

PSC-CS-Laser-LT

Digital 2-wire, Self-Contained IR thermometer with Precision Dual Laser targeting from -30°C to 1000°C (-22°F to 1832°F)



FEATURES

- Fast, high accuracy and small spot size
- Optical resolution up to 50:1 with selectable optics
- Double laser aiming identifies real spot location and actual spot size at any distance
- Scalable 4-20 mA output in combination with simultaneous alarm output
- USB programming interface and software - optional
- On board emissivity adjustment or remote via software
- Short circuit and polarity reversal protection
- Usable up to 85°C ambient temperature without cooling
- Automatic laser switch off at 50°C
- Wide power requirement range: 5 to 28 V DC

General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20 - 85°C (50°C with laser on)
Storage temperature	-40 - 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 ¹⁾
Output/ alarm	0-30 V/ 500mA (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)	45mA @ 5V 20mA @ 12V 12mA @ 24V
Power supply	5 - 28 V DC

¹⁾ in dependence on supply voltage

Measurement Specifications

Temperature range (scalable via software)	(LT) -30 to 1000°C/-22 to 1832°F
Spectral range / model	8 - 14 μm / PSC-CS Laser-LT
Optical resolution	50:1
System accuracy (at ambient temperature 23 ± 5°C)	± 1% or ± 1°C ¹⁾
Repeatability (at ambient temperature 23 ± 5°C)	± 0.5% or ± 0.5°C ¹⁾
Temperature resolution (digital)	0.1 K
Response time (90% signal)	150 ms
Emissivity/ Gain (adjustable via switches or via 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

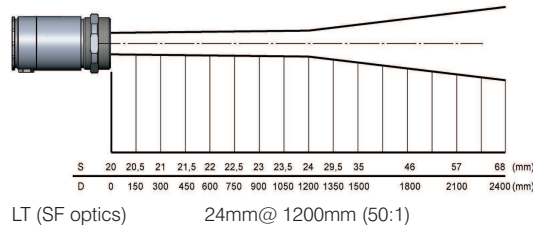
¹⁾ whichever is greater

PSC-CS-Laser-LT

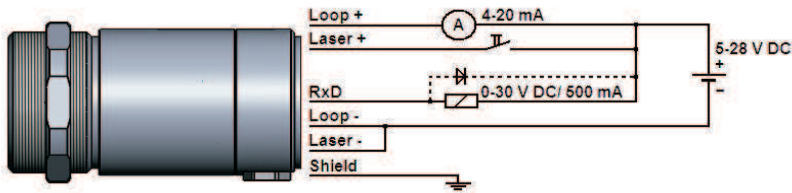
Optical Specifications

LT optics

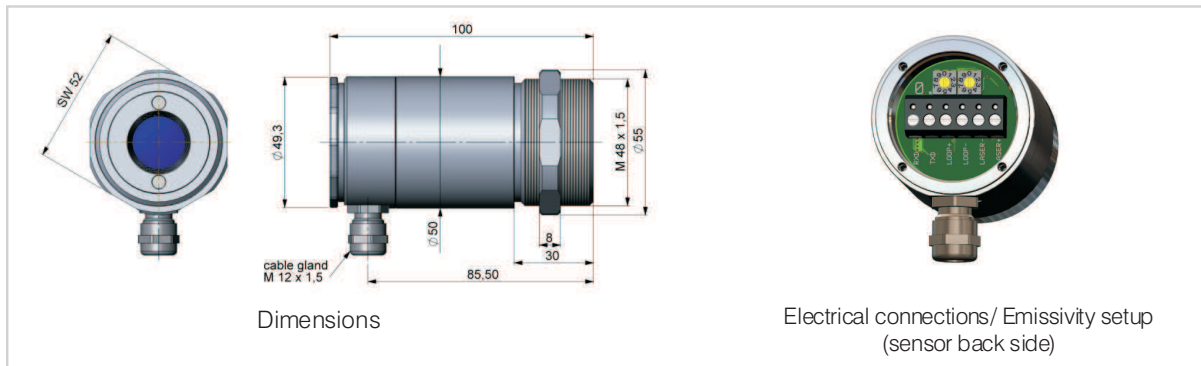
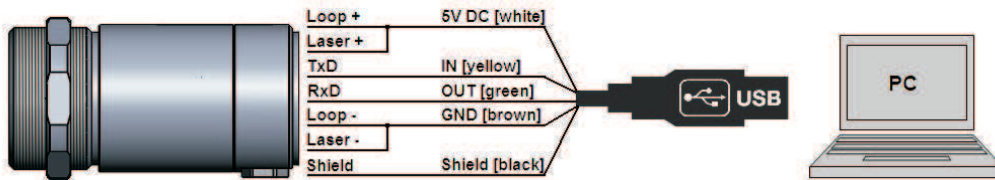
...SF	24 mm@ 1200 mm
...CF1	1.4 mm@ 70 mm
...CF2	3 mm@ 150 mm
...CF3	4 mm@ 200 mm
...CF4	9 mm@ 450 mm



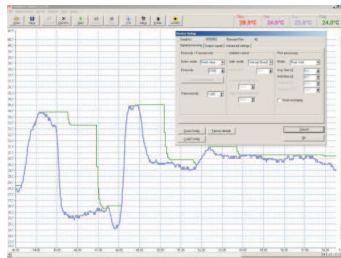
Analog mode: 4-20mA



Programming mode: USB



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 the sensor outputs
- The software PSC Connect allows to customize the sensor to application needs of the user

PSC-CS-Laser-LT-Fast

Digital 2-wire, Self-Contained IR thermometer with Precision Dual Laser targeting from -22 to 1832°F (-30 to 1000°C)



FEATURES

- Fast, high accuracy and small spot size
- Optical resolution up to 50:1 with selectable optics
- Double laser aiming identifies real spot location and actual spot size at any distance
- Scalable 4-20 mA output in combination with simultaneous alarm output
- USB programming interface and software - optional
- On board emissivity adjustment or remote via software
- Short circuit and polarity reversal protection
- Usable up to 85°C ambient temperature without cooling
- Automatic laser switch off at 50°C
- Wide power requirement range: 5 to 28 V DC
- Fast 30 millisecond response

General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20 - 85°C (50°C with laser on)
Storage temperature	-40 - 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 ¹⁾
Output/ alarm	0-30 V/ 500mA (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)	45mA @ 5V 20mA @ 12V 12mA @ 24V
Power supply	5 - 28 V DC

¹⁾ in dependence on supply voltage

Measurement Specifications

Temperature range (scalable via software)	(LT) -22 to 1832°F/-30 to 1000°C
Spectral range / model	8 - 14 μm / PSC-CS Laser-LT-Fast
Optical resolution	50:1
System accuracy (at ambient temperature 23 ± 5°C)	± 1% or ± 1°C ¹⁾
Repeatability (at ambient temperature 23 ± 5°C)	± 0.5% or ± 0.5°C ¹⁾
Temperature resolution (digital)	0.1 K
Response time (90% signal)	30 ms
Emissivity/ Gain (adjustable via switches or via 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

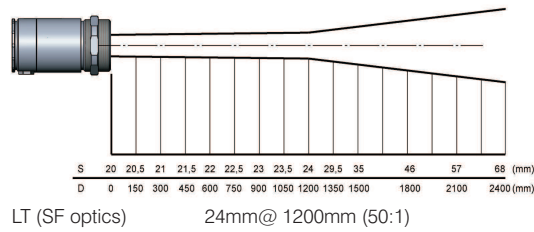
¹⁾ whichever is greater

PSC-CS-Laser-LT-Fast

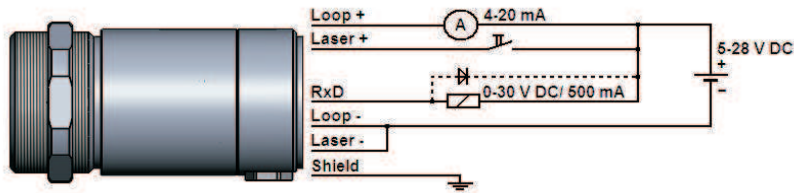
Optical Specifications

LT optics

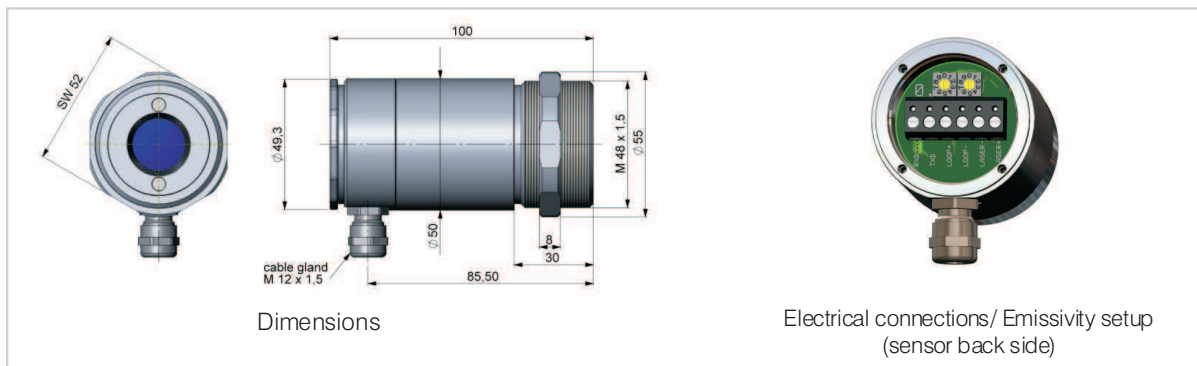
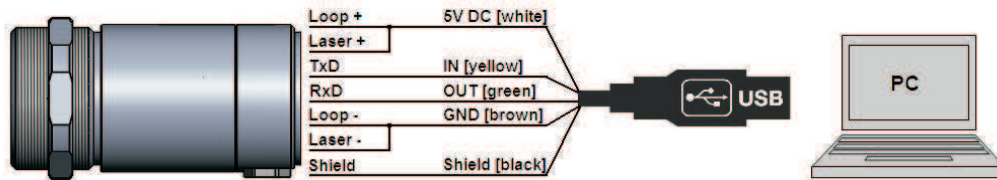
...SF	24 mm@ 1200 mm
...CF1	1.4 mm@ 70 mm
...CF2	3 mm@ 150 mm
...CF3	4 mm@ 200 mm
...CF4	9 mm@ 450 mm



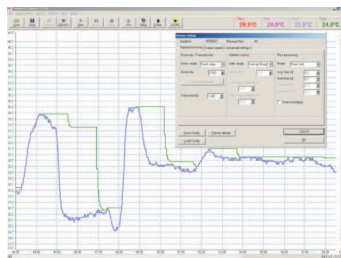
Analog mode: 4-20mA



Programming mode: USB



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 the sensor outputs
- The software PSC Connect allows to customize the sensor to application needs of the user

PSC-CS-Laser-G5HF

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



FEATURES

- Wide Temperature Range: 200-1650°C/392-3002°F
- Scalable 4-20mA output in combination with simultaneous alarm output
- On board emissivity adjustment or remote via software
- Small spot size down to 0.064 (1.6mm)
- Loop-powered 2-wire interface for ease of installation
- Innovative double-laser sighting for pinpoint targeting of measurement area (4 wire connection)
- Adjustment of all IR sensor parameters with real-time graphical display software via USB
- Ambient temperature rating up to 85°C

General specifications

Environmental rating	IP 65 (NEMA-4) front mountable at vacuum processes (up to 10 ⁻³ mbar)
Ambient temperature	-20°C to 85°C (50°C with laser ON)
Storage temperature	-40°C to 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 to 20 mA
Loop resistance	max. 1000 Ω ¹⁾
Output / alarm	0 - 30 V / 500 mA (open-collector)
Output/ digital	uni-/ bidirectional, 9,6 kBaud, 0/3 V Pegel, 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 - 28 V DC

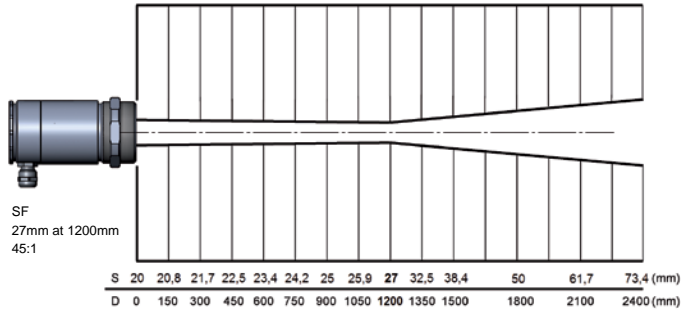
Measurement specifications

Temperature range (scalable via software)	200°C to 1650°C 392°F to 3002°F
Spectral range	5 µm
Optical resolution (90 % energy)	45:1
System accuracy (at T _{amb} = 23 ± 5°C)	± 1%
Repeatability (at T _{amb} = 23 ± 5°C)	± 0.5%
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	PSC Compact Connect

¹⁾ dependent on supply voltage

Field of View Diagram

FOV of SF (Std. Focus) optics, D:S = 45:1

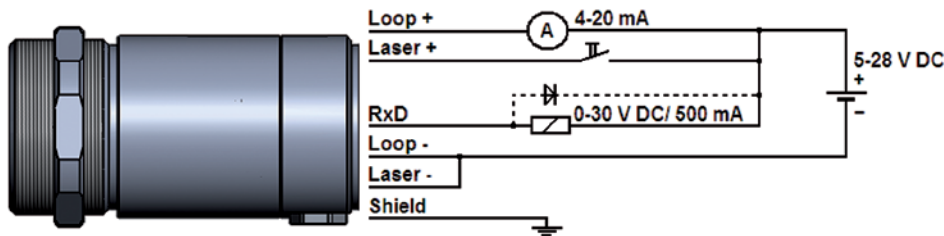


Optical choices: D:S = 45:1

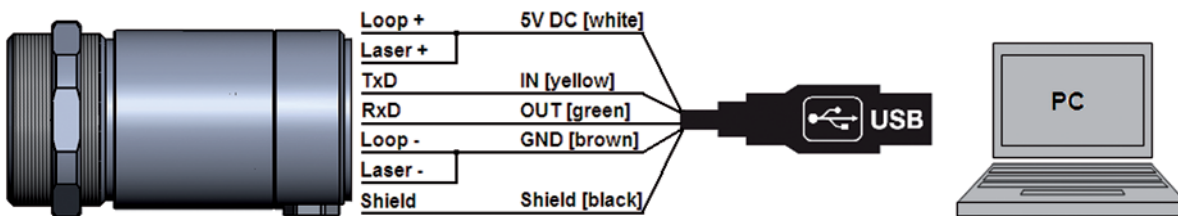
...SF	27.0 mm @ 1200 mm
...CF1	1.6 mm @ 70 mm
...CF2	3.4 mm @ 150 mm
...CF3	4.5 mm @ 200 mm
...CF4	10.0 mm @ 450 mm

Wiring Connections

Analog mode of operation

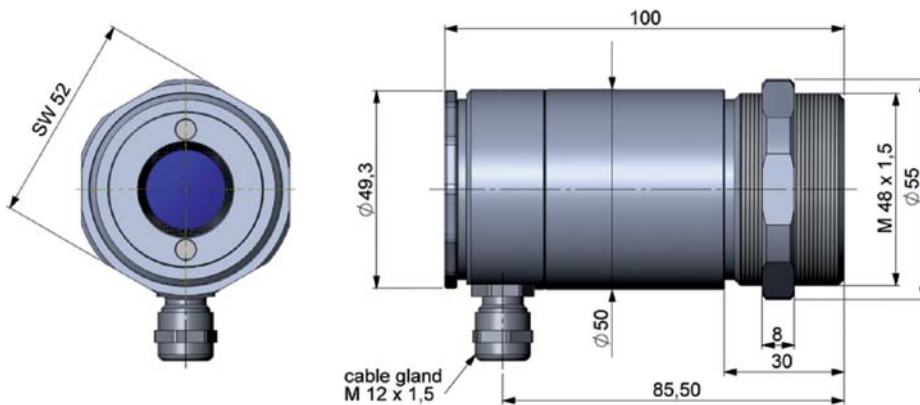


Digital mode of operation



IR Sensor Dimensions

PSC-CS-Laser-G5HF



Electrical connections / emissivity adjustment (sensor back side)



Specifications are subject to change without notice
09/24/15

PSC-CS-Laser-2ML /2MH Series

Digital 2-wire, Self-Contained IR Thermometer With Precision Dual Laser Targeting From 250 to 1600°C (482 to 2912°F)



- Fast, high accuracy and ultra-small spot size
- Optical resolution up to 300:1 with selectable optics
- Double laser aiming identifies target location and actual spot size at other than focal distance
- Scalable 4-20 mA output in combination with simultaneous alarm output
- USB programming interface and software - optional
- On board emissivity adjustment or remote via software
- Short circuit and polarity reversal protection
- Usable up to 85°C ambient temperature without cooling
- Rugged protective hardware assemblies
- Automatic laser switch off at 50°C
- Wide power range: 5 to 28 V DC or by USB

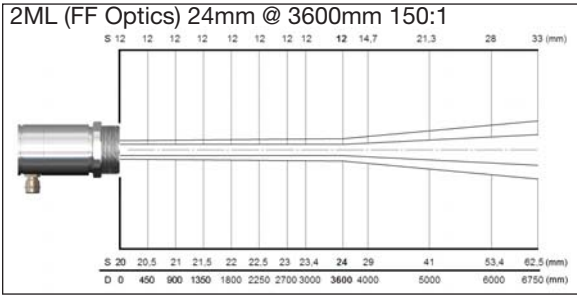
GENERAL SPECIFICATIONS	
Environmental Rating	IP 65 (NEMA-4)
Ambient Temperature	-20 to 85°C (50°C with laser on)
Storage Temperature	-40 to 85°C
Relative Humidity	10-95% non condensing
Vibration	IEC 68-2-6: 3G, 11-200Hz, any axis
Shock	IEC 68-2-27: 50G, 11ms, any axis
Weight	600g (1.32lbs)
ELECTRICAL SPECIFICATIONS	
Output/Analog	4-20mA
Loop Resistance	Max. 1000 Ω
Output/Alarm	0-30 V/500mA (open collector)
Output/Digital	Uni-/bidirectional, 9.6 kBaud, 0/3 V digital level, USB options!
Cable Length (connector version only)	3 m/8m/15m
Current Draw	45mA @ 5V 20mA @ 12V 12mA @ 24V
Power Supply	5 - 28 V DC

TECHNICAL DATA	
Temperature Range (Scalable via Software)	2ML: 250 to 800°C (482 to 1472°F) 2MH: 385 to 1600°C (725 to 2912°F)
Spectral Range*	1.6µm
Optical Resolution	2ML: 150:1 2MH: 300:1
System Accuracy (at Ambient Temperature 23 ± 5°C)	± (0.3% of reading + 2°C)1)
Repeatability (at Ambient Temperature 23 ± 5°C)	± (0.1% of reading + 1°C)1)
Temperature Resolution (Digital)	0.1°C
Response Time (90% Signal)	Adjustable up to 10 ms
Emissivity/Gain (Adjustable via Switches or PSC Connect Software)	0.100 to 1.100
IR Window Correction (Adjustable via PSC Connect Software)	0.100 to 1.000
Signal Processing (Parameter Adjustable via PSC Connect Software)	Peak Hold, Valley Hold, Average, Extended Hold Function with Threshold and Hysteresis

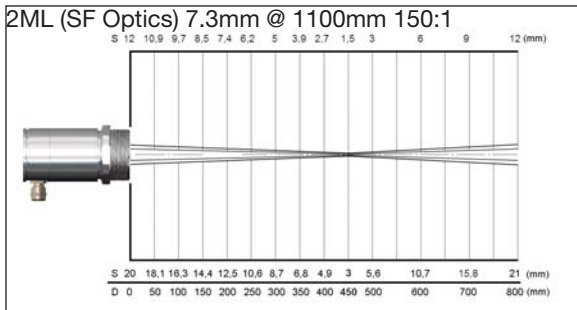
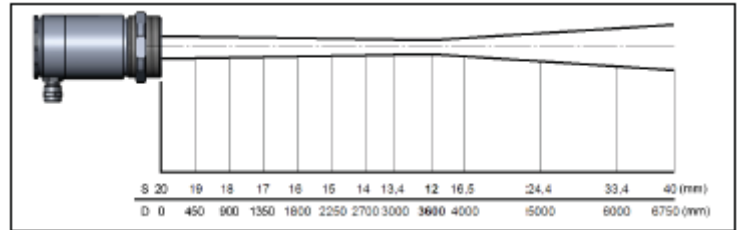
Optical Field Of View Diagrams

2ML Version (250 to 800°C)	
FF	24mm @ 3600mm
SF	7.3mm @ 1100mm
CF-2	1mm @ 150mm
CF-3	1.3mm @ 200mm
CF-4	3mm @ 450mm

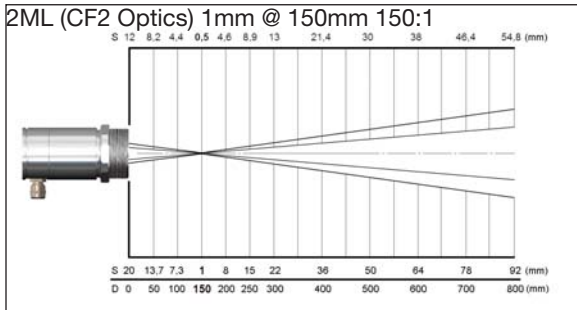
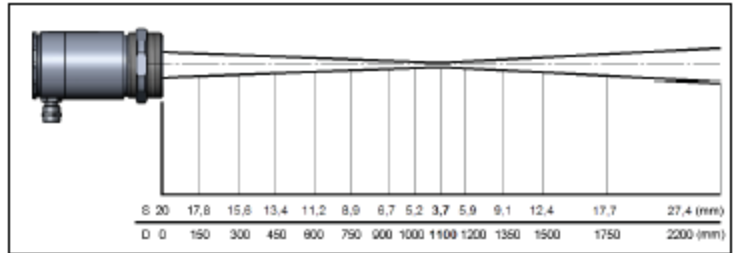
2MH Version (385 to 1600°C)	
FF	12mm @ 3600mm
SF	3.7mm @ 1100mm
CF-2	0.5mm @ 150mm
CF-3	0.7mm @ 200mm
CF-4	1.5mm @ 450mm



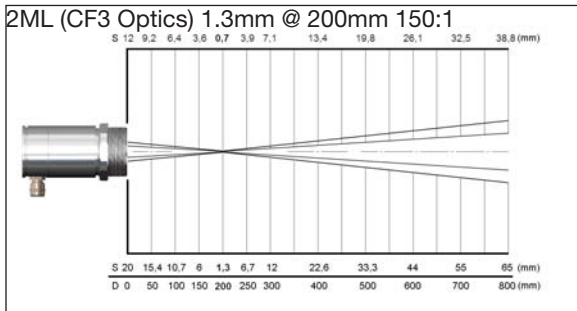
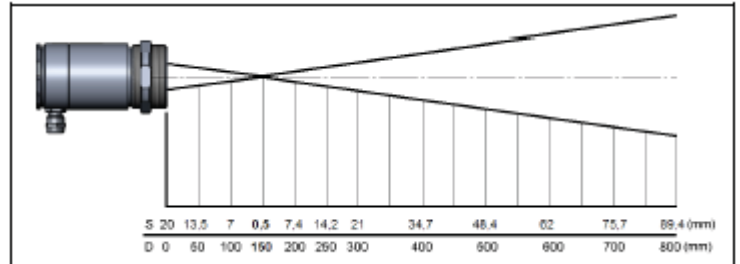
2MH (FF Optics) 12mm @ 3600mm 300:1



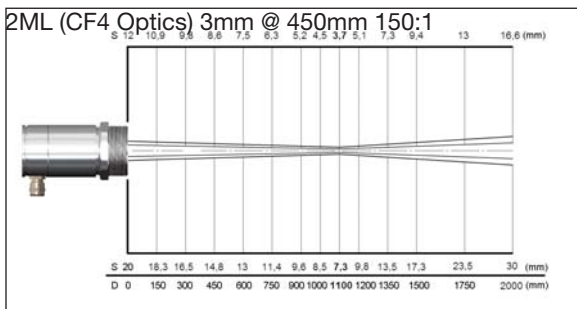
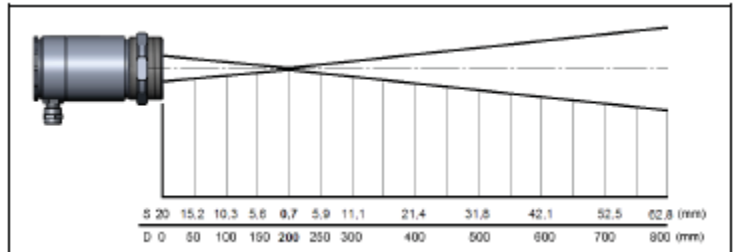
2MH (SF Optics) 3.7mm @ 1100mm 300:1



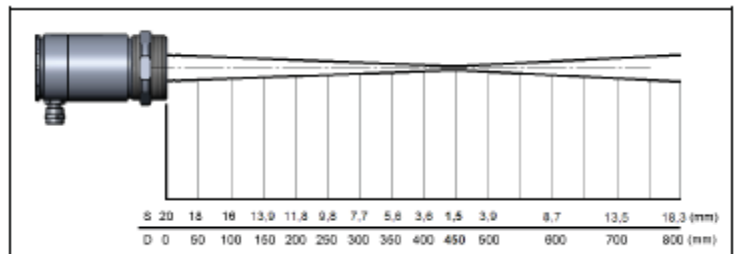
2MH (CF2 Optics) 0.5mm @ 250mm 300:1



2MH (CF3 Optics) 0.7mm @ 200mm 300:1



2MH (CF4 Optics) 1.5mm @ 450mm 300:1





Block 1: PSC = Process Sensors Corporation

Block 2: CS = Compact Sensor

Block 3: Method of Aiming: Laser

Block 4: Temperature Range: **2ML** 250 to 800°C (482 to 1472°F)
2MH 385 to 1600°C (725 to 2912°F)

Block 5: Focus Distance: **2ML** **FF** = 3600mm for a 24mm spot (Far Focus)
SF = 1100mm for a 7.3mm spot size (Standard Focus)
CF2 = 150mm for a 1mm spot size (Close Focus)
CF3 = 200mm for a 1.3mm spot size
CF4 = 450mm for a 3mm spot size

2MH **FF** = 3600mm for a 12mm spot size
SF = 1100mm for a 3.7mm spot size
CF2 = 150mm for a 0.5mm spot size
CF3 = 200mm for a 0.7mm spot size
CF4 = 450mm for a 1.5mm spot size

Block 6: Optional C = Connector (Male, Located on Sensor Rear Panel)

Block 7: Optional: Cable Length (For use with Connector - C Version)
CB3 = 3m cable with quick disconnect female connector
CB3H = 3m high temp cable with quick disconnect female connector
CB8 = 8m cable with quick disconnect female connector
CB8H = 8m hi-temp cable with quick disconnect female conn.
CB15 = 15m cable with quick disconnect female connector
CB15H = 15m hi-temp cable with quick disconnect female conn

Example:

PSC-CS-LASER-2MH-SF-C-CB3

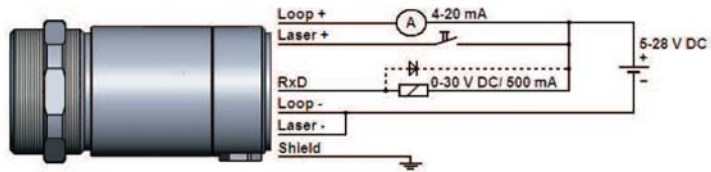
This model number refers to: Model PSC-CS-Laser Sensor, Temperature Range 385 to 1600°C, with 1.6µ Spectral Response, Standard Fixed Focus Optics (1100mm distance for a 3.7mm spot size), Connector on Sensor Rear Panel and 3 meter cable with quick disconnect female connector.

Note: Boxes 6 and 7 are options. Leave blank if not required.

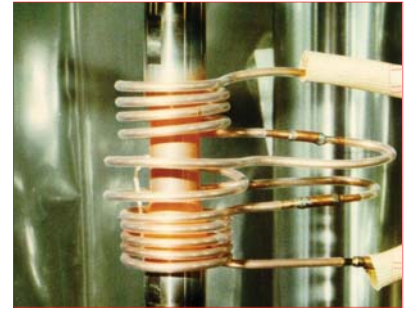
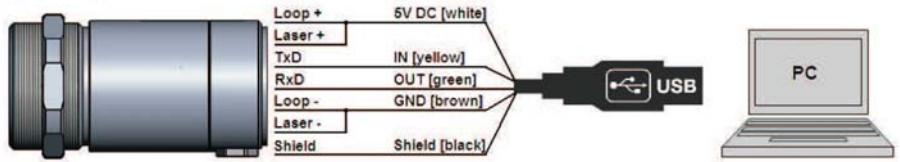


Rear Panel View

Analog mode: 4-20mA



Programming mode: USB



Accessories

AC-CSL-LAB	Adjustable Stainless Steel Mounting Bracket
AC-CSL-LAP	Stainless Steel Air Purge Collar
AC-CSL-LW	Stainless Steel Water Cooled Housing -Temps up to 175°C (347°F)
ACC-JCSL	Heavy Duty Stainless Steel Cooling Jacket w/Air Purge & Bracket
950-031-SS	6" Stainless Steel Sight Tube w/30° Slope & Weep Hole
950-047-SS	12" Stainless Steel Sight Tube w/30° Slope & Weep Hole

SS Water Cooled Housing	SS Air Purge Collar	Adjustable SS Mounting Bracket
		
Heavy Duty SS Cooling Jacket with Air Purge and Bracket	12" SS Sight Tube	
		

Specifications and or product picture subject to change. V1-07/2012

PROCESS SENSORS CORPORATION

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