

## Two-wire infrared thermometer for temperature measurement of glass from 200 °C to 1650 °C

### Features:

- Accurate glass temperature measurements on flat glass lines, container glass machines, bulb manufacturing and car glass finishing
- Measuring spots up from 1.6 mm and response times up from 30 ms
- Standard two-wire interface for reliable data transfer and easy integration into a PLC
- Innovative double-laser sighting for exact marking of measurement targets
- Fast sensor parameterisation and real-time measurement via USB
- Dependable in ambient temperatures up to 85 °C without additional cooling



### General specifications

|                      |                                                                                  |
|----------------------|----------------------------------------------------------------------------------|
| Environmental rating | IP 65 (NEMA-4) front mountable at vacuum processes (up to 10 <sup>-3</sup> mbar) |
| Ambient temperature  | -20 °C ... 85 °C<br>(50 °C with laser ON)                                        |
| Storage temperature  | -40 °C ... 85 °C                                                                 |
| Relative humidity    | 10 – 95 %, non-condensing                                                        |
| Vibration            | IEC 68-2-6: 3 G, 11 – 200 Hz, any axis                                           |
| Shock                | IEC 68-2-27: 50 G, 11 ms, any axis                                               |
| Weight               | 600 g                                                                            |

### Electrical specifications

|                                          |                                                                      |
|------------------------------------------|----------------------------------------------------------------------|
| Output / analog                          | 4 – 20 mA                                                            |
| Loop resistance                          | Max. 1000 Ω <sup>1)</sup>                                            |
| Output / alarm                           | 0 – 30 V / 500 mA<br>(open collector)                                |
| Output / digital                         | Uni-/ bidirectional, 9.6 kBaud,<br>0/3 V digital level, USB optional |
| Cable length<br>(connector version only) | 3 m / 8 m / 15 m                                                     |
| Current draw (laser)                     | 45 mA at 5 V<br>20 mA at 12 V<br>12 mA at 24 V                       |
| Power supply                             | 5 – 30 V DC                                                          |

### Measurement specifications

|                                                          |                                                                                          |
|----------------------------------------------------------|------------------------------------------------------------------------------------------|
| Temperature range<br>(scalable via software)             | 200 °C ... 1650 °C                                                                       |
| Spectral range                                           | 5.0 µm                                                                                   |
| Optical resolution<br>(90 % energy)                      | 45:1                                                                                     |
| System accuracy<br>(at T <sub>amb</sub> = 23 ± 5 °C)     | ± 1 % or ± 1 °C <sup>2)</sup>                                                            |
| Repeatability<br>(at T <sub>amb</sub> = 23 ± 5 °C)       | ± 0.5 or ± 0.5 °C <sup>2)</sup>                                                          |
| Temperature resolution                                   | 0.1 K                                                                                    |
| Response time (90 % signal)                              | 30 ms                                                                                    |
| Emissivity/ Gain (adjustable<br>via sensor or software)  | 0.100 – 1.100                                                                            |
| IR window correction<br>(adjustable via software)        | 0.100 – 1.000                                                                            |
| Signal processing (parameter<br>adjustable via software) | Peak hold, valley hold, average; extended hold<br>function with threshold and hysteresis |
| Software                                                 | optris® Compact Connect                                                                  |

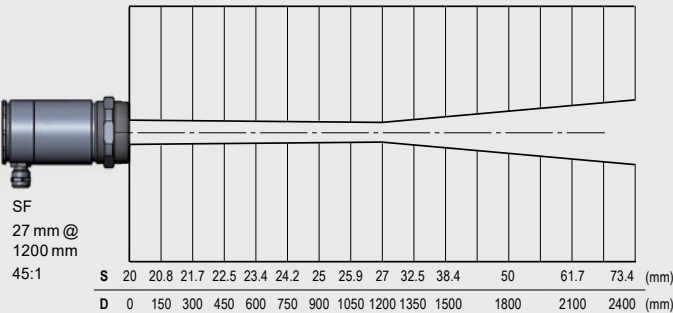
<sup>1)</sup> In dependence on supply voltage

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

# optris® CSlaser G5HF

## Optical parameters

Chart of SF optics, D:S = 45:1

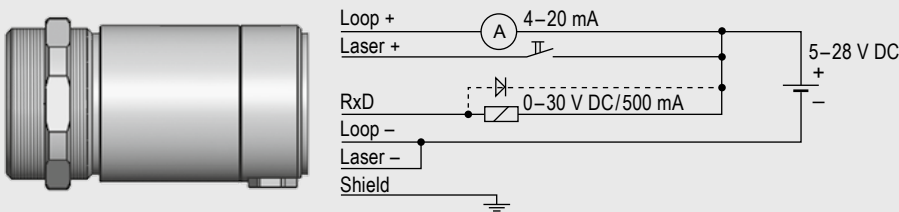


Further optics, D:S = 45:1

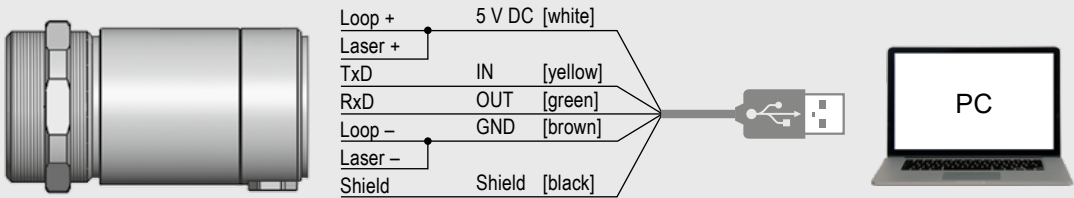
|         |                   |
|---------|-------------------|
| ... SF  | 27.0 mm @ 1250 mm |
| ... CF1 | 1.6 mm @ 70 mm    |
| ... CF2 | 3.4 mm @ 150 mm   |
| ... CF3 | 4.5 mm @ 200 mm   |
| ... CF4 | 10.0 mm @ 450 mm  |

## Connections

Analog mode of operation

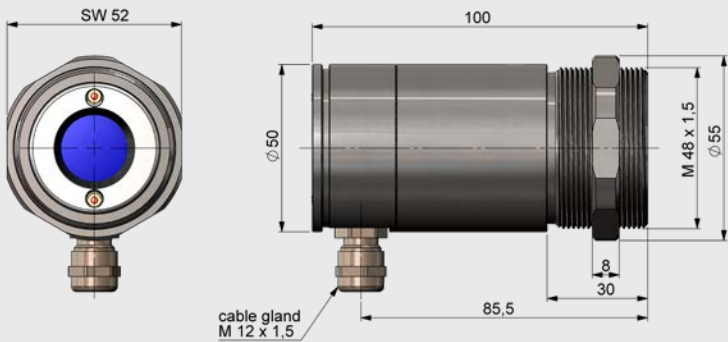


Digital mode of operation



## Dimensions

Dimensions CSlaser G5HF



Electrical connections / emissivity adjustment (sensor back side)

