Digital Fibre Optic IR Pyrometer in two color with mono fiber optic cable

CE 800°C to 2500°C

A450C+ FO-PL/TL

A450C+ FO-PL is a highly accurate digital two colour Fibre Optic IR Pyrometer from FO-PL series. It provide high performance and low maintenance of non-contact temperature measurement in demanding industrial and R&D environment. The pyrometer measure the temperature in object by calculating the ration of the energies at 2 different wavelength bands. The ratio technique eliminates and reduces errors in temperature measurement caused by changes in Emissivity, Surface finish and energy absorbing materials such as water vapour etc.

The IR pyrometer parameters can be selected via the keypad on the back panel. The setting are displayed on the OLED display. In the measuring mode real time temperature is displayed in pyroemters with video module real time color video measuring temperature and emissivity is displayed on the televison screen. The pyrometer is equipped with RS-485 output, analog output 0/4...20mA.

Technical specifications

Model	A450C+ FO PL
Temperature Range (Analog sub-range adjustable)	800°C - 2500°C
Spectral Range	0.7....1.15 μm
Photodetector Type	Si/Si
Distance to Spot Size Ratio	100:1 (OH - I) 200:1 (OH - II) 200:1 (OH - II V) 400:1 (OH - III V)
Emissivity (ε)	0.1....1.0 adjustable (Single color mode)
Emissivity Slope (ε1 / ε2)	0.75...1.25 slope adjustable (Two color mode)
Response Time	20 msec adjustable upto 10 sec
Accuracy	± 0.5% of the measured value + 1°C
Repeatability	0.1% of reading in °C + 1°C
Sighting Options	Laser Pilot Light(PL)
Analog Output	0-20mA, 4-20mA (User selectable)
Digital Output	RS-485
Operating Temp. Range	0°C...70°C (Pyrometer)
Storage Temp. Range	-20°C...70°C(optical head & fiber optic cable upto 250°C)
Adjustable Parameters and Features via Software and Android app	Emissivity, Emissivity Slope, Response Time, Clear Time (Peak Picker), Analog Output, Analog Scale (Sub range), Sensor type (Switches b\w 2-color or single color), Switch off level, Unit Of Temperature(°C/°F), Communication mode (Comm.mode), Record feature, Relay set point & hysteresis etc.
Adjustable Parameters and Features via Keypad	Emissivity, Emissivity Slope, Response Time, Clear Time (Peak Picker), Analog Output, Analog Scale (Sub range),Sensor type (Switches b\w 2-color or single color), Switch off level, Unit Of Temperature(°C/°F), Communication mode (Comm. mode), Relay set point & hysteresis, address etc.
Relay output	One Relay output with hysteresis 60V DC / 42 AC RMS, 0.4 A
Power Supply	12V to 28V DC with reverse voltage protection
Power Consumption	Max 4.0 watt
Laser Power	<1 m watt (only PL model)
Protection Class	IP65
Housing	Stainless Steel
Isolation	Power supply,Digital output and Analog output are galvanically islolated against each other
Operating Humidity	10-95%, Non-Condensing Conditions
Weight & Dimensions	1200g Dia= Ø 56mm; Length=199.5mm

Features

- Wide temperature ranges from 800°C to 2500°C
- Fast Response Time
- Spectral range 0.7 μm....1.15 μm
- Integrated OLED Display & Parameterizing Keys
- Two Color model (switchable to single colour mode)
- Laser targeting for high precious targeting
- Analog output options 0...20mA/ 4...20mA
- RS-485 Serial interface
- User friendly PC software for communication
- Green LED for pyrometer status indication
- Red LED for Laser ON/OFF indication

Standard Scope of Supply

- Pyrometer with laser pilot light, OLED display and parameterising keys
- 2.5 mtr mono fibre optic cable(5mtr. / 10 mtr. optional)
- Optical head (I)/(II)/(II-V)/(III-V)
- Analog Output 4…20mA, 0 - 20mA, 0-10V
- RS-485 serial interface
- 5 mtr long connection cable with connector
- Calibration Certificate, PC Software & Operation manual

Optional

- Mechanical and Electrical Accessories
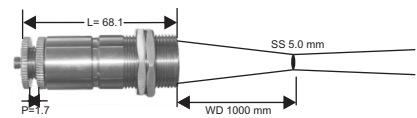- Extra Lengths of Fiber Cable and Connection cable

Applications

- Induction heating
- Welding
- Casting
- Forging
- Annealing
- Sintering
- Rolling mill
- Rotary kilns
- Pouring stream

Spot Sizes

Fixed Optics	A450C+ FO PL	
Optical Head	Working Distances (mm)	Spot Sizes(mm) 800°C - 2500°C
Optical Head - I	120	1.2
	260	2.6
	700	7
	Aperture(mm)	**10**
Optical Head - II	90	0.5
	200	1
	600	3
	4500	23
	Aperture(mm)	**8**

Example of OH(II) - V

L= 68.1
SS 5.0 mm
P=1.7
WD 1000 mm

Pull Out (P) = 1.7 mm
Optical Head Length (L) = 68.1 mm

Variable Optics	Optical Head - II - V (Variable)									
Working Distance (WD) (mm)	0	250	300	400	600	800	1000	1500	2000	2500
Optical Head Length L (mm)	66.4	78.9	75.75	72.8	70.1	68.8	68.1	67.15	66.7	66.4
Optical Pullout P (mm)	0	12.5	9.35	6.4	3.7	2.4	1.7	0.75	0.3	0
Spot Size (AST 450C+ FO PL) 800°C - 2500°C	10	1.3	1.5	2.0	3.0	4.0	5.0	7.5	10.0	13.0

Software "Infrasoft"

AST "Infrasoft" software is under standard scope of supply.It offers possibilities of connecting three pyrometers simultaneously for parameter setting, view real time graph, offline graph and to evaluate measuring data. Communication between the pyrometer and the software is implemented via a cable connected between the pyrometer and the PC serial port. It comes with record feature, spot size calculator and parameter settings features.

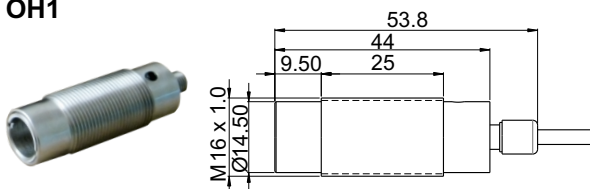Some of the parameters adjustable via software are

- Emissivity, Response Time
- Clear Time(Peak Picker)
- Analog Output
- Sub Range
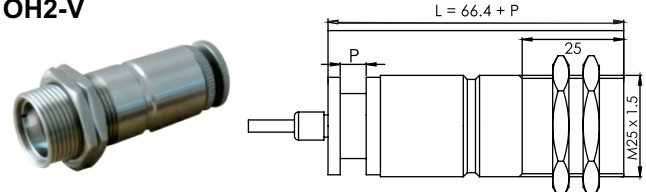- Unit of Temperature(°C/°F)
- Communication mode(Comm.mode)
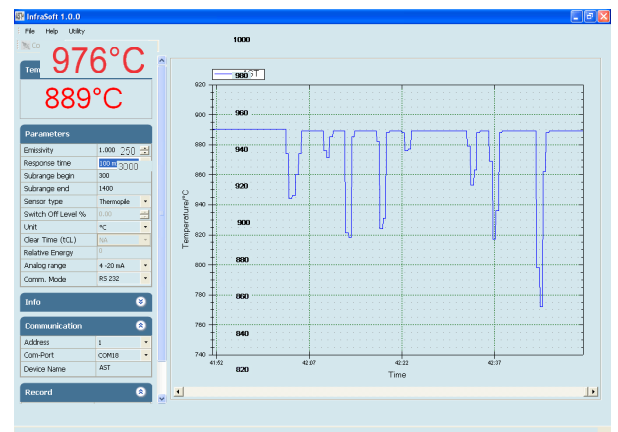
Infrasoft with integrated video image
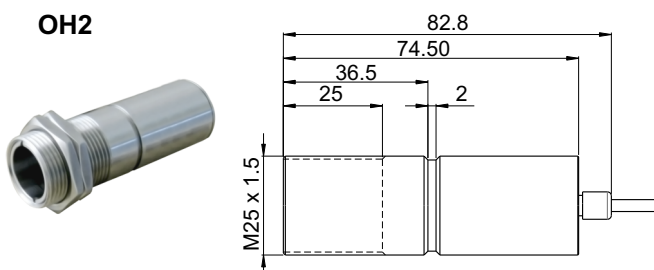
Pyrometer Drawing

OH1

53.8
44
9.50
25
M16 x 1.0
Ø14.50

OH2-V

L = 66.4 + P
P
25
M25 x 1.5
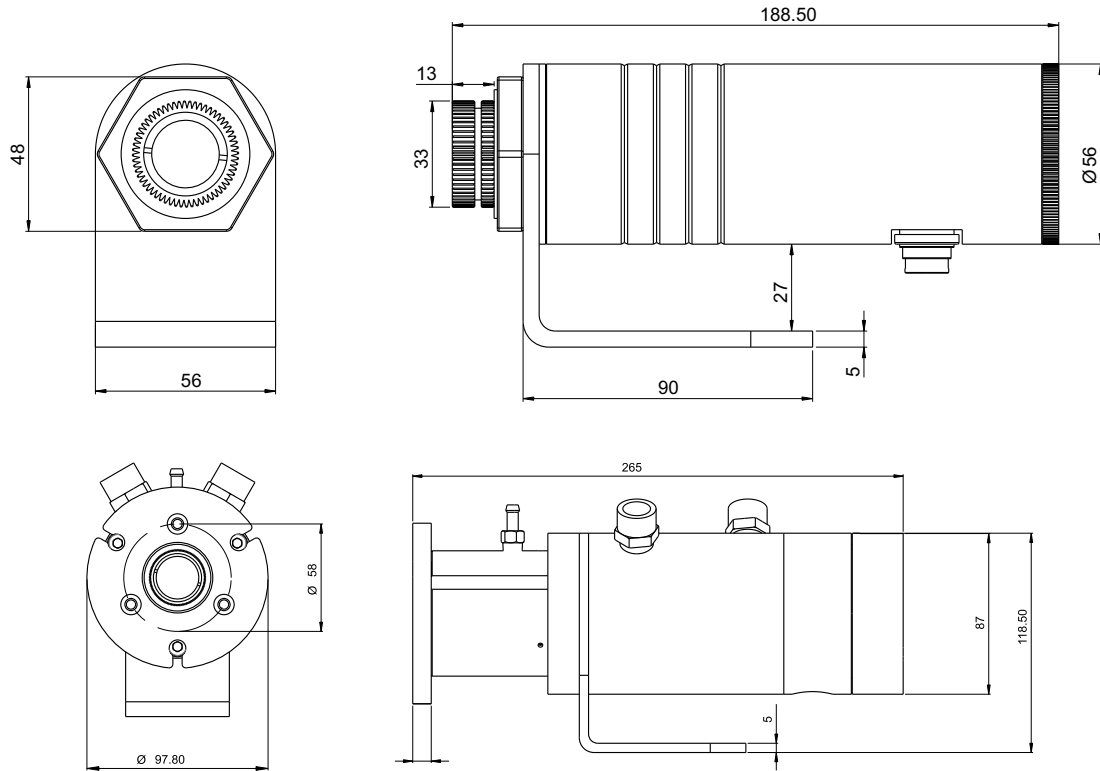
OH2

82.8
74.50
36.5
25
2
M25 x 1.5

We measure accurate temperature in extreme conditions

Pyrometer & Cooling Jacket Drawing

Accessories

| Mounting Clamp (Pyrometer) (Reference no: 8500-04)	Air Purge (Reference no: 8500-05)	Mounting Clamp (Water Cooling Jacket) (Reference no: 8500-06)
Mounting Flange (Reference no: 8500-07)	**Mounting Plate (Reference no: 8500-08)**	**Water Cooling Jacket (Reference no: 8500-09)**
Temperature Indicator (Reference no: 9000-01)	**Adjustable Mounting Stand (Reference no: 8000-07)**	**Power supplyInput 110/230V AC Reference No. 9000 - 02 Output 24 V DC, 0.7Amp.**
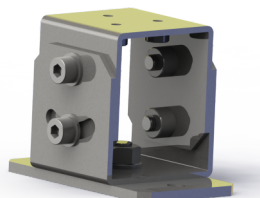
We measure accurate temperature in extreme conditions
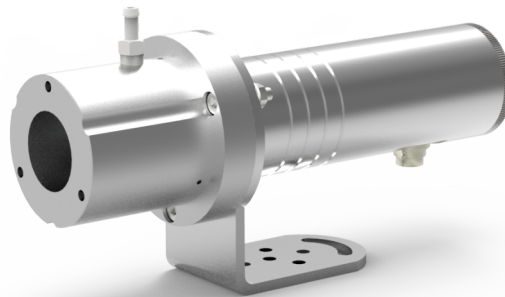
Assembly Options

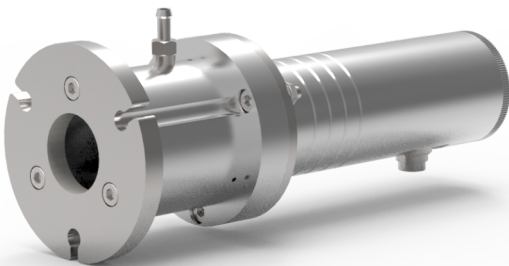**Pyrometer with Mounting Clamp (8500-04)**
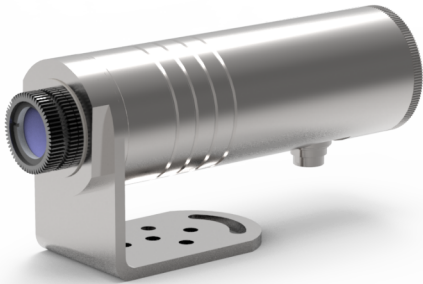
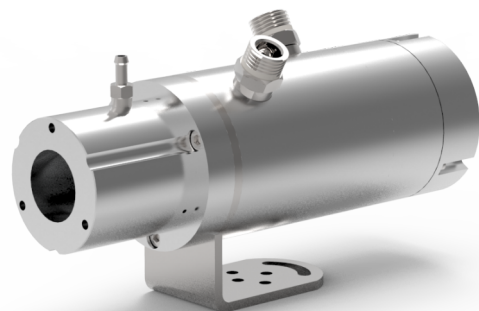**Pyrometer with Mounting Flange (8500-07) + Air Purge (8500-05) + Water Cooling Jacket (8500-09)**
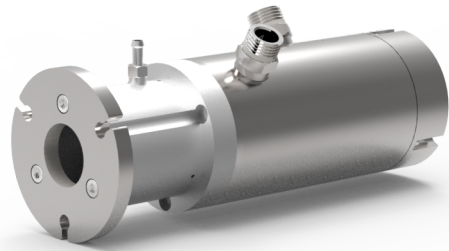
Pyrometer with Air Purge (8500-05) + Mounting Clamp (8500-04)

Pyrometer with Mounting Flange (8500-07) + Air Purge (8500-05)

Pyrometer with Mounting Flange (8500-07) + Air Purge (8500-05) + Water Cooling Jacket (8500-09)

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