



EIT UV PRODUCT OVERVIEW



EIT Instrument Markets/EIT LLC designs, manufactures, sells, supports and services radiometers and on-line measurement systems for industrial UV curing applications. Products are available for LED and broadband (Arc, Microwave and Spot) UV sources. EIT instruments provide key information to establish & maintain a UV curing process and to communicate UV values; within a company and with formulators, substrate and source suppliers. Controlling your UV process leads to higher production yields & targeted effective maintenance programs, improving company profitability. This is an overview of our products. For more information, please contact EIT (703-478-0700, uv@eit.com, www.eit.com) or one of our authorized representatives/distributors.

RADIOMETERS: UV LED MEASUREMENT

The LED-R™ Series of Radiometers from EIT comprises a new family of radiometers designed specifically to measure the energy generated by UV LED systems. The EIT LED-R™ Series of instruments use a patented “Total Measured Optic Response” which results in extremely consistent and extremely accurate readings; run-to-run, unit-to-unit and source-to-source.

Standard versions of the LEDCure™ provide Irradiance (W/cm^2) & Energy Density (J/cm^2) values. The irradiance profile (Watts/ cm^2 as a function of time) is also shown on the display.

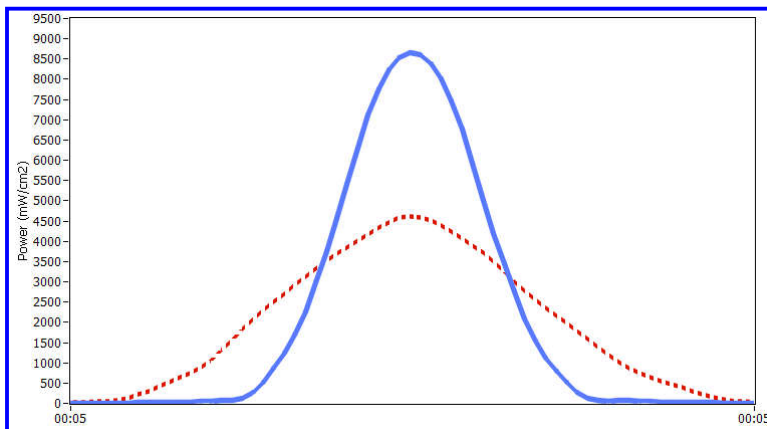
Profiler versions of the LEDCure™ also allow the Irradiance Profile to be transferred to a computer for further analysis and evaluation with EIT's PowerView® software.

Available LED-R Response Bands

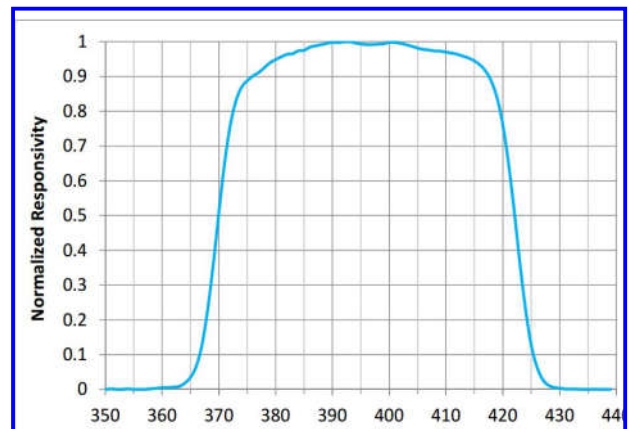
- L395: 370-422 nm a (As shown below on right)
- L365: +/- 340-390 nm
- Contact EIT for availability of the L385 (+/- 360-410 nm) and L405 (+/- 380-430 nm)



Top: LEDCure Radiometer
Above: LEDCure Display Screen



Above Left: “Profiler” Comparison of LED at different heights from the substrate



Above Right: L395 Total Measured Optic Response

EIT RADIOMETERS-BROADBAND SOURCES

EIT Radiometers (Power Puck® II, UviCure® Plus II, MicroCure®, 3D Cure®) provide peak UV irradiance (W/cm^2) and total energy density (J/cm^2) values. The EIT SpotCure® provides peak UV irradiance. The Power Puck II is a four-band (UVA, UVB, UVC, UVV) instrument while the other instruments are single-band. When selecting a measurement solution the user should consider instrument size, ease of use, source, dynamic range, spectral band(s), available service/support and how you will record, store and communicate the UV values measured.

UVICURE® PLUS II & UV POWER PUCK® II

The UviCure Plus II (single band) and Power Puck II (four band) are easy to use and can be adjusted to measure and display collected data in different configurations including:

Data Mode: UV data ($\text{Joules}/\text{cm}^2$, Watts/cm^2) displayed on one screen for up to 4 bands.

Graph Mode: A graph illustrating the collected UV irradiance and energy is displayed for each of the UV bands. Graph shows the irradiance profile as a function of time (mW/cm^2 on y-axis, time on x-axis).

Reference Mode: Allows the user to store a run into the instrument memory to allow for easy comparison to current UV conditions.

Setup Mode: Ability to adjust modes, display units and instrument sample rate.

Sample Rate: User adjustable sampling rates of 25, 128 or 2048 Hz (samples per second)

Dynamic Range: Standard (10 W), Mid (1 W) or Low (100 mW) range instruments, specified at time of order along with the UV band.



Top: Instruments

Middle: Data Mode (Left), Graph Mode (Right)

Bottom: Reference Mode

MICO CURE® & DATA READER



The MicroCure® is intended for use in applications that cannot be accessed by EIT's "puck" sized radiometers. Applications include digital printing, small piece/conveyor applications, small dimensional objects and exposure chambers.

MicroCure®

- Miniature radiometer 1.3"L x 0.95"W x 0.25" T (33.00 mm x 24.13 mm x 6.35 mm)
- High sampling rate of 2048 samples per second.
- Each MicroCure is good for 200 readings or one year, whichever comes first

DataReader

- Portable reader used to communicate and display MicroCure peak irradiance (W/cm^2) and energy density (J/cm^2) values
- DataReader is a one-time purchase, user changeable 9 volt battery

3D CURE® SYSTEM

Left to Right:
Individual 3D Sensor
3D Sensors in test fixture
DCM with 3 Sensors



Quickly and easily profile the UV exposure on complex and irregularly shaped objects. The 3D Cure System allows you to simultaneously collect W/cm^2 & J/cm^2 values on up to 32 individual EIT 3D Sensors. The 3D Sensors are available in UVA, UVB, UVC or UVV. During the run, the UV values are stored in the Data Collection Module (DCM). The values are transferred to a computer for further analysis once the exposure is made. Contact EIT to discuss your dimensional UV measurement needs.

EIT PROFILING RADIOMETERS

EIT Profiling Radiometers provide a complete picture of the UV source and how the UV is delivered to the cure surface. In addition to peak UV irradiance (W/cm^2) and total energy density (J/cm^2) values, the UV irradiance (Y-axis) is displayed as a function of time (X-axis). Profiling radiometers quickly and easily identify:

- The number of lamps and bulb type in each UV station
- Lamp focus/Changes to the focus
- Process speed and/or exposure time variations
- Uniformity of the UV across bulb length
- The performance of individual lamps in multi-lamp systems
- Maintenance needs before they impact product quality
- System changes over time with the comparison of stored files
- Differences between two UV systems



PowerMAP II: Reduced size, USB connection

POWERMAP® II, UV POWER PUCK® II PROFILER & UVICURE® PLUS II PROFILER

Instrument /Software Features

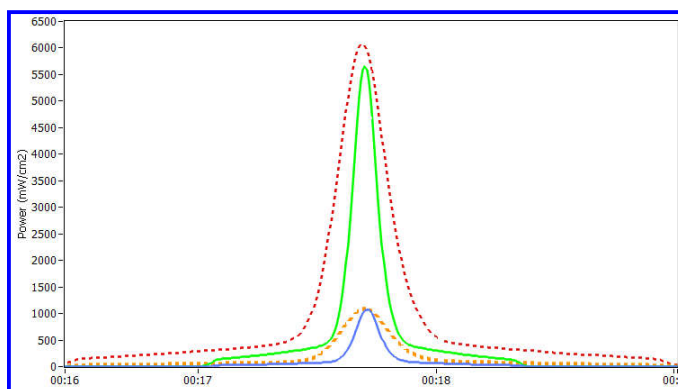
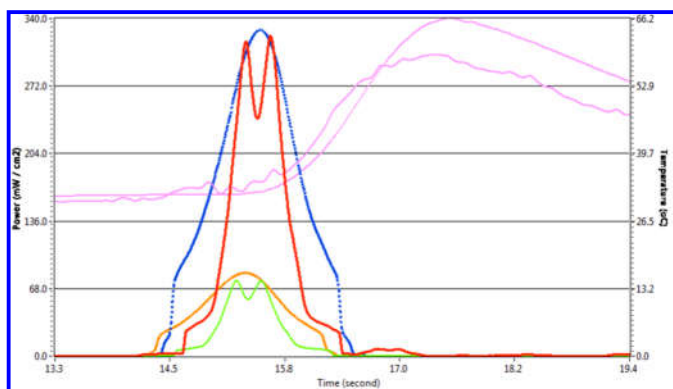
- USB Download
- LabView (*.tdms) file format
- Files are easy to share and export to Excel
- Easily capture and share screen shots, add process notes to files

PowerMAP II Features

- User adjustable sample rate from 128-2048 (Hz) samples per second
- Four UV bands plus thermocouple to measure temperature
- Small compact size of 5.5" x 2.1" x 0.55" (13.8 cm x 5.3 cm x 1.27 cm)
- Data collection time of 65 minutes, rechargeable battery

Profiler Features

- Unit has display & functions the same as a Standard Puck in the same housing
- Profile on computer displayed at fixed sample rate of 128 Hz, approximately 100 minutes of data collection time available
- User changeable AAA batteries



View and compare data collected by PowerMAP II, Power Puck II Profiler and UviCure Plus II Profiler
Above: Irradiance Profiles Right: Data

Summary (by File)			
	Sample File	Reference File	Difference
UVA - Power (mW/cm ²)	1607.559	453.032	1154.527
Power (%)	254.8	0	254.8
Energy (mJ/cm ²)	251.011	157.236	93.775
Energy (%)	59.6	0	59.6
UVB - Power (mW/cm ²)	1519.314	1486.910	32.404
Power (%)	2.2	0	2.2
Energy (mJ/cm ²)	200.012	199.609	0.403
Energy (%)	0.2	0	0.2
UVC - Power (mW/cm ²)	306.405	311.429	(5.024)
Power (%)	(1.6)	0	(1.6)
Energy (mJ/cm ²)	28.160	30.082	(1.922)
Energy (%)	(6.4)	0	(6.4)
UVV - Power (mW/cm ²)	2012.678	1514.450	498.227
Power (%)	32.9	0	32.9
Energy (mJ/cm ²)	347.783	295.648	52.136
Energy (%)	17.6	0	17.6

SPOTCURE®



- Monitor spot curing system performance
- Measure light guide degradation and determine optimum positioning of the light guide
- Measures UV irradiance (W/cm^2)
- Easy to use, long lasting battery, adaptors to support different size light guides

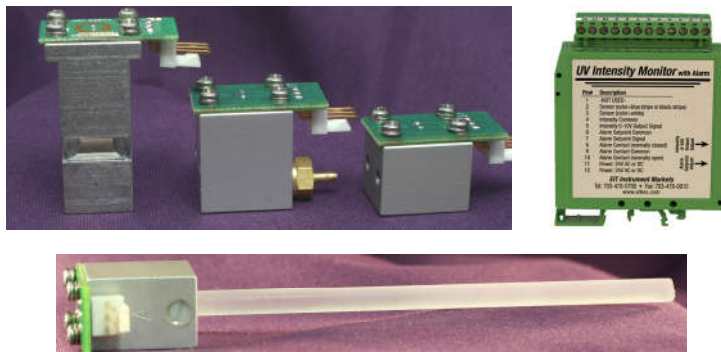
ON-LINE UV MESUREMENT SYSTEMS

EIT offers On-Line UV Measurement Systems for applications requiring continuous monitoring, with limited space, lamps in hard to reach locations and/or high-value products. On-Line Systems can be used in conjunction with radiometers or by themselves. Our systems provide continuous monitoring and feedback of the UV intensity and can alert the user to both gradual (e.g. bulbs aging) or sudden (equipment malfunction) changes in the UV intensity. Results are relative and are displayed or presented as either a percentage of the original output (usually set to 100% when the lamps are new) or on a scale of 0-10 volts or 4-20 milliamps for input to a PLC.

The EIT On-Line System consists of two components:

- **Compact Sensor:** Durable Sensor that has been designed to withstand the harsh UV environment. The Compact Sensor is available in different EIT bands, ranges and housing shapes based on the source and application.
- **Signal-Conditioning Unit:** Connects to the Compact Sensor and provides a means to track or display the real-time data. EIT offers the UV Intensity Monitor (DIN Rail) or Online UV Intensity Display Module.

Contact EIT or one of our Representatives/Distributors to discuss On-Line Monitoring Systems for your application.



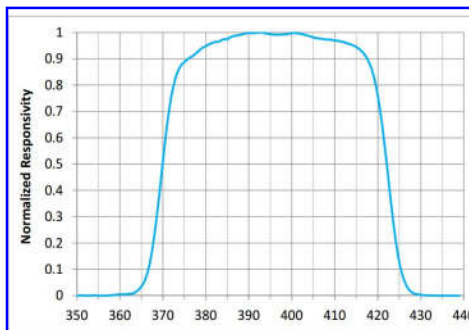
Top Left: EIT Compact Sensors / Top Right: UV Intensity Monitor
Bottom: EIT Quartz Rod used with Compact Sensor

INSTRUMENT CARE & SERVICE

Proper instrument handling, care and cleaning will help your EIT instrument perform as designed between service intervals at EIT. Cleaning guidelines are posted on our website. Please contact us with specific questions.

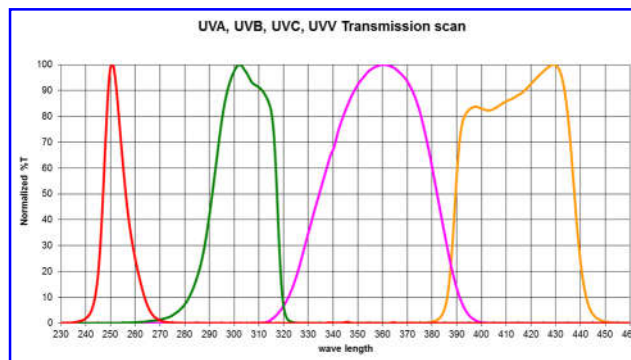
Periodically, instruments need adjustment back to factory settings. Service is available at EIT in Leesburg, Virginia or through one of our authorized service centers worldwide. Service related questions can be directed to calibration@eit.com

EIT INSTRUMENT RESPONSES



Left: LED L-395
L395 (370-422 nm)

Right: Broad Band
UVA (320-390nm)
UVB (280-320nm)
UVC (250-260nm)
UVV (395-445nm)

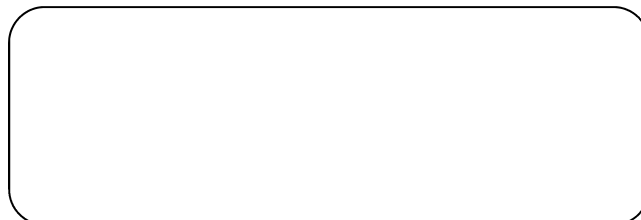


ABOUT EIT

Founded in 1977, EIT provides contract electronic manufacturing & engineering services for medical, industrial, analytical instrument, telecommunications and aerospace customers. EIT has multiple facilities in Virginia and New Hampshire. EIT is ITAR registered and our Quality Management System is registered to ISO 9001, ISO 13485 and AS 9100.

For more information contact EIT or one of our authorized representatives or distributors

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EIT Products are designed and manufactured in the USA

Product Specifications Subject to Change without Notice