PSC-S42NL & PSC-G42NL

SELF-CONTAINED, 2-WIRE PYROMETERS FOR INDUSTRIAL APPLICATIONS

KPM

PROCESS SENSORS CORPORATION
a KPM brand

OVERVIEW

The PSC-G42NL and PSC-S42NL 1-color pyrometer series provides functionality in 2 ways: As a 2-wire loop powered device or 4 wire connection for operation with the precision laser aiming feature. This IR pyrometer series offers on-board emissivity adjustment, precision laser sighting and a wide temperature range from 250°C to 2500°C.

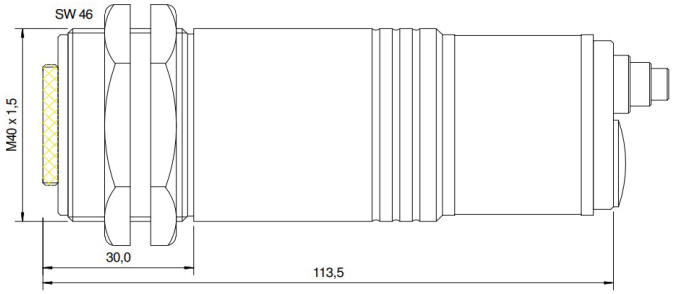
They are designed to easily integrate into existing measurement and control systems with a linear 4 to 20 mA output signal and are ideal for industrial and OEM machine building applications. The IR temperature sensors provide a fast response time, small spot size, and stainless-steel housing. For use in harsh industrial environments, the rugged stainless steel protective cooling jacket with air purge is rated for ambient temperatures up to 200°C (392°F), offering a full range of electrical, mechanical and optical accessories.

APPLICATIONS

- Metal processing
- Steel
- Furnaces
- Vacuum reactors
- Induction heating
- Semiconductor wafer/crystal growth
- Kilns
- Ceramics
- Molten glass
- Composites
- Medical & R&D

Standard cooling jacket
P/N PSC-3310A23010

Cooling jacket configuration for outdoor/harsh applications
P/N PSC-3310A23015



Dimensions in mm

PSC-S42NL & PSC-G42NL FEATURES

- Ideal for extreme high temperature applications from 250°C to 2500°C (482°F to 4532°F)
- Simple installation with 2-wire, loop powered IR sensor; precision aiming with laser possible with 4-wire
- 4 - 20 mA output
- Protective cooling/air purge assemblies for harsh industrial applications (IP65 rated)
- On-board emissivity adjustment
- High resolution optics
- Variety of fixed focus optics
- Stainless steel housing

ORDERING INFORMATION

Part Number	Description
PSC-S42NL	PSC-S42NL Sensor, Manual, Inspection Sheet, 2 Mounting Screw Nuts
PSC-G42NL	PSC-G42NL Sensor, Manual, Inspection Sheet, 2 Mounting Screw Nuts

ACCESSORIES

Part Number	Description
PSC-3310A21011	Mounting Angle, Adjustable
PSC-3310A21210	Window Slide (Without Window)
PSC-3310A22010	Air Purge Unit
PSC-3310A23010	Standard Cooling Jacket
PSC-3310A23015	Sealed Stainless Steel End Cap for Cooling Jacket
950-004	Power Supply
	Digital Temperature Display with 4-20mA Re-Transmitted output and a Laser Switch in Wall Mount FiberGlass Enclosure
	Digital Temperature Display
	Connecting Cables in 2, 5, 10, 15, 20 or 30 m

SPECIFICATIONS

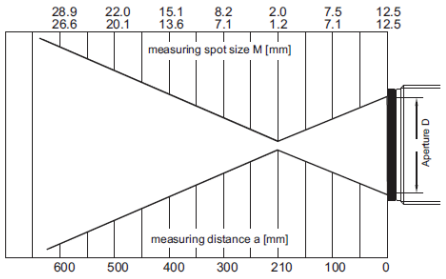
	PSC-S42NL	PSC-G42NL
Temperature Range	600°C to 1800°C (1112°F to 3272°F) 800°C to 2500°C (1472°F to 4532°F)	250°C to 1300°C (482°F to 2372°F) 350°C to 1800°C (662°F to 3272°F)
Spectral Range	0.8 µm to 1.1 µm	1.5 µm to 1.8 µm
Sub Temperature Range	Adjustable Within Temperature Range, Minimum Span 50°C (122°F)	
Fixed Focus Optics (see **Page 3** for Details)	210, 290, 650, 4000	
Measurement Accuracy	0.5 % Of Measured Value In °C	
Repeatability[1]	0.1 % Of Measured Value °C	
NETD[2]	< 0.1 °C[1]	
Response Time (t95)	10 ms, Optional Adjustable Up to 100 s (Factory-Provided)	
Emissivity	0.05 to 1.00, Adjustable (Factory Setting: 1.00)	
Output	4 to 20 mA, Temperature Linear, Max. Load: 500 Ohms At 24 V	
Power Supply	24 VDC ± 25 %, Residual Ripple 500 mV, Laser Aiming Light: 7 V to 30 VDC, < 200 mW	
Power Consumption	Max. 0.6 W (Without Aiming Light)	
Operating Temperature	0°C to 70°C (32°F to 158°F)	
Storage Temperature	–20°C to 70°C (–4°F to 158°F)	
Weight	Appr. 450 G (15.87 oz)	
Dimensions	Length 4.92in (125mm), Thread M40x1.5	
Housing	Stainless Steel with Screw-in Plug	
Safety Class	IP 65 (According to DIN En 60529 and DIN 40050)	
CE Symbol	According To Eu Regulations	

*Temperature range can be factory preset to a sub temperature range within the selected IR sensor's overall temperature range span. Minimum temperature span is 50°C. The temperature range cannot be changed in the field. 1) Details for black body radiator, T_u = 23°C, t95 = 1 s . 2) Noise equivalent temperature difference. 3) At Tu = 23°C, $T_{object\ DT\ 42L}$ = 100°C, $T_{object\ DT\ 42G}$ = 250°C respectively 700°C

FOCUS OPTIC TYPES

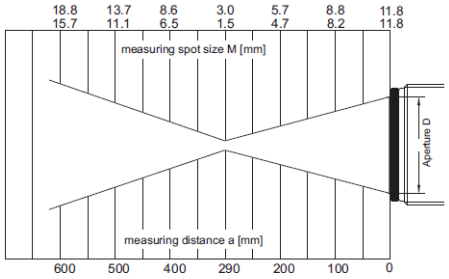
Optics 210 (focal point at 210 mm measuring distance), aperture D = 12.5 mm

Measuring distance a [mm]	0	100	210	300	400	500	600
Temperature range	Measuring field diameter M [mm]						
PSC-S42NL (600°C - 1800°C)	12.5	7.5	**2.0**	8.2	15.1	22.0	28.9
PSC-S42NL (800°C - 2500°C)	12.5	7.1	**1.2**	7.1	13.6	20.1	26.6
PSC-G42NL (250°C - 1300°C)	12.5	7.5	**2.0**	8.2	15.1	22.0	28.9
PSC-G42NL (350°C - 1800°C)	12.5	7.1	**1.2**	7.1	13.6	20.1	26.6



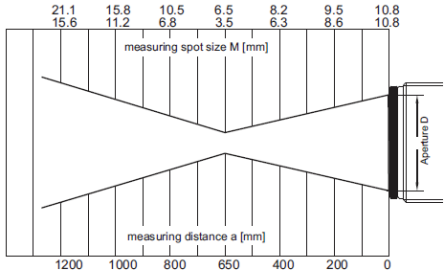
Optics 290 (focal point at 290 mm measuring distance), aperture D = 11.8 mm

Measuring distance a [mm]	0	100	200	290	400	500	600
Temperature range	Measuring field diameter M [mm]						
PSC-S42NL (600°C - 1800°C)	11.8	8.8	5.7	**3.0**	8.6	13.7	18.8
PSC-S42NL (800°C - 2500°C)	11.8	8.2	4.7	**1.5**	6.5	11.1	15.7
PSC-G42NL (250°C - 1300°C)	11.8	8.8	5.7	**3.0**	8.6	13.7	18.8
PSC-G42NL (350°C - 1800°C)	11.8	8.2	4.7	**1.5**	6.6	11.1	15.7



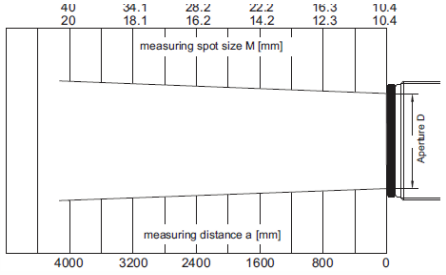
Optics 650 (focal point at 650 mm measuring distance), aperture D = 10.8 mm

Measuring distance a [mm]	0	200	400	650	800	1000	2000
Temperature range	Measuring field diameter M [mm]						
PSC-S42NL (600°C - 1800°C)	10.8	9.5	8.2	**6.5**	10.5	15.8	21.1
PSC-S42NL (800°C - 2500°C)	10.8	8.6	6.3	**3.5**	6.8	11.2	15.6
PSC-G42NL (250°C - 1300°C)	10.8	9.5	8.2	**6.5**	10.5	15.8	21.1
PSC-G42NL (350°C - 1800°C)	10.8	8.6	6.3	**3.5**	6.78	11.2	15.6



Optics 4000 (focal point at 4000 mm measuring distance), aperture D = 10.4 mm

Measuring distance a [mm]	0	400	800	1600	2400	3200	4000
Temperature range	Measuring field diameter M [mm]						
PSC-S42NL (600°C - 1800°C)	10.4	13.4	16.3	22.2	28.2	34.1	**40.0**
PSC-S42NL (800°C - 2500°C)	10.4	11.4	12.3	14.2	16.2	18.1	**20.0**
PSC-G42NL (250°C - 1300°C)	10.4	13.4	16.3	22.2	28.2	34.1	**40.0**
PSC-G42NL (350°C - 1800°C)	10.4	11.4	12.3	14.2	16.2	18.1	**20.0**



KPM Analytics | Process Sensors IR
787 Susquehanna Avenue I Franklin Lakes, NJ 07417 USA
Phone: +1 774.399.0461
www.processsensorsir.com I irtemp@processsensors.com