

# PSC-T40L

## SELF-CONTAINED, 2-WIRE PYROMETER FOR INDUSTRIAL APPLICATIONS



### OVERVIEW

The PSC-T40L is a simple, 1-color, 2-wire loop powered sensor that offers a wide temperature range and high resolution optics. The sensor is ideal for industrial and OEM machine building applications. It easily integrates into existing measurement and control systems with a linear 4 to 20 mA output signal. PSC-T40L pyrometer provides a fast response time, small spot size, several fixed focus optics and a robust stainless-steel housing.

Optionally, with the PSC Spot software combined with an available USB programming cable, users can adjust all pyrometer parameters such as emissivity, response time, and sub-temperature range. The software provides a graphical temperature display with storage and data exporting capabilities. For use in harsh industrial environments, the rugged protective cooling jacket with air purge assembly is rated for ambient temperatures up to 200°C (392°F), with a full range of electrical, mechanical and optical accessories available.

### APPLICATIONS

- Painted/coated metals
- Paper and packaging
- Building materials
- Ovens
- Dryers
- Plastics
- Glass
- Wood
- Minerals
- Ceramics
- Textiles
- Rubber
- Gypsum board
- Food production



### PSC-T40L FEATURES

- Wide temperature range: -40 to 1000°C (-40 to 1832°F)
- Simple installation with 2-wire, loop powered IR sensor
- 4 - 20 mA output
- Protective cooling/air purge assemblies for harsh industrial applications (IP65 rated)
- Emissivity adjustment via PC with free software
- High resolution optics
- Variety of fixed focus optics
- Stainless steel housing



*Heavy duty cooling jacket with integrated air purge for harsh/outdoor applications*

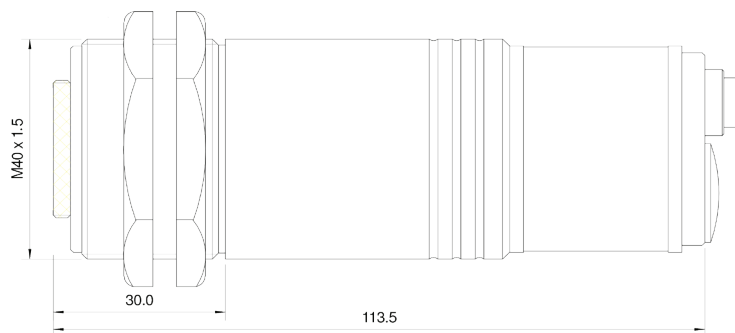


## TECHNICAL DATA

Type	PSC-T40L	PSC-T40L
Temperature Range	-40 °C to 1000 °C	0° to 1000°C (Provides integrated LED aiming)
Fixed Optics	100, 300, 800, 2000	100, 300, 800
Sub Temperature Range	Adjustable within temperature range via USB interface, minimum span 50 °C	
Spectral Range	8 µm to 14 µm	
Distance Ratio	50 : 1	
Accuracy <sup>1</sup>	1.0% of meas. value in °C or 1 K <sup>5</sup>	
Repeatability <sup>2</sup>	0.5% of meas. value in °C or 0.5 K <sup>5</sup>	
NETD <sup>2</sup>	0.1 K <sup>3</sup>	
Response Time (t <sub>95</sub> )	60 ms <sup>4</sup> , adjustable up to 100 s, adjustable via USB interface	
Emissivity	0.200 to 1.000, adjustable via USB interface	
Data Storage	Maximum or minimum value storage, adjustable via USB interface	
Output	4 to 20 mA, temperature linear, max. load: 600 Ω 24 V	
Interface	Galvanically isolated USB interface	
Software	PSC Spot for Windows®	
Aiming	None	Integrated LED aiming light
Parameters	Emissivity, response time, data storage, sub range, adjustable via USB interface and software	
Power Supply	24 VDC ± 25 % residual ripple 500 mV, LED aiming light: 7 V to 30 V DC, < 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	Approx. 15.9 oz (450 g)	
Dimensions	Thread M40 × 1.5, length 125 mm	
Housing	Stainless steel with plug connector	
Safety Class	IP 65 (according to DIN EN 60529 AND DIN 40050)	
CE-Symbol	According to EU regulations (EN 50 011)	
Scope of Delivery	PSC-T40L, manual, mounting nuts, inspection sheet, PSC Spot for Windows® (without connecting cable, please order separately)	

<sup>1</sup> Details for black body radiator, T<sub>u</sub> = 23°C, t<sub>95</sub> = 1 s. Whichever is higher value. <sup>2</sup> Noise equivalent temperature difference. <sup>3</sup> At T<sub>u</sub> = 23°C, ε = 1, t<sub>95</sub> = 200 ms, T<sub>object</sub> = 100°C. <sup>4</sup> PSC-T40L with LED: t<sub>95</sub> = 150 ms. With LED: valid for 100 °C.

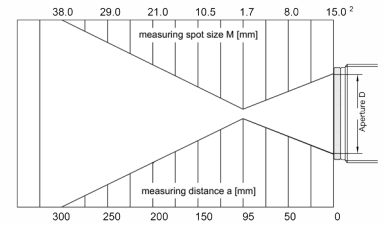
## DIMENSIONAL DRAWING



Dimensions in mm

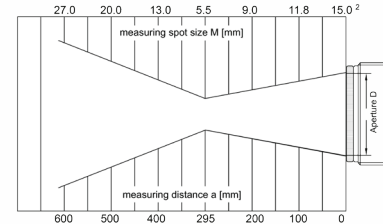
## OPTICS 100 (FOCUSED AT 95/100 MM MEASURING DISTANCE, IN BOLD)

Measuring distance in. (mm)	0	1.97 (50)	<b>3.74 (95)</b>	<b>3.93 (100)</b>	7.87 (200)	9.84 (250)	11.81 (300)
Measuring field diameter M in. (mm)							
PSC-T40L (- 40°C TO 1000°C) without LED aiming light	0.59 (15)	0.31 (8)	<b>0.07 (1.7)</b>	0.08 (2.0)	0.83 (21)	1.14 (29)	1.50 (38)
PSC-T40L (0°C TO 1000°C) with LED aiming light <sup>1</sup>	0.51 (13)	0.31 (7.8)	0.12 (3.0)	<b>0.10 (2.5)</b>	0.71 (18)	1.02 (26)	1.33 (34)



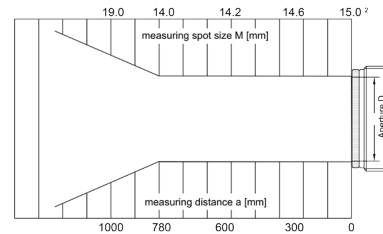
## OPTICS 300 (FOCUSED AT A= 270/295 MM MEASURING DISTANCE, IN BOLD)

Measuring distance in. (mm)	0	3.94 (100)	<b>10.63 (270)</b>	<b>11.61 (295)</b>	15.75 (400)	19.69 (500)	23.62 (600)
Measuring field diameter M in. (mm)							
PSC-T40L (- 40°C TO 1000°C) without LED aiming light	0.59 (15)	0.46 (11.8)	0.25 (6.3)	<b>0.22 (5.5)</b>	0.51 (13)	0.79 (20)	1.06 (27)
PSC-T40L (0°C TO 1000°C) with LED aiming light <sup>1</sup>	0.51 (13)	0.46 (11.6)	<b>0.22 (5.7)</b>	0.30 (7.6)	0.63 (16)	0.94 (24)	1.22 (31)



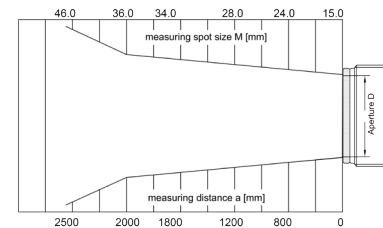
## OPTICS 800 (FOCUSED AT A= 750/780 MM MEASURING DISTANCE, IN BOLD)

Measuring distance in. (mm)	0	11.8 (300)	19.68 (500)	23.62 (600)	<b>29.52 (750)</b>	<b>30.71 (780)</b>	39.37 (1000)
Measuring field diameter M in. (mm)							
PSC-T40L (- 40°C TO 1000°C) without LED aiming light	0.59 (15)	0.57 (14.6)	0.57 (14.4)	0.56 (14.2)	0.55 (14.0)	<b>0.55 (14.0)</b>	0.75 (19.0)
PSC-T40L (0°C TO 1000°C) with LED aiming light <sup>1</sup>	0.59 (15)	0.57 (14.6)	0.57 (14.4)	0.56 (14.2)	<b>0.55 (14.0)</b>	<b>0.59 (15.2)</b>	0.75 (19.0)



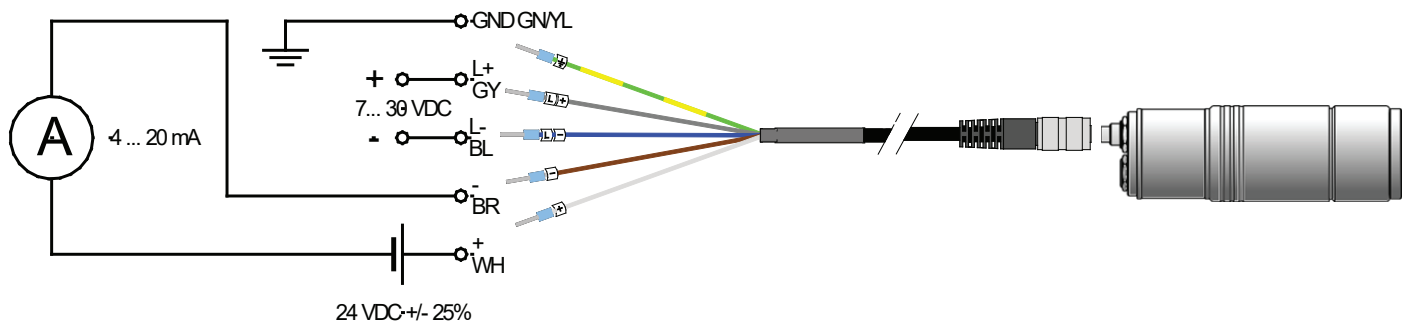
## OPTICS 2000 (FOCUSED AT A= 2000 MM MEASURING DISTANCE, IN BOLD)

Measuring distance in. (mm)	0	31.50 (800)	47.24 (1200)	70.87 (1800)	<b>78.74 (2000)</b>	98.42 (2500)	118.11 (3000)
Measuring field diameter M in. (mm)							
PSC-T40L (0°C TO 1000°C) without LED aiming light	0.59 (15)	0.94 (24)	1.10 (28)	1.13 (34)	<b>1.42 (36)</b>	1.18 (46)	2.24 (57)



## CONNECTION OF THE PYROMETER WITH LED AIMING LIGHT

The integrated LED aiming light enables exact alignment to the measuring object. The LED targeting light is identical to the measuring spot size.





## ELECTRICAL, MECHANICAL, AND OPTIONAL ACCESSORIES

Part Number	Description
PSC-3310A11511	Pyrometer cable; length 2 m
PSC-3310A11512	Pyrometer cable; length 5 m
PSC-3310A11513	Pyrometer cable; length 10 m
PSC-3310A11514	Pyrometer cable; length 15 m
PSC-3310A11515	Pyrometer cable; length 20 m
PSC-3310A11517	Pyrometer cable; length 30 m

## ACCESSORIES

Part Number	Description
PSC-3310A21210	Window Slide (Without Window)
PSC-3310A22010	Air Purge
950-004	Power Supply 24 VDC / 1.5A
TBD	Digital Temperature Display
PSC-3310A14010	USB connecting cable; length 1.8 m, screened
PSC-3310A21010	Mounting bracket; fixed
PSC-3310A21011	Mounting bracket; adjustable
PSC-3310A23010	Heavy duty cooling jacket, stainless steel with integrated air purge with end cap P/N PSC-3310A23015
PSC-3310A24010	Vacuum flange; KF 16
PSC-3310A34041	Vacuum flange; with ZnSe window
PSC-3310A23015	End Cap



### KPM Analytics | Process Sensors IR

787 Susquehanna Avenue | Franklin Lakes, NJ 07417 USA

Phone: +1 774.399.0461

[www.processsensorsir.com](http://www.processsensorsir.com) | [irtemp@kpmanalytics.com](mailto:irtemp@kpmanalytics.com)

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