Infrared Temperature Sensor

With High Speed Sensor, Small Measured Spot and Continuous LED Sighting

OS-PC Series

- **High Speed Cube Sensor with Optional Touch Screen Display**
- **Response Time 0.001 Seconds (-PCF Models)—the Fastest in the World**
- **Measures from 0 to 500°C (32 to 932°F)**
- **Ideal for Small Targets—Measurement Area as Small as 1.6 mm Diameter**
- **Continuous Red LED Sighting on all Models—Shows the Position and Size of the Measurement Spot While Readings are Being Taken**
- **Multilingual Touch Screen Interface (Optional) for Temperature Display, Data Logging, Sensor Configuration and Alarms**
- **Measures Surface Temperature of Paper, Thick Plastics, Food, Rubber, Electronic Components, Cable, Ceramics, Textiles, Painted Surfaces and Some Metals, as Well as Many Other Materials**

The OS-PC cube is an infrared pyrometer with an extremely fast response time and a very small measurement area size. It is available with or without the OS-PC-TSD touch screen interface. The sensor is designed for applications where an extremely fast response time is required, or where the object to be measured is very small. It is an ideal temperature sensor for blow molding preform measurement, as well as applications in the food industry, laboratories, and many others.

OS-PC-TSD touch screen display, sold separately.

OS-PC16-2M cube sensor, shown smaller than actual size.

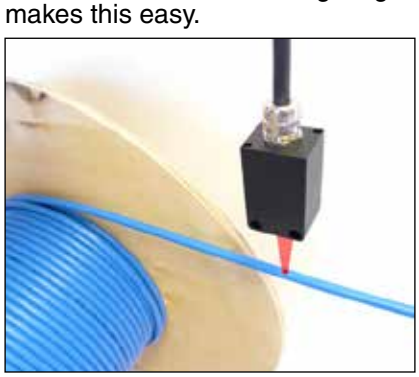
Typical Applications Include:

Cable Manufacturing

It is now possible to monitor the temperature of insulation and sheathing as they are applied to very narrow cables, avoiding manufacturing defects and ensuring highly repeatable product quality.

Plastics

Extrusion of plastic tubing and profiles requires temperature control to ensure consistent quality. The tube or profile can be narrow, so the very small measured spot of the OS-PC cube sensor is ideal. If the die is changed, the aiming angle of the sensor must often be adjusted, and the continuous LED sighting makes this easy.

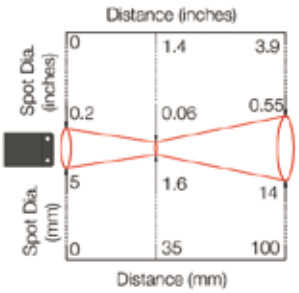


Electronics: PCB Testing

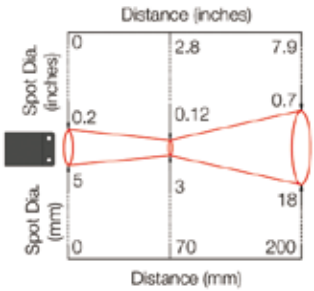
When testing the function of circuit boards, small components can heat up very quickly. The OS-PC cube sensor can monitor the temperature of very small components and read their surface temperature instantaneously.

Food

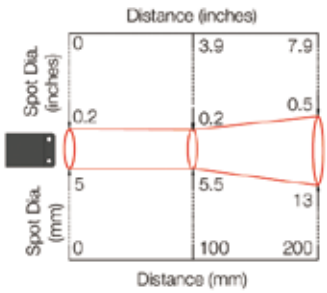
The OS-PC cube sensors advanced peak hold functionality is ideal for fast-moving conveyors, especially in food production. With the OS-PC cube sensor, it is now possible to measure the temperature of thousands of individual items every minute.



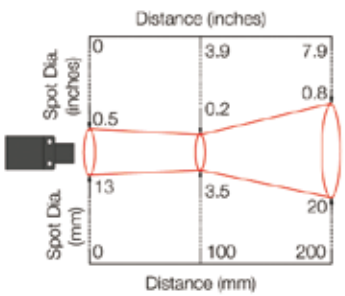
OS-PC16



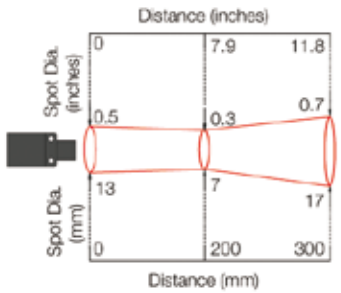
OS-PC30



OS-PC55



OS-PCF35



OS-PCF70

Sensor Specifications

Temperature Range: 0 to 500°C (0 to 932°F)

Response Time: 95%
"F" Models: 1 ms
Standard Models: 10 ms

Averaging Function: Adjustable up to 5s

Target Sighting: Red LED built-in as standard on all models, shows the position and size of the measurement area; switchable on/off*
**LED sighting and alarms*

Accuracy of Measurement: ±3°C (±5.4°F) or 1%, whichever is greater
Ambient Temperature: 23 ±5°C, emissivity 1.0, averaging time 50 ms

Repeatability: ±0.5°C (0.9°F)
Ambient Temperature: 23 ±5°C, emissivity 1.0, averaging time 50 ms

Temperature Resolution: <0.5°C (0.9°F)

Emissivity Setting: Adjustable, 0.3 to 1.0, via RS232C or optional touch screen interface

ENVIRONMENTAL

Weight: 85 g (3 oz), without cable

Environmental Rating: IP67

Operating Ambient Temperature: 0 to 50°C (32 to 122°F)

Storage Temperature: -15 to 70°C (5 to 158°F)

Operating Ambient Humidity: 30 to 85% RH non-condensing

Sensor Only: These functions are selectable via RS232C and share a common connection, which is configurable either as an input to switch the LED sighting on/off, or an open drain alarm output, but not both at once

Sensor with OS-PC-TSD: These functions may be configured via the OS-PC-TSD interface; two alarm relay output

OS-PC-TSD Specifications

Touch Screen Display Format: 72 mm (2.83") resistive touch TFT, 320 x 240 pixels, backlit

Configurable Parameters: Language (English, Chinese, Japanese), temperature units °C/°F, displayed temperature, LED sighting on/off, password, date and time (for data logging time stamps), peak hold period, decay level, averaging period, correction (gain/offset), emissivity setting (with teach function), reflected energy compensation (with teach function), output type, output temperature range, polarity on error, alarm mode, levels, hysteresis

OS-PC-TSD Data Logging Specifications

Optional wall-mounted display, data logging, configuration and alarm unit for OS-PC sensor

Temperature Reading: Large, bright backlit temperature display turns red in alarm condition

Temperature Recording History: Graphs of measured temperature, log more than a year of data to a single MicroSD card; data is stored in a simple text format easily imported into Excel®

Sensor Configuration: Configuration settings can be adjusted via the intuitive touch screen interface

Temperature Alarm Triggers: Two alarms are individually configurable as high, low, band or error; red screen to signal alarm condition, built-in 24V, 1 A relay outputs can be connected directly to alarm

Measurement Accuracy: Accurate, even with reflections of hot objects; measure the temperature of objects using Reflected Energy Compensation feature

Outputs (From Touch Screen Module):

Retransmitted analog output from sensor, plus 2 relays, rated 24 Vdc, 1 A

Output Type	Effective Minimum Output	Output Accuracy (Additional to Measurement Accuracy)
0 to 1 Vdc	30 mV	±1.5 mV
mV/°C	30 mV	±1.5 mV
0 to 20 mA	0.2 mA	±0.02 mA
4 to 20 mA	4.0 mA	±0.02 mA

Storage: MicroSD card (optional), max 32 GB, equal to 16 years of data at the fastest sample rate of 1 per second

Data Logging Interval: 1 second to 1 day (configurable)

Internal Clock Battery: One BR 1225 3V (not included)

Variables Logged: Instant target and hold temperatures, alarm events

File Format: .csv

Configurable Parameters (Data Logging): Sample period, number of samples, scheduled start

Configurable Parameters (Alarm Logging): Log times when triggered, acknowledged, reset; log data while triggered

Electrical Specifications

Outputs: 1 analog output and 1 alarm output

Analog Output: 4 to 20 mA (set by default), 0 to 20 mA, mV/°C or voltage, selectable via optional OS-PC-TSD touch screen interface

Alarm Output: 1 open drain alarm output, rated 27 Vdc, 0.2 A*

Supply Voltage: 5 to 27 Vdc, 100 mA max

Digital Communications: RS232C MODBUS® RTU, non-isolated

To Order

OS-PC{Response Time & Optics}-{Cable Length}-{Voltage Analog Output Option}		
Response Time & Optics	**16**	10 mS response, 1.6 mm spot @ 35 mm
	30	10 mS response, 3.0 mm spot @ 70 mm
	55	10 mS response, 5.5 mm spot @ 120 mm
	F35	1 mS response, 3.5 mm spot @ 100 mm
	F70	1 mS response, 7.0 mm spot @ 200 mm
Cable Length	**2M**	2 m (6.6')
	5M	5 m (16.4')
	10M	10 m (32.8')
Voltage Analog Output* Option	**1V**	0 to 1 Vdc
	5V	0 to 5 Vdc
	10V	0 to 10 Vdc

***Note:** All units include as standard 0 to 20 mA, 4 to 20 mA and mV/°C outputs.*

Ordering Examples

Model No.	Description
OS-PC16-2M-(*)	High speed cube sensor with 10 mS response, 1.6 mm spot @ 35 mm with 2 m (6.6') cable
OS-PC30-2M-(*)	High speed cube sensor with 10 mS response, 3.0 mm spot @70 mm with 2 m (6.6') cable
OS-PC55-2M-(*)	High speed cube sensor with 10 mS response, 5.5 mm spot @ 120 mm with 2 m (6.6') cable
OS-PCF35-2M-(*)	Very fast cube sensor with 1 mS response, 3.5 mm spot @ 100 mm with 2 m (6.6') cable
OS-PCF70-2M-(*)	Very fast cube sensor with 1 mS response, 7.0 mm spot @ 200 mm with 2 m (6.6') cable

** Voltage analog output option, see below.*

OS-PC-FBN
Fixed mounting bracket

OS-PC-PWC
Protective lens cover

OS-PC-APC
Air purge collar

OS-PC-ADP
Airless dust protector

Options/Accessories

Model No.	Description
OS-PC-TSD	Touch screen display (°C/°F) with data logging
OS-PC-FBN	Fixed mounting bracket (1-axis)
OS-PC-PWC	Protective lens cover
OS-PC-APC	Air purge collar
OS-PC-ADP	Airless dust protector

Comes complete with operator's instructions.

***Ordering Examples: OS-PC16-2M-1V,** high speed cube sensor with 10 mS response, 1.6 mm spot @ 35 mm with 2 m (6.6') cable and optional 0 to 1 Vdc analog output.*

***OS-PCF35-5M-5V,** very fast cube sensor with 1 mS response, 3.5 mm spot @ 100 mm with 5 m (16.4') cable and optional 0 to 5 Vdc analog output.*

Pyrometers for Special Applications

Type	S			F		G			
Application	General purpose			Fast response		Glass			
									
Description	The general-purpose S is suitable for measuring most non-reflective non-metals Advantages over other general purpose sensors are the built-in LED aiming light, fast response time, and small measured spot size.			The F has a lightning-fast response time of 0.001 seconds.		Glass-specific measurement wavelength for improved accuracy when measuring glass surface temperature. G models are ideal for annealing, e.g. light bulb and fluorescent lamp manufacturing. GH models are suitable for high-temperature glass melting, such as in glass-to-metal sealing.			
Wavelength	2 to 7 µm			2 to 7 µm		5 µm			
Temperature Range	0 to 500°C (0 to 932°F)					50 to 1200°C (122 to 2192°F)		50 to 2400°C (122 to 4352°F)	
Response Time	10 ms			1 ms		50 ms		10 ms	
Model No. OS-PC	**16**	**30**	**55**	**F35**	**F70**	**G70**	**G200**	**GH22**	**GH45**
Focal Spot Diameter (mm)	1.6	3	5.5	3.5	7	7	20	2.2	4.5
Focal Distance (mm)	35	70	120	100	200	180	500	150	300
Maximum Measurement Distance (mm)	150	200	300	300	500	500	1000	300	500

Pyrometers for Special Applications

Type	P	XS		M			
Application	Thin film plastics	Very small targets		Metals, low temperature			
							
Description	Accurately measures the temperature of thin film plastics that cannot be measured with general-purpose sensors. Materials include polyolefin, polyamide, polyethylene, polypropylene, polystyrene, nylon, PVC, acrylic, polyurethane and polycarbonate.	Extremely small measured spot size. Applications include measuring individual electronic component temperatures on a circuit board, and plastic welding where the seam is very narrow.		Short-wavelength sensors for measuring metals as cool as 50°C (122°F), with a very fast response time of 0.001 seconds and a very small measured spot size.			
Wavelength	3.4 µm	5 to 7 µm		2.2 µm			
Temperature Range	80 to 350°C (176 to 662°F)	0 to 500°C (0 to 932°F)		50 to 600°C (122 to 1112°F)			
Response Time	10 ms	10 ms	50 ms	1 ms			
Model No. OS-PC	**P120**	**XA7**	**XB10**	**MA10**	**MA20**	**MA35**	**MB110**
Focal Spot Diameter (mm)	12	0.7	1	1	2	3.5	11
Focal Distance (mm)	200	40	100	50	100	200	200
Maximum Measurement Distance (mm)	500	100	300	100	200	400	500