optris infrared thermometers

optris® CTlaser P7

Non-contact temperature measurement of plastic materials and glass surfaces from 0 to 710°C

FEATURES

- Accurate temperature measurement of thin plastic film materials like PET, PU, PTFE, PA and glass surfaces
- Double laser aiming marks real spot location and spot size up from 1.6 mm at any distance
- Optics 45:1 with selectable focus, compact sensor head size
- Usable up to 85°C ambient temperature without cooling and automatic laser switch off at 50°C
- Cooling and protection accessories for harsh environmental conditions

General Specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20°C to 85°C (sensing head, 50°C with laser ON) 0°C to 85 (electronics)
Storage temperature	-40 to 85°C (sensing head) -40°C to 85°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	600 g (sensing head) 420 g (electronics)

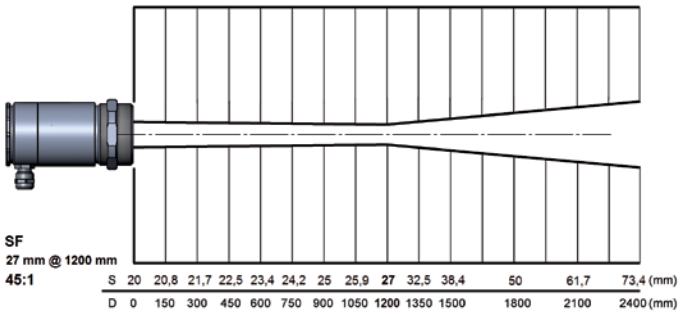
Electrical Specifications	
Outputs/analog	0/4 - 20 mA, 0-5/10 V, thermocouple J, K
Output/alarm	24 V/50 mA (open collector)
Optional	relay: 2 x 60 V DC/42 V AC_{eff}; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 5-36 V DC) mV min. 100 kΩ 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
Current draw	max. 160 mA
Power Supply	8-36 V DC
Laser 635 nm	1 mW, ON/OFF via electronic box or software

Measurement Specifications	
Temperature range (scalable via programming keys or software)	0°C to 710°C
Spectral range	7.9 µm
Optical resolution (90 % energy)	45:1
System accuracy[2] (at ambient temp. 23 ± 5°C)	± 1% or ± 1.5°C [1]
Repeatability (at ambient temp. 23 ± 5°C)	± 0.5% or ± 0.5°C [1]
Temperature resolution (digital)	0.5 K
Exposure time[3] (90% signal)	150 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] ε = 1, response time 1 s
[3] with dynamic adaptation at low signal levels

Optical Specifications

Chart SF optics, D:S = 45:1

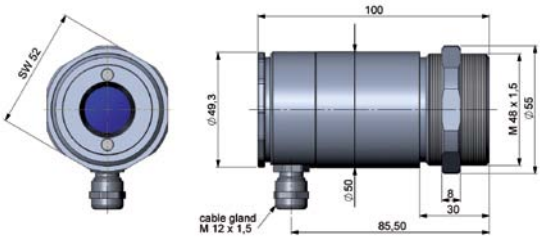


Further optics, D:S = 45:1

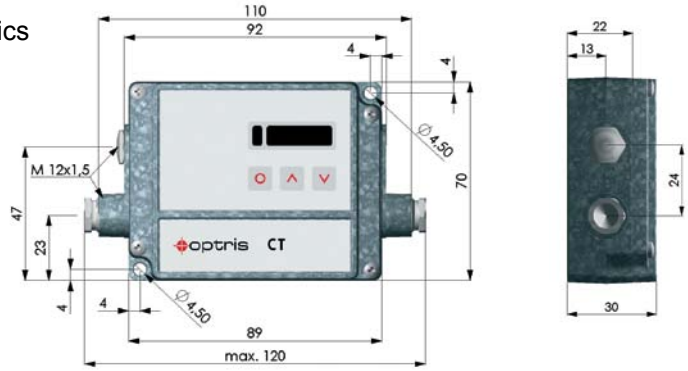
...SF	27,0 mm @ 1250 mm
...CF1	1,6 mm @ 70 mm
...CF2	3,4 mm @ 150 mm
...CF3	4,5 mm @ 200 mm
...CF4	10,0 mm @ 450 mm

Dimensions

Sensing head



Electronics

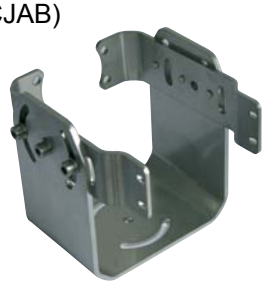


Accessories (examples)

Mounting angle, adjustable in two axes (ACCTLAB)

Cooling housing (ACCJCTL)

Mounting angle for cooling housing, adjustable in two axes (ACCJAB)



Water cooling and air purge for sensing head (ACCTLW + ACCTLAP)

Mounting device for cooling housing (ACCTLRM)

Specifications are subject to change without notice
CTlaserP7-DS-E2013-05-A

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