

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 substrate is placed on a speed adjustable rotating chuck.
- 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. Exposure intensity ranges from 12.5 – 9.5 mW/cm² measured at 260 nm. Light intensity uniformity is <2%.

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 wear UV protective safety glasses when using the system.

Operation

1. If the power supply is off, perform the following:
 - a. Verify:
 - INTENSITY/POWER switch is set to POWER
 - VOLTS/AMPS switch is set to VOLTS
 - CHANNEL SELECT switch is set to B
 - MODE switch is set to C/P
 - b. Move the POWER breaker up to the ON position. The LAMP VOLTAGE meter 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 the idle setting of 1000 W. 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. Move the POWER breaker down 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 preferred 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 shroud around the chuck.
6. Press the blue EXPOSE button; the shutter will open, chuck rotation will begin, and the timer will start.
7. Once the exposure is complete, remove the shroud and unload your sample.
8. When you are finished using the system, move the POWER breaker on the power supply down to the OFF position.