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› AENBUSLM 20W Laser Engraver Module User Manual

AENBUSLM 20W Laser Engraver Module (160W Built-in Air Assist)

AENBUSLM 20W Laser Engraver Module User Manual

Model: 160W Built-in Air Assist

1. INTRODUCTION

This manual provides essential information for the safe and effective use of your AENBUSLM 20W Laser Engraver Module. Please read it thoroughly before installation and operation to ensure optimal performance and safety.

The AENBUSLM 20W Laser Engraver Module features a 160W machine power and 20000mW (20W) optical output laser power. It is designed for precise engraving and cutting tasks, capable of cutting materials such as 25mm pinewood and 18mm black acrylic in a single pass. The module includes a built-in air assist system and a fan cooling system for enhanced performance and material finish.

2. SAFETY PRECAUTIONS

WARNING: This is a Class IV laser product. Improper use can result in serious injury, including eye damage and burns.

- **Eye Protection:** Never look directly into the laser beam or its reflection. Always wear appropriate laser safety goggles when operating the module.
- **Skin Protection:** Avoid direct contact with the laser beam. The laser can cause severe burns.
- **Children and Pets:** Keep the laser engraver module out of reach of children and pets at all times. Ensure the operating area is secure.
- **Ventilation:** Operate the laser in a well-ventilated area to dissipate fumes and smoke generated during engraving or cutting.
- **Fire Hazard:** The laser can ignite flammable materials. Always supervise the machine during operation and have fire extinguishing equipment readily available.
- **Power Supply:** Ensure the power supply matches the module's requirements (12V or 24V).

20W

Laser Engraving Head



20W Output



Laser Power



Eye Protection



External
Boosrer Air Pump



Laser Cutting



Air Assist



Laser Beam
0.06*0.06mm



Fireproof
Materials

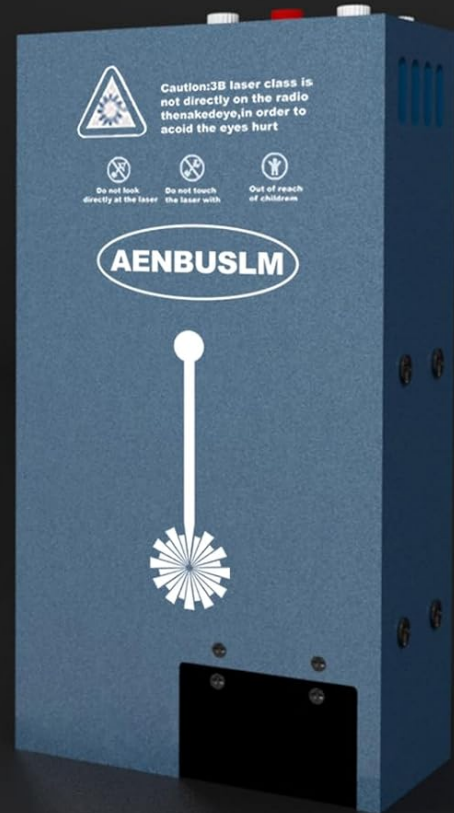


Image 2.1: Front view of the AENBUSLM 20W Laser Engraver Module highlighting safety warnings and key features like 20W output, eye protection, laser cutting, air assist, and fireproof materials.

3. PACKAGE CONTENTS

Verify that all components listed below are present in your package:

- AENBUSLM 20W Laser Module
- Slide Rail and Fixing Screws
- External Power Cord
- 3P Line (Control Cable)
- First to Second Line + External Power Cord (Adapter Cable)
- Lens Replacement Tool
- 1.5mm L Wrench
- Focus Fixing Plate

- Replaceable Protective Lens



Image 3.1: Overview of the AENBUSLM 20W Laser Engraver Module and its accompanying accessories, including cables, tools, and mounting hardware.

4. SETUP AND INSTALLATION

The AENBUSLM 20W Laser Engraver Module is designed for easy integration with various laser cutting and engraving machines, CNC routers, and 3D printers.

1. Mounting the Module:

Utilize the multi-hole positions on the back of the laser engraver module and the provided slide rail and fixing screws to securely attach the module to your machine's stand. Ensure the module is stable and properly aligned.

2. Connecting Power:

The module supports both 12V and 24V power supplies. Connect the appropriate external power cord to the laser module and your machine's power source. The control line installation is plug-and-play.

3. Connecting Control Line:

Connect the 3P line (control cable) from the laser module to the control board of your engraving machine. If an

adapter cable (First to Second Line + External Power Cord) is required for your specific machine, use it accordingly.

4. Focus Adjustment:

The module features fixed-focus technology. Use the provided focus fixing plate to set the correct working distance between the laser lens and the material surface. This ensures the ultra-fine compressed spot (0.06*0.08mm) is achieved for optimal engraving and cutting precision.

5. OPERATION

The AENBUSLM 20W Laser Engraver Module is engineered for high performance in various applications.

5.1 Key Features

- **Powerful Output:** 20000mW (20W) optical output power, capable of cutting dense materials.
- **Air Assist System:** Built-in air assist enhances cutting and engraving quality by clearing debris and reducing charring, resulting in cleaner edges.
- **Efficient Cooling:** An integrated fan cooling system ensures stable operation and extends the lifespan of the laser diode.
- **Ultra-Fine Spot:** Quadruple compression spot technology (0.06*0.08mm) provides exceptional precision for detailed work.



Image 5.1: Illustration of the module's cutting ability, showing 18mm acrylic and 25mm pinewood cut in a single pass.

5.2 Material Compatibility

The module is suitable for engraving and cutting a wide range of materials, including but not limited to:

- Wood (e.g., pinewood, plywood)
- Acrylic (black)
- Leather
- Paper and Cardboard
- Some metals (for engraving, not cutting)
- Ceramics and Glass (for engraving)



Wood Creation

Image 5.2: Various examples of intricate designs and cuts on wood, showcasing the module's versatility for wood-based projects.



Metal Creation

Image 5.3: Examples of engraved metal items, demonstrating the module's capability for marking on metal surfaces.



Leather Creation

Image 5.4: Various leather products with engraved designs, illustrating the module's application for leather crafting.



Image 5.5: Examples of engravings on ceramic, glass, and other diverse materials, highlighting the module's broad material compatibility.

6. MAINTENANCE

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

- **Lens Cleaning:** Periodically inspect the protective lens for dust, debris, or residue. Use the provided lens replacement tool and a soft, lint-free cloth with appropriate lens cleaning solution to gently clean the lens. Replace the protective lens if it becomes scratched or damaged.
- **Air Assist Nozzle:** Ensure the air assist nozzle is clear of any blockages to maintain effective airflow during operation.
- **Cooling Fan:** Keep the cooling fan vents free from dust and obstructions to prevent overheating. Use compressed air to clear any accumulated dust.
- **General Cleaning:** Keep the exterior of the module clean and free from dust and material particles.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your AENBUSLM 20W Laser Engraver Module.

Problem	Possible Cause	Solution
Laser module does not turn on.	No power supply. Incorrect voltage (not 12V or 24V). Loose power connection. Defective module.	Verify power supply is connected and active. Ensure power supply provides 12V or 24V. Check all power cables for secure connections. Contact customer support if the issue persists.
Laser power is weak or inconsistent.	Dirty or damaged protective lens. Incorrect focus setting. Insufficient power supply. Module overheating.	Clean or replace the protective lens. Re-adjust focus using the focus fixing plate. Confirm power supply meets specifications. Ensure cooling fan vents are clear; allow module to cool.
Poor cutting or engraving quality.	Incorrect focus. Air assist nozzle blocked. Material not suitable for laser. Incorrect speed/power settings in software.	Verify and adjust focus. Clear any blockages in the air assist nozzle. Consult material compatibility guidelines. Adjust software settings for optimal results.

8. SPECIFICATIONS

Feature	Detail
Model	20W Laser Engraver Module (160W Built-in Air Assist)
Optical Output Power	20000mW (20W)
Machine Power	160W
Laser Spot Size	0.06*0.08mm (Ultra-Fine Compressed Spot)
Air Assist	Built-in
Cooling System	Built-in Fan Cooling
Input Voltage Compatibility	12V and 24V (Universal)
Product Dimensions	2.1 x 1.8 x 5.7 inches
Item Weight	1.98 pounds
Manufacturer	AENBUSLM

9. WARRANTY AND CUSTOMER SUPPORT

AENBUSLM is committed to providing high-quality after-sales service. If you encounter any problems when using our products, please contact our customer service team.

Our professional technicians are available to provide solutions and assistance in a timely manner.

For support, please refer to the contact information provided with your purchase or visit the official AENBUSLM store on Amazon: AENBUSLM Store

