

Solar Light's **Model PMA2110 Digital UVA Sensor** provides fast and accurate irradiance measurement in the UVA region, with spectral response in the 320nm to 400nm range. Its Teflon diffuser assures an angular response close to a cosine function (Lambertian response,) making it suitable for measuring diffused radiation or radiation from extended sources. This sensor is ideal for laboratory applications measuring mercury, xenon, metal halide, or fluorescent lamps (commonly used for UVA studies,) as well as sunlight. When used with Solar Light PMA-Series Radiometers, the measured irradiance is displayed in  $\text{mW}/\text{cm}^2$  or  $\text{W}/\text{m}^2$ , user selectable. The integrated dose is shown in  $\text{Joules}/\text{cm}^2$  or  $\text{kJoules}/\text{m}^2$ . The sensor has a resolution of  $0.001 \text{ mW}/\text{cm}^2$  and a full scale of  $200 \text{ mW}/\text{cm}^2$ , allowing measurement of very weak and very strong signals with the same sensor. The effect of stray light is negligible. The angular response of the PMA2110 sensor is cosine corrected, and suitable for measurements of diffuse radiation or radiation from extended sources. Several packages are available for different types of environments, including standard, low profile, weatherproof, waterproof, and high volume applications.



### Applications

- Laboratory and Industrial Radiometry
- UV Curing, Printing, and Photolithography
- Skin and SPF Testing
- Clinical Studies
- Phototherapy
- Environmental Monitoring
- Art and Museum Maintenance

### Features and Benefits

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

### Common Sources of UVA Include:

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





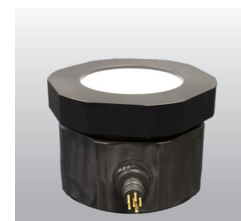
**Standard Chassis - IP60**  
1.8" (45.8mm) High x 1.6" (40.6mm) Diameter



**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 Chassis - 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 Chassis (submersible up to 100 meters)
- Analog Model also available (Model PMA1110)

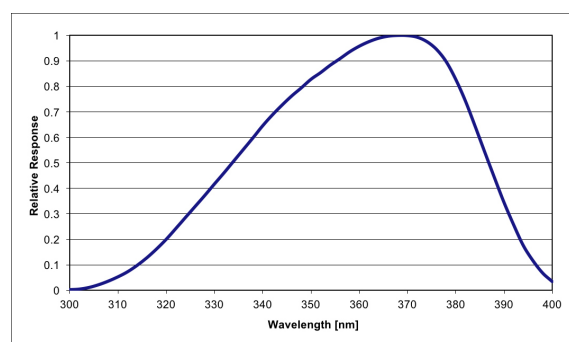


Fig. 1. Linear Spectral Response

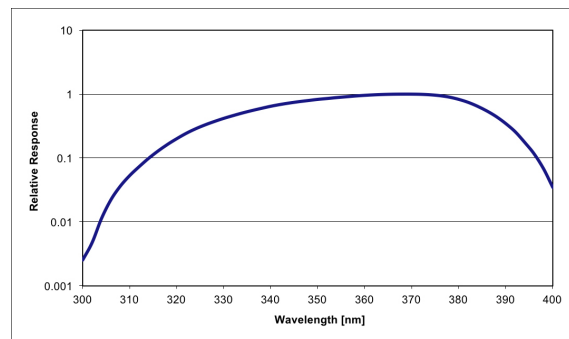


Fig. 2. Log Spectral Response

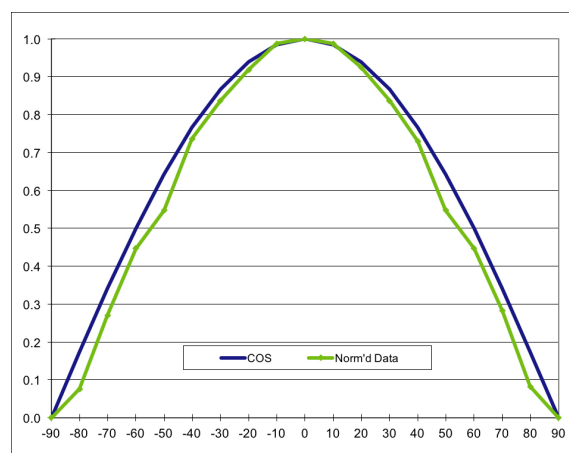


Fig. 3. Cosine Response

SPECIFICATIONS	
<b>Spectral Response</b>	320-400nm, Figure 1
<b>Cosine Response</b>	5% for Angle $\leq 40^\circ$ (Standard Chassis)
<b>Range</b>	*See model chart on the next page
<b>Display Resolution</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 cable length chart on the next page
<b>Dimensions and Weight</b>	*See outline drawings
IRRADIANCE FROM TYPICAL SOURCES	
<b>Solar Radiation</b>	30°. SZA, 3mm Ozone, Clear Sky: Approx. 6 [mW/cm <sup>2</sup> ]
<b>150W Xenon Lamp at 8" (20.3 cm)</b>	Approx. 0.5 [mW/cm <sup>2</sup> ]
<b>16S-Pre-Irradiation Simulator</b>	6 [mW/cm <sup>2</sup> ]

Part Number: 210000

Revision Level: B

Specifications subject to change without notice.

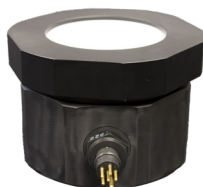
### Partial Model Selection Chart



STANDARD CHASSIS - IP60		
Model	Range	Display Resolution
PMA2110A	20,000 [ $\mu\text{W}/\text{cm}^2$ ] or 200 [ $\text{W}/\text{m}^2$ ]	0.1 [ $\mu\text{W}/\text{cm}^2$ ] or [0.001 $\text{W}/\text{m}^2$ ]
PMA2110C	2 [ $\text{mW}/\text{cm}^2$ ], 20 [ $\text{W}/\text{m}^2$ ] or 2,000 [ $\mu\text{W}/\text{cm}^2$ ]	0.001 [ $\text{mW}/\text{cm}^2$ ], 0.001 [ $\text{W}/\text{m}^2$ ] or 0.01 [ $\mu\text{W}/\text{cm}^2$ ]
PMA2110L	20 [ $\text{mW}/\text{cm}^2$ ], 200 [ $\text{W}/\text{m}^2$ ] or 20,000 [ $\mu\text{W}/\text{cm}^2$ ]	0.001 [ $\text{mW}/\text{cm}^2$ ], 0.01 [ $\text{W}/\text{m}^2$ ] or 0.1 [ $\mu\text{W}/\text{cm}^2$ ]
PMA2110	200 [ $\text{mW}/\text{cm}^2$ ] or 2,000 [ $\text{W}/\text{m}^2$ ]	0.001 [ $\text{mW}/\text{cm}^2$ ] or 0.01 [ $\text{W}/\text{m}^2$ ]



WEATHERPROOF CHASSIS - IP68		
Model	Range	Display Resolution
PMA2110A-WP	20,000 [ $\mu\text{W}/\text{cm}^2$ ] or 200 [ $\text{W}/\text{m}^2$ ]	0.1 [ $\mu\text{W}/\text{cm}^2$ ] or [0.001 $\text{W}/\text{m}^2$ ]
PMA2110C-WP	2 [ $\text{mW}/\text{cm}^2$ ], 20 [ $\text{W}/\text{m}^2$ ] or 2,000 [ $\mu\text{W}/\text{cm}^2$ ]	0.001 [ $\text{mW}/\text{cm}^2$ ], 0.001 [ $\text{W}/\text{m}^2$ ] or 0.01 [ $\mu\text{W}/\text{cm}^2$ ]
PMA2110L-WP	20 [ $\text{mW}/\text{cm}^2$ ], 200 [ $\text{W}/\text{m}^2$ ] or 20,000 [ $\mu\text{W}/\text{cm}^2$ ]	0.001 [ $\text{mW}/\text{cm}^2$ ], 0.01 [ $\text{W}/\text{m}^2$ ] or 0.1 [ $\mu\text{W}/\text{cm}^2$ ]
PMA2110-WP	200 [ $\text{mW}/\text{cm}^2$ ] or 2,000 [ $\text{W}/\text{m}^2$ ]	0.001 [ $\text{mW}/\text{cm}^2$ ] or 0.01 [ $\text{W}/\text{m}^2$ ]



WATERPROOF UNDERWATER CHASSIS - IP68		
Model	Range	Display Resolution
PMA2110A-UW	20,000 [ $\mu\text{W}/\text{cm}^2$ ] or 200 [ $\text{W}/\text{m}^2$ ]	0.1 [ $\mu\text{W}/\text{cm}^2$ ] or [0.001 $\text{W}/\text{m}^2$ ]
PMA2110C-UW	2 [ $\text{mW}/\text{cm}^2$ ], 20 [ $\text{W}/\text{m}^2$ ] or 2,000 [ $\mu\text{W}/\text{cm}^2$ ]	0.001 [ $\text{mW}/\text{cm}^2$ ], 0.001 [ $\text{W}/\text{m}^2$ ] or 0.01 [ $\mu\text{W}/\text{cm}^2$ ]
PMA2110L-UW	20 [ $\text{mW}/\text{cm}^2$ ], 200 [ $\text{W}/\text{m}^2$ ] or 20,000 [ $\mu\text{W}/\text{cm}^2$ ]	0.001 [ $\text{mW}/\text{cm}^2$ ], 0.01 [ $\text{W}/\text{m}^2$ ] or 0.1 [ $\mu\text{W}/\text{cm}^2$ ]
PMA2110-UW	200 [ $\text{mW}/\text{cm}^2$ ] or 2,000 [ $\text{W}/\text{m}^2$ ]	0.001 [ $\text{mW}/\text{cm}^2$ ] or 0.01 [ $\text{W}/\text{m}^2$ ]



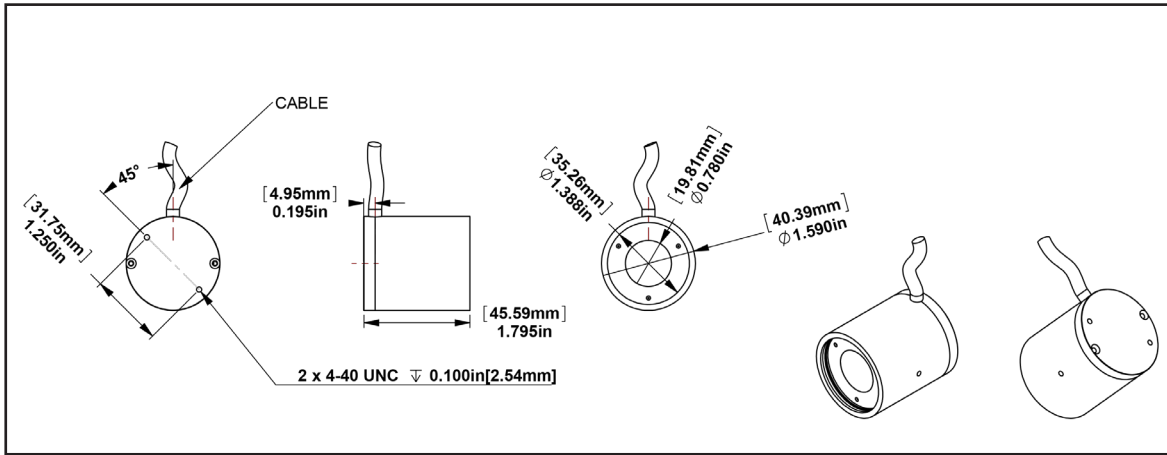
LOW PROFILE CHASSIS - IP60		
Model	Range	Display Resolution
PMA2110A-F	20,000 [ $\mu\text{W}/\text{cm}^2$ ] or 200 [ $\text{W}/\text{m}^2$ ]	0.1 [ $\mu\text{W}/\text{cm}^2$ ] or [0.001 $\text{W}/\text{m}^2$ ]
PMA2110C-F	2 [ $\text{mW}/\text{cm}^2$ ], 20 [ $\text{W}/\text{m}^2$ ] or 2,000 [ $\mu\text{W}/\text{cm}^2$ ]	0.001 [ $\text{mW}/\text{cm}^2$ ], 0.001 [ $\text{W}/\text{m}^2$ ] or 0.01 [ $\mu\text{W}/\text{cm}^2$ ]
PMA2110L-F	20 [ $\text{mW}/\text{cm}^2$ ], 200 [ $\text{W}/\text{m}^2$ ] or 20,000 [ $\mu\text{W}/\text{cm}^2$ ]	0.001 [ $\text{mW}/\text{cm}^2$ ], 0.01 [ $\text{W}/\text{m}^2$ ] or 0.1 [ $\mu\text{W}/\text{cm}^2$ ]
PMA2110-F	200 [ $\text{mW}/\text{cm}^2$ ] or 2,000 [ $\text{W}/\text{m}^2$ ]	0.001 [ $\text{mW}/\text{cm}^2$ ] or 0.01 [ $\text{W}/\text{m}^2$ ]

### CABLE LENGTHS

<b>Standard Chassis</b>	6ft Straight Cable (1.82m) <i>(Custom Lengths Available)</i>
<b>Weatherproof Chassis</b>	15ft Standard Cable (4.57m) <i>(Custom Lengths Available)</i>
<b>Waterproof Underwater Chassis</b>	Cable Length by Request. Specify up to 100 Meters.
<b>Low Profile Chassis</b>	6ft Straight Cable (1.82m) <i>(Custom Lengths Available)</i>

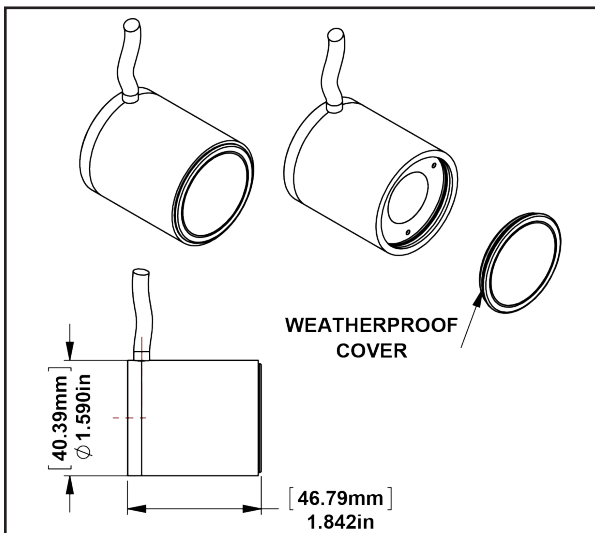
Custom ranges, cable lengths, and cable types are available upon request – please consult factory for details

## Standard Chassis



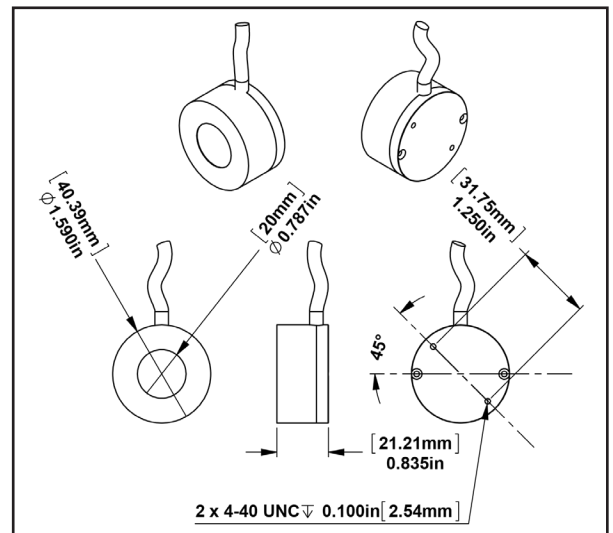
Est. Weight: 4 oz. (113 g)

## Weatherproof Chassis



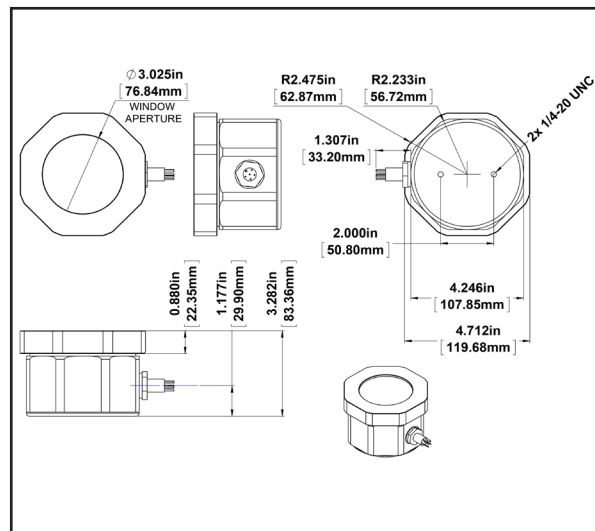
Est. Weight: 4.2 oz. (119 g)

## Low Profile Chassis



Est. Weight: 2.2 oz. (62 g)

## Waterproof Underwater Chassis



Est. Weight: 3.7 lbs. (1678 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.