Plasma Asher

ALLLWIN21 CORP.

AW-1008

Introduction

The AW-1008 single-wafer photoresist asher is an automated tool designed as a flexible downstream Microwave plasma photoresist removal system for high-volume wafer fabrication. The AW-1008 is in direct response to manufacturer’s concerns for wafer sensitivity to processing RF damage, uptime, reliability and production-proven technology.

AW-1008 Key Features

- Production-proven plasma stripper/Asher system technology.
- 5-15% Uniformity. (Process & Hardware dependent. Optional.)
- Fast strip/ash rate. (Process & Hardware dependent. Optional.)
- Increased throughput with 3-Axis Integrated Robust Solid Robot.
- Frontside and backside isotropic removal.
- 3x 1kW IR Lamp for uniform heating up to 500C.
- 75mm-150mm wafer capability.
- Endpoint detection w/Allwin21 SLOPE technology (Optional)
- 2 wafer sizes capability without hardware change if necessary.
- Two Fixed cassette stations. Or, one Fixed & one centering station.
- Can handle 50um thickness wafer
- PC controller with Advanced Allwin21 Software Package
- Up to 4 gas lines with MFC's
- 2.45GHz 1000W Microwave
- Pressure control with Throttle Valve
- Touch screen monitor
- EMO, Interlocks, and Watchdog function
- GEM/SECS II interface, Optional
- Small Footprint : 35”W x 40”D x 55”H (250LBs)
- Made in U.S.A.

AW-1008 Applications

- Downstream asher for NO device damage
- Frontside and backside isotropic removal
- Bulk resist removal
- Single wafer process
- High-dose implanted resist
- Non-oxidizing metal processing
- Descum

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**AW-1008 Software Key**

- Real time graphics display, process data acquisition, and analysis.
- Closed-loop process parameters control.
- Precise parameters profiles tailored to suit specific process requirements.
- Programmable comprehensive calibration of all subsystems from within the software. This allows faster, easier calibration, leading to enhanced process results.
- Recipe creation. It features a recipe editor to create and edit recipes to fully automate the processing of wafers inside the process chamber.
- Validation of the recipe so improper control sequences will be revealed.
- Storage of multiple recipes, process data and calibration files so that process and calibration results can be maintained and compared over time.
- Passwords provide security for the system, recipe editing, diagnostics, calibration and setup functions
- Simple and easy to use menu screen which allow a process cycle to be easily defined and executed.
- Troubleshooting features which allows engineers and service personnel to activate individual subassemblies and functions. More I/O, AD/DA “exposure”.
- DB-25F parallel (printer) port. The computer interfaces to the Allwin21 system with only one cable: the control interface cable.
- The control board inside the machine that translates the computer commands to control the machine has a watchdog timer. If this board looses communication with the control software, it will shut down all processes and halt the system until communication is restored.
- GEM/SECS II function (Optional).
- Advanced Allwin21 EOP function (Optional)

**AW-1008 Specifications**

- Wafer Size: 3.4, 5, 6 inch Capability. Multiple wafer size without hardware change.
- Temperature: 150-350 °C (-2 °C) capability
- Gas Lines: Up to four gas lines with MFCs. Popular MFC Range: 510 SLM O2 and 1 SLM N2.
- Asher Rate: 1.5u-5u/min. positive photoresist; >8u/min. negative photoresist
- Uniformity: 15%, Process Dependent
- Particulate: <0.05 /cm2 (0.03um or greater)
- Damage: CV: <0.1 V CV-shift for 250A gate oxide
- Selectivity: >1000:1
- MTBF/MTT/A/MTTR: 450 Hours/100 Hours/3.5 Hours or Better. 95% uptime

*Contact Allwin21 sales for other applications and specifications*

**AW-1008 Configuration**

- Main Frame with Breakers, Relays and Wires
- Pentium Class PC with AW Software
- Keyboard, Mouse, USB with SW backup and Cables
- Quartz Tray
  - 3-4 inch
  - 4-6 inch
  - 5 inch
  - 6 inch
  - Others
- Fixed Cassette Station
  - Two Cassette Stations
  - One Cassette Station
- Lamp Heat Module and Quartz Window (3 of 1000W IR lamp)
- 6 inch Quartz showerhead and 5 inch Diffusion Disk
- Chamber Top Plate and Body with TC for Close Loop Temperature Control (CLTC)
- Main Control, Distributor PCB and DC
- H1-7X1.0 Integrated Solid Robot
- Waveguide and Quartz Plasma Tube
- Blower for Magnetron and Waveguide
- Capacitor, Two Transformers, HV Diode
- 1000W Air cooling magnetron
- 1-4 Gas Lines w/ Pneumatic Valve, and MFC
  - One MFC
  - Two MFCs
  - Three MFCs
  - Four MFCs

**AC Box and Lamp Control PCB for Close Loop Temperature Control (CLTC)**

- Main Vacuum Valves. Two, one for Fast and one for slow pump down
- MKS Baratron
- Throttle Valve
- Front EMO, Interlocks
- 15-inch Touch Screen GUI

**Options:**

- EOP Module with PCB
- GEM/SECS II function (Software)
- Lamp Tower Alarm function
- 1.25kW “Absolute” MW Magnetron with water-cooled Waveguide with AGL Power Generator.
- Vacuum Pump

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All specification and information here are subject to change without notice and cannot be used for purchase and facility plan.