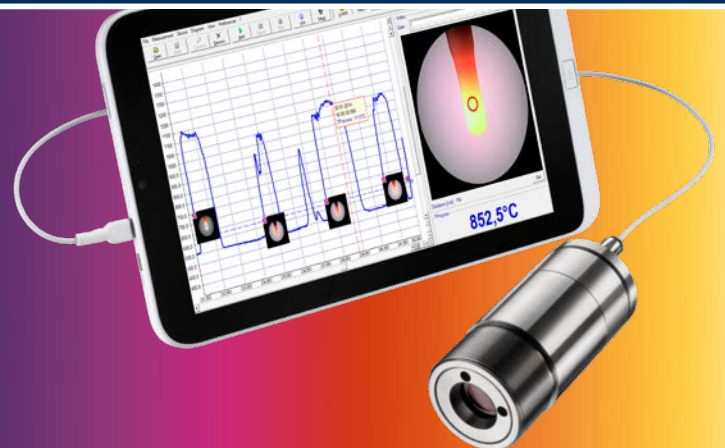




CSvideo 2M

Two-wire infrared thermometer for temperature measurements of metals and ceramics from 250 °C to 1600 °C (482 °F to 2912 °F) with adjustable focus, patented crosshair laser and video sighting

innovative infrared technology



optris® CSvideo 2M

TECHNICAL DATA

Features:

- Parallel use of video sighting and crosshair laser for easy sensor alignment (measuring spots up from 0.5 mm (0.02 in) under all viewing conditions possible)
- Manual focusing for measurement distances from 90 mm (3.5 in)
- Response times up from 10 ms
- Standard two-wire interface for reliable data transfer and easy integration into a PLC
- Usable up to 70 °C (158 °F) ambient temperature without cooling
- optris Compact Connect software for fast onsite sensor setup, video alignment and real-time process monitoring



General specifications

| | |
|----------------------|--|
| Environmental rating | IP 65 (NEMA-4) front mountable at vacuum processes (up to 10^{-3} mbar) |
| Ambient temperature | -20 °C ... 70 °C (50 °C with laser ON) (-4 °F ... 158 °F (122 °F with laser ON) |
| Storage temperature | -40 °C ... 85 °C (-40 °F to 185 °F) |
| Relative humidity | 10–95 %, non-condensing |
| Vibration | IEC 68-2-6: 3 G, 11–200 Hz, any axis |
| Shock | IEC 68-2-27: 50 G, 11 ms, any axis |
| Weight | 600 g (21.2 oz) |

Measurement specifications

| | |
|--|---|
| Temperature range (scalable via software) | 250 °C ... 800 °C (2ML) (482 °F to 1472 °F) 385 °C ... 1600 °C (2MH) (725 °F to 2912 °F) |
| Spectral range | 1.6 μ m |
| Optical resolution (90 % energy) | 150:1 (2ML) 300:1 (2MH) |
| System accuracy (at $T_{amb} = 23 \pm 5$ °C [at $T_{amb} = 73 \pm 41$ °F]) | \pm (0.3 % of reading + 2 °C) \pm (0.3 % of reading + 36 °F) |
| Repeatability (at $T_{amb} = 23 \pm 5$ °C [at $T_{amb} = 73 \pm 41$ °F]) | \pm (0.1 % of reading + 1 °C) \pm (0.1 % of reading + 34 °F) |
| Temperature resolution | 0.1 K |
| Response time (90 % signal) | 10 ms |
| Emissivity / Gain (adjustable via software) | 0.100–1.100 |
| IR window correction (adjustable via software) | 0.100–1.000 |
| Signal processing (parameter adjustable via software) | Peak hold, valley hold, average; extended hold function with threshold and hysteresis |
| Software (incl.) | optris® Compact Connect (Sensor setup, video sighting and process monitoring) |

Electrical specifications

| | |
|----------------------------------|---|
| Output / analog | 4–20 mA |
| Loop resistance | Max. 1000 Ω ¹⁾ |
| Output / alarm | 0–30 V / 500 mA (open collector) |
| Output / digital | USB 2.0 Ethernet (via optional USB server) |
| Video sighting | digital (USB 2.0), 640 x 480 px, FOV 3.1° x 2.4° |
| Cable length (analog + alarm) | 3 m, 8 m, 15 m (9.8 ft, 26.2 ft, 49.2 ft) |
| Cable length (USB) | 5 m (incl.), 10 m, 20 m, 100 m (over Ethernet) (9.8 ft [standard], 26.2 ft, 49.2 ft [over Ethernet]) |
| Current draw (laser) | 45 mA at 5 V 20 mA at 12 V 12 mA at 24 V |
| Power supply | 5–28 V DC |

1) In dependence on supply voltage

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TECHNICAL DATA

Optical parameters

The vario optics of the CSvideo allows a smooth focusing of the optics to the desired distance.

The following tables show examples of measurement distances and the corresponding measurement spot sizes:

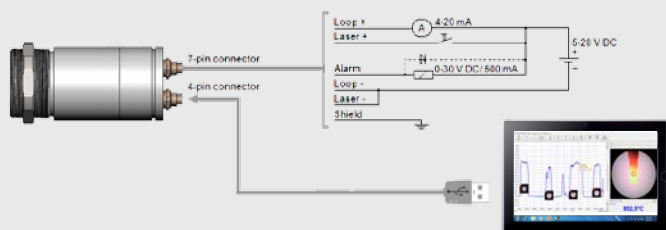
The sensors are available in two versions:

Standard focus (SF): 200 mm (7.9 in) till infinity

Close focus (CF): 90 mm till 250 mm (3.5 in till 9.8 in)

| | 2ML: SF optics (150:1) | | | | | | | | 2ML: CF optics (150:1) | | | | | |
|----------------------------|------------------------|---------------|---------------|---------------|----------------|----------------|----------------|-----------------|------------------------|---------------|---------------|---------------|---------------|---------------|
| Meas. spot size in mm (in) | 1.3 (0.05) | 2.0 (0.1) | 3.0 (0.1) | 4.7 (0.19) | 7.3 (0.29) | 10.7 (0.42) | 16.7 (0.66) | 33.3 (1.31) | 0.6 (0.02) | 0.8 (0.03) | 1.0 (0.04) | 1.2 (0.05) | 1.4 (0.06) | 1.7 (0.07) |
| Meas. distance in mm (in) | 200 (7.9) | 300 (11.8) | 450 (17.7) | 700 (27.6) | 1100 (43.3) | 1600 (63.0) | 2500 (98.4) | 5000 (196.9) | 90 (3.5) | 120 (4.7) | 150 (5.9) | 180 (7.1) | 210 (8.3) | 250 (9.8) |
| | 2MH: SF optics (300:1) | | | | | | | | 2MH: CF optics (300:1) | | | | | |
| Meas. spot size in mm (in) | 0.7 (0.03) | 1.0 (0.04) | 1.5 (0.06) | 2.3 (0.09) | 3.7 (0.15) | 5.3 (0.21) | 8.3 (0.33) | 16.7 (0.66) | 0.3 (0.01) | 0.4 (0.02) | 0.5 (0.02) | 0.6 (0.02) | 0.7 (0.03) | 0.8 (0.03) |
| Meas. distance in mm (in) | 200 (7.9) | 300 (11.8) | 450 (17.7) | 700 (27.6) | 1100 (43.3) | 1600 (63.0) | 2500 (98.4) | 5000 (196.9) | 90 (3.5) | 120 (4.7) | 150 (5.9) | 180 (7.1) | 210 (8.3) | 250 (9.8) |

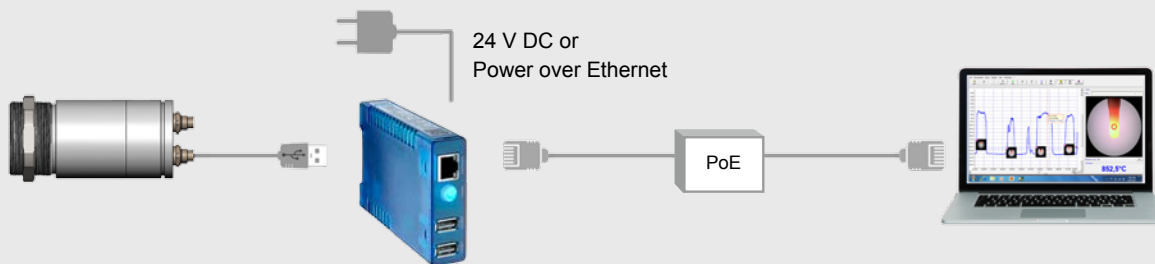
Connection modes



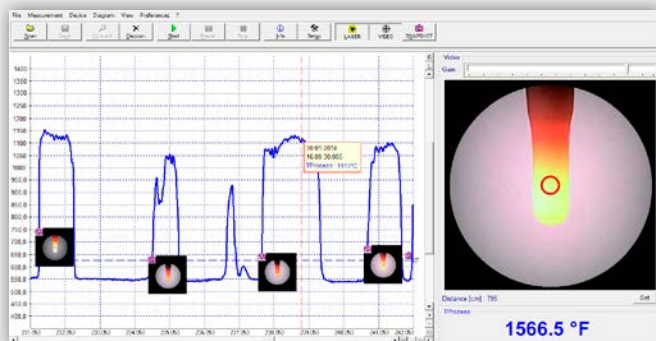
Analog operation mode: 4–20 mA and alarm interface. Setup & installation via USB cable (hot Plug & Play)



Digital operation mode: process control (Video and temperature) via software



Software included



- Automatic snapshots (time- or temperature dependent) to control and document the process
- Graphic display and recording of the measurement values
- Setup of sensor parameters and signal processing functions
- Remote control of the sensor

New

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Dimensions sensing head

