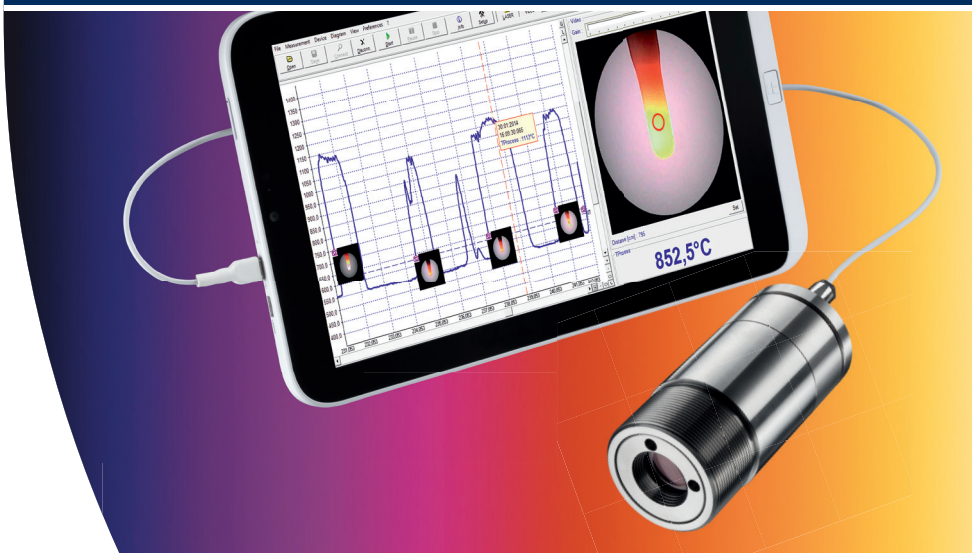
optris
infrared thermometers

CSvideo 2M

Two-wire infrared thermometer for temperature measurements of metals and ceramics from 250 °C to 1600 °C 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) under all viewing conditions possible
- Manual focusing for measurement distances from 90 mm
- 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 ambient temperature without cooling
- optris Compact Connect software for fast onsite sensor setup, video alignment and real-time process monitoring

Measurement specifications

Temperature range (scalable via software)	250 °C to 800 °C (2ML) 385 °C to 1600 °C (2MH)
Spectral range	1.6 µm
Optical resolution (90 % energy)	150:1 (2ML) 300:1 (2MH)
System accuracy (at T_{amb} = 23 ± 5 °C)	± (0.3 % of reading + 2 °C)
Repeatability (at T_{amb} = 23 ± 5 °C)	± (0.1 % of reading + 1 °C)
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)

General specifications

Environmental rating	IP 65 (NEMA-4) front mountable at vacuum processes (up to 10^{-3} mbar)
Ambient temperature	-20 °C to 70 °C (50 °C with laser ON)
Storage temperature	-40 °C to 85 °C
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

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
Cable length (USB)	5 m (incl.), 10 m, 20 m, 100 m (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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Optical parameters

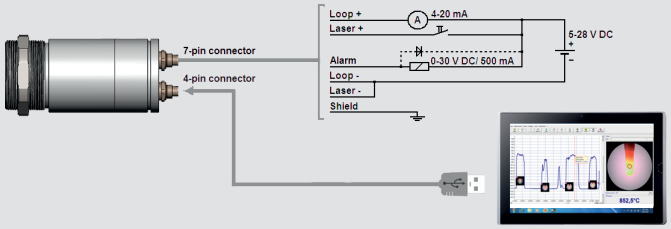
The vario optics of the CSvideo allows a smooth focusing of the optics to the desired distance.

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 till infinity
Close focus (CF): 90 mm till 250 mm

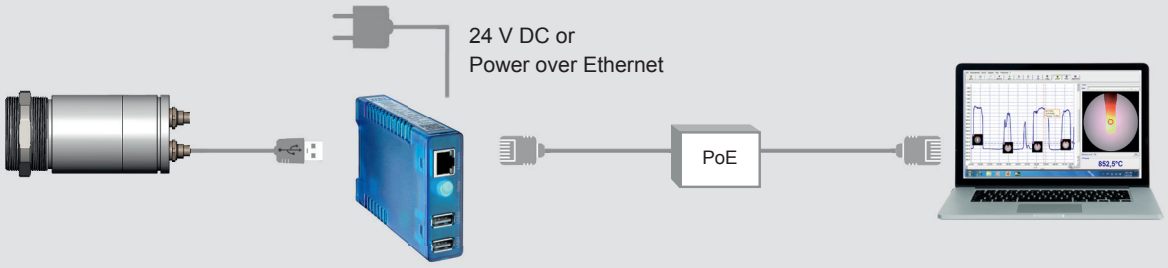
	2ML: SF optics (150:1)								2ML: CF optics (150:1)					
Meas. spot size in mm	1.3	2.0	3.0	4.7	7.3	10.7	16.7	33.3	0.6	0.8	1.0	1.2	1.4	1.7
Meas. distance in mm	200	300	450	700	1100	1600	2500	5000	90	120	150	180	210	250
	2MH: SF optics (300:1)								2MH: CF optics (300:1)					
Meas. spot size in mm	0.7	1.0	1.5	2.3	3.7	5.3	8.3	16.7	0.3	0.4	0.5	0.6	0.7	0.8
Meas. distance in mm	200	300	450	700	1100	1600	2500	5000	90	120	150	180	210	250

Connection modes

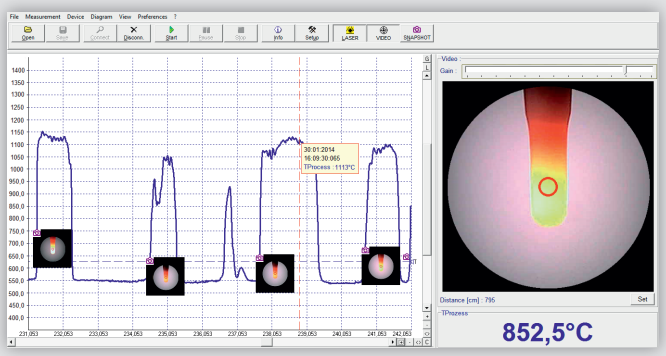


Analog operation mode: 4-20 mA and alarm interface. Setup & installation via USB cable (hot Plug & Play)

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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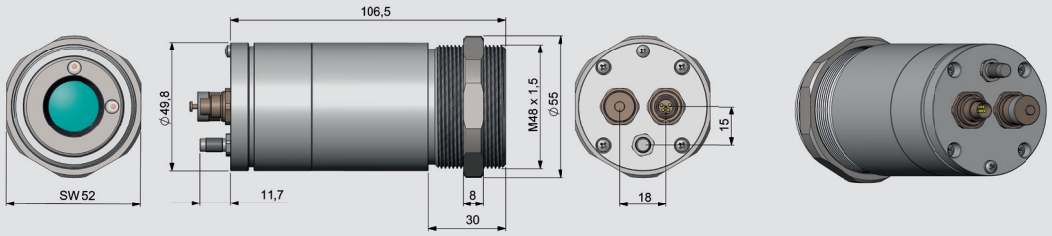
TECHNICAL DATA

Dimensions sensing head



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