



70234 Goldilux™ Smart Meter and 70237 Smart Probe.

- **Autoranging: up to 2×10^6 dynamic range**
- **UVA, UVB and UVC Radiometric models**
- **Lux or Footcandle Photometric models**
- **Cosine response for extended sources**
- **Smart Meters: RS-232 communications**
- **Analog output from every meter**

Our family of Goldilux™ Meters and Probes are simple, hand-held devices for quick and accurate measurements. We offer two types: Smart Meter and Probes and Standard Meters and Probes.

GOLDILUX™ SMART METER/PROBES

Microprocessor control makes radiation measurement with the family of Smart Goldilux™ Meters fully automatic. Connect any Smart Probe to the 70234 Meter, and all of the calibration information and probe identification are read by the meter and used to provide you with calibrated readings in appropriate units.

This Smart Meter accepts radiometric probes for UVA, UVB, and UVC measurements, or the 70235 Photometric Probe for 380 to 760 nm. Whether you are working in a single wavelength region, or several, the Goldilux™ Smart Meter is the only one you'll need.

GOLDILUX™ STANDARD METERS/PROBES

Economical price and quality performance can be obtained from these simple systems. We offer three meters and a number of probes. We offer Standard UV Meters and Probes, and Light (VIS) Meters and Probes.

The interchangeable UV probes measure UVA, UVB and UVC radiation from 0.1 to $2 \times 10^5 \mu\text{W cm}^{-2}$. You'll be impressed with their stability and linearity.

The Light Meters and Probes measure 380 to 760 nm radiation in lux units, and allow you to monitor dosage accumulation, ensuring your samples receive adequate exposure. We offer a light meter with built-in detector and a light meter that accepts external light probes. If you need to make remote light measurements, you can connect an external probe to a meter with built-in detector.

Table 1 on the following page lists the quality parameters for standard light meters, as recommended by the International Commission on Illumination (CIE Publication No. 69, 1987).

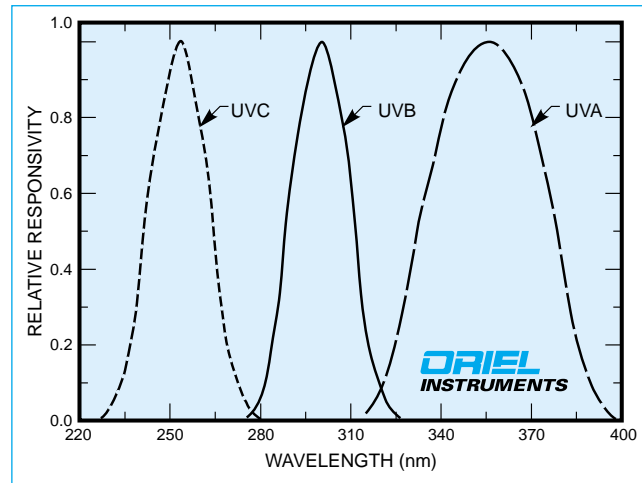


Fig. 1 Typical response of Goldilux™ UV Probes.

COSINE ANGULAR RESPONSE

Measurement of extended sources is best done with detectors characterized by a cosine angular response. The meter reading then provides a true representation of the flux incident on the detector from all directions, appropriately weighted. Our photometric instruments are excellent in approximating the true cosine response, less than 1.5% overall departure. UV units can have slightly larger departures from pure cosine response. Those departures are integrated in the overall accuracy specifications.

You can also use these meters for collimated beam measurements. In those measurements care must be taken to have the incident flux arrive at near normal incidence for most accurate readings.

TECH NOTE

UV Probes should not be used to measure broadband sources if accuracy is a concern. Their non square-top responsivity curve prevents them from properly responding to multi-spectral inputs. UVC probes will also allow red and NIR radiation to produce a significant response. Therefore, they should be screened from sunlight and room lights when taking UV measurements.

ABOUT CALIBRATION...

Goldilux™ Meters are calibrated to international recognized standards. Smart meters are password protected, to avoid accidental changes of calibration tables.

We recommend that UV probes and UV Smart Probes be re-calibrated every 6 months, while light probes and Smart Light Probes be re-calibrated every 6 to 12 months. Meter and probes should be returned to Oriel Instruments for re-calibration.

Table 1 Quality Parameters for Light Meters

Parameter	Symbol	Value
V (λ) Match	f ₁	<3.0%
UV Response	μ	<0.1%
IR Response	r	<0.1%
Cosine Response	f ₂	<1.5%
Linearity Error	f ₃	<0.1%
Display Unit Error	f ₄	<0.1%
Temperature Coefficient	α(T ₂ =5 °C)	<-0.2%/°C
Fatigue	f ₅	<0.1%
Modulated Radiation	f ₇	<0.1%
Polarization	f ₈	<0.1%
Range Change	f ₁₁	<0.1%
Crest Factor	C	>2
Lower Frequency Limit	f ₁	<40 Hz
Upper Frequency Limit	f _μ	>50 Hz

SPECIFICATIONS

Standard Meters/Probes

Meter display:	4 ½ digit LCD
Analog output:	2 V full scale reading, 10 kΩ output impedance cosine
Probe response:	
Probe accuracy:	better than 3%
Light probes:	5%
UVA probe:	7%
UVB probe:	10%
UVC probe:	to 200 J cm ⁻²
Dosage (UV probes only):	

Smart Meter/Probes

Meter display:	alpha-numeric LCD
Analog output:	2 V for full scale reading, 10 kΩ output impedance cosine
Probe response:	
Probe accuracy:	
Light probe:	3%
UVA probe:	5%
UVB probe:	7%
UVC probe:	10%

ORDERING INFORMATION

Standard Meters and Probes

Meters

Meter Type	Built-in Detector	Irradiance Range	Model No.	Price
UV Meter	No	Probe dependent	70217	
Lux Light Meter	No	Probe dependent	70226	
Light Meter	Yes	0.1 to 20,000 lux	70224	

Probes

Probe Type	Irradiance Range	For This Meter	Model No.	Price
UVA Probe	0.1 to 200,000 μW cm ⁻²	70217	70219	
UVB Probe	0.1 to 200,000 μW cm ⁻²	70217	70221	
UVC Probe	0.1 to 200,000 μW cm ⁻²	70217	70223	
Lux Probe	0.1 to 200,000 lux	70226	70231	

Smart Meter and Probes

Meter

70234 UV and Light Smart Meter

Probes

Probe Type	Irradiance Range	Model No.	Price
UVA Smart Probe	0 to 200,000 μW cm ⁻²	70237	
UVB Smart Probe	0 to 200,000 μW cm ⁻²	70238	
UVC Smart Probe	0 to 200,000 μW cm ⁻²	70239	
Light Smart Probe	0 to 200,000 lux 0 to 20,000 footcandles	70235	

Accessories for Smart Meters/Probes

70240 6 ft. (1.8 m) Long Remote Hold Cable With momentary switch
70241 6 ft. (1.8 m) Long Analog Output Cable With BNC termination