



Con-Trol-Cure “UV Developer’s Kit” Ultraviolet Curing Unit

This Con-Trol-Cure ultraviolet curing system consists of a powerful solid state UV light source and power supply, a lighthouse reflector housing (Irradiator), four lamps and a control enclosure. The UV unit generates the desired ultraviolet light as well as large amounts of visible light and an undesired side effect of IR or infra-red (heat) energy. The Ultraviolet or UV energy is used to cure special inks and coatings that contain monomers that are sensitive to UV energy. Monomers cross-link quickly when exposed, resulting in nearly instant curing of UV coatings.

Safety Precautions --- **READ BEFORE OPERATING UNIT!**

UV exposure

The Ultraviolet light or UV that is generated by your UV curing unit can be very harmful to the eyes and skin. Blindness or skin burns can result from the improper use of UV equipment. Under no circumstances allow anyone to directly view the UV light. Position your UV unit so that the light or reflected light emitting from the unit does not shine at the operator or other personnel. Keep the irradiator at a level to minimize the UV visibility. Persons working with and around this type equipment must wear special safety glasses that filter out most of the stray UV light, however do not rely on these glasses to look directly at the light. Special UV glasses are available from UV Process Supply. The UV curing unit enclosure and irradiator have very high voltage sources. Do not open or remove the irradiator for any reason (such as to replace or inspect the lamp) or open the main enclosure unless the power is off. The irradiator may be hot during operation, take care not touch the hot metal surfaces. Keep a properly selected fire extinguisher nearby.

Training and supervision

Because of the inherent safety issues it is important that only properly trained personnel operate this equipment. Use this manual as a starter-training manual for your operators. Make sure that your operators know what to do if there is a problem.

Remember to disconnect the power before opening the irradiator or control panel. Use proper lock out procedures when servicing the UV curing unit.

Power up procedure

1) Select a lamp (see lamp selections) and with lamp housing inverted, connect the lamp wires on either end using the stab connectors provided. The lamp wires should be attached firmly to the cables in the lamp housing. ***Be careful when handling the lamp that you do not touch the lamps surface, hold lamp only by the ceramic end fittings, oils from your hands will burn a permanently onto the lamps surface!*

2) Set the housing in the proper operating position. The lamp housing should be positioned so that airflow into the cooling fan on top and out of the vent holes in the bottom is not impeded. Make sure that the “**Power Level**” setting is at its highest output, “99” = 300 watts/inch (WPI). Push the “**Main Power**” switch to begin power to the unit. The main fan and the main power indicator light should

turn on indicating that main power is present.

2.) Turn the “**Lamp On/Off**” switch to the “on” position. UV light should begin to increase in intensity (there is usually a buzzing sound for the first second or so when the lamp first ignites) **Remember! Never look directly at the UV light!**

3.) Once the lamp has become stable (7-10 minutes), you can now set the UV intensity switch to the appropriate level. The push button switching system allows stepped, accurate adjustment from 150 WPI to 300 WPI. We would recommend the use of a radiometer in conjunction with this system to afford accurate, repeatable curing. If you need a recommendation for a radiometer, please give us a call at (800)621-1296.

Important Note** The ballast manufacturer recommends that the system only ever be started in the highest output position, starting the system on the lower settings can cause a decrease in the longevity of the ballast.

“Power Level” Switch

The “**Power Level**” switch controls power settings from 150-300 WPI. A higher setting results in greater intensity of UV output. Use the lowest setting that will reliably cure the coating at a given speed to reduce power consumption.

Power down procedure

To shut the unit down, the following procedure should be used to avoid heat damage to the irradiator and lamp.

1) Turn off the “**Lamp On/Off**” toggle switch. This will leave the cooling fan running and cool the lamp down in approximately 2-5 minutes. Once the lamp has significantly cooled, turn off the “**Main Power**” switch.

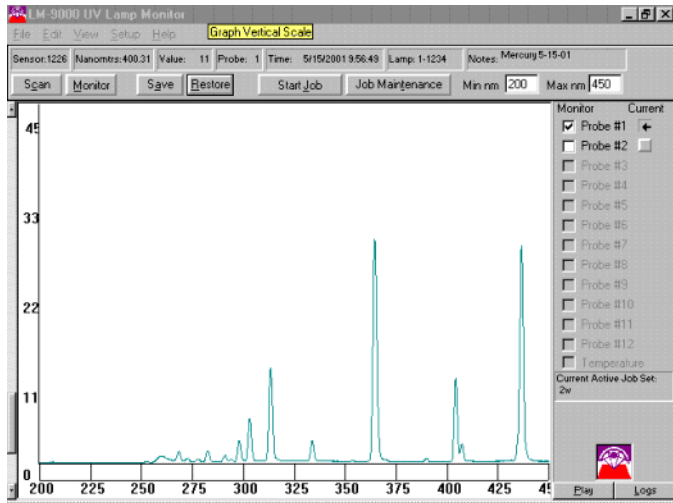
WARNING: Do not try to re-start a hot UV unit after shutting down. The lamp must be relatively cool to re-start. Allow adequate cooling time. (2-5 minutes).

Lamp Types

The system comes with four lamps, because each of these lamps has a different metal additive the spectral response of each lamp will drastically affect the cure that will be seen. What follows are charts depicting each lamp’s spectral response, while being driven by the unit’s power supply.

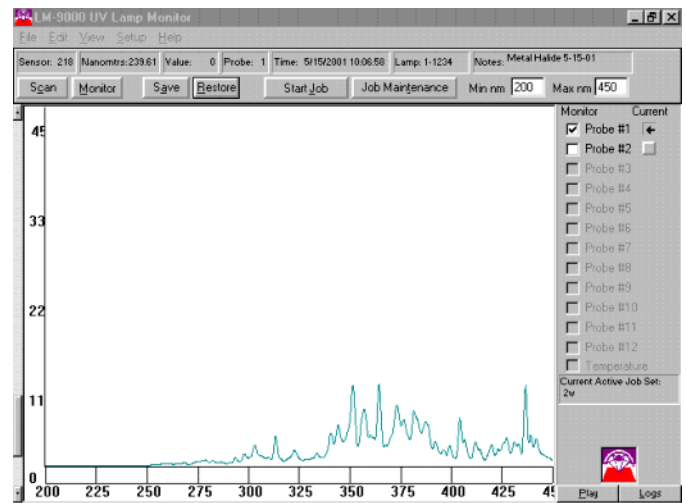
Spectral Response, Standard Mercury Lamp

Marked as "A" Lamp



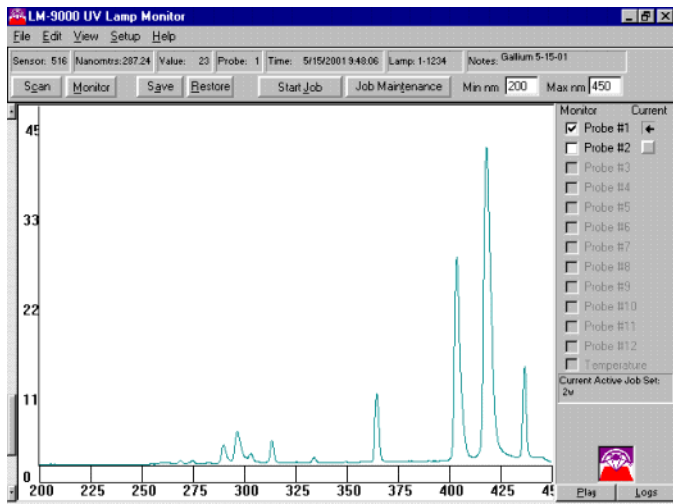
Spectral Response, Metal Halide Lamp

Marked as "J" Lamp



Spectral Response, Gallium Additive Lamp

Marked as "V" Lamp



Spectral Response, Iron Additive Lamp

Marked as "D" Lamp

