

# More Precision.



## optris® CT laser MT

Non-contact temperature measurement through flames from 200°C to 1400°C



### FEATURES

- Accurate temperature measurement through flames in the range of 200°C - 1400°C to monitor workpieces inside ovens (heated with fire), to measure inside chemical reactors and to observe the brick temperature in combustion chambers
- Double laser aiming marks real spot location and spot size up from 1.6 mm at any distance
- Usable in all modern applications where "size of spot matters"
- Optics 45:1 with selectable focus, compact sensor head size
- Usable up to 85°C ambient temperature without cooling and automatic laser switch off at 50°C
- Cooling and protection accessories for harsh environmental conditions

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 85°C (50°C with laser ON) electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 85°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	sensing head 600 g electronics 420 g
Electrical specifications	
Outputs/analog	channel 1: 0/4 - 20 mA, 0 - 5/10 V, thermocouple J, K
	channel 2: sensing head temperature (-20 - 85°C as 0 - 5 V or 0 - 10 V), alarm output
Alarm output	Open - collector (24 V / 50 mA)
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. 500Ω (with 8 - 36 V DC)
	mV min. 100 kΩ load impedance thermocouple 20Ω
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)	200 - 1400°C
Spectral range	3.9 μm
Optical resolution (90 % energy)	45:1
Selectable focus	CF1 1.6 mm @ 70 mm
	CF2 3.4 mm @ 150 mm
	CF3 4.5 mm @ 200 mm
	CF4 10 mm @ 450 mm
	SF 27 mm @ 1200 mm
System accuracy <sup>1)</sup> (at ambient temperature 23 ±5°C)	±1% or ±1.5°C <sup>2)</sup>
Repeatability (at ambient temperature 23 ±5°C)	±0.5% or ±0.5°C <sup>2)</sup>
Temperature resolution (NETD)	0.1°C
Response time <sup>3)</sup> (90 % signal)	10 ms
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.000
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis

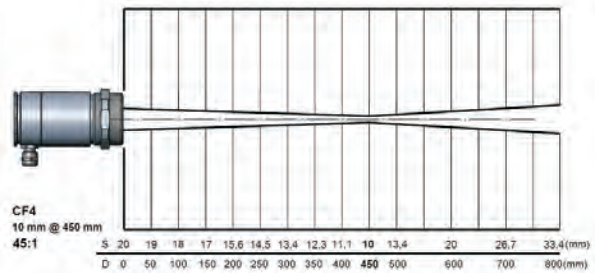
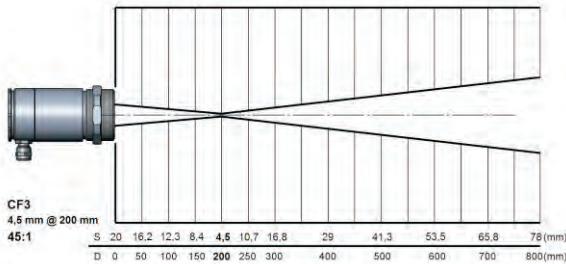
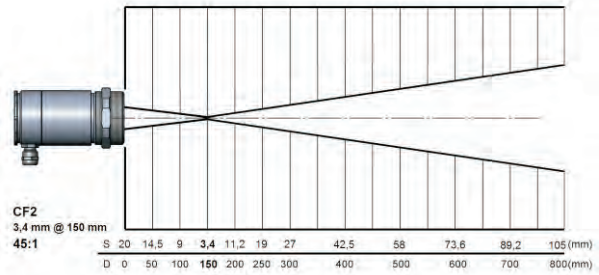
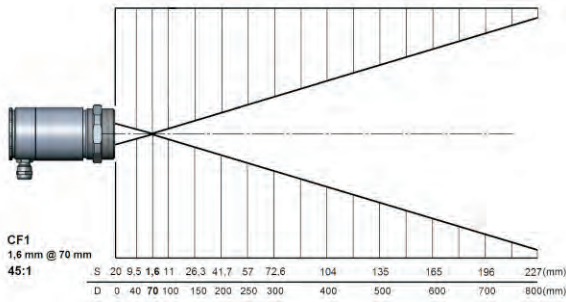
<sup>1)</sup> ε = 1, response time 1s

<sup>2)</sup> whichever is greater

<sup>3)</sup> with dynamic adaption at low signal levels

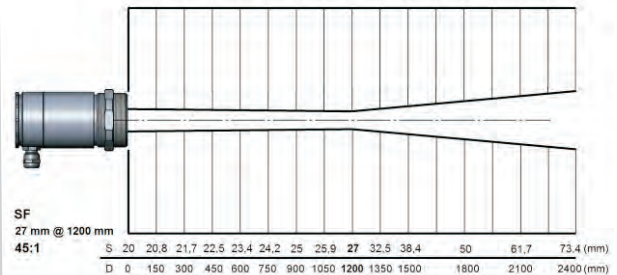
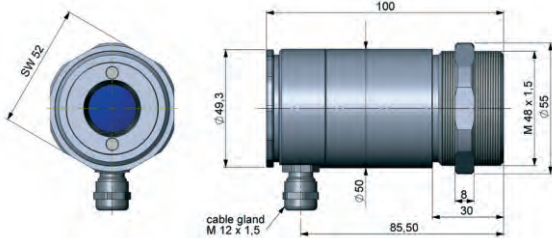
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## Optical specifications

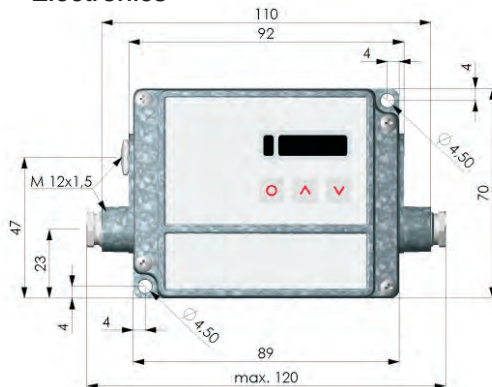


## Dimensions

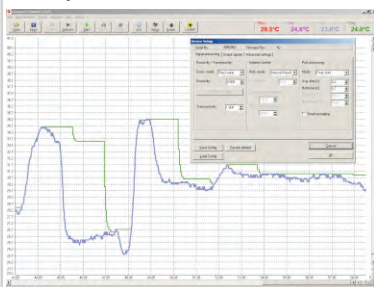
### Sensing head



### 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 1 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- The software CompactConnect allows to customize the sensor to application needs of the user