

Solar Light's **NIST-Traceable Model PMA1140 Analog Visible and Infrared Global radiometer** measures irradiance within the range of 400-1100nm, and is intended primarily for cost-sensitive applications where the flat spectral response of our thermopile-based pyranometers is not required. This sensor can be used to monitor the global solar irradiance (direct + diffuse.) It is factory calibrated to accurately read the global solar irradiance (from 300 to 2800nm) if exposed to the standard sun, even though the sensor is not sensitive beyond 1100nm. This is achieved by applying a correction factor during calibration. The angular response of the PMA1140 sensor is cosine corrected, and suitable for measurements of diffuse radiation or radiation from extended sources.



Applications

- Meteorology
- Agriculture
- Solar Power Research and Testing
- Heating and Air Conditioning
- Lighting
- Physics and Optical Laboratories

Features and Benefits

- Wide Spectral Range
- Excellent Long-Term Stability
- Cosine Corrected
- Calibration Traceable to World Radiometric Reference (WRR)
- High Sensitivity
- Low Cost





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



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



Waterproof Underwater Chassis
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)
- Waterproof Underwater Chassis (submersible up to 100 meters)
- Digital Model Also Available (Model PMA2140)

SPECIFICATIONS	
Spectral Response	400-1100nm, Figure 1
Angular Response	5% for Angles <60°
Range	*See model chart
Operating Environment	32 to 120 °F (0 to +50 °C)
Temperature Coefficient	Negligible
Cable Lengths	*See cable length chart below
Dimensions and Weight	*See outline drawings
WIRE CONNECTIONS	
Wire Color	PMA1140 Signal
White and Yellow	Analog Output (0 to Supply - 0.5 Volts) Connect Wires Together
Green and Blue	Analog/Power Ground, Connect Wires Together
Red	+5V to +12V Power Input
Orange	-5V to -12V Power Input
Braid	Cable Shield
REFERENCES	
"Solar Spectral Irradiance" Technical Report of the CIE, Publ No CIE 85	

Part Number: 210041

Revision Level: C

Specifications subject to change without notice.

CABLE LENGTHS	
Standard Chassis	6ft Straight Cable (1.82m) (Custom Lengths Available)
Weatherproof Chassis	15ft Standard Cable (4.57m) (Custom Lengths Available)
Waterproof Underwater Chassis	Cable Length by Request. Specify up to 100 Meters.

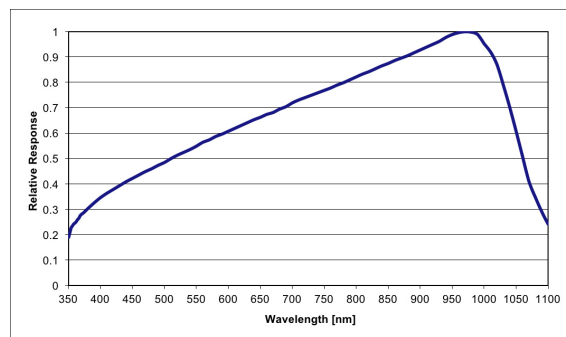


Fig. 1. Linear Spectral Response

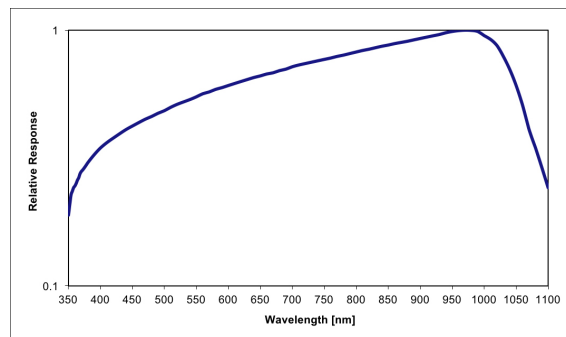


Fig. 2. Log Spectral Response

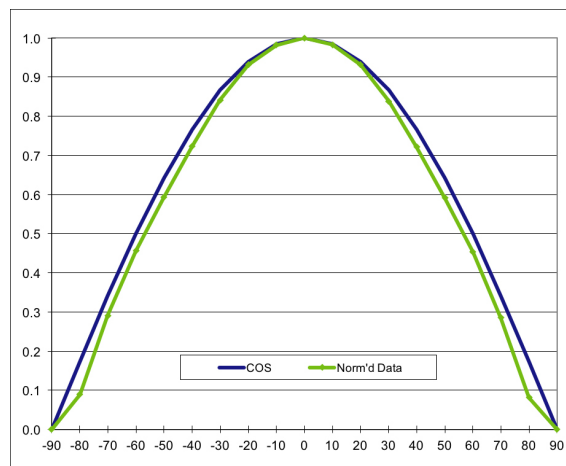


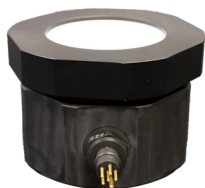
Fig. 3. Cosine Response



STANDARD CHASSIS - IP60		
Model	Range	Display Resolution
PMA1140L	2,000 [$\mu\text{W}/\text{cm}^2$]	0.01 [$\mu\text{W}/\text{cm}^2$]
PMA1140	200 [mW/cm^2] or 2,000 [W/m^2]	0.001 [mW/cm^2] or 0.01 [W/m^2]
PMA1140H	2,000 [mW/cm^2] or 20,000 [W/m^2]	0.01 [mW/cm^2] or 0.1 [W/m^2]



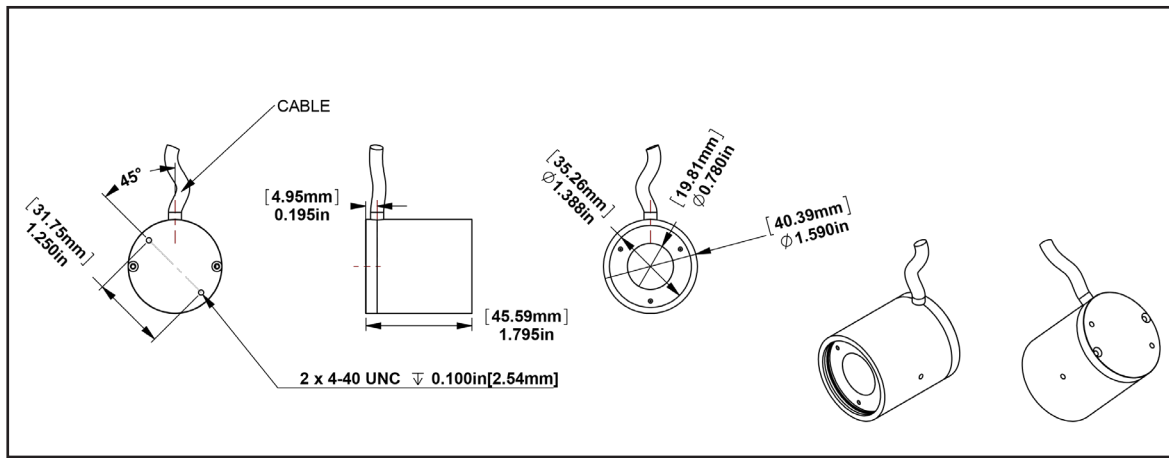
WEATHERPROOF CHASSIS - IP68		
Model	Range	Display Resolution
PMA1140L-WP	2,000 [$\mu\text{W}/\text{cm}^2$]	0.01 [$\mu\text{W}/\text{cm}^2$]
PMA1140-WP	200 [mW/cm^2] or 2,000 [W/m^2]	0.001 [mW/cm^2] or 0.01 [W/m^2]
PMA1140H-WP	2,000 [mW/cm^2] or 20,000 [W/m^2]	0.01 [mW/cm^2] or 0.1 [W/m^2]



WATERPROOF UNDERWATER CHASSIS - IP68		
Model	Range	Display Resolution
PMA1140L-UW	2,000 [$\mu\text{W}/\text{cm}^2$]	0.01 [$\mu\text{W}/\text{cm}^2$]
PMA1140-UW	200 [mW/cm^2] or 2,000 [W/m^2]	0.001 [mW/cm^2] or 0.01 [W/m^2]
PMA1140H-UW	2,000 [mW/cm^2] or 20,000 [W/m^2]	0.01 [mW/cm^2] or 0.1 [W/m^2]

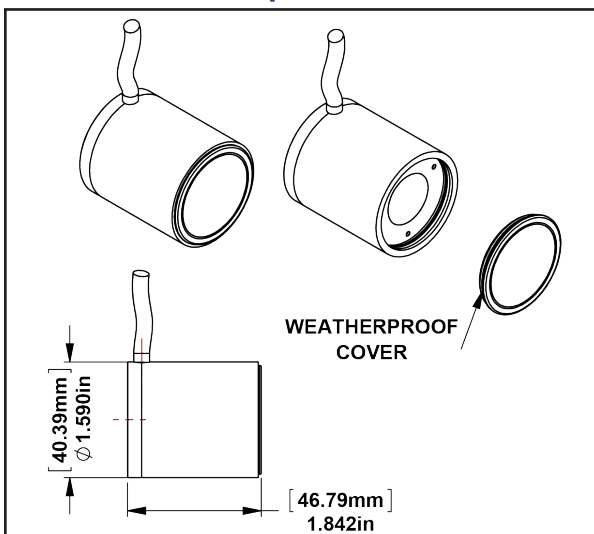
Custom ranges, cable lengths, and cable types are available upon request – please consult factory for details

Standard Chassis



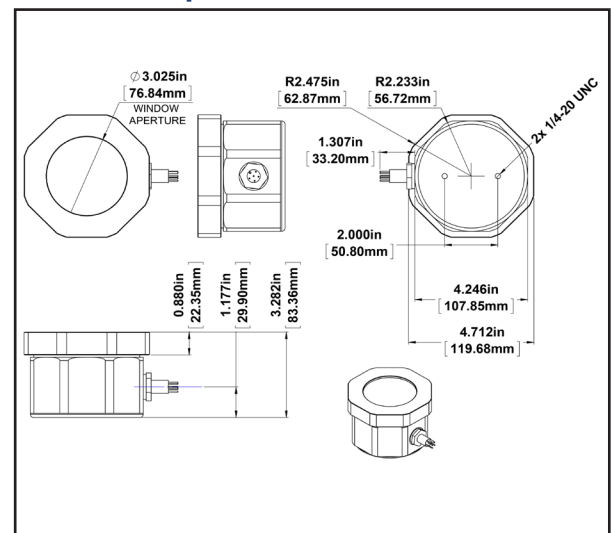
Est. Weight: 4 oz. (113 g)

Weatherproof Chassis



Est. Weight: 4.2 oz. (119 g)

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 100 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 100 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.