



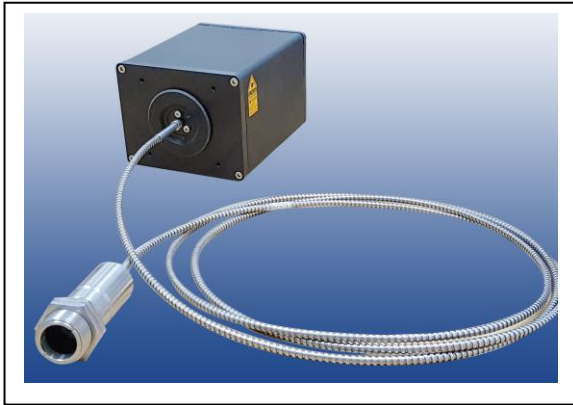
Highly Accurate, On-Line Infrared Non-Contact Pyrometers for Diamond Growing, CVD process, Steel Copper products, and Glass mold plunger.

**A5-2W-PL / A5-2W-TL: 105 to 3000°C (221 to 5432°F)**

**A5-2W-FO: 300 to 1500°C (572 to 2732°F)**



**A5-2W-PL  
A5-2W-FO  
A5-2W-TL**



AST A5-2W Infrared Pyrometer is specially designed for non-contact temperature measurement of non-gray bodies found in many applications like metal processing, heating, silicon, and ceramics. AST A5-2W-PL, A5-2W-TL, and AST A5-2W-FO are Two-wavelength pyrometers that use application-specific databases derived from years of experience in a real application.

Our pyrometers use special algorithms to accurately calculate both the actual temperature and emissivity of the surface Online. They have a laser pointer aligned in line with the detector to ensure both laser and detector are aimed in the same spot. This helps precise aiming even in long distances.

## Features

- High accuracy - 0.25%  $\pm 2^{\circ}\text{C}$  (3.6°F) of measured value for a full range of emissivity.
- High consistency, suitable for closed-loop control.
- Temperature ranges - see table at the beginning of next page.
- Temperature range for measurement in front of a blackbody, when measuring a shiny body minimum temperature will be higher.
- Fast response, compared to T/C.
- Full range of accessories and wide range of built-in functions.
- Durability, low maintenance.
- Easy to install in the existing line, replacing of contact probes.
- Capable of measuring targets with variable emissivity.
- AST NET SW software for PC.
- AST Pyrometer Android Application via Bluetooth.



## Standard Scope of Supply

- Integrated laser pilot light - Models A5-2W-PL and A5-2W-FO
- Built-in telescope aiming – Model A5-2W-TL
- Digital Interface RS-232
- Calibration Certificate, PC Software & Operation Manual

## Optional

- Mechanical and Electrical Accessories
- RS485, OpenBus, USB, Bluetooth, Alarm
- Special filter for High power plasma

## Applications

- Diamond Growing, wafer Annealing - CVD Crystal Growing
- Steel annealing line, Tube, hot-dip line,
- Copper - rod, bars, and strip



## Technical Specifications

Specification	Model A5-2W-PL \ A5-2W-TL				Model A5-2W-FO		
Temperature Range (Analog sub-range adjustable)	450* (550)-1700°C 500* (600)-2200°C 570* (670)-2700 °C 610* (710)-3000 °C	300 -1000°C 350 - 1300°C 380 - 1500°C 440 - 2000°C	572 - 1832°F 662 - 2372°F 716 - 2732°F 824 - 3632°F	105 - 900°C 200 - 1640°C 250 - 1850°C 360 - 2500°C	221 - 1652°F 392 - 2984°F 482 - 3362°F 680 - 4532°F	300 - 980°C 450 -1500°C 500-3000°C	572 - 1796°F 550 – 2732°F
Spectral Range	0.8μ / 1.0μ	1.3μ / 1.6μ		2.1μ / 2.4μ		2.1μ / 2.4μ	
Photodetector Type	Si	InGaAs		InGaAs Extended			
Distance to Spot Size Ratio	100:1 200:1 400:1	100:1 200:1		100:1 200:1		See table of spot sizes A5-2W-FO below	
Protection Class	IP65						
Response Time t90	Adjustable from 0.1 sec to 17 sec						
Accuracy and Repeatability	0.25% ± 2°C (3.6°F) of measured value for full range of emissivity						
Sighting	Integrated Laser Pilot Light 650-670nm for A5-2W and A5-2W-FO/ Built in Telescope 10× Magnification for A5-2W-TL						
Power Supply	24VDC						
Analog Output	4-20 mA, 0-20 mA, 0-10V, K Type T/C						
Digital Output	RS-232, RS-485, USB, Bluetooth						
Digital Display	P110						
Sensor overall dimensions	215 x 110 x 105 mm / 8.46 x 4.33 x 4.13 in						
Sensor weight	~2.0Kg / ~4.4lbs						
Operating temperature range	0°C +50°C / 32°F +122°F						
Storage temperature range	-20°C +70°C / -4°F +158°F						

\* - Tmin in Single Wavelength Mode only for  $\lambda_2 = 1.0\mu$ . In Dual wavelength mode Tmin value is 100°C higher.





We measure accurate temperature in extreme conditions

## Spot Sizes for A5-2W-PL\A5-2W-TL (Range 2.0-2.5mkm, InGaAs Extended)

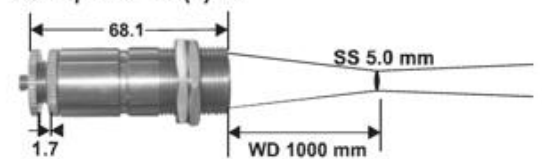
Working Distance [mm] / [in]	A5-2W-PL \ A5-2W-TL Spot Size [mm] / [in]			
	FOV 1:100	FOV 1:200	FOV 1:400	
	<b>Si</b>	450* (550)-1700°C	500* (600)-2200°C 570* (670)-2700 °C	610* (710)-3000 °C
	<b>InGaAs</b>	300 -1000°C	350 - 1300°C 380 - 1500°C 440 - 2000°C	
<b>InGaAs Extended</b>	105 - 900°C	200 - 1640°C 250 - 1850°C 360 - 2500°C		
500 / 20	5 / 0.2	2.5 / 0.1	1.25 / 0.05	
1000 / 40	10 / 0.4	5 / 0.2	2.55 / 0.1	
1500 / 60	15 / 0.6	7 / 0.3	3.50 / 0.15	
2000 / 80	20 / 0.8	10 / 0.4	5.0 / 0.2	
2500 / 100	25 / 1.0	12.5 / 0.5	6.25 / 0.25	
5000 / 200	50 / 2.0	25 / 1.0	2.5 / 0.5	

Variable Optics	Optical Head - II - V (Variable)									
Working Distance (mm) / [in]	0 / 0	250 / 9.84	300 / 11.81	400 / 15.74	600 / 23.62	800 / 31.49	1000 / 39.37	1500 / 59.05	2000 / 78.74	2500 / 98.42
Optical Head Length L (mm) / [in]	66.4 / 2.61	78.9 / 3.10	75.75 / 2.98	72.8 / 2.86	70.1 / 2.75	68.8 / 2.7	68.1 / 2.68	67.15 / 2.64	66.7 / 2.62	66.4 / 2.61
Optical Pullout P(mm) / [in]	0 / 0	12.5 / 0.49	9.35 / 0.36	6.4 / 0.25	3.7 / 0.14	2.4 / 0.09	1.7 / 0.06	0.75 / 0.02	0.3 / 0.01	0 / 0
Spot Size(mm) / [in]	18 / 0.7	3.9 / 0.15	4.5 / 0.17	6.0 / 0.23	9.0 / 0.35	12.0 / 0.47	15.0 / 0.59	22.5 / 0.88	30.0 / 1.18	39.0 / 1.53

## Spot Sizes for A5-2W -FO (Range 2.0-2.5mkm, InGaAs Extended)

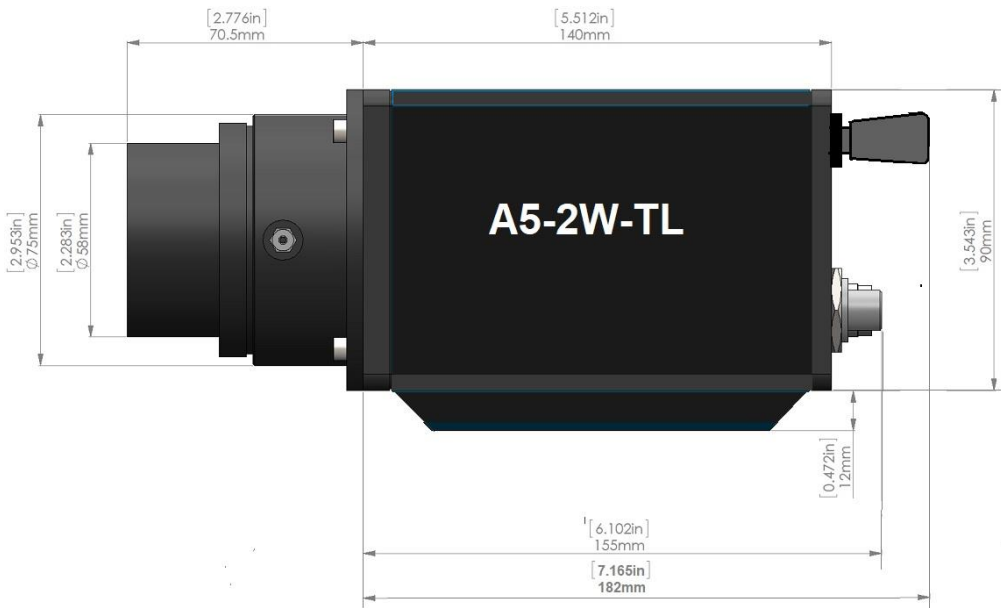
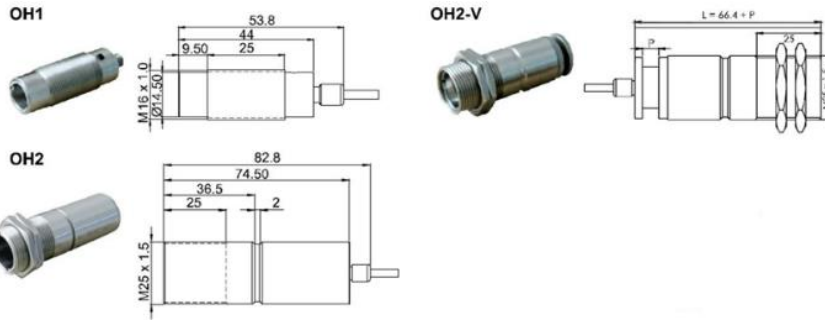
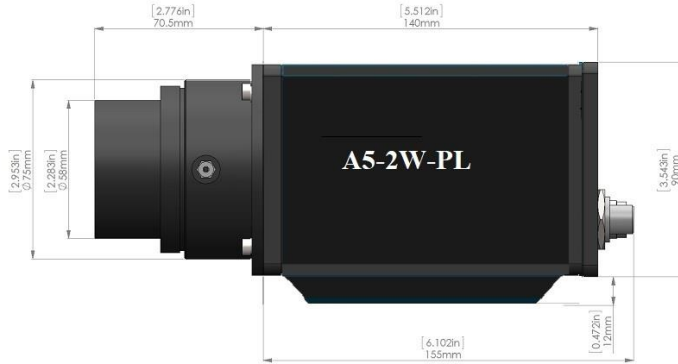
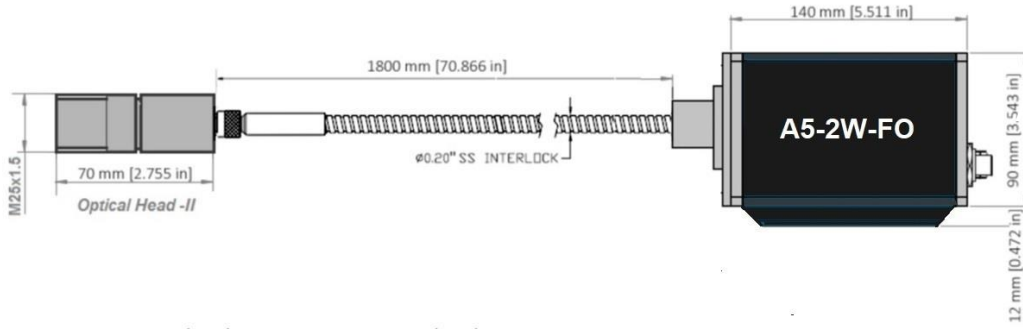
Fixed Optics		A5-2W-FO	A5-2W-FO-S
<b>Optical Head</b>	<b>Working Distances (mm) / [in]</b>	<b>Spot Sizes (mm) / [in]</b>	
	120 / 4.7	3.6 / 0.14	1.2 / 0.047
	260 / 10.2	7.8 / 0.30	2.6 / 0.102
	700 / 27.5	21.0 / 0.82	7.0 / 0.275
	90 / 3.6	1.5 / 0.059	0.5 / 0.019
	140 / 5.5	1.8 / 0.07	0.6 / 0.023
	200 / 7.9	3.0 / 0.11	1.0 / 0.039
	600 / 23.6	9.0 / 0.35	3.0 / 0.118
	4500 / 177.1	69.0 / 2.71	23.0 / 0.905

Example of OH(II) - V



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

# Pyrometer Drawing



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## Accessories for A5-2W

AS3000 Application Selector  
(Reference no: 300-07)



Power Supply Unit  
(Reference no: 200-09)



Air Purge Tube 200 mm  
(Reference no: 200-03)



Display  
(Reference no: P-110)



Adjustable Mounting  
(Reference no: 200-01)



Air Purge Tube Adapter  
(Reference no: 200-02)



Frontal Water-Cooling Plate  
(Reference no: 200-06)



Top Water-Cooling Plate  
(Reference no: 200-10)



Air purge unit  
for optical head II  
Reference No. 8200 - 01



Air purge unit for optical head-I  
Reference No. 8200 - 02



Adjustable Mounting  
for optical head II  
Reference No. 8200 - 03



Adjustable mounting for optical head-I  
Reference No. 8200 - 04



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