optris CSvision R2M
TECHNICAL DATA

optris
infrared measurements

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

Features:

- 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

General specifications

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

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

	1-Channel	2-Channel
Temperature ranges	250 ... 1400 °C	300 ... 1400 °C (R2ML)
Spectral range	1.35 – 1.75 µm	
Optical resolution (90 % energy)	75:1	
Motorized focus	CFV: 200 mm to 400 mm, SFV: 350 mm to infinity; infinitely adjustable	
System accuracy [3] (at T_{Amb} = 23 ± 5 °C)	± (0.5 % of reading + 2 °C)	
Repeatability [3] (at T_{Amb} = 23 ± 5 °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 (H x V)	8° x 6°
Maximum image transfer rate	30 fps

1) Optional: electrically isolated
2) USB powered unit works only in digital communication mode
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 tables show examples of measurement distances and the corresponding measurement spot sizes

The sensors are available in two versions:
Standard-focus vario optics (SFV):
adjustable 350 mm till infinity
Close-focus vario optics (CFV):
adjustable 200 mm till 400 mm

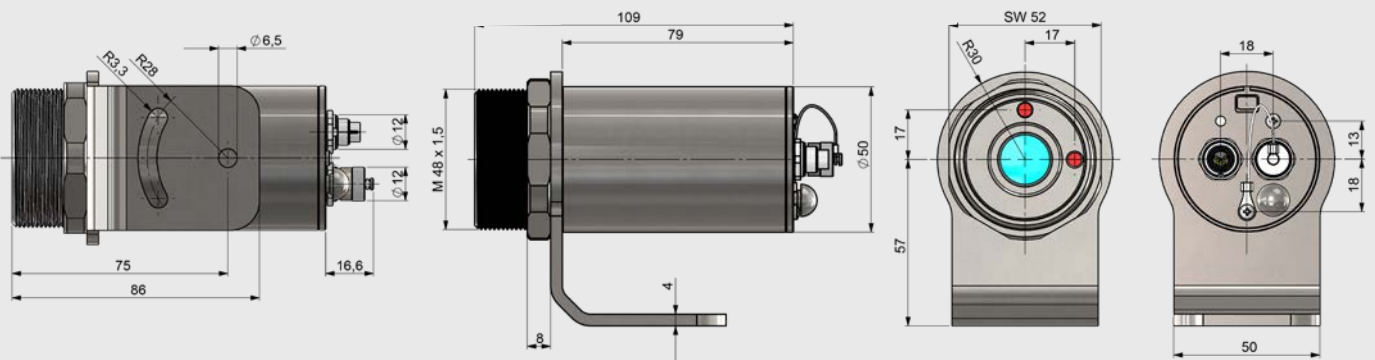Alternatively you can use the optris Spot size calculator or the optris optic calculator app.

2ML CFV (D:S = 75:1)

Spot size	mm	2.7	3.3	4	4.7	5.3
Measurement distance	mm	200	250	300	350	400

2ML SFV (D:S = 75:1)

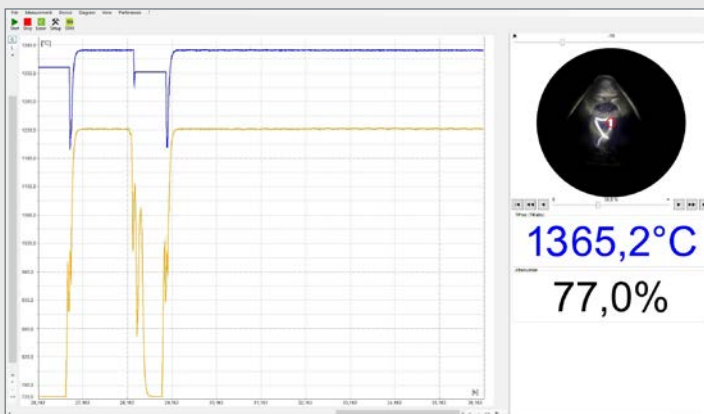| Spot size	mm	4.7	6.7	10	13.3	20	26.7	33.3	66.7
Measurement distance	mm	350	500	750	1000	1500	2000	2500	5000

Dimensions in mm

Software / App

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

GET IT ON Google Play

1365,2°C
77,0%

Software CompactPlus Connect (included) for extended setup on Windows computers.
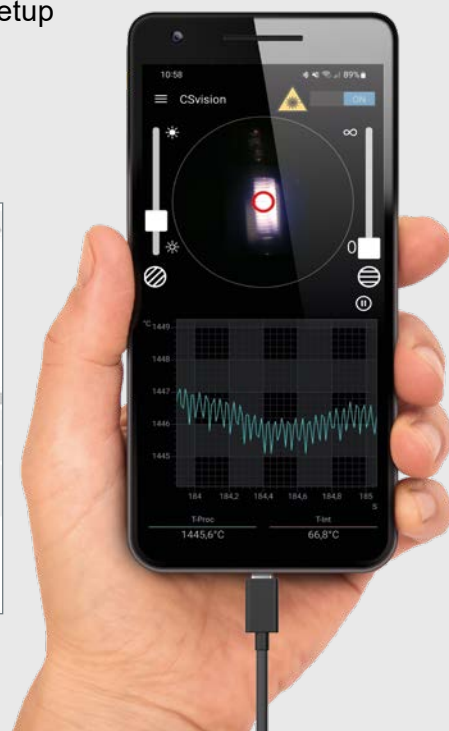
The innovative **two-step brightness reduction filter** uncovers tiny details: here of a filament.

Zoom and rotate the image with just **one finger.**

That´s precise alignment made easy.