

## optris® CTlaser 05M

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



### FEATURES

- Accurate temperature measurements of liquid metals
- Short measuring wavelength of 525 nm minimizes errors due to emissivity uncertainty and atmospheric vapour effects
- Temperature range from 1000°C to 2000°C, measuring spots up from 1 mm and response time of 1 ms
- Usable up to 85°C ambient temperature without cooling and automatic laser switch off at 50°C
- Industrial accessories available
- Optical resolution up to 150:1 with selectable focus
- Double laser aiming marks real spot location at any distance

#### General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	Sensing head: -20°C to 85°C (50°C with laser ON) Electronics: -20°C to 85°C
Storage temperature	Sensing head: -40°C to 85°C Electronics: -40°C to 85°C
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 <sub>eff</sub> ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
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
Current draw	max. 160 mA
Power Supply	8-36 V DC
Laser 635 nm	1mW, ON/OFF via electronic box or software

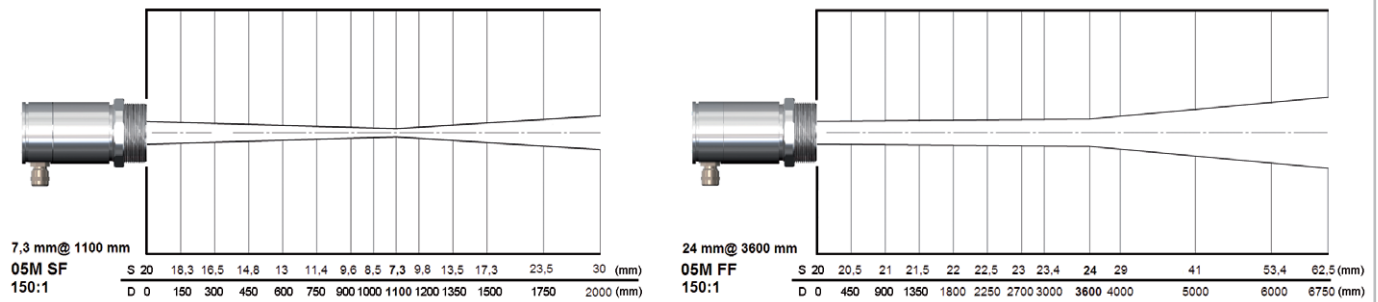
#### Measurement Specifications

Temperature range (scalable via programming keys or software)	1000°C to 2000°C
Spectral range	525 nm
Optical resolution (90% energy)	150:1
System accuracy <sup>1)</sup> (at ambient temp. 23 ±5°C)	± (0.3% of reading + 2°C)
Repeatability (at ambient temp. 23 ±5°C)	± (0.1% of reading + 1°C)
Temperature resolution	0.2 K
Exposure time <sup>2)</sup>	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

<sup>1)</sup>  $\epsilon = 1$ , exposure time 1 s

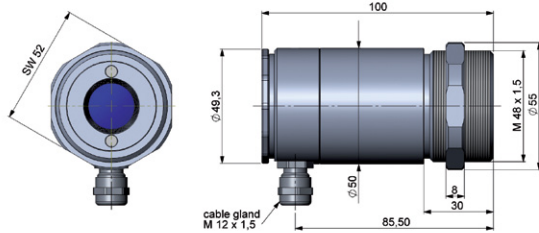
<sup>2)</sup> with dynamic adaptation at low signal levels

## Optical Specifications

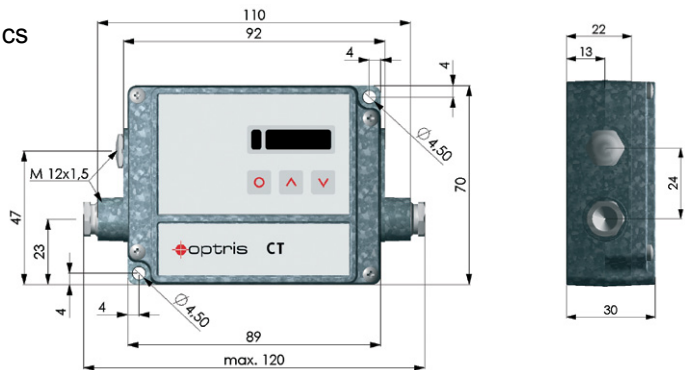


## Dimensions

### 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)



Specifications are subject to change without notice  
CTlaser05M-DS-EZ012-04-A