optris CTi LTfast
TECHNICAL DATA

Precise and fast non-contact temperature measurement from –50 °C to 1050 °C

Features:

- One of the smallest infrared sensors worldwide with down to 6 ms response time
- Rugged sensing head for low target temperatures - usable up to 125 °C ambient temperature without cooling
- Two-piece design with easy accessible programming keys and LCD backlit display
- Built-in USB interface for simple sensor setup via mobile phone or PC
- Selectable analog outputs: 0 / 4 – 20 mA, 0 – 5 / 10 V, thermocouple K
- Optional EtherNet/IP, Profinet, Ethernet TCP/IP / Modbus TCP, Modbus RTU, RS485, RS232 interface, EtherCAT, IO-Link or relay outputs (2 x optically isolated)
- Easy and flexible exchange of sensing heads

General specifications	
Environmental rating	IP 65 (NEMA-4)
Operating temperature range[1)]	–20 °C ... 125 °C (sensing head) –20 °C ... 85 °C (electronics)
Storage temperature	–40 °C ... 125 °C (sensing head) –40 °C ... 85 °C (electronics)
Operating air humidity range	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 (sensing head) / 420 g (electronics)

Electrical Specifications	
Output / analog (2x)	0 / 4 – 20 mA, 0 – 5 / 10 V, thermocouple K, alarm
Output / alarm	24 V / 50 mA (open collector)
Relay outputs (optional)	2 x 60 V DC/ 42 V AC_{RMS}; 0.4 A; optically isolated
Digital Interfaces	built-in USB-interface, Optional: EtherNet/IP, Profinet, EtherCAT, Ethernet TCP/IP / Modbus TCP, Modbus RTU, RS485, RS232 or relay outputs (2 x optically isolated)
Output impedances	mA max. 500 Ω mV min. 100 kΩ load impedance
I/O Pins (3x)	flexible programming as in- or output: external emissivity adjustment, ambient temperature compensation, uncommitted value, trigger (reset of hold functions), alarm output (open collector 24 V/ 50 mA)
Cable length	1 m (standard), 3 m, 8 m, 15 m
Power supply	8 - 30 V DC / 1.2W

Measurement specifications	
Measuring Temperature range (scalable via programming keys or software / App)	-50 °C ... 600 °C (LT02F) -50 °C ... 1050 °C (LT15F /LT25F)
Spectral range	8 – 14 µm
Optical resolution (90% energy)	25:1 15:1 2:1
Smallest spot size	0.6 mm @10 mm (LT25 + CF lens)
Measurement uncertainty [2), 3), 4), 5), 7)]	±1 % or ±2 °C
Repeatability [2), 3), 4), 5), 7)]	±0.11 K (LT02F) ±0.22 K (LT15F) ±0.55 K (LT25F)
Temperature resolution (display)	0.1 K
NETD (typically) [4), 5), 6), 7)]	40 mK (LT02F) 75 mK (LT15F) 180 mK (LT25F)
Response time (90%)	30 ms (LT02F) 9 ms (LT15F) 6 ms (LT25F)
Emissivity / Gain (adjustable via programming keys or software / App)	0.05 – 1.100
Transmissivity / Gain (adjustable via programming keys or software/ App)	0.05 – 1.100
Signal processing (parameter adjustable via programming keys or software / App)	Peak hold, valley hold, average; extended hold functions with threshold and hysteresis
Software / App	Optris CompactPlus Connect / IR Mobile App

1) The LCD displays capacity may be limited at ambient temperatures below 0 °C
2) Whichever is greater
3) T_{obj} > 0 °C
4) ε = 1
5) Response time = 100ms
6) T_{obj} = 25 °C
7) at ambient temperature 23 ± 5 °C

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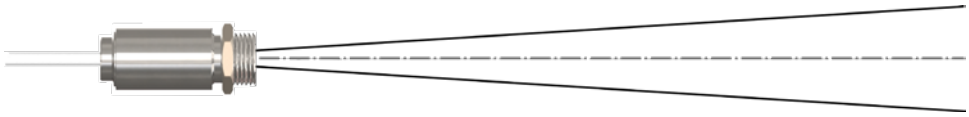
Optical specifications - Standard Focus (SF)

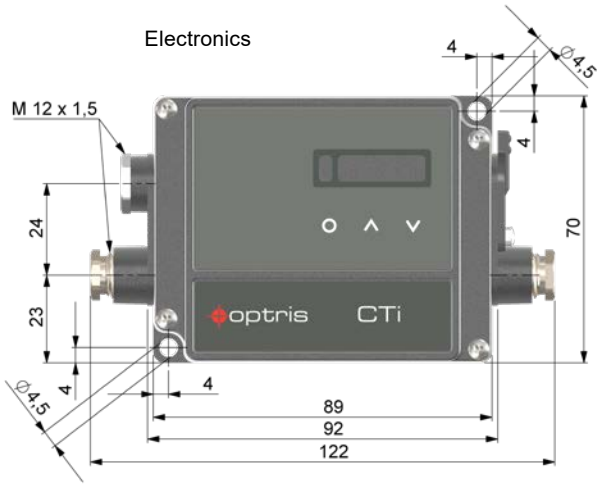


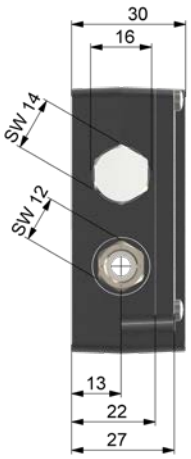
Device	D:S	Optical values											
		0	100	200	300	400	500	600	700	800	900	1000	Distance (mm)
LT02F	2:1	6.5	54.9	103.3	151.6	200.0	251.6	303.3	354.9	406.5	458.1	509.8	Spotsize (mm)
LT15F	15:1	6.5	11.5	16.6	21.6	26.7	35.0	43.3	51.5	59.8	68.1	76.4	Spotsize (mm)
LT25F	25:1	6.5	9.9	13.3	16.7	20.1	23.5	27.0	30.4	33.8	37.2	40.6	Spotsize (mm)

More optical data: https://optris.com/optris-calculator/

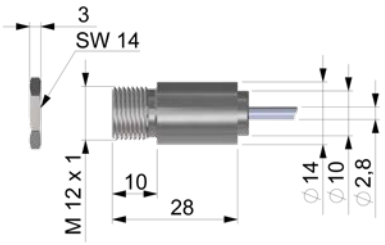
Dimensions (in mm)

Electronics





Sensing head
(standard)



Software / App

https://optris.com/software