

**Precise non-contact
temperature measurement
from $-50\text{ }^{\circ}\text{C}$ to $975\text{ }^{\circ}\text{C}$
($-58\text{ }^{\circ}\text{F}$ to $1787\text{ }^{\circ}\text{F}$)**



Features:

- One of the smallest infrared sensors worldwide with extrem short response time down to 6 ms (90 % signal)
- Fast analog output (0/4–20 mA, 0–5/10 V) with smart real time data processing
- Instant digital 0/10 V output with a response time of 4 ms (50 % signal)
- Continuous process monitoring with an unchoppered sensor system
Note: Conventional fast pyroelectrical infrared sensors with mechanical chopper see processes only part of the time
- Easy to assemble in multiple arrays for line scanning of small and fast objects (hot spot detection) using a RS485 bus communication
- Rugged up to $120\text{ }^{\circ}\text{C}$ ($248\text{ }^{\circ}\text{F}$) ambient temperature without cooling

General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	$-20\text{ }^{\circ}\text{C}$... $120\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{F}$... $248\text{ }^{\circ}\text{F}$) (sensing head) $0\text{ }^{\circ}\text{C}$... $85\text{ }^{\circ}\text{C}$ ($32\text{ }^{\circ}\text{F}$... $185\text{ }^{\circ}\text{F}$) (electronics)
Storage temperature	$-40\text{ }^{\circ}\text{C}$... $120\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F}$... $248\text{ }^{\circ}\text{F}$) (sensing head) $-40\text{ }^{\circ}\text{C}$... $85\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F}$... $185\text{ }^{\circ}\text{F}$) (electronics)
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	40 g (1.4 oz) (sensing head) / 420 g (14.8 oz) (electronics)

Electrical Specifications

Outputs / analog	0/4–20 mA, 0–5/10 V, thermocouple J, K, alarm
Output / alarm	24 V / 50 mA (open collector)
Outputs / digital	0/10 V (10 mA) optional: relay: 2 x 60 V DC/ 42 V AC; 0.4 A; optically isolated
Digital interface	USB, RS232, RS485, CAN, Profibus DP, Ethernet (optional)
Output impedances	mA max. $500\ \Omega$ (with 8–36 V DC) mV min. $100\ \text{k}\Omega$ load impedance, thermocouple $20\ \Omega$
Inputs	Programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	1 m (standard), 3 m, 8 m, 15 m (3.3 ft [standard], 9.8 ft, 26.2 ft, 49.2 ft)
Power Supply	8–36 V DC
Current draw	Max. 100 mA

Measurement specifications

Temperature range (scalable via programming keys or software)	$-50\text{ }^{\circ}\text{C}$... $975\text{ }^{\circ}\text{C}$ ($-58\text{ }^{\circ}\text{F}$... $1787\text{ }^{\circ}\text{F}$)
Spectral range	8–14 μm
Optical resolution (90 % energy)	LT15F 15:1 LT25F 25:1
System accuracy (at ambient temp. $23 \pm 5\text{ }^{\circ}\text{C}$) ($23 \pm 41\text{ }^{\circ}\text{F}$)	$\pm 1\%$ or $\pm 2\text{ }^{\circ}\text{C}^{1), 2)}$ ($\pm 1\%$ of reading + $3.6\text{ }^{\circ}\text{F}$)
Repeatability (at ambient temp. $23 \pm 5\text{ }^{\circ}\text{C}$) ($23 \pm 0.5\text{ }^{\circ}\text{F}$)	$\pm 0.75\%$ or $\pm 0.75\text{ }^{\circ}\text{C}^{1), 2)}$ ($\pm 0.75\%$ of reading + $1.4\text{ }^{\circ}\text{F}$)
Temperature resolution	LT15F $0.2\ \text{K}^{2), 3)}$ LT25F $0.4\ \text{K}^{2), 3)}$
Response time	Analog output (90 %) LT15F 9 ms LT25F 6 ms Digital output (50 %) LT15F 4 ms LT25F 3 ms
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

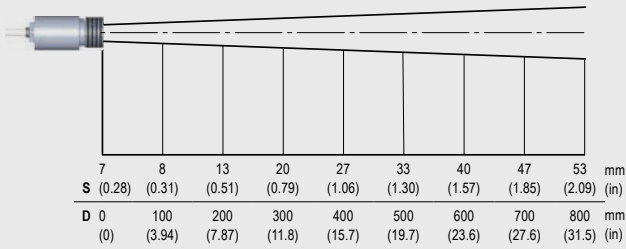
¹⁾ Whichever is greater with dynamic noise compression

²⁾ At object temperatures $\geq 20\text{ }^{\circ}\text{C}$ ($\geq 68\text{ }^{\circ}\text{C}$)

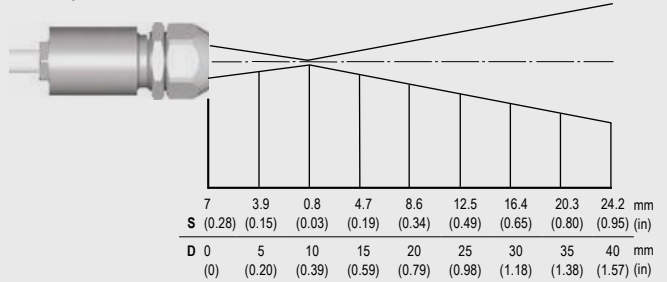
³⁾ At time constant 100 ms with smart averaging and $T_{\text{Obj}} 25\text{ }^{\circ}\text{C}$ ($T_{\text{Obj}} 77\text{ }^{\circ}\text{F}$)

Optical specifications

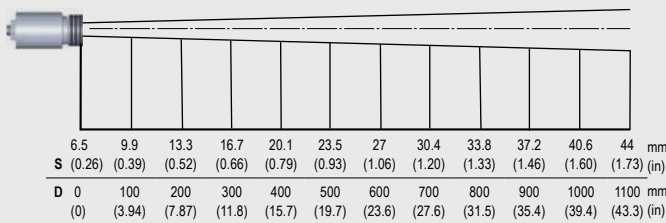
15:1 optics



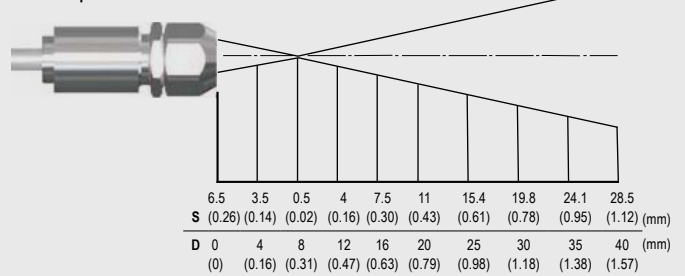
15:1 optics with CF-lens



25:1 optics

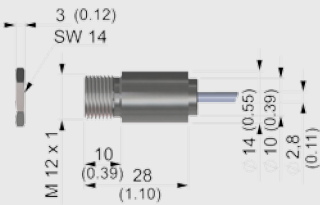


25:1 optics with CF-lens

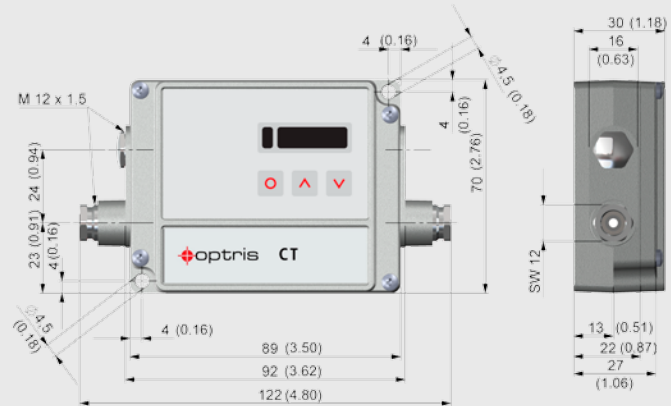


Dimensions

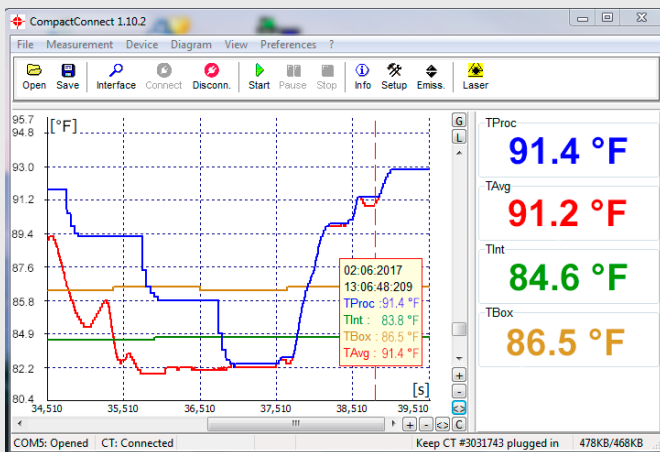
Sensing head (standard)



Electronics



Compact Connect software



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 1 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- The software CompactConnect allows to customize the sensor to application needs of the user