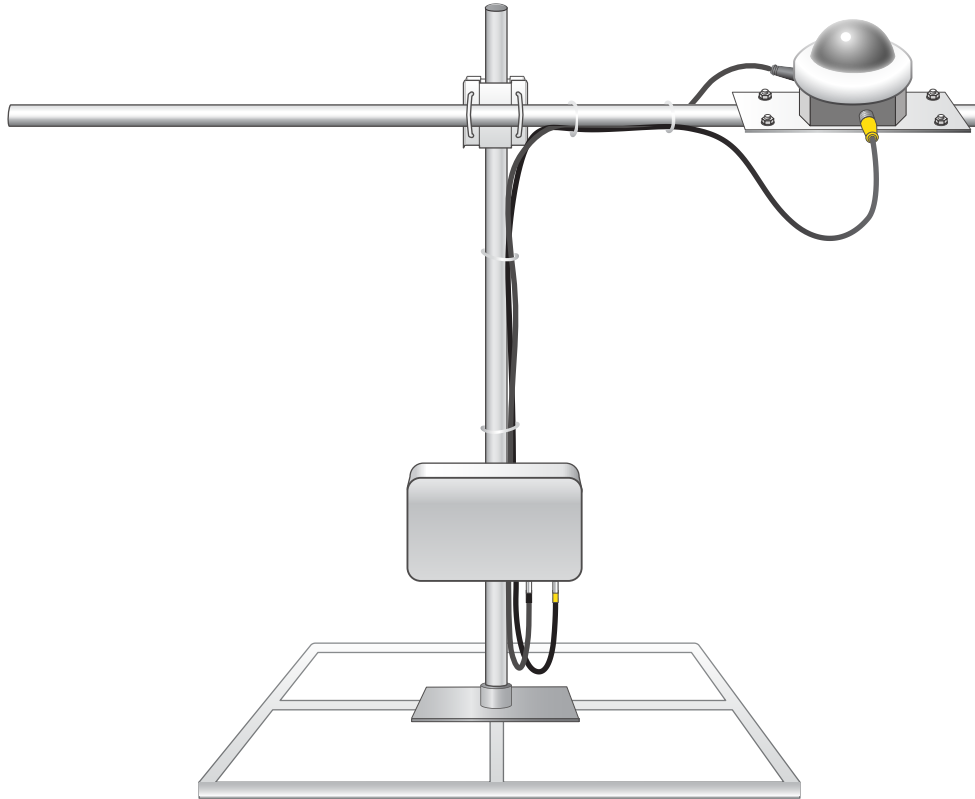


Front View



Side View

## STANDARD ROOFTOP MAST SYSTEM



### What's Included

- SPN1 Pyranometer Sensor
- SR400 Rooftop Sensor Hub
- Sensor Analog Cable (15m)
- Sensor Serial Cable (15m)
- SPN1 Leveling Plate
- Sensor Hub Mounting hardware
- DIN-rail RJ45 Network adapter

### Warranty

5 years, limited

## SPECIFICATIONS

|                                     |   |
|-------------------------------------|---|
| <b>Kit Model</b>                    | SR500   |
| <b>Sunshine Sensor (Model SPN1)</b> | <p>Resolution: <math>0.6W.m^{-2} = 0.6mV</math><br/>                     Range: 0 to <math>&gt;2000W.m^{-2}</math><br/>                     Overall Accuracy: 35% daily integrals<br/>                     Global and diffuse radiation<br/>                     Azimuth Accuracy: 35% over 360° rotation<br/>                     Spectral Response: 400 - 2700nm<br/>                     Sensor Power: 5 - 15VDC, up to 2mA<br/>                     Heater Power: 12 - 15VDC, up to 1.5A<br/>                     Serial Connector: 5-pin M12<br/>                     Power Connector: 8-pin M12<br/>                     Level Indicator: Built-in bubble level</p> |
| <b>Sensor Hub (Model SR400)</b>     | <p>Input Power: 48VDC, up to 3.5A<br/>                     Max SPN1 Sensors: 2<br/>                     Connections:<br/>                     Power &amp; Network: 8-pin M12<br/>                     Sensor 1: 1 serial 5-pin M12, 1 heater 8-pin M12<br/>                     Sensor 2: 1 serial 5-pin M12, 1 heater 8-pin M12<br/>                     Time to Full Charge: 30 minutes, without load<br/>                     Input Cable: 1m length, 4x16AWG with 4-position push-in connector</p>  |
| <b>Network Connectivity</b>         | <p>Ethernet Connection: DIN-rail RJ45 adapter to Halio power &amp; network cable<br/>                     10Mbps always-on broadband Internet access required<br/>                     Network Communication Protocol: IPv6 TCP/IP<br/>                     Maximum Network Cable Length: 300'   91m<br/>                     Wireless range highly dependent on building materials &amp; RF environment</p>  |
| <b>Embedded Software</b>            | <p>Monitors sensor data and transmits to the Halio Cloud<br/>                     Remote software updates to the Sensor Hub</p>   |
| <b>Sensor Dimensions</b>            | <p>Size: 3.7" H x 4.96" Dia   94mm H x 126mm Dia<br/>                     Weight: 1.73lb   786g</p>   |
| <b>Hub Dimensions</b>               | <p>Size: 2.55" H x 7.9" W x 4.2" D   63mm H x 201mm W x 106mm D<br/>                     Weight: 13.7lb   6.2kg</p>   |
| <b>Environmental</b>                | <p>Ambient Operating Temperature: -40°F to 158°F   0°C to 40°C<br/>                     Environmental Rating: IP67</p>  |
| <b>Certifications</b>               | CE, FCC, IC, RoHS, WEEE   |

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