DUV (Deep Ultraviolet) Flood Exposure System Operation

Overview

- This system consists of a collimated deep ultraviolet light source which uses a 1000-watt Mercury-Xenon gas discharge short arc lamp and timer-controlled shutter.
- The system's mirrors are dielectric type and primarily reflect 240 – 275 nm radiation, although some radiation is produced at 220 nm.
- The system operates in constant power mode; therefore, the light intensity will decrease with the age of the lamp. Contact the primary tool engineer if you require intensity info. Uniformity is <2%.
- Substrates are placed on a speed adjustable rotating chuck.

Restrictions & Precautions

- In case of lamp explosion; immediately leave the area, and contact the staff. Lamp explosion results in the release of mercury.
- Invisible high energy UV light may damage your eyes or skin if the machine is not used as intended. Always use the light shroud and wear UV protective safety glasses when using the system.

Operation

1. If the lamp power supply is off, perform the following:
   a. Turn the knob on the **LAMP PS TIMER** clockwise to set the length of time you want to use the tool. You must turn the knob past the **Turn Past** marker which is roughly 30 minutes, the maximum setting is 4 hours.
   b. The power supply should turn on (audible fan noise) and the **LAMP VOLTAGE** meter (right side) should max out.
   c. Press down on the **START** rocker switch momentarily to ignite the lamp. You should hear a clicking sound and the voltage reading should drop along with the LAMP POWER meter registering a reading. The power reading will begin ramp up to its idle setting. It is recommended to allow the lamp to warm up for at least 15 minutes before exposing.
   NOTE: If the lamp does not ignite, it is quite possible that the power supply was recently powered down, turn the knob on the **LAMP PS TIMER c**ounterclockwise to the **OFF** position and wait about 10 minutes before re-attempting lamp ignition.
2. Verify the power is on for the exposure control panel, if not press the green **POWER** button.
3. Set the exposure time, in minutes, on the timer.
4. If you require substrate rotation; set the **ROTATION SPEED** using the dial and make sure the **CHUCK ROTATION DURING EXPOSE** button is pushed in. If you want to check the rotation speed before exposing, press the **CHUCK ROTATION ONLY** button.
   NOTE: The recommended rotation speed is in the green band on the dial, between 4 and 5. Be aware that there is no vacuum on the chuck, so setting this too high could throw your sample off of the chuck.
5. Load your sample and place the light shroud around the chuck.
6. Press the blue **EXPOSE** button; the shutter will open, chuck rotation will begin (if selected), and the timer will start.
7. Once the exposure is complete, remove the light shroud and unload your sample.
8. When you are finished using the system, either turn the knob on the **LAMP PS TIMER c**ounterclockwise to the **OFF** position or let the timer expire.
   NOTE: If you need to use the tool longer, just turn the knob clockwise to add more time.