Flex and Rigid-Flex Processing Workstation

FP3000

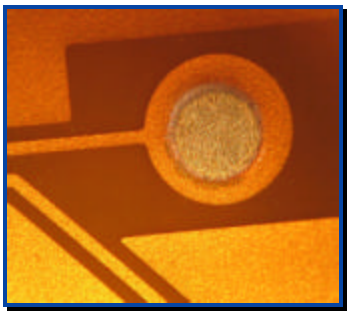
- Hybrid system for maximum versatility
- Integrated laser machining tool for high volume production
- APSä for superior process quality
- High performance motion stages for rapid, accurate panel processing
- Fully programmable job setup
- Windowsâ operator interface
- Optional roll-to-roll configuration
- Fast job changeover for prototype work

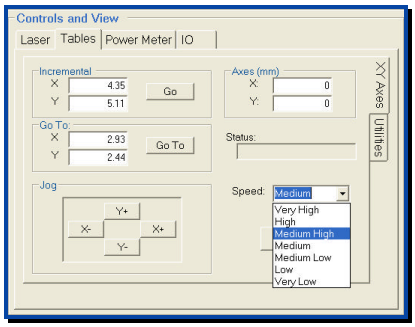
Two laser sources (CO_2 plus UV) for optimized machining in all common materials

- Polyimide
- copper
- Cover films (polyimide, acrylic, epoxies)
- Rigid-flex (FR4, aramid reinforcement)
- Solder resist

Configured for all applications

- Cutting, routing and circuit excising
- Skiving
- Via and through-hole drilling
- Cutting flying leads
- Defect repair





Process Photonics

Flex and Rigid-Flex Processing Workstation

The FP3000 is the ultimate processing workstation for flex, with high performance galvos for rapid point-to-point drilling and routing complex features. The CO_2 laser is appropriate for high speed machining (drilling, cutting and skiving) of polyimide, while the UV laser is able to machine copper and provide higher cut quality in polyimide. In addition, the system can process glass- and aramid-reinforced epoxies and resin-coated foil for rigid and rigid-flex applications. Consult the PPI applications note on processing of flexible printed circuits for more information.

FP3000 Specifications*

System Hardware

- High peak power RF-excited CO_2 laser and diode-pumped solid state UV laser (3W to 20W models)
- Configured with high performance galvanometer scanners for high speed feature skiving, cutting and via drilling
- Three drilling modes: hybrid, conformal mask CO_2, direct CO_2
- Galvanometer scanning field: 50 x50 mm (approx. 2" x 2")
- Maximum panel size: 533mm x 635mm (21"x25")
- Vacuum platen for panel hold-down
- Integrated power meter for accurate process control
- Precision linear motor XY stages with linear encoder feedback
- High performance motion and laser controller
- CDRH Class 1 enclosure
- Large process v iewing window
- Automated vision system for precision alignment, and scaling, offset, trapezoidal and rotation compensation
- Beam placement accuracy: 20µm (3 sigma) over panel process area
- Ultrastable steel weldment frame with resonance dampening
- Compliant with CE and North American regulations

- Easy integration with customer-supplied roll-to-roll equipment
- Optional automatic panel loader / unloader

Utilities

- Electrical: 208VAC, 3ϕ, 35A, 60Hz, or 400VAC, 3ϕ, 20A,50Hz
- Exhaust: ablation debris removal through 3" diameter duct
- Dimensions (HxWxD): 2356 x 1626 x 2192 mm (93"x64"x86")
- Weight: 2813 kg (6233 lbs) net; 3437 kg (7563 lbs) shipping
- Water: 8 l/min, or optional closed cycle water chiller

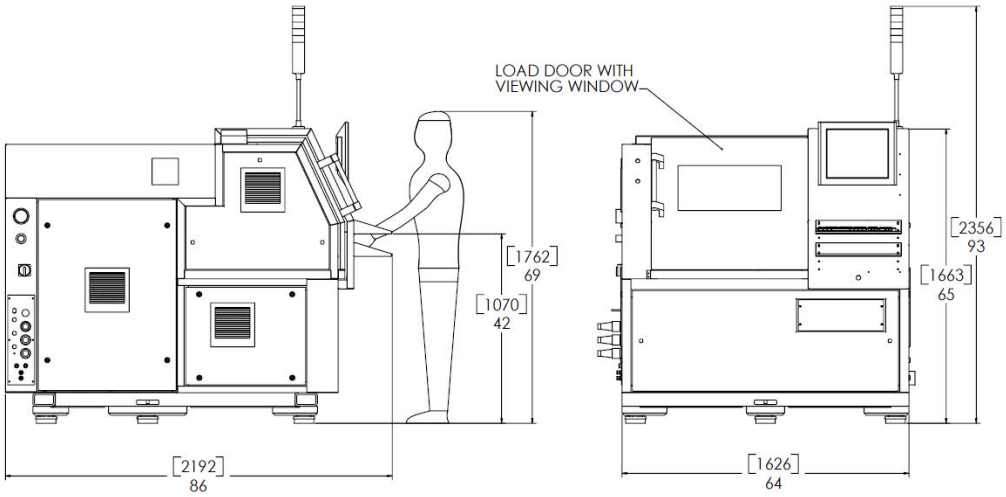
System Control

- WindowsXP® based user interface
- User friendly operator screens
- Compatible with industry standard file formats
- Rapid drill file conversion and path optimization utility
- Full system diagnostics
- Password protection for access to configuration, set-up, and operating screens
- System monitoring for process integrity
- Saving of multiple job parameter files
- Emergency stop and safety interlock circuits
- Optional network interface

Process Parameters

- Active Pulse Shaping™ for the CO_2 laser to optimize process quality
- Continuous line and area scanning, circuit excising or point to point processing
- Programmable laser pulse rate, pulse overlap, and scanning area
- Adjustable laser beam shape and energy density
- Automatically process stepped vias
- Via sizes from 40µm to 250µm
- Via roundness error: 10% maximum
- Drilling rates up to 500 blind vias/sec within galvo field
- Cutting rates up to 1000 mm/sec (CO_2), 100 mm/sec (UV)
- Consult PPI for processing rates in your material.

*specifications are subject to revision



Contact the team at Process Photonics for help with your process requirements.

PPI Systems Inc.
1051 Baxter Road
Ottawa, Ontario K2C 3P2
Canada
Tel: (613) 236-8359
Fax: (613) 248-4820
www.processphotonics.com

info@processphotonics.com

Process Photonics

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