



Unique Innovation for Optimized Equipment Performance

Rapid Thermal Process



Plasma Asher Descum



Sputtering Deposition System.



Company Introduction and Main Products

ALLWIN21 CORP.

Allwin21 Overview

Allwin21 Corp. is the exclusive licensed manufacturer of **AG Associates Heatpulse 610** Rapid Thermal Process tool. We are manufacturing the new AccuThermo AW Series Atmospheric and Vacuum Rapid Thermal Processors. Compared with traditional RTP systems, Allwin21's AccuThermo AW RTPs have innovative software and more advanced real time temperature control technologies to achieve the BEST rapid thermal processing performance (repeatability, uniformity, and stability) with decades of research directly applicable to ours.

We focus on extending product lifecycle, providing solutions, and engineering enhancements to many production proven semiconductor process equipment most directly related to III-V processing. These semiconductor equipment have been used in production and R&D since the 1990's. They have proven processes and research. Allwin21 Corp. can customize these systems with Allwin21's comparable integrated process control system with PC, solid robotic wafer transfer system, and new critical components. This is to achieve the goal of giving our customers a production edge, with right cost, and without having to worry about obsolete parts.

Allwin21 Corp. was formed in 2000 with a focus on professionally providing **Rapid Thermal Process, Plasma Asher Strip / Descum, Plasma Etch/RIE, Sputter Deposition** and **Metal Film Metrology** high-tech semiconductor equipment, services and technical support in Semiconductor III-V, MEMS, Biomedical, Nanotechnology, Solar, Battery & LED industries. We endeavor to be a leader in our product lines. To achieve this, we have been providing unique innovative and cost-effective technical solutions, high quality equipment, and on time spare parts delivery worldwide. We have maintained a global presence that has grown and expanded into the major high-tech manufacturing areas of the world. We pride ourselves on developing and continuing lasting customer relationships.

We understand that a timely responsive support and service are critical elements in semiconductor industries. Allwin21's experienced engineer team is the best guarantee for high quality service and support. We provide on-site installation, training, maintenance, system optimization, retrofits, and/or customized upgrades

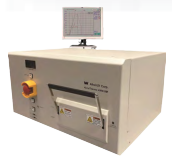
What sets us apart from the competition...

- 1) Exclusive licensed manufacturer of Heatpulse 610 of AG Associates.
- 2) Advanced Allwin21 Real Time PC Control Technology.
- 3) Focus on Production-Proven process technology.
- 4) Integrated 3-axis solid robotic wafer transfer technology.
- 5) Experienced local engineer support.
- 6) Products made in U.S.A



1) Rapid Thermal Process

- **AccuThermo AW 610M**
- AccuThermo AW 820M
- AccuThermo AW 820V
- **AccuThermo AW820R**



2) Sputter Deposition

- **AccuSputter AW 4450**



3) Plasma Asher Descum

- **AW-105R**
- AW-1008
- AW-B3000



4) Plasma Etch/RIE

- AW-901eR
- AW-903eR
- AW-2001R

5) Upgraded Kit for:

- Heatpulse® 210,310,410,610
- Matrix® X0X
- Tegal® 90Xe
- Gasonics® Aura 1000/2000LL/3000/3010
- Gasonics® AE 2001/2000LL
- Gasonics® L3510/L3500
- Perkin-Elmer 24XX,4XXX Sputter
- MRC 6XX, 9XX Sputter
- TES 6XX,9XX Sputter
- Branson/IPC® 3000/2000/4000
- Lam AutoEtch® 490/590/69
- Lam Rainbow® 4XXX Series



6) Sheet Resistance Measurement

- AWgage-150
- AWgage-200



W Rapid Thermal Process **ALLWIN21 CORP.**

Introduction

The AccuThermo AW Series RTPs were derived from the AG Associates 610 production-proven design. Allwin21 Corp. is the *exclusive* manufacturer of the AG Associates Heatpulse 610 desktop atmospheric RTP (Rapid Thermal Processing) system. The system uses high intensity visible radiation to heat single wafer for short process periods of time at precisely controlled temperatures. The process periods are typically 1-600 seconds in duration, although periods of up to 9999 seconds can be selected. These capabilities, combined with the heating chamber's cold-wall design and superior heating uniformity, provide significant advantages over conventional furnace processing.

AccuThermo AW Series RTPs Key Features

- ✦ 40 years' production-proven Real RTP/RTA/RTO/RTN system.
- ✦ Scattered IR light by special gold plated Al chamber surface.
- ✦ Allwin21 advanced Software package with real time control technologies and many useful functions.
- ✦ Precise and Rapid Control technology. 0.1millisecond Control.
- ✦ 0.02" Diameter "K" Type Thermocouple(Bare, Beaded) for 150-840 °C temperature with 0.25 second response time.
- ✦ Patented Non-contact ERP Pyrometer for >400°C temperature with much better performance and convenience. This is optional.
- ✦ Easy Allwin21 Pyrometer Calibration method.
- ✦ Consistent wafer-to-wafer process cycle repeatability.
- ✦ Advanced PID Control Technology with Fuzzy Logic Learn capability and Chamber Thermal Data.
- ✦ Top and bottom High-intensity visible radiation Tungsten halogen lamp heating for fast heating rates with good repeatability, performance and long lamp lifetime (up to 2400 power on hours).
- ✦ Cooling N2 (Or CDA) flows around the lamps and quartz isolation tube for fast cooling rates.
- ✦ Isolated quartz tube, thickness 0.125" only for low thermal budget.
- ✦ PowerSum function to save valuable compound material wafers.
- ✦ Up to six gas lines with MFCs and shut-off valves
- ✦ Energy efficient.
- ✦ Made in U.S.A.
- ✦ Small footprint.

Typical Application Areas:

- Chip manufacture
- Compound industry: GaAs, GaN, GaP, GaInP, InP, SiC, III-V, II-VI
- Optronics, Planar optical waveguides, Lasers
- Nanotechnology
- Biomedical
- Battery
- MEMS
- Solar
- LED

Models

- ◆ AccuThermo AW 610M
- ◆ AccuThermo AW 820M
- ◆ AccuThermo AW 820V

AccuThermo AW RTPs Software Key Features

- o Integrated process control system
- o Real time graphics display
- o Real time process data acquisition, display, and analysis
- o Programmed comprehensive calibration and diagnostic functions
- o Closed-loop temperature control with temperature sensing.
- o Precise time-temperature profiles tailored to suit specific process requirements.
- o Faster, easier Programmable comprehensive calibration of all subsystems, leading to enhanced process results.
- o A recipe editor to create and edit recipes to fully automate the processing of wafers inside the AccuThermo RTP
- o Validation of the recipe so improper control sequences will be revealed.
- o Storage of multiple recipes, process data and calibration files so that process and calibration results can be maintained and compared over time.
- o Passwords provide security for the system, recipe editing, diagnostics, calibration and setup functions.
- o Simple and easy to use menu screen which allow a process cycle to be easily defined and executed.
- o Troubleshooting feature which allows engineers and service personnel to activate individual subassemblies and functions. More I/O, AD/DA "exposure".
- o Use PowerSum technology to detect the process and increase Yield.
- o Watchdog function: If this board loses communication with the control software, it will shut down all processes and halt the system until communication is restored.
- o GEM/SECS II function (Optional).

Typical Applications

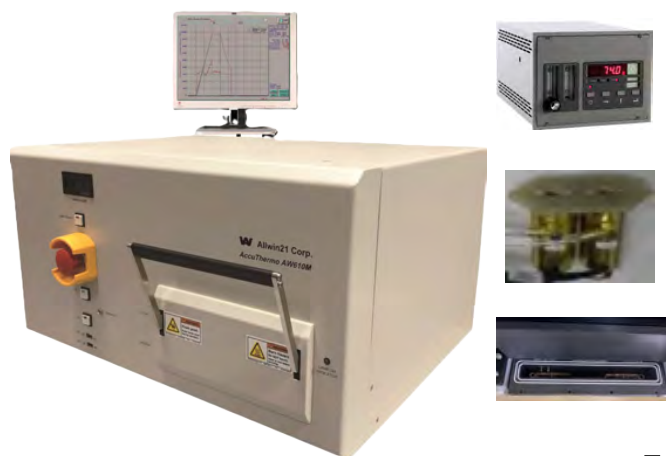
- Contact alloying
- Nitridation of metals
- Oxygen-donor annihilation
- Other heat treatment process
- Silicon-dielectric growth
- Implant annealing
- Glass reflow
- Silicides formation and annealing





Rapid Thermal Process

ALLWIN21 CORP.



AccuThermo AW 610M

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AccuThermo AW 610M Specifications

- ❖ Wafer sizes: Small pieces, 2", 3", 4", 5", 6" wafer capability
- ❖ Recommended ramp up rate: Programmable, 10°C to 120°C per second. Maximum Rate: 200°C (NOT RECOMMENDED)
- ❖ Recommended steady state duration: 0-300 seconds per step.
- ❖ Ramp down rate: Non-programmable, 10°C to 200°C per second.
- ❖ Recommended steady state temperature range: 150°C - 1150°C. Maximum 1250°C (NOT RECOMMENDED)
- ❖ **ERP Pyrometer** 400-1250°C with $\pm 1^\circ\text{C}$ accuracy when calibrated against an instrumented thermocouple wafer.
- ❖ Thermocouple 150-840°C with $\pm 0.5^\circ\text{C}$ accuracy & rapid response.
- ❖ Temperature repeatability: $\pm 0.5^\circ\text{C}$ or better at 1150°C wafer-to-wafer. (Repetition specifications are based on a 100-wafer set.)
- ❖ Temperature uniformity: $\pm 5^\circ\text{C}$ across a 6" (150 mm) wafer at 1150°C. (This is a one sigma deviation 100 angstrom oxide.) For a titanium silicide process, no more than 4% increase in non-uniformity during the first anneal at 650°C to 700°C.
- ❖ Process/Purge gas inputs: Any inert and/or non-toxic gas regulated to 30 PSIG and pre-filtered to 1 micron. Typically, N₂, O₂, Ar, He, forming gas, NH₃, N₂O₂ are used.

Options

- ◆ Multiple Process Gases (Up to 6) and MFCs with shut-off valve for each line.
- ◆ Carrier or Susceptor for small sample, transparent substrate and substrate with metal thin film on top.
- ◆ Patented ERP Pyrometer (400-1250°C) as non-contact high temperature sensor.
- ◆ Chiller for ERP Pyrometer
- ◆ 2-inch, 4-inch, 6-inch TC Wafer, Single Point for Pyrometer calibration

AccuThermo AW 610M Configuration

- AccuThermo AW 610M Main Frame with wires.
- Power Type: Three Phase, worldwide power (50/60 Hz) .
- **Cooling Air Control. SSR Lamp Control.CE Mark** if Necessary
- Pentium® class computer with a 17-inch LCD monitor and Allwin21 Corp proprietary software package.
- **New type water sensor** which is more reliable.
- Aluminum oven chamber with water cooling passages and gold plating plates. **24V valves** for cooling air and water.
- Door plate with 2 of TC connection ports.
- **Isolated Quartz Tube** W/O Pyrometer window or with Pyrometer Window.
- Oven control board and one main control board.
- Bottom and top heating with 21 (1.2KW ea) Radiation heating lamp module with **6 bank zones**(Top:3/4/3, Bottom:4/3/4) for sensitive applications.
- Quartz Tray for 4 to 6 inch round wafer or customized.
- **6 Gas lines** with up to 1 of MFC with shut-off valve.
- T-Shape Quartz with qualified **K-Type TC** and one set holder for 150-840°C temperature measurement.
- Package of 5 pieces of thermocouple wires as spare TC
- USB with original Software backup.
- ◆ Temperature Meter for Pyrometer and Thermocouple calibration
- ◆ Shut-off valve for Quartz Tube & Lamps cooling control
- ◆ Spare Parts
- ◆ Quartz Liner and quartz Tube with Liner Support
- ◆ SST chamber instead of Al chamber
- ◆ Special TC assembly with SiC cap for up to 1100 °C, low cost.
- ◆ **Double O Ring, O2 Sensor/Analyzer** for production.

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Rapid Thermal Process

ALLWIN21 CORP.



AccuThermo AW 820M

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AccuThermo AW 820M Specifications

- ❖ Wafer sizes: Small pieces, 2", 3", 4", 5", 6", 8" wafer capability
- ❖ Recommended ramp up rate: Programmable, 10°C to 120°C per second. Maximum Rate: 200°C (NOT RECOMMENDED)
- ❖ Recommended steady state duration: 0-600 seconds per step.
- ❖ Ramp down rate: Non-programmable, 10°C to 200°C per second.
- ❖ Recommended steady state temperature range: 150°C - 1150°C. Maximum 1250°C, 1500°C (Not recommended) is optional.
- ❖ **ERP Pyrometer** 400-1250°C with $\pm 1^\circ\text{C}$ accuracy when calibrated against an instrumented thermocouple wafer. 1500°C is optional.
- ❖ Thermocouple 150-840°C with $\pm 0.5^\circ\text{C}$ accuracy & rapid response.
- ❖ Temperature repeatability: $\pm 0.5^\circ\text{C}$ or better at 1150°C wafer-to-wafer. (Repetition specifications are based on a 100-wafer set.)
- ❖ Temperature uniformity: $\pm 8^\circ\text{C}$ across an 8" (200 mm) wafer at 1150°C. (This is a one sigma deviation 100 angstrom oxide.) For a titanium silicide process, no more than 6% increase in non-uniformity during the first anneal at 650°C to 700°C.
- ❖ Process/Purge gas inputs: Any inert and/or non-toxic gas regulated to 30 PSIG and pre-filtered to 1 micron. Typically, N₂, O₂, Ar, He, forming gas,

Options

- ◆ Multiple Process Gases (Up to 6) and MFCs with shut-off valve for each line.
- ◆ Carrier or Susceptor for small sample, transparent substrate and substrate with metal thin film on top.
- ◆ Patented ERP Pyrometer (400-1250°C) as non-contact high temperature sensor. 1500°C (NOT RECOMMENDED) is optional.
- ◆ Chiller for ERP Pyrometer

AccuThermo AW 820M Configuration

- AccuThermo AW 820 Main Frame with wires.
- Power Type: Three Phase, worldwide power (50/60 Hz).
- **Cooling Air Control. SSR Lamp Control. CE Mark** if Necessary
- Pentium® class computer with a 15-inch touch screen monitor and Allwin21 Corp proprietary software package.
- **New type water sensor** which is more reliable.
- Aluminum oven chamber with water cooling passages and gold plating plates.
- Door plate with one TC connection port.
- **Isolated Quartz Tube** W/O Pyrometer window or with Pyrometer Window.
- Oven control board and one main control board.
- Bottom and top heating with 27 (1.2KW ea) Radiation heating lamp module with **10 bank zones** (Top: 2/3/4/3/2, Bottom: 2/3/3/3/2).
- Quartz Tray for 5 to 8 inch round wafer or customized.
- **6 Gas lines** with one Gas MFC with shut-off valve.
- T-Shape Quartz with qualified K-Type TC and one set holder for 150-840°C temperature measurement.
- Package of 5 pieces of thermocouple wires as spare TC.
- USB with original Software backup.
- ◆ 2-inch, 4-inch, 6-inch, 8-inch (Not recommended) TC Wafer, Single Point for Pyrometer calibration
- ◆ Temperature Meter for Pyrometer and Thermocouple calibration
- ◆ Shut-off valve for Quartz Tube & Lamps cooling control
- ◆ Spare Parts
- ◆ **Double O Ring, O₂ Sensor/Analyzer** for production.

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AccuThermo AW 820V **(Not Recommended)**

AccuThermo AW 820V Specifications

- ❖ Wafer sizes: Small pieces, 2", 3", 4", 5", 6", 8" wafer capability
- ❖ Vacuum Pressure: 50mTorr to 13 Torr or 13 Torr to 760 Torr
- ❖ Recommended ramp up rate: Programmable, 10°C to 120°C per second. Maximum Rate: 200°C (NOT RECOMMENDED)
- ❖ Recommended steady state duration: 0-600 seconds per step.
- ❖ Ramp down rate: Non-programmable, 10°C to 200°C per second.
- ❖ Recommended steady state temperature range: 150°C - 1150°C. Maxim 1250°C, 1500°C (Not recommended) is optional.
- ❖ Special quick response K-Type TC temperature accuracy: $\pm 1^\circ\text{C}$, when calibrated against an instrumented thermocouple wafer.
- ❖ Thermocouple temperature accuracy: $\pm 0.5^\circ\text{C}$ with rapid response.
- ❖ Temperature repeatability: $\pm 0.5^\circ\text{C}$ or better at 1150°C wafer-to-wafer. (Repetition specifications are based on a 100-wafer set.)
- ❖ Temperature uniformity: $\pm 8^\circ\text{C}$ across a 8" (200 mm) wafer at 1150°C. (This is a one sigma deviation 100 angstrom oxide.) For a titanium silicide process, no more than 6% increase in non-uniformity during the first anneal at 650°C to 700°C.
- ❖ Process/Purge gas inputs: Any inert and/or non-toxic gas regulated to 30 PSIG and pre-filtered to 1 micron. Typically, N₂, O₂, Ar, He, forming gas, NH₃, N₂O₂ are used.

AccuThermo AW 820V Configuration

- AccuThermo AW 820V Main Frame with wires.
- Power Type: Three Phase, worldwide power (50/60 Hz)
- CE Mark if Necessary
- Pentium® class computer with a 15-inch touch screen monitor and Allwin21 Corp proprietary software package.
- Mouse and standard keyboard.
- Aluminum oven chamber with water cooling passages.
- Door plate with one TC connection port.
- Top and bottom quartz windows and heating module with 27 (1.2KW ea) Radiation lamps with 10 bank zones (Top:2/3/4/3/2, Bottom:2/3/3/3/2).
- Oven control board and one main control board.
- Quartz Tray for 5 to 8 inch round wafer or customized.
- Two gas lines with one Gas MFC with shut-off valve.
- USB with original Software backup.
- Main Vacuum Valve

Options

- ◆ Atmospheric process function.
- ◆ Vacuum pressure measurement and control function
- ◆ Turbo pump for up to 10-6 Torr (NOT RECOMMENDED)
- ◆ Mechanical vacuum pump*
- ◆ Dry vacuum pump*
- ◆ Multiple Process Gases and MFCs (Up to 5) with Gas Control Board if necessary.
- ◆ Special quick response K-Type TC assembly for high temperature
- ◆ Carrier or Susceptor for small sample, transparent substrate and substrate with metal thin film on top.
- ◆ Maximum 1500 °C (Not recommended) with special TC assembly.
- ◆ Shut-off valve for Quartz Tube&Lamps cooling control
- ◆ Temperature Meter Thermocouple calibration
- ◆ Spare Parts



RFQ for Fast Free Quotation

AccuSputter AW 4450

Introduction

Allwin21 Corp. has been focusing on providing solutions and enhancements to Perkin-Elmer 4400, Perkin-Elmer 4410, Perkin-Elmer 4450, Perkin-Elmer 4480 used sputter deposition semiconductor process equipment. These OEM semiconductor equipment have been used in productions and R&D since 1990's. They have been proven to be a true "work horse". Allwin21 Corp. can customize these OEM systems with Allwin21's comparable integrated process control system with PC and new critical components. We rebuild AccuSputter AW 4450 Series Sputter Deposition systems with our own integrated process control system, giving our customers the tools to achieve a production edge at very low cost impact.

AccuSputter AW 4450 Key Features

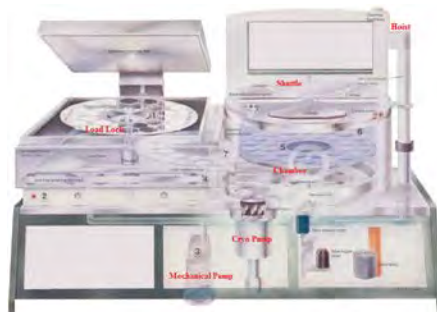
- ⊕ Production-proven sputter technology
- ⊕ Optimum AW-4450 System Control
- ⊕ DC 24V for Motors, Actuator, Relay, Solenoid
- ⊕ Efficient 8" Delta cathodes, 2 to 6" option
- ⊕ Full Pallet rotation control with "indexing"
- ⊕ High Uniformity and Yield
- ⊕ DC, RF Sputter, Pulse DC option
- ⊕ Magnetron and Diode Sputter option
- ⊕ RF Etch and Bias are optional
- ⊕ Ultra Clean vacuum system
- ⊕ Load lock operation
- ⊕ UHV design
- ⊕ Flexible for development or production use
- ⊕ Full range of substrate sizes and shapes
- ⊕ Various pumping and power options
- ⊕ Co-sputtering option
- ⊕ Reactive Sputtering option

AccuSputter 4450 Sputter Materials

Al+W	Cr/SiO ₂	SiC	Ti+Au
InSnO	SiO ₂	Ti/W	Ti+Au+Ni
Al ₂ O ₃	Mo	SiO ₂ +O ₂	Ni/Fe+Cu+SiO ₂
Ag	MoSi ₂	Si+N ₂ (Si ₃ N ₄)	Ti/W+Au
Au	Mo ₂ Si ₅	Si+N ₂ +B ₄ C	Ti/W+Au+Ta
C	Mo ₅ Si ₃	Ta	Ti/W+Al/Si
Cr	Ni	TaC	Ti/W+Ni/Cr+Au
Cr/Co	Ni/Cr	Ta+Au	Ti/W+Pt
Cr/Au	Ni+Ni/Cr	TaSi ₂	Al+Ti/W+Ag
Cr+Cu	Ni/Fe	Ta+SiO ₂	W+Al ₂ O ₃
Cr/Si	Pt	Zr	Zn
Cr/SiO	TiO ₂	TiO ₂ +Cr	ZnO ₂

AccuSputter AW 4450 Software Key Features

- o Maintenance, Manual, Semi Automatic and Fully Automatic modes.
- o Automated calibration of all subsystems.
- o Troubleshooting to subassembly levels.
- o Programmed comprehensive calibration and diagnostic functions.
- o Recipe creation for full automatic wafer processing.
- o Automatic decline of improper recipes and process data inputs.
- o Multi-level password protection.
- o Storage of multiple recipes and system functions.
- o Real-Time process graphics, data acquisition display, and analysis.
- o Process Data and Recipe storage automatically to hard drive.
- o Easy TC vacuum gauge calibration.
- o Positioning Deposition (optional)
- o GEM/SECS II (optional)



Production-Proven Chamber/Load lock/Vacuum

Options

- ◆ GEM/SECS II function (Software)
- ◆ More gas lines with MFC
 - ① N₂; ② O₂; ③ Customized
- ◆ Lamp tower alarm with buzzer.
- ◆ Mechanical pump or dry pump for process chamber and load lock.
- ◆ Independent mechanical pump or dry pump for process chamber.
- ◆ Chiller for Cooling plates and table.
- ◆ Turbo pump for load lock.
- ◆ Load lock Lamp Heating function, Up to 200°C
- ◆ Chamber Lamp Heating function, Up to 300°C (Use one cathode port in SST chamber top plate).
- ◆ Plasma etch function (before sputter)
- ◆ Bias function
- ◆ Co-sputter function
- ◆ Reactive sputter function
- ◆ Transformer for AC 380V to 208V for DC Power Supply (if necessary).

AccuSputter AW 4450 Basic Configuration

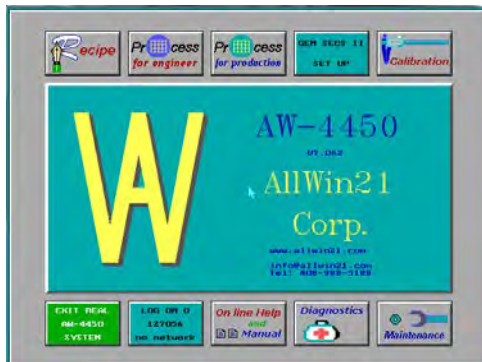
- Main Frame
- 28" dia. SST chamber top plate with ports and Cathodes

Configuration	I	II
Cathode Shape	Circle	Delta
Cathode Size	8 inch	Delta
Cathode Quantity	1 to 4	1 to 3
- Sputter Power Supply

Configuration	I	II	III
DC Power	5 KW	10 KW	
RF Power	1KW	2 KW	3 KW
Pulse DC Power	5 KW	10 KW	
- Process Chamber
 - 8" diameter X 12" high stainless steel cylinder with 6"
 - CF flange viewport and load lock port
 - 28" diameter stainless steel base plate
 - 1 1/2" air-operated roughing isolation valve
 - Air-operated gas inlet valve
 - Air-operated vent valve
 - 1 1/2" blanked-off leak check port
 - Removable deposition shields
 - 23" diameter, 3-position water-cooled annular substrate table with variable-speed motorized table drive
 - Full circle shutter and vane shutter
 - Chain drive pallet carrier transport
 - Heavy duty electric hoist
- Load lock
 - 30" x 28" x 8" stainless steel load lock chamber with aluminum cover
 - Chain drive pallet carrier transport
 - 2" air-operated roughing isolation valve
 - Air-operated vent valve
 - 23" diameter molybdenum annular substrate pallet
 - Elevator for pallet up and down function.
- Vacuum Systems for process Chamber
 - 2 stage Cryo pump with 1000 l/s pumping speed for air, including chevron, water-cooled compressor and lines, automatic regeneration controller and plumbing kit. 7 1/2" O.D. (6" ASA) aluminum air-operated gate valve Air-operated venetian blind throttling valve.
 - 36.7 cfm mechanical pump or dry pump for process chamber and load lock (Optional)
- 1 gas line with MFC
 - ① Ar, 200 SCCM; ② Customized
- New Controller: Allwin21 Corp.'s AW-4450 System PC Control
- New Power Distribution Box: AC380V /208V/ 3Phase

W Sputter Deposition System ALLWIN21 CORP.

Upgrade Your Perkin-Elmer 2400,44XX Series Sputter Deposition Systems



- ✓ Increase Uptime
- ✓ Decrease Maintenance

- ✓ Lowest Cost Upgrade Solution
- ✓ No More Obsolete Controller Parts

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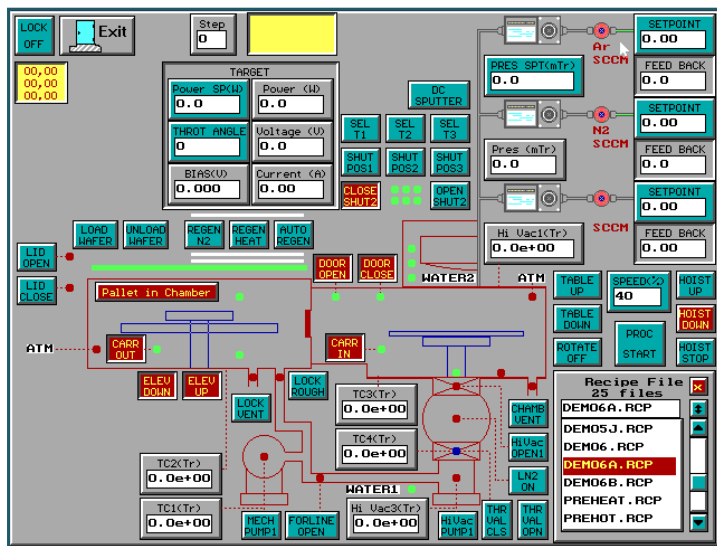
The AW-4450 Sputter System Upgrade Kit includes an advanced control system with touch screen operator interface and Allwin21 computer software. The kit is easy to incorporate (plug-and-play) into the original PE sputter system. No need to move the to be upgraded system from its present location. All utility connections stay in place. The new control system will enhance the entire system operation. It makes the upgraded sputter system much more reliable, since many of the old controllers are eliminated.

AW-4450 System Control

- ✓ Maintenance, Manual, Semi Automatic and Full Automatic operation modes
- ✓ Automated calibration of all subsystems
- ✓ Trouble shooting to sub-assembly levels
- ✓ Programmed comprehensive calibration and diagnostic functions
- ✓ Recipe creation for full automatic wafer processing
- ✓ Automatic decline of improper recipes and process data
- ✓ Multi level password protections
- ✓ Storage of multiple recipes and system functions
- ✓ Real-Time process data acquisition, display, analysis
- ✓ Real-Time graphics user display (GUI)
- ✓ Process Data and Recipe storage on a hard drive
- ✓ Easy TC vacuum gauge calibration
- ✓ Positioning Deposition (optional)
- ✓ GEM/SEC II functions (optional)

Fast On-site Upgrading

- ✓ Customized survey and upgrading plan
- ✓ Same input/output connectors
- ✓ Same definition of each connector
- ✓ Plug-and-Play



Replaced Obsolete Controls If Necessary

- ✗ Auto Pump Down Controller
- ✗ Load Lock Controller
- ✗ Digital Clock Timer
- ✗ Table Raise / Lower Control
- ✗ Throttle Valve Control System
- ✗ Pressure Control System
- ✗ Sputter Head Controls (optional)

Perkin-Elmer 44XX Series Sputter Systems : ► PE 2400 ► PE 4400 ► PE 4410 ► PE 4415 ► PE 4430 ► PE 4450 ► PE 4480

Tel.: 408-778-7788

E-mail: sales@allwin21.com

Website: www.allwin21.com

All specification and information here are subject to change without notice and can not be used for purchase and facility plan. All used equipment trademarks belong to the OEM.

Address: 220 Cochrane Circle, Morgan Hill, CA 95037

Sputter Deposition System **ALLWIN21 CORP.**

Comparison between New AW 4450 AccuSputter and AW Refurbished / AW Upgraded / Original PE 44XX Series systems

Comparing Item	AccuSputter AW 4450	AW Refurbished&Upgraded PE 44XX	AW Upgraded PE 44XX	Original PE 44XX
Controller	Allwin21 Corp.'s AW-4450 System Control			Obsolete Control Parts
Monitor	Touch Screen			Discrete
User Interface	GUI (Graphical User Interface)			Discrete
Data Storage	Store in computer hard disk			None
Recipe Edit	Easy to edit with GUI page			None
Gas Calibration	Easy to do gas calibration with Software			None
A/D Precision	14-16 bits			None
Diagnostic Function	More functions and I/O hardware "exposed" for easy maintenance and trouble shooting			Limited
Positioning Sputter	Yes			No
Power Distribution Box	New, AC380V/208V/3Phase/5Lines		Used	
Shutter Sensors	New, Optoelectronic Sensors		Used, Microswitches, mechanical	
Table Raiser/Lower/ Microswitch	New		Used	
Hoist Microswitch	New		Used	
Gauge Controller	AW-531 Gauge Controller , 3x Ion Gauge and 6x TC Gauge Capability , GUI/Touch Screen		PE Ion Gauge Controller (DGC, WRG), 1x Ion Gauge and 2x TC Gauge/each	
Valves	New		Used	
Gas Line	New		Used	
Motors,Actuator,Relay,Solenoid	New, DC 24V		Used, AC 115V	
RF Generator and RF Match	New, can be installed inside the chassis		Used	
DC Power Supply	New, can be installed inside the chassis	Used,Fully tested, , can be installed inside the chassis		Used, individual chassis
Reed Switch	New	Used,Fully tested		Used
Light Tower	New		Optional	None
Loadlock and Chamber	New	Fully refurbished, new if necessary		Used
Other Parts	New	Fully refurbished, new if necessary		Used
Overall Space	Main Console Only		Main Console, DC/RF Power, Computer (Optional)	

Tel.: 408-778-7788

E-mail: sales@allwin21.com

Website: www.allwin21.com

All specification and information here are subject to change without notice and can not be used for purchase and facility plan. All used equipment trademarks belong to the OEM.

Address:220 Cochrane Circle, Morgan Hill,CA95037

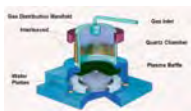
Plasma Asher Descum **ALLWIN21 CORP.**

Introduction

Allwin21 Corp. has been focusing on providing solutions and enhancements to plasma asher descum semiconductor process. These OEM asher descum semiconductor equipment have been used in production and R&D since 1990's. They have been Process-Proven. Allwin21 Corp. can customize these OEM systems with Allwin21's comparable integrated process control system with PC, solid 3-axis robotic wafer transfer system, and new critical components to achieve the goal of giving our customers a production edge.

Plasma Asher Descum Key Features

- ✦ Production-proven plasma Asher/Descum system.
- ✦ Frontside and backside isotropic removal.
- ✦ Consistent wafer-to-wafer process cycle repeatability.
- ✦ Can handle 50um thickness wafer.
- ✦ PC controller with Advanced Allwin21 Software.
- ✦ Endpoint detection (EOP) -Optional
- ✦ Pressure control with Throttle Valve.
- ✦ 15-inch Touch screen monitor GUI.
- ✦ EMO, Interlocks, and Watchdog function.
- ✦ GEM/SECS II (optional).
- ✦ Small Footprint
- ✦ Made in U.S.A.



Production-proven Reactor

Applications

- ▶ GaAs, InP, GaN, SiC wafer Strip (Mainly)
- ▶ GaAs, InP, GaN, SiC wafer Descum (Mainly)
- ▶ Thin Film Head Resist Cleaning
- ▶ Opto-Electronic Devices Cleaning
- ▶ Dry Descum, Clean
- ▶ Photoresist Stripping
- ▶ Controlled Resist Removal

Plasma Asher Descum Software Key Features

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



AW-105R



AW-1008



AW-B3000

Models	Plasma Power	Wafer Size	Wafer Load	Process Type	Uniformity
Matrix 105R	13.56MHz RF	2",3",4",5",6"	Automatic,	Single wafer	3%~10%
AW-1008R	2.45GHz Microwave	3",4",5",6"	Automatic	Single wafer	13%~20%
AW-B3000	13.56MHz RF	2",3",4",5",6",8"	Manual	Barrel, Batch	25%~35%



AW-105R

RFQ for Fast Free Quotation

for compound materials

Introduction

The AW-105R single-wafer photoresist asher and descum is an automated tool designed as a flexible 13.56MHz RF Parallel Plate downstream plasma photoresist removal and descum system for high-volume wafer fabrication. The AW-105R is in direct response to manufacturer's concerns for wafer uniformity, uptime, reliability and production-proven technology.

AW-105R Specifications

- ❖ Wafer Size: Up to 6.25 inch.
- ❖ Temperature: 60-250°C (±2°C)
- ❖ Gas Lines: Up to three gas lines with MFCs.
Typical MFC configuration: 5 SLM O2 and 500 SCCM N2.
- ❖ Asher Rate: 0.5-1.5 um/min at 200 to 250 °C, bulk strip; 600 A/min at 100 °C, Descum
- ❖ Uniformity: <±8% (Max-Min) Strip; <±5% (Max-Min) Descum
- ❖ Particulate: <0.05 /cm2 (0.3um or greater)
- ❖ Damage: CV:<0.1V from control; Mobile Ion:<1-2 E10 ; Vt :0% total shift on 98%of points tested no shift >5%
- ❖ Selectivity: >1000:1
- ❖ MTBF/MTTA/MTTR: 450 Hours/100 Hours/3.5 Hours or Better.
- ❖ 95% uptime

AW-105R Facilities

- ▶ Plumbed Process Gases: O2 N2
- ▶ Cooling water: 1GPM house circulating supply @ <23 ± 2°C
- ▶ Facility Exhaust: 100 CFM @ 1" static pressure
- ▶ Vacuum supply for Robot: 11.8"Hg(-5.8psi) / 0.1CFM airflow
- ▶ Power: 190-240VAC, single phase, 30A, 50/60Hz (NEMA L-6-30P plug supplied)

AW-105R Configuration

- Main Frame with Circuit Breakers, Solenoid Valves
- Pentium Class PC with AW Software
- Keyboard, Mouse, USB SW backup, and Cables
- Chuck /w Heat, Pump Ring ,Lift Pins
 - ① 2-4 inch; ② 2-6 inch; ③ 4-6 inch; ④ 6.125 inch; ⑤ 6.25 inch
- Center Aligner and Cassette Station
 - ① Two Dimensions ② Four Dimensions
- Anodized Reactor with Door
- Chamber Base plate with water sensor
- Base Plate and Reactor Ceramic Ring
- Base Plate and Chuck Ceramic Ring
- Upper and Lower Electrodes
- Quartz showerhead & Diffusion Disk
- Main Control and Distribution PCBs
- 3-axis Integrated Robust Solid Robot
- RF Matching Network with PCBs
- 13.56MHz RF Generator
 - ① 300W ② 600W
- MFC /w In-line Filter and Solenoid Isolation Valve
 - ① One MFC; ② Two MFCs; ③ Three MFCs
- AC/DC Box with Temperature Controller
- MKS Baratron with Isolation Valve
- Lamp Tower Alarm w/ Buzzer
- Throttle Valve
- Main Vacuum Valve
- Front EMO, Interlocks
- 15-inch Touch Screen GUI



Integrated Robust Solid Robot

Options

- ◆ End-of-Process (EOP)
- ◆ GEM/SECS II (Software)
- ◆ Vacuum Pump
- ◆ Chiller for Chamber Base Plate



AW-1008

RFQ for Fast Free Quotation

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 Specifications

- ❖ Wafer Size: 3, 4, 5, 6 inch Capability. Multiple wafer size without hardware charge.
 - ❖ Temperature: 150-350 °C (± 2 °C) capability
 - ❖ Gas Lines: Up to four gas lines with MFCs. Popular MFC Range: 5-10 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 (0.3um or greater)
 - ❖ Damage: CV: <0.1 V CV-shift for 250A gate oxide
 - ❖ Selectivity: >1000:1
 - ❖ MTBF/MTTA/MTTR: 450 Hours/100 Hours/3.5 Hours or Better. 95%uptime
- *Contact Allwin21 sales for other applications and specifications

AW-1008 Facilities

- ▶ Vacuum Chamber Pump = 165 cfm
- ▶ Cabinet Exhaust = >250 cfm
- ▶ Plumbed Gases: O₂, N₂
- ▶ Electrical Requirements: 208VAC, 3-Phase, 60Hz, 30Amps
- ▶ Weight = 350lbs.

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
 - ① 3-4 inch; ② 4-6 inch; ③ 5inch; ④ 6 inch; ⑤ Others Fixed
- ❖ Cassette Station
 - ① Two Cassette Stations; ② 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
- ❖ H1-7X10.5 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
 - ① One MFC; ② Two MFCs; ③ Three MFCs; ④ Four MFCs
- ❖ AC Box and Lamp Control PCB for Close Loop Temperature Control (CLTC)
- ❖ Main Vacuum Valves. Two, one for Fast and on for slow pump down
- ❖ MKS Baratron
- ❖ Throttle Valve
- ❖ Front EMO, Interlocks
- ❖ 15-inch Touch Screen GUI



Integrated Robust Solid Robot

Options

- ◆ End-of-Process (EOP)
- ◆ GEM/SECS II (Software)
- ◆ Vacuum Pump
- ◆ 1.25KW power



Plasma Asher Descum

ALLWIN21 CORP.



RFQ for Fast Free Quotation

AW-B3000 Barrel Batch

Introduction

The AW-B3000 batch/barrel photoresist asher is a manual load tool designed as a flexible 13.56 MHz RF plasma photoresist removal system for high-volume wafer fabrication. The AW-B3000 is in direct response to manufacturer's concerns for Uptime, Reliability, Production-Proven technology. and low cost of ownership.

AW-B3000 Specifications

- ❖ Wafer Size: Sample to 200mm Capability. Multiple wafer size without hardware change
- ❖ High Throughput: Up to 75 WPH. Process Dependent.
- ❖ Temperature: Only TC Option can be used for N2 plasma to heat the substrates up to 170°C.
- ❖ Gas Lines: Up to 5 isolated gas lines with MFCs.
- ❖ Asher Rate: 0-0.1u/min. positive PR; >0.2u/min. negative PR. Slower if Faraday Cage is used
- ❖ Uniformity: Up to 25%. Much lower with Faraday Cage.
- ❖ Particulate: <0.05 /cm² (0.3um or greater)
- ❖ Damage: Low damage with Faraday Cage.
- ❖ Selectivity: >1000:1
- ❖ MTBF/MTTA/MTTR: 450 Hours/100 Hours/3.5 Hours or Better.
- ❖ 95% uptime

AW-B3000 Facilities

- ▶ Vacuum Chamber Pump = 165 cfm
- ▶ Cabinet Exhaust = >250 cfm
- ▶ Plumbed Gases: O₂, N₂
- ▶ Electrical Requirements: 208VAC, 3-Phase, 60Hz, 30Amps
- ▶ Weight = 180lbs.

AW-B3000 Configuration

- ❖ Main Body with wires
- ❖ Control Box
- ❖ Pentium Class PC with AW Software
- ❖ Keyboard, Mouse, USB with SW backup and Cables
- ❖ Main Control PCB and DC
- ❖ Transformer, Circuit Breaker, Contactor
- ❖ 1-5 Isolated Gas Lines w/ Pneumatic Valve and MFC
- ❖ Purge has manual regulator in controller box to control speed.
- ❖ Quartz Chamber: Dia 12" x Depth 23";
- ❖ RF Match Network Integrated in the Main Body of tool. Chamber
- ❖ Door with quartz plate in the Main Body.
- ❖ Gas and vacuum lines Connections in the Main Body 13.56MHz RF Generator (Air-Cooled)
① 300W; ② 600W; ③ 1000W; ④ 1200W
- ❖ Lamp tower alarm with buzzer
- ❖ Main Vacuum Valve
- ❖ MKS Baratron
- ❖ Throttle Valve
- ❖ Front EMO, Interlocks
- ❖ 15-inch Touch Screen GUI

Options

- ◆ End-of-Process (EOP) function.
- ◆ GEM/SECS II function (Software)
- ◆ Thermocouple for Chamber Temperature
- ◆ Vacuum Pump
- ◆ Table for AW-B3000

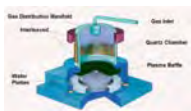
Plasma Asher Descum **ALLWIN21 CORP.**

Introduction

Allwin21 Corp. has been focusing on providing solutions and enhancements to plasma asher descum semiconductor process. These OEM asher descum semiconductor equipment have been used in production and R&D since 1990's. They have been Process-Proven. Allwin21 Corp. can customize these OEM systems with Allwin21's comparable integrated process control system with PC, solid 3-axis robotic wafer transfer system, and new critical components to achieve the goal of giving our customers a production edge.

Plasma Asher Descum Key Features

- ✦ Production-proven plasma Asher/Descum system.
- ✦ Frontside and backside isotropic removal.
- ✦ Consistent wafer-to-wafer process cycle repeatability.
- ✦ Can handle 50um thickness wafer.
- ✦ PC controller with Advanced Allwin21 Software.
- ✦ Endpoint detection (EOP) -Optional
- ✦ Pressure control with Throttle Valve.
- ✦ 15-inch Touch screen monitor GUI.
- ✦ EMO, Interlocks, and Watchdog function.
- ✦ GEM/SECS II (optional).
- ✦ Small Footprint
- ✦ Made in U.S.A.



Production-proven Reactor

Applications

- ▶ GaAs, InP, GaN, SiC wafer Strip (Mainly)
- ▶ GaAs, InP, GaN, SiC wafer Descum (Mainly)
- ▶ Thin Film Head Resist Cleaning
- ▶ Opto-Electronic Devices Cleaning
- ▶ Dry Descum, Clean
- ▶ Photoresist Stripping
- ▶ Controlled Resist Removal

Plasma Asher Descum Software Key Features

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



AW-105R



AW-1008



AW-B3000

Models	Plasma Power	Wafer Size	Wafer Load	Process Type	Uniformity
Matrix 105R	13.56MHz RF	2",3",4",5",6"	Automatic,	Single wafer	3%~10%
AW-1008R	2.45GHz Microwave	3",4",5",6"	Automatic	Single wafer	13%~20%
AW-B3000	13.56MHz RF	2",3",4",5",6",8"	Manual	Barrel, Batch	25%~35%



Plasma Asher Descum ALLWIN21 CORP.



AW-105R

RFQ for Fast Free Quotation

for compound materials

Introduction

The AW-105R single-wafer photoresist asher and descum is an automated tool designed as a flexible 13.56MHz RF Parallel Plate downstream plasma photoresist removal and descum system for high-volume wafer fabrication. The AW-105R is in direct response to manufacturer's concerns for wafer uniformity, uptime, reliability and production-proven technology.

AW-105R Specifications

- ❖ Wafer Size: Up to 6.25 inch.
- ❖ Temperature: 60-250°C (±2°C)
- ❖ Gas Lines: Up to three gas lines with MFCs.
Typical MFC configuration: 5 SLM O₂ and 500 SCCM N₂.
- ❖ Asher Rate: 0.5-1.5 um/min at 200 to 250 °C, bulk strip; 600 A/min at 100 °C, Descum
- ❖ Uniformity: <±8% (Max-Min) Strip; <±5% (Max-Min) Descum
- ❖ Particulate: <0.05 /cm² (0.3um or greater)
- ❖ Damage: CV:<0.1V from control; Mobile Ion:<1-2 E10 ; Vt :0% total shift on 98%of points tested no shift >5%
- ❖ Selectivity: >1000:1
- ❖ MTBF/MTTA/MTTR: 450 Hours/100 Hours/3.5 Hours or Better.
- ❖ 95% uptime

AW-105R Facilities

- ▶ Plumbed Process Gases: O₂ N₂
- ▶ Cooling water: 1GPM house circulating supply @ <23 ± 2°C
- ▶ Facility Exhaust: 100 CFM @ 1" static pressure
- ▶ Vacuum supply for Robot: 11.8"Hg(-5.8psi) / 0.1CFM airflow
- ▶ Power: 190-240VAC, single phase, 30A, 50/60Hz (NEMA L-6-30P plug supplied)

AW-105R Configuration

- Main Frame with Circuit Breakers, Solenoid Valves
- Pentium Class PC with AW Software
- Keyboard, Mouse, USB SW backup, and Cables
- Chuck /w Heat, Pump Ring ,Lift Pins
 - ① 2-4 inch; ② 2-6 inch; ③ 4-6 inch; ④ 6.125 inch; ⑤ 6.25 inch
- Center Aligner and Cassette Station
 - ① Two Dimensions ② Four Dimensions
- Anodized Reactor with Door
- Chamber Base plate with water sensor
- Base Plate and Reactor Ceramic Ring
- Base Plate and Chuck Ceramic Ring
- Upper and Lower Electrodes
- Quartz showerhead & Diffusion Disk
- Main Control and Distribution PCBs
- 3-axis Integrated Robust Solid Robot
- RF Matching Network with PCBs
- 13.56MHz RF Generator
 - ① 300W ② 600W
- MFC /w In-line Filter and Solenoid Isolation Valve
 - ① One MFC; ② Two MFCs; ③ Three MFCs
- AC/DC Box with Temperature Controller
- MKS Baratron with Isolation Valve
- Lamp Tower Alarm w/ Buzzer
- Throttle Valve
- Main Vacuum Valve
- Front EMO, Interlocks
- 15-inch Touch Screen GUI



Integrated Robust Solid Robot

Options

- ◆ End-of-Process (EOP)
- ◆ GEM/SECS II (Software)
- ◆ Vacuum Pump
- ◆ Chiller for Chamber Base Plate

Tel.: 408-778-7788

E-mail: sales@allwin21.com

Website: www.allwin21.com

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

Address:220 Cochrane Circle, Morgan Hill,CA95037, U.S.A.



AW-1008

RFQ for Fast Free Quotation

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 Specifications

- ❖ Wafer Size: 3, 4, 5, 6 inch Capability. Multiple wafer size without hardware charge.
 - ❖ Temperature: 150-350 °C (± 2 °C) capability
 - ❖ Gas Lines: Up to four gas lines with MFCs. Popular MFC Range: 5-10 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 (0.3um or greater)
 - ❖ Damage: CV: <0.1 V CV-shift for 250A gate oxide
 - ❖ Selectivity: >1000:1
 - ❖ MTBF/MTTA/MTTR: 450 Hours/100 Hours/3.5 Hours or Better. 95%uptime
- *Contact Allwin21 sales for other applications and specifications

AW-1008 Facilities

- ▶ Vacuum Chamber Pump = 165 cfm
- ▶ Cabinet Exhaust = >250 cfm
- ▶ Plumbed Gases: O₂, N₂
- ▶ Electrical Requirements: 208VAC, 3-Phase, 60Hz, 30Amps
- ▶ Weight = 350lbs.

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
 - ① 3-4 inch; ② 4-6 inch; ③ 5inch; ④ 6 inch; ⑤ Others Fixed
- ❖ Cassette Station
 - ① Two Cassette Stations; ② 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
- ❖ H1-7X10.5 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
 - ① One MFC; ② Two MFCs; ③ Three MFCs; ④ Four MFCs
- ❖ AC Box and Lamp Control PCB for Close Loop Temperature Control (CLTC)
- ❖ Main Vacuum Valves. Two, one for Fast and on for slow pump down



Integrated Robust Solid Robot

Options

- ◆ End-of-Process (EOP)
- ◆ GEM/SECS II (Software)
- ◆ Vacuum Pump
- ◆ 1.25KW power



Plasma Asher Descum

ALLWIN21 CORP.



RFQ for Fast Free Quotation

AW-B3000 Barrel Batch

Introduction

The AW-B3000 batch/barrel photoresist asher is a manual load tool designed as a flexible 13.56 MHz RF plasma photoresist removal system for high-volume wafer fabrication. The AW-B3000 is in direct response to manufacturer's concerns for Uptime, Reliability, Production-Proven technology. and low cost of ownership.

AW-B3000 Specifications

- ❖ Wafer Size: Sample to 200mm Capability. Multiple wafer size without hardware change
- ❖ High Throughput: Up to 75 WPH. Process Dependent.
- ❖ Temperature: Only TC Option can be used for N2 plasma to heat the substrates up to 170°C.
- ❖ Gas Lines: Up to 5 isolated gas lines with MFCs.
- ❖ Asher Rate: 0-0.1u/min. positive PR; >0.2u/min. negative PR. Slower if Faraday Cage is used
- ❖ Uniformity: Up to 25%. Much lower with Faraday Cage.
- ❖ Particulate: <0.05 /cm² (0.3um or greater)
- ❖ Damage: Low damage with Faraday Cage.
- ❖ Selectivity: >1000:1
- ❖ MTBF/MTTA/MTTR: 450 Hours/100 Hours/3.5 Hours or Better.
- ❖ 95% uptime

AW-B3000 Facilities

- ▶ Vacuum Chamber Pump = 165 cfm
- ▶ Cabinet Exhaust = >250 cfm
- ▶ Plumbed Gases: O₂, N₂
- ▶ Electrical Requirements: 208VAC, 3-Phase, 60Hz, 30Amps
- ▶ Weight = 180lbs.

AW-B3000 Configuration

- ❖ Main Body with wires
- ❖ Control Box
- ❖ Pentium Class PC with AW Software
- ❖ Keyboard, Mouse, USB with SW backup and Cables
- ❖ Main Control PCB and DC
- ❖ Transformer, Circuit Breaker, Contactor
- ❖ 1-5 Isolated Gas Lines w/ Pneumatic Valve and MFC
- ❖ Purge has manual regulator in controller box to control speed.
- ❖ Quartz Chamber: Dia 12" x Depth 23";
- ❖ RF Match Network Integrated in the Main Body of tool. Chamber
- ❖ Door with quartz plate in the Main Body.
- ❖ Gas and vacuum lines Connections in the Main Body 13.56MHz RF Generator (Air-Cooled)
① 300W; ② 600W; ③ 1000W; ④ 1200W
- ❖ Lamp tower alarm with buzzer
- ❖ Main Vacuum Valve
- ❖ MKS Baratron
- ❖ Throttle Valve
- ❖ Front EMO, Interlocks
- ❖ 15-inch Touch Screen GUI

Options

- ◆ End-of-Process (EOP) function.
- ◆ GEM/SECS II function (Software)
- ◆ Thermocouple for Chamber Temperature
- ◆ Vacuum Pump
- ◆ Table for AW-B3000



RFQ for Fast Free Quotation

AWgage-150/200

Introduction

AWgage-150/200 measure sheet resistance in ohms per square or milliohms per square. If specific resistivity is known, the thickness of the deposited film layer can be computed from the sheet resistance. The choice of measurement data is easily get in the software. AWgage-150 can accommodate 150mm (6") wafers as well as the standard 2", 3", 4", 5" wafers without any hardware change. AWgage-200 can accommodate 200mm (8") wafers as well as the standard 5", 6" wafers without any hardware change.

AWgage-150/200 Key Features

- ✦ 30 years proven Eddy Sheet Resistance Measurement technology.
- ✦ Non-contact Sheet Resistance Measurement.
- ✦ 1mΩ/square to 19,990Ω/square sheet resistance measurement range.
- ✦ 100Å to 270kÅ Metal Film Thickness range.
- ✦ Touch Screen Monitor GUI and PC w/ Advanced Allwin21 software.
- ✦ Wafer carriage travel programmed with internal encoder step motor , without encoder disk.
- ✦ Consistent wafer-to-wafer process cycle repeatability.
- ✦ Small footprint and energy efficient.
- ✦ Made in U.S.A.

AWgage-150/200 Configuration

- | | |
|-----------------------------------|---|
| ✦ Main Frame | ✦ Two Extra DB9 Ports |
| ✦ Wafer Carriage (2"-6" or 5"-8") | ✦ 15-inch touch screen GUI |
| ✦ Measurement Head | ✦ Allwin21 Corp proprietary software package. |
| ✦ RF Tank Circuit board | ✦ Mouse & keyboard . |
| ✦ Pentium® class computer board | ✦ USB Flash Drive with AW |
| ✦ Main control board | ✦ Software backup. |
| ✦ Motor control board. | ✦ CE Certification (Optional) |
| ✦ Two USB Ports | |

AWgage-150/200 Specifications

- Perform odd number of site tests: 1 to 9 points
- Highly Conductive or Metal Sheet Resistance
1 to 1,999 mΩ/square
1 to 1,999 Ω/square
Or 10 to 19,990 Ω/square
- Highly Conductive or Metal Film Thickness
Minimum: 100 Ångström
Maximum: Proportional to resistivity. Maximum for a resistivity of 2.7 μΩ-cm is 270 k Å (27 μm)
- Sheet Resistance Repeatability
Total repeatability is the standard deviation (σ) percent of mean value(X), 1 count.

Range	s/X (±%)
1 to 100 mΩ/sq; Ω/sq	1
100 to 500 ΩW/sq; Ω/sq	2
500 to 1000 mΩ/sq; Ω/sq	4
1000 to 1,999 mΩ/sq; Ω/sq	6
1,999 to 5,000 Ω/sq	Consult Factory
5000 to 10,000 Ω/sq	Consult Factory
10,000 to 15,000 Ω/sq	Consult Factory



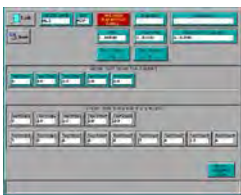
Sheet Resistance Measurement

ALLWIN21 CORP.

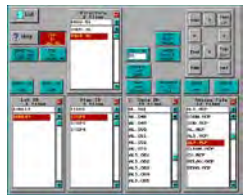
AWgage-150/200 Software Key Features

The AWgage-150/200 system is controlled by menu commands from the control software. This software allows a great deal of flexibility and control of the Allwin21 system. The AWgage-150/200 control software features the following:

- Automated calibration of all subsystems from within the control software. This allows faster and easier calibration, leading to enhanced process results. The AWgage allows calibration of the ohm and milliohm measurements within the software for maximum performance and accuracy. This provides a much easier and faster method to calibrate the instrument than by adjusting pots on the back of the traditional Sheet Resistance Measurement Instrument.
- The SOFTWARE can compensate for where the flat is on the carriage to locate the test points.
- It features a recipe editor to create and edit recipes to fully automate the processing of wafers on the Allwin21 system.
- Validation of the recipe so improper points 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 screens which allow an automatic cycle to be easily defined and executed.
- Troubleshooting features which allow engineers and service personnel to activate individual subassemblies and functions.



Recipe Editor



Start Test



Testing Data

AWgage-150 Facilities Requirements

- Instrument needs to be on a hard/solid surface.
- The room temperature should be close to 23° C for the greatest measurement accuracy.
- Avoid environments with high concentrations of particulates, especially abrasives such as glass and silicon dust.
- Power : 50/60Hz, Single Phase, 110/220VAC, 2 Amps
- Weight and Dimensions: 44 LBs ; 11 inch (W) X 18 inch (D) X 22 inch (H)

RFQ for Fast Free Quotation

AWgage-150/200 Measurement Processes

- Turn on the power to the AWgage. Allow 30 minutes for warming up.
- Select an existing recipe or create a new recipe.
- When The carriage is in the loading position, place the wafer on the carriage between the four locator blocks. The wafer will be centered over the circular platform that rotates the wafer.
- Manual Mode: Press the MAN/AUTO button, so the LED is off. Momentarily press the START/STANDBY button. The carriage will move the wafer under the measurement head to the first point in the measurement sequence. For multi-point measurements--press START/STANDBY once for each point in the measurement sequence. The wafer will be advanced to the next point. When the measurement sequence is complete the carriage will move to the right until the wafer is out from under the measurement head in the loading/unloading position. The wafer can be removed from the carriage after it has reached this position.
- Automatic Mode: Press the MAN/AUTO button on the AWgage control panel until the LED comes on. Press the START/STANDBY button. The entire measurement sequence will be performed without further operator intervention. When the sequence is complete, the wafer will be moved to the unloading position.
- PC Screen Mode: Press the "Start Test" button at the Process Screens (for Engineer or Production) to test the wafer that is on the wafer carriage, using the selected recipe. The entire measurement sequence will be performed without further operator intervention. When the sequence is complete, the wafer will be moved to the unloading position.
- All data measurements are recorded in the computer for later retrieval, inspection and, if desired, a print-out of the measured points can be printed on an external printer.





Upgrade Kits ALLWIN21 CORP.



Upgrade Kits

RFQ Form-Fast Free Quote

Introduction

We have been doing upgrade for many production proven equipment, such as Perkin-Elmer 2400, Perkin-Elmer 4400, Perkin-Elmer 4410, Perkin-Elmer 4450, Perkin-Elmer 4480, Matrix 105, Matrix 106, Matrix 303, Matrix 303, Matrix 403, Matrix 205, Matrix 101, Matrix 102, Matrix 103, Matrix 104, Tegal 901e, Tegal 903e, Lam Research LAM AutoEtch 490, Lam AutoEtch 590, Lam AutoEtch 690, Branson/IPC 2000, Branson IPC 3000, Branson/IPC 4000, Gasonics Aura 3000, Gasonics Aura 3010, Gasonics L3510, Gasonics Aura 1000, Gasonics AE 2001, AG Associates Heatpulse 610, AG Associates Heatpulse 410, AG Associates Minipulse 310, AG Associates Heatpulse 210. The Upgrade Kits include an advanced Allwin21 AW System Control with touch screen Graphic User Interface (GUI) and a new PC with Allwin21 real-time control Software. Most upgrade kits include new main control board, new wafer heating functions with Allwin21's Advanced RTP technology, fixed cassette station instead of the original elevator, and robust 3-Axis integrated robotic wafer handling (instead of the original). The kits are easy to incorporate (plug-and-play) into the original systems. Onsite installation available for most of kits as well (so all facilities connections can stay in place). Each upgrade kit will enhance the entire systems' operation and allow for far better Process Repeatability, Stability, and Uniformity.

Software Key Features

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

Why Upgrade Used Process Equipment

- 1) Low cost solution of obsolete components and parts.
- 2) Increase stability of the original system.
- 3) Add network function (GEM/SECS II) for Fab/Lab integration
- 4) PC control for data storage.
- 5) Friendly GUI operation.
- 6) More precise control.
- 7) Better performance (Repeatability, Uniformity, Stability)
- 8) Easier maintenance, calibration and troubleshooting.



Main Upgrade Kits

Equipment Model	Image	Upgrade Kits	
		New PC Controller with AW Software	Integrated Solid Robotic Wafer transfer
Heatpulse® 210		Yes At Allwin21 Facility only	N/A
Heatpulse® 410			
Heatpulse® 610			
Perkin-Elmer® 4XXX		Yes	N/A
Perkin-Elmer® 24XX MRC 6XX 9XX			
Matrix® 10X		Yes	
Matrix® 20X			
Matrix® 30X			
Matrix® 40X			
Tegal® 901e		Yes	
Tegal® 903e			
Gasonics® Aura 1000		Yes	 At Allwin21 Facility only
Gasonics® AE 2001			
Gasonics® Aura 3010 3000/2000LL/AE 2000LL		Yes	 Only for Gasonics 3010/3000 / L3510 / 3500
Gasonics® L3510 /L3500			
Lam AutoEtch® X90 Lam Rainbow 44XX		Yes	N/A
Branson/IPC 3000 2000 4000		Yes	N/A

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