



2.0kW

4.0kW

OPTIPLEX 3015 Fiber



Mazak offers over 50 laser-cutting machine models including the new OPTIPLEX 3015 Fiber, available in 2.0kW and 4.0kW configurations.

Fiber laser technology offers application-specific performance advantages that can significantly improve quality and throughput.

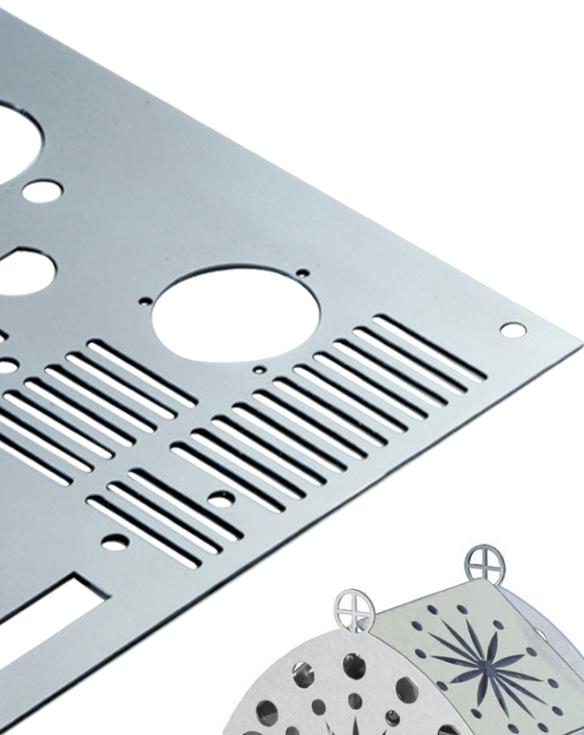
Fiber laser-cutting technology utilizes a wavelength that is dramatically shorter than CO2 units. It helps fiber lasers achieve faster cutting speeds in thinner material and improves cut performance for highly reflective materials. Because it has a shorter wavelength, the heat-affected zone is also smaller than traditional gas resonators.

A few of the industries where fiber laser technology affords significant benefits include:

- > Medical
- > Aerospace
- > Architectural Components
- > Food Processing
- > HVAC



> Application



2

OPTIPLEX 3015 Fiber

BENEFITS	1. Fast	Improved speed when cutting stainless steel, aluminum and mild steel < 6mm compared to CO2 lasers.
	2. Stable	More stable cutting performance for stainless, copper, brass, bronze, aluminum, hastelloy, inconel, titanium and other exotic metals.
	3. Clean	No need for additional surface cleaning when painting mild steel cut with nitrogen.
	4. Economical	Utilizing a fiber beam delivery system significantly lowers operating costs for applicable material thicknesses and types.



> Key Features



Rugged construction delivers higher accuracy and more reliable operation

The OPTIPLEX 3015 Fiber is built utilizing the industry-leading OPTIPLEX platform. This rugged two pallet design offers proven, reliable productivity, even in very high volume production operations. Key features include:

- > 27,557 pound machine weight with a rigid cast frame that provides greater stability while cutting
- > 2,050 pound workpiece capacity supports up to 1.0" thick 5'x10' CRS plates
- > Helical rack and pinion drive system maintains its precision in both high volume production and high variation job shop environments

The new PREVIEW 2 CNC control improves efficiency and ease of use

The MAZATROL PREVIEW 2 automatically determines the cutting speed and acceleration for each cutting point to the next from the programmed contour. The PREVIEW 2 features a 15" touch screen and includes integrated technology tables for a wide range of materials and thicknesses.



IPG's industry-leading fiber laser generator ensures proven performance

IPG Photonics YLS series Ytterbium generators are used by Mazak in 2.0kW and 4.0kW designs for OPTIPLEX



Fiber laser-cutting machines. IPG is the world's leading developer and manufacturer of high-performance fiber lasers and amplifiers for diverse applications in numerous markets. They use advanced diode-pumped technology which provides high quality laser power with extended operational life. This solid state laser operates with 28% less electricity as a result of greater efficiency levels of excitation. This technology provides maintenance-free operation yielding dramatically reduced cost of operation. Units are housed in a NEMA 12, air conditioned and sealed cabinet.

OPTIPLEX 3015 Fiber

INVISIBLE LASER RADIATION
IS EMITTED
FROM THIS APERTURE

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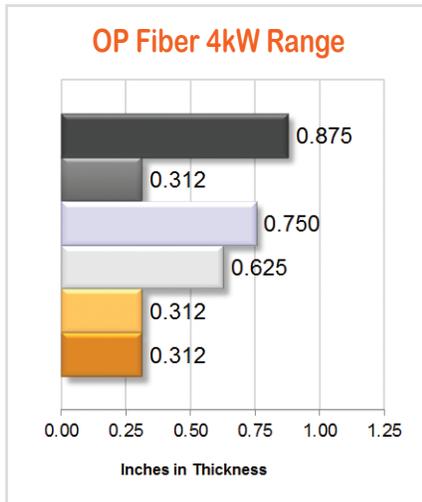
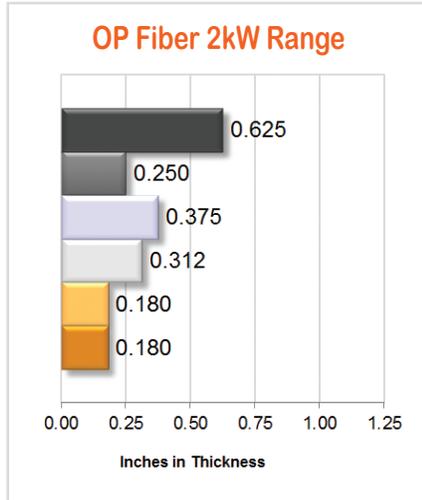
AVOID EXPOSURE

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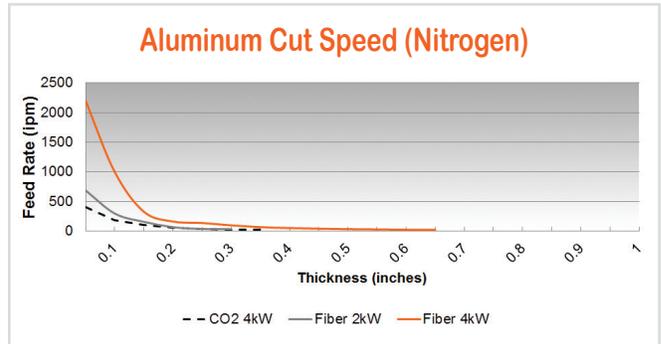
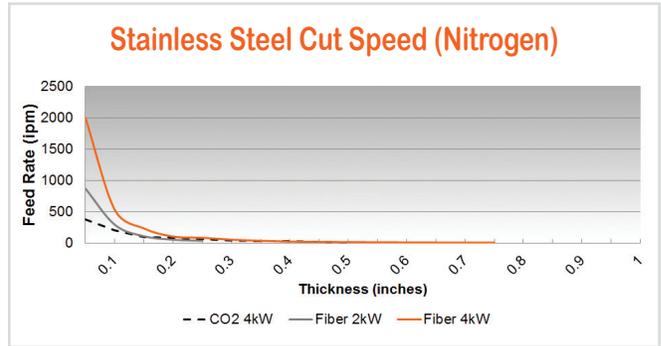
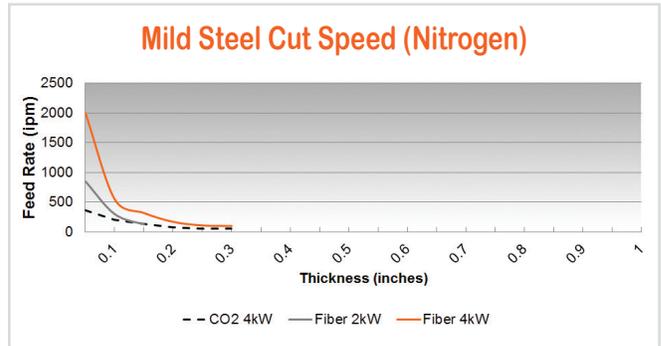
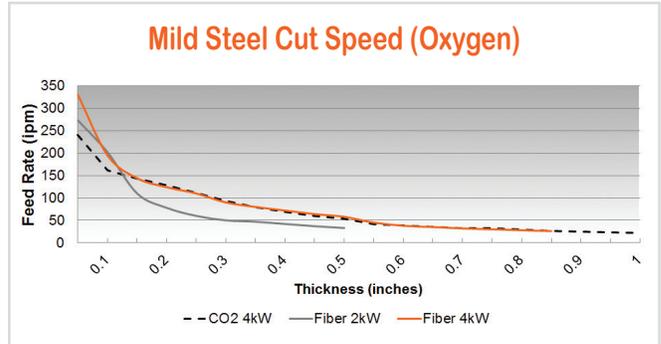


> Performance

New Fiber technology delivers similar cut ranges to CO2 laser-cutting machines, but with substantive advantages when processing thinner materials.



- Mild Steel (Oxygen)
- Mild Steel (Nitrogen)
- Stainless (Nitrogen)
- Aluminum (Nitrogen)
- Brass (Nitrogen)
- Copper (Nitrogen)



Contact your Mazak representative for actual cut speed charts.

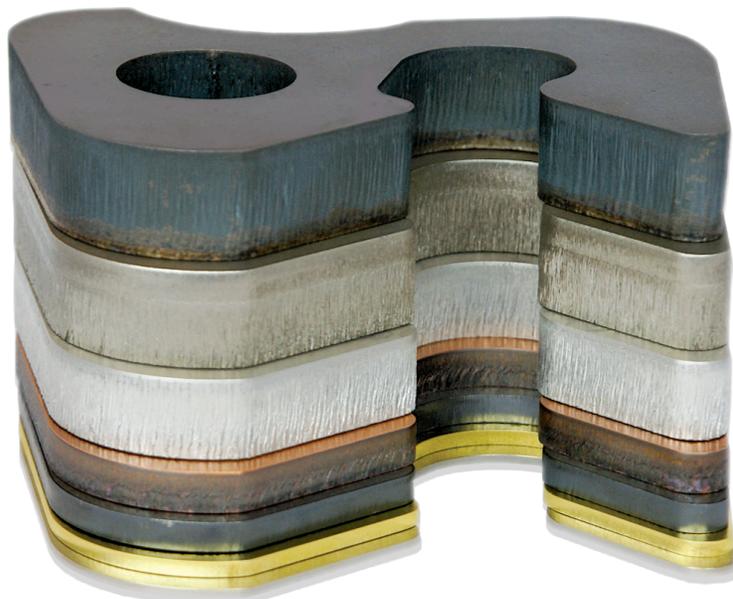
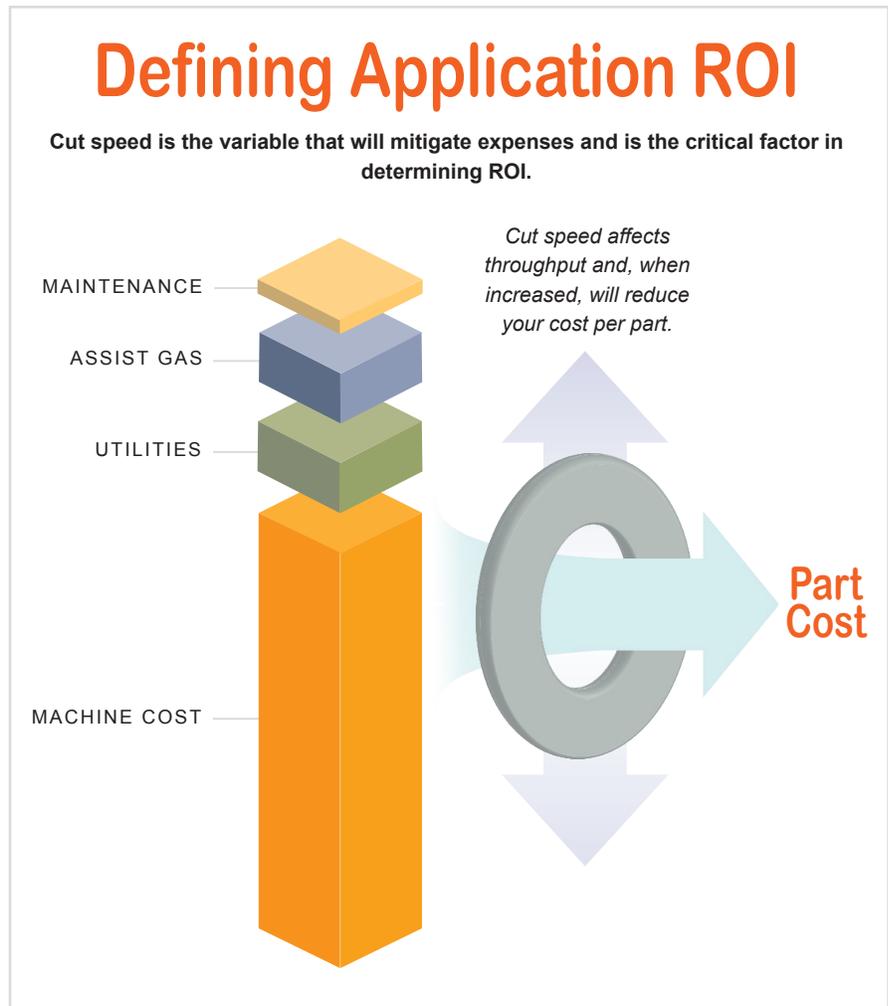
Fiber laser-cutting technology lowers the cost per part for many applications, but the analysis needs to incorporate a range of variables to determine the true ROI.

Maintenance expenses are dramatically lower because fiber eliminates maintenance of the generator and mirrors in the beam transport system.

Assist gas costs can be higher because nitrogen is utilized for most fiber applications. This is especially true when cutting thicker materials where more gas is required to clean the cut gap of debris.

Utility costs can be reduced 60% to 80% due to the lower power consumption of the fiber generator and reduced chiller capacity required.

Machine cost will have a significant effect on your part cost. It typically represents up to 70% of your cost. Fiber technology frequently costs 33% more than a comparable CO2 model.



The parts to the left represent a range of parts cut on an OPTIPLEX Fiber 4.0kW laser-cutting machine. They include:

- > 0.875" mild steel
- > 0.750" stainless steel
- > 0.625" aluminum
- > 0.312" copper
- > 0.250" mild steel
- > 0.125" brass
- > 0.090" stainless steel

> Automation

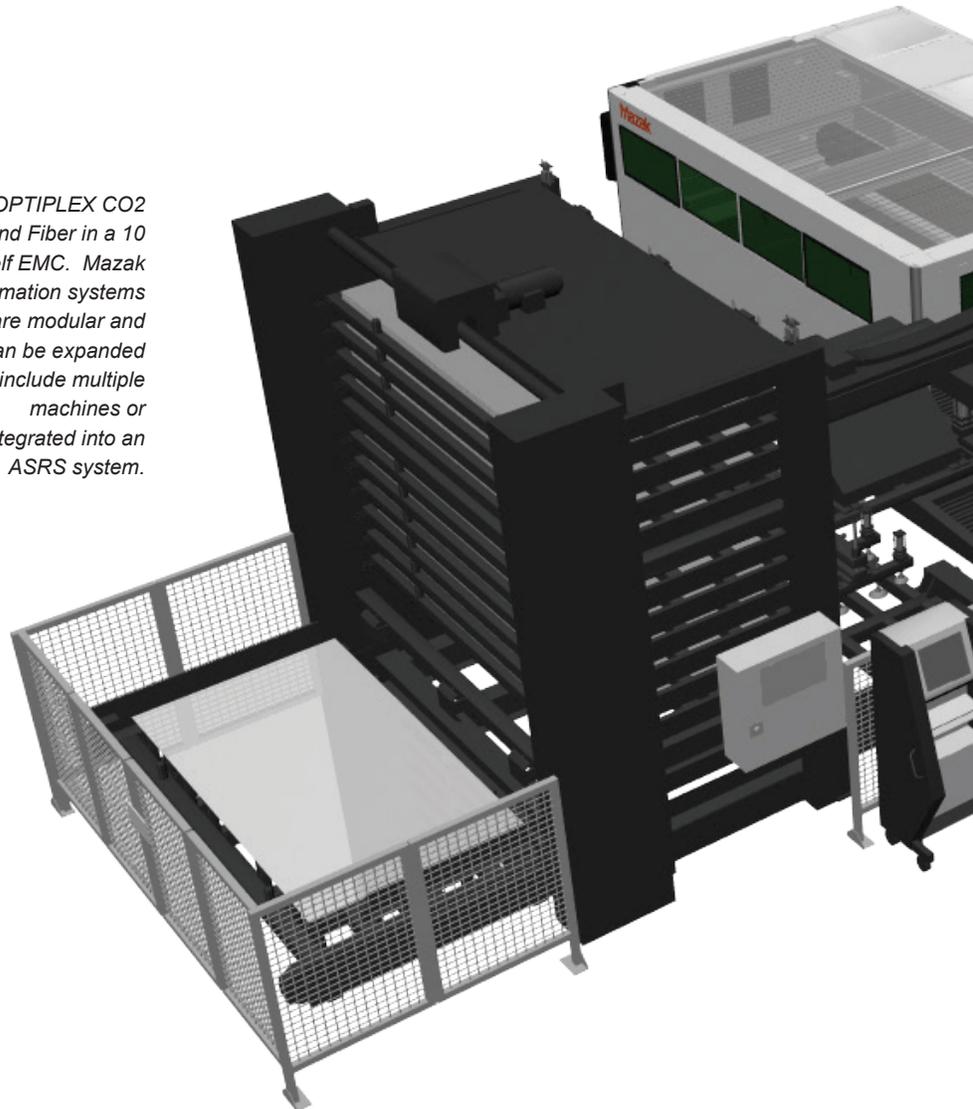
Mazak's OPTIPLEX Fiber series machines utilize a standard platform that enables flexible automation for future growth.

The OPTIPLEX Fiber uses a standard Mazak configuration that offers the flexibility to integrate the machines into an extensive range of automation systems. Automation permits future expansion as needs change. Up to four machines can be added from Mazak's full range of laser-cutting machine models.

Mazak was the first manufacturer to introduce laser-cutting machines into a Flexible Manufacturing System. Today, we offer modular automation configurations with standard 1" plate capacities that include:

- > Load/Unload Cells
- > Flexible Manufacturing Systems
- > Automated Parts Sorting
- > Factory Automation

OPTIPLEX CO2 and Fiber in a 10 shelf EMC. Mazak automation systems are modular and can be expanded to include multiple machines or integrated into an ASRS system.



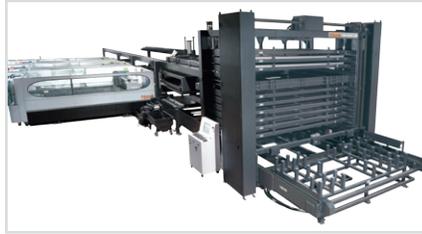
OPTIPLEX 3015 Fiber

Compact Manufacturing Cell

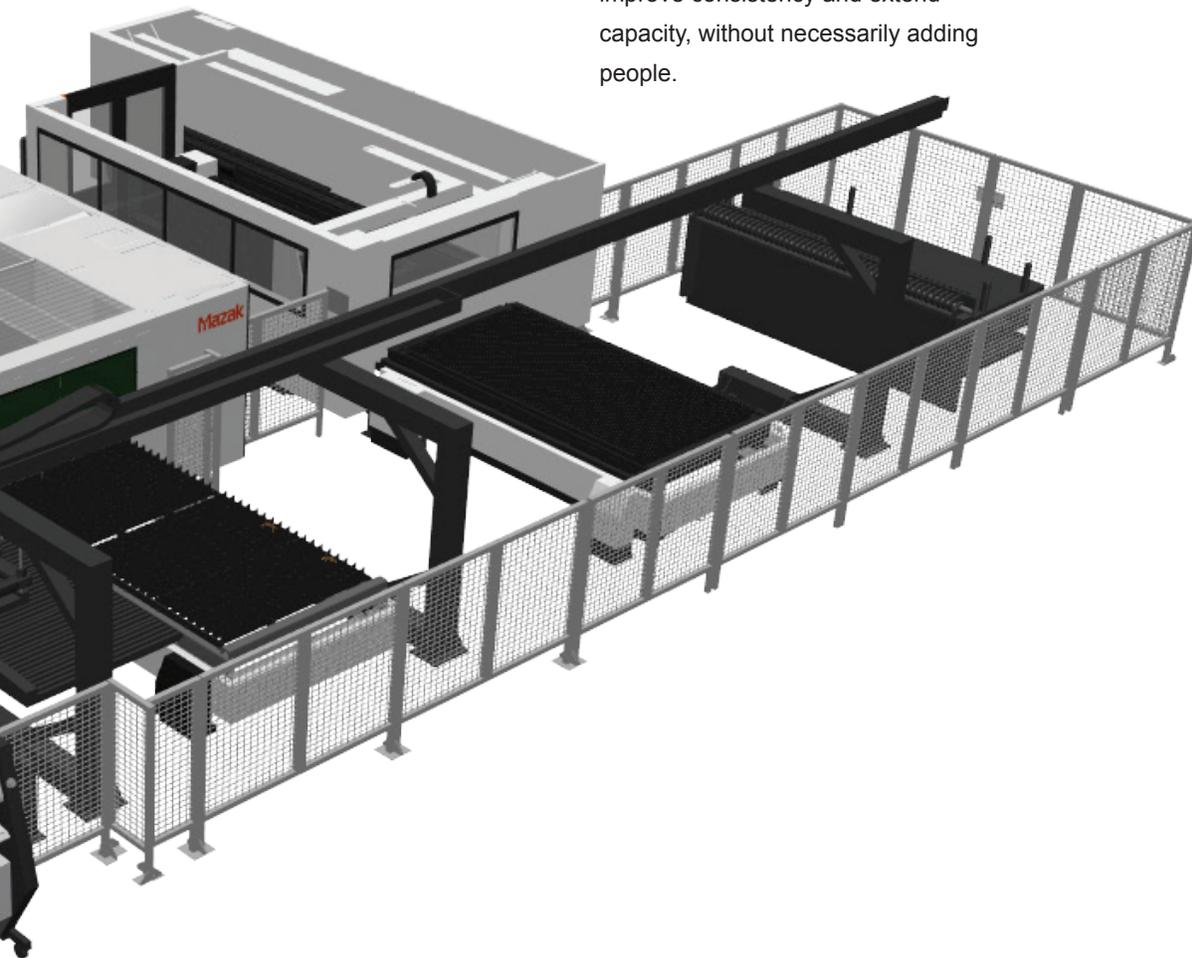


CMC is a compact, 10 pallet stoker for OPTIPLEX 3015 CO2 and Fiber configurations. It features a 1" thick material capacity, 2,200 pound plate capacity and optional sorting station.

Extensible Manufacturing Cell



Mazak's EMC laser-cutting automation is modular in design and can be modified as needs change. It is expandable to four machines. EMC enables you to increase loading speed, improve consistency and extend capacity, without necessarily adding people.



> Specifications

Machine		
	OPF 3015 2.0kW	OPF 3015 4.0kW
Max. workpiece size	60.04 x 120.08"	
Max. workpiece weight	2,050 lbs.	
Worktable height	35.43"	
Axis stroke	<i>X axis</i>	122.05"
	<i>Y axis</i>	62.20"
	<i>Z axis</i>	3.94"
Rapid traverse	<i>X/Y axis</i>	4,724 IPM
Max. cutting feedrate	4,724 IPM	
Positioning accuracy	<i>X/Y axis</i>	±0.002/19.7"
	<i>Z axis</i>	±0.002/3.94"
Positioning repeatability	±0.0012"	
Machine weight	27,557 lbs.	30,865 lbs.
Total electrical	33 kVA*	55 kVA*

* The power supply capacity noted includes laser machine, generator, chiller unit and dust collector. It does not include other optional units.

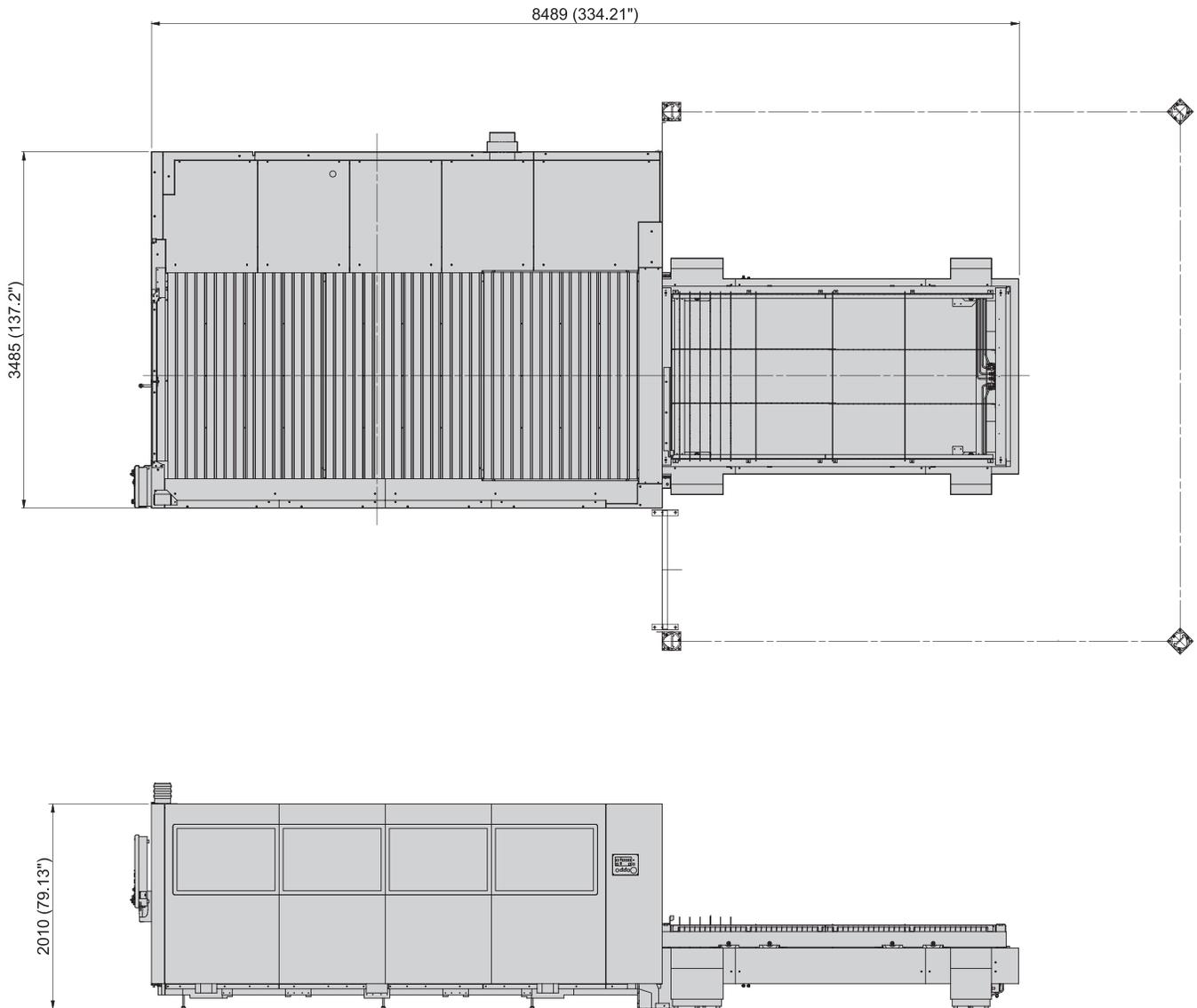
Generator		
Output	2.0kW	4.0kW
Wave length	1.07 µm	

CNC	
Type	MAZATROL PREVIEW 2
CPU	64 bit
Minimum increment	0.0001"
Programming method	EIA/ISO
Display	15" color LCD

Standard Equipment	
Torch (1) (without lens)	Assist gas changer
125 mm (4.92") focal lens	Manual work clamp
2, 3, 4 mm nozzles (1 each)	2 pallet changer
Non-contact profiling unit	Dust collection system
Auto profiler function	Work light
Side air blast	Generator status indicators
Assist gas piping (3.0 MPa)	NC retry
Assist gas pressure function	Auto power off

Optional Equipment	
1.2, 1.5, 2, 2.5, 3, 4 mm nozzles	
125 mm (4.92") focal lens	Scrap conveyor
200 mm (7.87") focal lens	Additional piping (3.0 MPa)
Protective glass	Worksheet lifter

OPTIPLEX 3015 Fiber



The above drawing illustrates the OPTIPLEX 3015 2.0kW, which has an integrated fiber generator. The 4.0kW generator design is external to the machine tool. Other peripherals such as a dust collector, chiller and transformer are not shown in the drawing. Please request a detailed layout drawing prior to planning machine positioning.



2725 Galvin Court
Elgin, Illinois 60124
847.252.4500

www.mazakoptonics.com
OPF5.13

Specifications subject to change without notice.

This product is subject to all applicable export control laws and regulations.

The accuracy of data presented was obtained under specific conditions. They may not be duplicated under other conditions such as room temperature, workpiece materials, cutting conditions, etc.