LaserBot

SKU: **90105** Weight: **4.48 Kilogram**

LaserBot

LaserBot is a desktop laser engraver developed on Makeblock's open-source platform. Equipped with 1.6W 445nm high power solid-state lasers, and cooperating with its software mLaser, LaserBot can easily engrave and cut many things for you, and help you to make surprises in daily life. For instance, making Christmas cards/birthday cards for your families, or engrave your honeymoon photos on the wood for decoration, etc.

Engraving graphic display

LaserBot uses a beam of light to cut, engrave, and shape designs from a variety of materials.

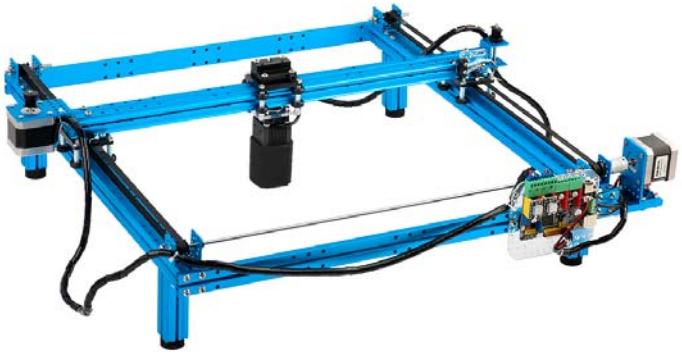
Features

• Simple but solid H-shaped structure;

• High-precision anodized aluminum alloy;

• Arduino compatible;

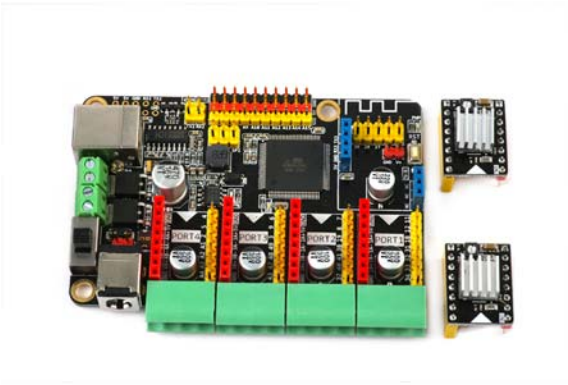
• User friendly sofware;



Capability:

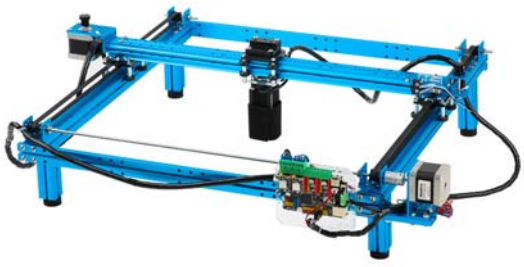
1. 1.6W 445nm semiconductor and Solid laser: The rotation speed of its high power laser head can reach up to 200mm/s, so that LaserBot is twice as efficient as XY Plotter (with Laser Engraver Upgrade Pack) . You will save more time to realize your ideas!

2. Megapi: The powerful mainboard MegaPi brings you unprecedented experience of laser engraving. It not only has superpower to control various motors, but also very easy to use. Moreover, you can also combine it with Raspberry Pi to explore more.



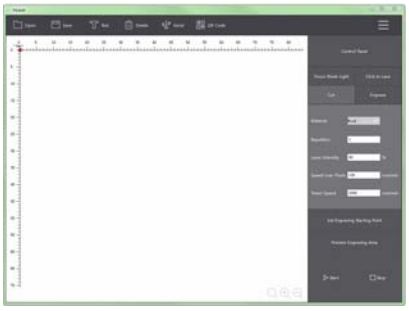
3. High-precision: Up to 0.1mm, carefully engraves every details.

4. Engraving area: Up to 383mm×367mm



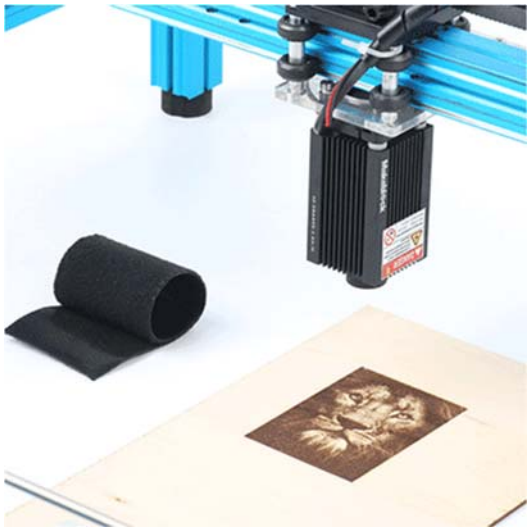
Software:

mLaser: This is a new software for LaserBot, our DIY laser cutter. It includes both simple mode and expert mode for different levels of users. Also we simplified the operation and setting procedure to save more time. Therefore, it is so user friendly that everyone can use to control LaserBot.



Safety:

Goggles: Specifically designed Goggles for LaserBot to protect your eyes during laser engraving.



Velcro sticker pad for Laser head: In order to avoid excessive scattering of laser, we specially designed Velcro sticker pad for Laser head. Only one step needed to install the Velcro sticker pad to laser head.

WARNING

Wavelength γ= 445nm blue-violet diode laser

DO NOT directly irradiate eye or skin by the laser beam.

WARNING: As laser energy gains higher density, make sure corresponding protection measures are taken while using.

• No direct eye-contact with the laser light path;

• DO NOT irradiate others by the laser;

• Keep away from children and other people who are not familiar with laser usage;

• When the laser is used, take eye protection measure;

• When certain materials are cut by the laser, it is possible for them to produce toxic smoke, take ventilation measures.

Comparison to XY Plotter (with Laser Engraver Upgrade Pack)

If you're trying to figure out the difference between LaserBot and XY Plotter (with Laser Engraver Upgrade Pack), check this comparison chart.

	LaserBot	XY Plotter (with Laser Engraver Upgrade Pack)
Main Control Chip	ATMEGA2560-16AU	Arduino Uno
Extension Ports	1.Aluminum Extrusion Parts 2.Timing Pulley 18T 3.Linear Motion Slide 4.MegaPi (Controller) 5.Stepper Motors	1.Aluminum Extrusion Parts 2.Timing Pulley 18T 3.Linear Motion Shaft 4.D8×496mm Linear Motion Slide Unit 8mm 5.Makeblock Orion(Controller)

	6.MegaPi Stepper Motor Drivers 7.1.6W 445nm High-Power Solid State Laser 8.Micro Switch 9.Cables 10.Other Hardware and Accessories	6.Stepper Motors 7.Stepper Motor Drivers 8.9g Micro Servo Pack 9.500mW 405nm High-Power Solid State Laser 10.Micro Switch 11.Cables 12.Other Hardware and Accessories
Electronics	MegaPi (Controller)	Makeblock Orion(Controller)
Laser	1.6W 445nm High-Power Solid State Laser	500mW 405nm High-Power Solid State Laser
Communication	USB Type B	Micro USB
Software	mLaser	mDraw & Benbox
Supports file type	*PNG, *JPG, *BMP, *SVG, *DXF	SVG(mDraw) JPG, PNG, BMP, GIF, DXF（Benbox））
Power Supply	100-240 V~50/60Hz AC/DC Power adapter, 12V/2.0A	100-240 V~50/60Hz AC/DC Power adapter, 12V/3.0A

Specifications

Frame	Anodized aluminum
Physical Dimensions (L×W×H)	535mm×637mm×184mm
Working Area (X×Y)	383mm×367mm
XY Accuracy	0.1mm
Maximum Working Speed	200mm/s
Noise Level	Low noise
Power	100-240 V~50/60Hz AC/DC Power adapter, 12V/2.0A
Mainboard	MegaPi (Arduino & Raspberry Compatible)
Connections	USB
Net Weight	3.87kg
Gross Weight	4.475kg
MEAS	562mm×336mm×90mm
Software	mLaser
Supported File Types	*PNG, *JPG, *BMP, *SVG, *DXF

Laser Technical Specification

Product Dimension	Φ33mm X 79mm
Output Power	1.6W
Best Engraving Distance	20-50mm
Light Spot Precision	≤1mm
Focus Mode	Adjustable Focal Distance
Damage Ratio of Lens	10%
Actual Light Power	1.3W
Wavelength	445nm
Operating Voltage	DC 12V ± 30%
Operating Current	600mA
Diameter Of Beam	5mm
Light Spot | Divergence Angle	≤1°
Light Spot | Concentricity	≤0.02°
Continuous Working Hours	≤5h
Operating Life	6000 Industrial Hours
Engraving Materials	Dark Flammable Objects
Laser Level	IV (Caution: DO NOT directly irradiate eye or skin with the laser beam over 50mW.)
Operating Temperature	-40℃ ~ 50℃
Storage Temperature	-50℃ ~ 60℃

Processable Material

Material	Cuts	Engraves
Paper	YES	YES
Cardboard	up to 0.8mm	YES
Wood Board	up to 0.6mm	YES
Rubber Sheet	up to 0.5mm	YES
Foam Paper	up to 3mm	Engraves
Dark Colored Cloth (denim cloth, cotton cloth and linen)	up to 1mm	YES
Non-Transparent ACRYLIC	※1	YES
Plastic Sheet	※2	YES
Urethane Sheet	up to 0.8mm	YES
Mirror	NO	NO
Glass	NO	NO
Ceramic	NO	※3
Aluminum	NO	NO
Steel	NO	YES

Stainless	NO	NO

※1. Opaque black acrylic only ※2. Gray plastic plate only ※3. Peeling of anodized only

Parts List

4×Slider Beam2424-072	4×Aluminum Sleeve 4×6×4mm	2×Micro Switch
2×Beam0824-496	4×Aluminum Sleeve 4×6×6mm	1×12V 2A AC/DC Adapter
1×Beam0824-96	4×Aluminum Sleeve 4×6×12mm	1×USB Cable B-1.3m
3×Slider Beam2424-504	2×Micro Switch Bracket B	2×42BYG Stepper Motor
2×42BYG Stepper Motor Bracket	8×Aluminum Sleeve 4×6×16mm	1×Fan
1×Plate 3×6	13×Headless Set Screw M3×5	1×1600mW Blue Laser Components
5×Bracket U1	8×Countersunk Screw M3×8	1×Velcro Sticker Pad 50×160mm
4×Cuttable Linkage-4 Holes	4×Nut M3	3×Timing Belt (1.3m), Open-end
1×Flexible Coupling 4×4mm	44×Nut M4	4×Foam Pad D24×12mm
10×Flange Bearing 4×8×3	4×Self Tapping Screw M2.2×9.5	10×Nylon Cable Tie 1.9×100
6×Plastic Timing Pulley 18T	12×Screw M4×8	1×Slotted Screwdriver
3×D-shaft 4×56mm	36×Screw M4×14	1×Wrench 5mm & 7mm
1×Shaft D4×512	2×Screw M4×22	2×HEX Key 1.5mm
1×1600mW Blue Laser Components Bracket	2×Megapi Stepper Motor Driver	1×Red Plexiglass Laser Goggles
16×Roller	34×Screw M4×30	4×Color Paper
3×Guide-Rail Slide 50×42×6mm	8×Screw M4×40	1×Micro Switch Line-70cm
1×Timing Belt Clamp 42×32×15.6mm	3×Plastic Rivet 4100	1×Micro Switch Line-20cm
1×MegaPi Acrylic Bracke	1×MegaPi	2×Wrap Tube-1m
7 x Shaft Collar 4mm	4 x Screw M3x20	1xCross & 2.5mm Hex Screwdriver