

Mask aligner 1 instructions

1. Enable the mask aligner using the Badger booking software
2. Turn on the 210502 Illuminator Controller by turning the power switch from down to up. The green power light on the front of the controller will turn on
3. Press the start button on the controller and check to see that the lamp voltage dial increases. Wait till lamp voltage reaches 70 volts or higher
4. Turn on the power button on the OAI mask aligner by turning the power switch from down to up
5. Set the exposure time + test the lamp power
 - a. The time is on the left hand side of the mask aligner, the red light under the time indicated a decimal point
 - b. Change where the decimal point is by pressing the buttons labelled 100 sec and 1000 sec
 - c. Change the time by turning the knobs next to each digit
 - d. Set the time to ten seconds
 - e. Take the UV power meter out of its black case and put the probe onto the mask aligner wafer holder. Turn on the UV power meter and turn readout to norm
 - f. Move the wafer holder to under the lamp by moving the whole stage to the left
 - g. The UV light will automatically turn on for ten seconds. Do not look at the UV light. Warn others in the room that you are doing UV exposure. Look at the UV power meter to see what output you are achieving: it is designed to measure UV Intensity (mW/cm^2) and/or Energy (mJ/cm^2)
 - h. After exposure move the wafer holder back to the right
6. Calculate the time you need to expose your own devices
 - a. Using the SU8 datasheet, divide the recommended dose on the data sheet (listed for different thicknesses of SU8) by the energy the UV power meter gave to get the number of seconds of exposure needed
7. Set the exposure time using the steps described above (5 a – c)
8. Expose your device
 - a. Put your wafer onto the wafer holder
 - b. Put your mask onto the wafer
 - c. Put the quartz glass on top of your mask to hold it flush to the wafer surface
 - d. Move the wafer holder to under the lamp by moving the whole stage left
 - e. Once exposure is complete move the whole stage to the right again
9. If exposing devices of varying thickness, change the exposure time as needed
10. Once all wafers have been exposed, turn of the mask aligner by turning off the power buttons on the mask aligner and illuminator controller, put the quartz glass back into it's case, and disable the mask aligner on badger software