

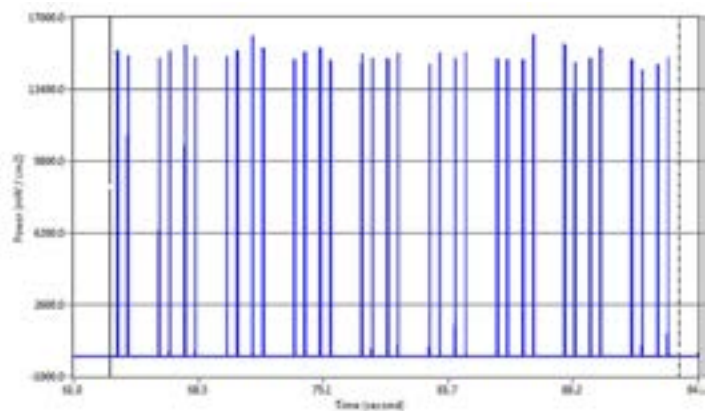
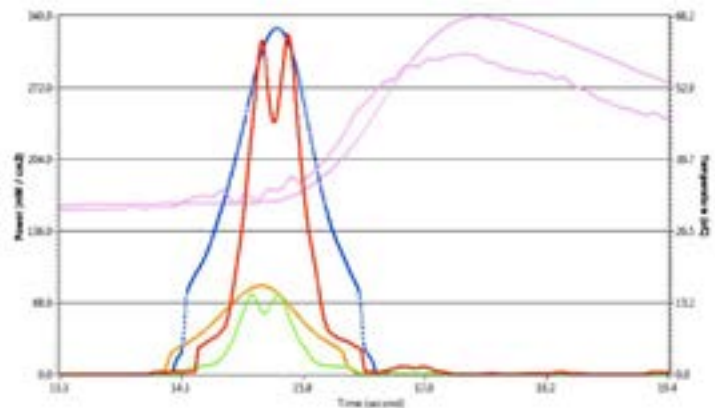
LEDMAP™ UV-LED Radiometers

The EIT LEDMAP is a Profiling Radiometer that provides the irradiance (W/cm²), energy density (J/cm²), irradiance profile (Watts/cm² as a function of time) and temperature profile (°C as a function of time). The instrument utilizes EIT's UV PowerView Software III for detailed visual and numerical analysis of the sources.

EIT LEDMAP

The EIT LEDMAP is designed to measure LED sources in high speed applications with EIT's patented LED L-Bands.

The image shows 34 individual LED peaks collected over 30 second interval at a speed of 400 fpm on a high speed digital printer. The sample rate was 2130.5 Hz.



Time is shown on the X-axis, UV irradiance on the left Y-axis and temperature on the right Y-axis if applicable

LEDMAP™ Profiling Radiometer

The EIT LEDMAP provides an extensive “picture” of the UV source(s) and how the UV LED is delivered to the cure surface. The irradiance (W/cm^2), energy density (J/cm^2), irradiance profile (Watts/cm² as a function of time) and the temperature profile ($^{\circ}C$ as a function of time) are available when the data is transferred to the computer.

Profiling radiometers quickly and easily identify and track:

- The number of lamps/arrays and their individual performance
- Focus conditions, array uniformity, speed/exposure time
- System changes over time with the comparison to stored files
- Maintenance needs before they impact product quality

LEDMAP Features:

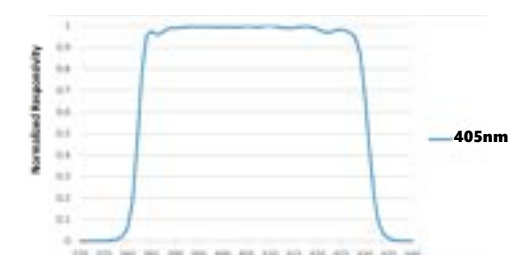
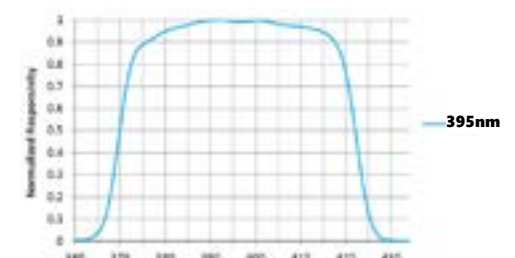
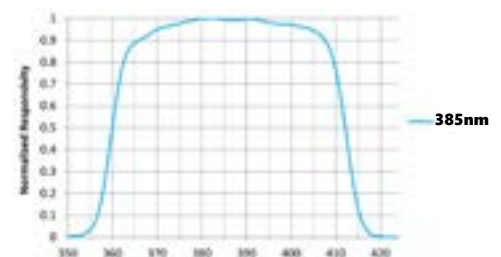
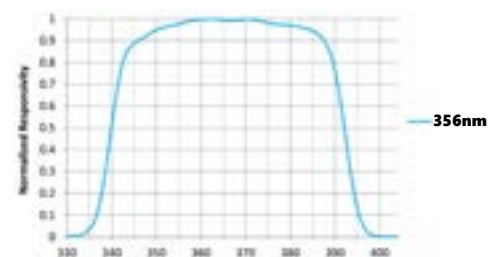
- **Size:** Compact size of 5.5" x 2.1" x 0.55" (139.7mm x 53.34mm x 13.97mm), allows use on molding lines and chill drums
- **Sample Rate:** User adjustable from 128-2048 (Hz) samples per second
- **Memory Capacity:** Supports 65 minutes of data collection at 2048 Hz.
- **Temperature Measurement:** J-type thermocouple included, samples at 32 Hz
- **Battery:** Typical battery life is 100 minutes. Rechargeable in +/- 90 minutes with included smart charger. May also charge via a computer USB port.
- **Pause Mode:** Allows the user to 'pause' the instrument up to eight different times to collect data prior to transfer to UV Power-View Software III



Different modes (Stop, Run, Pause) are indicated by the color of the LED

LEDMAP Responsivity & Ranges

- Single or four-band instruments designed for measurement of UV LEDs
- Patented EIT L-Band with all optics included in the instrument response
- L365 (340-392 nm), L385 (360-412 nm), L395 (370-422 nm) and/or L405 (380-432 nm)
- Dynamic range of 40 W/cm^2



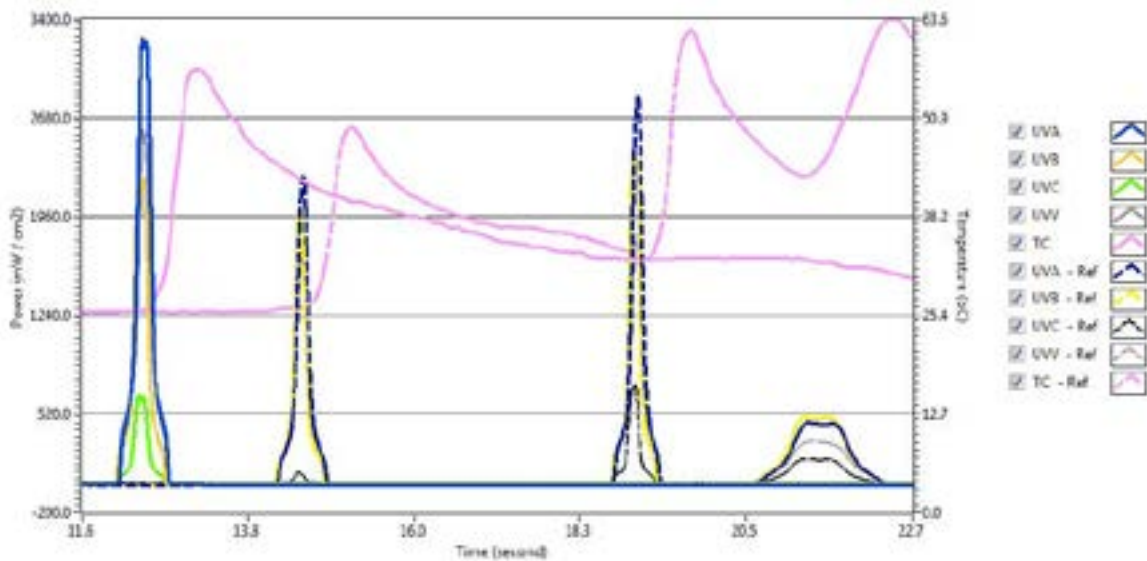
UV PowerView Software® III Features

EIT's UV PowerView Software III is designed to work with the PowerMAP II, LEDMAP & Profiler versions of the Power Puck® II, UviCure Plus® II and LEDCure®. UV PowerView Software III is a National Instruments LabVIEW based program designed to work on Windows 7-10. Collected data is stored in LabVIEW based *.tdms file format

Instrument /Software Features

- USB Download
- LabView (*.tdms) file format
- Multiple right click options
- Files are easy to share and export to Excel
- Easily capture and share screen shots, add process notes to files in the enhanced notes section

Graph by File: Display two files with four UV bands and temperature



Summary by File

| | Sample File | Reference File | Difference | % |
|-----------------------|-------------|----------------|------------|-------|
| UVA - Power (mW/cm²) | 1750.950 | 2837.660 | -1485.96 | -15.1 |
| UVB - Power (mW/cm²) | 1171.126 | 1418.550 | -145.196 | -6.1 |
| UVC - Power (mW/cm²) | 866.582 | 720.282 | 146.799 | 9.5 |
| UVV - Power (mW/cm²) | 2302.923 | 1825.218 | 757.509 | 41.3 |
| TC - Mean(°C) | 17.588 | 61.680 | -45.088 | -15.7 |
| UVA - Energy (mJ/cm²) | 835.688 | 1485.182 | -638.501 | -42.8 |
| UVB - Energy (mJ/cm²) | 393.882 | 1388.889 | -792.006 | -96.1 |
| UVC - Energy (mJ/cm²) | 147.622 | 20.248 | 152.601 | -52.4 |
| UVV - Energy (mJ/cm²) | 740.967 | 1136.244 | -434.177 | -36.5 |
| TC - Mean(°C) | 31.202 | 34.050 | -2.848 | -8.4 |
| Enable cursors | Off | | | |
| Time | 19.05 | | | |
| Time - Ref | 28.84 | | | |

Left:

Table by File with data displayed by units. The data can also be displayed by UV Bands

Bottom Left:

Sample Information screen with data transfer time and sample information. User notes can also be added in this area of the software

Below:

Summary/Cursor section of the software allows analysis of the file

Sample Information & Notes - 20180320_1

Model: PowerMap2
 Board Temperature: 30
 Battery Voltage: 1.47
 Firmware Version: 1.46
 Serial Number: 13
 Calibration Date: CalEIT

Actual Sample Rate: 2130.5
 Date & Time: 3/20/2018 11:40:36 AM

Channel Display Option

All Channel Channel Selection: UVA
 Single Channel

Summary:

| | | | |
|-----------------|--------------|----------|--|
| Power (mW/cm²) | Power - Ref | % Power | <input checked="" type="checkbox"/> Enable Cursors |
| 1266.950 | 2837.660 | 15.890 | <input checked="" type="checkbox"/> Smoothing |
| Energy (mJ/cm²) | Energy - Ref | % Energy | Sync Plots OFF |
| 513.639 | 807.123 | 36.400 | |

Cursor Values:

| | | | |
|----------------|-------------|-------------|--|
| Time | Time - Ref | Delta Time | Threshold (mW/cm²) |
| 12.36 | 19.05 | -6.69 | 0.000 |
| Power (mW/cm²) | Power - Ref | Delta Power | <input type="checkbox"/> Use Threshold |
| 1266.950 | 2837.660 | 429.291 | |

EIT® LEDMAP™/UV PowerView Software® III Product Specifications

Specifications are subject to change without notice

Physical Characteristics

| | |
|--------------------------------|---|
| Unit Dimensions | 5.5" x 2.1" x 0.55" / 139.7mm x 53.34mm x 13.97mm (LWH) |
| Materials | Aluminum & Stainless Steel |
| Instrument Weight | 7.3 ounces (207 grams) |
| Carrying Case, Ship Kit | Supplied with carrying case, cut polyurethane foam interior, scuff resistant nylon exterior cover, USB cable and USB drive with PowerView III software/manual |
| Time-Out Period | 2 minutes from Standby Mode (Red Flashing LED) with no button activity |
| Battery/Battery Life | Rechargeable Smart charger provided with unit recharges in fast mode (+/- 90 minutes). Charge speed on USB ports varies depending on the computer USB port. Battery life: 100 minutes typical |
| Memory Capacity | 65 minutes of data collection time |
| Sample Rate Adjustment | User adjustable from 128-2048 Hz (128-256-512-1024-2048) |
| Operating Temperature | 0-75°C Internal temperature; withstands high external temperatures for short periods (Audible alarm indicates when temperature has exceeded upper limit) |
| Thermocouple | Supplied with J type Thermocouple, effective sample rate of 32 Hz |
| Spatial Response | Approximately Cosine "Lambertian" |
| Calibration | Supplied with NIST traceable calibration certificate |

Optics & Performance

| | |
|----------------------------------|--|
| Spectral Response | L365: 340-392 nm; ±2 nm (FWHM, 52 nm); 4 OD Blocking L385: 360-412 nm; ±2 nm (FWHM, 52 nm); 4 OD Blocking L395: 370-422 nm; ±2 nm (FWHM, 52 nm); 4 OD Blocking L405: 380-432 nm; ±2 nm (FWHM, 52 nm); 4 OD Blocking |
| Dynamic Range | 40W/cm ² |
| Suggested Operating Range | 400 mW/cm ² -40 W/cm ² ; 0-250 J/cm ² |
| Accuracy | Typically ±2% or better; ± 10% of reading plus ± 0.2% of full scale |
| Repeatability | Typically better than 0.2% (unit alone); ≤ 1% max |
| PowerView Software III | National Instruments LabVIEW based programming designed for Windows 7-10. Collected data stored in LabVIEW based *.tdms files |



® Designed and manufactured in the USA

This equipment is in conformity with the following standards and therefore bears CE marking: IEC 61326-1:2005, EN55011: 1998, EN61000-4-2: 1995, A1: 1998, A2: 2001; EN 61000-4-3: 2002, A1: 2002, following the provisions of the applicable directives: 98/34/EEC and amendments, 89/336/EEC and amendments.

EFSEN UV & EB TECHNOLOGY

Skovlytoften 33 | DK-2840 Holte

efsen@efsen.dk | phone: +45 45650260