

## Chapter 1 Summary of FL8330-3D-700

FL8330-3D-700 Dynamic Focusing Scanning System adopts advanced optical design scheme and linear drive Z-axis system, and owns independent intellectual property rights, integrated the functions of data acquisition, data processing, electronic control, mechanical servo, optical imaging, optical compensation, and optical scanning, etc. It was adopted the integral structure, which is compact and well-sealed, ensuring the stability of the long time work condition.

FL8330-3D-700 is suitable to process on metal for laser marking, cutting, welding, drilling, laser micro-machining, 3D applications, laser rapid prototyping, etc.

FL8330-3D-700 has compact design, high positioning accuracy, higher marking speed, and strong anti-interference ability. In the process of dynamic marking, the marking line has high precision, distortion free, power uniform; pattern without distortion, the overall performance has reached the international leading level in the field. The advantages are as following:

- Adopted advanced optical design scheme, it is characterized by small light loss, small volume, high positioning accuracy, fast marking speed and strong anti-interference ability, etc. It is suitable for laser fine processing of various large surface, complex surface and deep carving.
- High speed system, meets above 1500mm/s precision hatch speed.
- Maximum scan field up to **700x700mm**, meets large scan field engraving requirements, according to customer requirement **600x600mm** is optional.
- Maximum marking height up to 80mm to meet customer's demand for large gap.
- Precisely control the focal length position of laser marking machine, automatically adjust Z-axis for 3D deep marking process, keep the spot size to minimum, ensure the uniform graphic effect after marking on the object.
- Adopted MM3D/Marking Mate software system to support various file formats, vector, bitmap and text bar code import, which is easy to learn and operate.

- Built-in concave and convex circular tube, concave and convex sphere, slope, cone, polygon and other basic models, the operator can easily and rapidly set the marking.
- 3D models can be imported; 2D graphics can be directly cladded or projected on built-in curve surface.
- The whole system adopted the optimization designing of electromagnetic compatibility, with high signal-to-noise ratio and strong anti-interference ability.

**Examples of Field Size, Focal Length, and Spot Size Configurations**

<b>Field Size</b>	<b>Focal Length</b>	<b>Spot Size</b>
600×600mm	730mm	36 μ m
700×700mm	830mm	40 μ m

## Chapter 2 FL8330-3D-700 Technical Parameters

Laser Type	1064nm fiber laser source	
Printing Field (Adjustable)	600×600mm~700×700mm	
Input Beam Size	7.5mm	
X&Y Axes Mirrors Aperture Size	30mm	
<b>Speed</b>		
Marking Speed	1000mm/s	
Positioning Speed	1000mm/s	
Writing Speed	125cps	
Step Response Time(1% of full scale)	940us	
Step Response Time(10% of full scale)	1500us	
Tracking Error Time	≤440us	
<b>Precision and Error</b>		
Linearity	99.9%	
Repeatability (RMS)	<8μRad	
Gain Error	<5mRad	
Zero Offset	<5mRad	
Long-term Drift Over 8 Hours	<0.5mRad	
Scale Drift	<40PPM/°C	
Zero Drift	<15μRad/°C	
<b>Power and Signal</b>		
Input Voltage	±24VDC	
Rated Current	4A	
Interface Signal	Digital	XY2-100
Machinery Scan Angle	±11°	
<b>Working Current, Temperature, Dimension</b>		
Working Temperature	0°C~45°C	
Storage Temperature	-10°C~60°C	
Galvanometer Scanner Dimension	460X160X176mm (LxWxH)	

## Chapter 3 The Galvanometer Structure and Wiring

### 3.1 Scanner Housing



### 3.2 Housing Dimension Drawing

