

IMPAC IS 50-LO/GL

Digital pyrometer with fiber optic designed for non-contact temperature measurement in glass applications in ranges between 600 and 1800°C (1112 to 3272°F).



The Impac® IS 50-LO/GL is a non-contact infrared thermometer with a fiber optic cable designed for the glass industry. It is primarily used for temperature measurement of glass in tank, working end, forehearth, and feeder applications. Additional applications include the temperature measurement of brickworks in the regenerator and tank. The IS 50-LO/GL uses the two-wire technique that combines the high accuracy of the digital signal processing with the simple connection and operating with two wires.

PRODUCT HIGHLIGHTS

- Adjustable temperature ranges between 600 and 1800°C (1112 to 3272°F)
- Highest accuracy
- Ambience up to 250°C without cooling with robust fiber optic cable (up to 30 m)
- Robust design
- Simple parametrizing
- Integrated air purge
- Quick release for optical head
- Two wire technique

TYPICAL APPLICATIONS

- Glass temperature measurement (e.g. forehearth, feeder, and tank)
- Temperature measurement of brickworks (e.g. tank side walls, tank roof, and in regenerator)

AT A GLANCE

Temperature Range

600 to 1800°C (1112 to 3272°F)

Spectral Range

0.8 to 1.1 μm

Measurement Uncertainty

< 1500°C: 0.3% oR + 1°C
> 1500°C: 0.5% oR + 1°C

Repeatability

0.1% oR + 1°C

Optics

1 fixed optics

Field of View

min 110:1 (min 9 mm)

TECHNICAL DATA

Measurement Specifications	
Temperature Range	600 to 1800°C (1112 to 3272°F)
Sub Range	Any range adjustable within the measuring range, minimum range 51°C
IR Detector	Silicon photo diode
Spectral Range	0.8 to 1.1 μm
Data Handling	Digital
Resolution	1°C
Emissivity ε	0.05 to 1.00; adjustable
Response Time t_{90}	250 ms, adjustable up to 10 s; ex works adjusted to 1 s
Measurement Uncertainty	< 1500°C: $\pm 0.3\%$ of measuring value in °C + 1°C
	> 1500°C: $\pm 0.5\%$ of measuring value in °C + 1°C
Repeatability	0.1% of measured value in °C + 1°C
Test Port	4 to 20 mA, temperature linear
Temperature Dependency	0.2°C per °C variation from 23°C

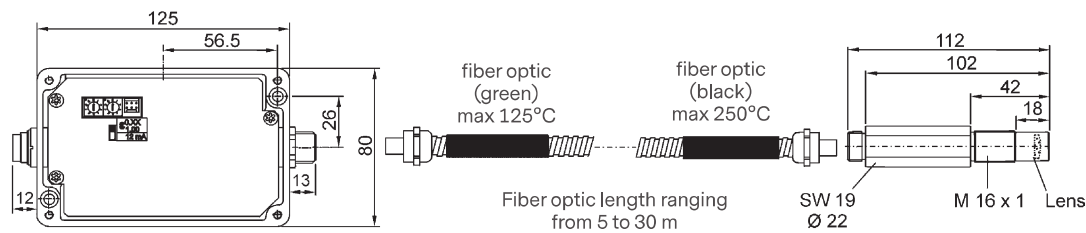
Electrical Specifications	
Power Supply	24 VDC $\pm 25\%$, ripple max 50 mV
Power Consumption	0.6 W
Max Load	700 Ohm at 24 V power supply

Environmental Specifications	
Protection Class	IP65 with mounted cable
Ambient Temperature	0 to 70°C (32 to 158°F) at housing
Storage Temperature	-20 to 70°C (-7 to 158°F)
Relative Humidity	Non-condensing conditions
Weight	600 g (~21.2 oz)
Converter Housing (L x W x H)	Alu die-casting, 125 mm x 80 mm x 57 mm (4.92" x 3.15" x 2.24") (without plug)
Optical Head	Stainless steel, 112 mm x 22 mm (4.41" x 0.87")
Fiber Optic	Multi fiber with flexible stainless steel protection
CE Label	According to EU directives about electromagnetic immunity

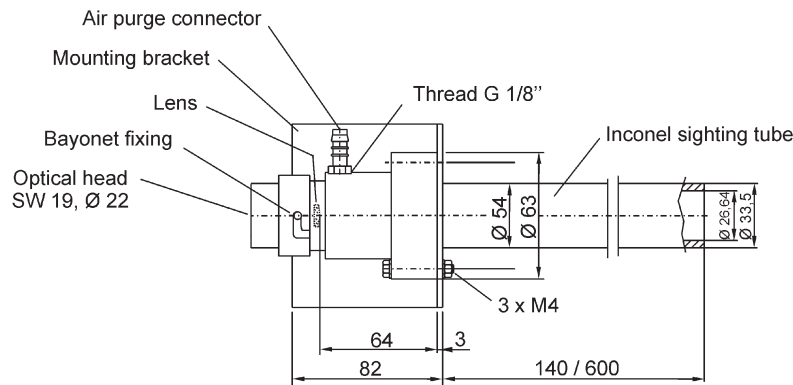
Interface Specifications	
Interface	Service interface RS232
Parameter Settings	Emissivity, test signal 12 mA
	Additional parameters via interface: Measuring range, response time

Communication Specifications	
Analog Output	Adjustable 0 to 20 mA or 4 to 20 mA, linear (via digital interface)
Digital Interface	RS485 addressable (half-duplex)
	Baud rate: 1200 Bd to 115.2 kBd (on request RS232, not addressable)

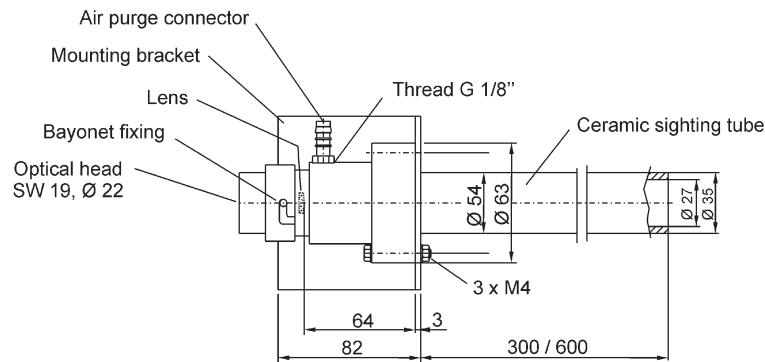
PRODUCT SCHEMATIC



Air Purge with Inconel Tubes

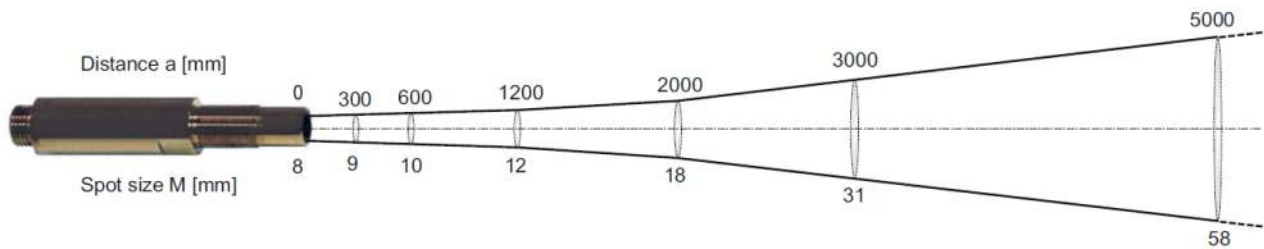


Air Purge with Ceramic Tubes



Dimensions in mm

MEASURING DISTANCE AND SPOT SIZE



REFERENCE NUMBERS

PN	Description
3 857 900	IS 50-LO/GL, 600 to 1800°C, with fiber optic 5 m and optical head

Scope of Delivery

Pyrometer with PC software InfraWin for adjustment and evaluation, Works Certificate, and Manual

Ordering Note

A connection cable is not included in scope of delivery and must be ordered separately

ACCESSORIES

PN	Description
3 820 650	Connection cable, length 5 m
3 820 660	Connection cable, length 10 m
3 820 670	Connection cable, length 15 m
3 820 680	Connection cable, length 30 m
On request	Other length of fiber optic: 10 m, 15 m, and 30 m
3 835 300	Air purge unit with inconel tube, 140 mm, open, incl. mounting angle
3 835 380	Air purge unit with inconel tube, 600 mm, open, incl. mounting angle
3 835 310	Air purge unit with ceramic tube, 300 mm, open, incl. mounting angle
3 835 370	Air purge unit with ceramic tube, 600 mm, open, incl. mounting angle
3 835 390	Ceramic tube, 600 mm, closed, incl. mounting angle
3 835 400	Air purge unit incl. mounting angle
3 836 900	Spare ceramic tube, 300 mm, open
3 836 700	Spare ceramic tube, 600 mm, open
3 836 710	Spare ceramic tube, 600 mm, closed
3 820 370	RS232 adapter cable for HT 6000 or PC incl. PC software
3 820 980	RS232 adapter cable HT 6000
3 890 600	Din-rail power supply
3 890 640	DA 4000-N, Digital display, with integrated 2-wire power supply
3 890 650	DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 230 VAC
3 890 520	DA 6000: LED digital display, digital and analog input, 2 limit switches, maximum value storage, analog output, RS232
3 890 530	DA 6000: like the DA 6000-N, but with analog input and 2 limit switches for the RS485 interface
3 826 500	HT 6000: portable battery driven indicator and instrument for pyrometer parameter settings; RS232 / RS485
3 863 010	Converter IW 5-C (4 to 20 mA in 0 to 20 mA)



For international contact information, visit advancedenergy.com.

sales.support@aei.com
+1 970 221 0108

PRECISION | POWER | PERFORMANCE

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