

optris[®] CT laser

Non-contact temperature measurement with precise aiming from -40°C to 975°C



FEATURES

- Low and high temperature measurements of smallest spots up from 0.9 mm
- NEW: Double laser aiming marks real spot location and spot size at any distance
- Optics 75:1 with selectable focus
- CT laser F (fast) for scanning of fast moving low temperature objects up from 9 ms exposure time
- Usable up to 85°C ambient temperature without cooling and automatic laser switch off at 50°C
- Selectable analog outputs 0/4-20mA, 0-5/10V, thermocouple type K or J
- Optional plug in digital interfaces USB, RS232, RS485, CAN or Profibus DP

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 85°C (50°C with laser ON) electronics: 0 - 65°C
Storage temperature	sensing head: -40 - 85°C electronics: -40 - 85°C
Relative humidity	10 - 95 %, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	sensing head 600 g electronics 420 g
Electrical specifications	
Outputs/analog	channel 1: 0/4 - 20 mA, 0 - 5/10 V, thermocouple J, K channel 2: sensing head temperature (-40 - 85°C as 0 - 5 V or 0 - 10 V), alarm output
Optional:	relay: 2 x 60 V DC/42 V AC _{eff} ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP
Output impedances	mA max. 500Ω (with 5 - 36 V DC) mV min. 100 kΩ load impedance thermocouple 20Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m
Current draw	max. 160 mA
Power supply	5 - 36 V DC
Laser 635 nm	1mW, ON/OFF via electronic box or software

Measurement specifications	
Temperature range (scalable via programming keys or software)	-40 - 975°C
Spectral range	8 - 14 μm
Optical resolution	75:1 CT laser 50:1 CT laser F
Selectable focus (CT laser)	CF1 0.9 mm @ 70 mm CF2 1.9 mm @ 150 mm CF3 2.75 mm @ 200 mm CF4 5.9 mm @ 450 mm SF 16 mm @ 1260 mm
System accuracy (at ambient temperature 23 ±5°C)	± 1 % or ±1°C ^{1,2}
Repeatability (at ambient temperature 23 ±5°C)	±0.5 % or ±0.5°C ¹
Temperature resolution (NETD)	0.1°C / 1°C (with CT laser F)
Response time (90% signal)	9 ms (CT laser F) 120 ms (CT laser)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.000
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Certificate of calibration	optional

¹ whichever is greater

² at object temperatures >0°C

