

3D Fiber Laser Marker (20W/50W)



ML-7320DL-3D/7350DL-3D

A 3D fiber laser marker equipped with long-awaited 3D features has been released as part of the popular fiber laser series.

Performs high-speed, beautiful marking and processing on workpieces with uneven, sloping, cylindrical surfaces by using the variable Z axis.

The ML-7320DL-3D/7350DL-3D is a fully air-cooled fiber laser marker best suited for marking characters on small metal and plastic parts, black marking on stainless steel, engraving on aluminum, and other types of ablation processing.

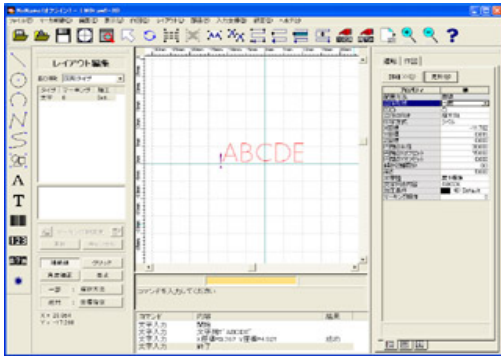
By changing the lasers focal distance with a newly embedded adjustable Z-axis feature, it is possible to achieve highly legible markings (without distorting characters and figures) on workpieces that are uneven or have cylindrical or inclined surfaces.

Contributes to maintaining processing quality by checking the laser power via the power monitor that comes as standard. We hope that you have a positive experience with these highly functional laser markers that are now even easier to use than ever. A new generation of fiber laser markers that are easier to use and have high-quality laser beams and excellent laser oscillation efficiency-which is characteristic of fiber lasers-is now on the market.

Features

- Employs an F-theta lensless structure using the variable Z-axis to achieve high-quality processing on uneven, sloping, cylindrical surfaces on which the focus distance varies.
- Accommodates 3 types of heads depending on the lenses which have different specifications (processing area: 300 mm square or 200 mm square or 120 mm square.)
- 20W or 50W high power fiber laser oscillator enables deep engraving of aluminum and black marking on stainless steel at high speed.
- 500kHz high repetitive frequency produces marking with a high level of visibility on plastics at high speed.
- Distance pointer makes it easy to position a focus point.
- Contributes to maintaining processing quality by checking the laser power via the power monitor that comes as standard.
- LM Draw 6-3D marking software compatible with Miyachi's other markers is installed. Data transferring, data sharing and converting from other markers can be easily done.
- Fully air cooled to reduce installation and maintenance costs.
- Long-lasting laser diode unit reduces maintenance costs.
- Environmentally-resistant strengthened head: IP67G?IP**G

LM Draw6-3D the latest marking software



Employs an F-theta lensless structure using the variable Z-axis. This easy-to-use marking software is compatible with AMADA MIYACHI's other laser markers. The data made by the previous version of the software can be automatically converted. Drawings, letters, and 2D codes can be easily designed and marked by laser.

Applications

Marking on electronic components, electric components, medical equipment, plastic parts, and silicon wafers. Black-marking on stainless steel parts. Deep-engraving of aluminum parts. Removal of coated paints on components. etc.

Processing area

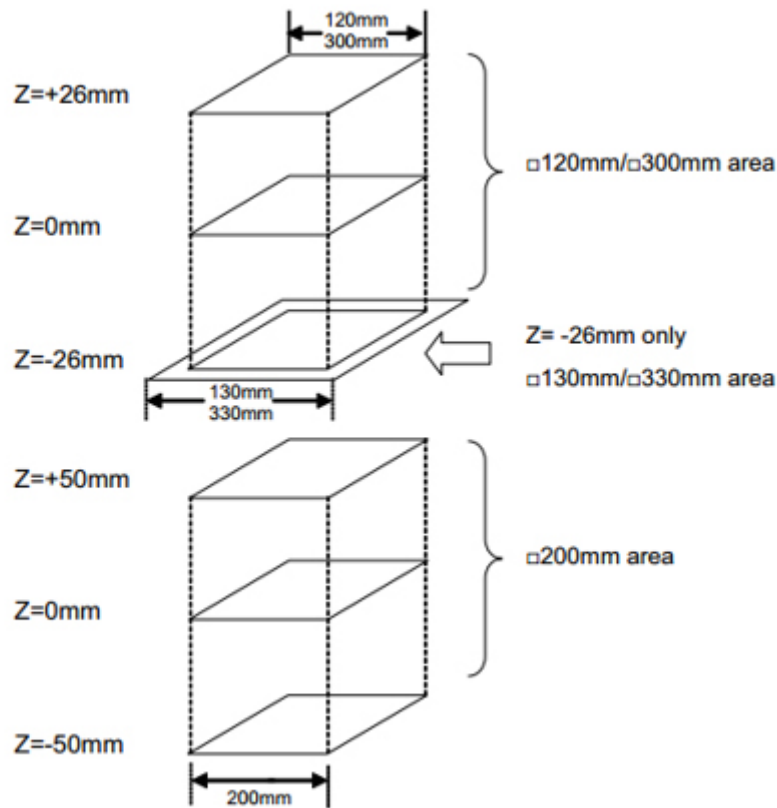
Type (mm)	120	200	300
Scanning method	Galvanometer scanner		
Processing area (mm) *1	120 x 120 (Broadest portion: 130 x 130)	200 x 200	300 x 300 (Broadest portion: 330 x 330)
Reference work distance (mm)	140	285	345
Z-axis variable range (mm)	52	100	52
Position resolution (μm) *2	2	3	5
Marking speed (mm/s) *3	0.01 to 4000		

*1 When Z is -26 mm, the Processing area of 120 mm and 300 mm types is 130 mm x 130 mm or 330 mm x 330 mm as shown below.

*2 Computed value. Not the actual position accuracy.

*3 Computed value. Confirm the appropriate speed for marking during actual marking operations.

The entire speed is limited so that the Z-directional speed becomes 380 mm/s or less at marking.



SPECIFICATIONS

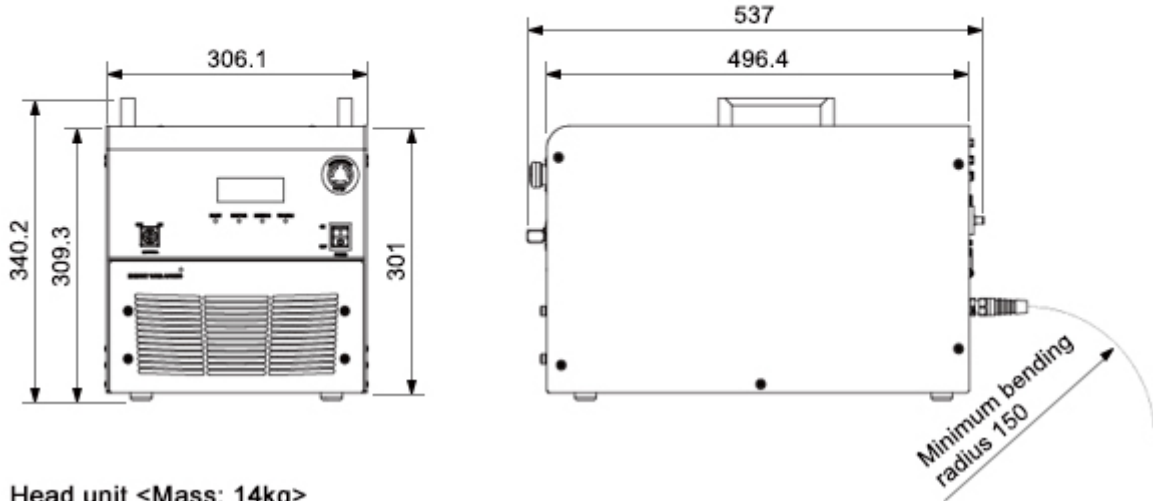
- Focusing head

Model	ML-7320DL-3D	ML-7350DL-3D
Laser type	Yb Fiber Laser	
Oscillation wavelength	Fundamental wavelength	
Oscillation mode	Multimode	
Maximum output	20W (Output from oscillator)	50W (Output from oscillator)
Oscillation type	Pulse oscillation (CW oscillation disabled)	
Repetition frequency	20k to 200kHz	50k to 200kHz
Point beam	Red LD laser	
Guide beam	Red LD laser	
Marking speed	400 characters/sec (character height 1 mm)	
Head Specifications	□120mm, □200mm, □300mm (Purchase choice)	
External communication terminals	USB1.1 (full speed), RS-232C, and compact flash card	
Cable length bet. Head and control unit	3m (Fix)	
Cooling method	Fully air cooled	
Power supply	Single-phase: 100 to 240 V AC, Auto switching: 50/60 Hz	
Power consumption	300W or below	360W or below
Marking software (PC) *1	LMDraw6-3D (Windows 7 Professional 32/64 bit Japanese/English version(SP1), or Windows 8.1 32/64 bit Japanese/English version)	
Font	TrueType font, DIN30640, JIS Z 8905, JIS Z 8904, JIS Z 8903, OCR-A, OCR-B, Round hand, Round gothic	
Marking characters	Alphabet, Number, Katakana, Hiragana, Chinese character (Round gothic of JIS first standard and second standard), Symbol	
Supported file formats	DXF (AutoCAD LT 2004), BMP, JPEG, GIF, TIFF	
Code types *2	Code39, Code128, ITF, Data matrix, QR code, Micro QR code	
Environmentally-resistant strengthened head	IP67 and IPXXG (the JIS standard) *3	
Ambient temperature	5 to 35°C (non-condensing and non-freezing)	
Ambient humidity	40 to 80% RH (non-condensing and non-freezing)	
Mass	<Control Unit>: approx. 26 kg; <Head Unit>: approx. 14 kg	

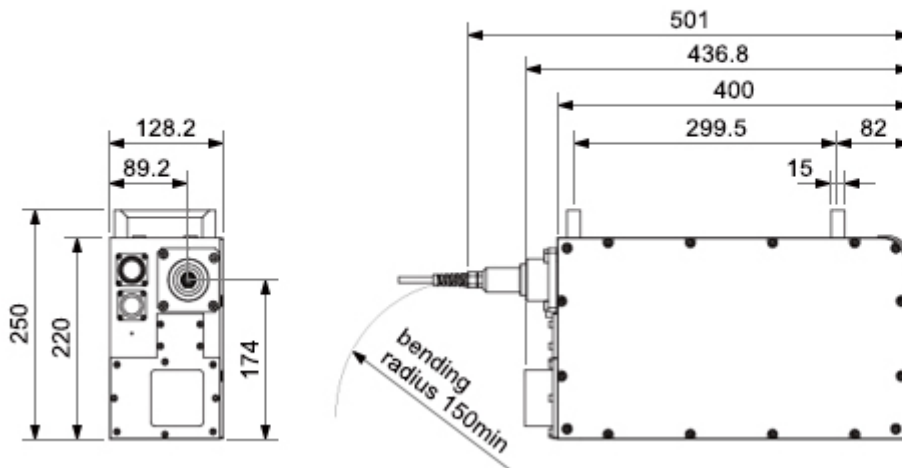
EXTERNAL VIEW

- Dimensions in mm

■ ML-7320DL-3D/50DL-3D Control unit <Mass: 26kg>

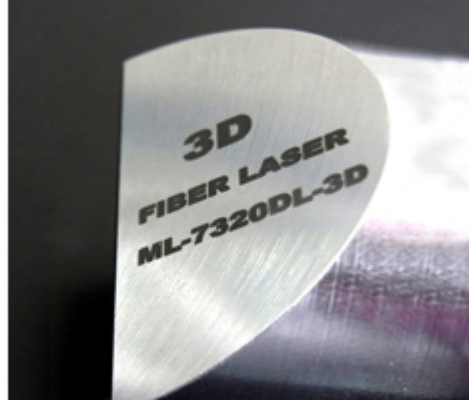


Head unit <Mass: 14kg>



SAMPLE

- Optical fiber



Uneven parts



Cylindrical parts



Metal parts of complex shape / Plastic parts