PROCESS SENSORS CORPORATION

PSC-S44N / PSC-G44N Pyrometer Series

Self-Contained, Non-Contact Infrared Temperature Sensors

- **Stainless steel housing with variable or fixed focus optics**
- **RS485 interface for bus system integration**
- **Bright green LED or laser aiming**
- **Selection of temperature ranges from 250°C to 2500°C**
- **Integrated USB interface for sensor parameter settings**

The innovative Process Sensors Models PSC-S44N and PSC-G44N with digital technology are compact, rugged and designed for simplicity of installation.

The pyrometer's RS485 or 4-20mA linear output signal can be easily integrated into existing instrumentation for recording and process control.

The rugged stainless steel housing with protective window and cooling jacket with air purge ensures reliable operation in harsh environments.

Models PSC-S44N and PSC-G44N are suitable for mid to high temperature measurements from 250°C, with fast response time of 5 milliseconds.

The 44 Series sensors are ideal instruments for system integrators, machine builders (OEMs), and engineering construction companies.

Typical applications:

- Steel industry
- Furnace
- Welding
- Semiconductor
- Solar
- Ceramic industry
- Metal heat treating
- Induction heating
- Rotary kilns
- Sintering

The integrated green LED or LASER facilitates accurate focusing and target alignment. The projected size of the LED is identical to the measuring spot.

Equipped with USB interface, adjustment of all sensor parameters can be accessed via a PC, such as emissivity, response time, temperature sub range, peak picker, etc.

Software is provided for IR sensor adjustments temperature measuring and data acquisition evaluation.

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TECHNICAL SPECIFICATIONS FOR PSC-S44N / PSC-G44N

TECHNICAL DATA				
Type	**PSC-S44N**		**PSC-G44N**	
Temperature range	600 °C to 1800 °C	800 °C to 2500 °C	250 °C to 1300 °C	350 °C to 1800 °C
Sub temperature range	Adjustable within temperature range, minimum span 51 °C			
Spectral range	0.8 µm to 1.1 µm		1.5 µm to 1.8 µm	
Optics (refer tables)	Several fixed optics (type I, II, III and IV)			
Distance ratio	100 : 1	200 : 1	100 : 1	200 : 1
Measurement uncertainty	0.5 % of meas. value (T_U = 23 °C, ε = 1, t95 = 1s)			
Reproducibility	0.1 % of meas. value (T_U = 23 °C, ε = 1, t95 = 1s)			
Response time (t95)	5 ms, adjustable up to 10s			
Emissivity	Adjustable, 0.05 to 1.00			
Storage	Maximum value storage, adjustable via interface			
Output	4…20 mA, linear, max. load: 700 Ω at 24 V			
Interface	Galvanically isolated RS485 interface, half duplex, 115 Kbd max.			
Software	PSC Spot for Windows®			
Aiming	Green LED or LASER aiming			
Parameters	Adjustable via software (emissivity, response time, temperature unit °C or °F, storage, sub range) with use of communications cable			
Power supply	24 VDC ± 25 % and 5 V to 30 VDC (LED/laser)			
Power consumption	1.5W Max.			
Operating temperature	0 °C to 70 °C			
Storage temperature	–20 °C to 70 °C			
Weight	approx. 1 lb			
Dimensions	Thread M40 x 1.5, length 5 inches (125mm)			
Housing	Stainless steel with plug connector and protection window			
Safety class	IP 65 (DIN 40 050)			
CE-Symbol	According to EU regulations (EN 50 011)			
Scope of delivery	PSC-S44N or PSC-G44N, manual, inspection sheet, PSC Spot for Windows (without connecting cable, please order separately)			
Accessories, mechanical, electrical and optical				
Connecting cable 12-pin	Length Feet 6.5', 16', 33', 49', 65', 82', 98' (2 m, 5 m, 10 m, 15 m, 20 m, 25 m or 30 m)			
Interface Module	RS485 to USB			
Power supply	24 VDC, 0.6 A			
Mounting angle bracket	Fixed or adjustable			
Ball and socket mounting	Stainless steel, adjustable			
Air purge unit	Stainless steel, air pressure 0.1 to 1.0 bar, oil free			
Water cooling jacket	With integrated air purge and mounting angle			
Vacuum flange	KF 16, with quartz glass			
Protection window	Quartz or sapphire			

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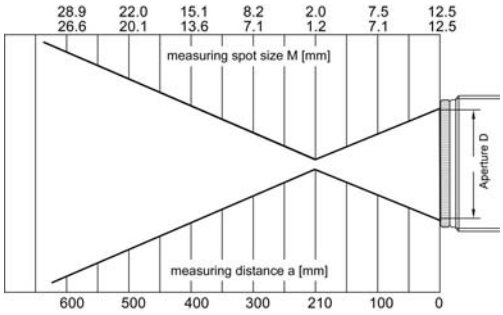
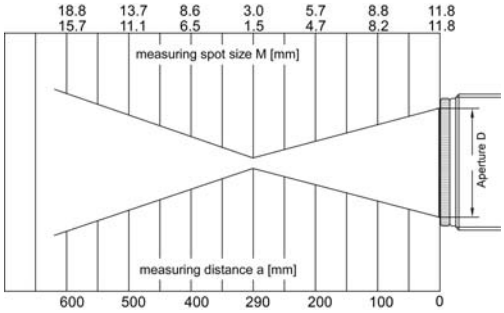
Optics I (focussed at a = 210mm measuring distance)

Measuring distance a in inches (mm)	0	4 (100)	**8.26 (210)**	12 (300)	15.7 (400)	19.6 (500)	23.6 (600)
Measuring field diameter M in mm							
PSC-S44N (600°C to 1800°C)	0.5 (12.5)	0.3 (7.5)	**0.8 (2.0)**	0.33 (8.2)	0.6 (15.1)	0.88 (22.0)	1.56 (28.9)
PSC-S44N (800°C to 2500°C)	0.5 (12.5)	0.28 (7.1)	**0.48 (1.2)**	0.28 (7.1)	0.54 (13.6)	0.8 (20.1)	1.06 (26.6)
PSC-G44N (250°C to 1300°C)	0.5 (12.5)	0.3 (7.5)	**0.8 (2.0)**	0.33 (8.2)	0.6 (15.1)	0.88 (22.0)	1.56 (28.9)
PSC-G44N (350°C to 1800°C)	0.5 (12.5)	0.28 (7.1)	**0.48 (1.2)**	0.28 (7.1)	0.54 (13.6)	0.8 (20.1)	1.06 (26.6)



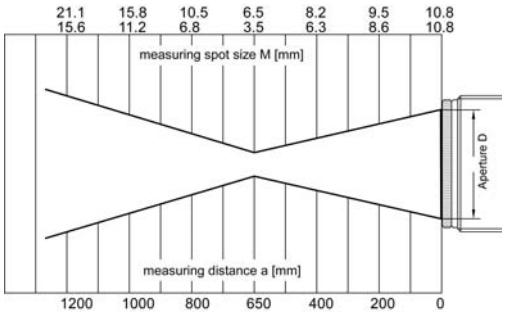
Optics II (focussed at a = 290mm measuring distance)

Measuring distance a in inches (mm)	0	4 (100)	7.9 (200)	**11.6 (290)**	15.7 (400)	19.6 (500)	23.6 (600)
Measuring field diameter M in mm							
PSC-S44N (600°C to 1800°C)	0.47 (11.8)	0.35 (8.8)	0.23 (5.7)	**0.12 (3.0)**	0.34 (8.6)	0.55 (13.7)	0.75 (18.8)
PSC-S44N (800°C to 2500°C)	0.47 (11.8)	0.33 (8.2)	0.19 (4.7)	**0.60 (1.5)**	0.26 (6.5)	0.44 (11.1)	0.63 (15.7)
PSC-G44N (250°C to 1300°C)	0.47 (11.8)	0.35 (8.8)	0.23 (5.7)	**0.12 (3.0)**	0.34 (8.6)	0.55 (13.7)	0.75 (18.8)
PSC-S44N (350°C to 1800°C)	0.47 (11.8)	0.33 (8.2)	0.19 (4.7)	**0.60 (1.5)**	0.26 (6.5)	0.44 (11.1)	0.63 (15.7)



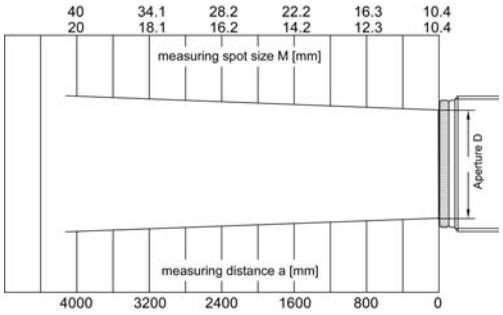
Optics III (focussed at a = 650mm measuring distance)

Measuring distance a in inches (mm)	0	7.9 (200)	15.7 (400)	**25.59 (650)**	32 (800)	40 (1000)	48 (1200)
Measuring field diameter M in mm							
PSC-S44N (600°C to 1800°C	0.43 (10.8)	0.38 (9.5)	0.33 (8.2)	**0.26 (6.5)**	0.42 (10.5)	0.63 (15.8)	0.84 (21.1)
PSC-S44N (800°C to 2500°C)	0.43 (10.8)	0.34 (8.6)	0.25 (6.3)	**0.14 (3.5)**	0.27 (6.8)	0.45 (11.2)	0.62 (15.6)
PSC-G44N (250°C to 1300°C)	0.43 (10.8)	0.38 (9.5)	0.33 (8.2)	**0.26 (6.5)**	0.42 (10.5)	0.63 (15.8)	0.84 (21.1)
PSC-G44N (350°C to 1800°C)	0.43 (10.8)	0.34 (8.6)	0.25 (6.3)	**0.14 (3.5)**	0.27 (6.8)	0.45 (11.2)	0.62 (15.6)



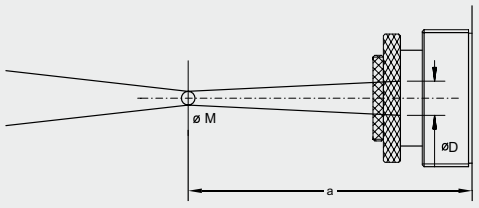
Optics IV (focussed at a = 4000mm measuring distance)

Measuring distance a in inches (mm)	0	15.7 (400)	32 (800)	64 (1600)	96 (2400)	128 (3200)	**160 (4000)**
Measuring field diameter M in mm							
PSC-S44N (600°C to 1800°C)	0.41 (10.4)	0.54 (13.4)	0.65 (16.3)	0.89 (22.2)	1.13 (28.2)	1.36 (34.1)	**1.6 (40)**
PSC-S44N (800°C to 2500°C)	0.41 (10.4	0.56 (1.4)	0.49 (12.3)	0.57 (14.2)	0.65 (16.2)	0.72 (18.1)	**0.8 (20)**
PSC-G44N (250°C to 1300°C)	0.41 (10.4	0.54 (13.4)	0.65 (16.3)	0.89 (22.2)	1.13 (28.2)	1.36 (34.1)	**1.6 (40)**
PSC-G44N (350°C to 1800°C)	0.41 (10.4	0.56 (1.4)	0.49 (12.3)	0.57 (14.2)	0.65 (16.2)	0.72 (18.1)	**0.8 (20)**



Variable Focus Optics

Measuring distance a in mm	0	300	400	500	600	700	800
Optics pullout in mm	0	6.1	5.0	3.9	2.6	1.3	0
Measuring field diameter M in mm							
PSC-S44N (600 °C to 1800 °C)	10	3.0	4.0	5.2	6.5	7.5	8.6
PSC-S44N (800 °C to 2500 °C)	10	1.5	2.1	2.6	3.5	4.5	5.5
PSC-G44N (250 °C to 1300 °C)	10	3.0	4.0	5.2	6.5	7.5	8.6
PSC-G44N (350 °C to 1800 °C)	10	1.5	2.1	2.6	3.5	4.5	5.5



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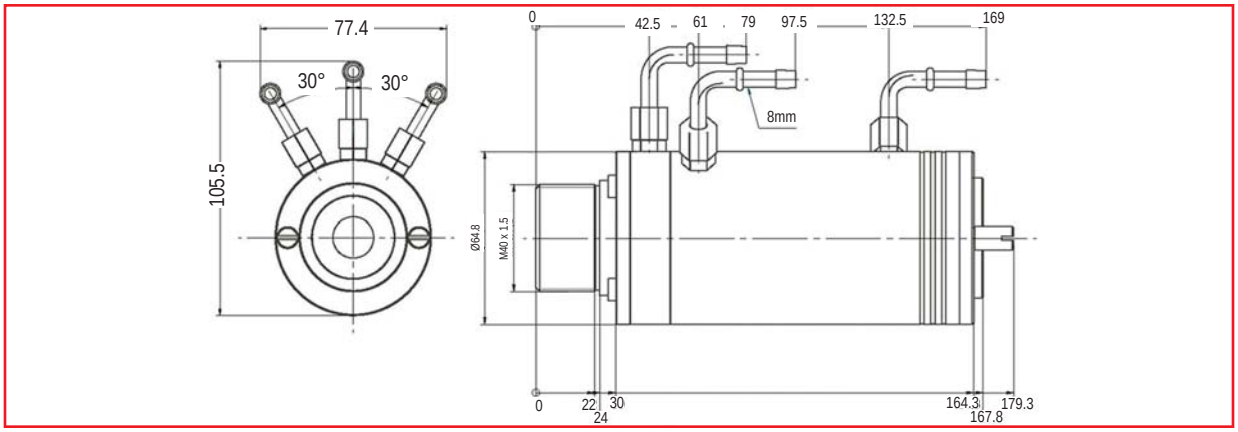
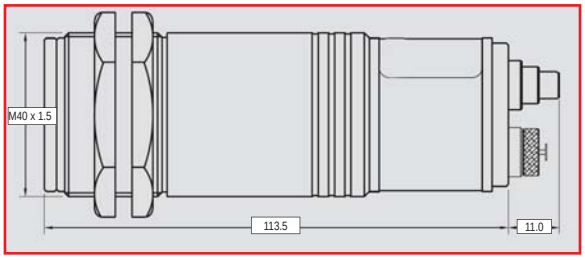
Dimensions in MM

Cooling Jacket & Air Purge



Pyrometer



Accessories

Adjustable mounting bracket
PN#PSC-3310A21011

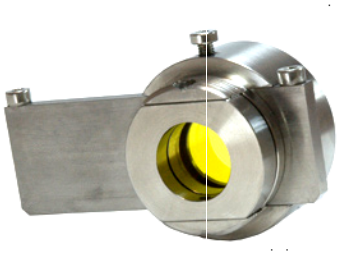
Cooling jacket with air purge
PN#PSC-3310A23010

Air purge unit
PN#PSC-3310A22010

Digital Display

Power supply 24 VDC (din rail)
PN#950-004

Window Slide



PROCESS SENSORS CORPORATION
787 Susquehanna Avenue, Franklin Lakes, NJ USA • Tel: 201-485-8773 • Fax: 201-485-8770 • www.ProcessSensorsIR.com • irtemp@processsensors.com
Headquarters: 113 Cedar Street, Milford, MA USA • Tel: 508-473-9901 • Fax: 508-473-0715

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