

# High Energy UV Integrating Radiometer UVICURE®

## Features

- Totally self-contained
- Convenient
- Accurate
- Rugged
- Eliminates sacrifice workpieces

## Applications

- Monitoring curing system performance
- Determining proper UV level for curing any materials (inks, solder mask, adhesives, coatings)
- Measuring individual lamp condition
- Establishing E-PROM erasure time
- Anywhere high energy UV is used

## Introduction

UVICURE® is a self-contained electro-optic instrument designed to measure and display the UV energy applied to a workpiece in a UV curing system. Its unique mechanical design allows it to be placed directly in a UV curing environment and operate satisfactorily in extremes of UV and thermal radiation. A carefully designed optical sensing system measures only the UV wavelengths while rejecting those wavelengths, such as visible light, which do not substantially affect the curing process. The output of the sensing system is converted to digital form and displayed on a self-contained four digit liquid crystal display, located on the back of the disk. The displayed number is the integrated value of UV radiation impinged on the sensor system since UVICURE® was reset.

## Simplified Operation

UVICURE® is very easy to use and virtually foolproof. In use, the instrument is removed from its carrying case and the ON/RESET button is depressed. This takes UVICURE® out of its extremely low power consumption mode, resets the display and prepares it for a measurement. The unit is then placed in the UV curing system. This may be an oven conveyor belt or a stationary device. UVICURE® circuitry automatically starts counting when UV energy is encountered. Accumulation continues until the conveyor carries UVICURE® outside the oven or the UV source is removed. The integrated value of energy, in Joules/cm<sup>2</sup>, is displayed for approximately four minutes after the last count is entered or until RESET is pushed. UVICURE® automatically reverts to extremely low power operation after the four minute time out. This feature enhances already excellent battery life of 8 hours continuous usage between charges.

## High UV Energy

UVICURE® is designed to accommodate energy intensities of up to 2.5W/cm<sup>2</sup>. The measuring circuitry is designed



with a threshold which inhibits counting at energy levels below 2.5mW/cm<sup>2</sup> to eliminate "nuisance" counting when UVICURE® is outside the curing system.

Total energy range is 0 to 9.999 Joules/cm<sup>2</sup> of UV energy. Models measure from 250 to 260 nm, 320 to 390 nm, and a switch selectable 3-channel model covering 250 to 260 nm, 280 to 320 nm, and 320 to 390 nm. A Joule is equal to 1 watt of UV energy for one second. No electronic damage is done if the upper energy limit is exceeded.

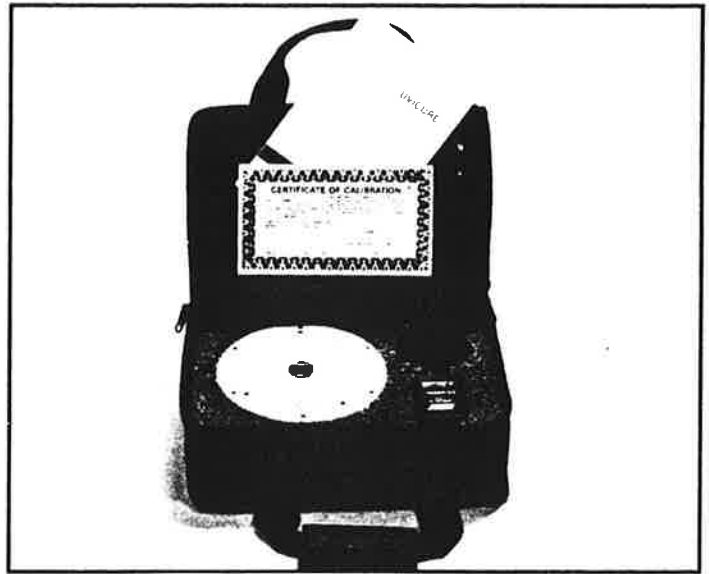
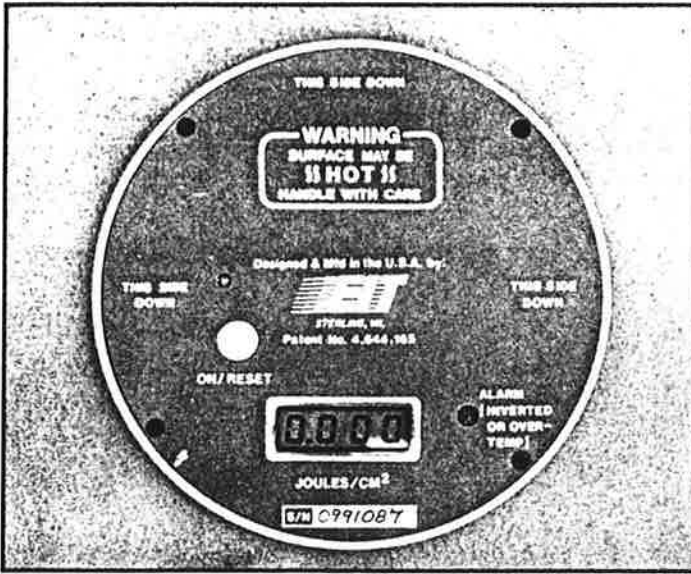
## Automatic Alarms

UVICURE® provides an overtemperature alarm which gives an audible alarm and flashing display whenever the unit approaches 80°C internal temperature. An audible alarm is also provided if an attempt is made to operate the unit in an inverted position which would expose the soft (display) underside to damaging radiation. A flashing display only is provided if the batteries are discharged to within 30 minutes of complete discharge.

## Complete Measuring System

The unit is battery powered and charging is accomplished through a short-circuit protected jack in the side of the case. A specially designed charger is included which is also short circuit proof and provides proper charging current. The charger provides an LED indication of proper charging, no charging and short circuit charging conditions.

An attractive, convenient foam-lined carrying case houses UVICURE® and its charger when not in use. Chargers for U.S., European and Japanese use are available.



## Specifications

<b>Radiometer:</b>	
Range:	2.5 mW/cm <sup>2</sup> to 2.5 W/cm <sup>2</sup> except Model M254; 2.5 mW/cm <sup>2</sup> to 1 W/cm <sup>2</sup> for Model 254.
Display:	0 to 9.999 Joules/cm <sup>2</sup> , 4 digit LCD.
Accuracy:	± 5% typical, ± 10% guaranteed.
Spectral Response:	Standard ranges are 250-260 nm, 280-320 nm, 320-390 nm and 395-445 nm.
Spatial Response:	Approximately cosine.
Operating Temperature Range:	0° to + 80°C internal temperature range. UVICURE® will tolerate much higher external temperature for short periods. Audible alarm sounds and display flashes at impending over temperature.
Time Out Period:	4 minutes, ± 0.5 minutes
Operating Time Between Charges:	8 hours; display flashes as batteries near discharged condition.
Recharge Time:	14 hours (maximum).
Dimensions:	6.5" diameter x 0.5" high (16.3 x 1.3 cm).
Weight:	11.4 oz. (325 grams).
Package Materials:	Silicone, fiberglass/epoxy, and ceramic.
<b>Charger:</b>	
Output:	20 Vdc limited to 25 mA (maximum). Short circuit proof.
Indicator LED:	Dark — no charge; Bright — charge.
Power Requirements:	US/Japanese — 90-130 Vac, 50/60 Hz; European — 200-240 Vac; 50/60 Hz.
Power Plug Configuration:	US/Japanese — Conventional two prong, supported in wall outlet; European — Standard EUROPLUG supported in wall outlet.
Dimensions:	1.75" W x 2.75" L x 1.5" D (4.4 x 6.9 x 3.8 cm).
Weight:	US/Japanese and European — 8 oz. (224 grams).
<b>Case:</b>	
Construction:	Cut polyurethane foam interior to accommodate charger and radiometer. Soft nylon exterior cover.
Weight:	1 lb. (448 grams).
Dimensions:	12"W x 4.75"H x 8.25"D (30.0 x 11.8 x 20.6cm).

Specifications may be subject to change.

## Ordering Information

UVICURE® with 320 to 390nm spectral response order Model M365; UVICURE with 280 to 320nm spectral response order Model M313  
UVICURE® with 250 to 260nm spectral response order Model M254; UVICURE with 395 to 445nm spectral response order Model M405  
Battery charger is included. Specify operating voltage of 90-130 Vac or 200-240 Vac when ordering.

## Other EIT Products

- UVIRAD® Low Energy UV Integrating Radiometer
- SPOTCURE™ UV Intensity Meter
- UVIMAP® Ultraviolet Intensity Profiler
- MULTIBRITE™ Multiple UV Lamp Monitor