

Solar Lights **Model PMA1107 Analog Non-Weighted UVA+B Sensor** provides an accurate measurement of non-weighted UVA+B ultraviolet radiation from sunlight or artificial light sources. The detector has angular response very close to an ideal cosine function (Lambertian response,) making it suitable for measurements of diffuse radiation or radiation generated by extended sources. Several packages are available for different types of environments, including standard, low profile, weatherproof, and waterproof.



### Applications

- Industrial and Laboratory Radiometry
- Phototherapy
- Environmental Monitoring
- Psoriasis Treatment Monitoring
- Materials Testing
- UVB + UVA Transmission Measurements
- Agricultural
- Biological Studies

### Features and Benefits

- High Sensitivity
- Excellent Long-term Stability
- Cosine Corrected
- NIST Traceable Calibration
- Weatherproof/Waterproof Chassis Available
- CE Compliant

### Common Sources of UVB+UVA Include:

- Low Pressure Fluorescent Lamps
- High Pressure Mercury and Metal Halide Lamps
- High Pressure Xenon Lamps
- Sunlight





**Standard Chassis - IP60**  
1.8" (45.8mm) High x 1.6" (40.6mm) Diameter



**Weatherproof Standard Chassis - IP68**  
Can be submersed up to 3 meters deep  
1.8" (45.8mm) High x 1.6" (40.6mm) Diameter



**Low Profile Chassis - IP60**  
0.8" (21mm) High x 1.6" (40.6mm) Diameter



**Waterproof Underwater Housing - IP68**  
Can be submersed up to 100 meters deep  
3.3" (83.4 mm) High x 4.7" (119.7 mm) Diameter

### Options:

- Tripod Mounting Plate
- Weatherproof Chassis (submersible up to 3 meters)
- Low Profile Chassis
- Waterproof Underwater Housing (submersible up to 100 meters)
- OEM Chassis for High Quantity Applications
- Digital Model for Interface with PMA Series Meters (Model PMA2107)

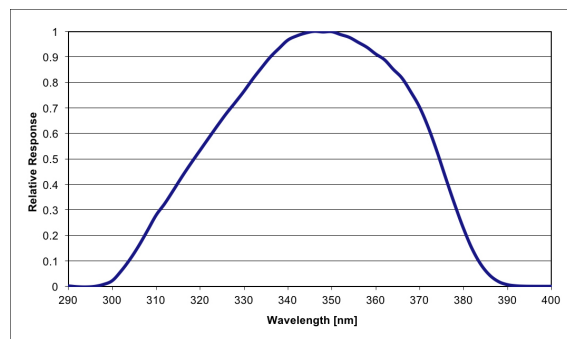


Fig. 1. Linear Spectral Response

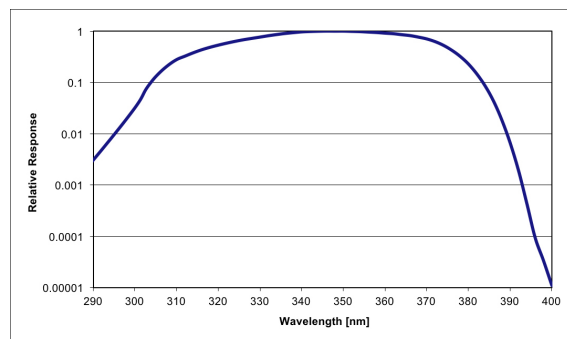


Fig. 2. Log Spectral Response

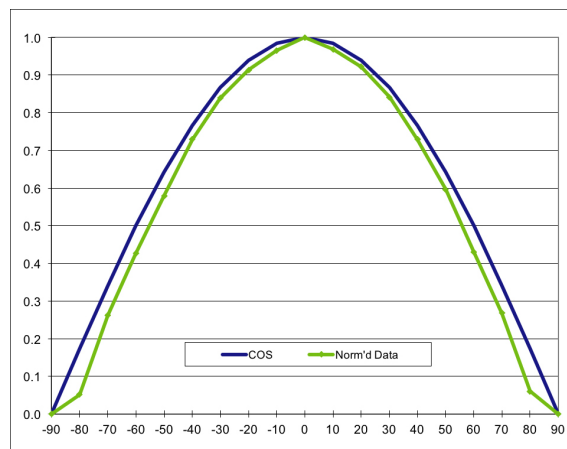


Fig. 3. Cosine Response

### SPECIFICATIONS

<b>Spectral Response</b>	280-400 nm, Follows Figure 1
<b>Cosine Response</b>	5% for Angle $\leq 40^\circ$ (Standard Chassis)
<b>Output Signal/Range</b>	*See model chart on the next page
<b>Input Power</b>	*See model chart on the next page
<b>Operating Environment</b>	32 to 120°F (0 to +50°C)
<b>Temperature Coefficient</b>	Negligible
<b>Cable Length</b>	*See model chart on the next page
<b>Dimensions and Weight</b>	*See outline drawings

### REFERENCES

The biological effects of UV-A radiation - Edited by F. Urbach and R.W. Gange, Praeger Publishers, New York, 1986  
Nichodemus F., "Self study manual on optical radiation measurements", NBS Technical Note 910-1 (1976)

Part Number: 210032

Revision Level: C

Specifications subject to change without notice.

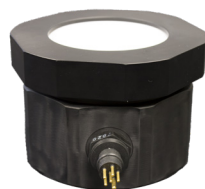
### Partial Model Selection Chart



STANDARD CHASSIS - IP60				
Model	Input Power	Output Signal	Range	Cable Type
PMA1107-S-05-10	9-24 VDC @ 30 mA	0-5 VDC	10 [mW/cm <sup>2</sup> ] or 100 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-S-05-20	9-24 VDC @ 30 mA	0-5 VDC	20 [mW/cm <sup>2</sup> ] or 200 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-S-05-30	9-24 VDC @ 30 mA	0-5 VDC	30 [mW/cm <sup>2</sup> ] or 300 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-S-420-10	9-24 VDC @ 70 mA	4-20 mA	10 [mW/cm <sup>2</sup> ] or 100 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-S-420-20	9-24 VDC @ 70 mA	4-20 mA	20 [mW/cm <sup>2</sup> ] or 200 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107	± 5-12 VDC @ <1 mA	*0-5 VDC	200 [mW/cm <sup>2</sup> ] or 2,000 [W/m <sup>2</sup> ]	6' cable stripped/tinned
PMA1107B	± 5-12 VDC @ <1 mA	*0-5 VDC	20 [mW/cm <sup>2</sup> ], 200 [W/m <sup>2</sup> ] or 20,000 [μW/cm <sup>2</sup> ]	6' cable stripped/tinned
PMA1107C	± 5-12 VDC @ <1 mA	*0-5 VDC	2 [mW/cm <sup>2</sup> ], 20 [W/m <sup>2</sup> ] or 2,000 [μW/cm <sup>2</sup> ]	6' cable stripped/tinned



WEATHERPROOF CHASSIS - IP68				
Model	Input Power	Output Signal	Range	Cable Type
PMA1107-W-05-10	9-24 VDC @ 30 mA	0-5 VDC	10 [mW/cm <sup>2</sup> ] or 100 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-W-05-20	9-24 VDC @ 30 mA	0-5 VDC	20 [mW/cm <sup>2</sup> ] or 200 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-W-05-30	9-24 VDC @ 30 mA	0-5 VDC	30 [mW/cm <sup>2</sup> ] or 300 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-W-420-10	9-24 VDC @ 70 mA	4-20 mA	10 [mW/cm <sup>2</sup> ] or 100 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-W-420-20	9-24 VDC @ 70 mA	4-20 mA	20 [mW/cm <sup>2</sup> ] or 200 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-WP	± 5-12 VDC @ <1 mA	*0-5 VDC	200 [mW/cm <sup>2</sup> ] or 2,000 [W/m <sup>2</sup> ]	15' cable stripped/tinned
PMA1107B-WP	± 5-12 VDC @ <1 mA	*0-5 VDC	20 [mW/cm <sup>2</sup> ], 200 [W/m <sup>2</sup> ] or 20,000 [μW/cm <sup>2</sup> ]	15' cable stripped/tinned
PMA1107C-WP	± 5-12 VDC @ <1 mA	*0-5 VDC	2 [mW/cm <sup>2</sup> ], 20 [W/m <sup>2</sup> ] or 2,000 [μW/cm <sup>2</sup> ]	15' cable stripped/tinned



WATERPROOF UNDERWATER CHASSIS - IP68				
Model	Input Power	Output Signal	Range	Cable Type
PMA1107B-UW	± 5-12 VDC @ <1 mA	*0-5 VDC	20 [mW/cm <sup>2</sup> ], 200 [W/m <sup>2</sup> ] or 20,000 [μW/cm <sup>2</sup> ]	Customer to define length required

\*0 to Supply -0.5 Volts

Custom ranges, cable lengths, and cable types are available upon request – please consult factory for details

### Partial Model Selection Chart



LOW PROFILE CHASSIS - IP60				
Model	Input Power	Output Signal	Range	Cable Type
PMA1107-F -05-10	9-24 VDC @ 30 mA	0-5 VDC	10 [mW/cm <sup>2</sup> ] or 100 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-F -05-20	9-24 VDC @ 30 mA	0-5 VDC	20 [mW/cm <sup>2</sup> ] or 200 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-F -05-30	9-24 VDC @ 30 mA	0-5 VDC	30 [mW/cm <sup>2</sup> ] or 300 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-F -420-10	9-24 VDC @ 70 mA	4-20 mA	10 [mW/cm <sup>2</sup> ] or 100 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-F -420-20	9-24 VDC @ 70 mA	4-20 mA	20 [mW/cm <sup>2</sup> ] or 200 [W/m <sup>2</sup> ]	Pigtail w/ 2 meter detachable cable
PMA1107-F	± 5-12 VDC @ <1 mA	*0-5 VDC	200 [mW/cm <sup>2</sup> ] or 2,000 [W/m <sup>2</sup> ]	6' cable stripped/tinned
PMA1107B-F	± 5-12 VDC @ <1 mA	*0-5 VDC	20 [mW/cm <sup>2</sup> ], 200 [W/m <sup>2</sup> ] or 20,000 [μW/cm <sup>2</sup> ]	6' cable stripped/tinned
PMA1107C-F	± 5-12 VDC @ <1 mA	*0-5 VDC	2 [mW/cm <sup>2</sup> ], 20 [W/m <sup>2</sup> ] or 2,000 [μW/cm <sup>2</sup> ]	6' cable stripped/tinned

\*0 to Supply -0.5 Volts

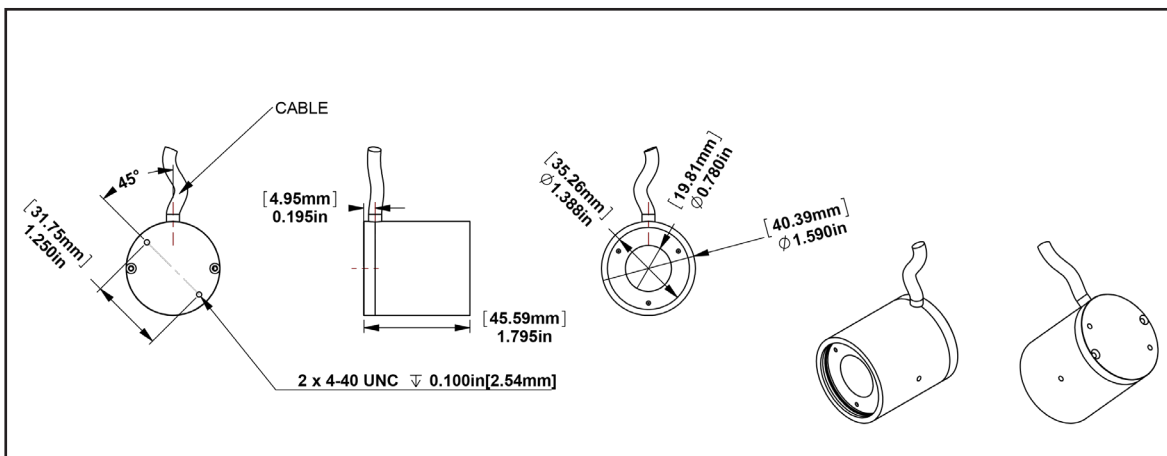
Custom ranges, cable lengths, and cable types are available upon request – please consult factory for details

### Analog Wiring Chart

WIRE COLOR	PMA11xx-420	PMA11xx-05	PMA11xx
White	Power Ground*	Signal Out 0-5 VDC	Signal Out 0 to Vin-0.5 VDC
Blue		Power Ground	Power Ground
Green			Analog Ground
Red			Vin +5-12 VDC
Orange			Vin -5-12 VDC
Yellow			Signal Out 0 to Vin-0.5 VDC
Black		Analog Ground	
Pink		Vin 9-24 VDC	
Brown	Vin 9-24 VDC*		
Bare or Braid		Shield	Shield
A/C Plug			

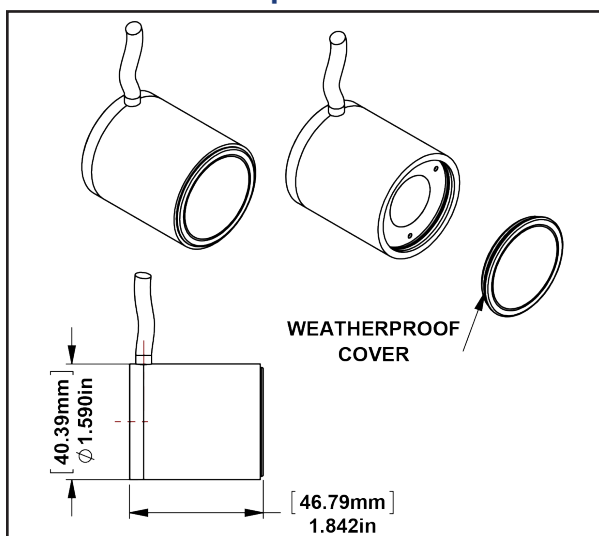
\*Current meter is connected in series with power supply and sensor

## Standard Chassis



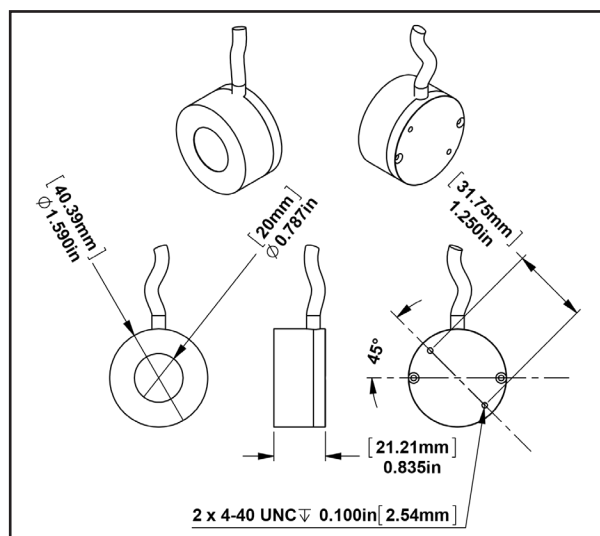
Est. Weight: 4 oz. (113 g)

## Weatherproof Chassis



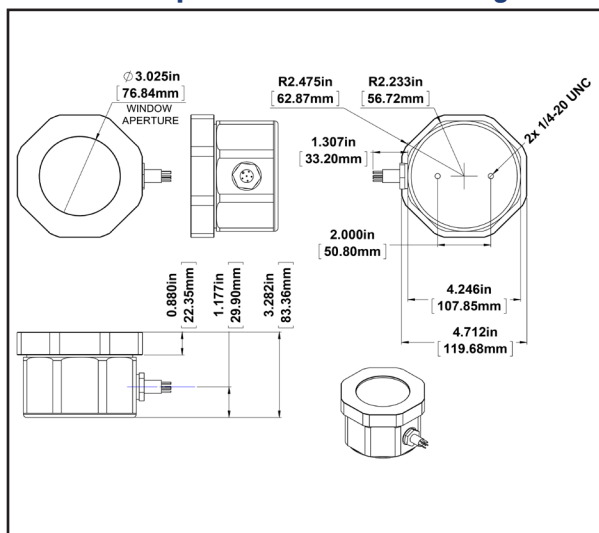
Est. Weight: 4.2 oz. (119 g)

## Low Profile Chassis



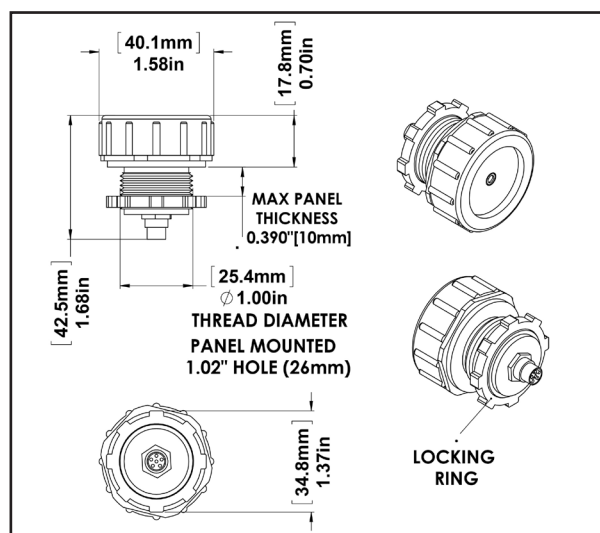
Est. Weight: 2.2 oz. (62 g)

## Waterproof Underwater Housing



Est. Weight: 3.7 lbs. (1678 g)

## OEM Chassis



Est. Weight: 1.2 oz. (34 g)

Since 1967, Solar Light Company, LLC has been recognized worldwide as America's premier manufacturer of Precision Solar Simulators and Light Sources, Light Measurement Instrumentation, UV Transmittance Analyzers, Meteorological Instrumentation, and Digital and Analog Sensors. Our advanced line of UV, visible, and IR radiometers and light meters measure laboratory, industrial, environmental, and health related light levels with NIST traceable accuracy. Column ozone, aerosol, and water vapor thickness measurements, in addition to long-term global ultraviolet radiation studies all over the world are performed using our atmospheric line of instrumentation. Solar Light also provides NIST traceable spectroradiometric analyses, calibrations for light meters and light sources, accelerated ultraviolet radiation degradation testing of materials, and OEM instrumentation and monitors. Please visit our website for more details, specifications, and pictures!



**State Of The Art Solar Simulators** available in 150-1000+ watt UV or AM variations for a variety of applications including PV Cell Testing, Materials Testing, Pre-Irradiation for *In Vitro* Broad Spectrum Sunscreen Testing, SPF Testing, and much more.



**Multi-Functional Professional Grade Radiometers** available with and without data logging, and compatible with over 130 Solar Light PMA-Series Sensors to measure UV, Visible and IR wavelengths. Specialty Meters also available to measure UV Radiation, SUV/UVA, Scotopic/Photopic Spectra, and much more.



**Advanced NIST-Traceable Sensors** for accurate measurement of UVA, UVB, UVA+B, UVC, Visible, IR, Photostability, Temperature, and Custom Wavelength – well over 130 models in both digital and analog configurations, all compatible with our Radiometers.



**Ultraviolet Transmittance Analyzers** available as complete integrated turnkey systems to meet the latest ISO24443 requirements.



**Handheld Ozonometers and Sunphotometers** for fast and dependable Column Ozone, Aerosol, and Water Vapor Thickness measurements, in addition to long-term global ultraviolet radiation studies.