

Solar Light's **Model PMA1131 Analog Scotopic Light Sensor** is a portable Lux detector with spectral response following the CIE Scotopic Luminous Efficiency Function (which mimics the human eye's response in low light conditions) and following from the SI definition of 1700 lm/W at 507nm. Several packages are available for different types of environments, including standard, low profile, weatherproof, and waterproof.



### Applications

- Low Light Level Testing
- Night Vision Technology
- Display and Illuminator Testing
- Luminescence
- Photography and Film Studios
- Clinical Studies, Ophthalmology

### Features and Benefits

- High Sensitivity
- Excellent Long-Term Stability
- Cosine Corrected
- NIST Traceable Calibration





**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)
- Digital Model for Interface with PMA Series Meters (Model PMA2131)

SPECIFICATIONS	
<b>Spectral Response</b>	Follows CIE scotopic luminous efficiency curve (380-780nm), Figure 1
<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>Cable Length</b>	*See model chart on the next page
<b>Dimensions and Weight</b>	*See outline drawings
REFERENCES	
"ISO 23539:2005(E) CIE S 0 10/E:2004 Photometry - The CIE Systems of Physical Photometry." ISO 2005. CIE 2004.	

Part Number: 210038

Revision Level: B

Specifications subject to change without notice.

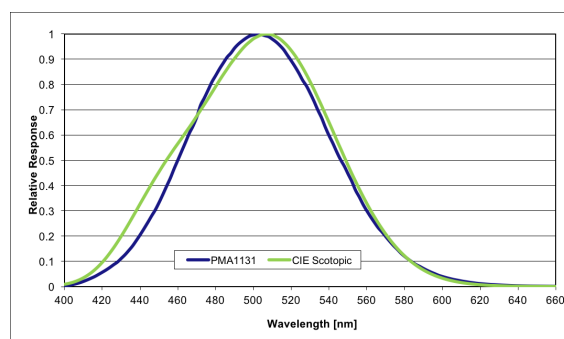


Fig. 1. Linear Spectral Response

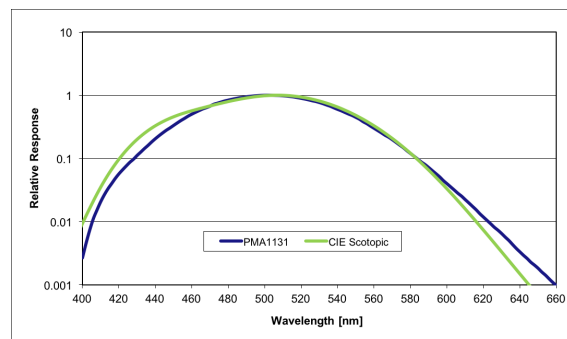


Fig. 2. Log Spectral Response

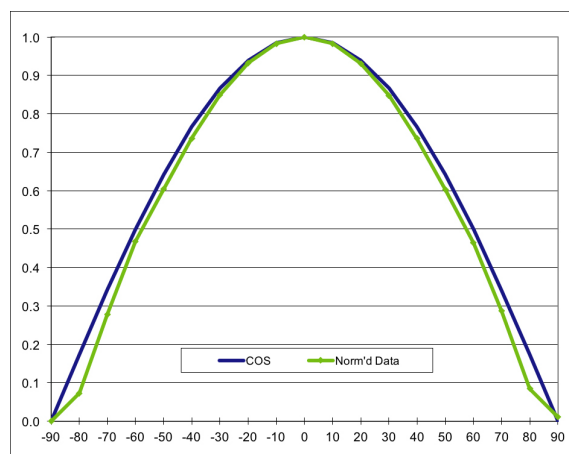


Fig. 3. Cosine Response

### Partial Model Selection Chart



STANDARD CHASSIS - IP60				
Model	Input Power	Output Signal	Range	Cable Type
PMA1131-S-05-200	9-24 VDC @ 30 mA	0-5 VDC	200 [scotopic Lux] or 20 [ft-cd]	Pigtail w/ 2 meter detachable cable
PMA1131-S-420-200	9-24 VDC @ 70 mA	4-20 mA	200 [scotopic Lux] or 20 [ft-cd]	Pigtail w/ 2 meter detachable cable
PMA1131	± 5-12 VDC @ <1 mA	*0-5 VDC	200 [scotopic Lux] or 20 [ft-cd]	6' cable stripped/tinned
PMA1131D	± 5-12 VDC @ <1 mA	*0-5 VDC	500 [Lux] or 48 [ft-cd]	6' cable stripped/tinned
PMA1131E	± 5-12 VDC @ <1 mA	*0-5 VDC	5,140 [Lux] or 480 [ft-cd]	6' cable stripped/tinned
PMA1131B	± 5-12 VDC @ <1 mA	*0-5 VDC	385,000 [Lux] or 36,000 [ft-cd]	6' cable stripped/tinned



WATERPROOF UNDERWATER CHASSIS - IP68				
Model	Input Power	Output Signal	Range	Cable Type
PMA1131-UW	± 5-12 VDC @ <1 mA	*0-5 VDC	200 [scotopic Lux] or 20 [ft-cd]	Customer to define length required
PMA1131D-UW	± 5-12 VDC @ <1 mA	*0-5 VDC	500 [Lux] or 48 [ft-cd]	Customer to define length required
PMA1131E-UW	± 5-12 VDC @ <1 mA	*0-5 VDC	5,140 [Lux] or 480 [ft-cd]	Customer to define length required
PMA1131B-UW	± 5-12 VDC @ <1 mA	*0-5 VDC	385,000 [Lux] or 36,000 [ft-cd]	Customer to define length required



WEATHERPROOF CHASSIS - IP68				
Model	Input Power	Output Signal	Range	Cable Type
PMA1131-WP-05-200	9-24 VDC @ 30 mA	0-5 VDC	200 [scotopic Lux] or 20 [ft-cd]	Pigtail w/ 2 meter detachable cable
PMA1131-WP-420-200	9-24 VDC @ 70 mA	4-20 mA	200 [scotopic Lux] or 20 [ft-cd]	Pigtail w/ 2 meter detachable cable
PMA1131-WP	± 5-12 VDC @ <1 mA	*0-5 VDC	200 [scotopic Lux] or 20 [ft-cd]	15' cable stripped/tinned
PMA1131D-WP	± 5-12 VDC @ <1 mA	*0-5 VDC	500 [Lux] or 48 [ft-cd]	15' cable stripped/tinned
PMA1131E-WP	± 5-12 VDC @ <1 mA	*0-5 VDC	5,140 [Lux] or 480 [ft-cd]	15' cable stripped/tinned
PMA1131B-WP	± 5-12 VDC @ <1 mA	*0-5 VDC	385,000 [Lux] or 36,000 [ft-cd]	15' cable stripped/tinned

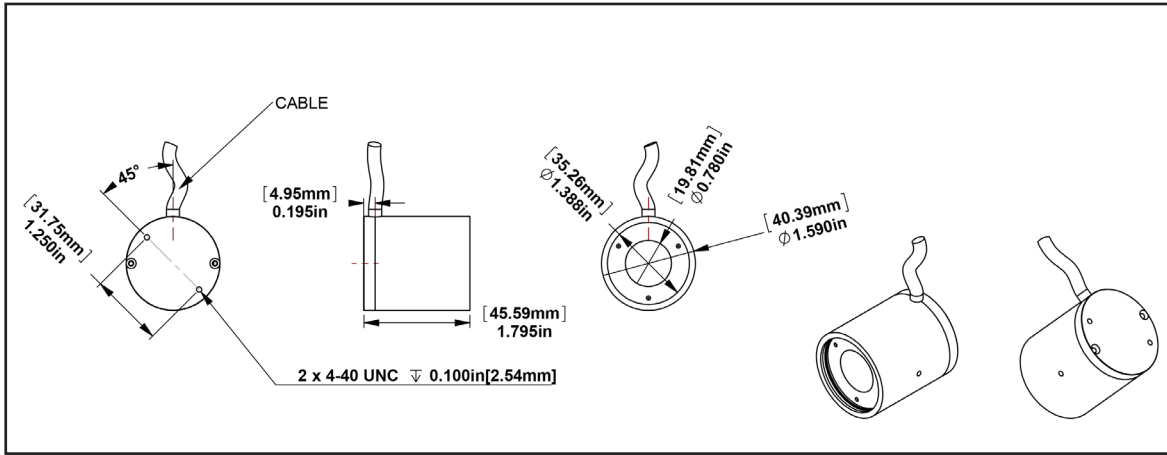


LOW PROFILE CHASSIS - IP60				
Model	Input Power	Output Signal	Range	Cable Type
PMA1131-F-05-200	9-24 VDC @ 30 mA	0-5 VDC	200 [scotopic Lux] or 20 [ft-cd]	Pigtail w/ 2 meter detachable cable
PMA1131-F-420-200	9-24 VDC @ 70 mA	4-20 mA	200 [scotopic Lux] or 20 [ft-cd]	Pigtail w/ 2 meter detachable cable
PMA1131-F	± 5-12 VDC @ <1 mA	*0-5 VDC	200 [scotopic Lux] or 20 [ft-cd]	6' cable stripped/tinned
PMA1131D-F	± 5-12 VDC @ <1 mA	*0-5 VDC	500 [Lux] or 48 [ft-cd]	6' cable stripped/tinned
PMA1131E-F	± 5-12 VDC @ <1 mA	*0-5 VDC	5,140 [Lux] or 480 [ft-cd]	6' cable stripped/tinned
PMA1131B-F	± 5-12 VDC @ <1 mA	*0-5 VDC	385,000 [Lux] or 36,000 [ft-cd]	6' cable stripped/tinned

\*0 to Supply -0.5 Volts

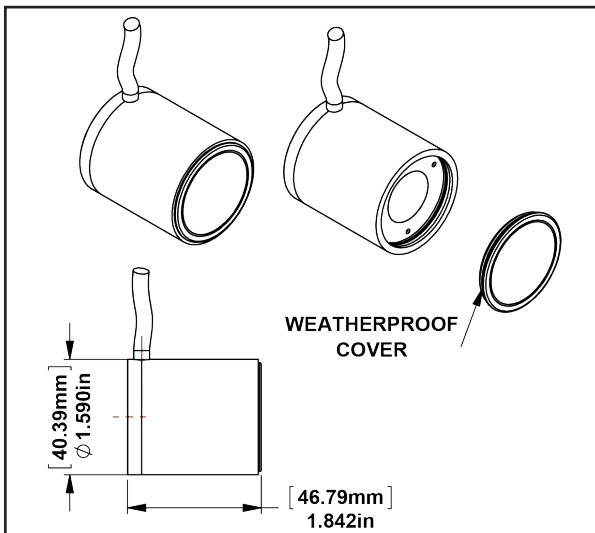
Custom ranges, cable lengths, and cable types are available upon request – please consult factory for details

## Standard Chassis



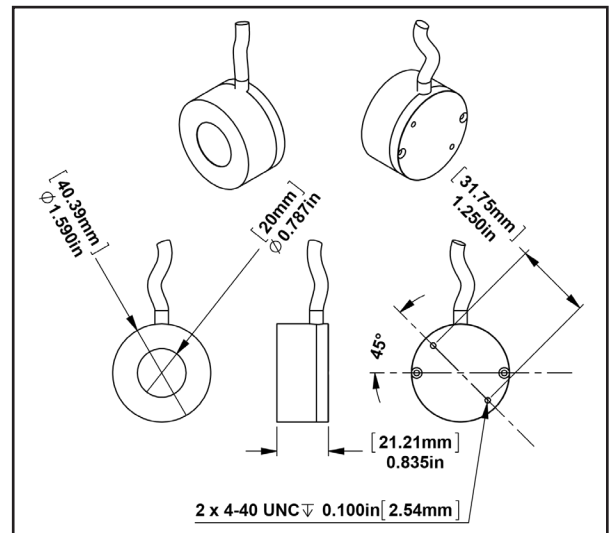
Est. Weight: 4 oz. (113 g)

## Weatherproof Chassis



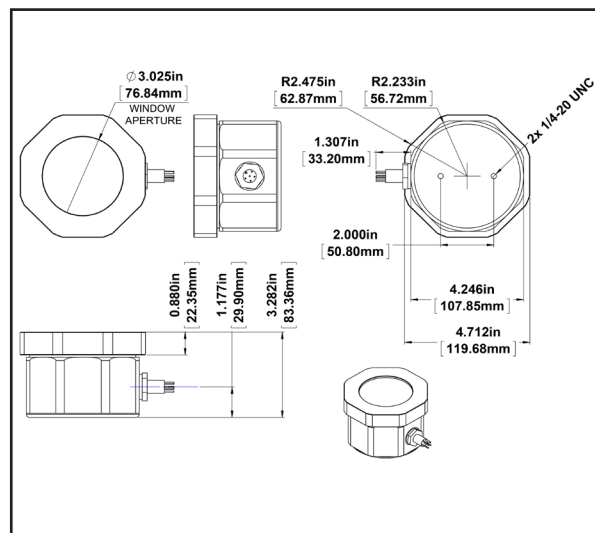
Est. Weight: 4.2 oz. (119 g)

## Low Profile Chassis



Est. Weight: 2.2 oz. (62 g)

## Waterproof Underwater Housing



Est. Weight: 3.7 lbs. (1678 g)

### 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

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