optris CTi P3
TECHNICAL DATA

optris infrared measurements

Non-contact temperature measurement of thin-film plastic materials from 35 °C to 600 °C



Features:

- Miniaturized infrared thermometer with a spectral range of 3.43 µm for precise temperature measurements of thin-film plastic materials like PE, PP, PS
- 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 V, 0 – 10 V, thermocouple type K
- Optional EtherNet/IP, Profinet, Ethernet TCP/IP / Modbus TCP, Modbus RTU, RS485, RS232 interface or relay outputs (2 x optically isolated)
- Easy and flexible exchange of sensing heads

General specifications	
Environmental rating	IP 67 (NEMA-4)
Operating temperature range[1)]	–20 °C ... 85 °C (sensing head) –20 °C ... 85 °C (electronics)
Storage temperature	–40 °C ... 85 °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	200 g (sensing head incl. massive housing) / 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 holdfunctions), alarm output (open collector 24 V/ 50 mA)
Cable length	3 m (standard), 8 m, 15 m
Power supply	8 - 30 V DC / 1.2W

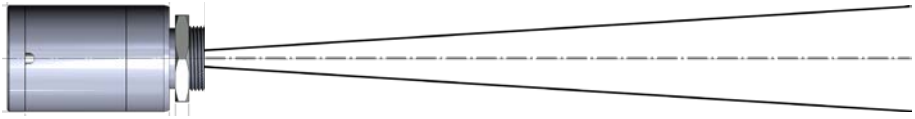
Measurement specifications	
Measuring Temperature range (scalable via programming keys or software / App) [8)]	35 °C ... 600 °C
Spectral range	3.43 µm
Optical resolution (90% energy)	15:1
Measurement uncertainty [2), 3), 4), 7), 9)]	±2.5 °C or ±1 %
Repeatability [4), 5), 6), 7)]	±0.25 K
Temperature resolution (display)	0.1 K
NETD (typically) [4), 5), 6), 7)]	90 mK
Response time (90% energy)	15 ms
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 / IRmobile App

[1)] The LCD display capacity may be limited at ambient temperatures below 0 °C
[2)] whichever is greater
[3)] Response time = 1 s (90%)
[4)] ε = 1.000
[5)] Tobj = 100 °C
[6)] Response time = 100 ms (90%)
[7)] at ambient temp. (23 ± 5) °C
[8)] $T_{obj} > T_{Head} + 10°C$
[9)] specifications are valid for temperatures above 50 °C

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Optical specifications - Standard Focus (SF)



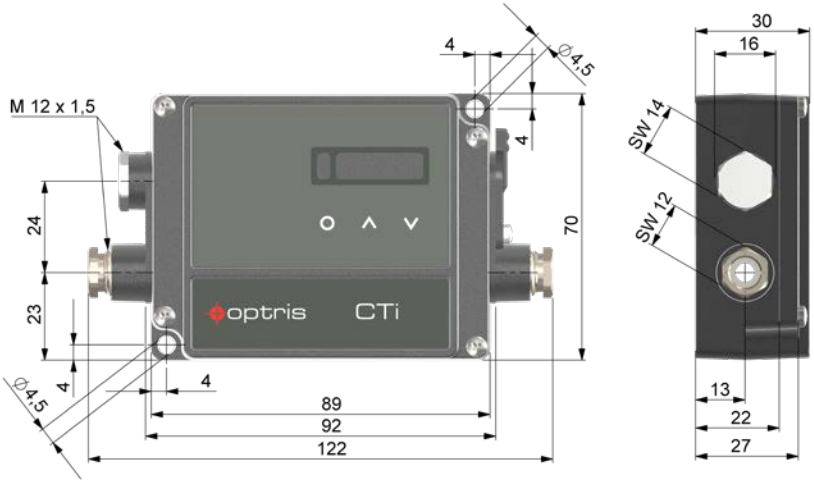
D:S	Optical values											
	0	100	200	300	400	500	600	700	800	900	1000	Distance (mm)
15:1	6.5	11.5	16.6	21.6	26.7	35.0	43.3	51.5	59.8	68.1	76.4	Spotsize (mm)



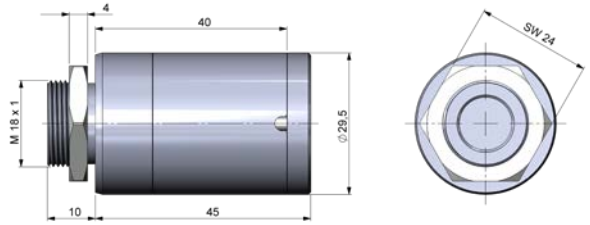
More optical data: https://optris.com/optris-calculator/

Dimensions (in mm)

Electronics



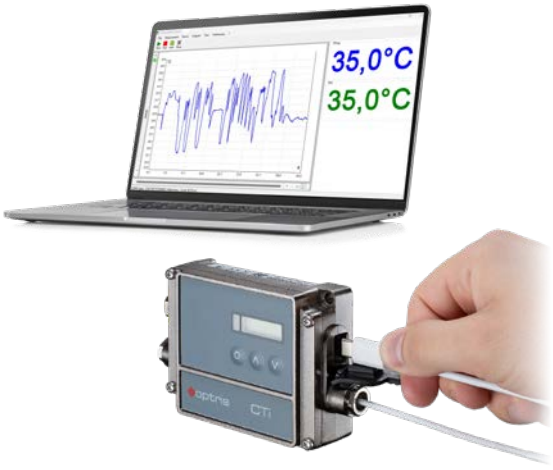
Sensing head
with Massive housing



Software / App



https://optris.com/software



Specifications are subject to change without notice · CTi P3-DS-EN2026-09_A