

The M-Box MOPA Fiber Laser Marking System marks surfaces of suitable Materials with an invisible Laser beam (1064nm). The System has been manufactured to up to date standards and Safety Regulations Requirements. There is, nevertheless, a risk of harm and/or injuries to other Goods or Personnel.

## M-Box

Weight: 70kg  
Dimensions: L 768mm \* W 430mm \* H 744.90mm  
Max. workpiece size: L 240mm \* W 360mm \* H 300mm  
Includes a focus finder and electrical Z-Axis

## Operating Conditions

### Environmental Conditions

Operating Condition.: Dust free, no radiation  
Operating Temp.: 15°C to 25°C (room temp.)  
Storage Temp.: 0°C to 40°C  
Relative Humidity: max. 90% (non condensing)  
Max. elevation above NN: max. 1000m

## Electrical Connections

### Currents

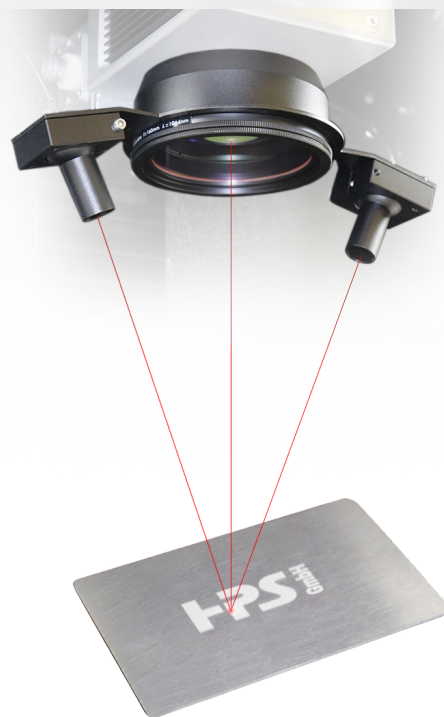
Mains: 220 V AC single phase  
Mains Tolerance:  $\pm 10\%$   
Frequency: 50 – 60 Hz  
Harmonic Distorsion: max. 10 %  
max. Interruption: 3 ms  
Power Consumption: max. 600 W (FBox-20Q)

## System connection and driver setup

The FBox Laser Marking System supports USB connection to the computer, which should meet below requirements

- CPU Core i3 or above
- USB 2.0 port or above
- Windows 2000 SP3, XP, Vista, Win 7, Win 8, Win 10
- RAM 1G or above, HDD 32G or above
- Display SVGA color

If users need to create graphic vector files for marking on the same computer, please refer to requirements from according software.



|                             |                                                                                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------|
| Laser source                | 1064nm MOPA Fiber Laser                                                                           |
| Nominal Laser Power         | 20W                                                                                               |
| Beam Quality M <sup>2</sup> | <1.3                                                                                              |
| Beam Diameter               | 6-9mm                                                                                             |
| Pulse Width                 | 1~350ns                                                                                           |
| Frequency                   | 35-2000 KHz                                                                                       |
| Pulse per Energy            | 0.59mj                                                                                            |
| Peak Power                  | -                                                                                                 |
| Long-term Power Instability | 5%                                                                                                |
| Cooling System              | Air Cooling                                                                                       |
| Aiming Diode                | Intergrated Visible Red Laser Diode, $\lambda=635\text{nm}$                                       |
| Laser Protection Class      |  LASER CLASS 1 |

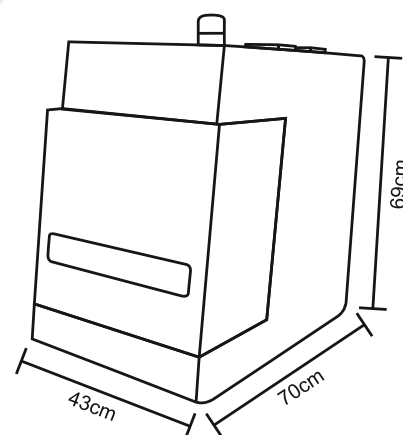


### FBox

|                              |                                |
|------------------------------|--------------------------------|
| Weight                       | 70kg                           |
| Dimensions                   | L 768mm * W 430mm * H 744.90mm |
| Electrical Connection Values | 115V - 230V VAC 50 - 60 Hz     |
| Operating Temperature        | +10 to +35 °C (46 to 95°F)     |
| Humidity                     | < 90% non-condensing           |
| Max. workpiece size          | L 240mm * W 360mm * H 300mm    |

### Scan Head

|                    |              |
|--------------------|--------------|
| F-Theta Lens       | FL 160/163   |
| Marking Area       | 100 * 100 mm |
| Spot Size in Focus | 0.15mm       |





|                            |                 |
|----------------------------|-----------------|
| Min. Line Width            | 0.01mm          |
| Min. Character             | 0.15mm          |
| Working Distance (to Lens) | 180±2mm         |
| Scan Speed                 | Up to 5000 mm/s |

## Marking Software

|                            |                                   |
|----------------------------|-----------------------------------|
| Min. Hardware Requirements |                                   |
| Operating System           | Windows XP, Win 7, Win 8, Win 10  |
| Min. Memory                | RAM 1G or above, HDD 32G or above |
| Display                    | SVGA Color                        |

## Text

|                |                                                 |
|----------------|-------------------------------------------------|
| Fonts          | True-Type ( filled/unfilled), Single-Line Fonts |
| Orientation    | User Defined                                    |
| Letter Spacing | User Defined                                    |
| Arc Text       | Scalable and adjustable                         |

## Graphic

|          |                                                                                           |
|----------|-------------------------------------------------------------------------------------------|
| Elements | Line, Rectangle, Circle, Ellipse (filled/ unfilled)                                       |
| Formats  | <u>Vector</u> : *.plt, *.dxf, *.ai, *.svg <u>BMP</u> : *.bmp, *.jpg, *.jpeg, *.gif, *.png |

## Specials

|                   |
|-------------------|
| Focus finder      |
| Electrical Z-Axis |
| Live View         |



# mBOX20