optris® CTlaser 05M
TECHNICAL DATA

Precise non-contact temperature measurement of liquid metals from 1000 °C to 2000 °C

Features:

- Precise temperature measurement of molten metal
- Decrease of measurement errors at emissivity changes or wrong settings thanks to short wavelength of 525 nm
- Temperature range from 1000 °C to 2000 °C, measuring fields from 1 mm and exposure times from 1 ms
- Suited for ambient temperatures of 85 °C without additional cooling, laser switches of automatically at 50 °C
- Optical resolution 150:1, focus settings scalable
- Double laser visor with 2 laser beams for exact measuring field marking and focussing

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature[1)]	–20 °C ... 85 °C (sensing head, 50 °C with laser ON) –20 °C ... 85 °C (electronics)
Storage temperature	–40 °C ... 85 °C (sensing head) –40 °C ... 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
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 8 – 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
Power Supply	8 – 36 V DC
Current draw	max. 160 mA
Laser 635 nm	1 mW, ON/OFF via electronic box or software

Measurement specifications	
Temperature range (scalable via programming keys or software)	1000 °C ... 2000 °C
Spectral range	525 nm
Optical resolution (90 % energy)	150:1 (3ML)
System accuracy[2)] (at ambient temp. 23 ±5 °C)	±1 % of reading (≤1100 °C) ±(0.3 % of reading +2 °C) (>1100 °C)
Repeatability (at ambient temp. 23 ±5 °C)	±0.5 % of reading (≤1100 °C) ±(0.1 % of reading +1 °C) (>1100 °C)
Temperature resolution	0.2 K
Exposure time[3)]	1 ms (90 %)
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 functioning of the LCD display may be limited in ambient temperatures below 0 °C

[2)] ε = 1, Exposure time 1 s

[3)] With dynamic adaptation at low signal levels

Optris GmbH · Ferdinand-Buisson-Str. 14 · 13127 Berlin · Germany
Phone: +49 (0)30 500 197-0 · Fax: +49 (0)30 500 197-10 · E-mail: info@optris.global · www.optris.global

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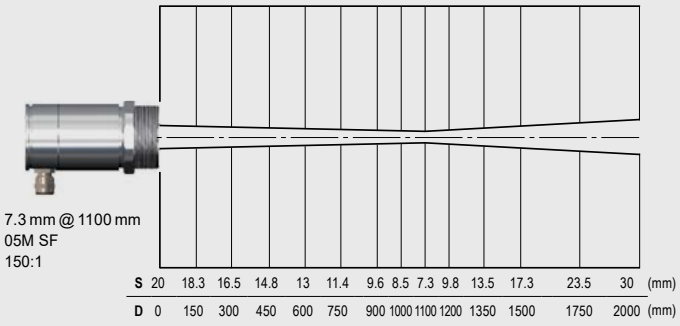
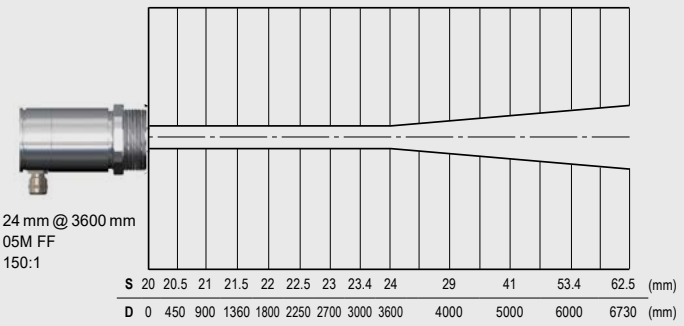
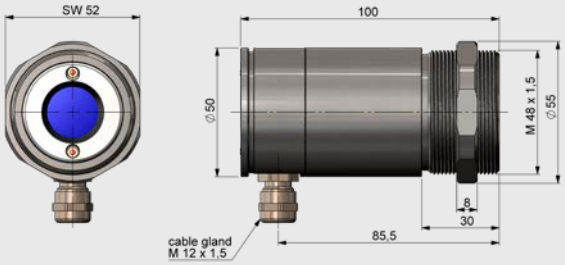
Optical specifications



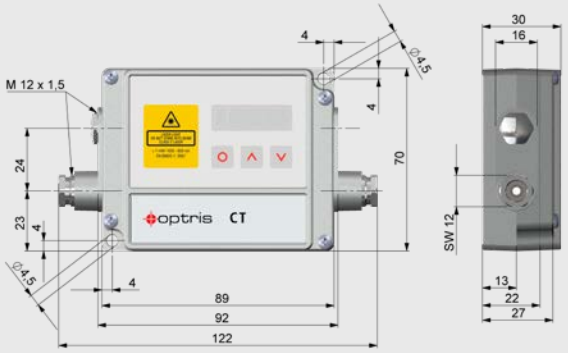


Dimensions

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)