

## Chapter 1 Summary of BL2830-3D-800

BL2830-3D-800 Dynamic Focusing Scanning System adopts advanced optical design scheme, combined with the engraving Z axis (focusing axis) control, with the characteristic of small light loss, fast response, high positioning accuracy, strong anti-interference ability, homogeneous light spot of the entire printing areas, which guarantees of printing in a variety of large scale, complex uneven surface, deep engraving case, etc. The whole structure adopts separate type, which is convenient for installation, debugging, upgrading and maintenance.

Dynamic focusing scanning system is applicable for CO2 laser source with 10600nm wavelength to process on leather, rubber, wood, bamboo, organic glass, ceramic tile, plastic, marble, jade, crystal, cloth and other non-metallic materials, comprehensive performance indicators has achieved leading standards on this area both home and aboard. The advantages are as following:

- Adopted MM3D/Marking Mate software system to support a variety of file formats, vector, bitmap and text bar code import, which is easy to learn and operate.
- Maximum working range: 800\*800mm, any printing size from **400\*400mm to 800\*800mm** can be customized.
- Adopted the photoelectric sensors technology and PDM control method which imported from America, and owned the proprietary intellectual property rights.
- Featured with precise loading design for the optical lens of the third axis (focusing axis), the motor assembly precision is high, the structure is reasonable, the static friction coefficient and the zero offset is small, which guarantees the best dynamic characteristics of the focusing system.

## Chapter 2 BL2830-3D-800 Technical Parameters

Laser Type	10600nm glass tube CO2 laser source	
Printing Field (Adjustable)	400*400mm~800*800mm	
Input Beam Size	7mm~8mm	
X&Y Axes Mirrors Aperture Size	30mm	
<b>Speed</b>		
Marking Speed	800mm/s	
Positioning Speed	800mm/s	
Writing Speed	120cps	
Step Response Time(1% of full scale)	1260us	
Step Response Time(10% of full scale)	1580us	
Tracking Error Time	≤514us	
<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	±12.5°	
<b>Working Current, Temperature, Dimension</b>		
Working Temperature	0°C~45°C	
Storage Temperature	-10°C~60°C	
Galvanometer Scanner Dimension	490x170x163mm (LxWxH)	
Galvanometer Scanner Weight	≈11.37Kg	

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

Field Size (mm)	400X400	500X500	600X600	700X700	800X800
Focal Length (mm)	450	550	650	750	850
Spot Size ( μ m)	336	410	483	556	630

## Chapter 3 The Galvanometer Structure and Wiring

### 3.1 Scanner Housing



### 3.2 Housing Dimension Drawing

