

Industrial Laser Systems





A Rich History in Laser

With more than 55 years experience, TYKMA™ ElectroX celebrates a rich history in the development of industrial laser systems with a focus in laser marking, etching, and engraving systems.

With headquarters in the U.S.A. and a global network of distributors, we provide unrivaled industrial laser solutions to customers around the world.



"The TYKMA Minilase 20W fiber laser has been a great asset for us. We were able to quickly migrate our production from older laser technology to the Minilase. It produces a higher quality mark in less time. We run the machine two shifts per day and it is a key resource in our production process. I wish all of our equipment acquisitions were so productive in such a short time."

Tom Koenig, Manufacturing Manager, Spyderco



Solving Complex Challenges

Our experience in industrial laser systems enables us to be the industry expert. From the first contact, we work in a consultative style to fully understand our customer's unique requirements. Our application specialists and sales engineers ensure you receive the highest quality systems and performance.

Production is supported by experienced, product identification industry management, highly qualified engineers, software designers, and skilled factory-trained technical service professionals. Every system we build is fully warranted, designed with exacting international standards, and backed by exceptional 24/7 service, training, and technical support.

Technology Advantage



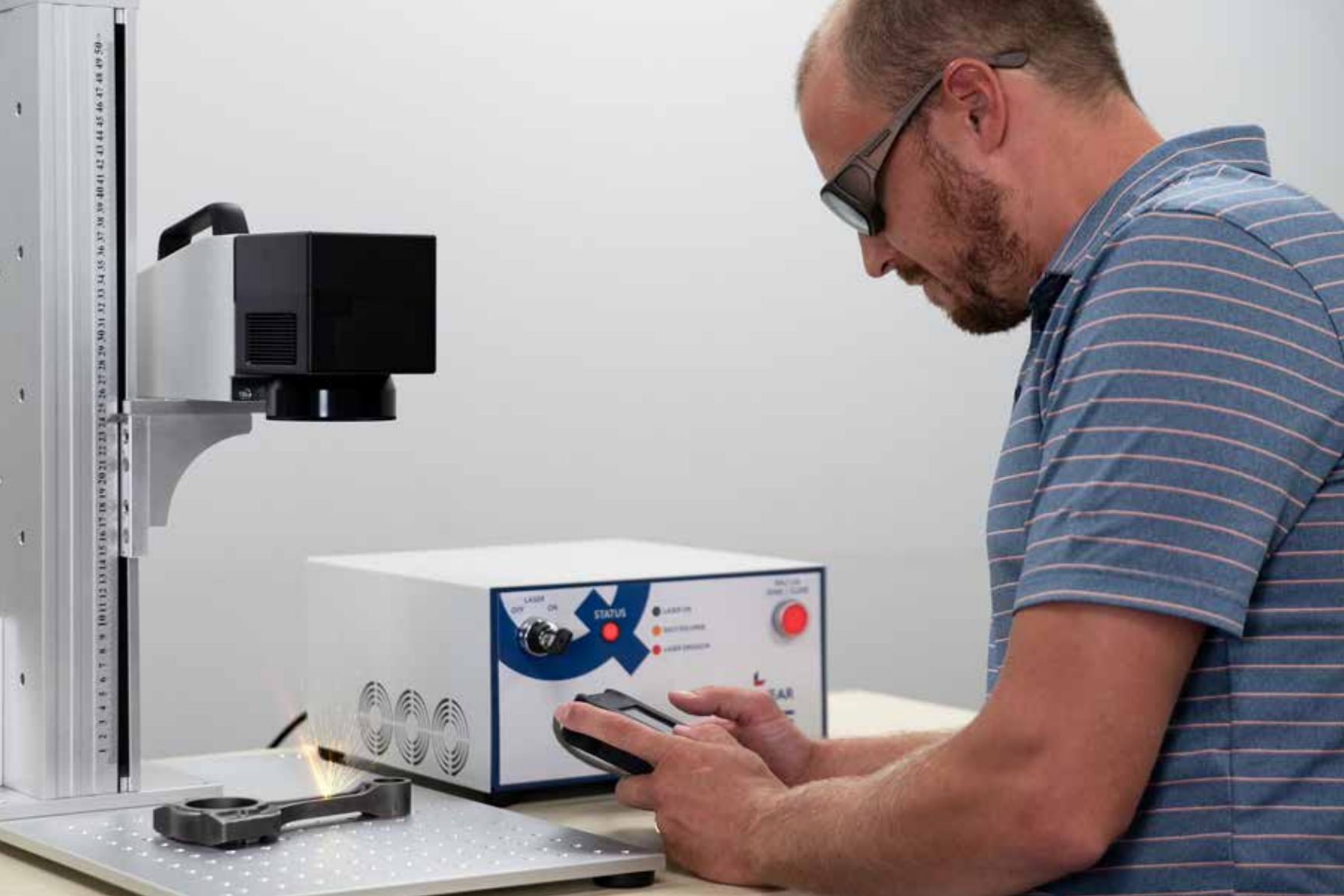
Powerful MOPA fiber laser technology enhances our marking capabilities over basic q-switched fiber laser systems. Selectable pulse durations allow for the processing of a wider variety of materials and substrates.



Our systems save you operating costs in the long run over obsolete and larger scale laser marking systems. Our systems are air cooled, maintenance-free and include comprehensive three year warranties.

"PFL could not be happier with the system we selected, its performance, and your support for our needs. Our new system is 10-20X faster than the older YAG laser system we were using. The TYKMA system's flexibility has allowed us to offer a host of value added services that has delighted our customers, and generated additional revenue for us. Thank you for being one of our valued suppliers and please let us know how we can help you in future initiatives."

David Diamond, CEO, Precision Fabricators



LASERGEAR

BY TYKMA ELECTROX

Entry-Level Laser Marking Systems Manufactured in the USA

LaserGear™ is a full featured, entry-level line of laser marking products from TYKMA ElectroX. LaserGear was created to serve clients who desire an entry-level laser marking system without compromising on quality. LaserGear products are manufactured in Chillicothe, OH USA, using high quality components and are backed by an 18-month warranty and industry leading service and support.

For full product specifications, please see pages 22-23.



LaserGear BOQX™, A Powerful Benchtop Laser Marking System

LaserGear BOQX is a Class 1 desktop laser marking system that combines simplicity with power. Featuring a 20W MOPA fiber laser, BOQX delivers both strength and speed to accomplish a variety of applications. A front sliding vertical door and power focal height adjustment with a built-in focus finder tool allow for simple front loading and part setup.



LaserGear QUBE™, Class IV or Integration Applications

LaserGear QUBE is a Class 4 laser marking system that is ideal for use in an open environment or integrated into production lines. Featuring a range of MOPA fiber lasers from from 20W to 60W, QUBE delivers both strength and speed to accomplish a variety of applications. Mount QUBE to a tool-post for marking applications which require open space and flexibility. Integrate QUBE into automated lines for unattended or turnkey applications.

Minilase™

Air Cooled, Maintenance-Free
Fiber Laser Source

Vertical Three-Side
Pneumatic Door with
Patented Safety System

minilase™

Power Focal Height
Adjustment with
Easy Focus Finder

T-Slot
Tool Plate

Simple USB
to PC

Operator Control
Pendant with
System Status LEDs

Easy Mode with Automated
Door Close, Marking and
Door Open Sequence





Minilase™ has smart features that drive efficiency and improve ergonomics with high volume production. A three-sided automatic vertical door provides an ergonomic method for part loading. Machine management is simple with the front mounted operator control panel. An optional rotary device can be utilized for 360° radial part marking.



Power focus adjustment and our built-in easy focus finder system allow for quick and easy change over when processing a variety of parts.



Minilase is ideal for high volume applications. Easy mode allows for the automated sequence of door close, marking and door open, maximizing operator ergonomics.

Minilase™ XL

Vertical Three-Side Pneumatic Door with Patented Safety System

Air Cooled, Maintenance-Free Fiber Laser Source

minilase™
XL

Power Focal Height Adjustment with Easy Focus Finder

T-Slot Tool Plate w/Open Interior for Large Parts

Service Key for Class 4 Operation

Simple USB to PC

Operator Control Pendant with System Status LEDs

Easy Mode with Automated Door Close, Marking and Door Open Sequence





Minilase™ XL offers a larger workspace and an open interior for maximum flexibility in a desktop solution. In addition, Minilase™ XL is equipped with our ergonomic features such as the three side pneumatic vertical door, power focal height adjustment and auto-mode for high volume applications. A service override key and safety warning lights allow for open door Class 4 marking capability for larger components.



Minilase XL features an open interior and the most expansive part loading area of our Minilase line. Class 4 capability for open door marking is possible with our service override key and safety warning light.



Minilase XL is ideal for high volume applications. Auto mode allows for the automated sequence of door close, marking and door open, maximizing operator ergonomics. Upgrade to programmable focal height adjustment for automatic focal change between parts.

Zetalase™



Air Cooled, Maintenance-Free
Fiber Laser Source

Operator Control Pendant with
System Status LEDs

Integrated Controller
with Front Mounted
Touch Screen Display

Power Focal Height
Adjustment with
Easy Focus Finder

Side Access
Door

Full Size Work
Surface with T-Slot
Tool Plate

Lightweight Sliding
Front Door with Large
Viewing Window



With its large work area and premium feature list, Zetalase™ can do it all. An expansive work envelope provides capability for marking a wide array of parts, large or small, light or heavy. In addition to the front sliding operator door, the side access door provides operators two-sided access to the expansive part loading area. Zetalase™ features an on-board processor and a 10" touch screen monitor.



Power focus adjustment and our built-in easy focus finder system allow for quick and easy change over when processing a variety of parts. Upgrade to optional programmable focal height adjustment.



Zetalase offers flexible access to its full size work area. Automatic mode enables automatic mark start when the door is closed. Add an optional full size rotary device for 360° radial part marking.

Zetalase™ XL





Zetalase™ XL offers an expansive work area and is highly configurable for a variety of applications. Zetalase™ XL is ideal for the processing of tall and/or large components as well as large fixtures of parts. A front vertical patented pneumatic safety door maximizes operator ergonomics. A choice of laser power and a variety of accessories and customizations provide the ability to solve any application.

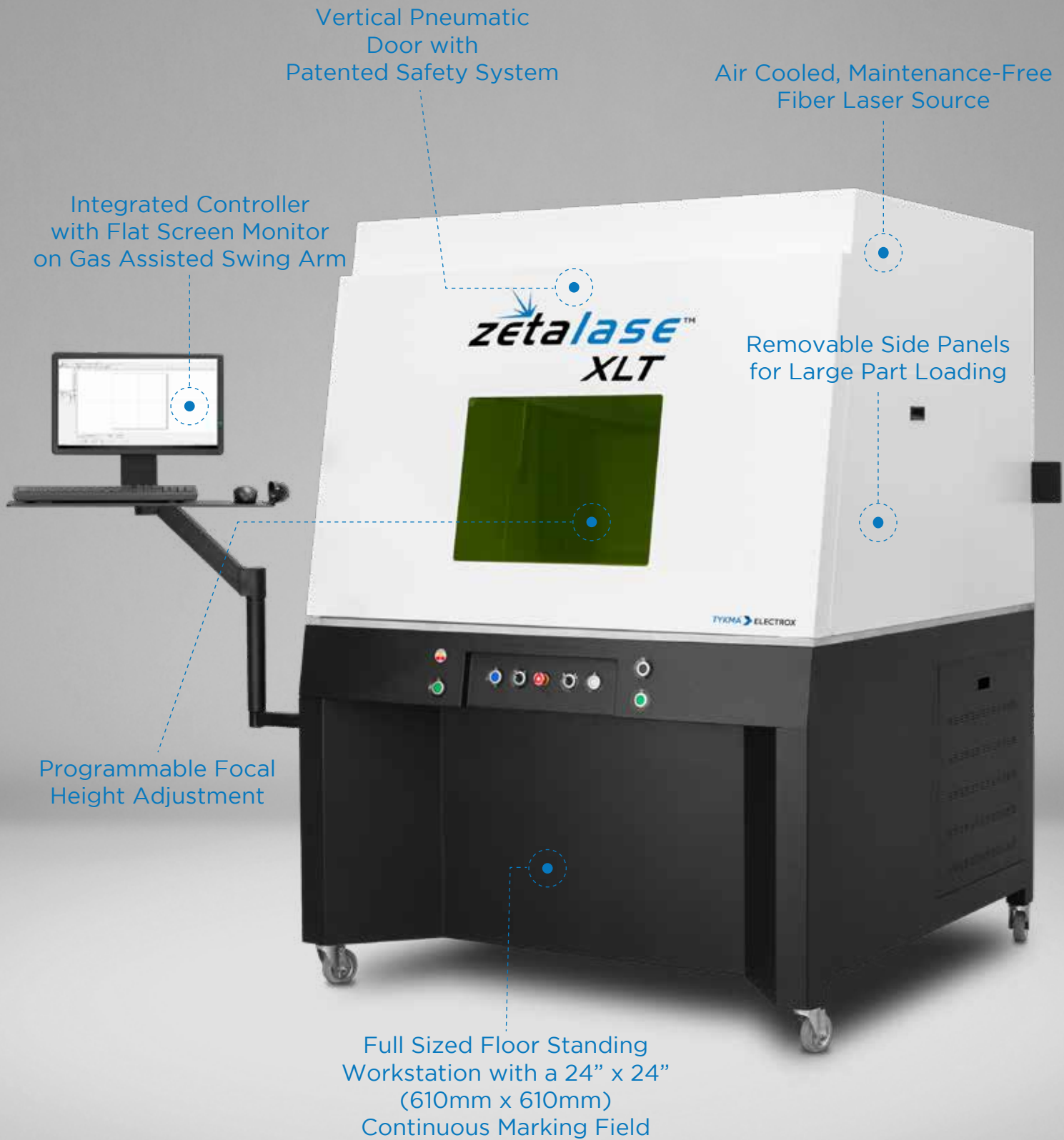
3D

A 3D upgrade delivers a large continuous marking field, 3D laser contour marking and 3D laser engraving. With the use of a high speed dynamic focusing optic, the marking field is expanded to 250mm x 250mm. With an industry leading 100mm of Z-Axis dynamic focus, the need for mechanical focal height adjustment when marking variable height components is eliminated.



Upgrade to a 381mm x 381mm marking field for the ability to process large graphics or trayed components. Removable side panels allow for the loading of large or extended parts.

Zetalase™ XLT





Zetalase™ XLT features a continuous marking field up to 24" x 24" (610mm x 610mm) while maintaining a small beam diameter with high energy output. This technology excels over traditional XY stage systems that require complex programming and high cycle times, due to indexing movements of the XY stage. Expansive graphics can be processed in one cycle without any tiling or stitching, and large trays or fixtures of parts can be marked in minimal cycle time.



A 20 to 100 watt MOPA fiber laser source provides both power and pulse duration control for a variety of industries and applications, including deep engraving of firearms, annealing of medical components, color change marking on plastics and more.



A 24" x 24" (610mm x 610mm) continuous marking field provides the ability to mark large graphics, trays of parts and apply markings in multiple locations without any indexing or axis movements. Programmable focal height is standard. Add an optional full size rotary device for 360° radial part marking.

Vereo™ Smart Integration Laser





The Vereo™ Smart Integration Laser is a revolutionary product in a stagnant field of integration laser systems. Control and monitor your laser system from any device, including PCs, Tablets, Smart Phones, PLCs and more without installing any software. Vereo™ Smart allows for virtually plug-and-play interfacing with many common industry leading PLC brands. In addition, users have a powerful amount of control at their fingertips with the front mounted touch screen interface.



Control and monitor your laser system from any device! Our proprietary interface allows users to upload and select programs, change data, view status, data logs and more from any device on the same network, with no need to install software.



On-board storage of marking programs allows for standalone operation (no PC). Easily interface with common PLC brands without any complex programming. Communicate to marking programs from networked databases using our proprietary TCP/IP commands.

Vereo™ 3D / LFSS Laser



Vereo™ 3D / LFSS is a versatile 3 axis laser marking system designed to deliver a large continuous marking field, 3D laser contour marking and 3D laser engraving. With an industry leading 100mm of 3D Z-Axis dynamic focus, the need for mechanical focal height adjustment when marking variable height components is eliminated. In addition, loss of focus and marking distortion are eliminated when marking uneven surfaces.



In 3D mode, a large marking field of 9.8" x 9.8" (250mm x 250mm) is combined with an industry leading 3.9" (100mm) of 3D Z-Axis dynamic focus. Applications include mold marking, 3D cylindrical marking, decoration of complex shapes, concave, convex and uneven surfaces, 3D deep engraving, and more.



In LFSS mode, the marking field is further expanded to 15" x 15" (381mm x 381mm), ideal for marking expansive graphics, large components, and trays of parts.

Zetalase™ Duo



Ideal for high volume marking, the Zetalase™ Duo dial index system allows the operator to load/unload parts while others are being marked. The addition of safety light curtains ensures operator safety. Our Zetalase Duo workstation utilizes a robust, high duty-cycle rotary indexer for years of trouble free operation. Custom holding fixtures can be engineered for a variety of applications.



Programmable focus adjustment allows for quick and easy changeover when processing a variety of parts. Dual rotaries in dial index oscillating mode allow for the quick processing of 360° radial part marking.



Dial index is available in a variety of laser output wattages and wavelengths to solve a variety of applications.

Scorpion™ Integration Laser



Stand-alone capability allows for on-board storage of the laser marking programs without the need for a PC on the shop floor or production line. Operators and programmers can easily control and select marking programs using the included hand-held pendant. Scorpion can be networked, allowing engineers and programmers to update the on-board marking programs from anywhere on the factory floor. Our proprietary beam steering technology provides high precision and repeatability for demanding, high-volume applications.



On-board storage of marking programs allows for standalone operation (no PC). Easily select data and marking information via external devices and networks.



Scorpion is equipped with Ethernet, allowing users to network their laser systems. Engineers can easily utilize our Scriba laser software to connect, edit and upload new programs remotely over the network.

EMS400™ Multi Axis



With the ability to run up to four axes, EMS400 is ideal for large tray and part marking. EMS400 features an automated 24" x 24" XY stage (610mm x 610mm), ideal for marking trays of parts or large components in multiple locations. A front vertical pneumatically actuated door maximizes operator ergonomics.



Programmable focus adjustment allows for quick and easy changeover when processing a variety of parts. Add an optional full size rotary device for 360° radial part marking.



A 24" x 24" (610mm x 610mm) automated XY stage enables users to mark large components in multiple locations or multiple parts loaded in fixtures. Removable side panels allow for the loading of large or extended components.

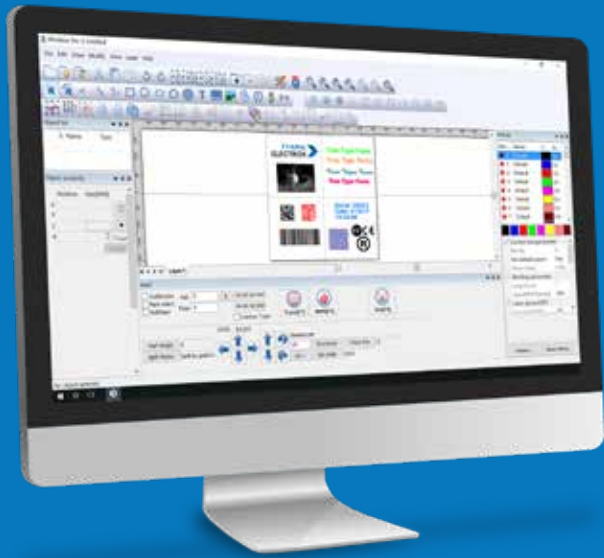
Technical Specifications

	LaserGear BOQX™	LaserGear QUBE™ 20/60	Minilase™	Minilase™ XL
System Dimensions / Weight (approx.)	16.15"W x 34.5"L x 24"H / 130lbs (mm) 410W x 876.3L x 584H / 59kg	(Head) 4"W x 14"L x 4.5"H / 10lbs (Rack) 13.5"W x 13.5"L x 8"H / 35lbs (mm) (Head) 102W x 356L x 114H / 4.5kg (Rack) 343W x 343L x 203H / 16kg	17"W x 34"L x 24"H / 150lbs (mm) 432W x 864L x 610H / 68kg	24"W x 42.5"L x 33.5"H / 200lbs (mm) 610W x 1,079L x 851H / 91kg
Standard Marking Field	163L (100mm x 100mm) (3.93" x 3.93")	163L (100mm x 100mm) (3.93" x 3.93")	163L (100mm x 100mm) (3.93" x 3.93")	163L (100mm x 100mm) (3.93" x 3.93")
Standard Max Part Size	12"W x 9"L x 5.6"H (mm) 254W x 228L x 142H	N/A Unrestricted	13.5"W x 9.5"L x 3.5"H (mm) 342W x 241L x 90H	20"W x 12.5"L x 14.3"H (mm) 508W x 317L x 365H
Available Marking Lens Upgrade and Marking Fields	254L (6.5" x 6.5", 165mm x 165mm)	254L (6.5" x 6.5", 165mm x 165mm)	n/a	254L (6.5" x 6.5", 165mm x 165mm)
Maximum Part Height with Lens Upgrade	(254L) .9"H/23mm	N/A Unrestricted	n/a	(254L) 11.22"/285mm
Laser Type	Ytterbium Fiber	Ytterbium Fiber	Ytterbium Fiber	Ytterbium Fiber
Wavelength	1062nm +/- 3nm	1062nm +/- 3nm	1062nm +/- 3nm	1062nm +/- 3nm
Wattage	20W	20W / 60W	20W	20W - 100W
Frequency Range	1 - 4,000kHz	1 - 4,000kHz	1 - 500kHz	1 - 500kHz
Pulse Duration	Selectable, 2-350ns	Selectable, 2-350ns / 2ns-500ns	Selectable, 260ns or 40ns	Selectable, 260ns or 40ns
Operative Ambient Temperature Range	7° - 40° C / 45° - 104° F	7° - 40° C / 45° - 104° F	7° - 40° C / 45° - 104° F	7° - 40° C / 45° - 104° F
Cooling	Air Cooled	Air Cooled	Air Cooled	Air Cooled
Fiber Cable Length	N/A	2M	N/A	N/A
Input Power	Power Sensing 110-240VAC 50/60Hz	Power Sensing 110-240VAC 50/60Hz	Power Sensing 110-240VAC 50/60Hz	Power Sensing 110-240VAC 50/60Hz
Aiming Beam	(2) Class II Red Diode	(2) Class II Red Diode	(2) Class II Red Diode	(2) Class II Red Diode
PC	Laptop/Desktop PC Required	Laptop/Desktop PC Required	Laptop/Desktop PC Required	Laptop/Desktop PC Required
PC Connection	USB	USB	USB	USB
Air Required	N/A	N/A	60 - 80 psi	60 - 80 psi
Available Ports	Diagnostic / HH Pendant	Diagnostic / HH Pendant	Diagnostic	Diagnostic
Warranty	18 Month Comprehensive Unlimited Hours	18 Month Comprehensive Unlimited Hours	36 Month Comprehensive Unlimited Hours	36 Month Comprehensive Unlimited Hours

Zetalase™	Zetalase™ XL	Zetalase™ XLT	EMS400™	Zetalase™ Duo	Vereo™ Smart
40"W x 26"L x 35"H / 306lbs (mm) 1,016W x 661L x 889H / 139kg	32"W x 52"L x 74"H / 500lbs (mm) 813"W x 1,321"L x 1,880"H / 227kg	59"W x 66"L x 88"H / 1,650lbs (mm) 1,504W x 1,672L x 2,235H / 748kg	59"W x 66"L x 80"H / 1,800lbs (mm) 1,504W x 1,672L x 2,026H / 816kg	34.6"W x 41.7"L x 69"H / 800lbs (mm) 880W x 1,060L x 1,752H / 362kg	(Head) 3.5"W x 16.25"L x 3.5"H / 11lbs (Rack) 17"W x 15.75"L x 5.2"H / 50lbs (mm) (Head) 89W x 413L x 89H / 4.9kg (Rack) 432W x 400L x 132H / 22.7kg
163L (100mm x 100mm) (3.93" x 3.93")	163L (100mm x 100mm) (3.93" x 3.93")	24" x 24" 610mm x 610mm	163L (100mm x 100mm) (3.93" x 3.93")	163L (100mm x 100mm) (3.93" x 3.93")	160S (100mm x 100mm) (3.93" x 3.93")
24"W x 18"L x 8"H (mm) 609W x 457L x 203H	30"W x 24"L x 19.5"H or (mm) 762W x 609L x 495H (mm) 381W x 1,066L (Using Center Wall Opening)	52"W x 36"L x 9.4"H or (mm) 1,321W x 914L x 238H	24"W x 24"L x 17.8"H or (mm) 610W x 610L x 454H 36"W x 23.6"L (Without using XY Motion) (mm) 914W x 599L (Without using XY Motion)	9.45"W x 9.45"L x 9"H or (mm) 240W x 240L x 227.3H (divider dictates max height)	N/A Unrestricted
254L (6.5" x 6.5", 165mm x 165mm)	254L (6.5" x 6.5", 165mm x 165mm) 330L (7.87" x 7.87", 200mm x 200mm) 420L (10.2" x 10.2", 260mm x 260mm)	N/A	254L (6.3" x 6.3", 160mm x 160mm) 330L (7.9" x 7.9", 202mm x 202mm) 420L (9.8" x 9.8", 250mm x 250mm)	254L (6.3" x 6.3", 160mm x 160mm) 330L (7.9" x 7.9", 202mm x 202mm)	254S (5.5" x 5.5", 140mm x 140mm)
(254L) 2.36"/60mm	(254L) 16.9"/429mm (330L) 12.6"/320mm (420L) 9.45"/240mm	N/A	(254L) 12.3"/313mm (330L) 8"/206mm (420L) 4.8"/124mm	(254L) 9"/227.3mm (divider height) (350L) 3.93"/100mm	N/A Unrestricted
Ytterbium Fiber	Ytterbium Fiber	Ytterbium Fiber	Ytterbium Fiber	Ytterbium Fiber	Ytterbium Fiber
1062nm +/- 3nm	1062nm +/- 3nm	1062nm +/- 3nm	1062nm +/- 3nm	1062nm +/- 3nm	1062nm +/- 3nm
20W - 100W	20W - 100W (UV/CO2 Avail.)	20W - 100W	20W - 100W (UV/CO2 Avail.)	20W - 100W (UV/CO2 Avail.)	20W / 50W
1 - 500kHz	1 - 500kHz	1 - 1,000kHz	1 - 500kHz	1 - 500kHz	1 - 500kHz
Selectable, 260ns or 40ns	Selectable, 260ns or 40ns	37 Selectable from 10ns to 520ns	Selectable, 260ns or 40ns	Selectable, 260ns or 40ns	Selectable, 260ns or 40ns
7° - 40° C / 45° - 104° F	7° - 40° C / 45° - 104° F	7° - 40° C / 45° - 104° F	7° - 40° C / 45° - 104° F	7° - 40° C / 45° - 104° F	7° - 40° C / 45° - 104° F
Air Cooled	Air Cooled	Air Cooled	Air Cooled	Air Cooled	Air Cooled
N/A	N/A	N/A	N/A	N/A	3M
Power Sensing 110-240VAC 50/60Hz	Power Sensing 110-240VAC 50/60Hz	Power Sensing 110-240VAC 50/60Hz	Power Sensing 110-240VAC 50/60Hz	Power Sensing 110-240VAC 50/60Hz	Power Sensing 110-240VAC 50/60Hz
(2) Class II Red Diode	(2) Class II Red Diode	(2) Class II Red Diode	(2) Class II Red Diode	(2) Class II Red Diode	(2) Class II Red Diode
Integrated Windows PC	Integrated Windows PC	Integrated Windows PC	Integrated Windows PC	Integrated Windows PC	Laptop/Desktop PC Required for initial programming only. Laser can operate in standalone mode (without PC)
N/A, PC Integrated	N/A, PC Integrated	N/A, PC Integrated	N/A, PC Integrated	N/A, PC Integrated	Ethernet
N/A	60 - 80 psi	60 - 80 psi	60 - 80 psi	N/A	N/A
Diagnostic/USB/VGA/Ethernet	Diagnostic/USB/VGA/Ethernet	Diagnostic/USB/VGA/Ethernet	Diagnostic/USB/VGA/Ethernet	Diagnostic/USB/VGA/Ethernet	USB/Diagnostic/Discrete I/O External Axes
36 Month Comprehensive Unlimited Hours	36 Month Comprehensive Unlimited Hours	36 Month Comprehensive Unlimited Hours	36 Month Comprehensive Unlimited Hours	36 Month Comprehensive Unlimited Hours	36 Month Comprehensive Unlimited Hours

Some system configurations are not listed, please contact TYKMA ElectroX for full specifications. All systems utilizing vertical doors require additional height clearance, full drawings available upon request.

Specifications are subject to change at any time.



Software

With our user friendly software, operators and engineers can quickly create marking files with text, barcodes, 2D codes, and a variety of graphic formats such as DXF, AI, PLT, BMP and JPEG. CAD tools allow users to draw their own graphics and manipulate complex vector files. Automated date coding and serialization capabilities are also included. A pre-configured materials

library takes the guess work out of setting up laser marking parameters. Control external axes such as XY stages, focal height adjustment and rotary devices for 360° marking.

Icon Interface, our off-the-shelf operator interface enables the following: advanced network data retrieval, TCP/IP communication protocols, SQL server connectivity, PLC interfacing, detailed photographic part fixture instructions and displays, operator restrictions and password protections, data entry via barcode scan, and more.

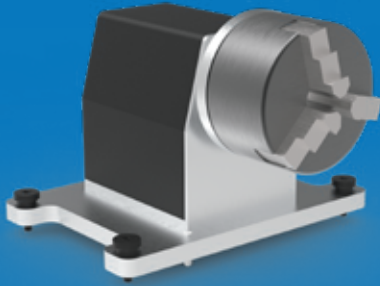
When our standard package isn't enough, let TYKMA™ ElectroX create a custom software interface, completely designed to your specifications.

Special Wavelengths (UV, CO2)

A variety of alternative wavelength laser systems are available for specialized applications. In addition to our standard fiber laser line we also offer UV at 355nm (pictured below) and CO2 products at 10,600nm. Complete specifications and model types are available upon request.



Options and Accessories



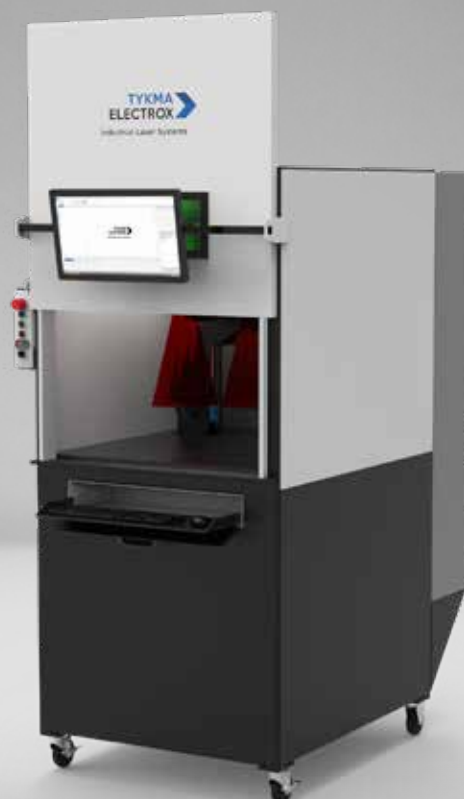
- Multi-Waveform laser upgrades
- 3D laser marking
- Rotary devices for 360° radial part marking
- Focal lenses
- Fume and dust extraction
- Class 4 tool posts
- Component fixtures
- Laser safety products
- Linear axes and motion devices
- And more...



Custom Solutions

If our standard products are not a fit for your application, or you need a custom solution to get the job done, we can help. TYKMA ElectroX can engineer a perfect-fit solution for your application.

- Custom enclosures
- Automated part handling and feeding
- Reading and grading 2D codes
- Machine vision





Service and Support

TYKMA™ ElectroX pledges to provide every customer with laser systems of the highest quality and reliability. We offer application specialists available from the start. Our 24/7, 365 days a year emergency service line is staffed with factory-trained technicians for all your service needs. We're dedicated to providing long-term customer problem resolution and training to ensure your system operates effectively for years to come. Contact us today to learn more. Join the growing number of manufacturers who've chosen TYKMA™ ElectroX as their partner in industrial laser systems.

- 24/7, 365 days a year emergency support phone line
- Online remote programming and troubleshooting assistance via Citrix™ secured software
- Application and programming assistance
- Preventive maintenance and critical response agreements
- Loaner and rental laser systems



What our Customers are Saying

"We purchased a Zetalase for part identification. TYKMA personnel demonstrated outstanding knowledge of our industry and their products. Recently, a part (under warranty) needed to be replaced. The technician from TYKMA drove from Ohio to North Carolina to replace the part. Rarely do we see this level of commitment from our vendors. We are completely satisfied with TYKMA's performance and we will use them to meet our laser needs in the future. They are fully committed to the interests of their customers and their team is enthusiastic and positive. It was a real pleasure to work with them."

Troy Crosby, Fixture Manager, James Tool Machine and Engineering, Inc.

"We've run two Minilase systems 8-12 hours per day, 5 days per week over the past 2.5 years and have only experienced a few technical problems, which alone makes me a satisfied customer, but why I would recommend working with TYKMA is because when we have had problems, they are quick to react and are willing to approach a solution with consideration given to my circumstances. Thank you Aaron and the TYKMA crew for enabling us to produce quality marks all year round!"

Chris Morgan, COO, Sticky Jewelry

"The lasers we have purchased from TYKMA are very well engineered and nicely finished products. They require little maintenance and are very easy to use. The sales and service support are excellent. The few issues we have had were resolved online in minutes with a TYKMA technician. They make it easy."

Arthur Jones, Director of Manufacturing, Royal Products

Global Presence

With facilities and distributors in more than 25 countries, TYKMA™ ElectroX is dedicated to providing exceptional service and support to our clients around the world. To learn more about our products and services, visit us online at www.permanentmarking.com.



Follow us on your favorite social media sites!



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