



VertaCure™ PLP

Automated Panel-based Vacuum Curing System

The VertaCure™ PLP is an automated panel-based vacuum cure system for polyimide/PBO cure, D2P bonding, low-temperature cure and pre-metal degas. The VertaCure PLP brings the YES industry-leading vacuum cure technology to panels from 400 mm to 550 mm, and leverages the VertaCure family's proven vertical laminar flow for excellent particle performance. The VertaCure PLP's two process modules hold 12 panels each, with automated loading and unloading via EFEM. Active heating and cooling provide rapid ramp-up and ramp-down. For the precise control and uniformity that innovative panel-based applications require, the VertaCure PLP delivers superior process results.

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 panel warpage

COMMON APPLICATIONS

- Polyimide/PBO cure
- Hybrid and D2P bonding
- Pre-metal degas
- Low temp polymer cure

Yield Engineering Systems, Inc.

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

www.yieldengineering.com



VertaCure™ PLP SPECIFICATIONS

SYSTEM / PROCESS

DESCRIPTION		SPECIFICATION
Environment Cleanliness		Class 1 (ISO 3)
EFEM Cleanliness		Class 1 (ISO 3)
Max Temp		350°C
WiW Temp Uniformity		± 2% during dwell after stabilization (based on panel type)
WtW Temp Uniformity		± 1% at dwell after stabilization (based on panel type)
Glass/CCL	Ramp-rate	Maximum 8.0°C/min from 100°C to 300°C (slope)
	Ramp-down	Maximum 3.0°C/min from 300°C to 100°C (slope)
Up-time		≥ 90%
MTTR		≤ 8 hours
Warpage		≤ 3 mm one side
Process Pressure		Sub-atmospheric
Process Recipe		YES BKM recipe: one-step process Customer-specified recipe: multi-step process

HARDWARE

Panel Size		510 mm X 515 mm, 410 mm X 515 mm, and smaller
Load Port Quantity		2
Process Gas Type		N ₂ gas (preheated) – Process grade N ₂ preferred
MFC		N ₂ calibrated MFC (max 1000 SLM)
Pump		Option to be provided by customer (Busch COBRA DS 0080 or equivalent)
Standard Cooling		Forced air cooling outside of chamber
Pump Exhaust		Scrubber-max flow 94 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 12 panels, Two process modules for 24 panels
O ₂ Concentration		<20 ppm after multiple pump and purge
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) ¹		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 Substrate Tracking (STS)		SEMI E90
Specification for Process Job Management (PJM)		SEMI E40
Specification for Control Job Management (CJM)		SEMI E94
Operating System		Windows-based

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