



Evolution

Fully Automated Linear Wet Processing Systems



Dry-to-Dry, High Throughput 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 300 mm. MEI Evolution systems are suitable for a wide variety of cleaning, etching and stripping applications, including all wafer types used in solar cell, IC, medical, MEMS manufacturing as well as parts cleaning applications. Configurability, up time, yield, maintainability and throughput are the hallmarks of an MEI wet processing system.

- **Tailored.** Systems to fit your process and fab design.
 - Process multiple lots and recipes simultaneously
 - Gravity spiking

- Fully enclosed, HEPA filtered environment
- **Production Ready.** Quality, ergonomics and safety are designed and built right in.
 - Easy to use and well controlled with MEI's IDX Automation Software (SECS/GEM compliant)
- **Precise.** MEI's advanced process controls provide closed loop monitoring/control using software recording.
- **Designed for Safety and Maintainability.**
 - Conforms to SEMI-S2 standard
- **Reliable.** With field-proven experience.
- **Supported.** MEI provides award winning service, installation and support.

MEI's Line of Wet Processing Systems

- **Evolution**
In-line, fully-automated, high throughput, wet processing systems
- **Revolution**
Rotary, automated, multiple-step, modular, wet processing systems
- **Advancer (and Advancer Gemini)**
Semi-automated, single-step, modular, wet processing systems
- **Achiever**
Manual wet benches, fume hoods and parts cleaning benches

MEI Products & Services

- Wet Process Systems
- Chemical Delivery & Handling Systems
- IDX Control Automation Software
- Used Semiconductor Systems Reconditioning
- Cleanroom Safety & Ergonomic Equipment
- Field Repair & Service

EVOLUTION: Automated Wet Processing Systems

Tailored Design & Custom Built

- Partnership Design Process—built to your process requirements from a wide array of options
- Solar option designed for low cost, automation and throughput
- Modular configuration fully enclosed and exhausted with optional positive pressure mini-environment
- Etch, strip and clean systems from 100–300 mm
- SECS/GEM interface options
- Controlled by MEI's IDX Automation Software with touchscreen interface, configurable, SECS/GEM compliant (see IDX datasheet)
- Multiple tank options (PVDF, stainless, quartz, Halar and more)
- Chemical spiking, DI reclaim, concentration monitoring, recirculation, filter, fill, agitation, flush, drain and temperature control options

Maintenance Friendly

- Thoughtful design includes easy access to all major component areas, and uses OEM off-the-shelf components
- MEI robots are designed and built in house for reliability, ease of maintenance and service using off-the-shelf components
- Robots slide out for service
- Easy access plumbing, separate pneumatics and electrical (front or rear)
- Semi-automated sequences for drain, flush, fill and setup
- Ability to manually control robot, on/off of individual valves, pumps and other devices
- Uses a standard PC running Windows software

Production Ready

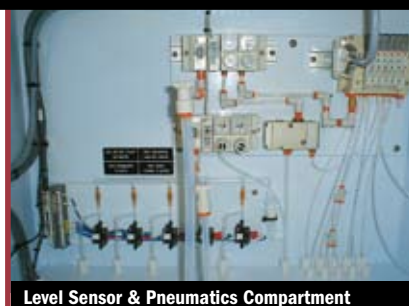
- Small footprint, high throughput and low cost of ownership
- Quality, ergonomics and safety built in
- Unlimited production recipes with easy editing
- SEMI-S2 and FM certified systems
- UL listed electrical components
- Pass-through channels allow efficient routing of electrical and pneumatic lines that are segregated from process area
- Unique shell design to prevent fume leaks; computer modeled exhaust flow, with separate exhaust controls for plumbing and plenum
- Interlocks with EPO buttons and exhaust pressure sensors
- Fully tested before shipping with DI water and to customer requirements
- Installation and start up included

Reliability

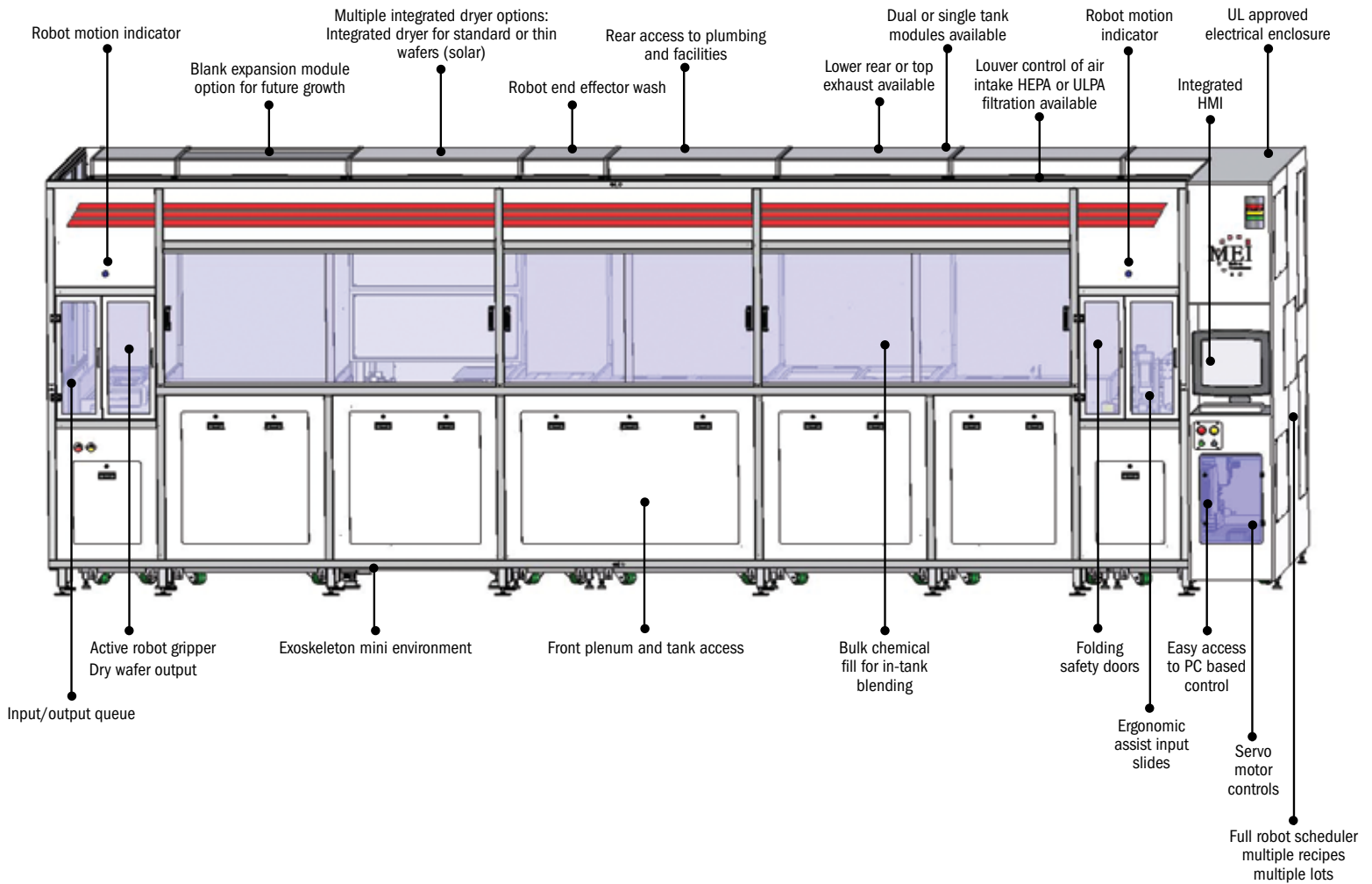
- Reliable, field-proven robotics and controls
- Nitrogen purged electrical compartments
- Designed to provide MTBF > 1,500 hours - E1092
- Uptime > 95 percent
- Maintenance friendly
- Durable OEM components

World-Class Service & Support

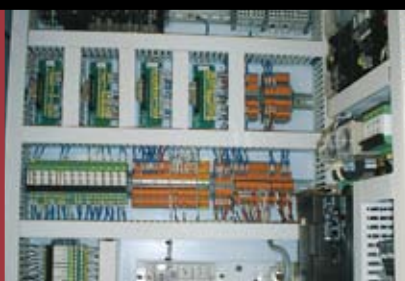
- Standard one-year parts and labor warranty
- Two-year optional warranty
- Full field service support and on-site warranty coverage
- Upgradable modular design



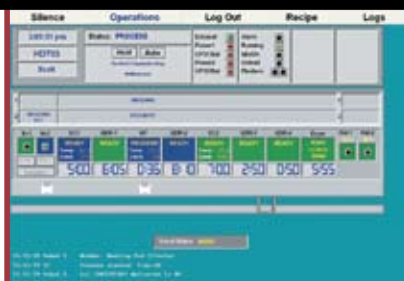
EVOLUTION: Automated Wet Processing Systems



877-858-3270



Electrical Compartment—UL Listed



IDX Automation Software for Superior Control



Robot Active Gripper



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Evolution Specifications

General

System type: Evolution Linear Wet Process System
 Shell style: Rear Access Automated Wet System with exoskeleton enclosure for HEPA filtration.
 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 XP® providing easy-to-use, flexible and configurable controls.
 Safety interlocks: Front/rear 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 shortest time possible.

Options

Process cassette: Customer specified, with queue-pass on cassette options.
 Load method: Manual load to/from input and output queues using pull-out slides (or as specified). SMIF-Pod wafer transfer available.
 Fire suppression: Available upon request.
 Shell material: Choice of FM4910 (Halar, CPVC, PVDF), polypropylene or stainless steel.
 Bath options: Custom tank and process bath options include megasonic or ultrasonic bath, chemical spiking, recirculation, and filtration. Heater (including solid state), chiller and dryer options are also available.
 End effector: PVDF/PTFE, Halar or quartz.
 HEPA-filtration: To create positive pressure mini-environment.
Solar option: High throughput with multiple robots, 200 wafer carrier cassettes, 1,200 wafers per hour, extra wide tanks for multiple carriers, input and output scales for wafer thinning metrics, and six inputs and outputs with automated staging.

Facility Requirements

Facilities: Bottom-rear mounted plenum drains, top or rear 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 3P
Main exhaust	8" duct	TBD
Plumbing exhaust	4" duct	TBD
CDA	1/2" Swagelok	80-100 PSI @ 25 SCFM
N2	3/8" Swagelok	60-80 PSI @ 7-9 ACFM
DI water supply	1" Flaretek	14-18 GPM @ 45 PSI
DI water return	1/2" Flaretek	14-18 GPM @ 45 PSI
Solvent bulkfill	3/4" x 1/2" Flaretek dual containment	N/A
Solvent tank drain	3/4" Flaretek	N/A
Process/rear 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