



thermoMETER CTlaserM1/M2

Innovative precision infrared temperature sensor marking the actual spot size on your measurement target at any distance with 1/1.6 μm wavelength for metal, ceramic and shiny targets

- Measuring range from 250°C to 2200°C
- Special short wavelength (1/1.6 μm) minimises errors caused by low emissivity for accurate temperature measurements on metal, shiny and ceramic targets
- Cooling and protection accessories for harsh environmental conditions
- Real mapping of the actual spot size, with automatic laser protection
- Precision optics (300:1 / 150:1) with different models for a specific focus point
- Extreme small measurement spot down to 0.45mm, only 1ms response time to capture fast events
- Up to 85°C ambient temperature without cooling
- Fully programmable instrument for enhanced signal processing and I/O control
- Separate controller with easy accessible programming keys and multi colour LCD backlit display

Optical specifications thermoMETER CTlaser M1/M2

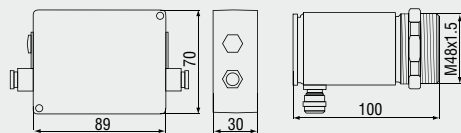
□ = smallest spot size (mm)

Standard Focus optics															
1L/2L SF	150:1	20	18.3	16.5	14.8	13	11.4	9.6	8.5	7.3	9.8	13.5	17.3	23.5	34.6
1H/2H/H1 SF	300:1	20	17.8	15.5	13.2	11	8.6	6.4	4.8	3.7	5.5	8.6	11.8	17	26.6
distance in mm		0	150	300	450	600	750	900	1000	1100	1200	1350	1500	1750	2200
Close Focus optics															
1L/2L CF2	150:1	20	13.7	7.3	1	8	15	22	36	50	64	78	92		
1H/2H/H1 CF2	300:1	20	13.5	7	0.5	7.3	14	21	34.5	48.2	61.8	75.4	89		
1L/2L CF3	150:1	20	15.4	10.7	6	1.3	6.7	12	22.6	33.3	44	55	65		
1H/2H/H1 CF3	300:1	20	15.2	10.3	5.6	0.7	5.9	11	21.2	31.5	41.8	52.1	62.4		
distance in mm		0	50	100	150	200	250	300	400	500	600	700	800		
Close Focus optics															
1L/2L CF4	150:1	20	18.1	16.3	14.4	12.5	10.6	8.7	6.8	4.9	3	5.6	10.7	12.8	21
1H/2H/H1 CF4	300:1	20	18	16	13.8	11.8	9.7	7.6	5.6	3.5	1.4	3.8	8.6	13.3	18
distance in mm		0	50	100	150	200	250	300	350	400	450	500	600	700	800
Far Focus optics															
1L/2L FF	150:1	20	20.5	21	21.5	22	22.5	23	23.4	24	29	41	53.4	62.5	
1H/2H/H1 FF	300:1	20	19	18	17	16	15	14	13.4	12	16.5	24.4	33.4	40	
distance in mm		0	450	900	1350	1800	2250	2700	3000	3600	4000	5000	6000	6750	

Product identification

CTLM - 1 L SF150 - C3

Cable length [3m Standard / 8m / 15m]
 Focus [SF / CF2 / CF3 / CF4 / FF]
 Temperature range [L / H / H1]
 Spectral range [1 μ m / 1.6 μ m]
 thermoMETER CTLaserM



Model	CTLM-1LSF150-C3	CTLM-1HSF300-C3	CTLM-1H1SF300-C3	CTLM-2LSF150-C3	CTLM-2HSF300-C3	CTLM-2H1SF300-C3
Optical resolution	150:1	300:1		150:1	300:1	
Temperature range ¹	485 to 1050°C	650 to 1800°C	800 to 2200°C	250 to 800°C	385 to 1600°C	490 to 2000°C
Spectral range	1 μ m			1.6 μ m		
System accuracy ²	\pm (0.3% of reading + 2°C)					
Repeatability ²	\pm (0.1% of reading + 1°C)					
Temperature resolution	0.1°C	0.2°C		0.1°C	0.2°C	
Response time (90% signal) ³	1ms					
Emissivity/gain ¹	0.100 to 1.100					
Transmissivity/gain ¹	0.100 to 1.000					
Signal processing ¹	Peak hold, valley hold, average; extended hold function with threshold and hysteresis					
Certificate of calibration	optional					
Outputs/analogue	channel 1 optional	0/4 to 20mA, 0 to 5/ 10V, thermocouple J, K relay: 2 x 60 VDC/ 42VAC _{eff} ; 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. 500 Ω (with 5 - 36VDC) mV min. 100k Ω load impedance thermocouple 20 Ω				
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 65°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: 3 G, 11-200Hz, any axis				
Shock	sensor	IEC 68-2-27: 50 G, 11ms, any axis				
Weight		sensor: 600g; controller: 420g				

¹ adjustable via controller or software² E=1, response time 1s; \pm ambient temperature: 23 \pm 5°C³ 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
- ▶ Software CompactConnect
- ▶ Certificate of calibration



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