

# Flex and Rigid-Flex Processing Workstation



## FP2000

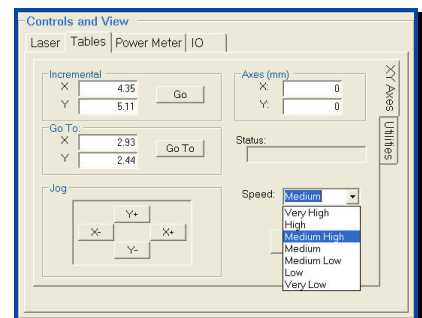
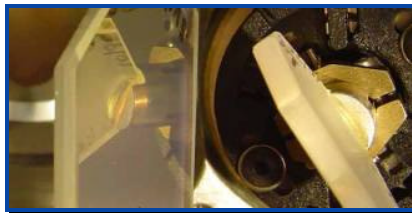
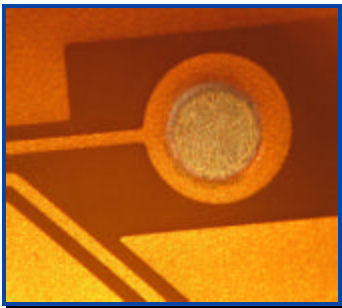
- Integrated laser machining tool for high volume production
- UV laser source for optimum process quality
- High performance motion stages for rapid, accurate panel processing
- Fully programmable job setup
- Windows® operator interface
- Optional roll-to-roll configuration
- Fast job changeover for prototype work

Diode-pumped solid state UV laser source 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



# Flex and Rigid-Flex Processing Workstation

The FP2000 is the ultimate processing workstation for flex, with high performance galvos for rapid point-to-point drilling and routing complex features. The UV laser is appropriate for high speed machining (drilling, cutting and skiving) of polyimide with excellent edge quality, as well as cutting copper traces for suspended leads. 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.

## FP2000 Specifications\*

### System Hardware

- High power UV laser (3W to 20W models available)
- Configured with high performance galvanometer scanners for high speed cutting, via drilling and feature skiving
- Small UV spot for highest precision
- 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 viewing window
- Automated vision system for precision alignment, and scaling, offset, trapezoidal and rotation compensation
- Beam placement accuracy: 15µm (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
- Optional second galvo scan head to increase throughput

### Utilities

- Electrical: 208VAC, 1φ, 25A, 60Hz, or 400VAC, 1φ, 15A, 50Hz
- Exhaust: ablation debris removal through 3" diameter duct
- Dimensions (HxWxD): 2356 x 1626 x 2192 mm (93"x64"x86")
- Weight: 2773 kg (6100 lbs) net; 3377 kg (7430 lbs) shipping

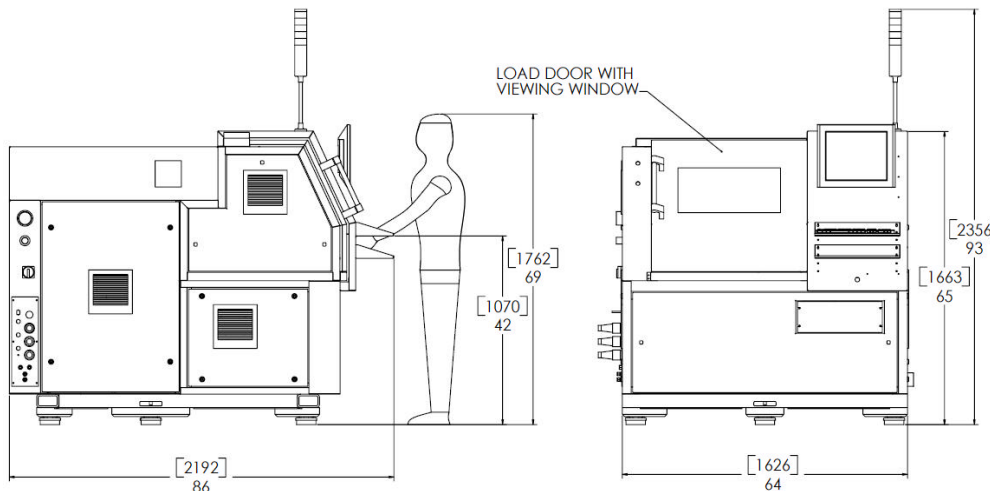
### System Control

- 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

- UV laser source minimizes heat affected zone and produces clean edges with minimum process residue
- 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 100 mm/sec in 50µm polyimide
- 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](http://www.processphotonics.com)

[info@processphotonics.com](mailto:info@processphotonics.com)

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