



# PC Configurable Infrared Temperature Sensor

## For Demanding Applications



OS151-2USB-LT shown smaller than actual size.

### OS150-2USB Series



- ✔ Short-Wavelength Measurement for Low Emissivity Targets Such as Steel Rollers and Other Metal Surfaces, Even at Low Temperatures
- ✔ Configurable Temperature Range, Emissivity Setting and More, Using a PC Via OMEGA® Software and USB Cable (Supplied)
- ✔ Features Max, Min, Average and Instantaneous Readings; Peak or Valley Hold; Reflected Energy Compensation
- ✔ OPC Server Capabilities
- ✔ Temperature Ranges from 45 to 2000°C (113 to 3632°F)
- ✔ Emissivity: 0.1 to 1.0
- ✔ Stainless Steel Housing, Sealed to IP65
- ✔ Field of View: 15:1, 25:1, 75:1 or Close Focus
- ✔ Selectable 0 to 20 mA or 4 to 20 mA Output
- ✔ Optional Air/Water Cooled Housing, Air Purge Collar, Laser Sighting Tool and Mounting Brackets

The OS150-2USB Series of infrared pyrometers measures temperatures from 45 to 2000°C (113 to 3632°F) accurately and consistently, with an outstanding response time of 240 ms. The selectable 0 to 20 mA or 4 to 20 mA output is compatible with almost any indicator, controller, recorder, data logger etc. without the need for special interfacing or signal conditioning. All OS150-2USB Series sensors are fully configurable from a PC using the OMEGA software and USB cable supplied. This user friendly software enables the user to set the temperature range and emissivity setting compensates for reflected energy; apply filtering; select max, min, average or instantaneous readings; and configure peak or valley hold processing. These features can also be monitored and adjusted by an OPC client. Other features include data acquisition, alarms and a scrolling graphical display. The sensor will operate with the 4 to 20 mA cable connected, the USB cable connected, or both. The USB cable has an IP65 connector at the sensor end. An IP65 cap protects the sensor when the USB cable is not connected.

† For NIST calibration ordering information see accessories chart.



Compact stainless steel IP65 housing.



## Specifications

### Temperature Range:

**LT (OS151 Only):** 45 to 300°C  
(113 to 572°F)

**MT:** 250 to 1000°C (482 to 1832°F)

**HT:** 450 to 2000°C (842 to 3632°F)

### Field-of-View:

**OS151 Only:** 15:1

**OS251:** 25:1

**OS751:** 75:1 (OS751)

**OS801:** 7.5 Dia. at 500 mm

**Output:** Selectable 4 to 20 mA or  
0 to 20 mA (linear with temperature)

**Configuration:** Via PC port conforming  
to USB 2.0

**Accuracy\*:** ±1% of reading or ±2°C,  
whichever is greater

**Repeatability\*:** ±0.5% of reading or  
±0.5°C, whichever is greater

\* *Emissivity = 1.0, object temperature >  
sensor temperature + 20°C*

**Emissivity Setting:** 0.1 to 1.0

**Response Time, t90:** 240 ms  
(90% response)

**Spectral Range:** 2.0 to 2.4 μm

**Supply Voltage:** 24 Vdc (26 Vdc max)

**Sensor Voltage:** 11 Vdc min

**Max Loop Impedance:** 900 Ω at  
24 Vdc

**Maximum Span:** Full temperature  
range up to 1550°C (2822°F)

**Minimum Span:** 100°C (212°F)

### Mechanical

**Construction:** Stainless Steel

**Dimensions:** 25 D x 106.5 mm L  
(0.98 x 419")

**Thread Mounting:** M20 x 1 mm pitch

**Weight with Output Cable:**

175 g (6.17 oz)

**Output Cable Length:** 1 m (3.3')

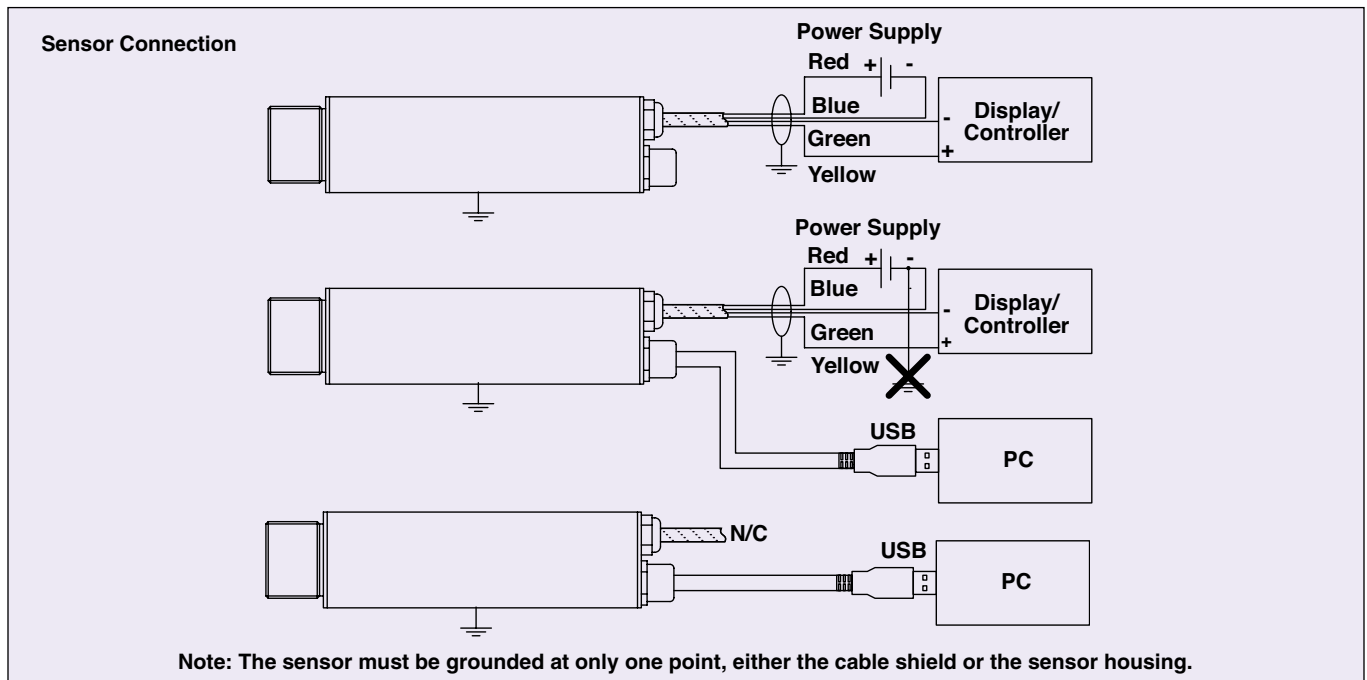
**USB Cable Length:** 1 m (3.3')

### Environmental

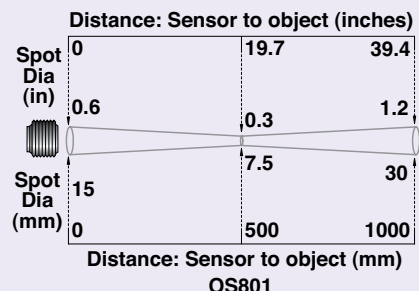
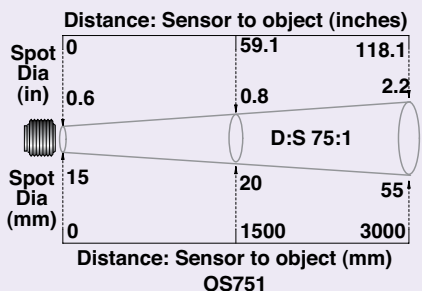
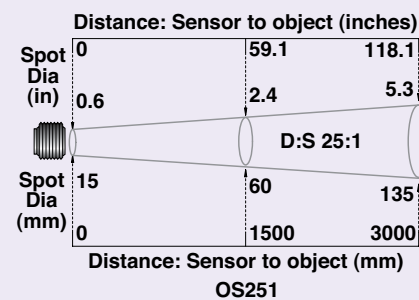
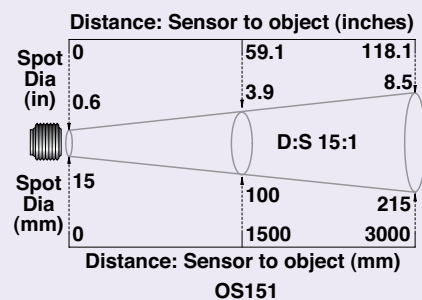
**Environmental Rating:** IP65

**Ambient Temperature:** 0 to 70°C  
(32 to 158°F)

**Relative Humidity:** 95% max  
non-condensing



### Diameter of target spot measured versus distance from sensing head.





OSUSB-FBL

**Fixed Mounting Bracket**

The L-shaped fixed mounting bracket offers a rigid support for the sensor and allows fine adjustment in a single plane.



OSUSB-ABL

**Adjustable Mounting Bracket**

The adjustable mounting bracket consists of a fixed mounting bracket plus another L-shaped bracket. When assembled as shown the adjustable mounting bracket offers a rigid support for the sensor and allows fine adjustment in two planes.

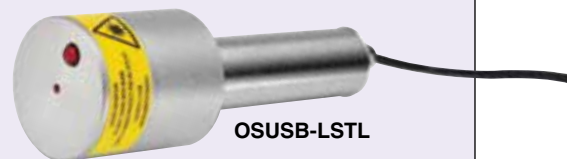


OSUSB-APL

**Air Purge Collar**

The air purge collar is used to keep dust, fumes, moisture and other contaminants away from the lens. Air flows into the fitting on the side and out of the aperture at the front.

All models shown smaller than actual size.



OSUSB-LSTL

**Laser Sighting Tool**

The laser sighting tool screws onto the front of the sensor during installation and indicates precisely where the sensor is aiming. Once the sensor has been aimed at the centre of the target and locked in position the laser sighting tool can be removed. The laser is activated by means of a push button on the front of the tool which has a latching mechanism.

**To Order Visit [omega.com/os150-2usb](http://omega.com/os150-2usb) for Pricing and Details**

Model No.	Temperature Range	Optics
OS151-2USB-LT	45 to 300°C (113 to 572°F)	15:1
OS251-2USB-MT	250 to 1000°C (482 to 1832°F)	25:1
OS251-2USB-HT	450 to 2000°C (842 to 3632°F)	25:1
OS751-2USB-MT	250 to 1000°C (482 to 1832°F)	75:1
OS751-2USB-HT	450 to 2000°C (842 to 3632°F)	75:1
OS801-2USB-MT	250 to 1000°C (4823 to 1832°F)	Close-focus (7.5 mm Dia. measurement spot at 500 mm distance) optics
OS801-2USB-HT	450 to 2000°C (842 to 3632°F)	Close-focus (7.5 mm Dia. measurement spot at 500 mm distance) optics

Comes complete with sensor head, 1 m (3.3') cable, USB cable, software, and operator's manual.

**Ordering Examples:** OS151-2USB-LT, PC configurable IR sensor with 15:1 optics.

OS251-2US-MT-WC, PC configurable IR sensor with 25:1 optics with water cooled jacket.

**Options (Not Field Installable)**

Suffix	Description
-WC	Air/water cooled jacket (includes air purge collar)
-2.2CE(*)	Cable extended, for uncooled IR USB series, 30 m (98') max total cable length

\* 1 m (3.3') cable is included as standard on every sensor. Extended cable is added to that length, add suffix to model number. Insert cable length in meters.

**Accessories**

Model No.	Description
OSUSB-FBL	Fixed bracket for IR USB
OSUSB-ABL	Adjustable bracket for IR USB
OSUSB-APL	Air purge collar for IR USB
OSUSB-LSTL	Laser sighting tool for IR USB
CAL-3-IR†	NIST-traceable calibration



OMEGACARE<sup>SM</sup> extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARE<sup>SM</sup> covers parts, labor and equivalent loaners.

**Power Supplies**

Model No.	Description
PSR-24S	Regulated power supply, US plug, 90 to 264 Vac input, 24 Vdc output, 400 mA, screw terminals, UL
PSR-24L	Regulated power supply, US plug, 90 to 264 Vac input, 24 Vdc output, 400 mA, stripped leads, UL
PSR-24L-230	Regulated power supply, European plug, 230 Vac input, 24 Vdc output, 400 mA, stripped leads, CE
TX8-100	Power/output cable, 30 m (98')

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