LASER TREE LT-40W-F23

LASER TREE LT-40W-F23 5W Output Laser Engraving Module Instruction Manual

Model: LT-40W-F23 | Brand: LASER TREE

1. INTRODUCTION

This manual provides essential information for the safe and effective use of your LASER TREE LT-40W-F23 5W Output Laser Engraving Module. Please read these instructions carefully before installation and operation to ensure optimal performance and safety. This module is designed for engraving and cutting various materials including wood, metal, acrylic, and paper.

Figure 1: LASER TREE LT-40W-F23 Laser Engraving Module.

2. SAFETY INFORMATION

WARNING: This product contains a Class 4 laser. Direct exposure to the laser beam can cause severe eye damage and skin burns. Always wear appropriate safety glasses that filter 97% of UV rays when operating the laser module. Ensure all bystanders also wear protective eyewear. Never look directly into the laser beam or its reflections. Operate in a well-ventilated area. Keep out of reach of children.

Figure 2: The laser module includes a magnetic eye protection cover for safety.

3. SETUP

3.1. Unboxing and Components

Carefully unpack the laser module and verify all components are present. The package typically includes:

- Laser module (LT-40W-F23)
- 3-Pin input cable
- Driver Adapter
- 2x Focus fixing plates
- Eye protection cover (magnetic)
- Spare protective window glass
- Metal wind gathering hood

LT-40W-F23 Packing list:

Driver adapter

1*Magnetic eye protection cover

1*Metal wind gathering hood

laser module

1*Spare protective window glass

1*3 Pin input cable
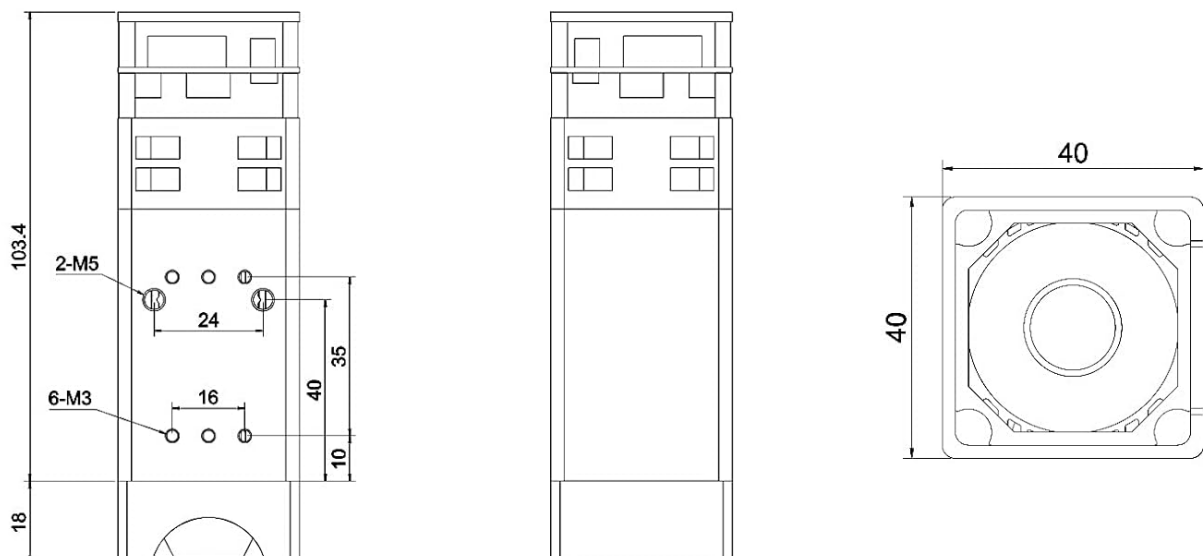
2*Focus fixing plate

Outline Dimensions:

Figure 3: Included components in the LT-40W-F23 package.

3.2. Physical Installation

Mount the laser module onto your CNC laser engraver/cutter machine. Ensure it is securely fastened. The module features cooling fans for heat dissipation. Attach the magnetic eye protection cover to the laser head.
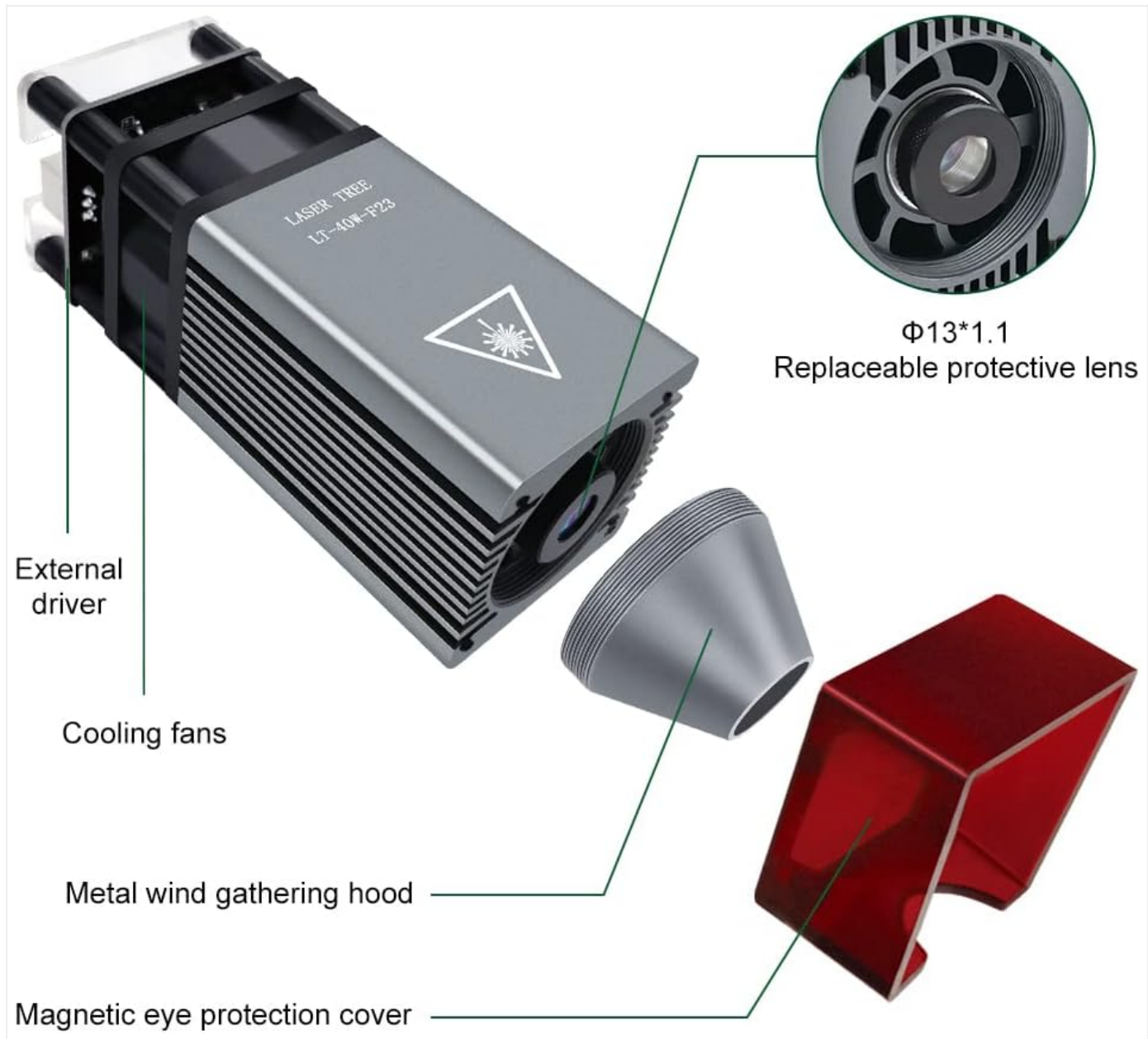

Φ13*1.1
Replaceable protective lens

External driver

Cooling fans

Metal wind gathering hood

Magnetic eye protection cover

Figure 4: Components of the laser module, including the replaceable protective lens.

3.3. Electrical Connection and Compatibility

Connect the laser module using the provided 3-pin input cable to your machine's control board. The module requires DC 12V 1.8A (1.5A-2A) input and supports 5V PWM modulation. If your machine's interface is not directly compatible (e.g., 4-pin or 24V), use the included driver adapter and an appropriate power supply.

The laser module is compatible with most laser engraver cutter brands on the market, such as Atomstack and Ortur, and supports software like LaserGRBL and LightBurn. It is compatible with Win XP / Win 7 / Win 8 / Win 10 and MACOS operating systems.

Figure 5: Wiring diagram and compatibility information for the laser module.

3.4. Focus Adjustment

The laser module has a 23mm fixed focal length. Use the provided focus fixing plates to set the correct distance between the laser head and the material. For example, to cut 4mm plywood, select the 3mm focus fixing plate.
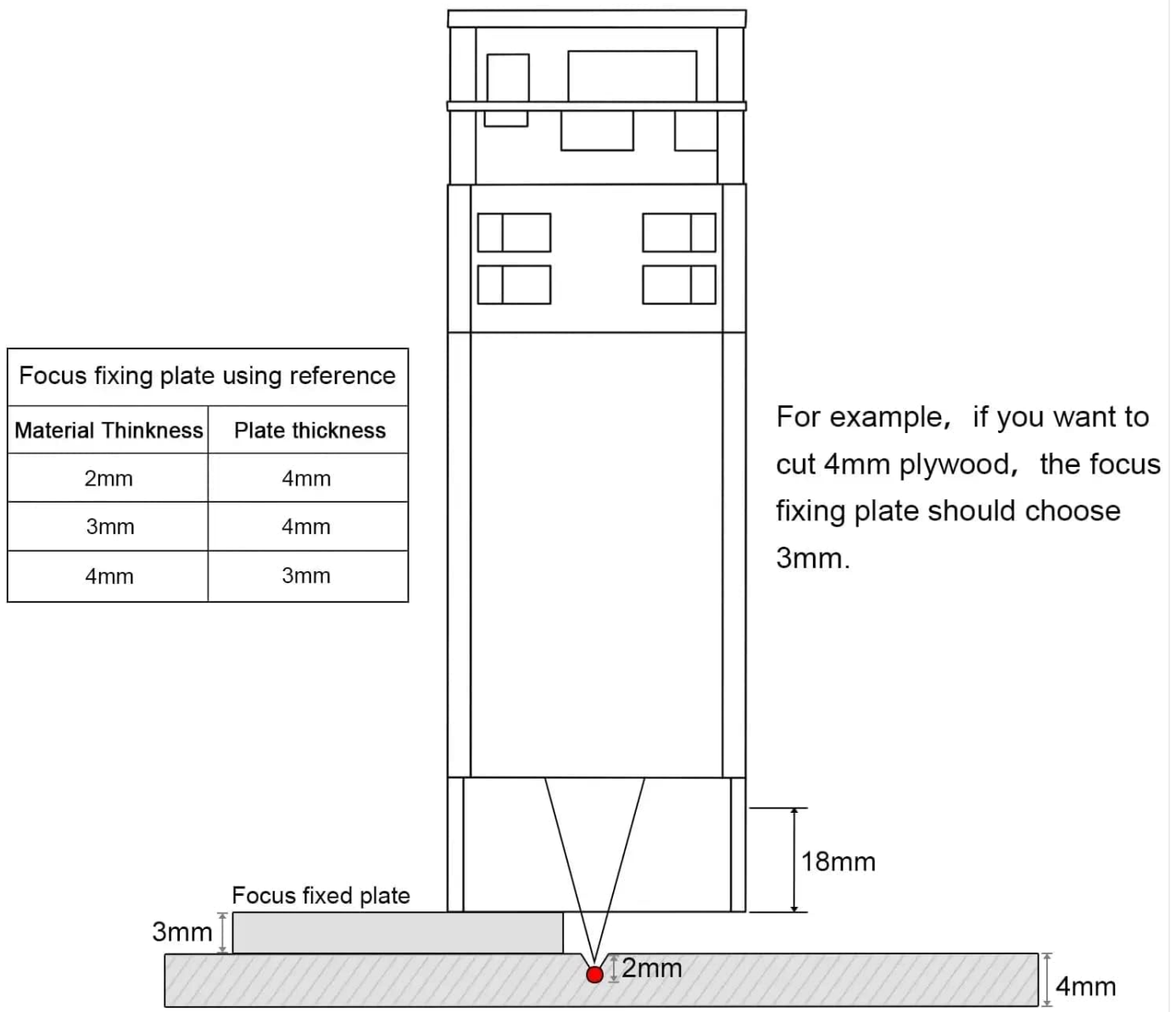
Reference settings for cutting

Focus fixing plate using reference	
Material Thinkness	Plate thickness
2mm	4mm
3mm	4mm
4mm	3mm

For example, if you want to cut 4mm plywood, the focus fixing plate should choose 3mm.

18mm

Focus fixed plate

3mm

2mm

4mm

Figure 6: Reference settings for cutting with focus fixing plates.

4. OPERATING INSTRUCTIONS

4.1. Material Compatibility and Performance

The LT-40W-F23 module is suitable for engraving and cutting a wide range of materials, including MDF, wood, paper, leather, bamboo, plastic, rubber, alumina, and stainless steel. It can engrave mirror stainless steel without needing to paint it black. The module offers a fast engraving speed, up to 800mm/min for 304 stainless steel, and excellent cutting ability, such as cutting 4mm thick plywood in one pass at 120mm/min.

Note: This laser module is unable to engrave blue, purple, white, or transparent materials, or aluminum without an oxide layer.
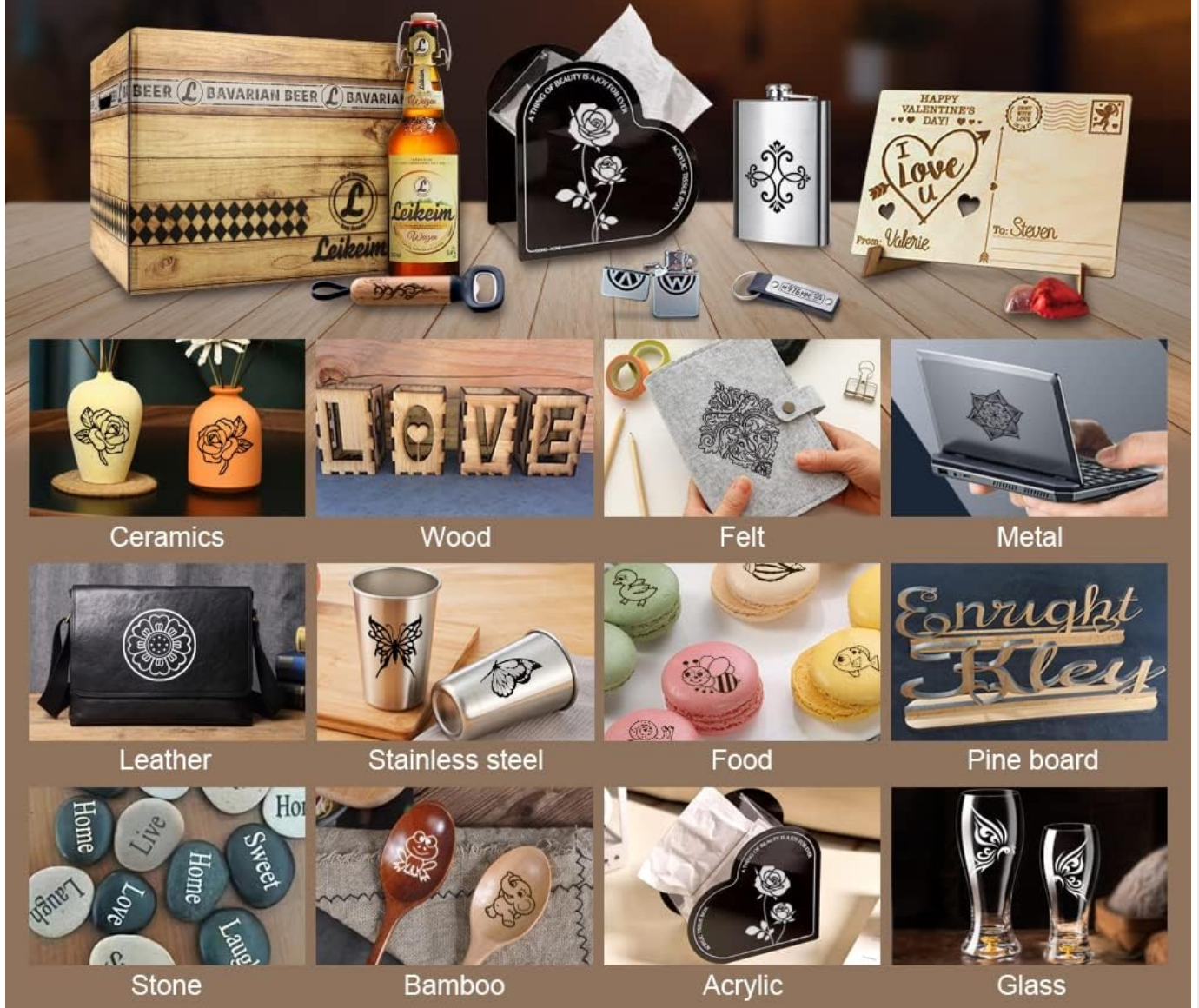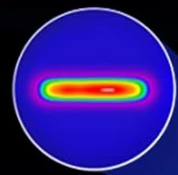
Figure 7: Examples of materials compatible with the laser module.
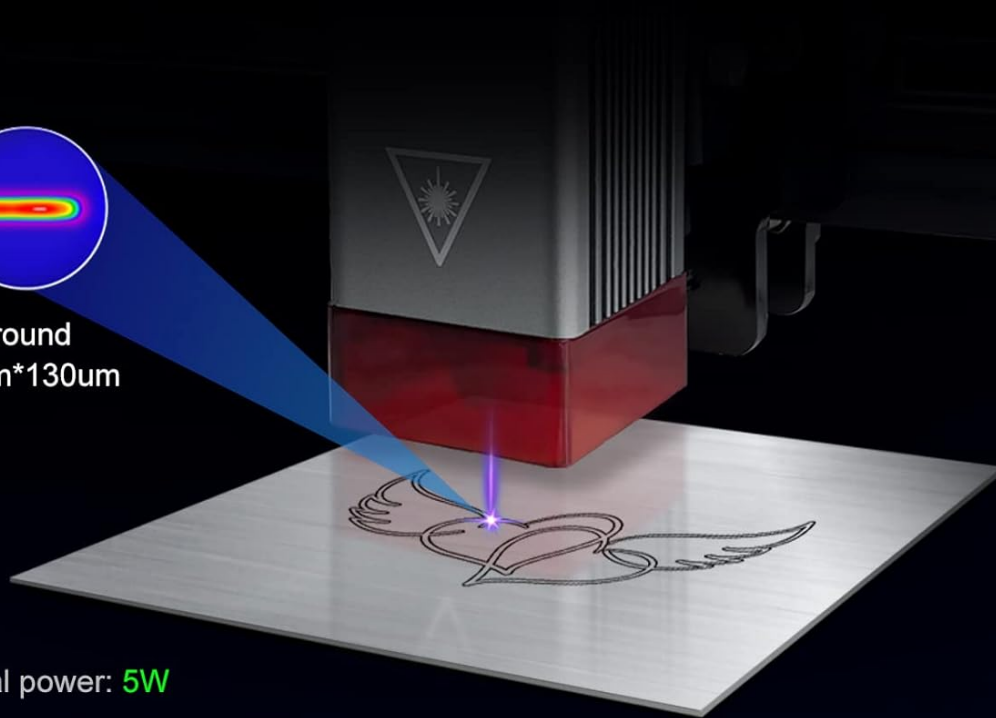
4.2. Engraving and Cutting Process

After securing the material and setting the correct focus, use your chosen engraving software (e.g., LaserGRBL, LightBurn) to prepare your design. Adjust the speed and power settings according to the material and desired outcome. The module's beam compressed spot technology ensures high engraving speed and precision.

Figure 8: Engraving stainless steel with the LT-40W-F23 module.

4.3. Video Demonstrations

Video 1: Demonstration of the F23 module cutting 4mm plywood in a single pass. This video shows the laser module in action, precisely cutting through wood at various speeds, highlighting its efficiency and power.

Video 2: Demonstration of the F23 laser module cutting 5mm acrylic in a single pass. This video illustrates the module's capability to cut thicker acrylic materials, showcasing its precision and cutting power.

5. MAINTENANCE

5.1. Lens Cleaning

Regular cleaning and maintenance of the laser lens are crucial for maintaining good cutting results and extending the service life of the module. Use a soft, lint-free cloth and appropriate lens cleaning solution. Avoid touching the lens directly with your fingers.

5.2. General Care

Keep the laser module free from dust and debris. Store it in a dry, cool environment when not in use. Ensure proper ventilation

during operation to prevent overheating.

6. TROUBLESHOOTING

6.1. Common Issues

- **No Laser Output:** Check all electrical connections, including the 3-pin cable and driver adapter. Ensure the power supply meets the DC 12V 1.8A requirement. Verify software settings for laser activation.
- **Poor Engraving/Cutting Quality:**

    a. Verify the focus is correctly set using the focus fixing plates.

    b. Clean the laser lens if it appears dirty.

    c. Adjust engraving/cutting speed and power settings in your software.

    d. Ensure the material is compatible with the laser module (e.g., not transparent or blue/purple).

- **Module Not Recognized:** Confirm compatibility with your machine's control board and operating system. Ensure the driver adapter is correctly installed if needed.

6.2. Contacting Support

If you encounter persistent issues or require further assistance, please contact LASER TREE customer support. A professional engineer team is available to troubleshoot and solve problems.

7. SPECIFICATIONS

Feature	Specification
Model Number	LT-40W-F23
Optical Output Power	5W
Machine Power	40W
Wavelength	450nm (Blue Laser)
Input Voltage	DC 12V
Input Current	1.8A (1.5A-2A)
PWM Modulation	Support 5V PWM
Input Port	XH2.54-3P socket
Focal Length	23mm (Fixed Focus)
Beam Technology	Compressed Spot
Product Dimensions	1.57 x 1.57 x 4 inches
Item Weight	1.21 pounds
Diode Lifetime	20,000 hours

8. WARRANTY AND SUPPORT

The LASER TREE LT-40W-F23 module is built with high-quality components, including an original diode designed for high stability

and efficiency, offering a lifetime of 20,000 hours. For any pre-sale consultations or after-sales support, please contact LASER TREE directly. Our professional engineering team is dedicated to providing assistance and resolving any issues you may encounter.

Figure 9: LASER TREE offers a one-year warranty on its products.

Related Documents - LT-40W-F23

LT-40W-F23 USER MANUAL	[Laser Tree LT-40W-F23 User Manual: Specifications, Connection, and Maintenance](#) Comprehensive user manual for the Laser Tree LT-40W-F23 laser module. Includes technical specifications, detailed connection instructions, driver adapter guide, cutting and engraving settings, and maintenance tips.
LT-80W-AA-PRO USER MANUAL	[LASER TREE LT-80W-AA-PRO Laser Module User Manual for Engraving and Cutting](#) Comprehensive user manual for the LASER TREE LT-80W-AA-PRO laser module, detailing specifications, connection procedures, cutting and engraving reference settings, and essential maintenance guidelines for optimal performance and safety.
LT-4LDS-V2 USER MANUAL	[LASER TREE LT-4LDS-V2 Laser Module User Manual	Specifications, Setup & Maintenance](#) Comprehensive user manual for the LASER TREE LT-4LDS-V2 laser module. Includes detailed specifications, connection diagrams, focus settings for engraving and cutting, safety precautions, and maintenance guide.
LT-40W-AA USER MANUAL	[Laser Tree LT-40W-AA User Manual: Specifications, Connection, and Settings](#) Comprehensive user manual for the Laser Tree LT-40W-AA 5W laser module. Covers technical specifications, connection diagrams, driver adapter details, cutting and engraving settings, and essential precautions and maintenance guidelines.

Laser Tree Laser Module FAQ and Compatibility Guide

Frequently asked questions and compatibility information for Laser Tree laser engraving modules, covering materials, power output, and machine connections.

LT-80W-F45
USER MANUAL

LASER TREE LT-80W-F45 Laser Module User Manual - Specifications & Operation

Comprehensive user manual for the LASER TREE LT-80W-F45 10W laser module. Includes specifications, connection guides, reference settings for cutting and engraving, and maintenance tips.