



Highly Accurate On-Line Infrared Non-Contact pyrometer for Laser Welding. Suitable for Ferrous and Non-Ferrous Metals as Stainless-Steel, Aluminium, Brass, Bronze, Copper.

**A5-WL-PL: 105 to 2500°C (221 to 4532°F)**

**A5-WL-FO: 350 to 1000°C (662 to 1382°F)**

**A5-WL-PL**

**A5-WL-FO**



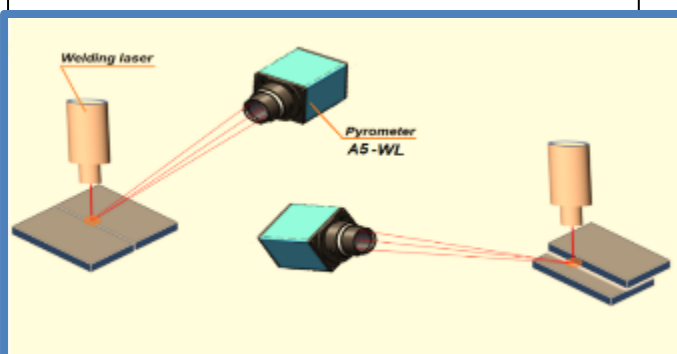
AST A5-WL is specially designed IR Pyrometers for non-contact temperature measurement in a welding process.

AST A5-WL-PL and AST A5-WL-FO are Multi-wavelength pyrometers that use application-specific databases derived from years of experience in a real application. AST A5-WL-PL and AST A5-WL-FO use special algorithms to accurately calculate the actual temperature and emissivity of the surface during Laser Welding.

AST A5-WL and AST A5-WL-FO have Laser Emission Immunity for  $\lambda=910, 1032, 1064\text{nm}$  (Each  $\lambda \leq 1080\text{nm}$ ) but not for keyhole welding mode.

They have a laser pointer that is aligned in line with the detector to ensure both laser and detector look into the same spot. This helps precise aiming even in long distances.

AST A5-WL and AST A5-WL-FO offer Bluetooth communication to communicate with Android smartphones or laptops to view the measured temperature and adjust the parameters/selection of database and data logging.



## Technical Specifications



Specification	Model A5-WL-PL	Model A5-WL-FO
Temperature Range (Analog sub-range adjustable)	105 - 900°C 200 - 1640°C 250 - 1850°C 360 - 2500°C	221 - 1652°F 392 - 2984°F 482 - 3362°F 680 - 4532°F
Spectral Range	2.1μ / 2.4μ	2.1μ / 2.4μ
Photodetector Type	InGaAs Extended	
Distance to Spot Size Ratio	100:1 200:1	See table of spot sizes A5-WL-FO below
Emissivity	0.1 -1.0	
Response Time t90	Adjustable from 50 ms 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	
Power Supply	24VDC	
Analog Output	4-20 mA, 0-20 mA, 0-10V, K Type T/C	
Digital Output	RS-232, RS-422, RS-485, USB, Bluetooth, Openbus	
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	
Protection Class	IP65	

We measure accurate temperature in extreme conditions

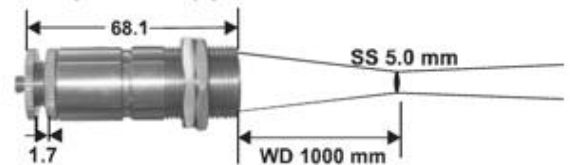
## Spot Sizes for A5-WL-PL (Range 2.0-2.5mkm. InGaAs Extended)

Working Distance [mm] / [in]	A5-WL-PL Spot Size [mm] / [in]		
	FOV 1:100	FOV 1:200	FOV 1:400
	InGaAs Extended		
	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

## Spot Sizes for A5-WL-FO (Range 2.0-2.5mkm. InGaAs Extended)

Fixed Optics		A5-WL-FO	A5-WL-FO-S
Optical Head	Working Distances (mm) / [in]	Spot Sizes (mm) / [in]	
 Optical Head - I	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
 Optical Head - II	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

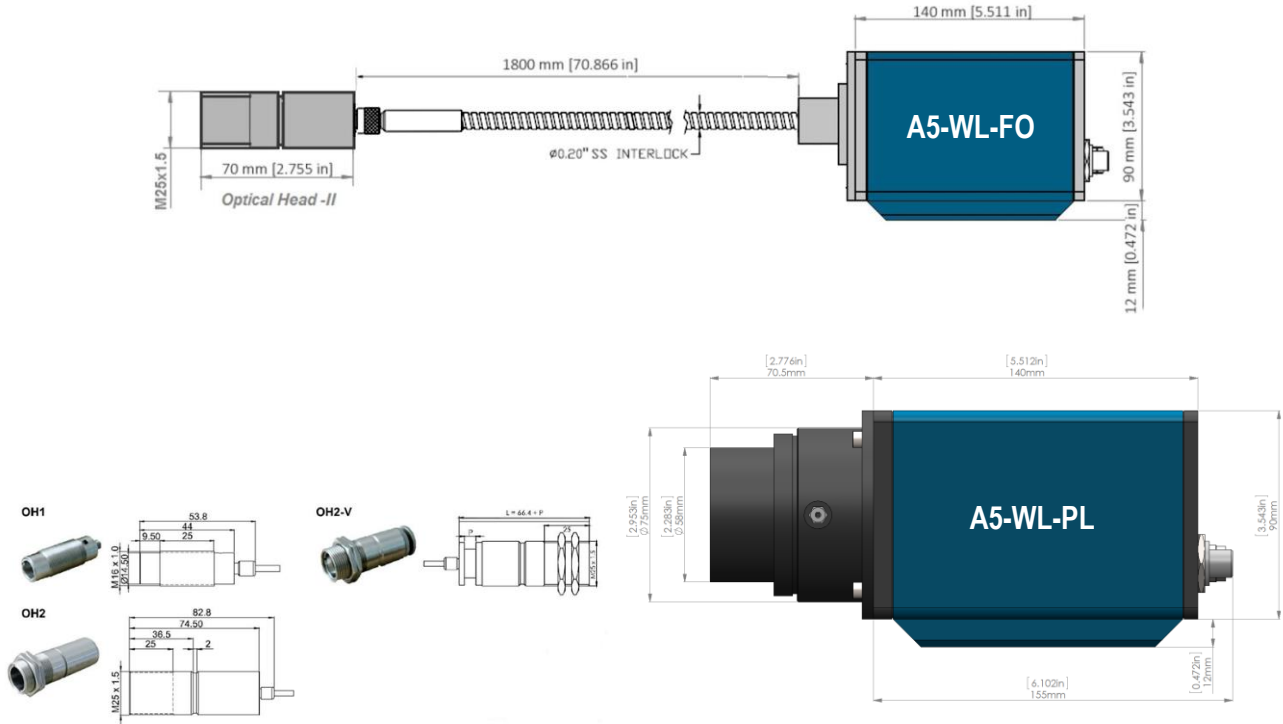
Example of OH(II) - V



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

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

# Pyrometer Drawing



## Accessories for A5-WL

**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



# AST



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