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› Snapmaker 1064nm Infrared Laser Module User Manual

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For Snapmaker 2.0 A350T/A350/A250T/A250/A150/F350/F250 and Ray Series

1. INTRODUCTION

This manual provides essential information for the safe and effective use of your Snapmaker 1064nm Infrared Laser Module. This module is designed for engraving various plastics and metals, expanding the capabilities of your Snapmaker 2.0, Artisan, or Ray series machine. Please read this manual thoroughly before installation and operation.

2. SAFETY INFORMATION

Operating laser equipment requires strict adherence to safety protocols to prevent injury. The 1064nm Infrared Laser Module incorporates a built-in tilt detection and protection mechanism that automatically halts operation if incorrect installation or tilting of the laser head is detected.

- **Eye Protection:** Always wear appropriate laser safety goggles specifically designed for 1064nm infrared lasers during operation. These must be purchased separately.
- **Enclosure:** Use a protective enclosure (must be purchased separately) to contain laser emissions and debris, ensuring a safe working environment.
- **Ventilation:** Ensure adequate ventilation to remove fumes and particles generated during engraving.
- **Material Safety:** Only engrave materials specified as safe for infrared lasers. Certain materials can produce hazardous fumes or catch fire.
- **Supervision:** Never leave the laser module operating unattended.



Figure 2.1: Laser module tilt detection. The left side shows correct installation (green check), while the right side shows incorrect installation (red X) triggering a safety halt. Laser safety goggles and an enclosure are shown as separate safety accessories.

3. PRODUCT OVERVIEW AND CONTENTS

The Snapmaker 1064nm Infrared Laser Module is a precision tool for detailed engraving on a variety of materials. It features an easy-to-focus mechanism and AB position functionality for precise graphic placement.

3.1 What's in the Box

Upon unpacking, ensure all the following components are present:

- 1064nm Infrared Laser Module
- Calibration Card
- Cotton Swabs
- Mounting Screws



Figure 3.1: Unpacked contents of the Snapmaker 1064nm Infrared Laser Module.

4. SETUP

To set up your 1064nm Infrared Laser Module, follow these general steps. Refer to your Snapmaker machine's main user manual for specific instructions on module installation.

1. **Power Off:** Ensure your Snapmaker machine is powered off and disconnected from the power source before beginning installation.
2. **Mount the Module:** Carefully attach the 1064nm Infrared Laser Module to the tool head carriage of your Snapmaker machine using the provided mounting screws. Ensure it is securely fastened and correctly oriented.
3. **Connect Cables:** Connect the module's data and power cables to the designated ports on the tool head carriage.
4. **Power On:** Once the module is securely installed and connected, you may power on your Snapmaker machine.
5. **Software Recognition:** Your Snapmaker software (e.g., Luban) should automatically detect the new laser module. If not, restart the software or machine.

5. OPERATING INSTRUCTIONS

This section details the key operational aspects of the 1064nm Infrared Laser Module.

5.1 Engravable Materials

The 1064nm Infrared Laser Module is suitable for engraving a variety of plastics and metals. This includes:

- **Metals:** Painted Metal, SPTE (Steel Plate), Anodized Aluminum, Tinplate, Gold, Silver, Copper, Titanium, Stainless steel, Aluminum.
- **Plastics:** Opaque plastics (e.g., ABS, PLA, PETG 3D printing filament - dark opaque), Acrylic (white opaque & black opaque).
- **Others:** Leather, Silicone (dark opaque), PCB.

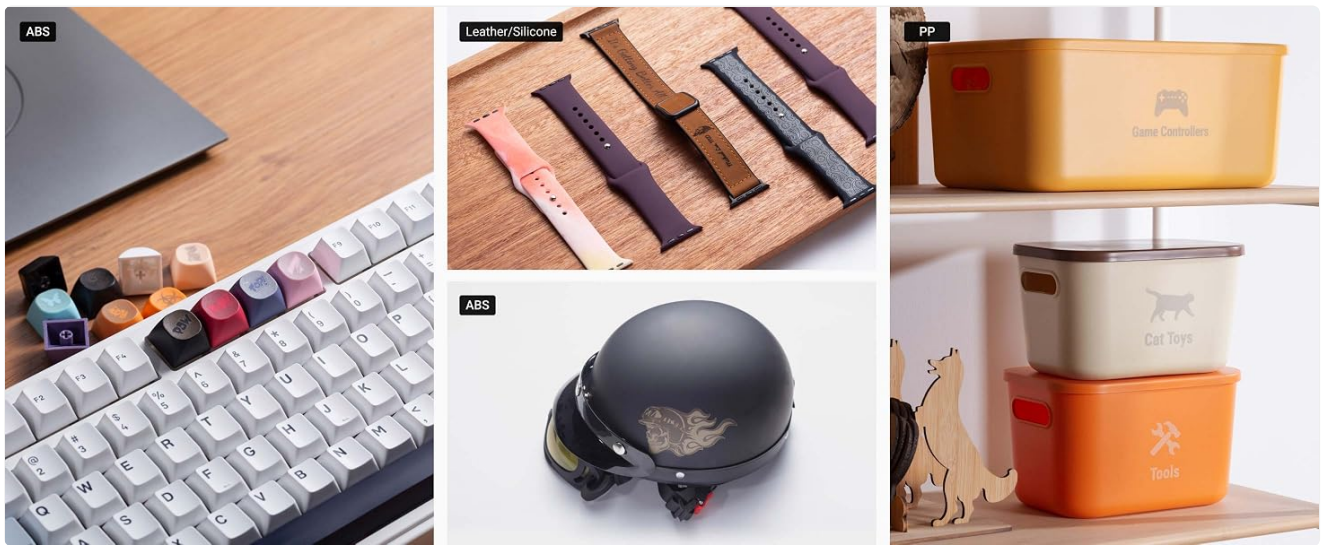


Figure 5.1: Examples of materials and objects successfully engraved with the 1064nm Infrared Laser Module.

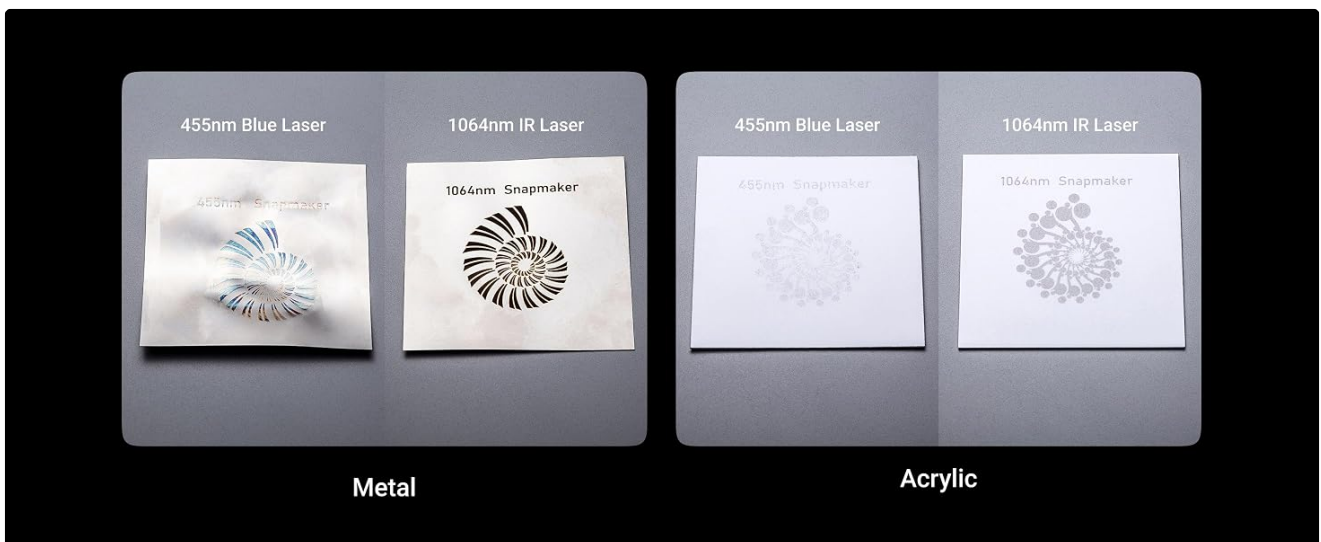


Figure 5.2: Comparison of 455nm Blue Laser vs. 1064nm IR Laser engraving on metal and acrylic.

5.2 AB Position for Precise Engraving

The AB Position feature in the Luban software streamlines your workflow by allowing you to define a rectangular engraving area using two points, A and B. This ensures precise graphic placement on your material.

1. **Select Points:** In Luban, manually position the laser head to define point A, then set it. Repeat for point B.
2. **Define Area:** The software will automatically define a rectangular engraving area based on these two points.
3. **Preview and Engrave:** Preview the engraving path and proceed with the operation.

A brief history of Snapmaker laser products.

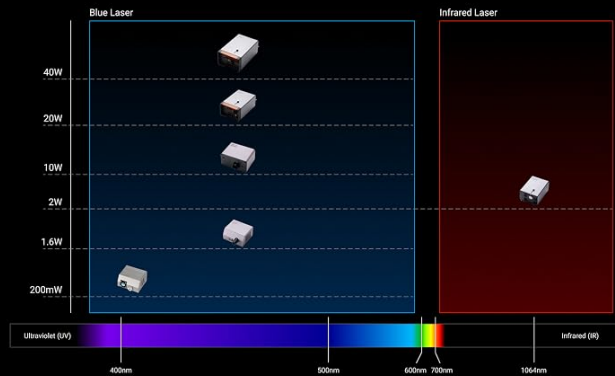


Figure 5.3: Using the AB Position feature in Snapmaker Luban software.

5.3 Easy-to-Focus Mechanism

Achieving optimal focus is crucial for high-quality engraving. The module offers two focus methods:

- **Auto-Focus (Material Touch Measuring):** Position the execution head in Luban to locate the material. Use the focus lever on the module to touch the material surface. The module will automatically adjust to the correct focal distance.
- **Manual Measuring:** Adjust focus by manually measuring the material thickness and inputting the value into the software.

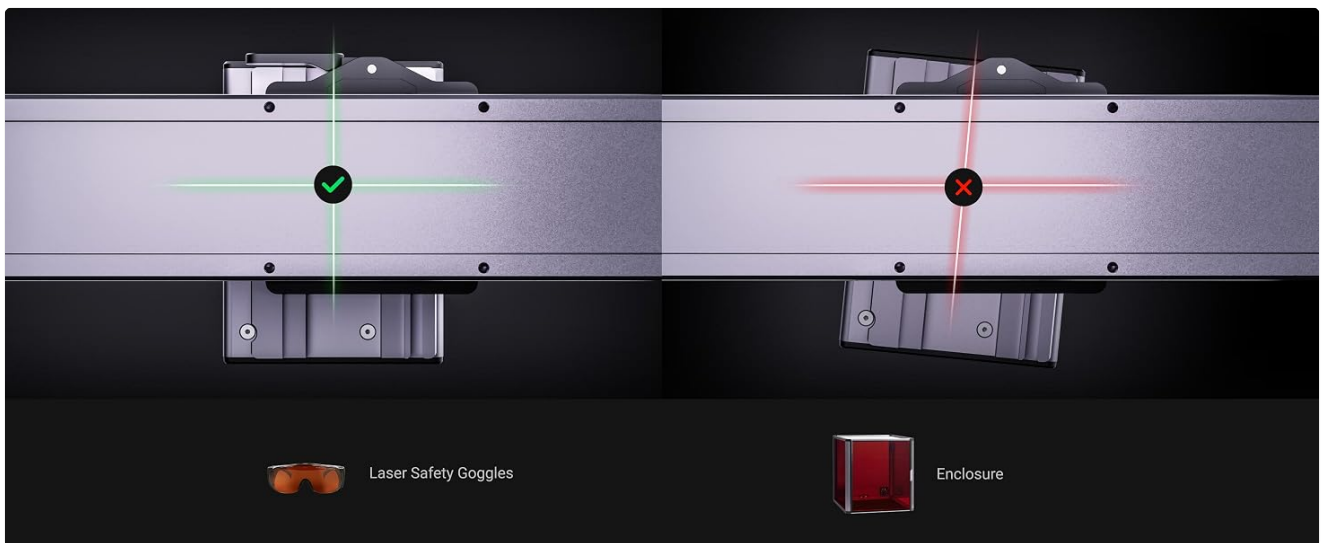


Figure 5.4: The focus lever on the 1064nm Infrared Laser Module.

5.4 Supported Design Files

The Snapmaker software supports various design file formats for engraving:

- STL
- SVG
- JPEG
- PNG
- JPG
- BMP

- DXF
- SNAPLZR

6. MAINTENANCE

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

- **Lens Cleaning:** Periodically inspect the laser lens for dust or debris. Use a soft, lint-free cloth and a small amount of isopropyl alcohol to gently clean the lens. Avoid abrasive materials.
- **Module Exterior:** Keep the exterior of the module clean by wiping it with a dry or slightly damp cloth.
- **Storage:** When not in use, store the module in a clean, dry environment, away from direct sunlight and extreme temperatures.

7. TROUBLESHOOTING

If you encounter issues with your 1064nm Infrared Laser Module, consider the following common solutions:

- **Module Not Detected:** Ensure the module is correctly installed and all cables are securely connected. Restart your Snapmaker machine and the Luban software.
- **Poor Engraving Quality:** Check the laser focus. Ensure the material is flat and properly secured. Verify that the correct material settings (power, speed) are selected in Luban. Clean the laser lens if necessary.
- **Laser Not Firing:** Confirm that safety features (e.g., enclosure door, tilt sensor) are not triggered. Check software settings for laser power and ensure the job is properly initiated.
- **Machine Errors:** Refer to your Snapmaker machine's main user manual or the Snapmaker support website for specific error codes and solutions.

For further assistance, visit the official Snapmaker support website or contact customer service.

8. SPECIFICATIONS

Feature	Detail
Laser Wavelength	1064nm (Infrared)
Engravable Materials	Various plastics and metals (Painted Metal, SPTE, Anodized Aluminum, Tinfoil, Gold, Silver, Copper, Titanium, Stainless steel, Aluminum, Opaque Plastic, 3D Printing Filament (Dark Opaque), Acrylic (White Opaque & Black Opaque), Leather, Silicone (Dark Opaque), PCB)
Focus Method	Auto-focus through Manual Measuring or Material Touch Measuring (Using Focus Lever)
Safety Features	Module tilt detection and protection
Supported Design Files	STL, SVG, JPEG, PNG, JPG, BMP, DXF, SNAPLZR
Package Dimensions	7.28 x 6.06 x 4.61 inches

Feature	Detail
Item Weight	2.14 pounds
Manufacturer	Snapmaker

9. COMPATIBILITY

The Snapmaker 1064nm Infrared Laser Module is compatible with the following Snapmaker machines:

- Snapmaker 2.0 A350T
- Snapmaker 2.0 A350
- Snapmaker 2.0 A250T
- Snapmaker 2.0 A250
- Snapmaker 2.0 A150
- Snapmaker F350
- Snapmaker F250
- Snapmaker Ray

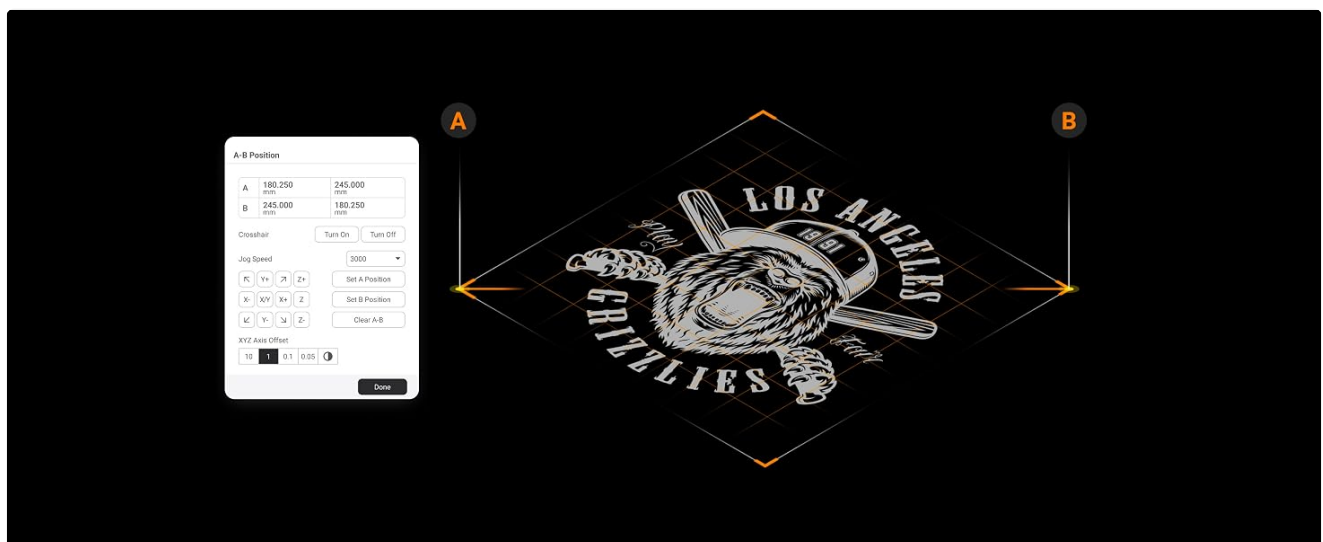


Figure 9.1: The 1064nm Infrared Laser Module is compatible with Snapmaker 2.0, Artisan, and Ray series machines.

10. WARRANTY AND SUPPORT

For detailed warranty information and technical support, please refer to the official Snapmaker website or contact their customer service directly. Keep your purchase receipt for warranty claims.

- **Online Resources:** Visit the [Snapmaker Official Website](#) for FAQs, tutorials, and software updates.
- **Customer Service:** Contact Snapmaker support for assistance with product issues or inquiries.