

# **YES-58TA Image Reversal Oven Instructions**

## ***Log In***

Log into CORAL to activate the **YES Image Reversal Oven**.

## ***Select Program 2***

Select the program by pressing **ENTER RECIPE NUMBER**, press **2**, then **ENTER**.

<b>Process Number</b>	<b>Process</b>
2	Image Reversal
10	Chamber Purge

**\*\*\*NOTE: DO NOT ADJUST THE TEMPERATURE FROM 90°C!\*\*\*  
DO NOT RUN ANY PROGRAM OTHER THAN #2 OR #10!**

## ***Place Substrates in the Oven***

Place your wafers in the appropriate holder for your wafer size. There is glassware available for 3", 100mm, and 150mm wafers. For other size or shape substrates, lay your substrates flat on the glassware or aluminum foil. Open the oven door and place the wafers/substrates on the top shelf. Close the door, making sure that the latch is securely in place.

## ***Start Process***

Press the **PRESS TO START** button. The tool should start to pump down and begin the process. Wait and observe the pressure dropping to ensure that the process begins normally. Note the run time for your process and be sure to be at the tool when the process finishes. The tool may abort several minutes into the run if there is a problem. Check on the tool several minutes before the tool finishes to be sure that it completes normally. When the Process is done, the alarm will sound. Press the **PRESS TO RESET** button.

**\*NOTE\***: Even though the oven is purged after a process and there are no chemical fumes, the oven surfaces will evolve a small amount of ammonia. For this reason, please keep your face away from the door when opening the oven.

Remove your substrates. Make sure you latch the door closed. You may leave the glassware on the table below the oven for the next user.

## ***Log Out***

Log out of CORAL.

## ***Process Recipes***

2 = NH<sub>3</sub> Image Reversal

10 = N<sub>2</sub> Chamber Purge

### ***Image Reversal***

(Process #2)

In the reversal process, the chamber is purged of oxygen using vacuum, Nitrogen, and heat. It is then filled with 500 Torr of NH<sub>3</sub> (ammonia) vapor. The NH<sub>3</sub> reacts with the acid in the exposed resist rendering it insoluble in developer. The proceeding flood exposure causes acid to form in the previously unexposed areas allowing them to be removed in development, leaving behind the negative image of the first exposure. A descum process using O<sub>2</sub> plasma is recommended before lift-off to promote good adhesion of deposited material.

Process Variables:

Number of dehydration cycle purges: 3

Number of exit cycle purges: 6

Wafer Delay Time 10

Process Duration: 2700 seconds

Pressure Set Points:

Set Purge Pressure Hi: 500 torr

Set Purge Pressure Low: 100 torr

Set Process Pressure Trip Point: 500 torr

Hi Abort Pressure Trip Point: 600 torr

Total cycle time for the recommended process is approximately 89 minutes.

### ***Purge Chamber***

(Process #10)

This process is used to purge and vent the oven. This process is typically used by staff to purge the system during system maintenance. It can be run at the end of an aborted process to assure the oven is completely purged or if the cycle is terminated in mid-process.