

More Precision.



thermoMETER CT ratio 1M

Glass fiber ratio thermometer for noncontact temperature measurement from 700°C to 1800°C



FEATURES

- 5 ms fast temperature measurements of hot objects
- Due to ratio principle insensitive to certain dust and partially observed targets; in general suppression of object emissivity changes
- Rugged sensing head withstands 250°C without cooling
- High optical resolution up to 80:1 with variable focus optics
- Built in laser marks the actual spot size at any distance
- Programmable 1 or 2 color mode

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 250°C (70°C with laser ON) electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 250°C electronics: -40 - 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	fiber cable with head 400g electronics 420 g
Electrical specifications	
Outputs/analog	0/4 - 20 mA, 0 - 5/10 V
Output impedances	mA max. 500 Ω (with 5 - 36 V DC) mV min. 100 k Ω load impedance
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Alarm output	2 x open - collector (24 V/1 A)
Optional	relay: 2 x 60 V DC/42 V AC _{eff} ; 0.4 A; optically isolated
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Glass fiber cable length	2 m (standard), 3 m, 6 m, 10 m, 22 m stainless steel armour, 400 μ m fiber dia
Current draw	max. 160 mA
Power supply	8 - 36 V DC or USB powered
Optical aiming	Laser 635 nm, 1mW, ON/OFF via electronic box or software

Measurement specifications	
Temperature range	700°C - 1800°C
Spectral range	0,7 - 1,1 μ m
Optical resolution (95% Energy) CF	up to 60:1
Optical resolution (95% Energy) SF	up to 80:1
System accuracy ¹⁾ (at ambient temperature 23 \pm 5°C)	\pm (0,5% of reading + 1°C)
Repeatability ¹⁾ (at ambient temperature 23 \pm 5°C)	\pm (0,2% of reading + 1°C)
Temperature resolution (> 900°C)	0,1 K
Exposure time (95% signal) ²⁾	5 ms - 10 s
Slope (adjustable via programming keys or software)	0.800 - 1.200
Emissivity (adjustable via programming keys or software)	0.100 - 1.000
Signal processing (parameter adjustable via programming keys or software, respectively)	1 color / 2 color mode; attenuation monitoring / alarms; peak hold, valley hold, average; extended hold function with threshold and hysteresis

¹⁾ E = 1, response time 1s

²⁾ with dynamic adaptation at low signal levels

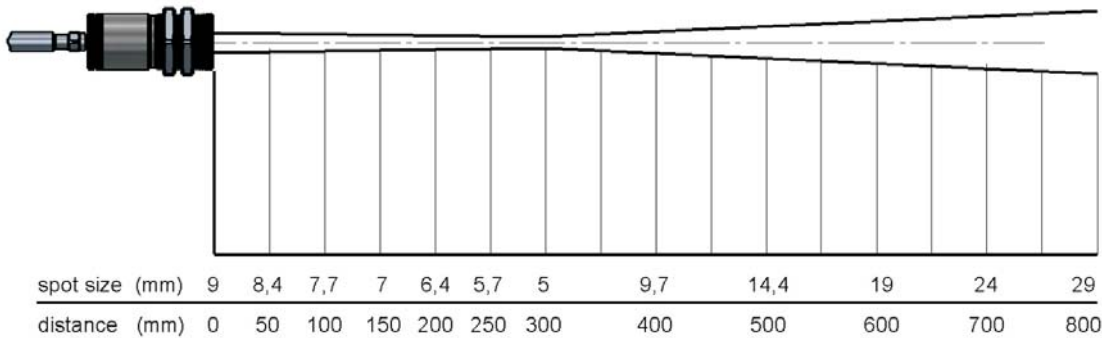
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Optical specification

Variable focus optics - CF-optic								
sensor length (mm)	70	67	63	60	58	57	56	
spot size (mm)	1,3	1,7	2,1	2,8	3,6	4,2	5,0	
focus control @ distance (mm)	65	85	110	150	200	240	300	

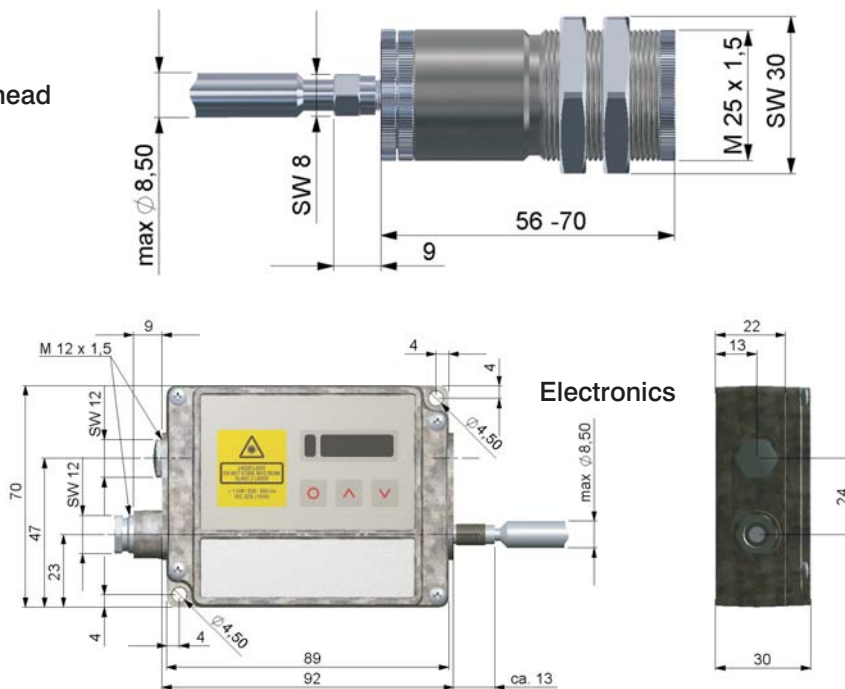
Variable focus optics - SF-optic										
sensor length (mm)	69,5	68,0	66,5	65,0	64,4	64,0	63,5	63,2	63,0	
spot size (mm)	3,0	3,7	5,0	7,2	9,2	12,0	18,0	24,0	31,0	
focus control @ distance (mm)	250	300	400	600	800	1000	1500	2000	2500	

Optical diagram example: CF-optic at 300 mm distance



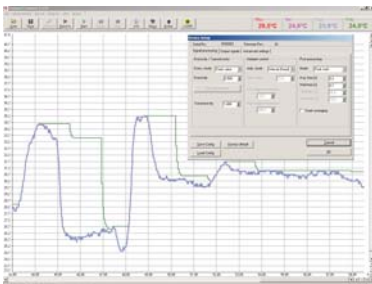
Dimensions

Sensing head



Electronics

CompactConnect Software



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 5 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- The software CompactConnect allows to customize the sensor to application needs of the user

MICRO-EPSILON

info@micro-epsilon.com
www.micro-epsilon.com

info@micro-epsilon.co.uk
www.micro-epsilon.co.uk

info@micro-epsilon.us
www.micro-epsilon.us

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