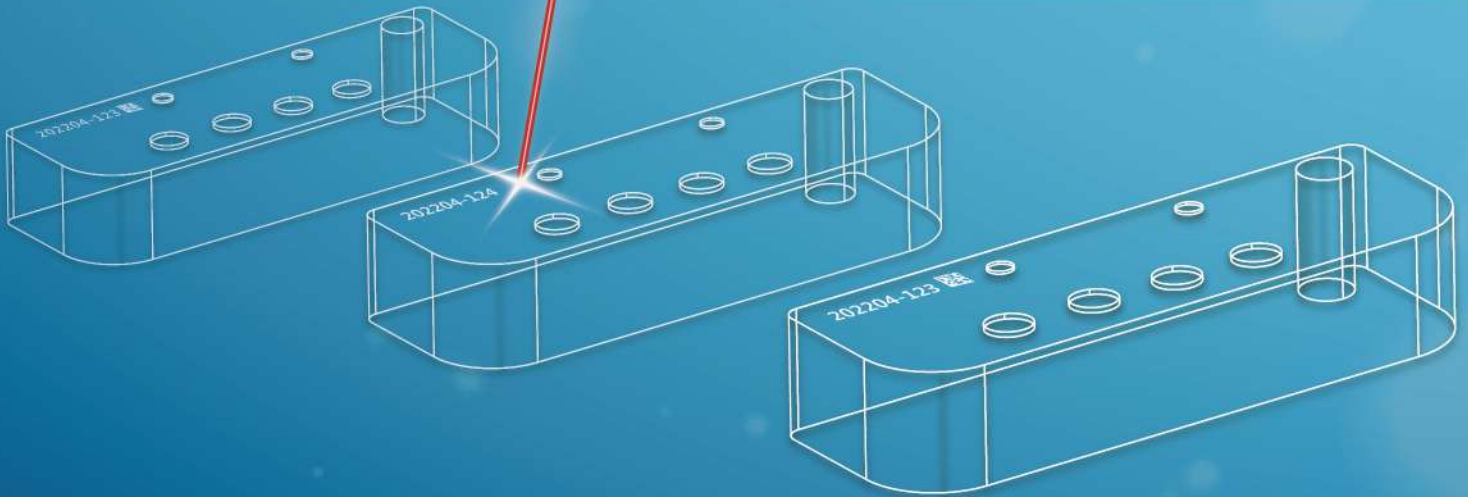**Jumbo®**
LASER PLASMA 正鉑

The Best Assistant for Production Traceability
Smart Laser Marking Machine Easily Links Operation and Production Core.

Smart Laser Marking Machine

Built-in Vision | Quality Inspection | Auto Focus | Built-in Parameter Table

Our patented design from Taiwan ensures user-friendliness and simplifies production processes.

Realizing Intelligent and Sustainable Production Traceability

With the implementation of global ESG and carbon tariffs, companies have to pay more attention to sustainable environmental practices in every aspect of their operations. Product traceability is an essential process for exporting globally, particularly when it comes to sustainable production.

Jumbo Laser has developed an intelligent laser marking machine to help companies achieve intelligent and sustainable production traceability. The machine is designed to be user-friendly, easy to adjust, and convenient to use, providing customers with multiple practical benefits.
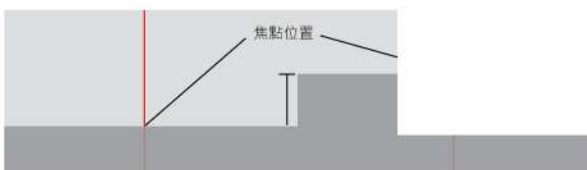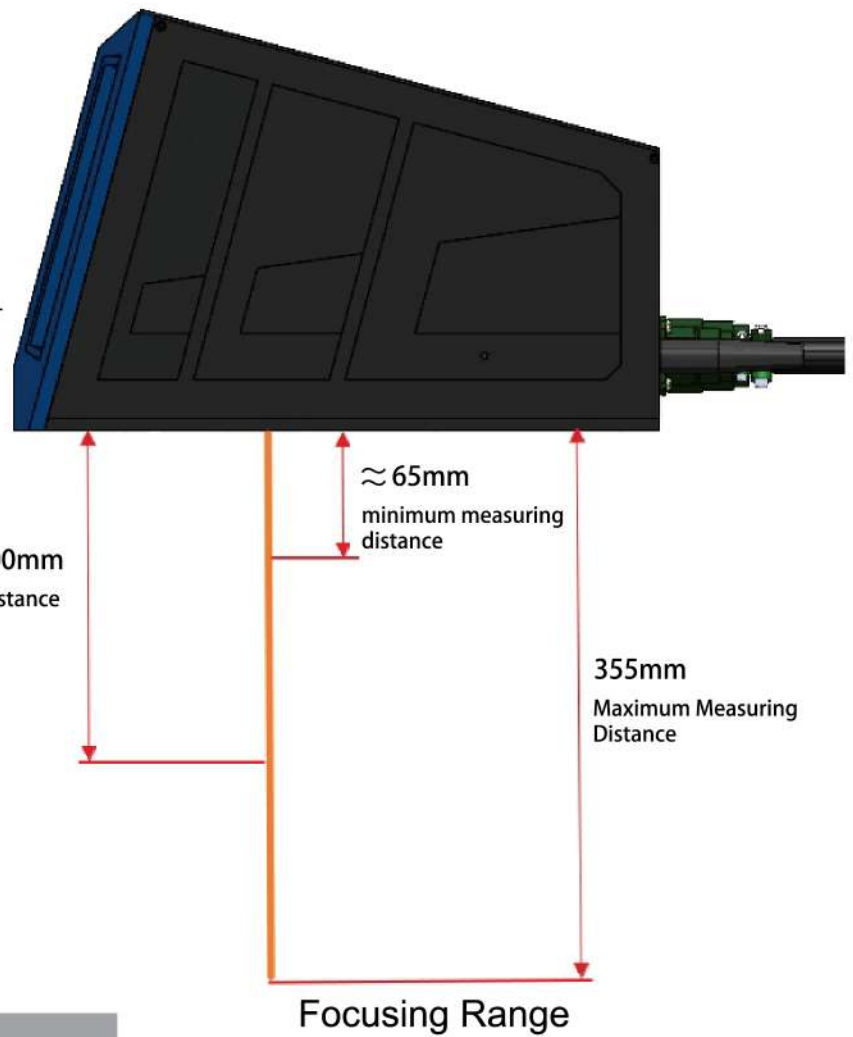
User-friendly   Easy installation   Visual position

Eco-friendly   Auto focus   Inspection

Necessary   Connect in series   Excellent Service

Towards easier operation with automatic focus configuration

In a typical laser marking machine with manual focusing, operators need to visually align and manually adjust the laser beam onto the workpiece, which can be a cumbersome and labour-intensive process.

Therefore, this product comes with an automatic focusing function as standard, which makes the operation much easier for operators and significantly reduces the need for manual focusing, greatly improving productivity!
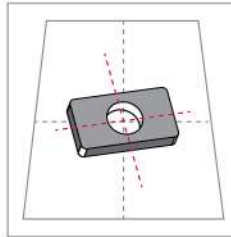
≈ 65mm
minimum measuring distance

≈ 200mm
working distance

355mm
Maximum Measuring Distance

焦點位置

Focusing Range

| Automatically adjust focal distance through Z-axis mechanism

Essential for High Productivity:
# Visual Alignment for Random Material Processing

For a basic laser marking machine, the object to be marked needs to be fixed in position or assisted by a fixture during processing. This requires manual labour to remove the material, which limits production capacity.

With the addition of CCD vision positioning, no fixture is needed, and the material can be placed anywhere in the marking area. The vision system accurately determines the area to be marked, significantly improving processing efficiency.

| Positioning Automatically | Laser Marking
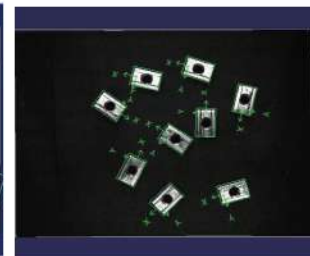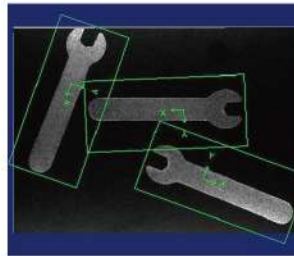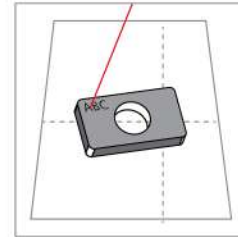
Parts can be accurately marked at the set position without the need for neatly arranged workpieces, reducing marking time for large quantities of products and small-sized components..

Laser Marking Diagram

Alphabet

JUMBO LASER
正鉑雷射

QR CODE

DATA MATRIX

Alphabet Arc

JUMBO LASER
正鉑雷射

1D Barcode

QR CODE
5x5mm

DATA MATRIX
4x4mm

Challenging High Convenience Quality Inspection
Post-marking Quality Inspection - Barcode Grading

Built-in post-marking quality inspection allows direct access to information contained in barcodes and writes the ISO/IEC TR 29158 standard, enabling direct determination of barcode scores to distinguish between grades, without the need for additional barcode scanners. This not only optimizes production line space but also reduces additional expenses.
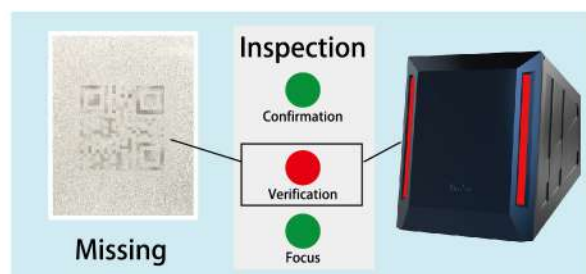

▲ With various barcode type and can change the number automatically
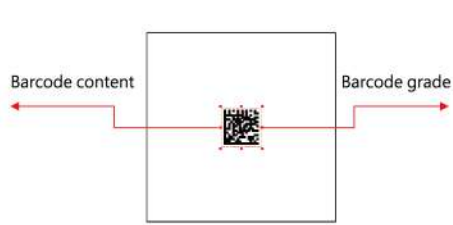
▲ To export to international companies, barcodes with grade B or above are required.

▲ Green light confirms successful barcode verification. Signal is then sent to next stop for quality control classification

▲ Red light: barcode verification failed. Machine signals the next stop for automatic actions.

Simplified operation process and excellent marking performance on various materials. Fast processing with built-in parameter table

Simply select the corresponding colour for the material being marked, and the desired result can be achieved. This reduces the time for process engineers to test parameters such as laser power, pulse width, and processing speed. Even inexperienced operators can easily operate the machine.


The Effect of The Alphabet Marking
Various Effect on Various Material

Stainless Steel

Aluminum

Titanium

Brass

Nickel

Aluminum Anodizing

Carbon Steel

Low-carbon Steel

Simple operation - Easy and concise Image Correction.

Once the vector image file is imported into the software, it can be processed to correct laser image files. The correction process includes common functions such as removing duplicate segments, connecting segments, removing intersections, and clipping lines.
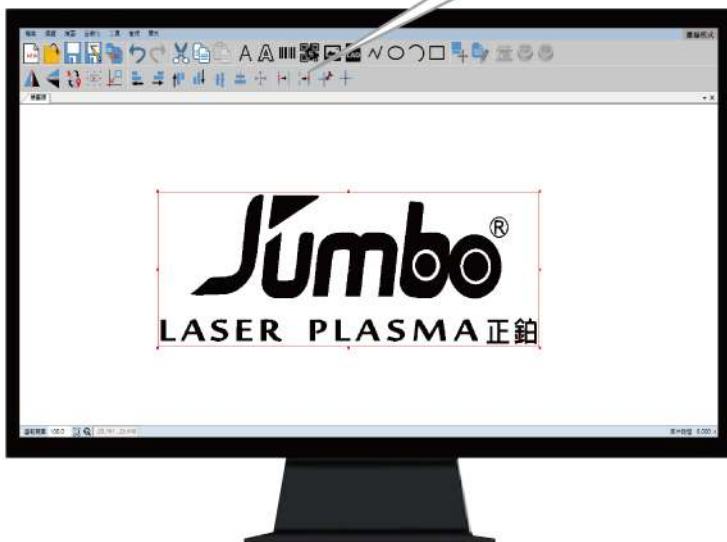
	Duplicate Segment Removal
	Segment Connecting
	Intersection Removal
	Line Clipping

One-button power on/off

Common laser marking machines require a complex power-on sequence that includes turning on the device power, laser power, and galvanometer. If a barcode scanner is installed, there is an additional power-on procedure.

The one-button power on/off design eliminates the need for operators to remember the power-on sequence, making it simpler to use.

ON/OFF

Patented Design - Designed for Humanity Foolproof Protective Cover

The foolproof protective cover effectively prevents dust or foreign objects from entering the interior of the laser device. At the same time, it also prevents the laser device from emitting laser light without warning in the unused state, thus avoiding damage to personnel or workpieces and preventing industrial accidents.

| Light emission is only possible after the protective cover is removed.

Quick detachable cable design

To facilitate more efficient disassembly and movement of the machine, the quick detachable cable design eliminates the need for repeatedly plugging and unplugging signal cables. This helps to prevent damage to the interface between the laser source and the signal cable, ensuring the integrity of the laser device.

01

Convenient connection - Essential for smart factories.

User-friendly control system that can quickly connect with optional mechanisms such as Z-axis, rotary axis, etc. Purchasing the electric Z-axis can also achieve automatic focusing function.

Supports multiple communication formats such as Modbus, EthernetIP, RS232, RS485, etc., and can quickly connect with the factory production system ERP, MES data, etc., to achieve intelligent factory, networked monitoring of data.
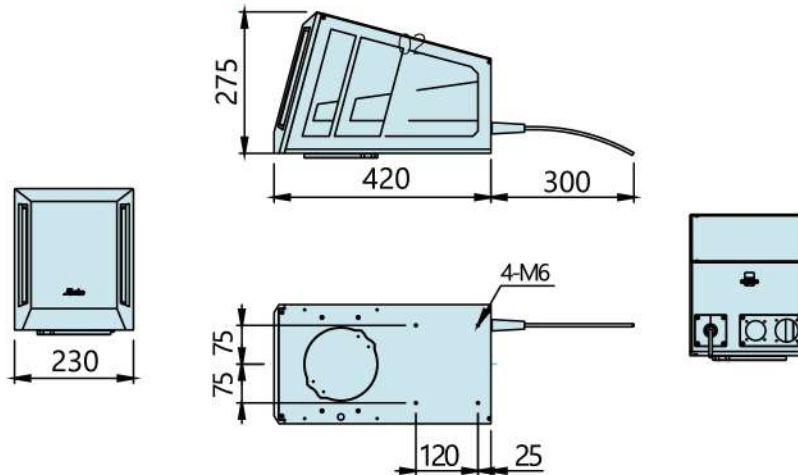
| Take the advantage of optional axis to process on cylinder
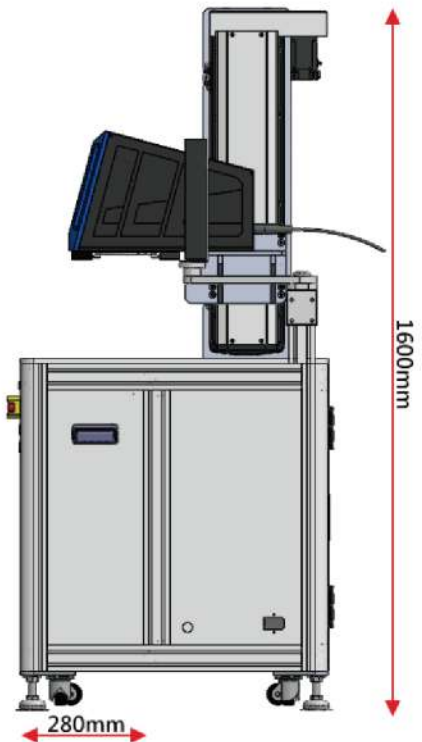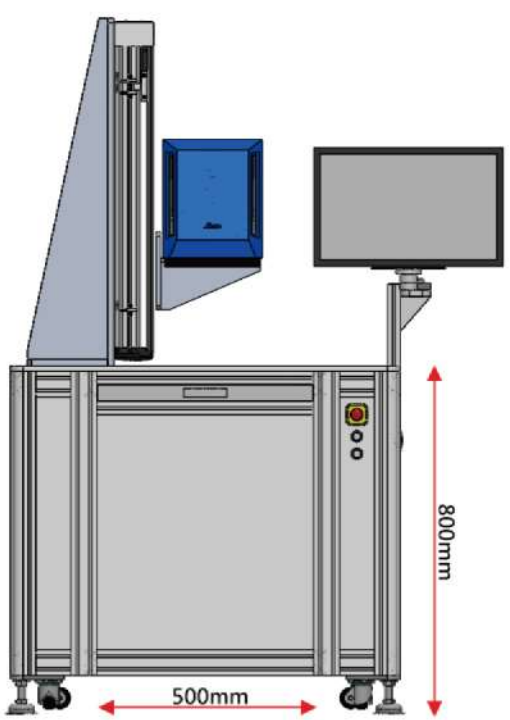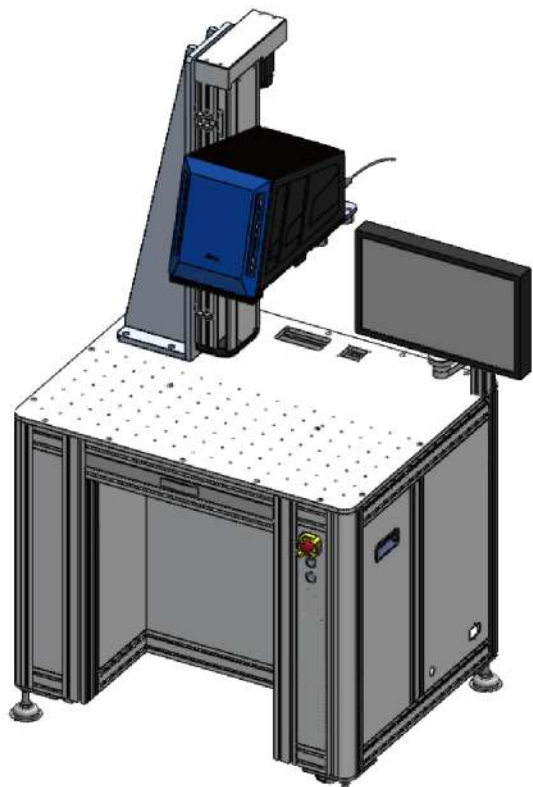
Dimension (Unit:mm)

The Host

300 | 625 | 680

20 | 552 | 300

Laser Processing Head

275 | 420 | 300

230

75 75 | 4-M6 | 120 | 25
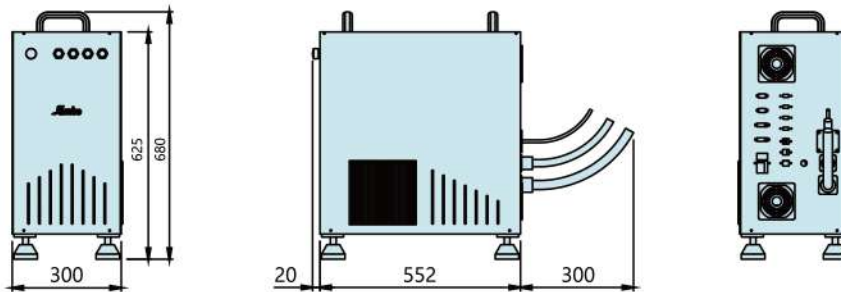
Smart Laser Marking Machine (Cabinet)

1200mm

700mm

400mm

900mm

1600mm

800mm

500mm

280mm
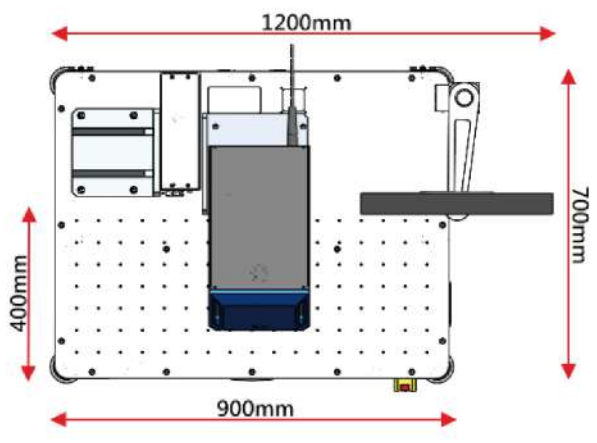
Application–Cabinet with Rotary Axis

For different cylinder sizes, the Z-axis can run with a rotary axis and automatically adjust the height to match the focal length.
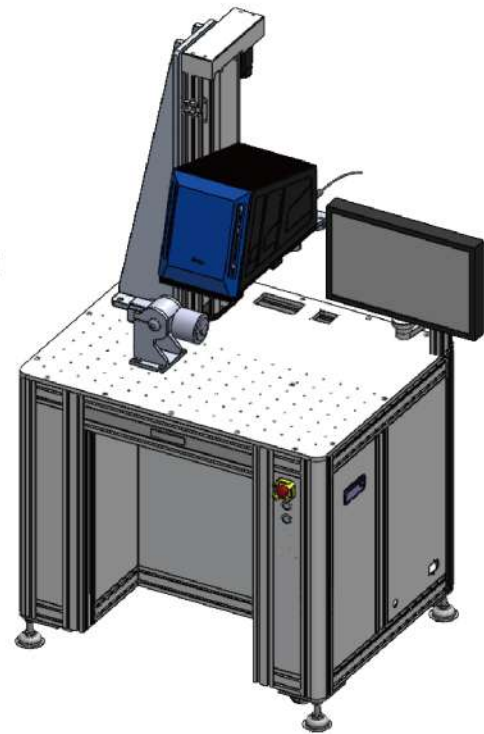
Application –Cabinet attached with Conveyor

This solution is designed for the production line and can be applied directly without further integration.

Specification

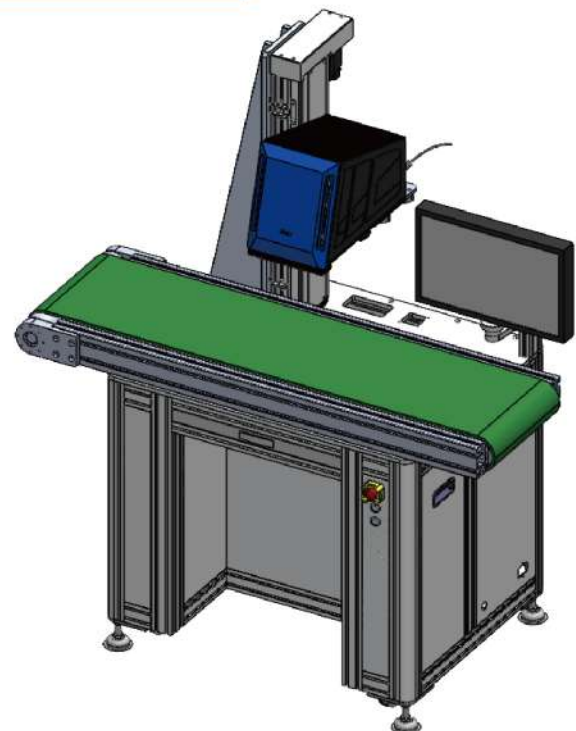| Description		Specifications	
The Laser Source	Wavelength	1064nm Laser Class 4	
	Pulse Width	2~350ns	2~500ns
	Laser Frequency	1~4000kHz	
	Average Output Power	20W/30W	60W
Laser Galvanometer	Spot size	Approx. 70μm	
	Speed	7200mm/s	
	Effective Processing Area	125 x 125mm	
Vision	Detection Area	85 x 120mm	
	Distinguishability (H X V)	3840 x 2748 pixel	
	Pixel Size(H X V)	1.67 x 1.67μm	
Form	Word	Chinese Characters, English Alphabet, Number, Mark	
	1D Barcode	CODABAR, ITF, UPC_A, MSI, CODE_39, CODE_128 EAN_8, EAN_13	
	2D Barcode	QR Code, Data Matrix	
	Image	.JPG, .BMP, .PNG	
	Vector Diagram	.DXF, .PLT	
I/O Connector		Input: 8 ports, Output: 8 ports	
Cooling Mode		Forced Air Cooling	
Attached Program		CAD/CAM, COGNEX	
Axis Communication Interface		Mechatrolink Ⅲ/Ether CAT	
Data Communication		LAN, USB, RS485	
Ambient Temperature		0~40˚C	
Environmental Humidity		35~85%RH	
Avalible Sensing Range of Workpiece Distance		65~355mm	
PC CAD/CAM Interface Language		Traditional/Simplified Chinese, English	
Electricity		AC 220V 50Hz/60Hz	
Input/Output Connector		Input, Output, I/O Connector	
Connector		USB-A, VGA, Ethernet	
Power Consumption		< 1000VA	
Weight (Including laser source and PLC)		Approx. 40kg	
Laser Processing Part		Approx. 9.7kg	

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Mark Smart, Mark Fast - Laser Made for Smart Factories

▲The Circumstance Of Automated Application

Quick System Integration | Supports Multiple Communication Formats | Easy and Simple Operation