



PROCESS SOLUTIONS, EQUIPMENT AND SERVICES

VertaCure™ XP

High-Volume Automated System
for Polyimide Vacuum Cure



Yield Engineering Systems, Inc.

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

yieldengineering.com



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.

SYSTEM / PROCESS

DESCRIPTION	SPECIFICATION	
Environment Cleanliness	Class 1 (ISO 3)	
EFEM Cleanliness	Class 1 (ISO 3)	
Max Temp	400°C	
WiW Temp Uniformity*	≥ 250°C: ± 2% at dwell after temperature stabilization ≤ 250°C: ± 3°C at dwell after temperature stabilization	* Using YES BKM recipe: one-step process and 375°C dwell
WtW Temp Uniformity*	± 2.5°C at dwell after temperature stabilization (3-zone control TC)	
Ramp-rate*	Maximum 3.5°C/min from 150 to 350°C (slope)	
Ramp-down*	Maximum 3.0°C/min from 350 to 150°C (slope)	
Up-time	≥ 95%	
MTTR	≤ 4 hours	
Warpage	≤ 3 mm one side	
Process Pressure	Sub-atmospheric and atmospheric pressures	
System Footprint	6.5 m ² (EFEM and one process module); 10.7 m ² (EFEM and two process modules)	

HARDWARE

Wafer Size	300 mm	
Load Port Quantity	2 or 4	
Process Gas Type	N ₂ gas (preheated)	
MFC	N ₂ calibrated MFC	
N ₂ Flow	20 – 250 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	1 process module for 50 wafers, 2 process modules for 100 wafers	
O ₂ Concentration	< 10 ppm within 20 minutes of process initiation	
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
Specification for Control Job Management (CJM)	SEMI E94
Operating System	Windows 10



VertaCure™ XP

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*	≤ 1% up to 400°C	* Using YES BKM recipe: one-step process and 375°C dwell
	WtW Temp Uniformity*	≤ 1% at dwell after temperature stabilization	
	Ramp-rate*	Maximum 4.0°C/min from 150°C to 350°C (slope)	
	Ramp-down*	Maximum 3.0°C/min from 350°C to 150°C (slope)	
	Up-time	≥ 95%	
	MTTR	≤ 4 hours	
	Warpage	≤ 3 mm one side	
	Process Pressure	Sub-atmospheric and atmospheric pressures	
	System Footprint	6.5 m ² (EFEM and one process module); 10.7 m ² (EFEM and two process modules)	
	Wafer Size	200/300 mm	
Load Port Quantity	2 or 4		
HARDWARE	Process Gas Type	N ₂ gas (preheated)	
	MFC	N ₂ calibrated MFC	
	N ₂ Flow	25–300 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	1 process module for 50 wafers, 2 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
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