optris CSvision R2M

TECHNICAL DATA



Ratio thermometer with motorized focus, patented crosshair laser and video sighting for non-contact temperature measurement from 250 °C to 1400 °C



- Rugged and compact ratio thermometer with motorized focus and excellent optical resolution of 75:1
- · Innovative video sighting and crosshair laser for easy sensor alignment under all viewing conditions
- Switchable two-step brightness reduction filter for best viewing conditions on bright objects
- Easy on site sensor setup, video alignment and real-time process monitoring with IRmobile Android app or CompactPlus Connect software
- Integrated Smart Ratio Mode (SRM) for demanding applications with adaptive slope requirements
- Usable up to 60 °C ambient temperature without cooling



Environmental rating	IP 65 (NEMA-4)
Ambient temperature	0 60 °C
Storage temperature	-40 85 °C
Relative humidity	10 – 95 %, non-condensing
Vibration	IEC 60068-2-6 (sinus shaped) IEC 60068-2-64 (broadband noise)
Shock	IEC 60068-2-27 (25G and 50G)
Weight	518 g

Electrical specifications

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Outputs analog	2x 0/4 – 20 mA				
Output impedances	max. 500 Ω (with 8 – 30 V DC)				
Digital Interfaces	USB, RS485 ¹⁾ , Modbus RTU ¹⁾				
I/O-Pin	Programmable in-/output: selectable as alarm output (open collector 24 V/ 1 A), input for triggered signal output and peak hold function or as analog input for external emissivity or slope adjustment				
Power supply	USB powered or 8 – 30 V DC ²⁾				
Power consumption	2.5 W (USB) or 4 W (8 – 30 V DC)				
Aiming laser	Laser 635 nm/ <1 mW/ ON/OFF via software / app				

Measurement specifications

Temperature ranges	1-Channel 2-Channel 250 1400 °C (R2ML)						
Spectral range	1.35 – 1.75 µm						
Optical resolution (90 % energy)	75:1						
Motorized focus	350 mm to infinity; infinitely adjustable						
System accuracy ³⁾ (at $T_{Amb} = 23 \pm 5 \degree C$)	$\pm (0.5\% \text{ of reading } + 2 ^{\circ}\text{C})$						
Repeatability ³⁾ (at $T_{Amb} = 23 \pm 5 \degree C$)	±0.3% of reading						
Temperature resolution	0.1 K						
Response time (90 % signal) ⁴⁾	1 ms – 10 s						
Slope (adjustable via app / software or analog input)	0.700 – 1.300						
Emissivity (adjustable via app / software or analog input)	0.050 – 1.100						
Signal processing (parameter adjustable via app / software)	1 color / 2 color mode/ attenuation monitoring/ alarms/ peak hold, valley hold, average/ extended hold function with threshold and hysteresis, Smart Ratio Mode (SRM)						
Software / App	optris CompactPlus Connect / IRmobile						

Specifications visual camera

Optical resolution	1280 x 960 pixels
FOV (HxV)	8° x 6°
Maximum image transfer rate	30 fps

¹⁾ Optional: electrically isolated

³⁾ ϵ = 1. response time 1 s; no attenuation / Specification valid for 5 - 95% of measurement range

⁴⁾ With dynamic adaptation to low signal levels

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Optical parameters

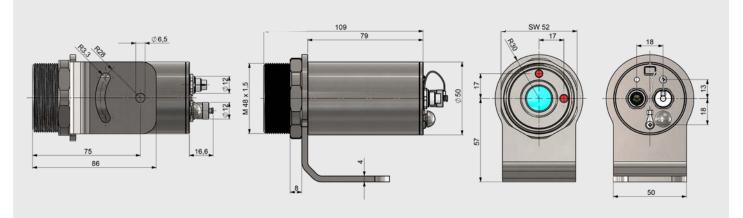
The vario optics of the CSvision allows a smooth focusing of the optics to the desired distance.

The following table shows examples of measurement distances and the corresponding measurement spot sizes.

Alternatively you can use the <u>optris Spot size calculator</u> or the <u>optris optic calculator app</u>.

2ML SFV (D:S = 75:1)									
Spot size	mm	4.7	6.7	10	13.3	20	26.7	33.3	66.7
Measurement distance	mm	350	500	750	1000	1500	2000	2500	5000

Dimensions in mm

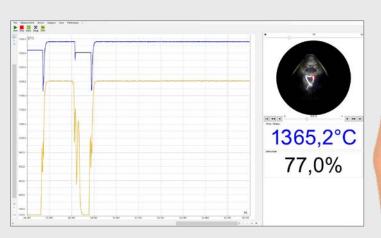


Software / App



Built-in USB interface for an easy setup via smartphone and IRmobile app.





Software CompactPlus Connect (included) for extended setup on Windows computers.



The innovative two-step brightness reduction filter uncovers tiny details: here of a filament.

Zoom and rotate the image with just one finger.

That's precise alignment made easy.