

# Ultra High Speed Infrared Pyrometer Three Microsecond Time Constant



OS1581 Sensor Shown  
Smaller Than Actual Size

DP1581  
**\$10,995**

OS1581  
**\$2095**

- ✓ **Fast IR Temperature Measurements:**  
3 microsec (0 to 63.2%)
- ✓ **Minimum Spot Size: 0.004"**
- ✓ **Vacuum to:  $10^{-7}$  Torr**
- ✓ **Temperature Range:**  
370 to 1200°C (700 to 2200°F)\*
- ✓ **Emissivity Setting:**  
0.1 to 1.0 in 0.01 Steps
- ✓ **Backlighting Optional**
- ✓ **Accuracy:  $\pm 1\%$  Full Scale**
- ✓ **Immune to Electrical Noise and Radiation Fields**

*\*in subranges of no more than 2:1 (ie: 400-800°)*

The OS1581 Ultra High Speed Infrared Pyrometer with the DP1581 console was developed for temperature measurements of high speed rotating turbine blades used in power plants and in jet engine test stands. However, it is usable for any temperature measurement requiring time constants on the order of 3  $\mu$ sec.

A flexible fiber optical cable from the detector terminates with a lens in a probe for remotely viewing the target area. Since there are no electronics in the probe, it is immune to electrical noise, radiation fields and, to a large extent, mechanical vibration.

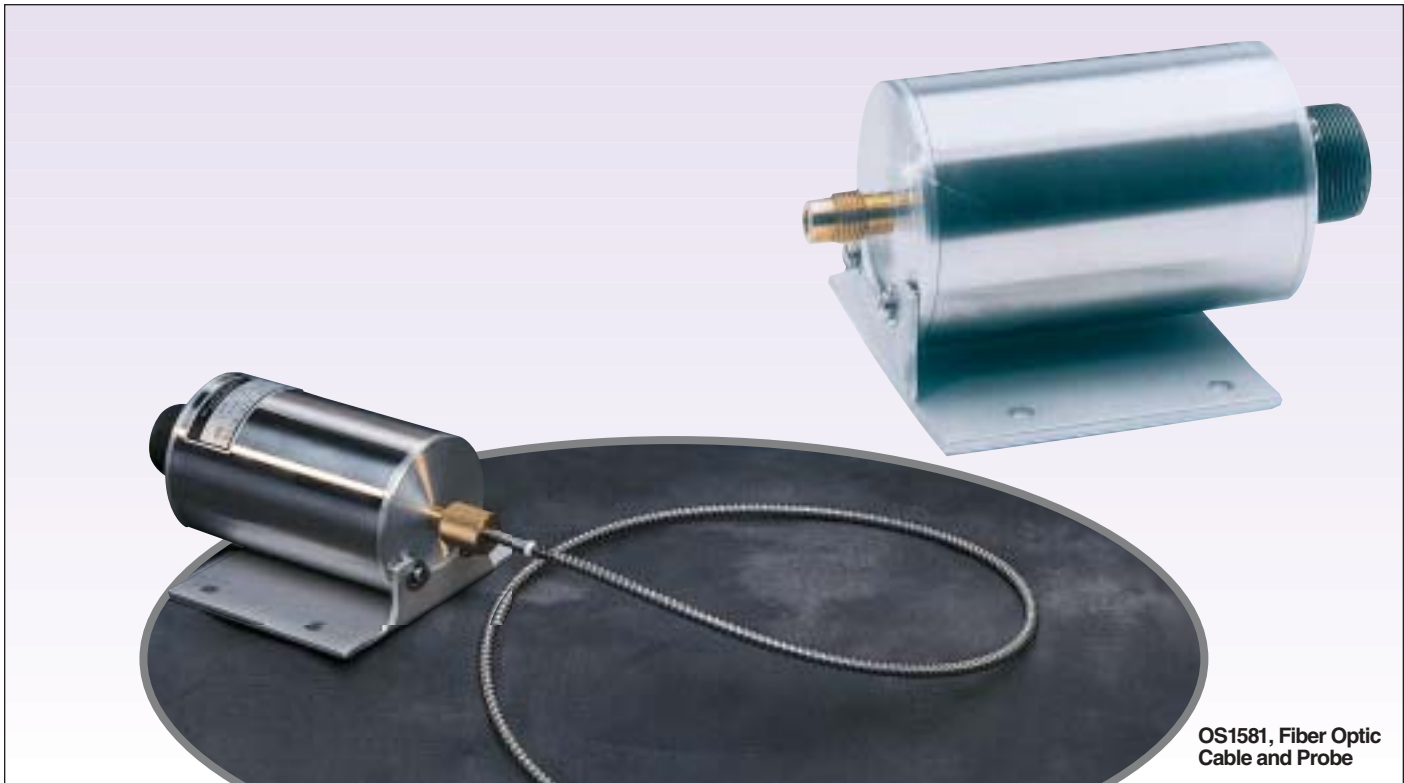
The small size of the probe and flexibility of the fiber optical cable allow viewing of the target in inaccessible tight locations not possible with conventional line of sight optics.

A vacuum bushing allows measurements down to  $10^{-7}$  Torr.

Temperatures of targets as small as 0.004" can be measured over a 3:1 temperature section of the full system range with an optical cable up to 30' long.

The outputs are: average (T=3  $\mu$ sec), average peak (T rise= 3  $\mu$ sec, T decay= 2.4 msec), maximum peak (T rise= 3  $\mu$ sec, T decay= 72 msec).

The monitor is mounted on a 19" rack panel that can be placed in an optional NEMA-4 enclosure.



OS1581, Fiber Optic Cable and Probe

**SPECIFICATIONS:**

**Accuracy:** ± 1% Reading  
**Repeatability:** ± 0.5%  
**Resolution:** 1°C or °F  
**Target Size:** Minimum 0.004" at 1" working distance  
**Ambient Temperature:**  
 Probe: +150°C (302°F)  
 Sensor: -10 to 50°C (14 to 122°F)  
 Monitor: -10 to 30°C (14 to 86°F)  
**Spectral Response:**  
 GE Detector: 0.8 to 1.8 μ  
 Silicon Detector: 0.8 to 1.05 μ  
**Time Constant:** Rise time 3 to 16 μsec (0 to 63.2%)  
**Readout:** °C or °F  
**Emissivity:** 0.5 to 1.0 in 0.01 steps  
**Output:** Average, Average Peak and Average Maximum Peak; Linearized and Non-Linearized

**Calibration:**

Three front panel meters for blackbody calibration

**Communications:** RS-232 optional

**Dimensions:**

Probe 0.5" or 1.0" dia. by 3.25" to 10.85" long  
 (13 or 25 mm dia. x 83 to 276 mm long)  
 (depends on target size and distance)  
 Sensor† 2.5 H x 4 W x 5" L (64 x 102 x 127 mm)  
 Monitor 19" rack x 5.22 H x 12" D  
 (483 mm rack x 133 x 305 mm)

**Power:** 110/220Vac ±10%

† with mounting bracket

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.

To Order (Specify Model Number)		
Model No.	Description	Price
OS1581-R1	Infrared Pyrometer 370 to 740°C (700 to 1360°F)	2095
OS1582-R2	Infrared Pyrometer 600 to 1200°C (1110 to 2200°F)	2095
DP1581	19" rack mount monitor with multiple high speed outputs for use with OS1581	10995

\*includes 6' cable

**Ordering Example:** OS1581 Infrared Pyrometer with DP1581 19" monitor, \$2,095 + 10,995 = **\$13,090.**

**ACCESSORIES**

Model No.	Description	Price
DP1580-NEMA	NEMA-4 enclosure for DP1581	\$1295
BB-4A	High Temperature Blackbody calibration source 205 to 982°C (400 to 1800°F)	3595
OS1500-BLS	Backlight	495
VB-(*)	Vacuum bushing	300

\*Select 1" or 1/2" diameter bushing.

**Ordering Example:** OS1581 + DP1581 + DP1580-NEMA + OS1500-BLS: IR Pyrometer plus Monitor in NEMA-4 enclosure with a backlight supply to illuminate target area; \$2,095 + 10,995 + \$1,295 + \$495 = **\$14,880.**



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