



**Precise non-contact
temperature measurement
from -50°C to 975°C
(-58 to 1787°F)**



Features:

- One of the smallest infrared sensors worldwide with 22:1 optical resolution
- Rugged and usable up to 180°C (356°F) ambient temperature without cooling
- Separate electronics with easy accessible programming keys and LCD backlit display
- Selectable analog output: 0/4–20 mA, 0–5 V, 0–10 V, thermocouple type K or J
- Optional USB, RS485, RS232 interface, relay outputs (2 x optically isolated), Profibus DP, Ethernet
- Installation of up to 32 sensors in one network (with RS485)
- CTex: Explosion proof version (ATEX) Ex

General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature ¹⁾	-20°C to 180°C (-4°F to 356°F) 130°C (266°F) to LT02) (sensing head) 0°C to 85°C (32°F to 185°F) (electronics)
Storage temperature	-40°C to 130°C (-40°F to 266°F) (sensing head) -40°C to 85°C (-40°F to 185°F) (electronics)
Relative humidity	10–95 %, non condensing
Vibration (sensor)	IEC 60068-2-6 (sinus shaped) IEC 60068-2-64 (broadband noise)
Shock (sensor)	IEC 60068-2-27 (25G and 50G)
Weight	40 g (1.4 oz) (sensing head) / 420 g (14.8 oz) (electronics)

Electrical Specifications

Outputs / analog	Channel 1: 0/4–20 mA, 0–5/ 10 V, thermocouple J, K Channel 2: sensind head temperature (-20°C to 180°C (-4°F to 356°F) as 0–5 V or 0–10 V), alarm output
Output / alarm	24 V / 50 mA (open collector)
Optional	Relay: 2 x 60 V DC/ 42 V AC _{eff.} ; 0.4 A; optically isolated
Outputs / digital (optional)	USB, RS232, RS485, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 8–36 V DC) mV min. 100 k Ω load impedance thermocouple 20 Ω
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°C to 975°C (LT22) (-58°F to 1787°F) -50°C to 600°C (LT15) (-58°F to 1112°F) -50°C to 600°C (LT02) (-58°F to 1112°F)
Spectral range	8–14 μm
Optical resolution (90 % energy)	22:1 (precision glass optics) 15:1 (precision glass optics) 2:1 (with flat front window)
CF-lens (optional)	0.6 mm @ 10 mm (with LT22) (0.02 in @ 0.4 in) 0.8 mm @ 10 mm (with LT15) (0.03 in @ 0.4 in) 2.5 mm @ 23 mm (with LT02) (0.1 in @ 0.9 in)
System accuracy ^{2),3)} (at ambi- temp. $23 \pm 5^{\circ}\text{C}$) ($73 \pm 9^{\circ}\text{F}$)	$\pm 1\%$ or $\pm 1^{\circ}\text{C}$ ($\pm 1\%$ or $\pm 1.8^{\circ}\text{F}$)
Repeatability ^{2),3)} (at ambient temp. $23 \pm 5^{\circ}\text{C}$) ($73 \pm 9^{\circ}\text{F}$)	$\pm 0.5\%$ or $\pm 0.5^{\circ}\text{C}$ ($\pm 0.5\%$ or $\pm 0.9^{\circ}\text{F}$)
Temperature resolution (display)	0.1 K
NETD ^{3),4)}	0.05 K (LT22/ LT15) 0.1 K (LT02)
Response time	150 ms (95 %)
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⁾ The LCD displays capacity may be limited at ambient temperatures below 0°C .

²⁾ Whichever is greater

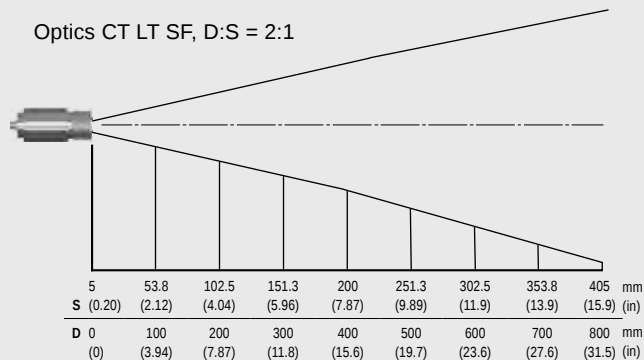
³⁾ At object temperatures $>0^{\circ}\text{C}$ ($> 32^{\circ}\text{F}$), $\epsilon = 1$

⁴⁾ At time constant 200 ms and $T_{\text{obj}} 25^{\circ}\text{C}$ (77°F)

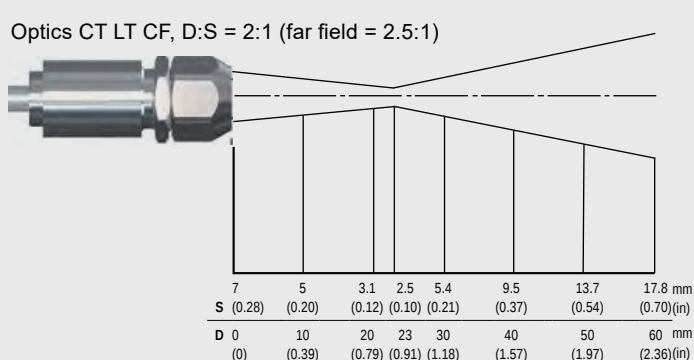


Optical specifications

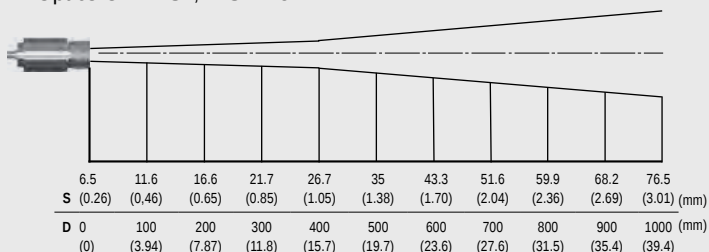
Optics CT LT SF, D:S = 2:1



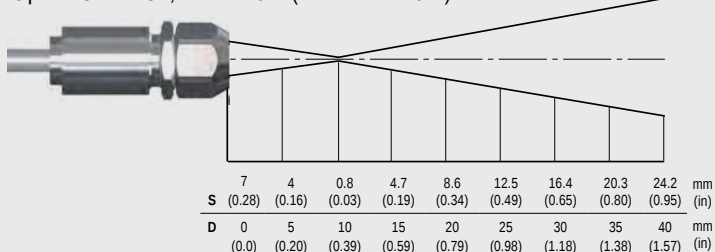
Optics CT LT CF, D:S = 2:1 (far field = 2.5:1)



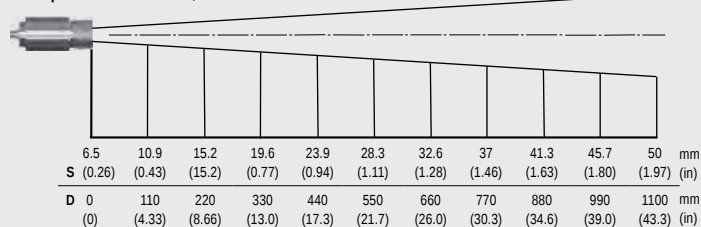
Optics CT LT SF, D:S = 15:1



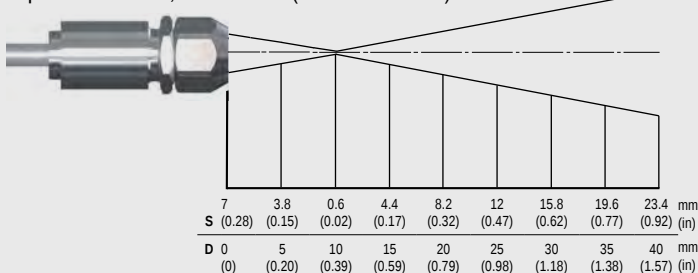
Optics CT LT CF, D:S = 15:1 (far field = 1.5:1)



Optics CT LT SF, D:S = 22:1

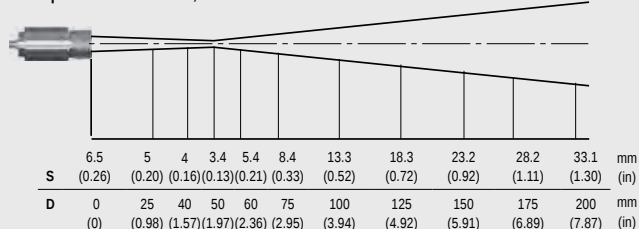


Optics CT LT CF, D:S = 22:1 (far field = 1.5:1)

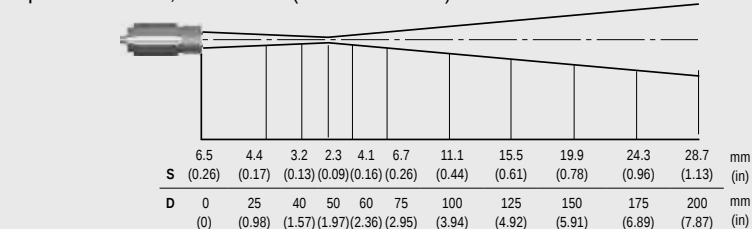


Versions with built-in CF lenses

Optics CT LT CF, D:S = 22:1

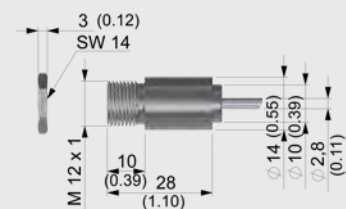


Optics CT LT CF, D:S = 22:1 (far field = 1.5:1)

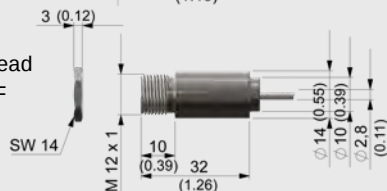


Dimensions

Sensing head (standard)



Sensing head (built-in CF lenses)



Electronics

