

LASER 450G MODULE

The laser 450G module is designed for secure government applications. It utilizes the latest in precision control architecture and fiber laser technology to deliver high-speed, fine line detail engraving of variable-sized photos, security features, and alphanumeric text.

- Single controller supports multiple modules in a MX series system
- State-of-the-art, grayscale laser technology produces high-quality tonal images
- Security features engraved at time of personalization (S.T.O.P) offer unique elements that are extremely difficult to replicate
- Engraves both the front and back of the card in a single module
- Supports CLI (vertical tilted engraving) and MLI (horizontal tilted engraving) for enhanced visual security
- Vision registration camera allows precise alignment between engraved and preprinted elements on the card
- Air-cooled fiber laser provides powerful technology within a compact module, does not require an external power or cooling unit
- Scalable laser solution integrates multiple modules to meet higher throughput demands

Laser 450G Module Specifications

Module Functionality	Engraves text, photos, bar codes, security features, and other images on the card surface using laser technology
Engraving Technology	Air-cooled fiber laser; Class 1 Laser Product
Engraving Capabilities	<ul style="list-style-type: none"> • Pixel engraving: text, photos, bar codes, and other digitized images • Vector engraving: text • Micro-engraving • Tilted image engraving: CLI, MLI, 3D photo • Security features: Laser Tact, PersoCurve, and photo optimization
Resolution	Up to 3,200 dpi; grayscale
Laser Engravable Elements	Photos, alphanumeric text, vector text, bar codes, signature, fingerprint, graphic images, scrambled indicia, tilted images, ghost images, micro-engraving
Text Formats	Scalable fonts, including TrueType and OpenType fonts for Microsoft® Windows® operating systems
Bar Code Formats	<ul style="list-style-type: none"> • One-dimensional (1D): Code 39, Extended Code 39, HIBC, Codabar, NW7, EAN8, EAN13, JAN8, JAN13, UPCA, UPCE, Bookland, Interleaved 2 of 5, Code 128, EAN/UCC 128, Code 93, MSI Plessey • Two-dimensional (2D): QR Code, PDF417, Data Matrix
Image Formats	JPEG (.jpg), TIFF (.tif), Bitmap (.bmp), PNG (.png), GFF (.gif)
Laser Engraving Placement	<ul style="list-style-type: none"> • Front and back of the card • 0.10 in. (2.54 mm) from the top or bottom edge of the card • 0.02 in. (0.50 mm) from the left or right edge of the card • Laser engraving rotation between 0° and 359°
Laser Engraving Accuracy	±0.004 in. (±0.1 mm) in both X and Y axis
Micro-Engraving Feature	0.4 - 0.8mm in height
Tilted Engraving Feature	<p>Tilted laser range:</p> <ul style="list-style-type: none"> • Vertical axis ± 30° • Horizontal axis ± 20° • 3D image ± 10° (either vertical or horizontal axis may be used) <p>Tilted engraving placement:</p> <ul style="list-style-type: none"> • 0.315 in. (8.0 mm) from any edge on the card
Vision Registration Feature	Optional feature Tolerance: 0.006 in. (0.015 cm) with respect to the vision mark
Card Types Supported	ISO/IEC 7810 ID-1 Size: 30 mil (±10%) Alternative card thicknesses can be made available upon request
Card Materials Supported	Laser engraving recommended for polycarbonate, composite, or PVC with special layer. Limitations may exist for each personalization technology.

Fume Extraction Gen 2 System

Recommended	When engraving PVC cards
Usage	One extraction system for every 2 laser modules
Dimensions	46.49 in. H x 20.78 in. W x 18.30 in. D (118.1 cm x 52.8 cm x 46.5 cm)
Weight	156.0 lbs (70.0 kg)
Voltage	230V max, 208V nominal +/- 10%
Max Flowrate	460m3/h
Wattage	1.3 kW
Frequency	50/60 Hz



Laser 450G Module Supported Systems				
Available Systems	MX9100™ System	MX8100™ System	MX6100™ System	MX2100™ System
Rated Speed	Up to 4,000 CPH (Actual throughput dependent on the card layout, material, and number of modules)	Up to 3,000 CPH (Actual throughput dependent on the card layout, material, and number of modules)	Up to 1,800 CPH (Actual throughput dependent on the card layout, material, and number of modules)	Not Available See the Laser 430G Module data sheet
Allowed Quantity	Up to 6 modules per system		Up to 4 modules per system	
Module Configurations	Not applicable			
System Considerations	Not applicable	<ul style="list-style-type: none"> • Cards must be laser engraved before any type of laminate or topcoat is applied • Requires Controller Software v10.5 or higher 		
Module Dimensions	50.1 in. H x 10.0 in. W x 27.0 in. D (127.3 cm x 25.4 cm x 68.6 cm)			
Weight	155.0 lbs (71.0 kg)			
Current Draw	1.51 Amps at 230V			
Heat Output	Average of 1,187 BTUs per hour			

 [Learn more about the MX Series at entrust.com](https://www.entrust.com)

