



VertaCure XP

High-Volume Automated System for Polyimide Vacuum Cure



Chosen by the world's largest companies, the VertaCure XP is a production-proven platform that accommodates 200 mm/300 mm wafers with automated processing for up to two process modules inside an integrated Class 1 mini-environment. The VertaCure XP 1PM and 2PM systems accommodate 50 and 100 wafers respectively.

The Vacuum Cure Advantage

- 3.5 hours vs. 8+ hours for atmospheric
- Laminar flow reduces/eliminates particles
- More complete cure (5x less outgassing)
- Less film stress and low wafer warpage
- 1.6x to 2x less power and N₂ consumption
- Much lower capital cost, 2-3x lower CoO

COMMON APPLICATIONS

- Polyimide, BCB and PBO cure
- Low temp polymer cure
- Copper anneal
- Wafer to wafer bonding anneal

Contact Us: We offer process demonstrations. If you would like to submit samples, please call us. We can run your samples and provide a detailed process report.

Yield Engineering Systems, Inc.

Call: **1-510-954-6889** (worldwide) or **1-888-YES-3637** (US toll free)

www.yieldengineering.com



VertaCure XP

300 MM SYSTEM SPECIFICATIONS

| | DESCRIPTION | SPECIFICATION |
|--|------------------------------|--|
| SYSTEM / PROCESS | Environment Cleanliness | Class 1 (ISO 3) |
| | EFEM Cleanliness | Class 1 (ISO 3) |
| | Max Temp | 450°C |
| | WiW Temp Uniformity | ≥ 250°C ± 2.5°C at dwell after temperature stabilization ≤ 250°C ± 1.5°C at dwell after temperature stabilization |
| | WtW Temp Uniformity | ± 2.5°C at dwell after temperature stabilization |
| | Ramp-rate | Maximum 8.0°C/min from 150°C to 350°C (slope) |
| | Ramp-down | Maximum 4.0°C/min from 350°C to 150°C (slope) |
| | Up-time | ≥ 95% |
| | MTRR | ≤ 4 hours |
| | Warpage | ≤ 3 mm one side |
| | Process Pressure | Sub-atmospheric and atmospheric pressures |
| | Process Recipe | YES BKM recipe: one-step process |
| | System Footprint | 6.5 m ² (EFEM and one process module); 10.7 m ² (EFEM and two process modules) |
| | Wafer Size | 300 mm |
| HARDWARE | Load Port Quantity | 2 or 4 |
| | Process Gas Type | N ₂ gas (preheated) - Process grade N ₂ preferred |
| | MFC | N ₂ calibrated MFC |
| | N ₂ Flow | 20 - 200 SLM |
| | Pump | Purchasable option (process-dependent) |
| | Standard Cooling | Forced air cooling outside of chamber |
| | Pump Exhaust | Scrubber-max flow 21 CFM (provided by customer) |
| | Aligner | Purchasable option |
| | Safety Compliance | SEMI S2 and S8, CE and NFPA79 compliance |
| | Chamber Material | Stainless steel chamber 316L |
| | Process Capability | One process module for 50 wafers, Two process modules for 100 wafers |
| | O ₂ Concentration | <10 ppm |
| | Warranty | 12 months after acceptance |
| | SOFTWARE | SEMI Equipment Communication Standard 2 Message Content (SECS II) |
| Generic Model for Communications and Control of SEMI Equipment (GEM) | | SEMI E30 |
| High-Speed SECS Message Services Generic Services (HSMS) | | SEMI E37 |
| High-Speed SECS Message Services Single-Session Mode (HSMS-SS) | | SEMI E37.1 |
| Standard for Carrier Management (CMS) | | SEMI E87 |
| Specification for Enhanced Carrier Handoff Parallel I/O Interface | | SEMI E84 |
| Specification for Substrate Tracking (STS) | | SEMI E90 |
| Specification for Process Job Management (PJM) | | SEMI E40 |
| Specification for Control Job Management (CJM) | | SEMI E94 |
| Operating System | | Windows 10 |

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200/300 MM BRIDGE SYSTEM SPECIFICATIONS

| | DESCRIPTION | SPECIFICATION |
|------------------------------|--|--|
| SYSTEM / PROCESS | Environment Cleanliness | Class 1 (ISO 3) |
| | EFEM Cleanliness | Class 1 (ISO 3) |
| | Max Temp | 450°C |
| | WiW Temp Uniformity | 200 mm: ± 2.0°C at dwell after temperature stabilization 300 mm: ± 3.0°C at dwell after temperature stabilization |
| | WtW Temp Uniformity | ± 2.5°C at dwell after temperature stabilization |
| | Ramp-rate | Maximum 4.0°C/min from 100°C to 350°C (slope) |
| | Ramp-down | Maximum 3.0°C/min from 350°C to 100°C (slope) |
| | Up-time | ≥ 95% |
| | MTRR | ≤ 4 hours |
| | Warpage | ≤ 3 mm one side |
| | Process Pressure | Sub-atmospheric and atmospheric pressures |
| | Process Recipe | YES BKM recipe: one-step process |
| | System Footprint | 6.5 m ² (EFEM and one process module); 10.7 m ² (EFEM and two process modules) |
| | HARDWARE | Wafer Size |
| Load Port Quantity | | 2 or 4 |
| Process Gas Type | | N ₂ gas (preheated) - Process grade N ₂ preferred |
| MFC | | N ₂ calibrated MFC |
| N ₂ Flow | | 50 - 200 SLM |
| Pump | | Purchasable option (process-dependent) |
| Standard Cooling | | Forced air cooling outside of chamber |
| Pump Exhaust | | Scrubber-max flow 21 CFM (provided by customer) |
| Aligner | | Purchasable option |
| Safety Compliance | | SEMI S2 and S8 compliance |
| Chamber Material | | Stainless steel chamber 316L |
| Process Capability | | One process module for 50 wafers, Two process modules for 100 wafers |
| O ₂ Concentration | | <10 ppm |
| Warranty | | 12 months after acceptance |
| SOFTWARE | SEMI Equipment Communication Standard 2 Message Content (SECS II) | SEMI E5 |
| | Generic Model for Communications and Control of SEMI Equipment (GEM) | SEMI E30 |
| | High-Speed SECS Message Services Generic Services (HSMS) | SEMI E37 |
| | High-Speed SECS Message Services Single-Session Mode (HSMS-SS) | SEMI E37.1 |
| | Standard for Carrier Management (CMS) | SEMI E87 |
| | Specification for Enhanced Carrier Handoff Parallel I/O Interface | SEMI E84 |
| | Specification for Substrate Tracking (STS) | SEMI E90 |
| | Specification for Process Job Management (PJM) | SEMI E40 |
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| | Operating System | Windows 10 |

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