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
- 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

www.meillc.com □ 1-541-917-3626
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

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)

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
IDX Multiple Processes Simultaneously

Integrated Touch-screen HMI
with IDX Flexware Software

Multiple Ceiling Options
HEPA, ULPA or Louvered Panels

Marangoni or VaporDry
Integrated Dryer Options

Class 1 Mini Environment

Dual or Single Tank Process Modules Available

Low-profile FFUs

Integrated SMIF Loading
or Manual Loading Options

Optional Active Queue
Wafer Transfer Units

FM4910 Compliant Materials

Flush-mounted Semi-S2
EPO & Robot-Stop

Class 1 Mini Environment

Wide-access Doors

Access to Electrical & Monitoring

UL Listed Electrical Panels

Access to Plumbing & Facilities

Bulk Chemical Fill for In-tank Blending

Modeled Air and Fluid Flow for Optimization

Wet Processing
Built on Commitment

Active Queuing Option

IDX Multiple Processes Simultaneously
**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)

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

**Designed for Reliability**
- Limited PM requirements
- Field proven reliability
- Semi-S2 compliance
- Durable “off the shelf” components
- Nitrogen purged electrical compartments
- Designed to provide MTBF >1,500 hours – E1092

**Low Cost of Ownership**
- Extended tank life
- Improved process control
- Reduced DI water usage
- 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

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