

optris® CTlaser LT

Precise non-contact temperature measurement with precise aiming from -50°C to 975°C



FEATURES

- Low and high temperature measurements of smallest spots up from 0.9 mm
- 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 response 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	-20°C to 85°C (sensing head, 50°C with laser ON) 0°C to 85°C (electronics)
Storage temperature	Sensing head: -40°C to 85°C Electronics: -40°C to 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°C to 85°C as 0 - 5 V or 0 - 10 V), alarm output
Alarm output	Open - collector (24 V / 50 mA)
Optional	relay: 2 x 60 V DC/42 V ACeff; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 5-36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
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	8-36 V DC
Laser 635 nm	1mW, ON/OFF via electronic box or software

Measurement Specifications

Temperature ranges (scalable via programming keys or software)	-50°C to 975°C
Spectral ranges	8-14 μm
Optical resolution (90% energy)	75:1 CTlaser 50:1 CTlaser F
Selectable focus (CTlaser)	CF1 (0.9mm@70 mm) CF2 (1.9 mm@150 mm) CF3 (2.75 mm@200mm) CF4 (5.9 mm@450 mm) SF (16 mm@1260 mm)
System accuracy ¹⁾ (at ambient temp. 23 ±5°C)	±1% or ±1°C ^{2),3)} (CTlaser) ±1.5% or ±1.5°C ^{2),3)} (CTlaser F)
Repeatability (at ambient temp. 23 ±5°C)	±0.5 % or ±0.5°C ^{1),2)} (CTlaser) ±1 % or ±1°C ^{1),2)} (CTlaser F)
Temperature resolution (NETD)	0.1°C / 0.5°C (with CTlaser F)
Response time (90% signal) ⁴⁾	9 ms (CTlaser F) 120 ms (CTlaser)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	optris Compact Connect

1) different spotsizes for CTlaser F (D:S = 50:1)

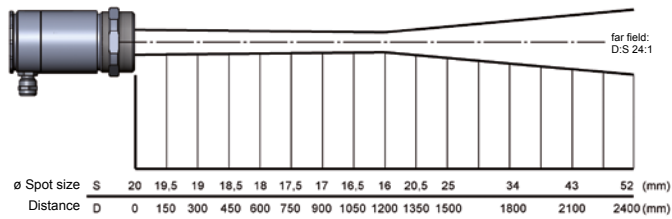
2) whichever is greater

3) at object temperatures >0°C, ε = 1

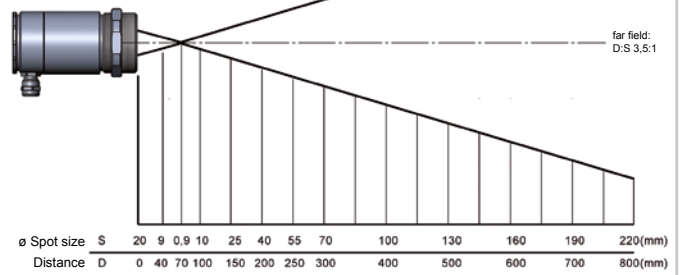
4) with dynamic adaption at low signal levels

Optical Specifications

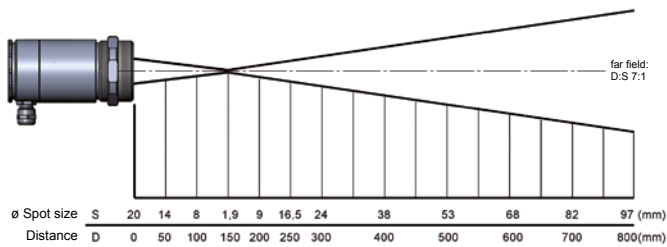
SF optics 75:1



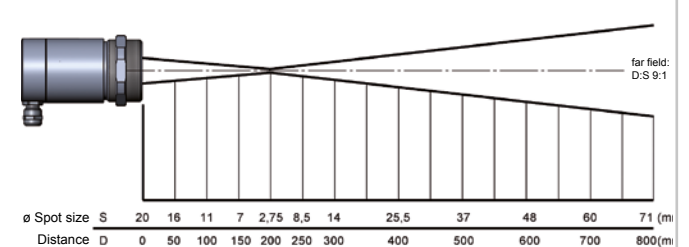
CF1 optics 75:1



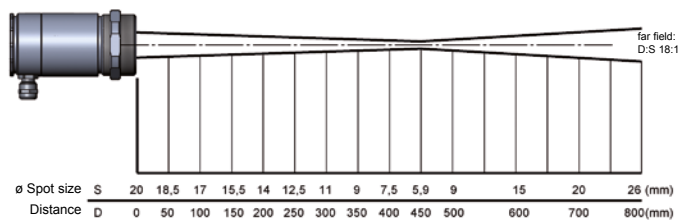
CF2 optics 75:1



CF3 optics 75:1

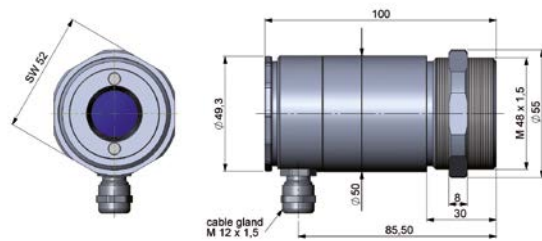


CF4 optics 75:1



Dimensions

Sensing head



Electronics

