Good-Laser

Light 530

Smart CO2 Desktop Laser Cutting Machine

Product User Manual

Contents

Statement

Thank you for choosing Good-Laser products.

To ensure that you can fully understand and correctly use this product, please read carefully all the accompanying instructions of the product before installing and using this product for the first time.

If you fail to use the machine in accordance with the instructions and requirements of the user manual, or operate this product incorrectly due to misunderstanding, etc. Good-Laser will not be responsible for any losses caused thereby.

We will continue to pay attention to product updates and technological developments, revise and update the manual content in a timely manner. If there is a difference between the user manual and the actual product due to technological upgrades, please refer to the actual product. Meanwhile, you can also contact our technical support team at info@good-laser.com to request the latest version of the manual to meet your usage needs.

Thank you again for your trust and support, and wish you a pleasant experience!

Safety instructions

Operational safety

Light 530 is equipped with an advanced integrated safety system. Once the protective cover is opened, the safety system will be triggered immediately and the equipment will not be able to process, thus effectively preventing potential risks of injury. Therefore, during operation, please make sure that the protective cover is closed to avoid accidental interruption of processing. If you do need to interrupt processing, please press the 【Stop】 key first and then perform other operations safely.

When the equipment is working, please pay attention to the following safety precautions:

To ensure safety, it is recommended to have a carbon dioxide fire extinguisher near the equipment in case of emergency.

It is strictly forbidden to place flammable items inside the equipment, and after each processing is completed, the remaining materials must be cleaned up in time to avoid the risk of fire.

Please keep the air circulating around the device and do not cover the device with anything during operation to ensure its normal operation and heat dissipation.

The machine operator must be present when operating the equipment. It is strictly forbidden to use the equipment without supervision to prevent accidents.

When performing cutting process, please ensure that the air blow assist function is turned on to provide the necessary assist effect.

Since the laser beam is invisible, in order to prevent potential eye damage, be sure to wear special goggles when maintaining laser equipment.

The adjustment of the optical path must be performed by professionally trained personnel. Any non-standard or irregular operation may cause laser damage, so please be careful.

Please note that it is strictly forbidden to disable limit switches and safety devices. Otherwise, personal injury and equipment damage caused by this will not be included in the warranty scope.

Before processing materials, please make sure whether the materials will release toxic substances and verify whether the exhaust filtration equipment can properly handle these potentially harmful substances.

Please be aware that under no circumstances should you use a CO2 laser cutting machine to process PVC (polyvinyl chloride) to avoid possible safety risks.

• Laser Safety

Based on the assessment of the potential risks of laser machines, the safety level of the equipment is defined as Level 1. Light 530 belongs to this safety level, which is mainly due to its sturdy protective shell and safe circuit configuration. However, please note that improper operation and maintenance may reduce the safety level of the equipment, thereby causing the risk of laser radiation.

This laser engraving system is equipped with a Class 4 Carbon Dioxide (CO2) laser source, which produces intense, invisible laser radiation. Both direct and diffuse radiation can present serious risks if necessary safety measures are not taken.

In the absence of safety protection measures, direct laser exposure can cause the following harm to the human body: the eyes may suffer corneal burns, the skin may be burned, and clothing may even catch fire.

Do not perform any modification or disassembly operations on the laser machine, and it is strictly forbidden to start the modified or disassembled laser machine.

In addition to the normal operation, use and adjustment of the equipment may cause laser radiation, other improper behavior may also trigger harmful laser radiation. Therefore, when operating a laser machine, be sure to remain highly vigilant and follow all safety regulations.

· Warning and instruction signs

The warning labels on the equipment are intended to provide customers with key precautions and warnings of possible dangerous consequences when installing and operating the equipment. To ensure safety, please be sure to carefully read and strictly follow the instructions on the labels.

· List of package items


Light 530 machine*1


Power cable*1


USB 3.0 extension cable*1


Network cable*1


USB Cable*1


USB drive*1


Steel ruler*1


Fuse * 2


Smoke exhaust pipe*1


Airduct locking steel ring*2


Screw-drivers*2


Hexagon wrench sets*1


Rail oiler pot*1

Funnel*1


Measuring cup*1


Cotton swab*1


Acrylic board*2


Plywood board*2


Metal connector*1

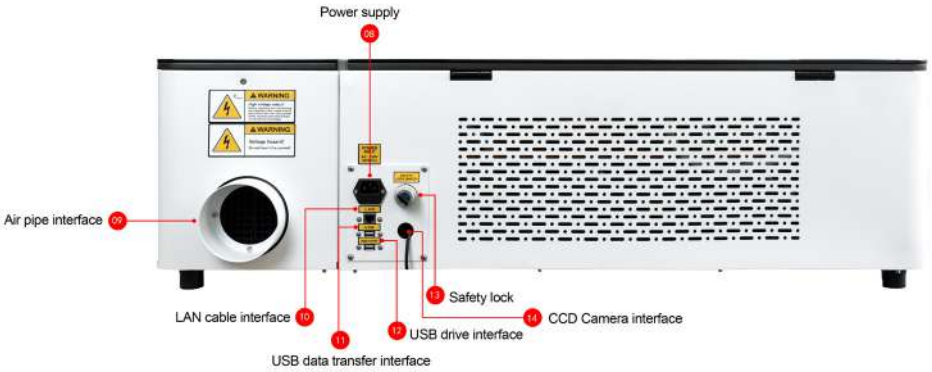

Safety lock key*1


User manual*1


Quality certificate card*1


Warranty card*1

Meet Light 530



WARNING

- **Before operating the machine for the first time, make sure to fill the built-in cooling water tank with purified water or distilled water first, in extremely cold weather(under 0°C), please add anti-freezing agent in the cooling water tank too. For guidance on adding antifreeze, please check on page 45 of this manual.**
- **The machine must be properly grounded according to the power grid, otherwise it will affect the normal operation and cause machine fault.**

Light 530 Technical Specification

Laser Type	Sealed CO2 Glass Laser Tube
Laser peak power	55W
Work area	500×300 mm
Maximum operating speed	1--600mm/s
Positioning accuracy	≤0.025mm
Laser head lifting stroke	≤30mm
Maximum cutting thickness	20mm (Acrylic)
Thickness of material that can be placed	≤ 22mm
Focusing method	Autofocus, Manual focus
Connection	Support USB connection, network cable connection, WIFI connection.
Support system	Windows, Mac OS
Supported Software	Ps, Ai, CorelDRAW, AutoCAD, Solidworks, etc.
Power supply system	220V/110V AC 50HZ/60HZ
Supported file formats	JPG, DXF, AI, DST, PNG, BMP, TIF, SVG, etc.
power supply system	220V/110V AC 50HZ/60HZ.
Laser tube service life	≥4000-6000 hours
Operating software	Good-Laser LightMaker or Lightburn (PC) LightMaker (mobile)
Supported processing materials	Wood board, cardboard, corrugated board, acrylic board, cloth, leather, pad, two-color board, PET, rubber, veneer, fiberglass, plastic, glass, ceramic and other non-metallic materials.
Equipment working noise	≤60db
Total Weight	70kg

Control method	5-inch LCD touch screen/mobile phone APP/ PC software LightMaker
Transmission form	Stepper motor X-axis linear guide + 3M synchronous belt; Y-axis linear guide + 3M synchronous belt.
Safety protection	CE approved safety interlock switch: stop when cover is opened, stop when drawer is opened, emergency button, safety key, working status indicator.
Cooling method	Built-in water cooling system (water tank & water cooler)
Focusing method	Support automatic focusing when identifying materials

Material requirements for cutting/engraving

Maximum cutting size: 500 (length) * 300 (width) * 20 (thickness) mm

Types of materials that can be cut/engraved

Materials		Line drawing	Cutting	Shallow engraving	Deep engraving
Wood board	Solid wood	√	√	√	√
	Plywood	√	√	√	√
	density board	√	√	√	√
Plastic	Acrylic	√	√	√	√
	ASB two-tone panel	√	√	√	√
	PET	√	√	√	√
Paper	Printing paper	√	√	√	—
	Corrugated paper	√	√	√	—
	Cardboard	√	√	√	—
Textile	Cotton cloth	√	√	√	—
	Denim	√	√	√	—
	Felt	√	√	√	—
Laser rubber		√	√	√	√
Foam cotton		—	√	—	—
Bamboo		√	√	√	√
Ceramic		—	—	√	√
Glass		—	—	√	—
Metal（coated surface）		—	—	√	—

Note: “√” means it can be processed, “-” means it cannot be processed.

Unprocessable materials

Material	Hazards of processing
PVC/Vinyl/Chrome(VI)	When cutting, chlorine gas is produced, which is highly toxic and has a strong pungent smell. It can corrode the metal of the equipment and damage optical devices and motion control systems.
Polycarbonate (>1mm)	Poor cutting effect, easy to discolor, even catch fire, and damage the optical system of the equipment.
ABS plastic/contains epoxy resin material	Processing will melt and easily catch fire, and cutting will release highly toxic hydrogen cyanide.
High-density polyethylene (HDPE) /baby bottle plastic	Processing is very easy to melt, even catch fire.
Polystyrene foam/polypropylene foam	Processing can burn rapidly, melt and catch fire.
Other highly reflective materials	Processing can easily lead to diffuse reflection hazards

Note: Using the above non-machinable materials may cause damage to the equipment, and the resulting damage will not be covered by the warranty service.

Common material processing parameter table for cutting/engraving

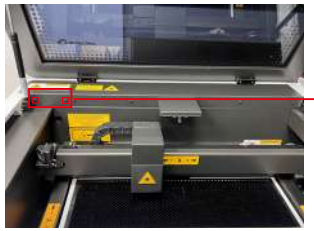
Material	Processing methods	Speed	Minimum power%	Maximum power%
3mm basswood board	**laser cutting**	25	25	25
	Laser cutting (Not cut through for line drawing)	200	10	20
	Laser engraving	300	12	12
3mm acrylic	**laser cutting**	10	50	60
	Laser cutting (Not cut through for line drawing)	100	15	20
	Laser engraving	300	20	20
Paper	**laser cutting**	200	20	20
	Laser cutting (Not cut through for line drawing)	200	10	12
	Laser engraving	300	15	15

Install Light 530

1. Installation

1. Use the hex wrench in the toolbox to first install the black air duct metal connector at the outlet on the back of the machine, and then use the locking duct steel ring to lock the gray exhaust pipe and the black metal connector.


2. Use the hexagonal wrench in the tool box to unscrew the screws and open the water tank protective cover , and fill up purified water or distilled water to the water tank. Tip: The water tank capacity is 3.5L, and antifreeze needs to be added in cold weather's period of time(under 0℃).



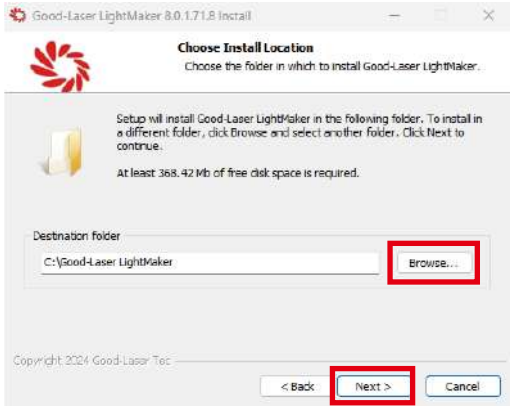

3. Connect the power supply. Note: The power supply voltage and the operating voltage must be consistent (AC 230V 50/60 Hz), refer to the information label next to the connection socket.

2. Install the laser software LightMaker

1. Find the file named《Good-Laser LightMaker software installation package》in the USB flash drive, doule click the installation package to install it directly.

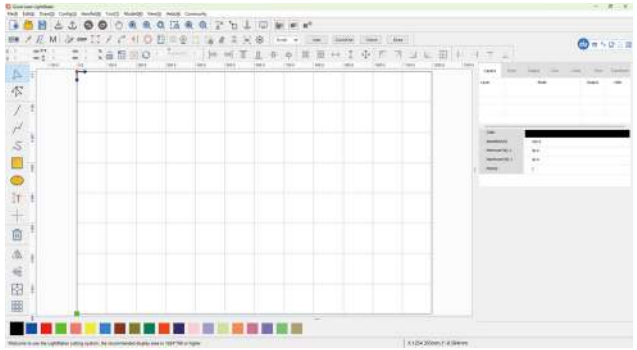
Note: LightMaker installation requires that the computer must be running Windows system, and the version of Windows 8 or later.

Click 【Browse】 Browse... to select the installation location, and click 【Next】 Next > after confirmed.



2. The installation is successful after the installation progress bar is completed.

The interface of the LightMaker software after installation completrd is as follows.



Use Light 530

1. Turn on the machine

Use the safety switch key to turn it to the right, turn on the emergency stop switch in the direction of the arrow, and the laser head will automatically reset and calibrate, and the device will be in standby mode.

Note: Indicator light status description

Yellow light means the device is turned on and in standby mode.

If the red light is steady on, indicating that the device cannot process and is in an alarm or abnormal state.

If the green light is steady on, indicating that the device is processing and in working condition.

2. Connecting the machine to the computer

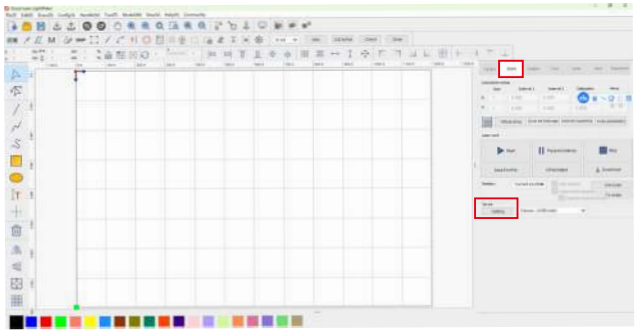
There are two ways to connect your computer to Light 530. You can choose one of them according to the actual needs.

2.1 Use a USB cable connection

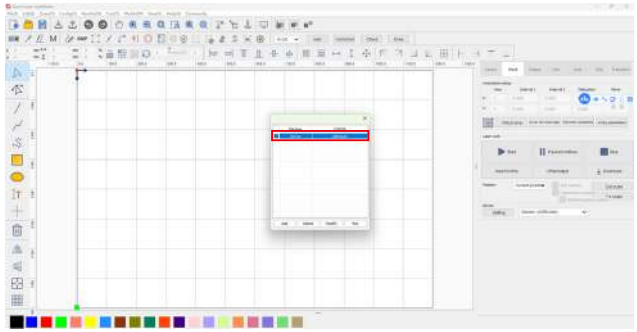
Tips: Using a USB cable is the fastest and easiest way to connect the machine and computer. For users who are using the laser machine for the first time, we recommend that you use a USB cable to connect.

2.1.1 Plug the USB cable into the USB port on your device and the other end into your computer.

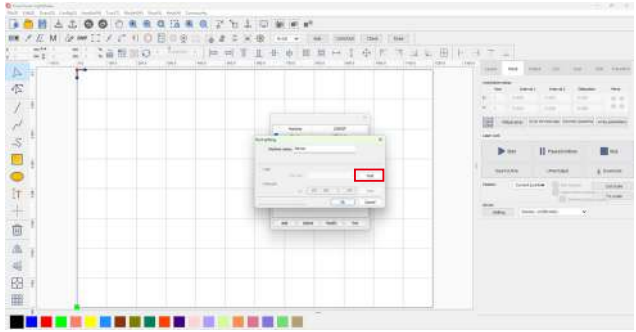
2.1.2 Open the LightMaker software and locate the【Work】Work area in the right border bar of the main interface and click it to find the【Setting】Setting button.



Select 【USB】 Device USB:Auto connection port and double click to enter the connection method window.



Click【Test】Test in the Set Port dialog box.



2.1.3 After “Communication test successful" is displayed --- click【Ok】Ok continuously --- and then click Exit.

2.1.4 After completing the above operations, download and transfer the files to be processed to the device for testing in LightMaker. If the files can be transferred to the device, the connection is successful and it can be used normally.

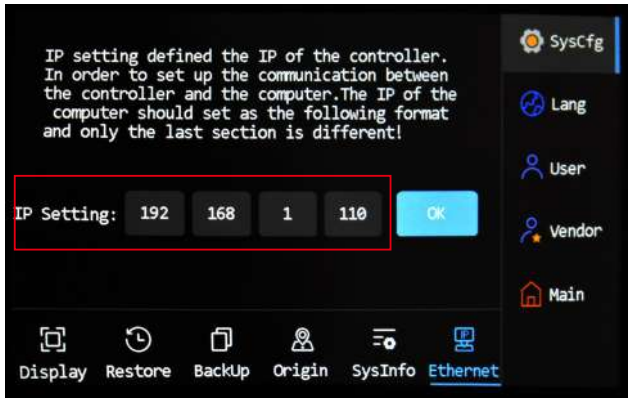
2.2 Use a network LAN cable connection

2.2.1 Plug the LAN cable into the LAN port on your device and the other end into your computer.

2.2.2 Find your computer's IP address. For example, your computer's IP address is 192.168.1.100.

2.2.3 Go to the machine's operating panel. Find the machine's IP address setting, click the function button one by one as Manual --- System --- IP address.

2.2.4. Enter an IP address on the machine that is consistent with the first three static codes of the computer IP, but inconsistent with the last one. For example. your computer's IP address is 192.168.1.100 , then enter the IP address to the machine as 192.168.1.110.



2.2.5 Open the LightMaker software and click the 【Setting】 Setting button at the bottom right of the software main interface.