

**MPI**<sup>®</sup> | **20**<sup>+</sup>  
YEARS

# MANUFACTURING PROCESS INNOVATION

INDUSTRIAL TRACEABILITY  
EQUIPMENT



KEYENCE  
LASER MARKING SYSTEM

**20**<sup>+</sup> MPI Traceability  
ANNIVERSARY Smart Future



# CLM SERIES

# MPI® | 20+ YEARS

JOHNSON ELECTRIC GEN OMM 中环股份 CUB TROIS JABIL Linear flex Koyo

SUNRISE WANGANG NE 中环股份 协和电子 HITACHI 五洲电子

SCANFIL TOA RIAMB COSIC XILI SIX

SMC SINCES 1952 Calsonic Kansay P&G HANA Microelectronics Group bel LITEON SINBON

Sunlight Panasonic nichicon DENSO TEN RAYVAL SHARP BELGIAN

INESA WOLONG 卧龙控股 FLEXium 淳华科技 HIGER 海格汽车 长城电脑 许继集团

信利电子 威胜集团 LONGCHEER

**1999**

1999 MPI was founded in Hong Kong, China

**2002**

2002 Released the automatic pick & place system

**2005**

2005 Released the inline laser marking system

**2001**

2001 Expanded business to Shenzhen, China

**2008**

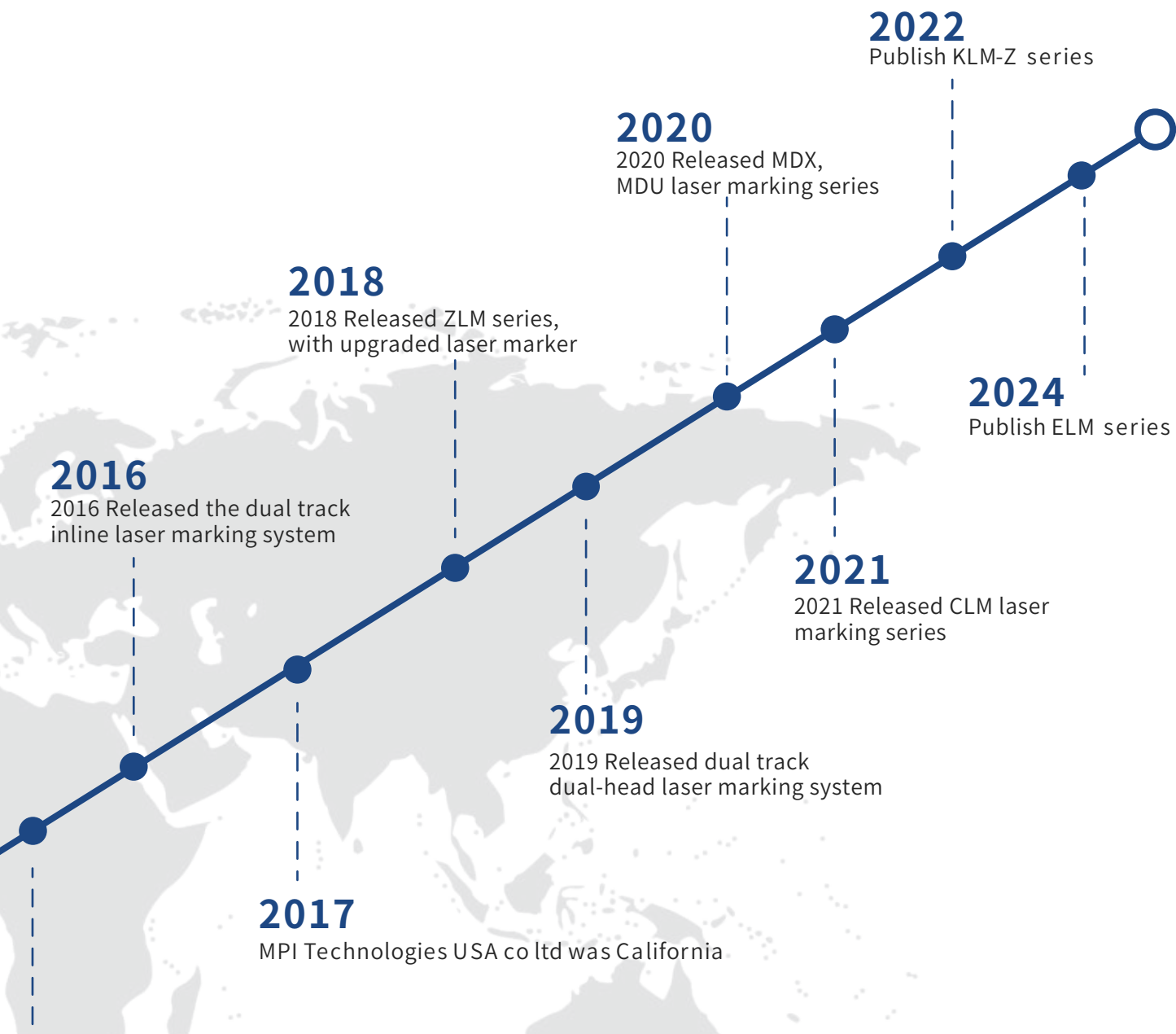
2008 Exapnded business to Suzhou, China

**2009**

2009 Released the inline label mounter

**2010**

2010 Released the inline code reading system



# CLM-Z

Japan made KEYENCE  
CO<sub>2</sub> Laser unit

- ▲ The newly launched CLM-Z series laser marking machine, with high stability and cost-effective automatic SMT production line traceability equipment, with Japan made Keyence CO<sub>2</sub> 3D laser and Keyence AI code reader, accurate, durable and high-yield, easily meet the high requirements of SMT production traceability in various scenarios.



Transfer Production Data

Engraving Data Transfer



- ▲ The CLM-Z is seamlessly linked to the SMT production MES to exchange data in real time, and realize the automatic traceability of one-stop engraving, reading and uploading on the SMT production line.

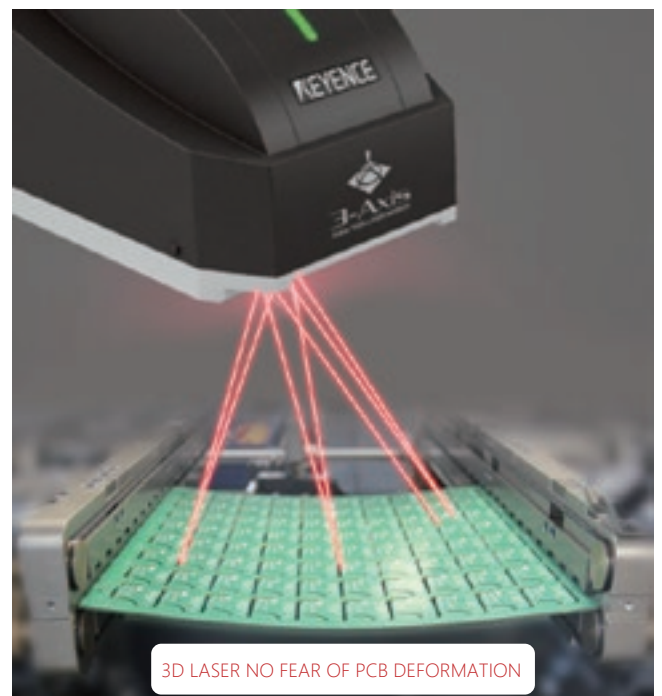
## Excellent 3D Laser Making System

- Japan made Keyence CO2 3D laser and controller, combined with Keyence's new Marking Builder software, provides high stability, ultra-long durability, high-speed engraving and clear precision.



- Safe and reliable, No copper damage, high quality engraving, no consumables, is the best partner for SMT production line traceability equipment.

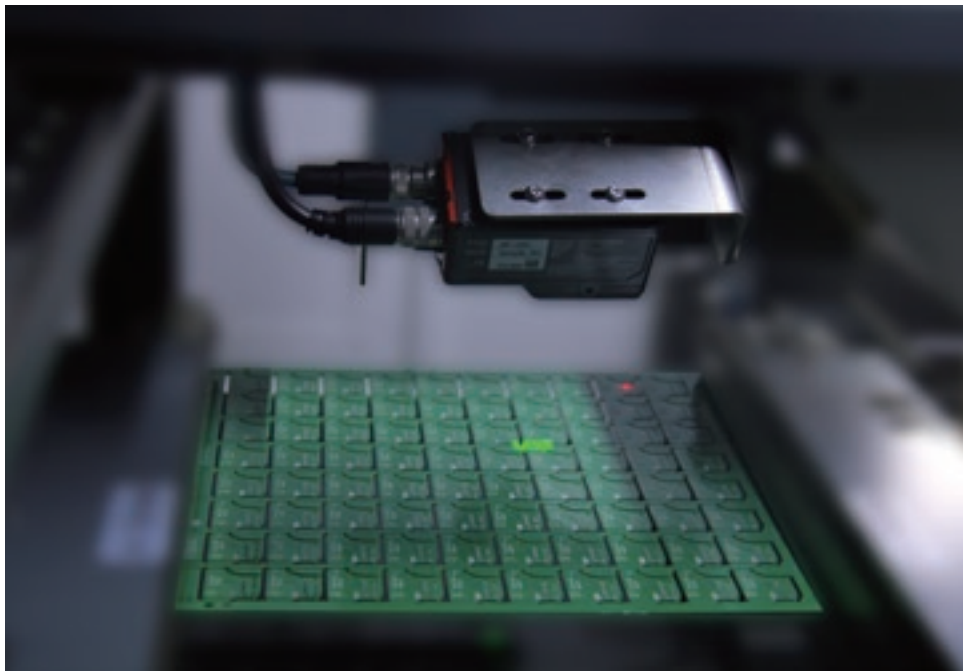
- Keyence 3D laser built-in Z-axis focal length adjustment function, can effectively solve the SMT production of circuit board deformation caused by the 2D code engraving is not clear, difficult to read or can not read, 2D code quality grade is poor and a series of problems.



# CLM-Z

## Accurate And Reliable Code Reading System

Use KEYENCE Autofocus AI smart bar code reader. SR-X Series. Greatly improve reading performance, intelligently correspond to changes in work piece state, field environment, and engraving quality. The reason for the error is clear.



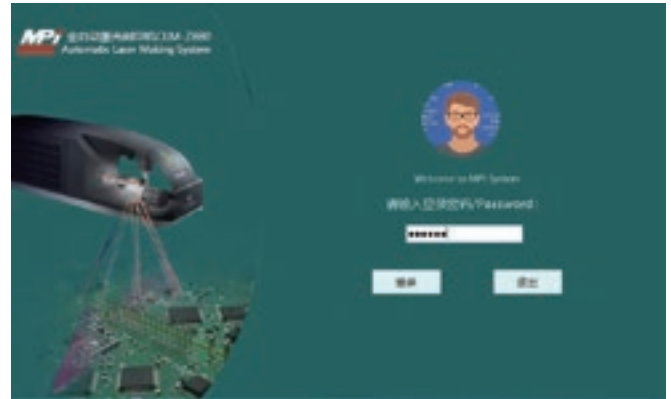
Keyence AI reader includes international bar code quality output, the output results meet the laser printing quality ISO/IEC TR29158 standard.



# CLM-Z

## Friendly Machine Operating System

- CLM-Z operating system using Microsoft Win10 platform, friendly, simple and strong compatibility. With CCD visual image processing system, Has a Fiducial mark recognition and BAD Mark recognition system.



- CLM-Z operating system standard with SMT production management system real-time link, production management traceability system directly real-time control of work order content, to avoid human error caused by mismarking, leakage caused by loss.



- Engraving content, engraving code, read the code of the situation and the situation at a glance, safe and reliable.

# CLM-Z

## Precise And Stable Machine Structure

- Japanese servo control system, X, Y moving parts using THK precision screw, positioning more accurate. The laser drive support adopts overall precision machining to ensure that the laser is more stable and reliable.



## PATENT PCB FLIP SYSTEM

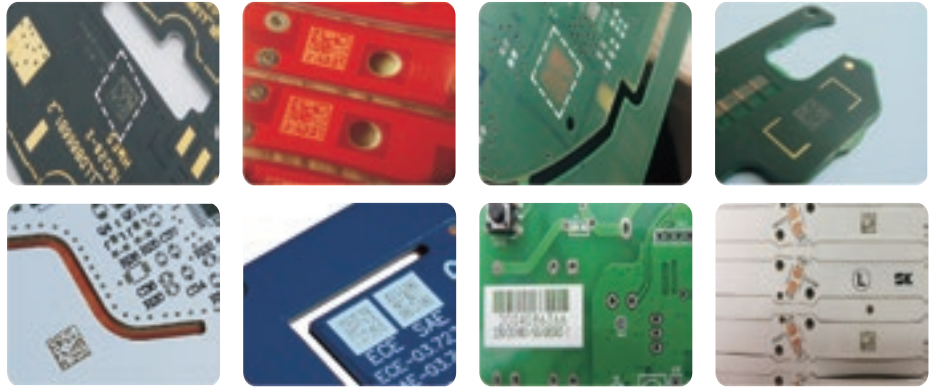


- Built-in PCB automatic flip system model, can choose the production mode of double-sided engraving and reading or single-side engraving and reading, the production is flexible and convenient.

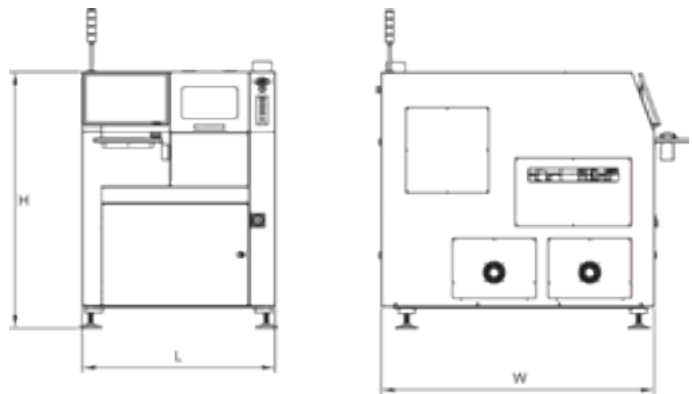
- Built-in dust collection odor removal filter device, dust alarm device, effectively reduce dust damage to the interior of the air-cooled laser, external exhaust duct, effectively ensure that the production environment without odor.



## Laser Engraving Sample



## Overall Dimension Drawing



## Specification

Model	CLM-Z800	CLM-Z880
PCB Marking mode	Single-sides marking	Double-sides marking
PCB Size	W50×L50 ~ W330×L460mm	W50×L50 ~ W330×L460mm
Marking Area	W330×L460 mm	W330×L460 mm
Laser Source	Japan made KEYENCE 30W CO <sub>2</sub> , Laser unit	
Support Marking Type	1D,2D Bar Code,Font,Logo	
Cycle Time	Transfer<1seconds , Marking Time < 0.3seconds	
System connection function	It can connect to SHOPFLOW,MES,JMS,PMS and other production management systems	
Transport Direction	Left to Right or Right to Left ( option )	
Conveyor Height	900±30 mm	
I/O Signal	Standard SMEMA	
Power	AC 220V50/60Hz 1Ph	
Air Pressure	4 ~ 6kg/cm <sup>2</sup>	
Machine Size (L×W×H)	L880mm×W1600mm×H1500mm	L880mm×W1600mm×H1500mm
Weight	850Kg	920Kg

# CLM-X

Three axis hybrid laser printing machine is adopted

- Auto-Focus at each Marking Location
- High Quality, High Output, Long Service Life
- Three axis hybrid laser printing machine is adopted

It combines the high quality beam of the YVO4 laser with the high power output of the fiber laser. It can be stable for a long time to make beautiful and fast engraving on the resin and metal.



Transfer Production Data

Engraving Data Transfer



- ▲ The CLM-X is seamlessly linked to the SMT production MES to exchange data in real time, and realize the automatic traceability of one-stop engraving, reading and uploading on the SMT production line.

# CLM-X

Use KEYENCE Autofocus  
1D/2D Barcode Reader  
SR-X Series

The upgraded measurement mode includes 5 functions of international grade determination ABCDF output for two-dimensional code.



Subvert the common sense of reading difficult barcodes

## Physical test (grade verification)



F Grade

Overall	
F	
Decode	A 4.0
Symbol Contrast	A 4.0
Resolution	A 4.0
Sufficient Margin	A 4.0
Fixed Pattern Damage	A 4.0
Formal Defo. Damage	-
Version Defo. Damage	-
Actual Readability	F 3.0
Grid Readability	A 4.0



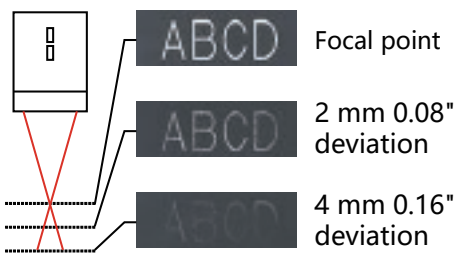
A Grade

Overall	
A	
Decode	A 4.0
Symbol Contrast	A 4.0
Resolution	A 4.0
Sufficient Margin	A 4.0
Fixed Pattern Damage	A 4.0
Formal Defo. Damage	-
Version Defo. Damage	-
Actual Readability	A 4.0
Grid Readability	A 4.0

# CLM-X

## The Importance of Focusing

Laser markers use a lens to focus light to perform marking and processing. Deviation in the focal point may cause blurred or missing markings. Focusing is a prerequisite for stable marking.



## No Focus Misalignment

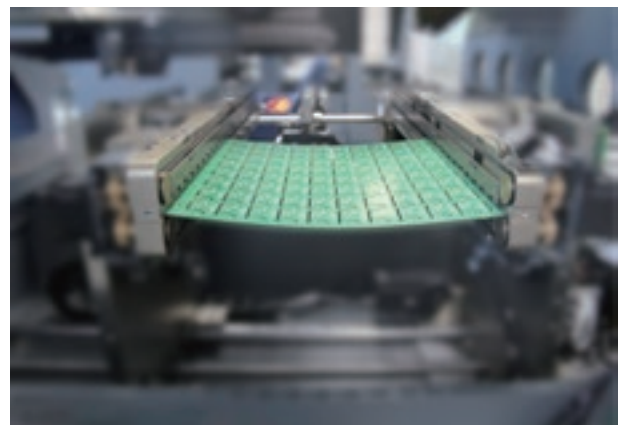
## Auto-Focus at each Marking Location

## Z Tracking Function

Conventional marking (focal point deviation)



MD-X marking (auto-focus)



Problems with conventional methods

Slight tilting during mounting caused a deviation in focal distance, which led to irregularities in marking.



**Resolved with MD-X**

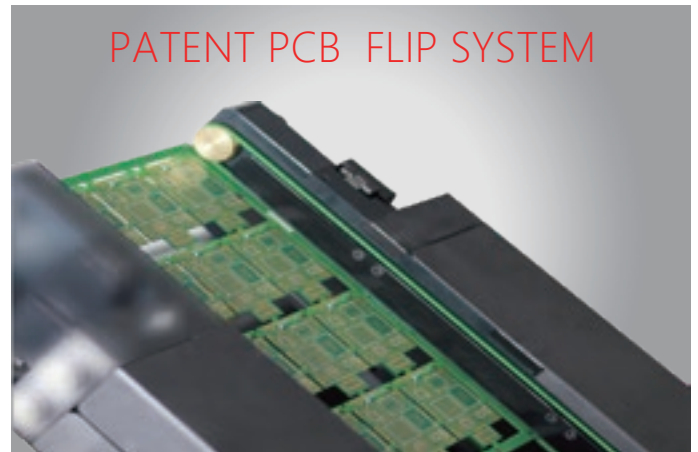
The MD-X accounts for tilt of the target, enabling stable marking.



Unlike conventional laser markers in which the focal distance is fixed, the built-in distance sensor measures each marking location. This maintains high marking quality over the entire marking area.

## Precise And Stable Machine Structure

- ▲ Built-in PCB automatic flip system model, can choose the production mode of double-sided engraving and reading or single-side engraving and reading, the production is flexible and convenient.



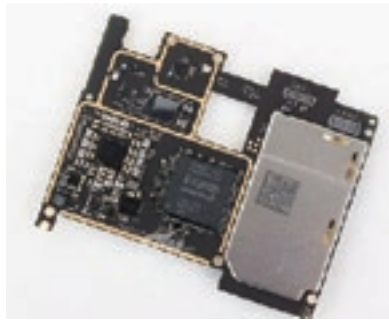
- ▲ Japanese servo control system, X, Y moving parts using THK precision screw, positioning more accurate. The laser drive support adopts overall precision machining to ensure that the laser is more stable and reliable.

- ▲ Built-in dust collection odor removal filter device, dust alarm device, effectively reduce dust damage to the interior of the air-cooled laser, external exhaust duct, effectively ensure that the production environment without odor.



# CLM-X

## Laser Engraving Sample



## Specification

Model	CLM-X800	CLM-X880
PCB Marking mode	Single-sides marking	Double-sides marking
PCB Size	W50×L50 ~ W330×L460 mm	W50×L50 ~ W330×L460 mm
Marking scope	W330×L460 mm	W330×L460 mm
Laser Source	Japan made KEYENCE Hybrid Laser MD-X Series	
Support Marking Type	1D,2D Bar Code,Font,Logo	
Cycle Time	Transfer<1seconds , Marking Time< 0.3seconds	
System connection function	It can connect to SHOPFLOW,MES,IMS,PMS and other production management systems	
Transport Direction	Left to Right or Right to Left (option )	
Height Conveyor	900±30 mm	
I/O Signal	Standard SMEMA	
Power	AC 220V50/60Hz 1Ph	
Air Pressure	4~6kg/cm <sup>2</sup>	
Machine Size (L×W×H)	L880mm×W1600mm×H1500mm	L880mm×W1600mm×H1500mm
Weight	850Kg	920Kg

# CLM-U

Japan made KEYENCE  
Triaxial UV Laser unit

- Using Japan made KEYENCE UV laser, stable and easy-to-read marking, higher absorption rate of the material, the marking surface will effectively absorb the irradiated light, and high visibility marking can be achieved without increasing the power. High-functionality, Material diversity, Improve efficiency, and enhance the "Competitiveness" of customer products.



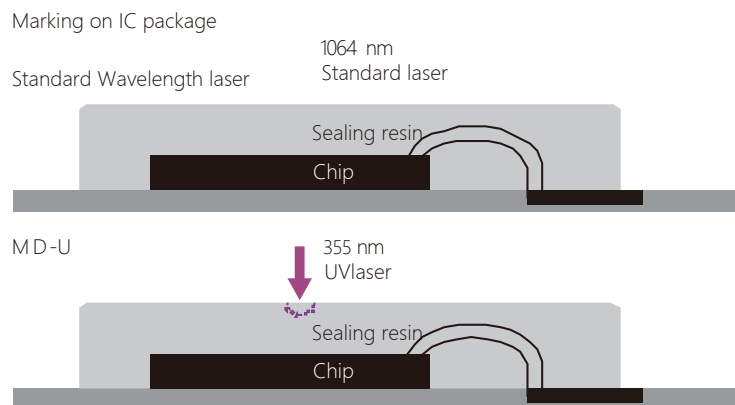
- The CLM-U is seamlessly linked to the SMT production MES to exchange data in real time, and realize the automatic traceability of one-stop engraving, reading and uploading on the SMT production line.

**High-Contrast,  
Damage-Free Marking**

**3-Axis Marking,  
With no Deviation and High Stability.**

## Inhibit damage to the interior

- With the steadily decreasing size of electronic components and their sealing resins, standard wavelength lasers incur a greater risk of damaging the internal components through the transmitted energy. The high material absorption rate offered by UV lasers reduces the chance of that energy being transmitted to internal components.



- Marking on ceramic PCBs

High-contrast code marking regardless of size.

**Standard Wavelength**

Cell size: 0.09 mm 0.0035"  
1.08 mm 0.04" × 2.34 mm 0.09"

**MD-U**

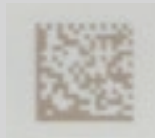
Cell size: 0.03 mm 0.0012"  
0.36 mm 0.01" × 0.78 mm 0.03"

# CLM-U

Clearer, more detailed

High Contrast Marking

Standard Wavelength



MD-U



The MD-U Series is capable of generating greater contrast for more appealing aesthetics and improved readability on 2D codes.

Reduced heat

Damage-Free Marking

Standard Wavelength



MD-U

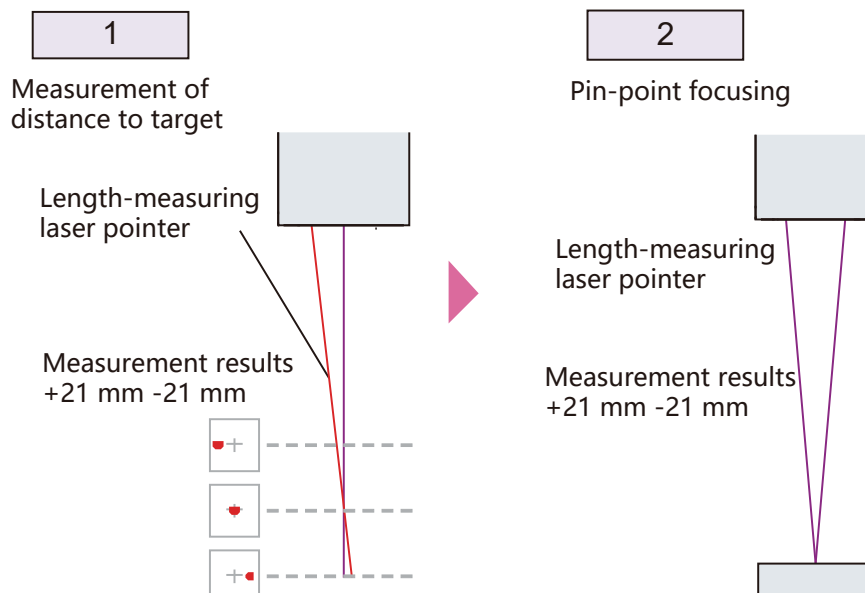


Through suppressed heat effects, burrs and yellow tinting are eliminated, allowing for a nearly perfect finish.

- Eliminating the Need for Peripheral Equipment—Built-In Multi-Function Camera Enables Positioning, Inspection, and More.

## Auto-Focus Function

- Without the use of external equipment. The position of the measurement laser pointer is monitored using the built-in camera, allowing for automatic adjustment of the focal point to within  $\pm 21$  mm.





# CLM-U

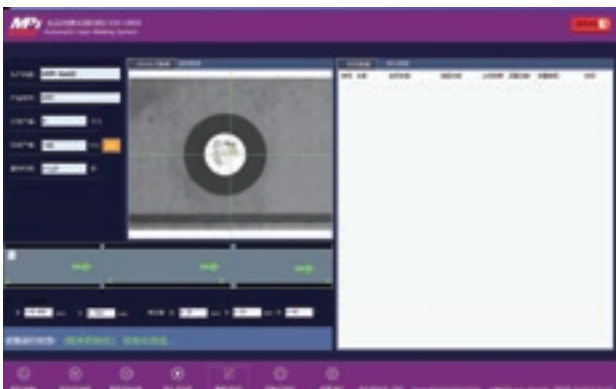
## Friendly Machine Operating System

Production management system(MES) and the system is compatible with the engraving machine platform connection tracking system, device downloading network work content avoid any errors caused by worker mistakes.

CLM-U operating system using Microsoft Win10 platform, friendly, simple and strong compatibility. With CCD visual image processing system, Has a Fiducial mark recognition and BAD Mark recognition system.



User friendly Intelligent software design, Industrial camera position correction of signet, Identify the bad board and skip the engraving. Real-time interconnection between engraving data and production management system data. Avoid Duplicated code, Wrong code. Realize industry 4.0 intelligent production.

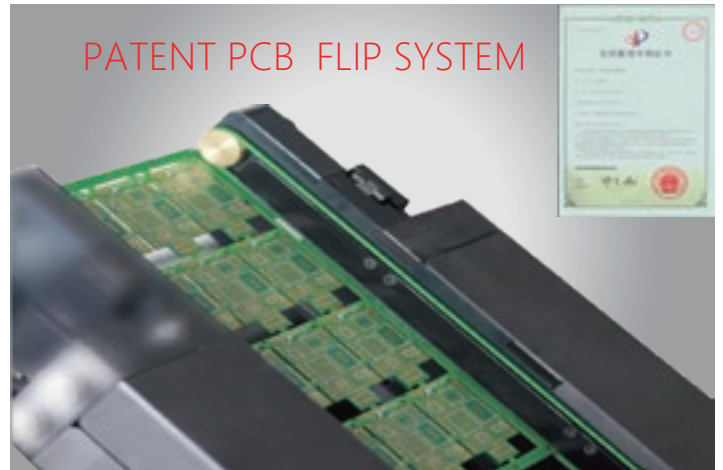


Engraving content, engraving code, read the code of the situation and the situation at a glance, safe and reliable.

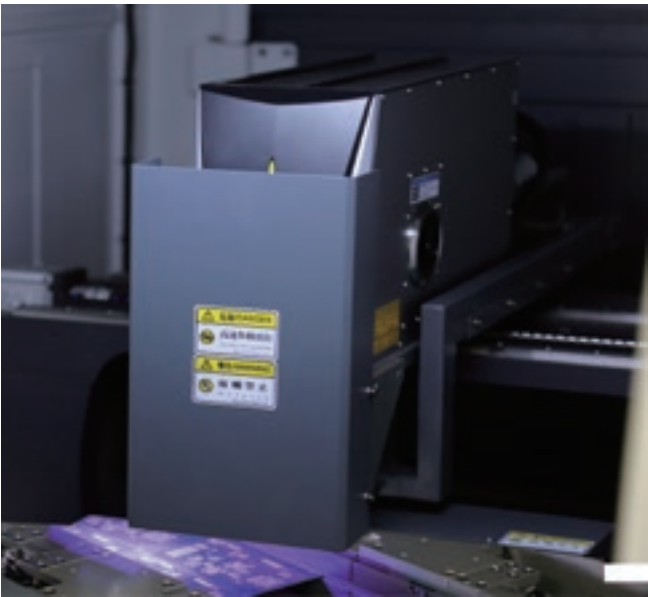


## Precise And Stable Machine Structure

- ▲ Built-in PCB automatic flip system model, can choose the production mode of double-sided engraving and reading or single-side engraving and reading, the production is flexible and convenient.



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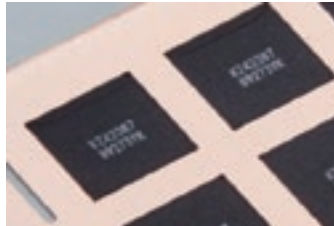
# CLM-U

## Laser Engraving Sample

Lead frame  
Material: Copper



IC Package  
Material: Epoxy



Terminal Block  
Material: PC



Headphone  
Material: PVC



Lead frame  
Material: Copper



ECU Printed Circuit Board  
Material: Epoxy Glass



Terminal  
Material: LCP



Fuse Holder  
Material: PBT



Switch Cover  
Material: PP



Magnifying Glass  
Material: ABS



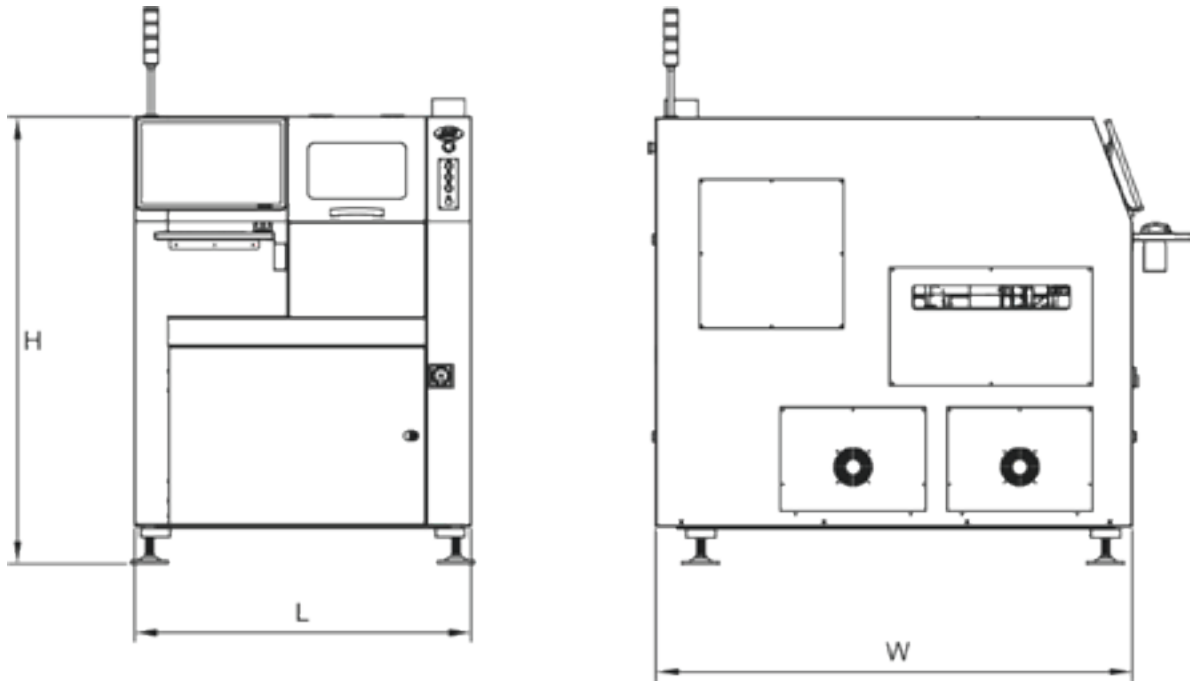
Automotive Multi-Color Relay  
Material: PBT



Crystal Oscillator  
Material: Nickel Plating



## Overall Dimension Drawing



## Specification

Model	CLM-U800	CLM-U880
PCB Marking mode	Single-sides marking	Double-sides marking
PCB Size	W50×L50~W330×L460 mm	W50×L50~W330×L460 mm
Marking Area	W330×L460 mm	W330×L460 mm
Laser Source	Japan made KEYENCE Triaxial UV Laser unit	
Support Marking Type	1D,2DBar Code,Font,Logo	
Cycle Time	Transfer<1seconds, Marking Time<0.3seconds	
System connection function	It can connect to SHOPFLOW,MES,IMS,PMS and other production management systems	
Transport Direction	Left to Right or Right to Left (option )	
Conveyor Height	900±30 mm	
I/O Signal	Standard SMEMA	
Power	AC 220V50/60Hz 1Ph	
Air Pressure	4 ~ 6kg/cm <sup>2</sup>	
Machine Size (L×W×H)	L880mm×W1600mm×H1500mm	L880mm×W1600mm×H1500mm
Weight	850Kg	920Kg

# Cooperative Partner



# Exhibition





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