



thermoMETER CTlaserM3

Innovative precision infrared temperature sensor marking the actual spot size on your measurement target at any distance with 2.3μm wavelength for metal, ceramic and shiny targets

- Measuring range from 50°C to 1800°C
- Special short wavelength (2.3μm) minimizes errors caused by low emissivity for accurate temperature measurements on metal, shiny and ceramic targets down to 50°C
- Cooling and protection accessories for harsh environmental conditions
- Real mapping of the actual spot size, with automatic laser protection
- Precision optics (300:1 / 100:1 / 60:1) with different models for a specific focus point
- 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 color LCD backlit display

Optical specifications thermoMETER CTlaserM3

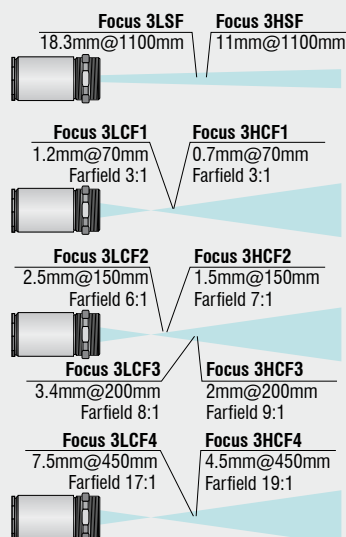
□ = smallest spot size (mm)

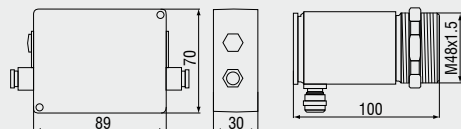
Standard Focus optics

3LSF	60:1	20	20	20	20	20	19	19	19	19	18.3	19	25	30	40	53
3HSF	100:1	20	19	18	17	16	15	14	12	11	11	13	16	20	28	38
3 H1/H2/H3 SF300	300:1	20	17.8	15.5	13.2	11	8.6	6.4	4.8	3.7	3.7	5.5	8.6	11.8	17	26.6
distance (mm)		0	150	300	450	600	750	900	1000	1100	1200	1350	1500	1750	2200	

Close Focus optics

3LCF1	60:1	20	9.3	1.2	10.3	25.5	40.5	56	71	102	132	162	192	223		
3HCF1	100:1	20	9	0.7	9.6	24.4	39.2	54	69	99	128	158	187	217		
distance (mm)		0	40	70	100	150	200	250	300	400	500	600	700	800		
3LCF2	60:1	20	14.2	8.4	2.5	10	17.5	25	40	55	70	85	100			
3HCF2	100:1	20	14	7.7	1.5	8.7	16	23	38	52	66	81	95			
3 H1/H2/H3 CF2	300:1	20	13.5	7	0.45	7.3	14	21	34.5	48.2	61.8	75.4	89			
3LCF3	60:1	20	16	11.7	7.6	3.4	9.3	15.1	27	39	51	62	74			
3HCF3	100:1	20	15.5	11	6.5	2	7.5	13	24	35	46	57	68			
3 H1/H2/H3 CF3	300:1	20	15.2	10.3	5.5	0.6	5.8	11	21.2	31.5	41.8	52.1	62.4			
distance (mm)		0	50	100	150	200	250	300	400	500	600	700	800			





Product identification

CTLM - 3 L SF60 - C3

Fiber cable length [3 m Standard / 8 m / 15 m]
Focus [SF / CF1 / CF2 / CF3 / CF4]
Temperature range [L / H]
Spectral range [2,3 μ m]
thermoMETER CTLaserM3

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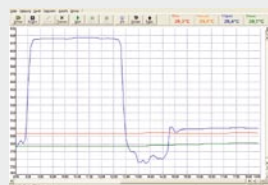
Model	CTLM-3LSF60-C3	CTLM-3HSF100-C3	CTLM-3H1SF300-C3	CTLM-3H2SF300-C3	CTLM-3H3SF300-C3
Optical resolution	60:1	100:1	300:1	300:1	300:1
Temperature range ^{1,2}	50 to 400°C	100 to 600°C	150 to 900°C	200 to 1200°C	400 to 1800°C
Spectral range	2.3 μ m				
System accuracy ³	<0.3% or <2°C				
Repeatability ³	<0.1% or <1°C				
Temperature resolution (digital)	0.1°C				
Response time (90% signal) ⁴	1 ms				
Emissivity/gain ¹	0.100 to 1.100				
Transmissivity/gain ¹	0.100 to 1.100				
Signal processing ¹	peak hold, valley hold, average; extended hold function with threshold and hysteresis				
Certificate of calibration	optional				
Outputs/analogue	channel 1 channel 2	0/4 to 20mA, 0 to 5/ 10V, thermocouple J, K sensor temperature (-40 to 85°C as 0 to 5 V or 0 to 10 V), alarm output			
Outputs/analogue (option)		relay: 2 x 60 VDC / 42 VAC; 0.4 A; optically isolated			
Alarm output		open-collector (24 V / 50 mA)			
Outputs/digital	option	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		3 m (standard), 8 m, 15 m			
Power supply		8 to 36 VDC; max. 160 mA			
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: 3 G, 11-200Hz, any axis			
Shock	sensor	IEC 68-2-27: 50 G, 11 ms, any axis			
Weight		sensor: 600 g; controller: 420 g			

¹ adjustable via controller or software

² target temperature > sensor temperature + 25°C

³ E=1, response time 1s; $\pm$ ambient temperature: 23 $\pm$ 5°C

⁴ with dynamic adaptation at low signal levels



Software CompactConnect

- Display, graphic charting and recording of temperature readings
- Easy system configuration and sensor calibration
- Sophisticated signal processing features
- Programming of input and output channels

Accessories page 22 - 23

- Mounting bracket
- 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≤1mW; λ =630-650nm