POWER ARC UV 100

HIGH INTENSITY SPOT CURE SYSTEM

USER MANUAL

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TECHNICAL DESCRIPTION

1. SAFETY PRECAUTIONS

a) Before operation, you must read the user manual carefully.

b) Refer to Section 13, CLEANING/MAINTENANCE for cleaning instructions.

c) To prolong lamp life, if the lamp is on, the fan must be on as well. If not, please switch off the lamp and contact us for repair service.

d) To protect the light guide, it should always be placed in its holder after each curing procedure is completed.

e) To keep the operation safe, we suggest that you check your local AC power supply voltage before you use this product internationally or buy it from an international company.

f) Always switch off the power before connecting or disconnecting the light guide.

g). All internal product servicing must be done by trained personnel.

h). Never use this curing light near a flammable liquid, anesthetic, oxygen or any environment full of flammable material.

i) Adjust your curing time in accordance with the curing variables. Some examples are: an increase in the composite thickness, or an increase in the distance between the end of the light guide and the materials to be cured.

j) UV is a hazardous light; do not expose yourself to UV light without proper protection.

CAUTION 1: The curing energy in this unit may possibly be higher than equipment you have previously used. It is important to observe the following precautions and procedures:

(a). Do not expose this light to people.

(b). Do not stare directly at UV light.

(c). This unit shall not be used by someone who has been fitted with a heart pacemaker and/or has been cautioned against the use of small electrical appliances such as hair dryers etc.

CAUTION 2: This light-curing unit contains a mercury short arc lamp. Like all mercury arc lamps, the bulb may explode under rare circumstances. Do not operate this light-curing unit without the case or light guide removed.

2. DESCRIPTION

The POWER ARC UV100 uses a 100W mercury short arc lamp to emit light for UV curing between 300-500nm for polymerization with UV curable chemical material such as UV adhesives, epoxy etc.

3. SPECIFICATIONS AND EQUIPMENT CLASS

This curing system has been manufactured with respect to electric shock, fire and mechanical hazards only in according with EN60598-1.

a) AC supply connection: 100 to 240 Volts AC. 50/60 Hz.
b) Power input: Max. 140 watt
c) Equipment class: Type A
d) Protection against electric shock: Type A
e) Protection against entry of liquids: None
f) Use environment: This equipment would not suitable for use in the presence of a flammable material.
g) Operation: There are five functions that can be selected by one mode and two direction buttons on the front panel. Depressing the "mode" button, the LCD displays (in sequence) Setting→Auto→Manual→Life(time)→Turn on(times) for a cycle.
h) Fuses (2 per unit): T2AL250V (110VAC TYPE), T1AL250V (230VAC TYPE)
i) Lamp: mercury short arc Lamp 103W, 12VDC
j) Output wavelength range: 300-500nm
k) Output light intensity: approximately 8000mw/cm^2 (New shipment at max. intensity setting)
l) Standard fiber-optic light guide: 3 & 5 mm light guide for general use
m) Unit's overall dimensions: Height 16 cm
Length 33 cm
Width 27 cm
Unit's weight: Control box 9.5 kg
n) Thermal safety: The power supply will cut off if overheating occurs. After a 3-4 minute cool down process, it resets and normal usage may resume.
o) Wide range intensity adjusting: Light intensity can be adjusted from 30% to 100%

4. OPERATIONAL ENVIRONMENT

Ambient temperature: +10°C ~ +40°C
Relative humidity: 30% ~ 75%
Atmospheric pressure: 700hPa ~ 1060hPa

5. TRANSPORTATION AND STORAGE ENVIRONMENT

Ambient temperature: -10°C ~ +70°C
Relative humidity: 10% ~ 90%
Atmospheric pressure: 500hPa ~ 1060hPa

6. LAMP REPLACEMENT

a) CAUTION: Before attempting to replace the lamp, turn the master power switch to "OFF" on the back side of the power box and disconnect the curing light unit from the AC outlet. Allow the lamp to cool completely!
b) Open the cover of the power box.
c) Replace with a 103W, 12VDC mercury short arc Lamp. To maintain proper functionality,

use only an appropriate bulb available from the distributor. An incorrect bulb type may cause the entire unit to break down. NOTE: do not touch the bulb or the inside of the reflector.

d) Reassemble the case.


CAUTION: The positive and negative pole of the lamp should not be reversed as the replacement is processing. The lamp will be damaged if the electrodes are reversed.

7. TROUBLESHOOTING GUIDE

PROBLEM	SERVICE PROCEDURE
1. Curing lamp is on, and fan does not operate.	Unit must be shut off immediately; contact seller for repair.
2. Curing lamp does not switch on, the fan does not operate and no message is shown on the screen.	● Check to ensure power cord is plugged in. ● Check fuses ● Ensure that the top case is properly seated. If you are not certain what else could be wrong, contact seller for repair.
3. Curing lamp does not light, but the fan is working.	Allow the lamp to cool for about 5 minutes. Try again. If this does not help, check to see that the: ● Lamp cord is plugged in ● Lamp has not burned out If not certain what has happened, contact seller for repair.
4. UV output low (reading from a radiometer)	● Light guide aged or bent ● Light guide end is scratched or dirty ● Lamp has aged.
5. Chemical compound is not cure completely	● Adhesive is not compatible with UV light ● UV output low (see above)

NOTE: We and our authorized distributors will make available, on request, circuit diagrams, component part lists and other information to assist the user's appropriate technical personnel to repair any units that are designated by us as repairable.

INSTRUCTIONS FOR USE

8. SYMBOLS

▲ TIME SET: depress this button to preset the curing time

► SHIFT BUTTON: shift the cursor to preset the curing period

MODE SETTING SWITCH: SETTING → AUTO → MANUAL → BULB LIFE → TURN ON → SETTING

POWER SWITCH： located at the rear side of power box to control power on/off and reset the built-in program.

INTENSITY KNOB: located at front panel of power box for output light intensity adjustment.

9. ASSEMBLY/CONNECTION

The shipping box contains:

- Power cord 1 set
- UV curing unit 1pc
- 5 mm x 1m liquid light guide (single) 1pc
- Foot switch 1pc
- Protective eye goggle 1pc

Option: 3mm/5mm WITH DUAL LIGHT GUIDE ARE AVAILABLE
3mm/5mm WITH QUADRIC LIGHT GUIDE ARE ALSO AVAILABLE

10. OPERATION

a) Light guide:

Insert light guide into light-emitting slot and push firmly in to assure it is fully seated. Access the screw from the hole on the side of front panel and fasten the head screw to secure the light guide.

b) Electric plug:

See electric information plate at bottom of power unit first and plug the power cord into appropriate AC outlet.

c) Power unit:

Depress the power switch at rear of power box to start the unit. Then the LCD will flicker as it warms up.

d) Curing mode setting:

Once the system is ready to use, the LCD displays "**Setting** □□□、□ **S**" for operators to select the mode they want. A detailed explanation is listed below:

* The "**Setting**" function is used to preset the shutter time for "**Auto**" function. Once the "Setting" function has been set, press the "Mode" button one time, then the

LCD displays "**Auto** □□□ 、□ **S**" This is automatically set at the same number as the "Setting" time.

* Now, the LCD displays "**Auto** □□□ 、□ **S**". During this period, the shutter will remain closed until the footswitch is depressed. When the footswitch is depressed, the LCD will display a countdown and a beeper will sound when the time is up in order to remind the user to stop curing. If you want stop anytime during the curing process, just depress the footswitch once again and the curing lamp will shut off. The LCD will reset to original preset time for the next curing cycle.

* If the "**Manual**" function is selected, the user must depress the footswitch once, then the shutter will remain open and the LCD will display **"manual □□□ □ S".** As long as the unit is curing, a beeper sounds every 10 seconds. The curing process won't stop unless the footswitch is depressed once again. It is not necessary for operator to hold down the footswitch during manual curing.

* The "**Lamp**" function records the accumulated lamp usage time. The LCD displays "**Life □□□□:□□:□□**" (hr:min:sec). NOTE: this display cannot be reset or changed.

* The "**Turn on**" function records the number of times the unit has been powered on/off. The system should be optimally operated at least 4 hours per each use. If a lesser time of curing is employed, the lamp life may be shortened.

***** The **"Intensity"** adjustment function allows the output intensity to be controlled by adjusting the mechanical knob.

NOTE:

1. The microprocessor needs a very stable power source. Although the built-in circuit is designed to stabilize the power source, any large power surge may scramble the preset program. If this occurs, the operator can switch the power off and back on again to reset the built-in program and the unit should work normally again. As well, we suggest the operator turn off the power if the unit will be idle for more than one hour.
2. If the lamp remains activated for an extended period, a safety thermostat will cut off power to prevent the unit from overheating. Operation can be restored by simply allowing the fan to run for 3-4 minutes. Normal usage may then be resumed.
3. Protect the light guide from tight bending (do not bend tighter than a 3 inch radius) or crushing. Do not autoclave the light guide.
4. Never immerse any part of unit in water.
5. Do not cover or block the slots in the bottom and back of the instrument. Doing so will not allow adequate airflow around the system for proper cooling.

11. LIGHT INTENSITY TEST：

We recommend the use of a UV radiometer. At normal condition, the reading should exceed 3,000 mW/cm^2 at max. intensity setting. If the reading is lower than this, please

check the condition of the optic probe face and light guide face to ensure that it is not the cause of reduced light output. Lamp replacement may be required.

For a complete selection of radiometers, please visit our website at www.uvprocess.com or give us a call at (773)248-0099.

NOTE:

1. For lamp replacement, please contact your authorized dealer.

12. OUR SUGGESTION:

When curing, place the light guide end no closer than 10mm from the material being cured. Locating the light guide end too close can cause the light guide end to become cloudy from vapors generated when curing the adhesive. This cloudiness can reduce UV output up to 50 %. We recommend that when the operator is not using the light guide, place the light guide in a safe place. This can help to prevent the light guide end from getting scratched.

13. CLEANING/MAINTENANCE

A) POWER UNIT

1. The power unit should be unplugged before cleaning and disinfecting to prevent from electric shock.
2. Washing or spraying the power unit with water, cleanser and chemical disinfectant is not recommended and may result in electric shock and damage of inner circuitry. If this happens, please contact us for inspection.
3. The case of power box is made of metal and plastic. To properly clean, wipe the surface lightly with a cleansing solution and soft cloth.

B) LIGHT GUIDE

1. Do not autoclave the light guide.
2. The light guide sheathing should be cleaned with the same precautions and procedures of the power unit.
3. Clean the light guide end monthly or as required. Use alcohol and a clean cloth, remove heavy coating of cured adhesive with a blade and then clean with alcohol.

14. LIABILITY

The manufacturer will be responsible for the safety, reliability and performance of this product only if:

- Assembly operations, extensions, re-adjustments, modifications or repairs are carried out by persons authorized by UV Process Supply.
- The electrical installation in the room complies with requirements.
- The equipment is used in accordance with these instructions for use.

15. WARRANTY

The manufacturer hereby guarantees that for a period of one year from the date of purchase, this instrument shall be free from defects in material and workmanship and will perform satisfactorily under normal conditions of use and service.

THE WARRANTY STATED HEREIN IS THE SOLE WARRANTY APPLICABLE TO "POWERARC UV100" PRODUCTS. THE MANUFACTURER EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING WARRANTIES AS TO MERCHANDISABILITY OR FITNESS FOR A PARTICULAR USE. THE MANUFACTURER'S LIABILITY WITH RESPECT TO ITS PRODUCTS IS EXPRESSLY LIMITED TO THE REMEDIES SET FORTH ABOVE. THESE REMEDIES ARE THE BUYER'S EXCLUSIVE REMEDIES. UNDER NO CIRCUMSTANCES SHALL THE MANUFACTURER BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

16. OPTIONAL ACCESSORIES

3mm/5mm with dual or quadric-light guide