

**Infrared thermometer  
for measurement of  
smallest temperature  
differences of 0.025 °C**

**Features:**

- New benchmark in low noise IR pyrometry for the measurement of smallest temperature differences of 0.025 °C
- Touches the physical limits ensuring low ambient temperature drift
- Green LED alarm indication, aiming support, self diagnostic or temperature code indication
- Scalable analog output: 0 – 5/10 V or 4 – 20 mA (two-wire); additional simultaneous alarm output
- Easy programming via smartphone app (IR mobile) or Windows software (Compact Connect)
- Stainless steel housing with compact dimensions



**General specifications**

|                      |                                                                                                                       |
|----------------------|-----------------------------------------------------------------------------------------------------------------------|
| Environmental rating | IP 65 (NEMA-4)                                                                                                        |
| Ambient temperature  | –20 ... 75 °C (sensing head)<br>–20 ... 80 °C (electronics)<br>–20 ... 75 °C (electronics / mA version) <sup>1)</sup> |
| Storage temperature  | –40 ... 85 °C                                                                                                         |
| Relative humidity    | 10–95 %, non condensing                                                                                               |
| Vibration            | IEC 60068-2-6 (sinus shaped)<br>IEC 60068-2-64 (broadband noise)                                                      |
| Shock                | IEC 60068-2-27 (25 G and 50 G)                                                                                        |
| Weight               | 200 g                                                                                                                 |

**Electrical specifications**

|                                                           |                                                                                                                                                                                     |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output / analog                                           | 0 – 5 or 10 V or 4 – 20 mA                                                                                                                                                          |
| Output / alarm                                            | 0 – 30 V / 50 mA (open collector)<br>(mA version: 500 mA)                                                                                                                           |
| Output / digital                                          | Uni-/ bidirectional, 9.6 kBaud,<br>0/3 V digital level, USB (optional)                                                                                                              |
| LED functions                                             | Alarm indication, automatic aiming support,<br>self diagnostic, temperature indication<br>(via temp. code)                                                                          |
| Input (0 – 10 V)                                          | Programmable functional input for external<br>emissivity setting <sup>2)</sup> / ambient temperature<br>adjustment <sup>2)</sup> , triggered signal output or peak-hold<br>function |
| Cable length<br>head – electronics:<br>after electronics: | 0.5 m (standard)<br>0.5 m (standard), 3 m, 6 m                                                                                                                                      |
| Power supply                                              | 5–30 V DC                                                                                                                                                                           |
| Current draw                                              | 9 mA (mV version)                                                                                                                                                                   |

**Measurement specifications**

|                                                                           |                                                                                          |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Temperature range                                                         | –20 ... 150 °C                                                                           |
| Spectral range                                                            | 8–14 µm                                                                                  |
| Optical resolution<br>(90 % energy)                                       | 15:1                                                                                     |
| CF optics (optional)                                                      | 3.4 mm @ 50 mm                                                                           |
| System accuracy                                                           | ±1.0 % or ±1.0 °C <sup>3)</sup> , <sup>4)</sup>                                          |
| Repeatability                                                             | ±0.3 % or ±0.3 °C <sup>3)</sup> , <sup>4)</sup>                                          |
| Temperature coefficient                                                   | ±0.05 K/K or ±0.05 % K <sup>5)</sup>                                                     |
| NETD                                                                      | 0.025 K <sup>6)</sup>                                                                    |
| Response time                                                             | 150 ms                                                                                   |
| Emissivity / gain<br>(adjustable via software)                            | 0.100 – 1.100                                                                            |
| Transmissivity<br>(adjustable via software)                               | 0.100 – 1.100                                                                            |
| Signal processing (parameter<br>adjustable only via optional<br>software) | Peak hold, valley hold, average; extended hold<br>function with threshold and hysteresis |
| Dimensions of electronics                                                 | Length: 35 mm<br>Diameter: 12 mm                                                         |
| Software                                                                  | optris® Compact Connect (Windows)<br>IR mobile (Android)                                 |

<sup>1)</sup> mA version: For Vcc (supply voltage) 5 – 12 V DC/ the electronic's max. ambient temperature is 65 °C at Vcc >12 V DC

<sup>2)</sup> mV version only

<sup>3)</sup> Object temperature >20 °C; whichever is greater

<sup>4)</sup> At ambient temperature 23 ±5 °C

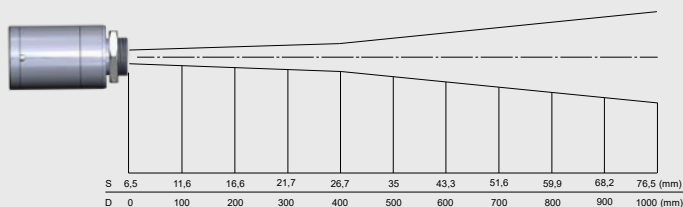
<sup>5)</sup> At ambient temperatures <18 °C and >28 °C; whichever is greater

<sup>6)</sup> At time constant of 150 ms and T<sub>Obj</sub> 20 °C

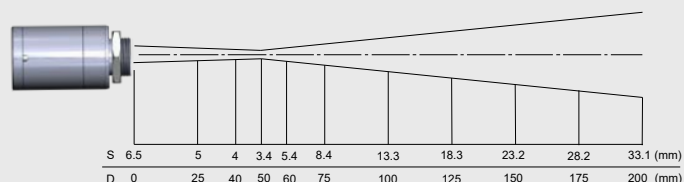
# optris CSmicro LT HS

## Optical parameters

SF optics, D:S = 15:1

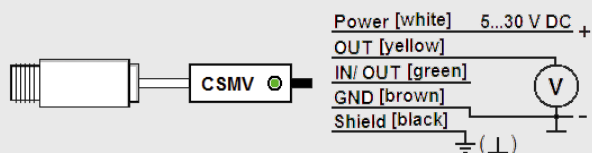


Integrated CF optics, D:S = 15:1 (far field = 5:1)

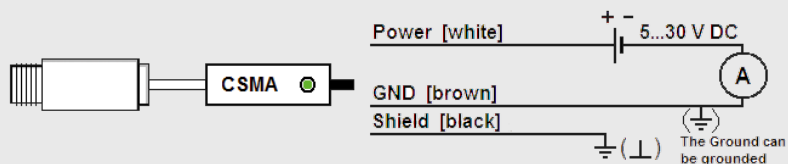


## Connections

Connection mV version



Connection mA version

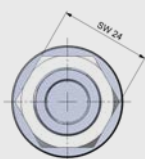
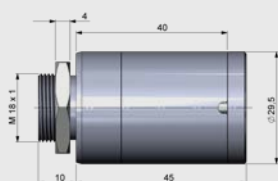


The CSmicro can be connected to a smartphone via the IR app connector

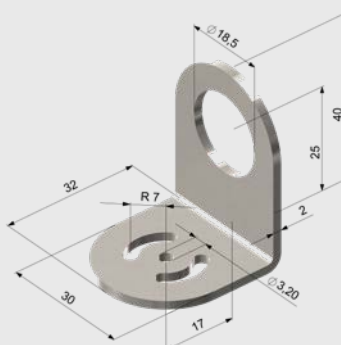


## Dimensions

Dimensions CSmicro LT HS



Mounting bracket, fixed (ACCTFBMH)



Air purge with integrated CFoptics (ACCTAPMH)

