

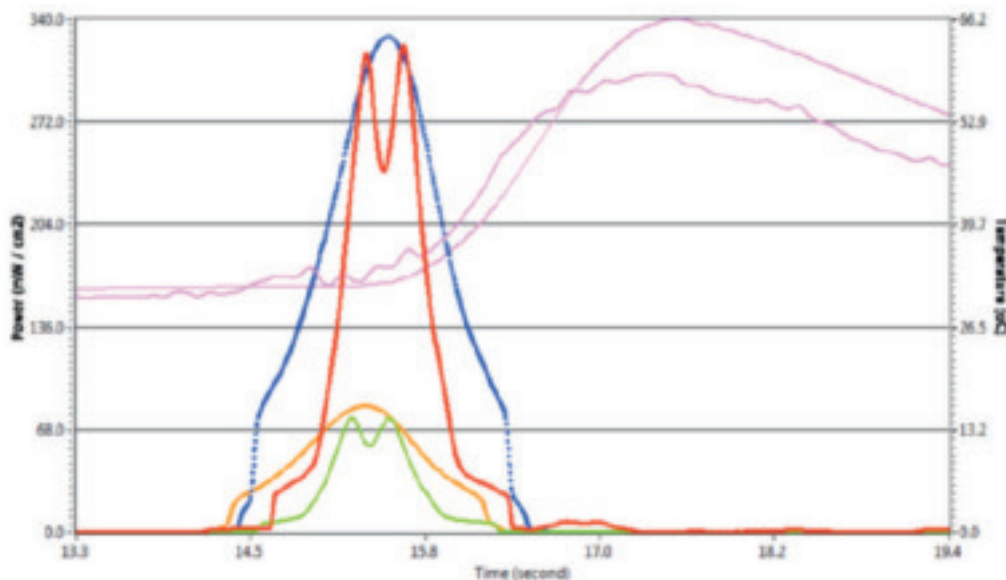
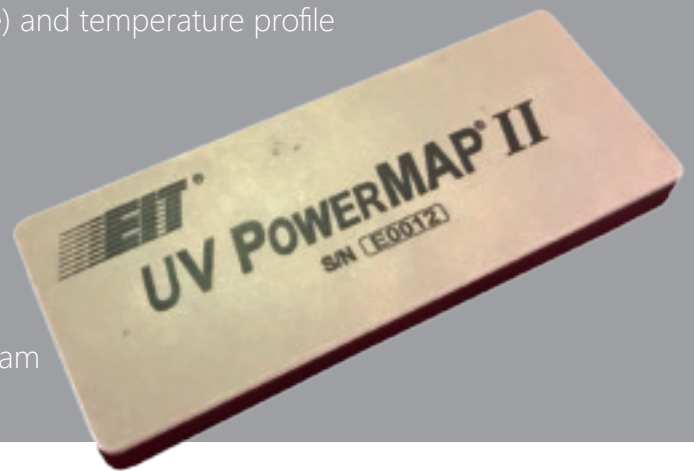
# UV PowerMAP® II

## UV PowerView Software® III

The EIT PowerMAP® II is a Profiling Radiometer that provides the irradiance ( $W/cm^2$ ), energy density ( $J/cm^2$ ), irradiance profile (Watts/cm<sup>2</sup> as a function of time) and temperature profile ( $^{\circ}C$  as a function of time) in a new instrument from EIT.

This compact, one-piece instrument is 60% smaller than the original EIT PowerMAP and measures UV in four (UVA, UVB, UVC, UVV) EIT spectral regions.

The product features larger internal memory for more data gathering, and rapid transfer of data to our new UV PowerView Software® III graphic data analysis program via USB interface.



The powerful EIT UV PowerView Software® III program provides detailed visual and numerical analysis of your data. In this typical plot, time is shown on the X-axis, UV irradiance on the left Y-axis and temperature on the right Y-axis. The image shows the difference in performance for a focused lamp (in blue and orange) and an out-of-focus lamp (in red and green) with the temperature profiles in light purple.

## UV PowerMAP® II Profiling Radiometer

Profiling Radiometers such as the UV PowerMAP® II provide an extensive “picture” of the UV source(s) and how the UV is delivered to the cure surface. The irradiance (W/cm<sup>2</sup>), energy density (J/cm<sup>2</sup>), irradiance profile (Watts/cm<sup>2</sup> as a function of time) and the temperature profile (°C as a function of time) are available when the data is transferred to the computer.

### Profiling radiometers quickly and easily identify

- The number of lamps and bulb type in each position
- 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 to stored files



Size comparison of the new PowerMAP® II to the legacy PowerMAP.

### PowerMAP® II Features

**Size:** The PowerMAP® II is approximately 60% smaller than the original EIT PowerMAP. Its small compact size of 5.5" x 2.1" x 0.55" (13.8 cm x 5.3 cm x 1.27 cm) allows it to measure UV in areas such as molding lines or chill drums that were not previously accessible.

**Instrument Responsivity:** The PowerMAP® II is currently available with EIT UVA, UVB, UVC and UVV in a 10 W/cm<sup>2</sup> dynamic range.

**Sample Rate:** Instrument has a user adjustable from 128-2048 (Hz) samples per second.

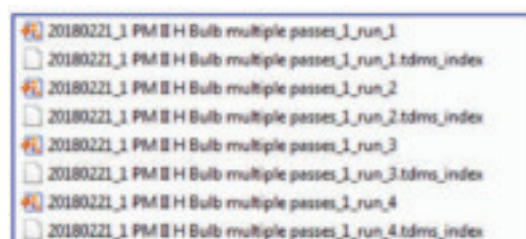
**Temperature Measurement:** The unit supports a J-type thermocouple that is included with the system at a sample rate of 32 Hz.

**Memory Capacity:** The PowerMAP® II memory supports 65 minutes of data collection time at a sample rate of 2048 Hz.

**Battery:** Typical battery life is 100 minutes. Battery is rechargeable via a provided smart charger. With the smart charger, the battery charges in fast mode (+/- 90 minutes). The time to charge via a computer USB port is dependent on USB port.

**Pause Mode:** Allows the user to ‘pause’ the PowerMAP® II to collect information on up to eight different UV systems before transferring the data to a computer. When using Pause Mode, the collected data will automatically be broken into individual files. Example of the file structure is shown below.

Format of files collected when the Pause Mode is utilized.



PowerMAP® II with thermocouple.



Optics side of PowerMAP® II.



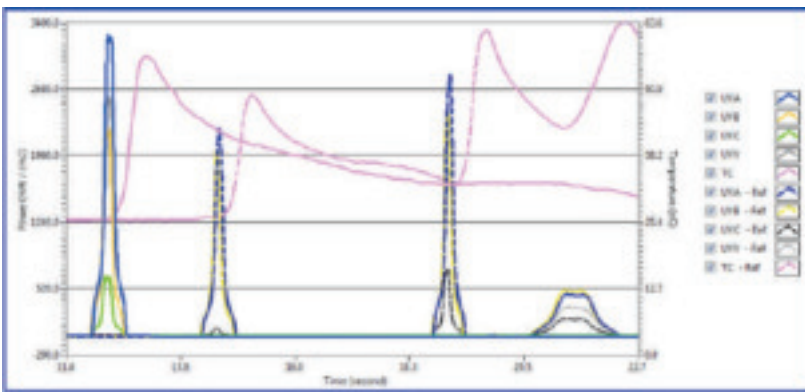
Operator/Data Transfer end of the PowerMAP® II. Different modes (Stop, Run, Pause) are indicated by the color of the LED.

# UV PowerView Software® III Features

EIT's UV PowerView Software® III is an updated program designed to work with the PowerMAP® II & Profiler versions of the Power Puck® II, UviCure Plus® II Profiler and UV 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 Table				
	Sample File	Reference File	Difference	%
UVA- Power (mW/cm2)	3266.950	2837.660	429.291	15.1
UVB- Power (mW/cm2)	2275.629	2429.529	-149.199	-6.1
UVC- Power (mW/cm2)	651.502	728.282	-68.780	-9.5
UVV- Power (mW/cm2)	2582.925	1835.324	757.599	41.3
TC_Peak(C)	57.200	63.600	-6.500	-10.2
UVA- Energy (mJ/cm2)	836.688	1465.292	-628.604	-43.9
UVB- Energy (mJ/cm2)	563.962	1344.463	-780.501	-58.1
UVC- Energy (mJ/cm2)	147.622	318.246	-170.624	-53.4
UVV- Energy (mJ/cm2)	702.987	1186.244	-484.277	-36.5
TC_Mean(C)	31.200	34.050	-2.848	-8.4
Enable cursors	OFF			
Time	8.00			
Time - Ref	28.84			

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

```

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
    
```

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

Channel Display Option

All Channel      Channel Selection: UVA

Single Channel

---

Summary:

Power (mW/cm2)	Power - Ref	% Power	<input checked="" type="checkbox"/> Enable Cursors
3266.950	2837.660	15.200	<input checked="" type="checkbox"/> Smoothing
Energy (mJ/cm2)	Energy - Ref	% Energy	<input type="button" value="Sync Plots OFF"/>
513.639	807.129	-35.400	

---

Cursor Values:

Time	Time - Ref	Delta Time	Threshold (mW/cm2)
12.36	28.05	-6.69	0.000
Power (mW/cm2)	Power - Ref	Delta Power	<input type="checkbox"/> Use Threshold
3266.950	2837.660	429.291	

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

# UV PowerMAP® II / UV PowerView Software® III Product Specifications

(Specifications subject to change without notice)

## Physical

Unit Dimensions	5.5" x 2.1" x 0.55" (LWH) 13.8 x 5.3 x 1.27 (cm)
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

## Optics & Temperature

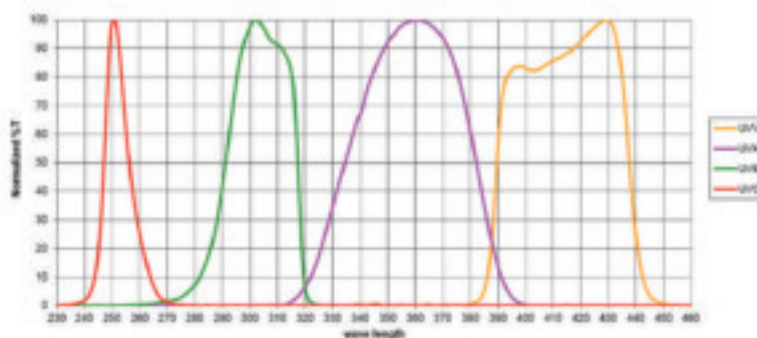
Spectral Response	Four Bands: 320-390nm (UVA), 280-320nm (UVB), 250-260nm (UVC), 395-445nm (UVV) See below
Dynamic Range	10 W/cm <sup>2</sup> High Range (Standard)
Suggested Operating Range	UVA, UVB, UVV - 100mW/cm <sup>2</sup> to 10W/cm <sup>2</sup> UVC - 10mW/cm <sup>2</sup> to 1W/cm <sup>2</sup>
Spatial Response	Approximately Cosine "Lambertian"
Calibration	Supplied with NIST traceable calibration certificate
Thermocouple	Supplied with J type Thermocouple, effective sample rate of 32 Hz

## Unit Performance

Memory Capacity	65 minutes of data collection time
Accuracy	+/- 10%; +/- 5% typical plus ±0.2% of full scale Typical ±5% or better
Repeatability	± 2-5% typical; Dependent on source and equipment (conveyor) stability, unit alone better than 2.0%
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 )
PowerView Software III	National Instruments LabVIEW based programming designed for Windows 7-10. Collected data stored in Lab - VIEW based *.tdms files

### Typical EIT Optic Response

- UVA (320-390nm)
- UVC (250-260nm)
- UVB (280-320nm)
- UVV (395-445nm)



® 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