

PSC-SSS-Laser-LT

Non-contact temperature measurement with precise aiming from -50°C to 975°C



FEATURES

- Low and high temperature measurements of smallest spots up from 0.9 mm
- NEW: Double laser aiming marks real spot location and spot size at any distance
- Optics 75:1 with selectable focus
- PSC-SSS-Laser-LT- Fast for scanning of fast moving low temperature objects up from 9 ms response time
- Usable up to 85°C ambient temperature without cooling and automatic laser switch off at 50°C
- Selectable analog outputs 0/4-20mA, 0-5/10V, thermocouple type K or J
- Optional plug in digital interfaces USB, RS232, RS485, CAN or Profibus DP

General Specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 85°C (50°C with laser ON) electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 85°C electronics: -40 - 85°C
Relative humidity	10 - 95%, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11 - 200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	sensing head 600 g electronics 420 g
Electrical specifications	
Outputs/analog	channel 1: 0/4 - 20 mA, 0 - 5/10 V, thermocouple J, K
	channel 2: sensing head temperature (-40 - 85°C as 0 - 5 V or 0 - 10 V), alarm output
Alarm output	Open - collector (24 V / 50 mA)
Optional	relay: 2 x 60 V DC/42 V AC _{eff} ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 5 - 36 V DC)
	mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m
Current draw	max. 160 mA
Power supply	8 - 36 V DC
Laser 635 nm	1mW, ON/OFF via electronic box or software

Measurement Specifications	
Temperature range (scalable via programming keys or software)	-50 - 975°C
Spectral range	8 - 14 μm
Optical resolution (90% energy)	75:1 PSC-SSS-Laser-LT
	50:1 PSC-SSS-Laser-LT-Fast
Selectable focus (PSC-SSS-Laser-LT) ¹⁾	CF1 0.9 mm @ 70 mm
	CF2 1.9 mm @ 150 mm
	CF3 2.75 mm @ 200 mm
	CF4 5.9 mm @ 450 mm
	SF 16 mm @ 1260 mm
System accuracy (at ambient temperature 23 ±5°C)	±1% or ±1°C ^{2),3)} (PSC-SSS-Laser-LT) ±1.5% or ±1.5°C ^{2),3)} (PSC-SSS-Laser-LT-Fast)
Repeatability (at ambient temperature 23 ±5°C)	±0.5 % or ±0.5°C ²⁾ (PSC-SSS-Laser-LT) ±1 % or ±1°C ²⁾ (PSC-SSS-Laser-LT-Fast)
Temperature resolution (NETD)	0.1°C / 0.5°C (with PSC-SSS-Laser-LT-Fast)
Response time (90% signal) ⁴⁾	9ms (PSC-SSS-Laser-LT-Fast)
	120 ms (PSC-SSS-Laser-LT)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.000
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis

¹⁾ different spot sizes for PSC-SSS-Laser-LT-Fast (D:S = 50:1)

²⁾ whichever is greater

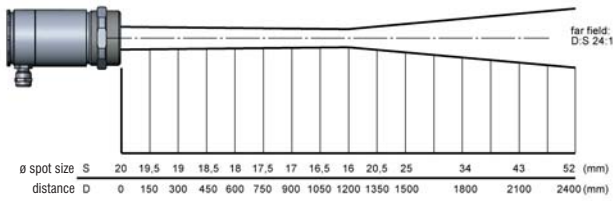
³⁾ at object temperatures >0°C, ε = 1

⁴⁾ with dynamic adaption at low signal levels

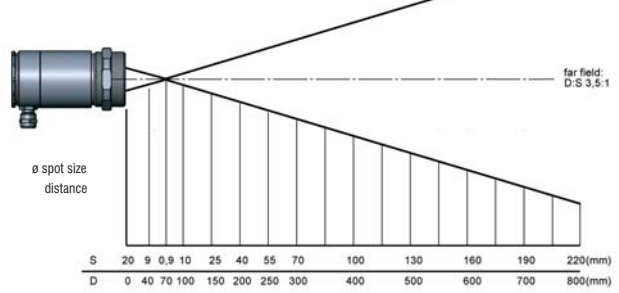
PSC-SSS-Laser-LT

Optical specifications

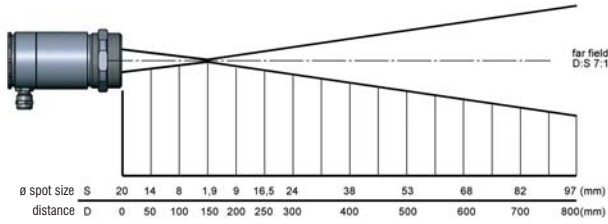
SF optics 75:1



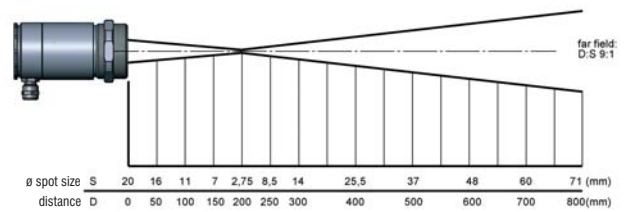
CF1 optics 75:1



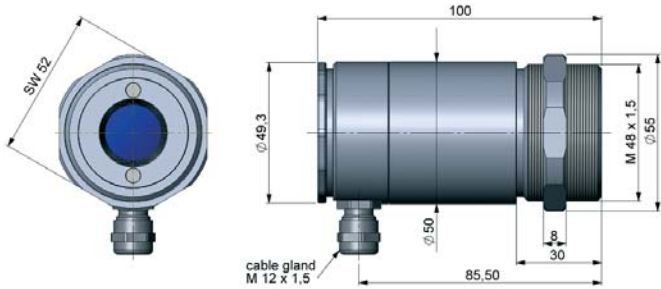
CF2 optics 75:1



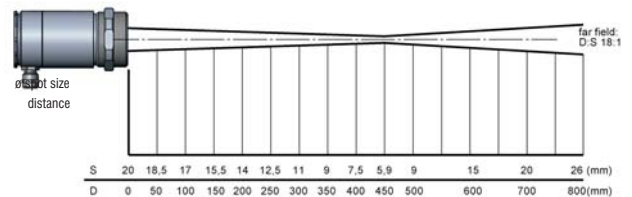
CF3 optics 75:1



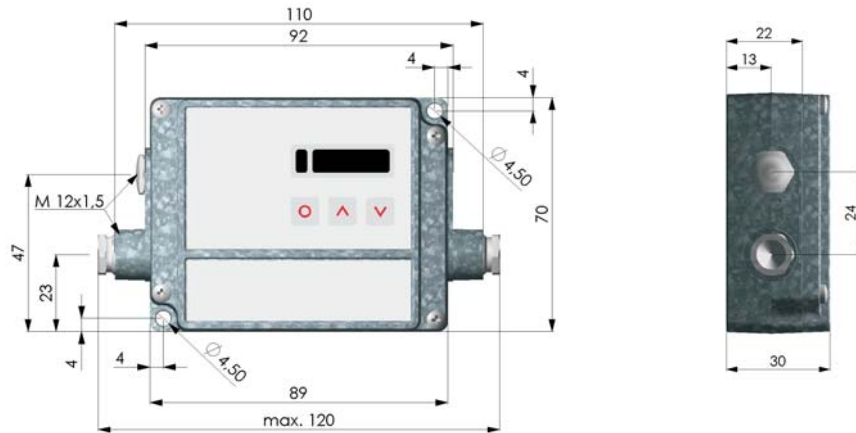
Dimensions



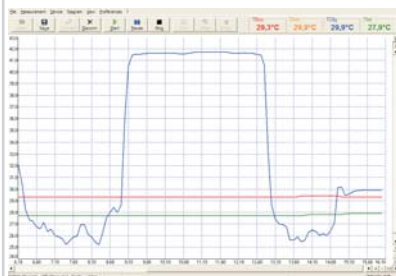
CF4 optics 75:1



Electronics



PSC Connect Software



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 1 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- The software PSC Connect allows to customize the sensor to application needs of the user

PSC-SSS-Laser-1M/2M

Non-contact temperature measurement with precise aiming from 250°C to 2200°C



FEATURES

- Accurate temperature measurements of metals, secondary metal processing and ceramic materials
- Double laser aiming marks real spot location at any distance
- Optical resolution up to 300:1 with selectable focus
- Temperature ranges from 250°C to 2200°C, measuring spots up from 0.45 mm and response times up from 1 ms
- Usable up to 85°C ambient temperature without cooling and automatic laser switch off at 50°C
- Short measuring wavelength of 1.0 μm or 1.6 μm reduces error of temperature readings on surfaces with low or unknown emissivity

General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20°C to 85°C (sensing head, 50°C with laser ON) 0°C to 85°C (electronics)
Storage temperature	Sensing head: -40°C to 85°C Electronics: -40°C to 85°C
Relative humidity	10 - 95%, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	Sensing head: 600 g Electronics: 420 g

Electrical Specifications

Outputs/analog	0/4 - 20 mA, 0-5/10 V, thermocouple J, K
Alarm output	24 V/50 mA (open collector)
Optional	relay: 2 x 60 V DC/42 V AC _{eff} ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 8-36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m
Current draw	max. 160 mA
Power Supply	8-36 V DC
Laser 635 nm	1mW, ON/OFF via electronic box or software

Measurement Specifications

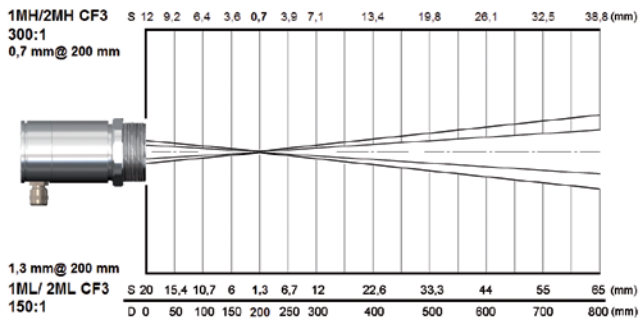
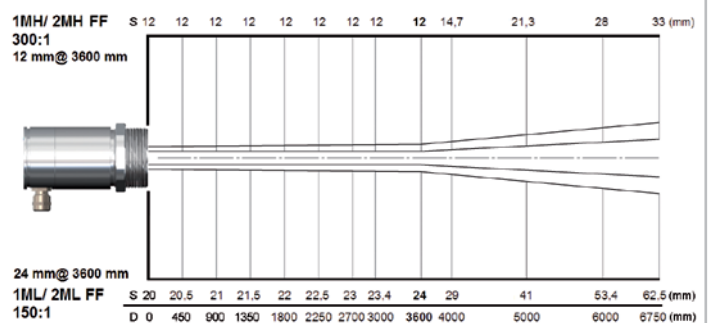
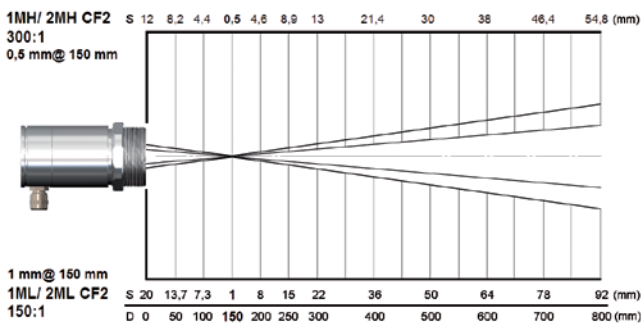
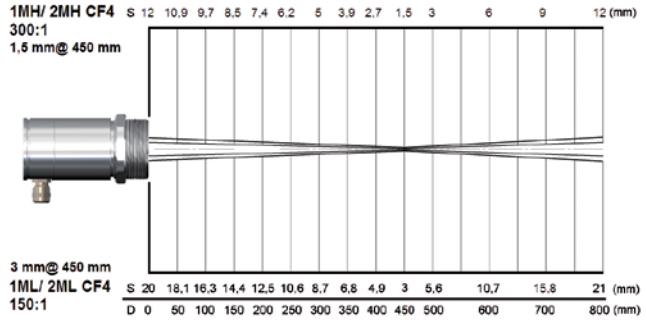
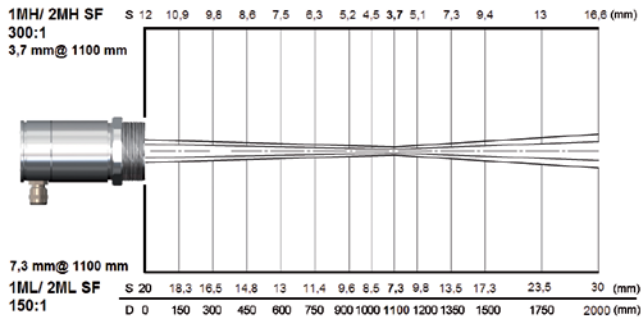
Temperature ranges (scalable via programming keys or software)	485°C to 1050°C (1ML) 650°C to 1800°C (1MH) 800°C to 2200°C (1MH1) 250°C to 800°C (2ML) 385°C to 1600°C (2MH) 490°C to 2000°C (2MH1)
Spectral ranges	1.0 μm (1M) / 1.6 μm (2M)
Optical resolution (90% energy)	150:1 (1ML, 2ML) 300:1 (1MH, 1MH1, 2MH, 2MH1)
System accuracy ¹⁾ (at ambient temp. 23 ±5°C)	± (0.3% of reading + 2°C)
Repeatability (at ambient temp. 23 ±5°C)	± (0.1% of reading + 1°C)
Temperature resolution	0.1 K (1ML, 2ML) 0.2 K (1MH, 1MH1, 2MH, 2MH1)
Exposure time ²⁾	1 ms (90 %)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	PSC Connect

¹⁾ $\epsilon = 1$, Exposure time 1 s

²⁾ with dynamic adaptation at low signal levels

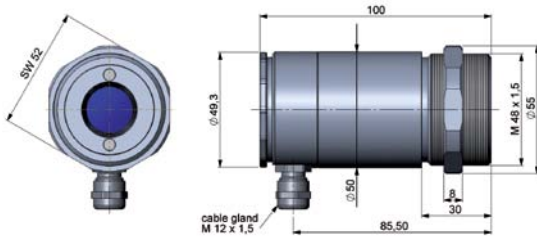
PSC-SSS-Laser-1M/2M

Optical Specifications

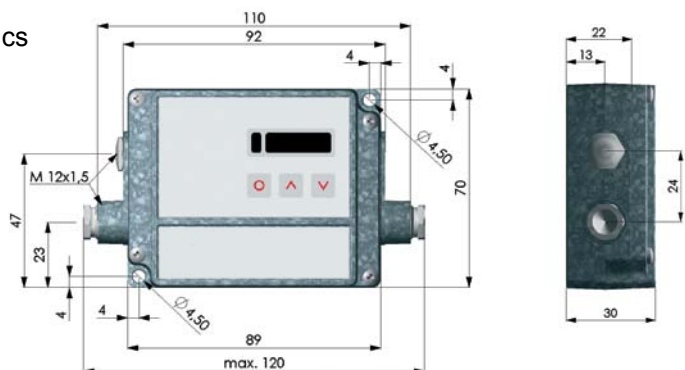


Dimensions

Sensing head



Electronics



Specifications are subject to change without notice
PSC-SSS-Laser-1M/2M 0516

PSC-SSS-Laser-Video-1M/2M Series

Non-contact temperature measurement of metals and ceramics from 250°C to 2200°C with adjustable focus, crosshair laser and video sighting



FEATURES

- Video and crosshair sighting for pinpointing targets as small as 0.012" (0.3mm)
- Adjustable manual focus optics from 3.6" (90mm) with optical resolution up to 300:1
- Fast response time from 1 ms
- Ambient Temperature Rating of 158°F (70°C) cooling and automatic laser switch off at 50°C
- Short measuring wavelengths of 1.0 μm or 1.6 μm for increased accuracy on surfaces with changing emissivity
- PSC Connect software for easy set up of pyrometer parameters, video alignment and real-time process monitoring
- Rugged stainless steel housing

General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20°C to 85°C (sensing head, 50°C with laser ON) 0°C to 85°C (electronics)
Storage temperature	-40°C to 85°C
Relative humidity	10 - 95%, non-condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	Sensing head: 600 g Electronics: 420 g

Electrical specifications

Outputs/analog	0/4 - 20 mA, 0-5/10 V, thermocouple J, K
Alarm output	24 V/50 mA (open collector)
Output/digital	USB 2.0 Ethernet (via optional USB server)
Video sighting	digital (USB 2.0) 640 x 480 px, FOV 3.1° x 2.4°
Output impedances	mA max. 500 Ω (with 8-36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length (sensor-electronics)	3 m (standard), 5 m, 10 m
Cable length (USB)	5 m, extendable up to 100 m over Ethernet
Current draw	max. 160 mA
Power Supply	8-36 V DC
Laser 635 nm	1mW, ON/OFF via electronic box or software

Measurement specifications

Temperature ranges (scalable via programming keys or software)	485°C to 1050°C (1ML) 650°C to 1800°C (1MH) 800°C to 2200°C (1MH1) 250°C to 800°C (2ML) 385°C to 1600°C (2MH) 490°C to 2000°C (2MH1)
Spectral ranges	1.0 μm (1M)/1.6 μm (2M)
Optical resolution (90% energy)	150:1 (1ML, 2ML) 300:1 (1MH, 1MH1, 2MH, 2MH1)
System accuracy ¹⁾ (at ambient temp. 23 ±5°C)	± (0.3% of reading + 2°C)
Repeatability (at ambient temp. 23 ±5°C)	± (0.1% of reading + 1°C)
Temperature resolution	0.1 K (1ML, 2ML) 0.2 K (1MH, 1MH1, 2MH, 2MH1)
Exposure time ²⁾	1 ms (90 %)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software (incl.)	PSC Connect (Sensor setup, video sighting and process monitoring)

¹⁾ $\epsilon = 1$, Exposure time 1 s

²⁾ With dynamic adaptation at low signal levels

PSC-SSS-Laser-Video-1M/2M Series

Optical specifications

The various optics of the PSC-SSS-Laser-Video-1M//2M series allow smooth focusing to the desired distance.

The sensors are available in two versions: Standard focus (SF): 200 mm to infinity

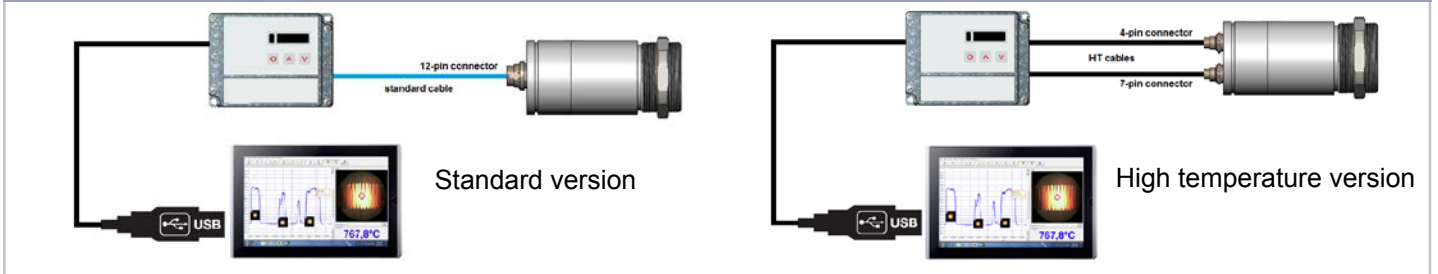
Close focus (CF): 90 mm to 250 mm

The following tables show examples of measurement distances and the corresponding measurement spot sizes:

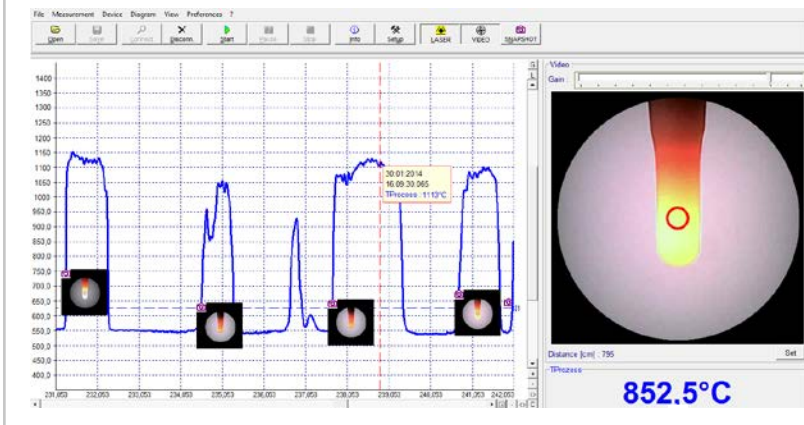
1ML, 2ML: SF optics (150:1)									1ML, 2ML: CF optics (150:1)						
Meas. spot size in mm	1.3	2.0	3.0	4.7	7.3	10.7	16.7	33.3	Meas. spot size in mm	0.6	0.8	1.0	1.2	1.4	1.7
Meas. distance in mm	200	300	450	700	1100	1600	2500	5000	Meas. distance in mm	90	120	150	180	210	250

1MH, 1MH1, 2MH, 2MH1: SF optics (300:1)									1MH, 1MH1, 2MH, 2MH1: CF optics (300:1)						
Meas. spot size in mm	0.7	1.0	1.5	2.3	3.7	5.3	8.3	16.7	Meas. spot size in mm	0.3	0.4	0.5	0.6	0.7	0.8
Meas. distance in mm	200	300	450	700	1100	1600	2500	5000	Meas. distance in mm	90	120	150	180	210	250

Connections



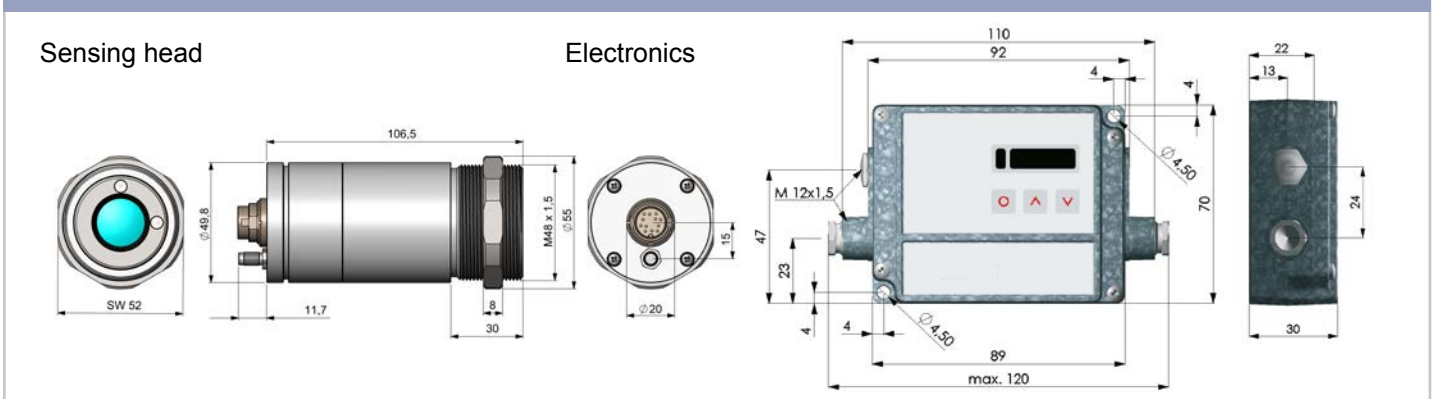
Software included



NEW

- Automatic snapshots (time- or temperature dependent) to control and document the process
- Graphic display and recording of the measurement values
- Setup of sensor parameters and signal processing functions
- Remote control of the sensor

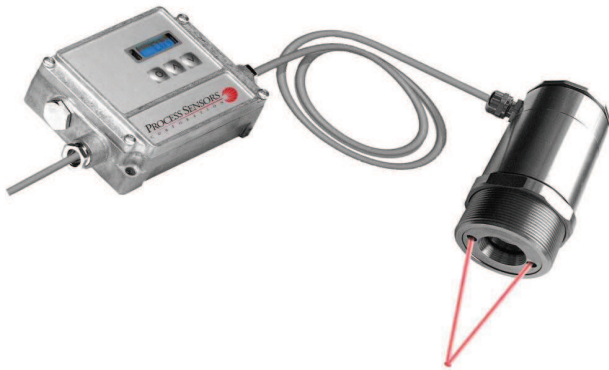
Dimensions



Specifications are subject to change without notice
PSC-SSS-Laser-Video1M/2M 03/16

PSC-SSS-Laser-3M Series

Non-contact temperature measurement with precise aiming from 50°C to 1800°C



FEATURES

- Accurate temperature measurements of metals, secondary metal processing and ceramic materials
- Double laser aiming marks real spot location at any distance
- Optical resolution up to 100:1 with selectable focus
- Temperature ranges from 50°C to 1800°C, measuring spots up from 0.7 mm and response times up from 1 ms
- Usable up to 85°C ambient temperature without cooling
- Short measuring wave length of 2.3 μm reduces error of temperature readings on surfaces with low or unknown emissivity

General Specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20°C to 85°C (sensing head, 50°C with laser ON) 0°C to 85 (electronics)
Storage temperature	-40°C to 85°C (sensing head) -40°C to 85°C (electronics)
Relative humidity	10 - 95%, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	600 g (sensing head) 420 g (electronics)

Electrical Specifications	
Outputs/analog	0/4 - 20 mA, 0-5/10 V, thermocouple J, K
Output/alarm	24 V/50 mA (open collector)
Optional	relay: 2 x 60 V DC/42 V AC _{eff} ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 5-36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m
Current draw	max. 160 mA
Power Supply	8-36 V DC
Laser 635 nm	1 mW, ON/OFF via electronic box or software

Measurement Specifications	
Temperature range ¹⁾ (scalable via programming keys or software)	50°C to 400°C (3ML) 100°C to 600°C (3MH) 150°C to 1000°C (3MH1) 200°C to 1500°C (3MH2) 250°C to 1800°C (3MH3)
Spectral range	2.3 μm
Optical resolution (90 % energy)	60:1 (3ML) 100:1 (3MH) 300:1 (3MH1-H3)
System accuracy ²⁾ (at ambient temp. 23 ± 5°C)	± (0.3% of reading + 2°C)
Repeatability (at ambient temp. 23 ± 5°C)	± (0.1% of reading + 1°C)
Temperature resolution (digital)	0.1 K
Exposure time ³⁾ (90% signal)	1 ms
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	PSC Connect

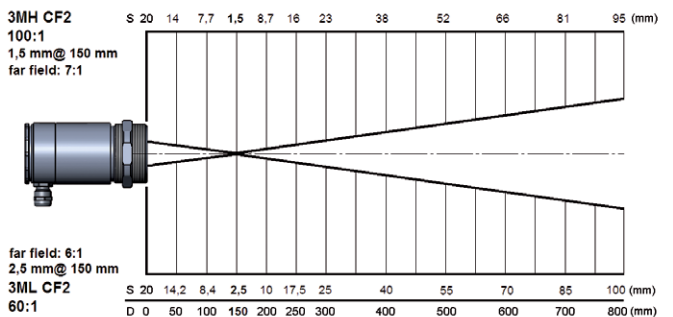
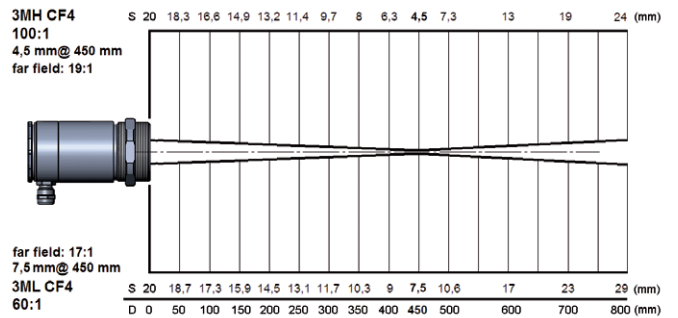
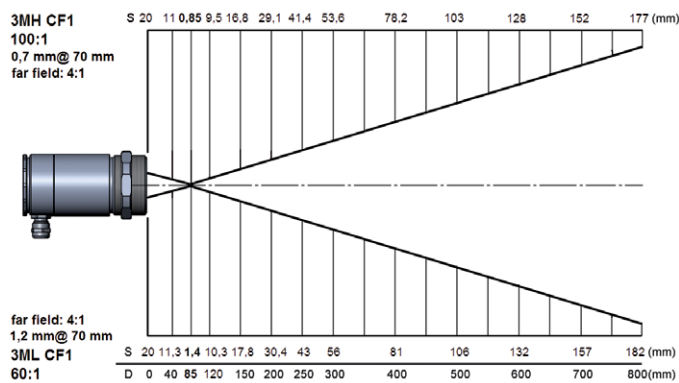
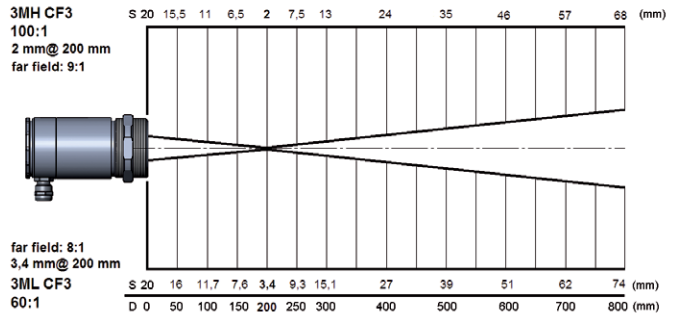
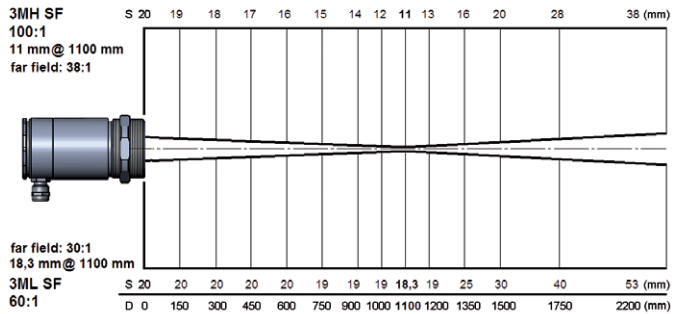
¹⁾ $T_{object} > T_{sensing\ head} + 25^{\circ}C$

²⁾ $\epsilon = 1$, response time 1 s

³⁾ with dynamic adaptation at low signal levels

PSC-SSS-Laser-3M Series

Optical Specifications

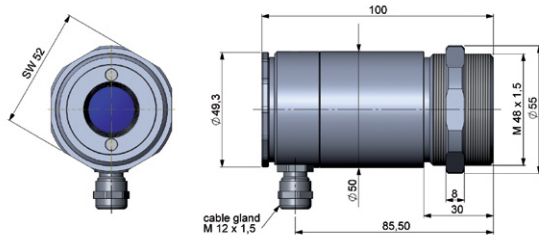


Further optics, D:S = 300:1

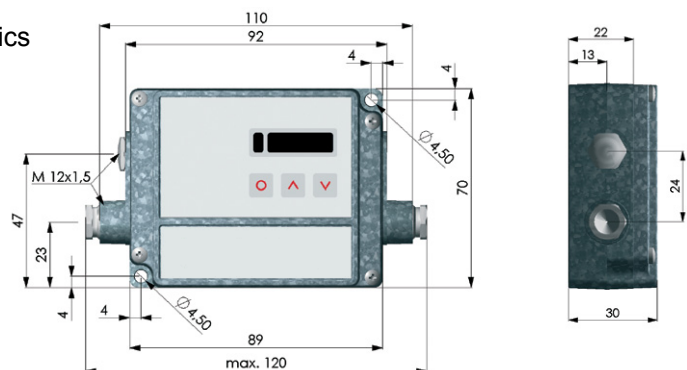
...SF	3.7 mm @ 1100 mm
...CF2	0.5 mm @ 150 mm
...CF3	0.7 mm @ 200 mm
...CF4	1.5 mm @ 450 mm
...FF	12 mm @ 3600 mm

Dimensions

Sensing head



Electronics



PSC-SSS-Laser-Video-3M Series

Non-contact temperature measurement of metals and ceramics from 50°C to 1800°C with adjustable focus, crosshair laser and video sighting



FEATURES

- Video and crosshair sighting for pinpointing targets as small as 0.020" (0.5mm)
- Adjustable manual focus optics from 3.6" to infinity
- Fast response time from 1 ms
- Ambient Temperature Rating of 158°F (70°C)
- Short wavelength (2.3 μ) for increased accuracy on surfaces with changing emissivity
- PSC Connect software for easy set up of pyrometer parameters, video alignment and real-time process monitoring
- Rugged stainless steel housing

General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20 °C to 70 °C (sensing head, 50 °C with laser ON) 0 °C to 85 °C (electronics)
Storage temperature	-40 °C to 85 °C
Relative humidity	10 - 95 %, non-condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	600 g (sensing head) 420 g (electronics)

Electrical specifications

Outputs/analog	0/4 - 20 mA, 0-5/10 V, thermocouple J, K
Alarm output	24 V/50 mA (open collector)
Output/digital	USB 2.0 Ethernet (via optional USB server)
Video sighting	Digital (USB 2.0) 640 x 480 px, FOV 3.1° x 2.4°
Output impedances	mA max. 500 Ω (with 5-36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length (sensor-electronics)	3 m (standard), 5 m, 10 m
Cable length (USB)	5 m, extendable up to 100 m over Ethernet
Current draw	max. 160 mA
Power Supply	8-36 V DC
Laser 635 nm	1 mW, ON/OFF via electronic box or software

Measurement specifications

Temperature range ¹⁾ (scalable via programming keys or software)	50 °C to 400 °C (3ML) 100 °C to 600 °C (3MH) 150 °C to 1000 °C (3MH1) ²⁾ 200 °C to 1500 °C (3MH2) ²⁾ 250 °C to 1800 °C (3MH3) ²⁾
Spectral range	2.3 μm
Optical resolution (90 % energy)	60:1 (3ML) 100:1 (3MH) 300:1 (3MH1-3MH3)
System accuracy ³⁾ (at ambient temp. 23 ± 5 °C)	± (0.3 % of reading + 2 °C)
Repeatability (at ambient temp. 23 ± 5 °C)	± (0.1 % of reading + 1 °C)
Temperature resolution (digital)	0.1 K
Exposure time ⁴⁾ (90% signal)	1 ms
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software (incl.)	PSC Connect (Sensor setup, video sighting, process monitoring)

¹⁾ $T_{\text{object}} > T_{\text{sensing head}} + 25 \text{ °C}$

²⁾ Specification valid at $T_{\text{Object}} \geq \text{start of measurement range} + 50 \text{ °C}$

³⁾ $\epsilon = 1$, response time 1 s

⁴⁾ With dynamic adaptation at low signal levels



PSC-SSS-Laser-05M

Non-Contact Temperature Measurement of Molten / Shiny Metals from 1000°C to 2000°C (1832°F to 3632°F)



FEATURES

- Accurate temperature measurements of liquid metals
- Short measuring wavelength of 525 nm minimizes errors due to emissivity uncertainty and atmospheric conditions
- Temperature range from 1000°C to 2000°C
- High resolution optics: Spot sizes from 1 mm
- Fast response of 1 ms
- Usable up to 85°C ambient temperature without cooling and automatic laser switch off at 50°C
- Industrial accessories available
- 150:1 (FOV) with choice of fixed focus optics
- Dual Lasers pinpoint targets at any distance

General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20°C to 85°C (sensing head, 50°C with laser ON) 0°C to 85°C (electronics)
Storage temperature	Sensing head: -40°C to 85°C Electronics: -40°C to 85°C
Relative humidity	10 - 95%, non-condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	600 g (sensing head) 420 g (electronics)

Electrical Specifications

Outputs/analog	0/4 - 20 mA, 0-5/10 V, thermocouple J, K
Alarm output	24 V/50 mA (open collector)
Optional	relay: 2 x 60 V DC/42 V AC _{eff} ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 8-36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	Programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m
Current draw	max. 160 mA
Power Supply	8-36 V DC
Laser 635 nm	1mW, ON/OFF via electronic box or software

Measurement Specifications

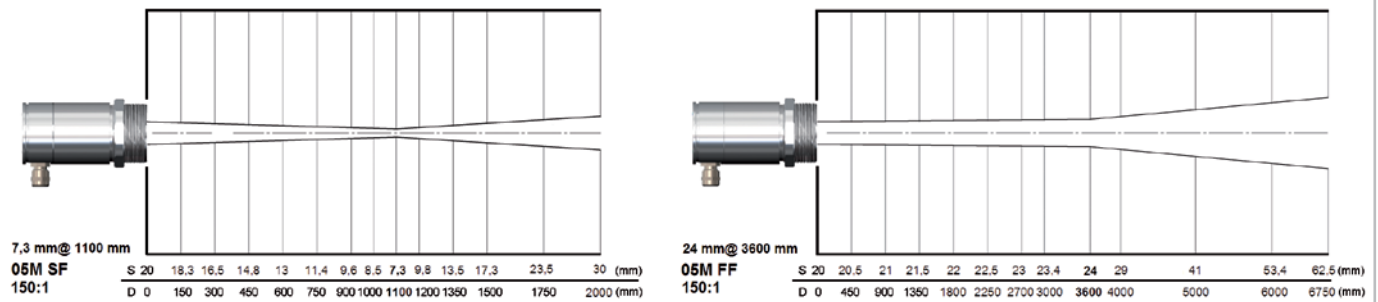
Temperature range (scalable via programming keys or software)	1000°C to 2000°C
Spectral range	525 nm
Optical resolution (90% energy)	150:1
System accuracy ¹⁾ (at ambient temp. 23 ±5°C)	± 1% of reading (≤ 1100°C) ± (0.3% of reading + 2°C) (> 1100°C)
Repeatability (at ambient temp. 23 ±5°C)	± 0.5% of reading (≤ 1100°C) ± (0.1% of reading + 1°C) (> 1100°C)
Temperature resolution	0.2 K
Exposure time ²⁾	1 ms (90 %)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	PSC Connect

¹⁾ $\epsilon = 1$, exposure time 1 s

²⁾ with dynamic adaptation at low signal levels

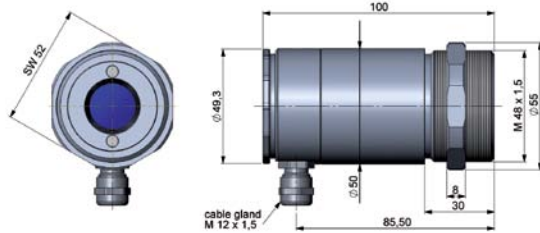
PSC-SSS-Laser-05M

Optical Specifications

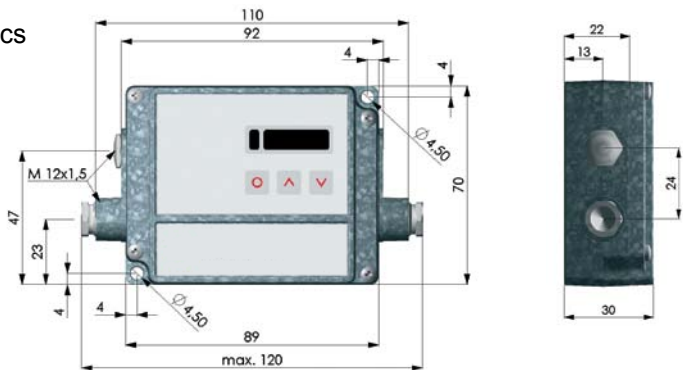


Dimensions

Sensing head



Electronics



Accessories (examples)

Mounting angle, adjustable in two axes (AC-SSS-LAB)



Cooling housing (AC-CJ-SSSL)



Mounting angle for cooling housing, adjustable in two axes (AC-CJ-AB)



Water cooling and air purge for sensing head (AC-SSS-LW + AC-SSS-LAP)



Mounting device for cooling housing (AC-SSS-LRM)



Specifications are subject to change without notice
PSC-SSS-Laser-05M

High Accuracy

PSC Small Smart Sensorfast

Precise noncontact temperature measurement from -40 to 600°C



FEATURES

- One of the smallest infrared sensors worldwide with exposure times between 3 ms (50 % signal) and 9 ms (90 % signal)
 - Fast analog output (0/4 - 20 mA, 0 - 5/10 V) with smart real time data processing
 - Instant digital 0/10 V output with a response time of 4 ms (50 % signal)
 - Continuous process monitoring with an unchopped sensor system
- Note: Conventional fast pyroelectrical infrared sensors with mechanical chopper see processes only part of the time
- Easy to assemble in multiple arrays for line scanning of small and fast objects (hot spot detection) using a RS485 bus communication
 - Rugged up to 130°C ambient temperature without cooling

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 130°C electronics: 0 - 65°C
Storage temperature	sensing head: -40 - 130°C electronics: -40 - 85°C
Relative humidity	10 - 95 %, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	sensing head 40 g electronics 420 g
Electrical specifications	
Analog output	0/4 - 20 mA, 0 - 5/10 V or thermocouple J, K
Digital output	0/10 V (10 mA) optional: relay: 2 x 60 V DC/42 V AC; 0.4 A; optically isolated
Digital interface (optional)	USB, RS232 or RS485
Output impedances	mA max. 500 Ω (with 8 - 36 V DC) mV min. 100 k Ω load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	1 m (standard), 3 m, 8 m, 15 m
Current draw	max. 100 mA
Power supply	8 - 36 V DC

Measurement specifications	
Temperature range (scalable via programming keys or software)	-40 - 600°C
Spectral range	8 - 14 μ m
Optical resolution	10:1
System accuracy (at ambient temperature 23 \pm 5°C)	\pm 1 % or \pm 1°C ¹
Repeatability (at ambient temperature 23 \pm 5°C)	\pm 0.5 % or \pm 0.5°C ¹
Temperature coefficient	0.05 % or 0.05°C/ $^{\circ}$ C ^{1,2}
Temperature resolution (NETD)	0,5°C
Exposure time	3 ms (50 %) 9 ms (90 %)
Response time	17 ms (90 %) at analog output 4 ms (50 %) at digital output
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Certificate of calibration	optional

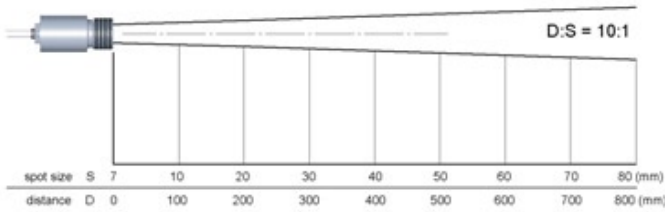
¹ whichever is greater with dynamic noise compression

² at sensing head temperature 0 - 130°C

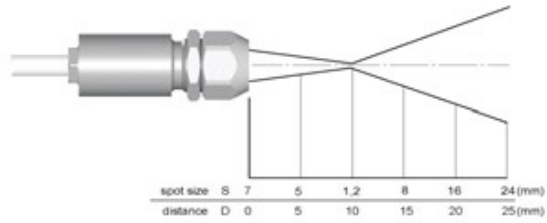
PSC Small Smart Sensorfast

Optical specifications

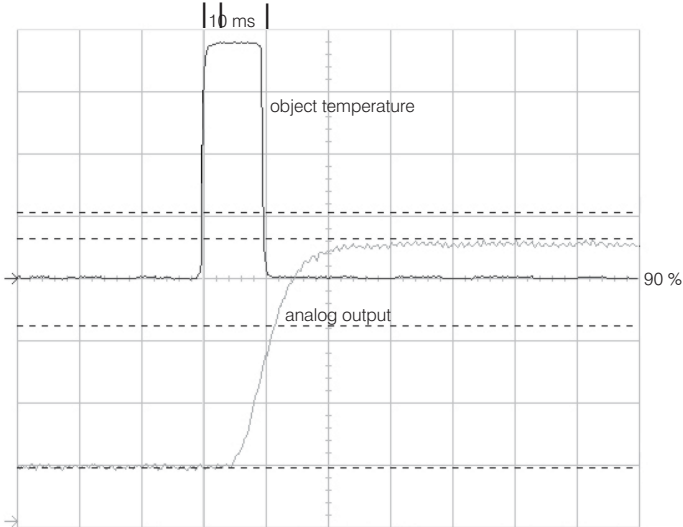
10:1 optics



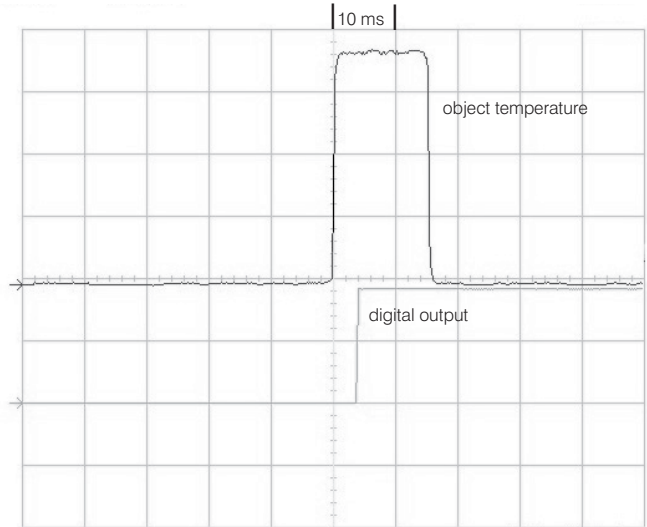
10:1 optics with CF-lens



Time constants for temperature jumps between 25°C and 180°C

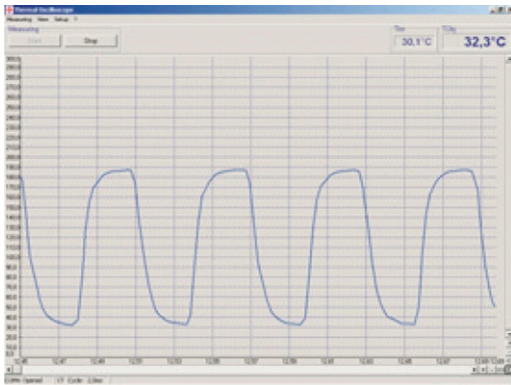


Exposure time at 90 % signal with peak hold



Digital output for 50 % energy threshold

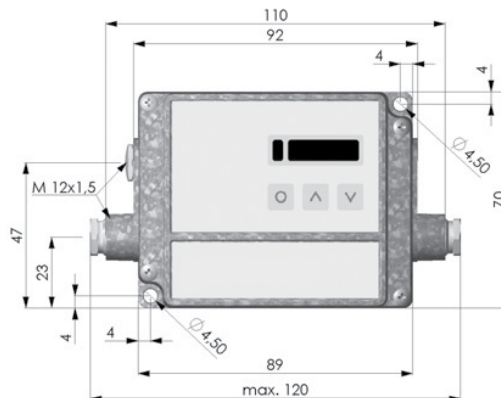
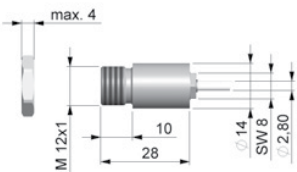
SSSfast - thermal oszilloscope software



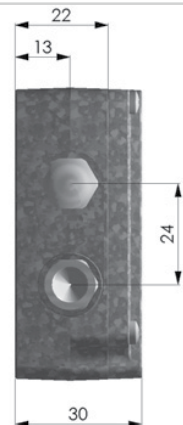
- easy sensor setup and remote controlling
- automatic data logging for analysis and documentation
- graphic display of temperature trends
- adjustment of extended signal processing functions
- programming of analog and digital input for external emissivity and ambient temperature compensation
- programming of alarm output (head or object temperature)
- digital remote communication of up to 32 sensors in one network

Dimensions

Sensing head



Electronics



Process Sensors Corp.

787 Susquehanna Avenue
Franklin Lakes, NJ 07417 USA

Tel: (201) 485-8772
Fax: (201) 485-8770

IRTemp@ProcessSensors.com
www.ProcessSensorsIR.com

Specifications are subject to change without notice.
CT-DS-E2005-11-C



PSC-SSS-Laser-G5 Series

Non-contact glass temperature measurement with precise aiming from 100°C to 1650°C



FEATURES

- Accurate glass temperature measurements on float glass lines, container glass machines, bulb manufacturing, automotive glass tempering lines and the production of solar panels in the range of 100°C up to 1650°C
- Double laser aiming marks location and exact spot size at any distance
- High resolution optics with 1mm spot size
- Usable up to 85°C ambient temperature without cooling and automatic laser switch off at 50°C
- Cooling and protection accessories for harsh environmental conditions

General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20°C to 85°C (sensing head, 50°C with laser ON) 0°C to 85 (electronics)
Storage temperature	-40 to 85°C (sensing head) -40°C to 85°C (electronics)
Relative humidity	10 - 95%, non-condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	600 g (sensing head) 420 g (electronics)

Electrical Specifications

Outputs/analog	0/4 - 20 mA, 0-5/10 V, thermocouple J, K
Output/alarm	24 V/50 mA (open collector)
Optional	relay: 2 x 60 V DC/42 V AC _{eff} ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 5-36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m
Current draw	max. 160 mA
Power Supply	8-36 V DC
Laser 635 nm	1 mW, ON/OFF via electronic box or software

Measurement Specifications

Temperature range (scalable via programming keys or software)	100°C - 1200°C (G5L) 250°C - 1650°C (G5H) 200°C - 1650°C (G5HF)
Spectral range	5.0 μm
Optical resolution (90 % energy)	45:1 (G5L, G5HF) 70:1 (G5H)
System accuracy ²⁾ (at ambient temp. 23 ± 5°C)	± 1% or ± 1,5°C ¹⁾
Repeatability (at ambient temp. 23 ± 5°C)	± 0.5% or ± 0.5°C ¹⁾
Temperature resolution (digital)	L: 0.1 K / H/HF: 0.2 K
Exposure time ³⁾ (90% signal)	10 ms (G5HF) 80 ms (G5H) 120 ms (G5L)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	PSCconnect

¹⁾ whichever is greater

²⁾ $\epsilon = 1$, response time 1 s

³⁾ with dynamic adaptation at low signal levels

PSC-SSS-Laser-G5 Series

Optical specifications

Chart SF optics, D:S = 45:1

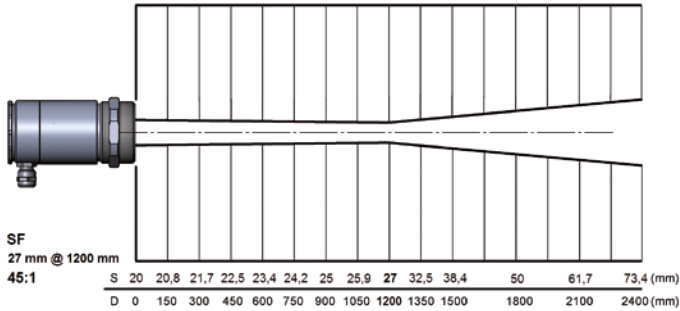
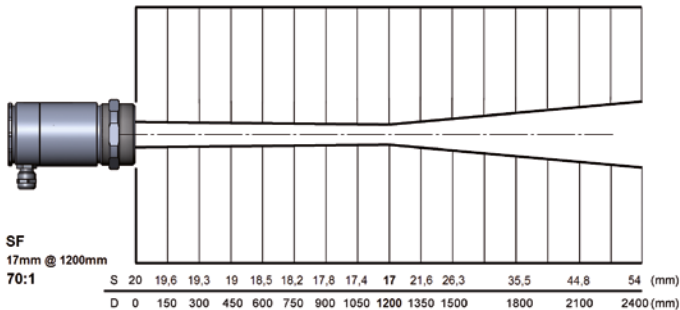


Chart SF optics, D:S = 70:1



Further optics, D:S = 45:1

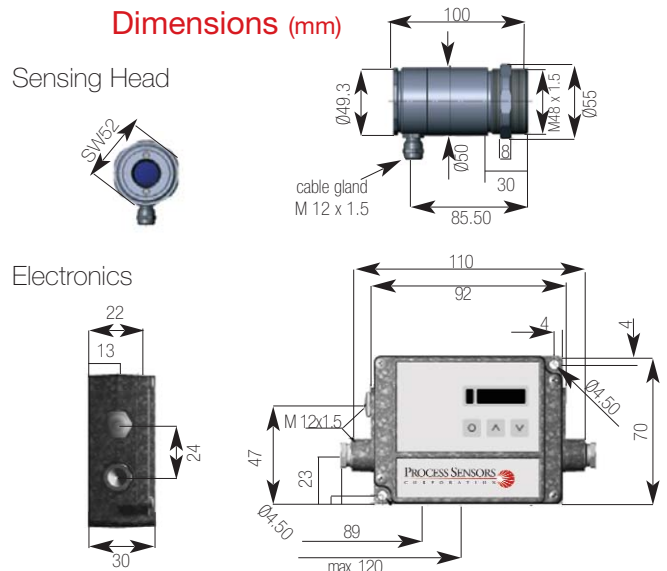
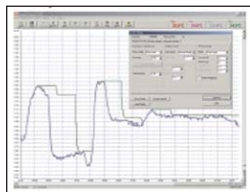
...SF	27.0 mm @ 1250 mm
...CF1	1.6 mm @ 70 mm
...CF2	3.4 mm @ 150 mm
...CF3	4.5 mm @ 200 mm
...CF4	10.0 mm @ 450 mm

Further optics, D:S = 70:1

...SF	17.0 mm @ 1200 mm
...CF1	1.0 mm @ 70 mm
...CF2	2.2 mm @ 150 mm
...CF3	2.9 mm @ 200 mm
...CF4	6.5 mm @ 450 mm

PSCconnect Software

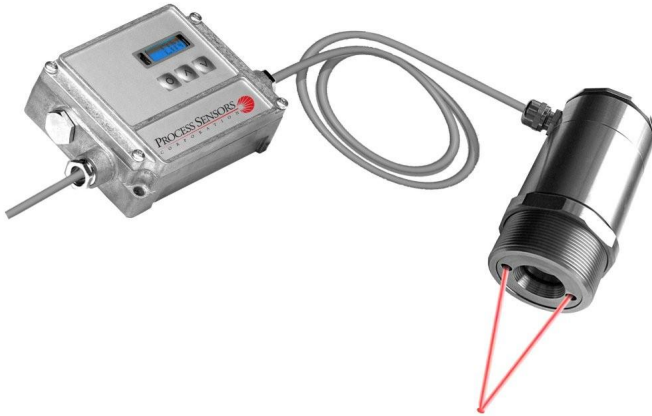
- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 1 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- The software PSCconnect allows to customize the sensor to application needs of the user



Specifications are subject to change without notice
PSC-SSS-Laser-G5 04-16

PSC-SSS-LASER-MT

Non-contact temperature measurement through flames from 200°C to 1650°C



FEATURES

- Measures temperature accurately through hot combustion gases and clean flames
- Double laser aiming identifies spot location
- Spot size up from 1.6 mm
- FOV 45:1 with fixed focus optics
- Compact Sensor head
- Usable up to 85°C ambient temperature without cooling and automatic laser switch off at 50°C
- Cooling and protection accessories for harsh environmental conditions
- On-Board Temperature display

General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20°C to 85°C (sensing head, 50°C with laser ON) 0°C to 85 (electronics)
Storage temperature	-40 to 85°C (sensing head) -40°C to 85°C (electronics)
Relative humidity	10 - 95%, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	600 g (sensing head) 420 g (electronics)

Electrical Specifications

Outputs/analog	0/4 - 20 mA, 0-5/10 V, thermocouple J, K
Output/alarm	24 V/50 mA (open collector)
Optional	relay: 2 x 60 V DC/42 V AC _{eff} ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 5-36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m
Current draw	max. 160 mA
Power Supply	8-36 V DC
Laser 635 nm	1 mW, ON/OFF via electronic box or software

Measurement Specifications

Temperature range (scalable via programming keys or software)	200°C - 1450°C (MT) 400°C - 1650°C (MTH)
Spectral range	3.9 μm
Optical resolution (90 % energy)	45:1
System accuracy (at ambient temp. 23 ± 5°C)	± 1% ¹⁾²⁾
Repeatability (at ambient temp. 23 ± 5°C)	± 0.5% or ± 0.5°C ²⁾
Temperature resolution (digital)	0.1 K
Exposure time ³⁾ (90% signal)	10 ms
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	PSC Connect

¹⁾ for object temperatures above 300°C

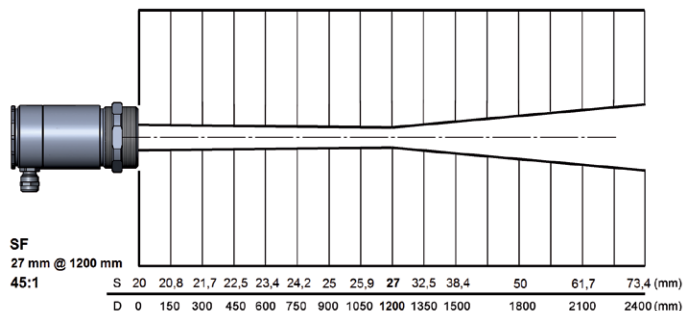
²⁾ ε = 1, response time 1 s

³⁾ with dynamic adaptation at low signal levels

PSC-SSS-LASER-MT

Optical Specifications

Chart SF optics, D:S = 45:1

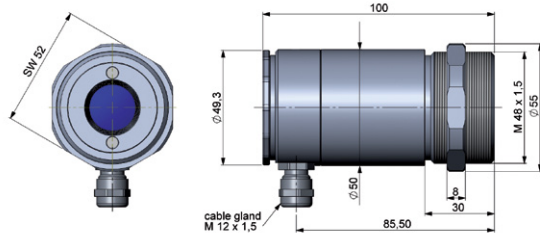


Further optics, D:S = 45:1

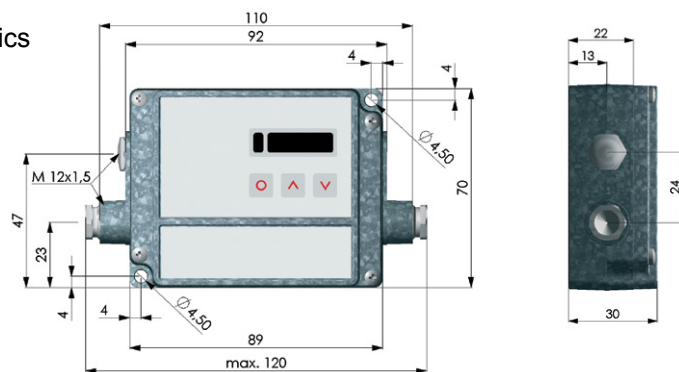
...SF	27,0 mm @ 1250 mm
...CF1	1,6 mm @ 70 mm
...CF2	3,4 mm @ 150 mm
...CF3	4,5 mm @ 200 mm
...CF4	10,0 mm @ 450 mm

Dimensions

Sensing head



Electronics



Accessories (examples)

Mounting angle, adjustable in two axes (AC-SSS-LAB)



Cooling housing (ACCJ-SSS-L)



Mounting angle for cooling housing, adjustable in two axes (ACCJAB)



Water cooling and air purge for sensing head (AC-SSS-LW + AC-SSS-LAP)



Mounting device for cooling housing (AC-SSS-LRM)

