AENBUSLM DLC-JG-3.0

AENBUSLM 80W Laser Module with Air Assist Kit

Model: DLC-JG-3.0

Introduction

This manual provides detailed instructions for the installation, operation, maintenance, and troubleshooting of your AENBUSLM 80W Laser Module with Air Assist Kit. This module features 10W optical output power, FAC compression technology, and a double ultra-fine compressed spot for precise engraving and efficient cutting. It is designed for compatibility with various laser engraving machines, CNC machines, and 3D printers.

Safety Information

WARNING: This product contains a Class IV laser. Direct exposure to the laser beam can cause severe eye damage and skin burns. Always follow these safety guidelines:

- **Eye Protection:** Always wear the provided laser safety goggles (or equivalent certified eye protection) when operating the laser module. Never look directly into the laser beam or at its reflection.
- **Protective Cover:** Ensure the protective cover is installed to filter blue light during operation.
- **Ventilation:** Operate the laser in a well-ventilated area to avoid inhaling fumes produced during engraving or cutting.
- **Flammable Materials:** Keep flammable materials away from the laser's working area.
- **Supervision:** Never leave the laser module operating unattended.
- **Children and Pets:** Keep children and pets away from the laser module and its operating area.

Package Contents

Verify that all items listed below are included in your package:

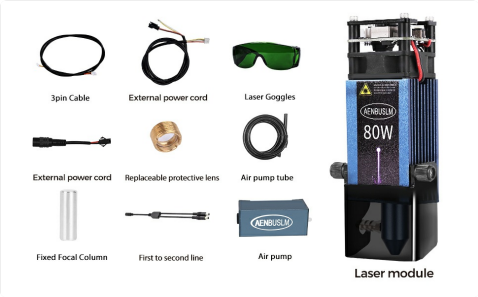


Image showing the AENBUSLM 80W Laser Module along with its various accessories, including cables, air pump, and protective lens.

- AENBUSLM 80W Laser Module
- Air Pump
- Air Pump Tube
- 3-pin Cable
- External Power Cord
- Laser Goggles
- Fixed Focal Column
- Replaceable Protective Lens
- First to Second Line Adapter

Setup

1. Mounting the Laser Module

The laser module features multi-hole positions on its back for easy installation onto various laser cutting and engraving machine stands. Securely attach the module to your machine's gantry using appropriate screws and brackets (not included unless specified by your machine's manufacturer).

2. Electrical Connection

Diagram illustrating the motherboard connection points for the laser module: VCC (DC 12/24V), GND, and PWM (0/5-12V, 0-1KHz).

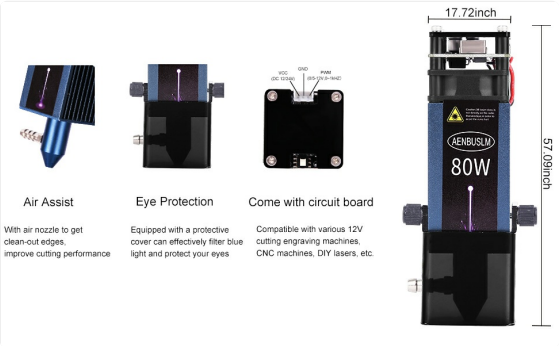
Connect the laser module to your machine's control board using the provided 3-pin cable. The connection method is plug-and-play for compatible 12V DIY machines and other brands. Ensure correct polarity and pin assignment:

- **VCC:** DC 12V/24V power input.
- **GND:** Ground connection.
- **PWM:** Pulse Width Modulation signal (0/5-12V, 0-1KHz) for laser power control.

If your machine's wiring differs, you may need to adjust the pin configuration. Refer to your machine's manual for specific wiring diagrams.

3. Air Assist Connection

Connect the air pump to the air assist nozzle on the laser module using the provided air pump tube. The air assist system helps to keep the cutting area clear of debris and improves cutting performance by preventing charring and producing cleaner edges.



Comparison image showing the difference in engraving quality with and without the air assist pump, highlighting cleaner cuts with air assist.

4. Focusing

This laser module features a fixed focus design. Use the provided fixed focal column to set the correct working distance between the laser lens and the material surface. Place the column on the material, lower the laser module until it rests on the column, then tighten the module's securing screws.

Operating Instructions

1. Software Compatibility

The AENBUSLM 80W Laser Module is compatible with common laser control software such as LaserGRBL and LightBurn. Ensure your software is configured for your specific CNC or laser engraving machine and the laser module's specifications.

2. Material Preparation

Place the material to be engraved or cut on a flat, stable, and fire-resistant surface. Ensure it is securely held to prevent movement during operation.

3. Engraving and Cutting Parameters

Optimal parameters (speed, power, passes) vary significantly depending on the material type and thickness. Start with conservative settings and adjust as needed. The module offers excellent performance:

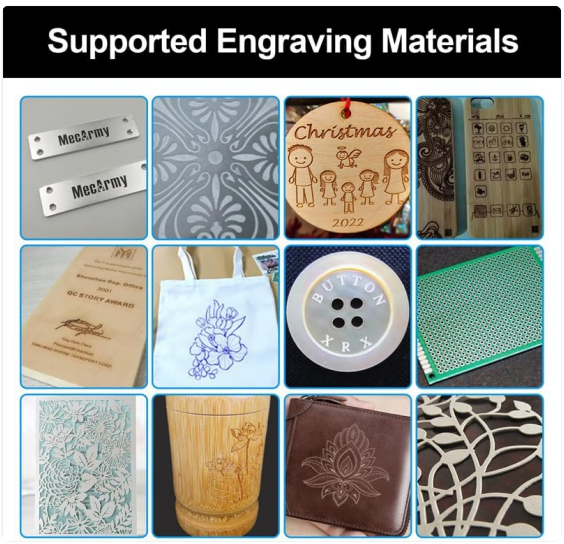
- **Engraving:** Super fast engraving speed on 304 stainless steel, up to 400mm/s.
- **Cutting:** Capable of cutting 10mm plywood at 1.6mm/s in a single pass.
- **Cutting:** 10mm MDF boards can be cut in a single pass.
- **Cutting:** 20mm pine boards can be cut in a single pass.

Image displaying examples of maximum cutting thicknesses for various materials like black acrylic, plywood, and pine wood, with single or multiple passes.

4. Supported Materials

The laser module is widely used for engraving and cutting a variety of materials:

- **Engraving:** Plywood, wood, stone, mirror stainless steel, black acrylic, plastic, leather, etc.
- **Cutting:** Plywood, wood, black acrylic, leather, MDF, pine board, etc.



Collage of various items engraved with the laser module, including wooden plaques, metal tags, and leather goods.

Examples of materials cut by the laser module, such as plywood, black acrylic, leather, and honeycomb board.

Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of your laser module.

- **Lens Cleaning:** Periodically clean the laser lens with a soft, lint-free cloth and lens cleaning solution to remove dust and debris. A dirty lens can reduce laser power and engraving/cutting quality.
- **Fan Cleaning:** The built-in cooling fan operates at 12000 rpm. Keep the fan free of dust and obstructions to ensure efficient heat dissipation. Use compressed air to gently clean the fan blades and heatsink fins.
- **Protective Lens Replacement:** The module includes a replaceable protective lens. If the lens becomes scratched or damaged, replace it to maintain laser performance and safety.
- **Storage:** When not in use, store the laser module in a clean, dry environment away from direct sunlight and extreme temperatures.

Troubleshooting

If you encounter issues with your laser module, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Laser not firing	Incorrect wiring, power supply issue, software settings, emergency stop engaged.	Check all cable connections (VCC, GND, PWM). Verify power supply. Ensure software settings (laser power, enable) are correct. Check for any active safety switches.
Poor engraving/cutting quality	Incorrect focus, dirty lens, wrong parameters (speed/power), material issues.	Ensure the laser is correctly focused using the fixed focal column. Clean the laser lens. Adjust speed and power settings for the specific material. Ensure material is flat and suitable for laser processing.
Laser module overheating	Obstructed fan, prolonged high-power operation in poor ventilation.	Clean the cooling fan and heatsink. Ensure adequate ventilation around the module. Reduce laser power or allow for cooling periods if operating continuously at high power.
Air assist not working	Air pump not connected, tube kinked, pump malfunction.	Check air pump connection and power. Ensure air tube is not kinked or blocked. Verify air pump functionality.

If the problem persists after attempting these solutions, please contact AENBUSLM customer support for further assistance.

Specifications

Technical specifications for the AENBUSLM 80W Laser Module (Model DLC-JG-3.0):

- **Model Number:** DLC-JG-3.0
- **Laser Power:** 80W (Input), 10W (Optical Output)
- **Laser Class:** Class IV
- **Technology:** True FAC Compression, Double Ultra-Fine Compressed Spot

- **Cooling System:** Built-in Fan (12000 rpm)
- **Compatibility:** 12V DIY machines, 3018 series CNC engraving machines, laser engraving machines, laser cutting machines, CNC routers.
- **Product Dimensions:** 1.57 x 1.57 x 5.71 inches
- **Item Weight:** 1.5 pounds
- **Manufacturer:** AENBUSLM
- **Estimated Diode Lifetime:** Up to 20,000 hours

Warranty and Support

AENBUSLM is committed to providing high-quality after-sales service. While specific warranty duration is not detailed in this manual, for any issues encountered during product use, please contact our after-sales 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