



### thermoMETER CTLaserM5

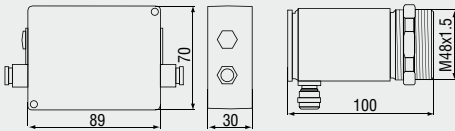
*Precise non-contact temperature measurement of liquid metals from 1000°C to 2000°C*

- Measuring range from 1000°C to 2000°C
- Short measuring wavelength of 525nm minimises errors due to emissivity uncertainty and atmospheric vapour effects
- Response time of 1ms
- Extreme small measurement spot down to 1mm
- For metallurgical processes and for measurements of metal oxides and ceramics
- Optical resolution up to 150:1 with selectable focus
- Up to 85°C ambient temperature without cooling, automatic laser switch off at 50°C
- Double laser aiming marks real spot location at any distance

### Optical specifications thermoMETER CTLaserM5

□ = smallest spot size (mm)

Standard Focus optics															
<b>1L/2L SF</b>	<b>150:1</b>	20	18.3	16.5	14.8	13	11.4	9.6	8.5	7.3	9.8	13.5	17.3	23.5	30
<i>distance in mm</i>		0	150	300	450	600	750	900	1000	1100	1200	1350	1500	1750	2000
Far Focus optics															
<b>1L/2L FF</b>	<b>150:1</b>	20	20.5	21	21.5	22	22.5	23	23.4	24	29	41	53.4	62.5	
<i>distance in mm</i>		0	450	900	1350	1800	2250	2700	3000	3600	4000	5000	6000	6750	



### Product identification

**CTLM - 5 SF150 - C3**

Cable length [3m Standard / 8m / 15m]  
 Focus [SF / FF]  
 Spectral range [525nm]  
 thermoMETER CTLaserM

Model	CTLM-5SF150-C3	
Optical resolution	150:1	
Temperature range <sup>1</sup>	1000 to 2000°C	
Spectral range	525nm	
System accuracy <sup>2</sup>	±(0.3% of reading +2°C)	
Repeatability <sup>2</sup>	±(0.1% of reading +1°C)	
Temperature resolution	0.2°C	
Response time (90% signal) <sup>3</sup>	1ms	
Emissivity/gain <sup>1</sup>	0.100 to 1.000	
Transmissivity/gain <sup>1</sup>	0.100 to 1.000	
Signal processing <sup>1</sup>	Peak hold, valley hold, average; extended hold function with threshold and hysteresis	
Certificate of calibration	optional	
Outputs/analogue	channel 1	0/4 to 20mA, 0 to 5/ 10V, thermocouple J, K
Outputs/analogue optional		relay: 2 x 60 VDC/ 42VAC <sub>eff</sub> ; 0.4A; optically isolated
Alarm output		open-collector (24V/ 50mA)
Outputs/digital	optional	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	current output voltage output	mA max. 500Ω (with 5 - 36VDC) mV min. 100kΩ load impedance; thermocouple 20Ω
Inputs		programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length		3m (standard), 8m, 15m
Power supply		8 to 36VDC; max. 160mA
Laser		class II (635nm), 1mW, ON/OFF via controller or software
Environmental rating		IP 65 (NEMA-4)
Ambient temperature		sensor: -20°C to 85°C (50°C if laser ON) controller: 0°C to 85°C
Storage temperature		sensor: -40°C to 85°C controller: -40°C to 85°C
Relative humidity		10 to 95%, non condensing
Vibration	sensor	IEC 68-2-6: 3G, 11-200Hz, any axis
Shock	sensor	IEC 68-2-27: 50G, 11ms, any axis
Weight		sensor: 600g; controller: 420g

<sup>1</sup> adjustable via controller or software

<sup>2</sup> E=1, response time 1s; ± ambient temperature: 23 ±5°C

<sup>3</sup> with dynamic adaptation at low signal levels

### Accessories page 22 - 23

- ▶ Mounting bracke
- ▶ Air purge collar
- ▶ Rail mount adapter for controller
- ▶ Water cooled housing
- ▶ Interface kit
- ▶ Certificate of calibration



**LASER RADIATION**  
 DO NOT STARE IN THE BEAM  
 CLASS 2 LASER  
 EN60825-1:2002  
 P≤1mW; λ=630-650nm