

# Operating Manual



UV PROCESS SUPPLY, INC.  
1229 W. Cortland St.  
Chicago, IL 60614-4805  
voice 773-248-0099 • 800-621-1296 • fax 773-880-6647  
www.uvprocess.com  
info@uvps.com

# OmniScan™ Radiometer & Irradiance Profiler



## Data Analysis/Display (System Diagnostics)

The OmniScan allows you to see the status of your lamps and reflectors and to compare the current conditions of these components to that of some base line or reference condition. The OmniScan will hold an irradiance profile in memory that can be visually compared to the current run. To enter the data analysis mode, press the "PRESS HERE" button twice if the screen is blank (unit off). If you have just completed an acquisition, press the "PRESS HERE" button two times again to enter the data analysis mode.

The first time that you enter this mode, there will be no base line profile. The current profile will be displayed. To save it as your base line, press the "PRESS HERE" button three times rapidly. This profile will remain as the base line until you again press the button three times when a current profile is displayed in this mode.

### Quick Guide



#### Data Acquisition Mode: Taking Data



 Start data collection

 Start/Stop display cycling

  Shut down

#### Data Analysis/Display (System Diagnostics)

  Exit acquisition mode

  Start analysis mode

 Move between screens

  Shut down

   Store current profile as base line



After the initial base line has been stored, there will be three screens displayed in the data analysis mode. You can cycle through the screens by pressing the "PRESS HERE" button once. Pressing the button twice will turn off the OmniScan. Pressing the button three times while the current profile is displayed will store it as the new base line.

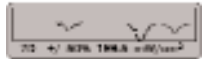
The base line profile can be identified by the letter "B" in the lower left corner of the display. The total exposure time for the run and the maximum irradiance are shown below the profile. The run time information is not important for determining system performance but is shown for process comparison.



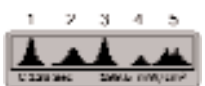
The current profile is from the most recent run through the chamber. The current profile is identified by the letter "C" in the lower left corner of the display. It is easy to see in this example that the maximum irradiance of the system has not changed, as the maximum irradiance values of the base line and current profiles are the same. However, lamps 4 and 5 have decreased in intensity. As the height of the profiles of lamp 4 is about half that of the maximum, it is clear that it has lost half its power.



The difference screens show the percentage difference in the irradiance profiles. The "7D" in the lower left corner of the screen shows that there were 7 days between the base line and current run. An "M" or "H" would indicate minutes or hours between measurements. The display shows both increases and decreases in performance. In this case it is clear that the upside-down peaks indicate that the lamps are currently weaker than they were when the base line was taken. The =/-50% indicates that the maximum (full-scale) difference is 50%. Lamp 4 lost half of its power. Lamp 5 is about half as low, or down about 25%. The accuracy of the difference display is graphically limited to 5%.



The irradiance profile display can be a powerful diagnostic for determining the type of maintenance that is required. In the diagram to the right we have provided some examples for interpreting the information provided by the display. Peaks 1 and 3 represent well-focused normal output lamps. Peak 2 is lower and wider. This indicates that lamp 2 is probably out of focus or that the reflector is very dirty. Peak 4 is lower but not wider. This indicates that lamp 4 is losing power, but is well-focused. Peak 5 has a double hump. This can indicate that either the reflector is severely defocused or that it is warped or delaminated. The lamp also may be weak.



## Maintenance

The OmniScan is a very rugged instrument and should not require any maintenance other than wiping the shiny surface with a soft cloth occasionally. Over time, however, the bandpass filters in the OmniScan will begin to degrade due to the extreme UV exposure. This gradual degradation manifests itself in changes in total transmission and bandpass characteristics, both of which adversely affect the calibration. It is, in part, for this reason that the OmniScan should be recalibrated on an annual basis.

The recalibration procedure includes the replacement of the LiF batteries, evaluation, and replacement of the filter, if necessary, and a complete optical and electrical recalibration to NIST standards. The OmniScan has a built-in timer that will remind you in advance as to when the unit should be returned for recalibration. Beginning 30 days before the recalibration due date an initial reminder screen will appear. It will remain visible for 10 seconds or until the "PRESS HERE" button is pressed once. The calibration due date is set for 13 months from initial set-up or last calibration. The batteries are designed to provide approximately 15 months of service before failing.

**RECAL DUE  
IN 30 DAYS**

**RECAL IS  
DUE NOW**

PRESS  
HERE

Clear message

## Calibration and Repair

Calibration and repair service can be obtained by contacting our customer service department. All returns required an RMA (returned materials authorization) number.

Customer service may be reached at:

Phone: 800-621-1296

Fax: 773-248-0099

E-mail: [info@uvps.com](mailto:info@uvps.com)

## Specifications

Dose Range	1mJ/cm to 19,999mJ/cm . (Flashes on over ranging)
Dynamic Range	2mW/cm to 20W/cm (Flashes on over ranging)
Spectral Range	250nm to 400nm OmniScan 205nm to 345nm OmniScan-C
Out Of Band Rejection	1,000:1 OmniScan above 450nm 10,000:1 OmniScan-C above 365nm
Accuracy	better than 5% absolute NIST standard
Reproducibility	better than 1%
Sample Rate	500Hz @ >500mW
Conveyor Speed Range	up to 300 ft/min
Internal Operating Temperature	10 C to 60 C
Size	12.7 x 111 x 161 mm 0.5" x 4.4" x 6.3"
Weight	0.341Kg 0.75lbs
Warranty	1 year parts and labor

The OmniScan has two operational modes, data acquisition and data analysis. It is not possible to directly go from one mode to the other. The OmniScan must either be shut down or allowed to automatically shut down before entering the new mode.

## Taking Data (Data Acquisition Mode)

If the screen is blank, press "PRESS HERE" once. The unit will turn on and will display screen 1 to the right. (It will turn off automatically in 5 minutes if it is not run through the curing chamber.)

Place the OmniScan LABEL SIDE DOWN on the conveyor. When it emerges from the chamber, the display will alternate every 5 seconds between numeric and graphics displays similar to screens 2 and 3 to the right.

To stop the display from alternating, press "PRESS HERE" once. Press it once again to start the display alternating again. The OmniScan will shut itself off automatically after five minutes. To shut it off immediately, press "PRESS HERE" two times quickly. The current profile may be stored for future analysis in the data acquisition mode. Please read that section for instructions.

**0 J/cm<sup>2</sup>  
0 mW/cm<sup>2</sup>**  
Screen 1

**1.83 J/cm<sup>2</sup>  
199.5 mW/cm<sup>2</sup>**  
Screen 2

**126 Sec 199.5 mW/cm<sup>2</sup>**  
Screen 3

PRESS  
HERE Start data collection  
Start/Stop display  
cycling

PRESS  
HERE PRESS  
HERE Shut  
down