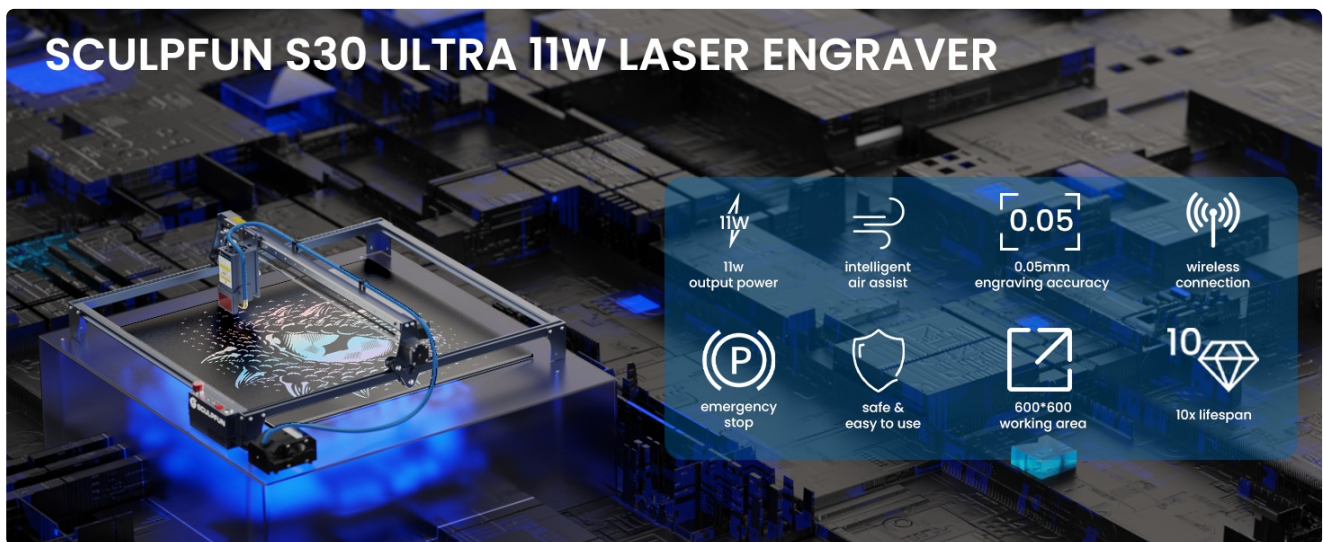


## SCULPFUN S30 Ultra 11W

# SCULPFUN S30 Ultra 11W Large Laser Engraver Instruction Manual

Model: S30 Ultra 11W



Overview of the SCULPFUN S30 Ultra 11W Laser Engraver, highlighting its key features and design.

## 1. PRODUCT OVERVIEW

The SCULPFUN S30 Ultra 11W is a high-precision laser engraving and cutting machine designed for various materials including wood, metal, and acrylic. It features a large working area, smart air assist, and advanced safety mechanisms to ensure efficient and safe operation.

### Key Features:

- **11W Laser Power:** Utilizes two enhanced 6W diodes for superior cutting and engraving capabilities.
- **Large Working Area:** An expansive 600x600mm (23.6"x23.6") work area, offering increased space for larger projects.
- **High Precision:** 0.08mm ultra-fine compression spot for delicate and clear engraving.
- **High Speed:** Engraving speeds up to 400mm/s for improved efficiency.

- **Smart Air Assist:** Automatic air assist control for cleaner cuts and engravings, activating for cutting and deactivating for engraving.
- **Enhanced Safety:** Equipped with an emergency stop button, key lock, and limit switches for safe operation.
- **Durable Design:** Features an interchangeable lens design for extended laser module service life.

## 2. SETUP AND ASSEMBLY

This section guides you through the initial setup and assembly of your SCULPFUN S30 Ultra 11W laser engraver. Please follow the steps carefully to ensure proper functionality and safety.

### 2.1 Unpacking and Component Check

Carefully unpack all components and verify against the packing list. Ensure all parts are present and undamaged.

### 2.2 Mechanical Assembly

The engraver comes unassembled. Follow the detailed instructions provided in the physical manual for step-by-step assembly. The parts are individually wrapped and labeled to assist with this process.

# One Step to Best—S30 Ultra



**600\*600 Perfect size**  
Most ideas can be realized



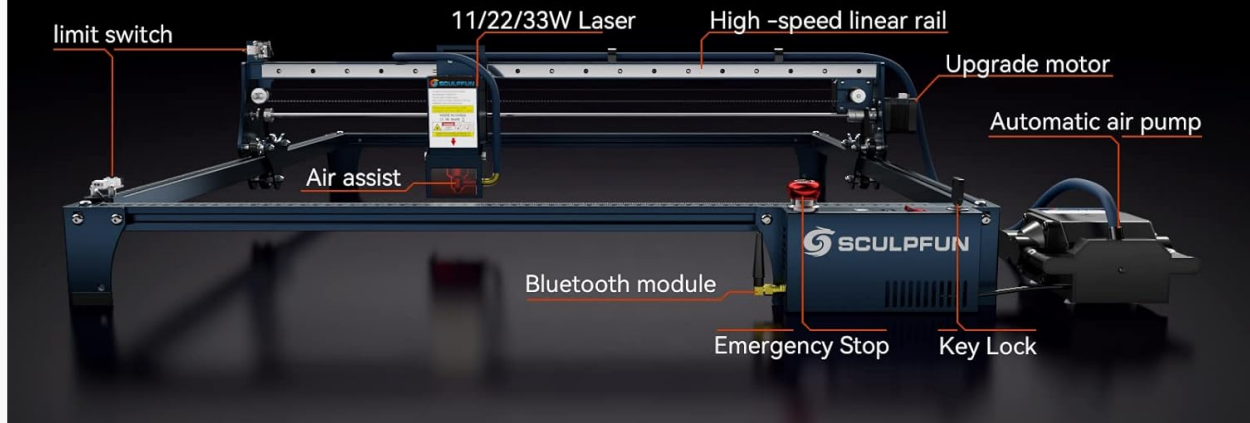
**Upgrade 11/22/33W laser**  
New 6W Diode Technology



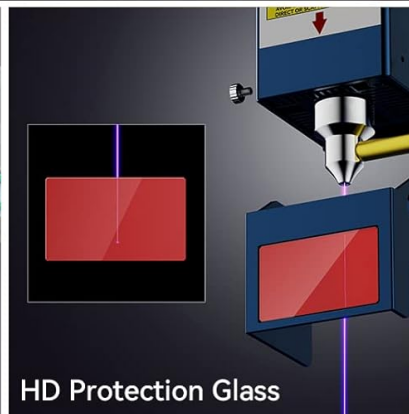
**Upgrade Linear Slide**  
Precise and Fast



**Automatic Air Assist**  
Cut clean and intelligent



Replaceable lens



HD Protection Glass



An overview of the SCULPFUN S30 Ultra's main components and features, including the laser module, linear rail, and control panel.

## 2.3 Software and Connectivity

The SCULPFUN S30 Ultra series is compatible with various software, including LightBurn and LaserGRBL. It supports multiple connection methods for flexible operation.

- **Software Installation:** Install your preferred laser control software (e.g., LightBurn, LaserGRBL) on your computer. Refer to the software's documentation for installation guides.
- **Bluetooth Wireless Connection:** Connect your engraver to your computer wirelessly via Bluetooth for convenient control.
- **USB Cable Connection:** For a stable wired connection, use the provided USB cable to connect the engraver to your computer.
- **SD Card:** Transfer design files directly to the engraver using an SD card for offline operation.

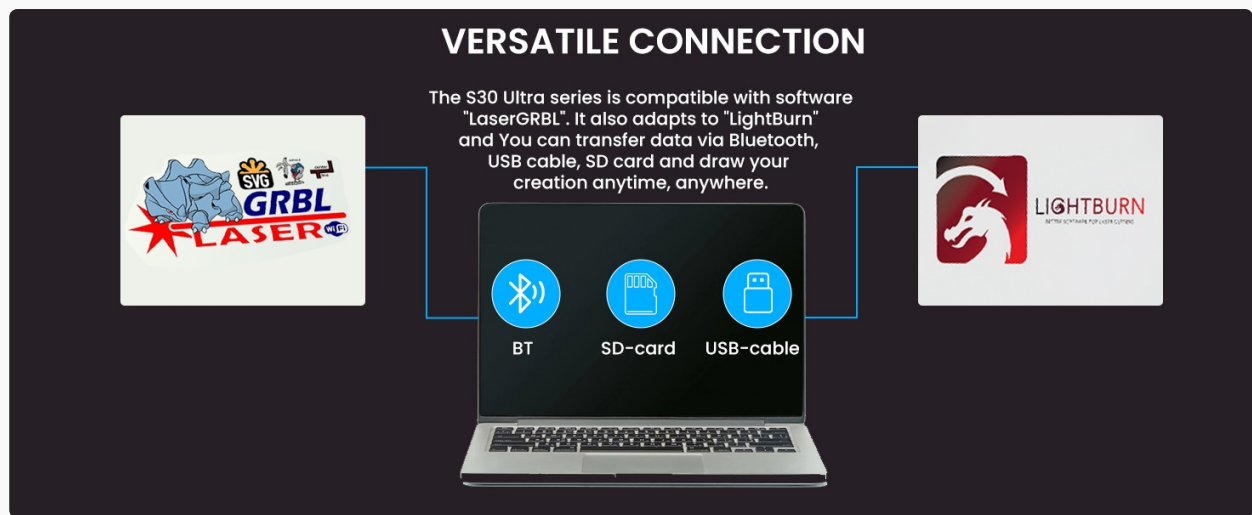


Illustration of the versatile connection options available for the SCULPFUN S30 Ultra, including Bluetooth, SD card, and USB cable.

## 2.4 Focusing the Laser

Proper focusing is crucial for optimal engraving and cutting results. Use the focusing column to set the correct distance between the laser module and the material surface.

- Place the focusing column on the material surface.
- Lower the laser module until it rests gently on the focusing column.
- Tighten the laser module's locking screw.
- Remove the focusing column.

## 3. OPERATING INSTRUCTIONS

This section provides guidance on operating your SCULPFUN S30 Ultra 11W for various tasks.

### 3.1 Powering On and Safety Features

Before starting any operation, ensure all safety measures are in place.

- Insert the key into the key lock and turn it to the ON position.
- Press the power button to turn on the machine.
- In case of emergency, press the red emergency stop button immediately.

# Upgraded Safety Design

Double security – key lock and emergency button to prevent children from misuse and emergency; limit switches auto-homing after work is done, also prevents the laser head from touching the edge of the machine in the X- and Y-axis directions



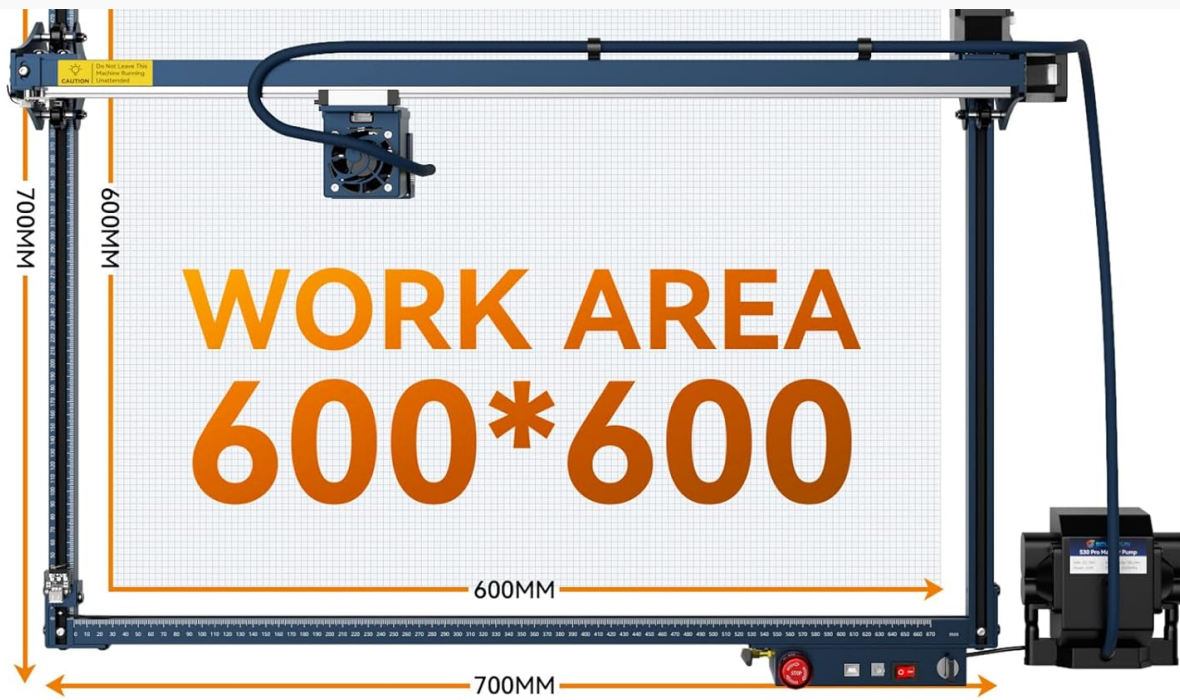
Details of the upgraded safety features, including the emergency stop switch, key lock, and limit switches.

## 3.2 Engraving and Cutting

The S30 Ultra 11W is capable of both precise engraving and powerful cutting.

- **Material Placement:** Place your material within the 600x600mm working area. For cutting, consider using a honeycomb workbed (sold separately) for optimal smoke exhaust and clean edges.
- **Design Import:** Import your design into the laser control software.
- **Parameter Settings:** Adjust laser power, speed, and passes according to the material type and desired outcome.
- **Start Operation:** Initiate the engraving or cutting process from the software.





## Perfect Larger Working Area( 125% Increase)

No need an extension kit, you can also make bigger pieces with fewer limitations for bigger needs such as tables, large wall art and more large DIYs!



Visual representation of the large 600x600mm working area, demonstrating its capacity for various projects.

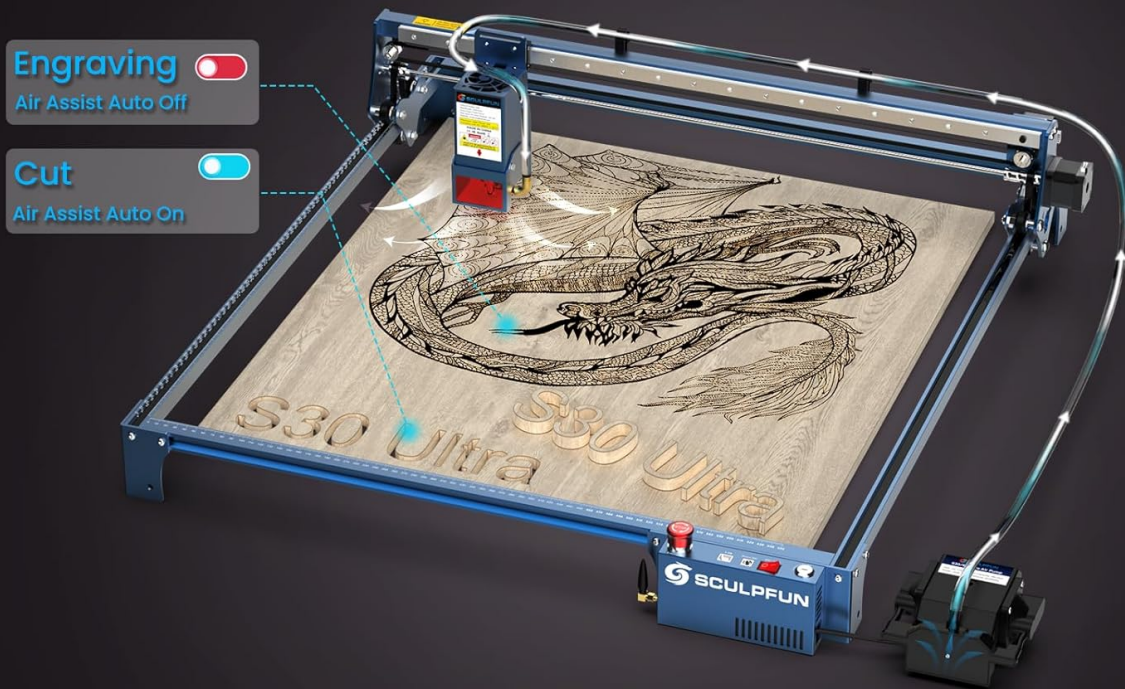
### 3.3 Smart Air Assist Functionality

The integrated smart air assist system automatically optimizes airflow for different operations.

- **Engraving:** Air assist automatically turns off to prevent material scorching and ensure fine detail.
- **Cutting:** Air assist automatically turns on to blow away debris, resulting in cleaner and faster cuts.

# Cut Cleaner with Included Air Assist

The air assist pump and nozzle enable smooth engraving and clean edge cutting



with air assist: clean and smooth



without air assist: yellowed and rough



Demonstration of the smart air assist system, showing the difference in cut quality with and without air assist.

## INTELLIGENT AIR ASSIST

Functions:  
30L/Min Airflow  
Clean Surface, Smooth Edge,  
Faster and Deeper Cutting  
pretty nozzle design, air assist pump,  
32-bit air assist mainboard



An illustration detailing the intelligent air assist system, including its 32-bit mainboard and high airflow.

## 3.4 Performance Capabilities

- **Cutting Power:** Capable of cutting 10mm wood, 5mm acrylic, and 0.05mm steel in a single pass.



- **Engraving Accuracy:** 0.08mm ultra-fine compression spot ensures high detail.
- **Speed:** Engraving at 400mm/s, significantly faster than previous models.

# STRONGER CUTTING ABILITY







one pass cut 10mm wood



one pass cut 5mm black acrylic



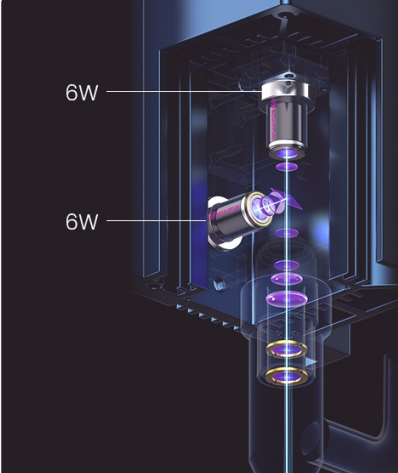
one pass cut 0.05mm steel


Visual representation of the 11W laser's cutting capabilities on various materials like wood, acrylic, and steel.

## 11W LASER OUTPUT

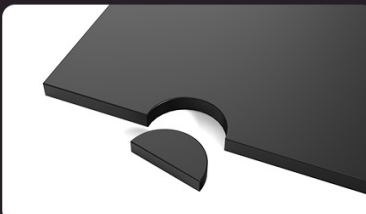
### Supporting Thicker Cutting

Combined two 6W laser beams into one 11W laser beam, the compressed spot has stronger power, faster engraving speed, higher cutting ability, and the more fantastic effects.





One-time cutting 10mm wood



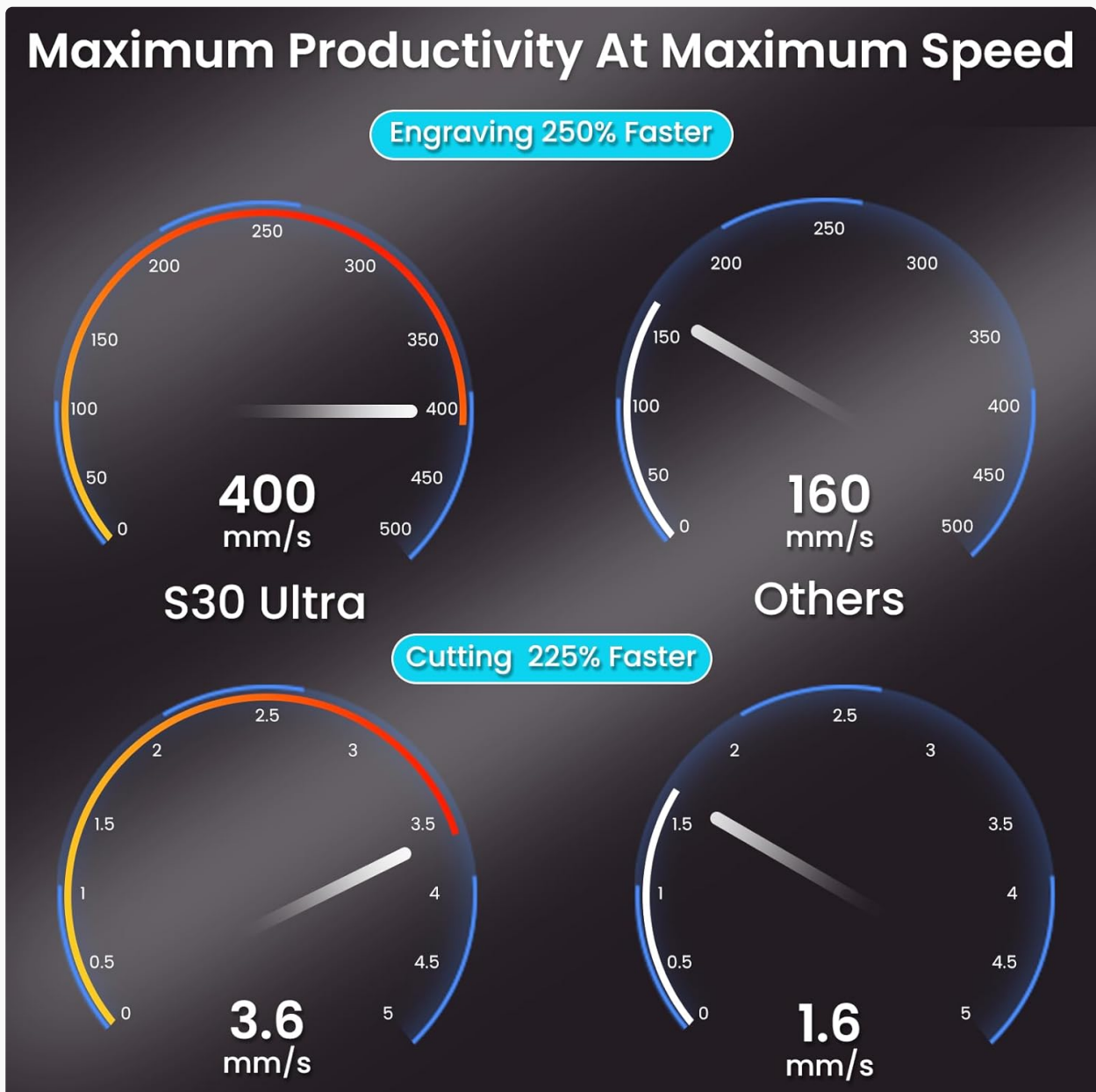
One-time cutting 5mm acrylic

Detailed explanation of the 11W laser output, showing how two 6W beams combine for stronger, faster, and higher cutting ability.





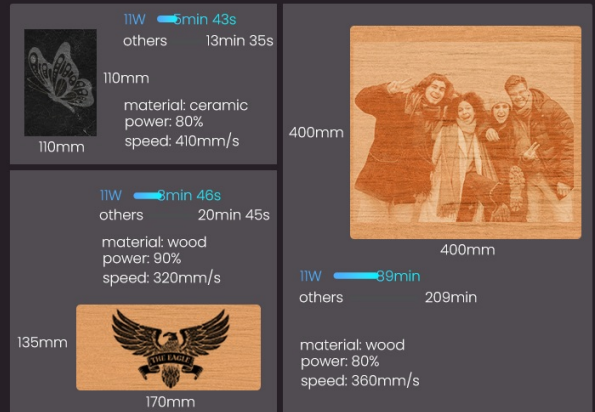
Close-up view demonstrating the highest accuracy engraving with the 0.08\*0.1mm compressed laser spot.



Comparison of engraving and cutting speeds, highlighting the S30 Ultra's enhanced productivity.

## ENHANCE 200–250% ENGRAVING PRODUCTIVITY WITH

# 400mm/s



Examples of engraving tasks and their completion times, showcasing the 200-250% enhancement in productivity.

### 3.5 Official Product Videos

#### Video: SCULPFUN S30 Ultra Series Overview

This video provides a general overview of the SCULPFUN S30 Ultra series, highlighting its main features and capabilities.

#### Video: Make Holiday Gifts with the S30 Ultra Series

Watch how the S30 Ultra series can be used to create personalized holiday gifts and decorative items.

#### Video: S30 Ultra Series 600x 600mm Larger Working Area

This video demonstrates the large 600x600mm working area of the S30 Ultra series and its benefits for various projects.

#### Video: Mass Production with S30 Ultra Series

See how the S30 Ultra series can be utilized for efficient mass production of engraved and cut items.

#### Video: SCULPFUN S30 Ultra 11W, 22W, 33W Laser Engraver and Cutter

A comprehensive video showcasing the capabilities of the S30 Ultra series across different power levels for engraving and cutting.

#### Video: Powerful, Fast and Clean Laser Cutting

This video highlights the powerful, fast, and clean laser cutting performance of the SCULPFUN S30 Ultra.

## 4. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your laser engraver.

## 4.1 Laser Module Lens Maintenance

The S30 Ultra features an interchangeable lens design, allowing you to restore laser power and extend the module's service life.

- Regularly inspect the lens for dust or debris.
- Clean the lens gently with a soft, lint-free cloth and appropriate lens cleaning solution.
- If the lens is damaged or its performance degrades, replace it with a spare lens from the repair kit.



Explanation of the replaceable lens feature, which helps maintain stable cutting performance and extends the laser's lifespan.

## 4.2 Air Nozzle Cleaning

Keep the air nozzle clean to ensure efficient air assist and prevent smoke accumulation.

- Use the provided air nozzle brush to clear any blockages or residue from the nozzle.
- Perform this cleaning regularly, especially after cutting operations that produce significant debris.

# 5. TROUBLESHOOTING

This section addresses common issues you might encounter with your SCULPFUN S30 Ultra 11W.

## 5.1 Laser Not Firing or Weak Output

- Check if the laser module is properly connected and powered.
- Ensure the key lock is in the ON position and the emergency stop button is not engaged.
- Verify laser power settings in your software.
- Inspect and clean the laser lens. Replace if damaged.

## 5.2 Inaccurate Engraving/Cutting

- Ensure the material is flat and securely placed on the work area.
- Verify the laser is correctly focused.
- Check for any loose belts or mechanical components that might affect movement.



- Confirm software settings (speed, power, steps per mm) are appropriate for the material.

### 5.3 Air Assist Malfunction

- Check if the air pump is connected and powered.
- Ensure the air hose is not kinked or blocked.
- Clean the air nozzle for any obstructions.

### 5.4 Connectivity Issues

- For USB connection, try a different USB port or cable.
- For Bluetooth, ensure the device's Bluetooth is enabled and paired correctly.
- Restart both the engraver and your computer.

## 6. SPECIFICATIONS

Feature	Specification
Model	S30 Ultra 11W
Laser Output Power	11W
Working Area	600 x 600 mm (23.6" x 23.6")
Engraving Accuracy	0.08 mm
Engraving Speed	Up to 400 mm/s
Laser Class	4
Item Weight	20.8 pounds
Product Dimensions	28 x 28 x 2.8 inches
Manufacturer	SCULPFUN
Air Assist	Automatic (32-bit air assist motherboard)
Safety Features	Emergency Stop Button, Key Lock, Limit Switches
Connectivity	Bluetooth, SD Card, USB Cable
Motor	Upgraded 4.2KG.CM Stepper Motor
Laser Module Life	10x longer with interchangeable lens design

## 7. WARRANTY AND SUPPORT

SCULPFUN is committed to providing excellent customer service and product support.

- **Warranty:** SCULPFUN provides a 2-year free warranty service for the S30 Ultra 11W laser engraver.
- **Contact Support:** If you have any questions, encounter issues, or require assistance, please contact SCULPFUN customer service. They are dedicated to providing satisfactory solutions.