FlexLaser I

FlexLaser II Features and Specifications

FlexLaser II family of laser cutting systems features fully enclosed (Class 1) industrial laser cutting systems. They are designed with ultimate safety, accuracy, ease of operation, low maintenance and durability in mind. They are most suited for working in harsh environments and in many cases run 24 hours a day, seven days a week. In its standard configurations, **FlexLaser II** is offered in 24" x 36"and 36" x 48" formats with a wide range of laser power from 10 to 400 watts to economically fit any application. Customized formats and powers are also available.

FlexLaser II is a CO2 laser cutter system that will provide you with a tool that can cut a wide variety of materials:

- Any polymer - acrylic, polycarbonate, polyester, polyimide, Kapton, styrene, polyethylene etc.
- Fiber Products - fiberglass, carbon fiber, Kevlar, paper, different fabrics, wood and wood composites

Versatile Table

FlexLaser II is equipped with a versatile no-clean vane type vacuum table that allows the slag to directly fall into the table's waste compartment. This eliminates time-consuming slag removal after each cut. The table also has a honeycomb for more elaborate cuts.

Software

Most of laser-cutting systems on the market today are based on standard plotter / printer drivers. Their software modules, although vastly used, but have serious limitations in their capabilities and functionalities. In contrast, Automation Alternatives started from the ground up to develop a software system specifically designed for the laser cutting industry. **FlexLaser** software has many unique features that most of the competition cannot offer. These include:
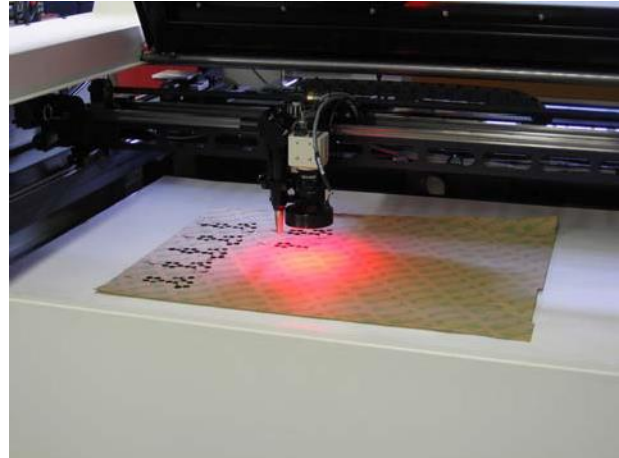
- Fine cut quality due to fine laser power modulation;
- Power and speed attributes for each layer of the artwork;
- Ability to change power, speed and other cutting parameters on the fly without wasting the current part being cut;
- Direct importation of files generated by standard CAD and many graphic environments;
- Library for commonly cut materials that includes power level and other cutting parameters;

- Automatic fiducial alignment with multiple fiducial capability that automatically compensates any displacement or rotational errors;
- Matrix capability;
- Integrated vision in the main display to check the cutting path of new programs prior to cutting parts;
- Interaction ability with upstream and downstream systems in fully automated production lines; and
- Many diagnostic features.

Standard Vision Alignment

All **FlexLaser II** machines come equipped with vision alignment as a standard feature. This means the operators do not need to use tooling holes or guide edges to align their product prior to cutting. **FlexLaser II** vision automatically finds the programmed fiducials (targets) on your work piece. The machine will then automatically calculate X-Y and rotational offsets and cut your part with unparalleled precision. Most competitions offer vision as a very expensive option.
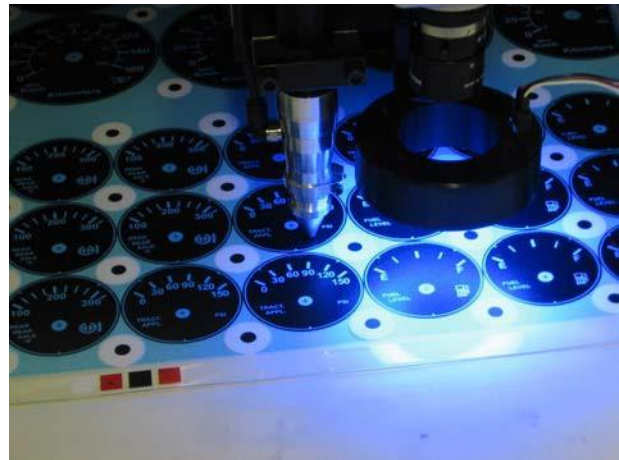

Options

FlexLaser II can be equipped with the following options:

1)   Programmable Z-axis-moving lens

This option provides automatic and pre-programmed adjustments to maintain proper laser beam focus at all times. It provides automatic, fast and accurate adaptation of the optics to guaranty sharp and clean cuts for parts having different build ups (thickness) or from job to job.

2)   Programmable Z-axis-moving table

This option provides automatic and pre-programmed table height adjustment to maintain proper laser beam focus at all times. It is most suited for applications where cutting of extra-thick items is required.

3)   Roll to Roll Option

This unique option in conjunction with the machine's no-clean vane-type vacuum table provides a very efficient way for cutting jobs like spacers or other jobs that allow the use of the feedstock in roll form. The machine automatically feeds the material into the cutting area, cuts the job, the slag is sucked into the no-clean table and the ready-to-use cut parts will be taken up by the take-up roll at the other side of the machine.

4) **Top and Bottom Laminator Option**

The Roll to Roll option can be equipped with a Top and Bottom laminator feature that allows in-line lamination of adhesive and finishing film to overlays, prints, spacers, etc. as part of the laser cutting process. This will eliminate off-line time-consuming lamination process. The system features accurate automatic electronic tension control mechanism that consistently produces high quality laminates.

5) **Sheet-Feeder Option**

The Top and Bottom laminator option can also be equipped with an automatic Sheet-Feeder. The feeder can feed sheets of different materials into the laminator for further processing by machine in a roll-to-roll fashion.

6) **Parts Extraction Option**

This option can be installed on the Roll-to-Roll version of the machine, with or without Top and Bottom laminator. It will automatically transfer the cut parts into a collection bin, freeing up operator time to do other tasks.

Price Competitiveness

Automation Alternatives have standardized **FlexLaser II** in a variety of highly popular configurations. This wide range of standard machines not only enables Automation Alternatives to offer very competitive pricing but also allows our customers to choose the most suitable and cost-effective system for their application.

Warranty and Support

FlexLaser II, like all Automation Alternatives machines carry a one-year limited warranty for parts and labour, except for wear items. Extended warranty is also available. Technical support is available on-site, via telephone or email.

Automation Alternatives in- house technical support team can be resourced at a time that best fits the customers schedules. North and South American customers can be serviced in both Eastern and the Pacific Time zones. Automation Alternatives carries a complete inventory of all parts for FlexLaser II and its options. The majority of the parts are shipped next day.

Specifications

General

Cutting Area	24" x 24" (600 mm x 600 mm) 24" x 36" (600 mm x 900 mm) 36" x 48" (900 mm x 1,200 mm)	FL2-2424 Family FL2-3624 Family FL2-4824 Family
Table type	No-clean with automatic slug removal	Also equipped with honeycomb for more elaborate cuts
Power and Cooling	10 W, 20 W, 40 W, 60 W; Air-cooled 80 W, 100 W, 200 W, 400 W; Water cooled	
Laser Type	No-maintenance sealed CO_2	
Power Control	Modulated in proportion to speed	No burning on corners
Focusing lens	2.5 inch (63.5 mm) - other options available	Equipped with assist gas jet nozzle
Enclosure	Fully enclosed Class 1	
Safety	Dual redundancy	

Control and Positioning

Axis Type	Anti-backlash lead-screw	Long life with automatic wear compensation
Maximum speed	80 ft / minute (24 m /minute)	
Repeatability	Better than 0.0005" (0.0125 mm)	
Accuracy	+/- 0.008 %	
Measuring units	Standard / Metric	

Hardware and Software Systems

PC	Industrial rack-mount	Complete with 17" LCD monitor
Operating System	Windows XP	
Hand-held	User friendly with full motion and laser control capabilities	
Specialty Software	FlexLaser C/W integrated vision	
Vision	Integral vision with programmable tri-color illuminator for automatic fiducial alignment	

Specifications (continued)

Options	
Roll to Roll Cutting	Allows automatic feeding and cutting of material in a roll to toll fashion
Top and Bottom Laminator	Allows in-line lamination of adhesive and finishing film to overlays, prints, spacers, etc.
Automatic moving lens	Machines lens is programmable for automatic focusing to the cutting surface to allow for precise cutting of parts with different build up (thickness)
Automatic moving table	Machines table is programmable and automatically moves up and down allowing precise cutting of extra-thick parts.
Sheet Feeder	An add-on to the Roll-to-Roll option to feed sheets onto a web of adhesive for further processing by machine in a roll-to-roll fashion
Part Extractor	Another add-on for the Roll-to-Roll option. It will automatically transfer the cut parts into a collection bin.
Optional optics	Different focal length to address different applications

Dimensions

Length	58" (1,450 mm)	All models
Width	46" (1,150 mm) 58" (1,450 mm) 70" (1,750 mm)	FL2-2424 Family FL2-3624 Family FL2-4824 Family
Height	53" (1,250 mm)	All models
Approximate Weight	600 lbs (270 kg) 750 lbs (320 kg) 850 lbs (385 kg)	FL2-2424 Family FL2-3624 Family FL2-4824 Family