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<b>Ангарск</b> (3955)60-70-56	<b>Калуга</b> (4842)92-23-67	<b>Орел</b> (4862)44-53-42	<b>Тамбов</b> (4752)50-40-97
<b>Архангельск</b> (8182)63-90-72	<b>Кемерово</b> (3842)65-04-62	<b>Оренбург</b> (3532)37-68-04	<b>Тверь</b> (4822)63-31-35
<b>Астрахань</b> (8512)99-46-04	<b>Киров</b> (8332)68-02-04	<b>Пенза</b> (8412)22-31-16	<b>Тольятти</b> (8482)63-91-07
<b>Барнаул</b> (3852)73-04-60	<b>Коломна</b> (4966)23-41-49	<b>Петрозаводск</b> (8142)55-98-37	<b>Томск</b> (3822)98-41-53
<b>Белгород</b> (4722)40-23-64	<b>Кострома</b> (4942)77-07-48	<b>Пермь</b> (342)205-81-47	<b>Тула</b> (4872)33-79-87
<b>Благовещенск</b> (4162)22-76-07	<b>Краснодар</b> (861)203-40-90	<b>Ростов-на-Дону</b> (863)308-18-15	<b>Тюмень</b> (3452)66-21-18
<b>Брянск</b> (4832)59-03-52	<b>Красноярск</b> (391)204-63-61	<b>Рязань</b> (4912)46-61-64	<b>Ульяновск</b> (8422)24-23-59
<b>Владивосток</b> (423)249-28-31	<b>Курск</b> (4712)77-13-04	<b>Самара</b> (846)206-03-16	<b>Улан-Удэ</b> (3012)59-97-51
<b>Владикавказ</b> (8672)28-90-48	<b>Курган</b> (3522)50-90-47	<b>Саранск</b> (8342)22-96-24	<b>Уфа</b> (347)229-48-12
<b>Владимир</b> (4922)49-43-18	<b>Липецк</b> (4742)52-20-81	<b>Санкт-Петербург</b> (812)309-46-40	<b>Хабаровск</b> (4212)92-98-04
<b>Волгоград</b> (844)278-03-48	<b>Магнитогорск</b> (3519)55-03-13	<b>Саратов</b> (845)249-38-78	<b>Чебоксары</b> (8352)28-53-07
<b>Вологда</b> (8172)26-41-59	<b>Москва</b> (495)268-04-70	<b>Севастополь</b> (8692)22-31-93	<b>Челябинск</b> (351)202-03-61
<b>Воронеж</b> (473)204-51-73	<b>Мурманск</b> (8152)59-64-93	<b>Симферополь</b> (3652)67-13-56	<b>Череповец</b> (8202)49-02-64
<b>Екатеринбург</b> (343)384-55-89	<b>Набережные Челны</b> (8552)20-53-41	<b>Смоленск</b> (4812)29-41-54	<b>Чита</b> (3022)38-34-83
<b>Иваново</b> (4932)77-34-06	<b>Нижний Новгород</b> (831)429-08-12	<b>Сочи</b> (862)225-72-31	<b>Якутск</b> (4112)23-90-97
<b>Ижевск</b> (3412)26-03-58	<b>Новокузнецк</b> (3843)20-46-81	<b>Ставрополь</b> (8652)20-65-13	<b>Ярославль</b> (4852)69-52-93
<b>Иркутск</b> (395)279-98-46	<b>Ноябрьск</b> (3496)41-32-12	<b>Сургут</b> (3462)77-98-35	
<b>Казань</b> (843)206-01-48	<b>Новосибирск</b> (383)227-86-73		
	<b>Киргизия</b> (996)312-96-26-47	<b>Россия</b> (495)268-04-70	<b>Казахстан</b> (772)734-952-31

## 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



### Measurement specifications

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

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

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

### 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 (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

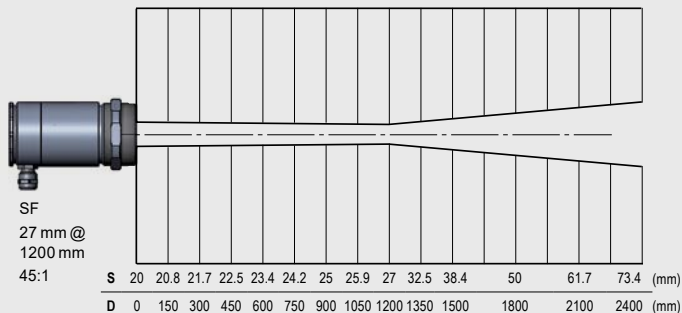
### Electrical specifications

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

# optris® CSlaser G5HF

## Optical parameters

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

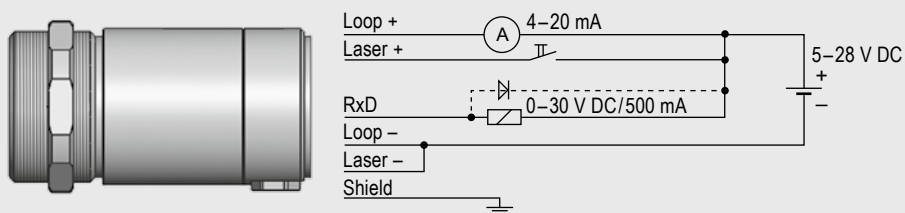


Further optics, D:S = 45:1

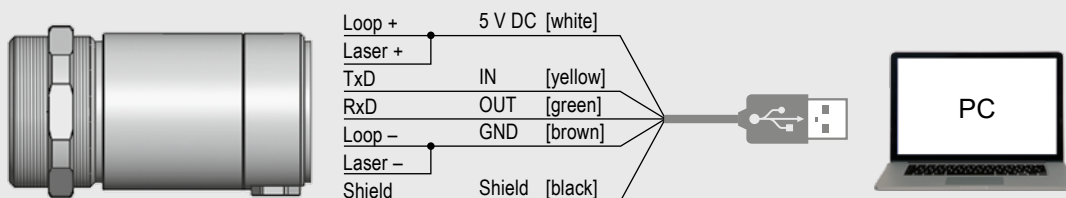
... SF	27.0 mm @ 1250 mm
... CF1	1.6 mm @ 70 mm
... CF2	3.4 mm @ 150 mm
... CF3	4.5 mm @ 200 mm
... CF4	10.0 mm @ 450 mm

## Connections

Analog mode of operation

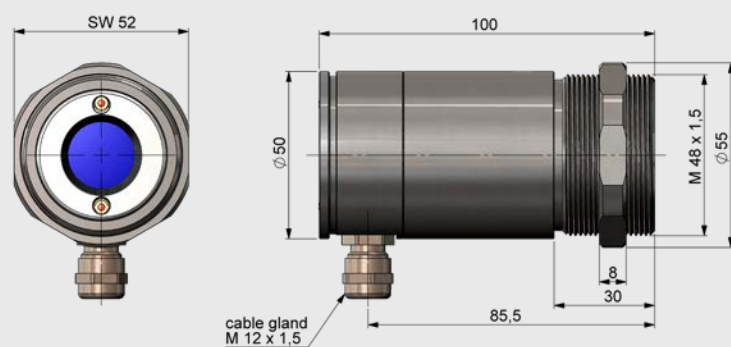


Digital mode of operation

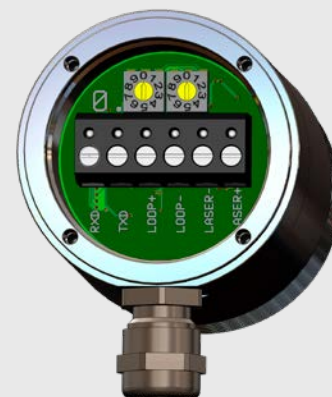


## Dimensions

Dimensions CSlaser G5HF



Electrical connections / emissivity adjustment (sensor back side)



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