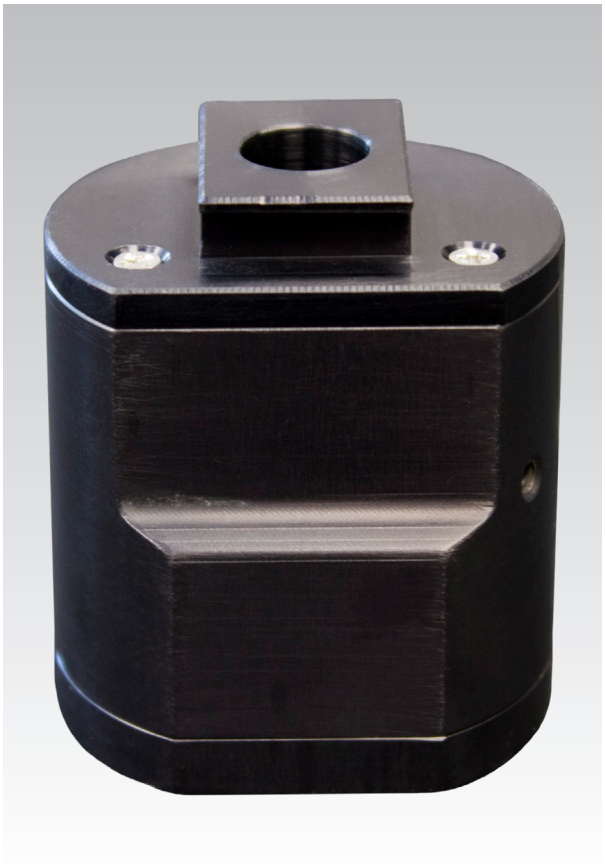
SOLAR® LIGHT

Digital Sensors
Erythema Sensor PMA2105

Measures Biologically Effective Ultraviolet Radiation from DCS Subject Stop-Equipped Single Port Simulator

Solar Light's **Model PMA2105 Digital Biologically Weighted Erythema UV Sensor With Beam Splitter Adapter** allows direct coupling with the beam splitter on the subject stop available for our legacy 15S-Series and modern 16S-Series Solar Simulators. The sensor's spectral response closely follows the Erythema Action Spectrum. A built-in Teflon diffuser assures that the sensor has negligible azimuthal error, making the measurement insensitive to the rotation of the sensor. Extended measurement range of 600 [MED/Hr] enables measurement of intense radiation. This sensor enables our PMA-Series Radiometers to operate as smart dose controllers/monitors, substantially enhancing the functionality of the Solar Simulators. The MED Calculation Formula (1 [MED/Hr] = 5.833 [μW/cm^2]) is programmed into the PMA2105 Sensor, allowing for easy conversion of units. Consequently, the integrated effective dose can be expressed in [mJoules/cm^2] or MED. The measurement result can be shown in [MED/Hr], [μW/cm^2] as well as a time to accumulate 1 [MED]. High dynamic range of the sensor allows measurements down to 1 [μW/cm^2] with the ability to measure radiation as strong as 3.5 [mW/cm^2].



Applications

- Skin and SPF Testing
- Clinical Studies
- *In Vivo* Testing
- Phototherapy
- Photobiology
- Chemistry Laboratories

Features and Benefits

- Excellent Long-Term Stability
- NIST Traceable Calibration
- Radiometric and Biological Units
- Dose Controller Functionality

100 East Glenside Avenue • Glenside, PA 19038 • USA • P 1.215.517.8700 • F 1.215.517.8747
www.solarlight.com • info@solarlight.com • www.youtube.com/user/SolarLightColnc

CE Compliant

SOLAR® LIGHT

Digital Sensors
Erythema Sensor PMA2105

Measures Biologically Effective Ultraviolet Radiation from DCS Subject Stop-Equipped Single Port Simulator

SPECIFICATIONS	
Spectral Response	Follows Erythema Action Spectrum, Figure 1
Range	600 [MED/Hr], 10 [MED/min], 3,500 [µW/cm²] or 6 [sec-10 Hrs]
Display Resolution	0.1 [MED/Hr], 0.01 [MED/min], 1 [µW/cm²] or 1 [hh:mm:ss]
Operating Environment	32 to 120°F (0 to +50°C)
Temperature Coefficient	1% /°C for Solar Radiation
Cable Length	6ft. (1.82m) Straight Cable
Dimensions and Weight	**See Outline Drawing*

REFERENCES

McKinlay A.F. and B.L. Diffey, "A reference action spectrum for ultraviolet induced erythema in human skin", CIE Journal, 6, 17-22, 1987

Morys M., D. Berger, "Accurate measurements of biologically effective ultraviolet radiation" SPIE Proc. 2049, pp. 152-161, 1993.

Parrish J.A., K.F.Jaenicke, R.R. Anderson "Erythema and melanogenesis action spectra of normal human skin" Photochem. Photobiol. 36, pp. 87-191 (1982)

Part Number: 210006
Revision Level: C

Specifications subject to change without notice.

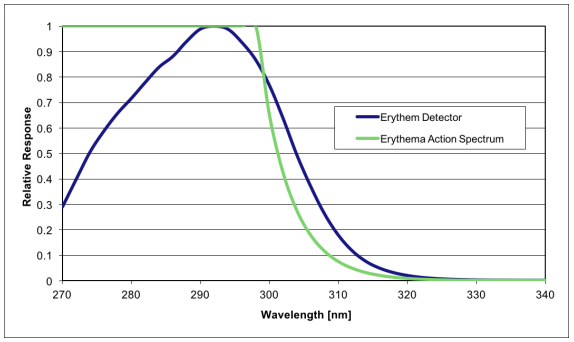


Fig. 1. Linear Spectral Response

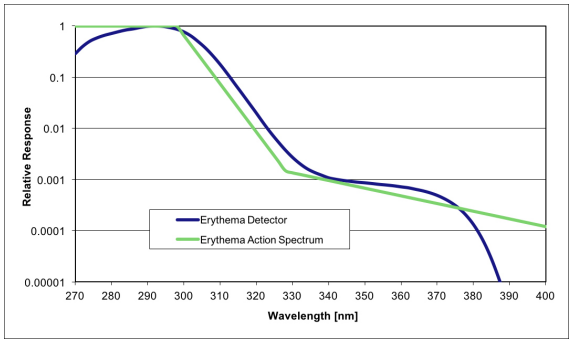
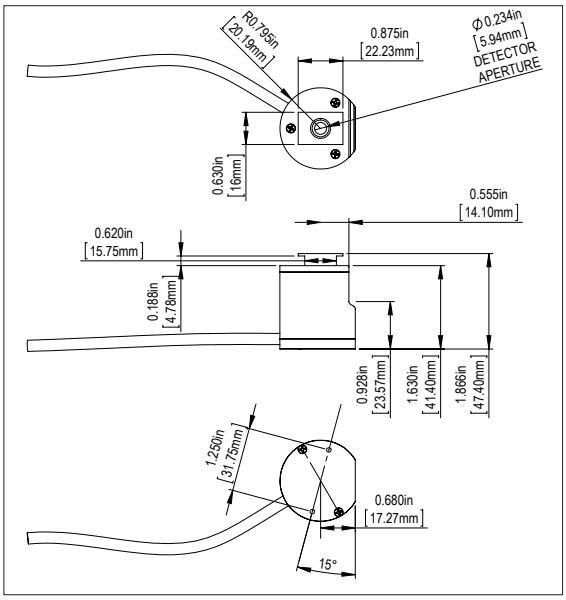


Fig. 2. Log Spectral Response

Sensor With Beam Splitter PMA2105



Est. Weight: 4 oz. (113 g)

One minimal erythema dose (MED) equals 21 [mJ/cm²]

100 East Glenside Avenue • Glenside, PA 19038 • USA • P 1.215.517.8700 • F 1.215.517.8747
www.solarlight.com • info@solarlight.com • www.youtube.com/user/SolarLightColnc

CE Compliant

SOLAR® LIGHT

Digital Sensors
Erythema Sensor PMA2105

Measures Biologically Effective Ultraviolet Radiation from DCS Subject Stop-Equipped Single Port Simulator

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.

100 East Glenside Avenue • Glenside, PA 19038 • USA • P 1.215.517.8700 • F 1.215.517.8747
www.solarlight.com • info@solarlight.com • www.youtube.com/user/SolarLightColnc

CE Compliant