MEI
Wet Processing
Built on Commitment

Evolution
Fully Automated Linear Wet Processing Systems

Dry-to-Dry, High Throughput Wet Processing

The MEI Evolution series wet processing systems are in-line, configurable, automated, modular, linear, batch immersion systems made for high throughput at low cost. They are designed for dry-in and dry-out batch wafer processing of multiple lots of wafers from 100 to 300mm.

Full Auto High Performance

- FEOL, BEOL
- Multiple I/O options (SMIF, WTU, Manual)
- Class 1 mini-environment
- Superior air management, HEPA, ULPA, minimum exhaust

Versatile

- Multiple etch, strip and clean applications
- Easy recipe configuration
- Chemical spiking dosing and fill options
- Acid and solvent models
- 2–5 process tanks
- Integrated Genesis X Marangoni or Vapor Dry IPA dryer

Performance and Yield with IDX Flexware

- Flexible
- Configurable
- Precise
- SECS/GEM compliant
- Touch-screen interface
- Simultaneous multiple lots and recipes
- Barcode and RFID lot ID support

Designed for: Productivity ■ Safety ■ Reliability ■ Configurability ■ Low Cost ■ Maintenance Friendly

Applications

Fluid Jet™ Metal Lift-Off

Tru Etch Metal Etch

Si Etch Silicon Etch

- FEOL
- BEOL
- Au, Al, Ti & Cu Apps
- KOH Applications
- Prediffusion Clean
- Gate Clean
- Cobalt Salicide
- HF Last
- Post CMP Clean
- Nitride ONO
- Solvent Resist Strip
- Side Wall Polymer Clean
- Wafer Reclaim
- PreEpi Clean
- Strain Relief Etch

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Custom Designed

- MEI partnership design process
- MEI application solutions
- Custom tank, material and configuration
- Solid works modeling

Flow Modeling

- Fume capture
- Minimal exhaust

Chemical Spiking, Dosing and Bulk Fill Options

- Bulk fill via system request
- In-tank mixing
- Concentration monitors and controls
- Metering pump reservoir dispense
- Spiking flow rate monitoring

Genesis X MARANGONI DRYER

Genesis MARANGONI DRYER by MEI

Vapor Dry IPA Displacement

Full Auto I/O Management

- SMIF loading
  - SMIF load ports
  - WTU
- Increase throughput with lot and carrier buffer queue
- Optional active queue (up to eight lots simultaneously)
- Linear robot
- Active gripper, cassette detection
- Product size driven custom end effector
- "Off the shelf" components
- Field proven
- Notch alignment (in and out)

Options

- Genesis, Genesis X Marangoni dryer or IPA vapor dryer
- Etch, strip and clean systems from 100–300mm
- SMIF and open cassette options, 25 or 50 wafer lot
- Modular configuration fully enclosed and exhausted
- Multiple tank options (PVDF, stainless, quartz, Halar and more)
- Manual Loading (open cassette)

IDX Flexware
PROCESS CONTROL SOFTWARE by MEI

Superior Process Control

- SECS/GEM compliant
- Recipe editor
- Advanced process controls
- Unlimited user/permission levels
- Easy-to-use, touch-screen interface
- Error logging and data graphing
- Barcode reader compatibility
- Remote access compatible
- I/O monitor displays status

Analog Control

Analog sensing enables software to control:

- In-tank blending
- Blending ratio creation
- Control DI water inject
- Control temperature
- Recirculation flow
- Spiking volume

Integrated Vapor Dryer

Genesis X Marangoni Dryer

Linear Robot

EVOLUTION: Automated Wet Processing Systems

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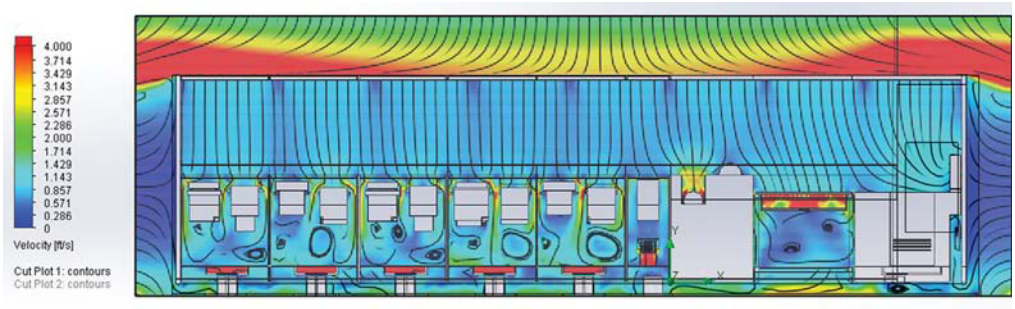
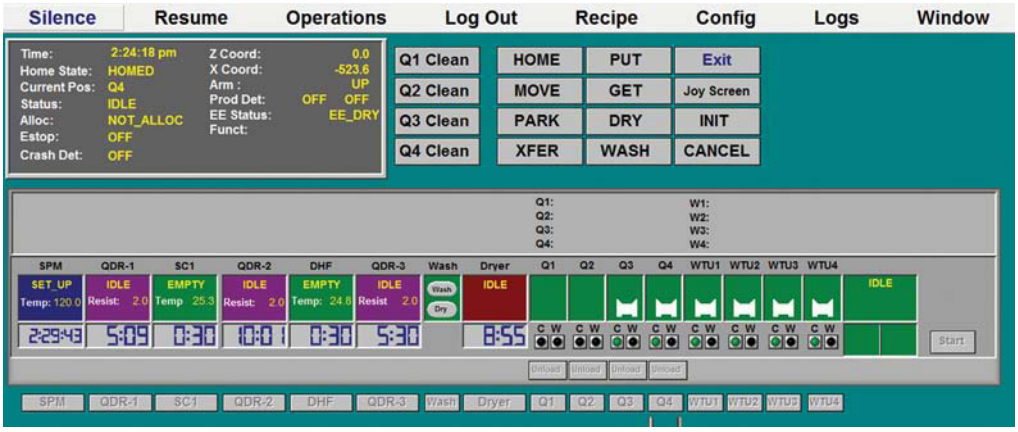
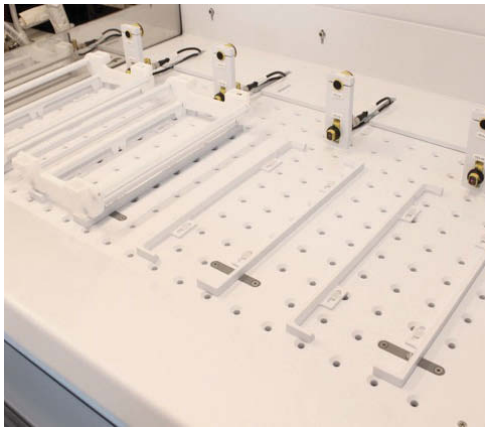


Modeled Air and Fluid Flow for Optimization



IDX Multiple Processes Similtaneously



Active Queuing Option

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Evolution Specifications

General

System type:	Evolution Linear Wet Process System
Shell style:	Back Access Automated Wet System with exoskeleton enclosure.
Exhaust:	All configurations airflow modeled for lowest exhaust with complete fume capture.
Access doors:	Clear PVC, hinged with tool-required access, plumbing/wet area doors lift-out style to prevent leakage.
Transfer robot:	MEI-made 2-axis, passive or active gripper design mounted in front of the process area, smooth multi-axis moves with programmable agitation. Robot incorporates ride along detector and output position sensor for confirmation of proper wafer handling.
Control system:	MEI IDX Automation Software running on a standard PC host with Windows 7 Pro providing easy-to-use, flexible and configurable controls.
Safety interlocks:	Front/back EMO buttons, process and plumbing cabinet plenum float switches, exhaust photohelic, electrical compartment N2 purge, tank liquid level heater interlocks, door position sensor interlock on operator access to load areas.
Electrical protection:	Main power disconnect with individual branch circuit protection devices.
Status notification:	Audible/visual alarm.
DIW manifold:	Loop style, Teflon, minimal dead-legs.
Documentation:	Operation manual (hard copy and CD ROM versions with hypertext links), all OEM equipment cut-sheets, electrical and plumbing schematics (hard copy and CD ROM versions).
Process enclosure:	Simplified design ready to assemble and install in a few hours.

Facility Requirements

Facilities:	Bottom-back mounted plenum drains, top or back exhaust connections available, low exhaust requirements; shared facilities and electronics. UL compliant electrical components.

Typical Facility Table (Will change to specifications)

Description	Connection	Requirement
Electrical Connection	5-Wire	208V 60A (min) 3P
Main Exhaust	8" Duct	Module Specific
Plumbing Exhaust	4" Duct	Application Specific
CDA	1/2" Swagelok	80–100 PSI @ 25 SCFM
N2	3/8" Swagelok	60–80 PSI @ 7–9 SCFM
DI Water Supply	1" Flaretek	14–18 GPM @ 45 PSI
DI Water Return	1/2" Flaretek	Fixed Orifice 1 Lpm
Chemical Bulkfill	3/4" X 1/2" Flaretek Dual Containment	N/A
Chemical Tank Drain	3/4" Flaretek	N/A
Process/Back Plenum Drain	1-1/2" Male Pipe	N/A
QDR Plenum Drain	1-1/2" Male Pipe	N/A
Fire System Connection	1/2" Male Pipe	N/A

Designed for Reliability

- Limited PM requirements
- Field proven reliability
- Semi-S2 compliance
- Durable "off the shelf" components
- Nitogen purged electrical compartments
- Designed to provide MTBF >1,500 hours – E1092

Low Cost of Ownership

- Extended tank life
- Improved process control
- Reduced DI water useage
- Reduced chemistry usage
- Easy installation

Designed for Safety

- Semi-S2 third party inspection optional
- FM4910 material standard
- S8 compliant
- UL/NFPA79/NEC
- CE optional

MEI's Award Winning Service and Support

MEI Global Field Service Team

- Final test and verification
- Standard one year parts and labor warranty
- Two year optional warranty
- Full field service support, on-site warranty coverage
- On-site training provided