



Manuals.plus /

› Cloudray /

› Cloudray BM1 5W Diode Laser Engraver Machine User Manual

Cloudray BM1

Cloudray BM1 5W Diode Laser Engraver Machine User Manual

Model: BM1

1. IMPORTANT SAFETY INFORMATION

Please read all safety instructions carefully before operating the Cloudray BM1 laser engraver. Failure to follow these instructions may result in injury, damage to the machine, or property damage.

- **Eye Protection:** Always wear appropriate laser safety goggles when operating the machine, even though it features a Class 1 enclosed design. Never look directly into the laser beam.
- **Ventilation:** Operate the machine in a well-ventilated area or use an external fume extractor. Laser engraving can produce smoke, fumes, and odors that may be harmful if inhaled.
- **Material Compatibility:** Only engrave or cut materials specified as safe for diode lasers. Avoid highly reflective materials, PVC, vinyl, or any material that produces toxic fumes when burned. Refer to the material compatibility section for details.
- **Fire Hazard:** Keep a fire extinguisher nearby. Do not leave the machine unattended during operation, especially when working with flammable materials.
- **Children and Pets:** Keep children and pets away from the operating area. The machine contains moving parts and a laser that can cause serious injury.
- **Power Supply:** Use only the provided power adapter. Ensure the power source matches the machine's requirements.
- **Emergency Stop:** Familiarize yourself with the location of the emergency stop button and how to use it.

2. PRODUCT OVERVIEW

The Cloudray BM1 is a compact and versatile 5W diode laser engraver machine designed for precision etching and cutting. Its enclosed Class 1 design ensures enhanced safety for home, school, or workshop use. It supports a wide range of materials and is compatible with popular software.

BM1 Your home's first laser engraving machine.

BM1, with its compact size, simple operation and wide range of marking materials, has become the best choice for your marking desire.



Image: The Cloudray BM1 laser engraver machine shown on a desk with various engraved items, highlighting its compact size and creative applications.

Key Features:

- **Safe & Powerful:** Class 1 enclosed design with 5W (5000mW) output power, tilt protection, and a powerful exhaust fan.
- **High-Precision Performance:** 80x80mm engraving area, 5000 mm/min speed, and 0.01mm accuracy.
- **Wide Material Compatibility:** Engraves wood, acrylic, leather, plastic, paper, fabric, and coated metals. (Note: For metal marking, a fiber laser engraver is recommended.)
- **Software Compatibility:** Works with CutLabx (included), LaserGRBL, and LightBurn.
- **Plug-and-Play:** Designed for ease of use for all skill levels.
- **Compact Design:** Measures 8.03x8.96x7.39 inches and weighs 7.04 lbs, fitting easily into any workspace.

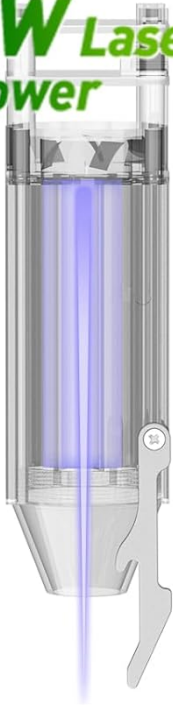
5000_{mm/min}
Max Marking Speed

0.01_{mm}
Accuracy

5_{mm}
Max Cutting Depth

CutlabX
Include

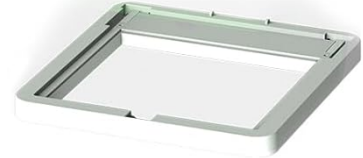
5W Laser Power



**Windows /MAC
/Android /IOS**
Compatible



80*80_{mm}
Working Area



Height Adjustable



**Lightburn
/GRBL**
Compatible



High-performance
Exhaust Fan

10000_{H+}
Lifespan

Image: An infographic highlighting the key features and specifications of the ClouDray BM1, including its speed, accuracy, laser power, and software compatibility.

3. PACKAGE CONTENTS

Verify that all items listed below are included in your package. If any items are missing or damaged, please contact ClouDray customer support.



Image: A visual representation of all items included in the ClouDray BM1 product package.

- ClouDray BM1 Laser Engraver Machine
- User Manual
- Power Supply
- Type-C Cable
- Marker Pen

- Wood Board (x2)
- Brush Kraft Paper (x2)
- Safety Goggles (x1)
- Card Reader

4. SETUP GUIDE

Follow these steps to set up your Cloudray BM1 laser engraver for the first time.

1. **Unpack the Machine:** Carefully remove all components from the packaging. Retain the packaging for future storage or transport.
2. **Placement:** Place the engraver on a stable, level surface in a well-ventilated area, away from flammable materials.
3. **Connect Power:** Connect the power supply to the machine and then to a suitable power outlet.
4. **Software Installation:** Install the CutLabx software (or LaserGRBL/LightBurn) on your computer or mobile device. Refer to the software's documentation for specific installation instructions.
5. **Connect to Device:** Connect the engraver to your computer via the provided Type-C cable or establish a Wi-Fi connection as per software instructions.
6. **Initial Focus Adjustment:** The BM1 features an open focus design. Adjust the laser head height using the focusing rod to achieve optimal focus for your material.

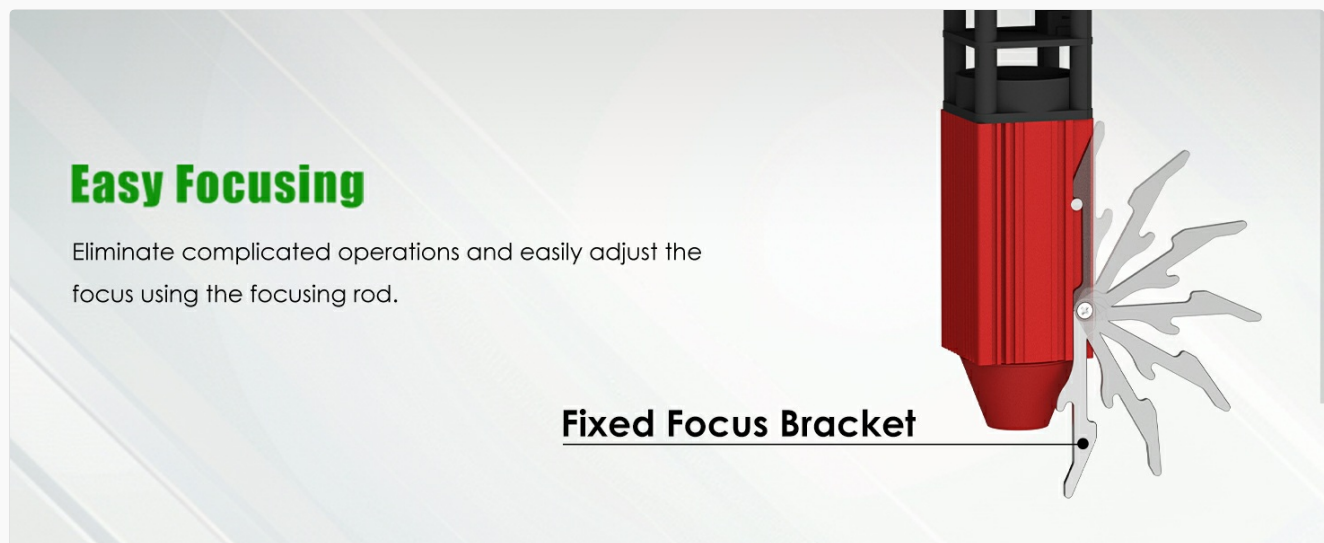


Image: The height adjustment mechanism of the Cloudray BM1, allowing for easy expansion of marking height up to 10 cm.

5. OPERATING INSTRUCTIONS

This section outlines the general steps for operating your Cloudray BM1 laser engraver. Specific software operations will be detailed in the respective software manuals.

1. **Prepare Material:** Place your material securely within the engraving area (80x80mm). Ensure it is flat and stable.
2. **Adjust Focus:** Adjust the laser head height to achieve optimal focus for your material.
3. **Design and Import:** Create or import your design into the chosen software (CutLabx, LaserGRBL, or

LightBurn).

4. **Software Settings:** Configure engraving/cutting parameters such as power, speed, and passes based on your material type and desired outcome. Always perform test engravings on scrap material first.
5. **Start Engraving:** Initiate the engraving process from the software. The machine will begin operation.
6. **Monitor Progress:** Supervise the machine during operation. Do not leave it unattended.
7. **Completion:** Once the process is complete, the laser will stop. Carefully remove the engraved material.

Offline Marking:

The Cloudray BM1 supports offline marking using a TF card. This allows you to engrave without a continuous connection to a computer or mobile device.

- Save your design file to a TF card.
- Insert the TF card into the designated slot on the machine.
- Use the machine's control buttons to select and start the engraving process.

Image: The offline marking feature, demonstrating how to initiate engraving directly from the machine using a TF card.

Software Compatibility:

The BM1 is compatible with various software platforms, offering flexibility for different user preferences and operating systems.

- **CutLabx:** Included software, user-friendly for beginners.
- **LaserGRBL:** Popular open-source software for GRBL-controlled laser engravers.
- **LightBurn:** Advanced, paid software offering extensive features for laser control.



Image: Visual representation of the Cloudray BM1's compatibility with LightBurn and CutLabX software.

6. MAINTENANCE

Regular maintenance ensures optimal performance and extends the lifespan of your Cloudray BM1 laser engraver.

- **Cleaning the Lens:** Periodically clean the laser lens with a soft, lint-free cloth and lens cleaning solution. A

dirty lens can reduce laser power and engraving quality.

- **Clear Debris:** After each use, clear any debris or dust from the engraving area and around the laser head.
- **Exhaust Fan:** Ensure the exhaust fan is free from obstructions to maintain proper ventilation and smoke extraction.
- **Storage:** When not in use, store the machine in a clean, dry environment, away from direct sunlight and extreme temperatures.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your Cloudray BM1 laser engraver.

Problem	Possible Cause	Solution
Laser not firing or weak output	Dirty laser lens, incorrect focus, low power setting, laser module issue.	Clean the laser lens. Adjust focus. Increase laser power in software. Contact support if the issue persists.
Engraving is blurry or inconsistent	Incorrect focus, unstable material, high speed setting, dirty lens.	Re-adjust focus. Secure the material. Reduce engraving speed. Clean the laser lens.
Machine not connecting to software	Incorrect cable connection, driver issues, Wi-Fi connectivity problems.	Check Type-C cable connection. Reinstall drivers. Verify Wi-Fi network and password. Restart both machine and computer/device.
Machine stops mid-engraving	Loose connection, software crash, overheating, material tilt detection.	Check all connections. Restart software. Allow machine to cool down. Ensure material is stable and machine is on a level surface.
Excessive smoke or odor	Poor ventilation, incorrect material, high power setting.	Improve ventilation or use a fume extractor. Ensure material is safe for laser engraving. Reduce laser power.

8. SPECIFICATIONS

Detailed technical specifications for the Cloudray BM1 laser engraver.

- **Product Dimensions:** 9.03 x 8.93 x 7.39 inches
- **Item Weight:** 7.43 pounds
- **Laser Power:** 5W (5000mW) Diode Laser
- **Max Marking Speed:** 5000 mm/min
- **Accuracy:** 0.01mm
- **Working Area:** 80x80mm
- **Safety Class:** Class 1 (Enclosed Design)
- **Software Compatibility:** CutLabx, LaserGRBL, LightBurn
- **Connection Method:** Wi-Fi, Type-C USB
- **Cooling:** High-performance Exhaust Fan
- **Lifespan:** 10000H+

- **Manufacturer:** Cloudray
- **Model Number:** BM1

9. OPTIONAL ACCESSORIES

Enhance the capabilities of your Cloudray BM1 with these optional accessories.



Image: A display of optional accessories including a rotation axis, smoke extractor, and marking plate.

- **Rotation Axis:** For engraving cylindrical objects.
- **Smoke Extractor:** Provides additional fume extraction for cleaner operation.
- **Marking Plate:** Offers a stable and precise surface for various materials.

10. PRODUCT DEMONSTRATION VIDEO

Watch this official product video for a visual guide on the Cloudray BM1's features and capabilities.

Your browser does not support the video tag.

Video: A demonstration of the Cloudray 5W Laser Engraver Machine, showcasing its use for etching various materials and creating personalized items.

11. WARRANTY AND SUPPORT

Cloudray products are backed by a comprehensive warranty and dedicated technical support.

- **Warranty:** This product typically includes a 2-year comprehensive coverage. Please refer to your purchase documentation for specific warranty terms and conditions.
- **Technical Support:** Lifetime technical support is available to assist you with any questions or issues regarding your Cloudray BM1 laser engraver.
- **Contact Information:** For support, please visit the official Cloudray website or refer to the contact details provided in your product packaging.

