

Precise non-contact temperature measurement from $-40\text{ }^{\circ}\text{C}$ to $975\text{ }^{\circ}\text{C}$ in rough environmental conditions

Features:

- The new infrared thermometer for hot environmental temperatures up to $250\text{ }^{\circ}\text{C}$ without any need of cooling
- A variety of applications in dryers, ovens, heat treatment lines in the metal and glass industry, paper, plastic and textile manufacturing and semiconductor processing in the temperature range of $-40\text{ }^{\circ}\text{C}$ to $975\text{ }^{\circ}\text{C}$ and a response time up from 100 ms
- Selectable 10:1 or 2:1 optics, compact sensor head size
- Narrow beam optics allows oblique aiming to avoid material thickness dependent temperature readings
- Monitor box for programming and temperature display
- Analog outputs 0/4–20 mA, 0–5/10 V, thermocouple type K or J and integrated digital interfaces (optional) Profibus DP, USB, RS232, RS485 or CAN



General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	$-20\text{ }^{\circ}\text{C}$... $250\text{ }^{\circ}\text{C}$ (sensing head) $0\text{ }^{\circ}\text{C}$... $85\text{ }^{\circ}\text{C}$ (electronics)
Storage temperature	$-40\text{ }^{\circ}\text{C}$... $250\text{ }^{\circ}\text{C}$ (sensing head) $-40\text{ }^{\circ}\text{C}$... $85\text{ }^{\circ}\text{C}$ (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 (sensing head, without massive housing) 420 g (electronics)

Electrical specifications

Outputs / analog	Channel 1: 0/4–20 mA, 0–5/10 V, thermocouple J,K channel 2: sensing head temperature ($-40\text{ }^{\circ}\text{C}$... $250\text{ }^{\circ}\text{C}$ as 0–5 V or 0–10 V), alarm output
Alarm output	24 V/50 mA (open-collector)
Optional	Relay: 2 x 60 V DC/ 42 V AC _{eff} : 0.4 A; optically isolated
Outputs / digital	USB, RS232, RS485, CAN, Profibus DP, Ethernet (optional)
Output impedances	mA max. 500 Ω (with 5–36 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	3 m (standard), 8 m, 15 m
Power supply	8–36 V DC
Current draw	Max. 100 mA

Measurement specifications

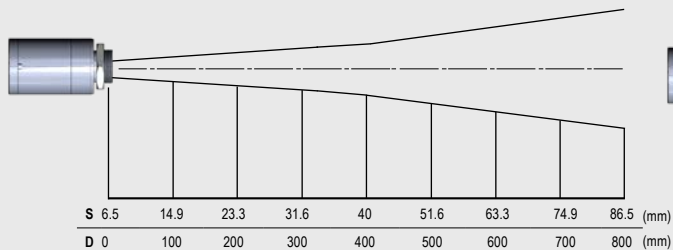
Temperature range (scalable via programming keys or software)	$-40\text{ }^{\circ}\text{C}$... $975\text{ }^{\circ}\text{C}$
Spectral range	8–14 μm
Optical resolution (90 % energy)	10:1 2:1
System accuracy ²⁾ (at ambient temperature $23 \pm 5\text{ }^{\circ}\text{C}$)	$\pm 1\%$ or $\pm 1.5\text{ }^{\circ}\text{C}^{1)}$
Repeatability ²⁾ (at ambient temperature $23 \pm 5\text{ }^{\circ}\text{C}$)	$\pm 0.5\%$ or $\pm 0.5\text{ }^{\circ}\text{C}^{1)}$
Temperature resolution (NETD)	0.25 K
Response time	100 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

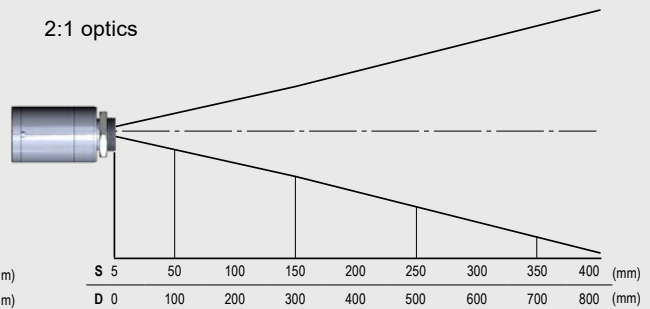
²⁾ At objekt temperatures $\geq 20\text{ }^{\circ}\text{C}$

Optical specifications

10:1 optics

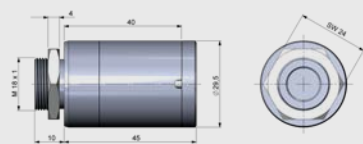


2:1 optics

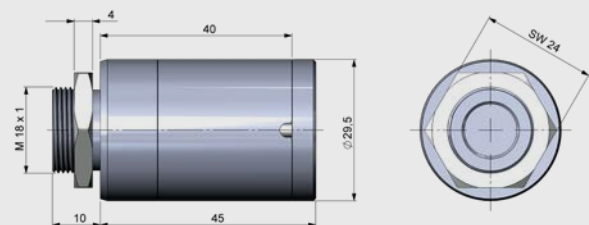


Dimensions

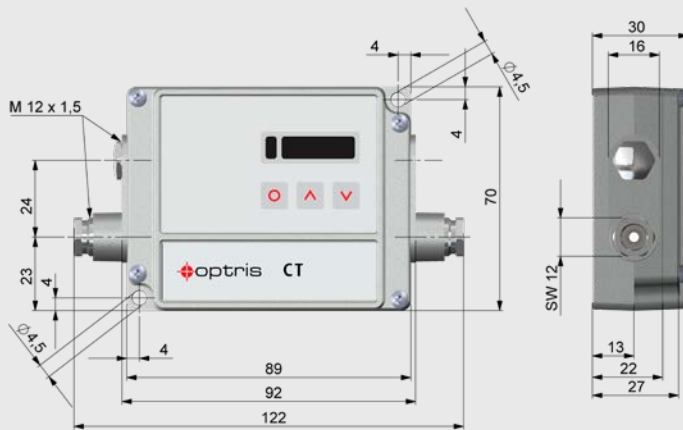
Sensing head



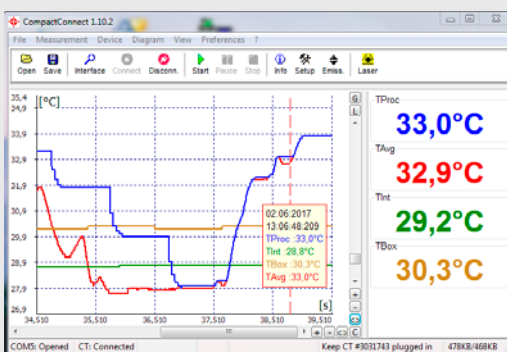
Massive housing



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