

[Manuals.plus](#) /

› [SainSmart](#) /

› SainSmart 450nm Blue-Violet Laser Module Instruction Manual for Genmitsu 3018-MX3 / 3018-PROVer

SainSmart 3018-MX3 / 3018-PROVer

SainSmart 450nm Blue-Violet Laser Module Instruction Manual

Model: Genmitsu 3018-MX3 / 3018-PROVer Compatible

1. INTRODUCTION

This manual provides essential information for the safe and effective use of your SainSmart 450nm Blue-Violet Laser Module. Designed for industrial engraving machines, this module offers high reliability, stability, and efficiency. It is specifically compatible with Genmitsu 3018-MX3 and 3018-PROVer CNC machines. Please read this manual thoroughly before installation and operation.

2. SAFETY INFORMATION

WARNING: This product emits laser radiation. Direct exposure to the laser beam can cause severe eye injury and skin burns. Always follow these safety precautions:

- **Wear Protective Eyewear:** Always wear appropriate laser safety glasses (OD 4+ for 450nm wavelength) when the laser module is in operation.
- **Avoid Direct Exposure:** Never look directly into the laser beam or at reflections from shiny surfaces.
- **Keep Clear:** Ensure no personnel or flammable materials are in the laser's path during operation.
- **Supervision:** Do not leave the laser module operating unattended.
- **Ventilation:** Operate in a well-ventilated area to disperse fumes generated during engraving or cutting.
- **Children and Pets:** Keep children and pets away from the operating area.



Image: SainSmart 450nm Blue-Violet Laser Module. The label clearly indicates wavelength, output power, fixed focus distance, and a critical laser radiation warning.

3. SPECIFICATIONS

- **Wavelength:** 450nm (Blue-Violet)
- **Output Power:** 5500mW (5.5W)
- **Fixed Focus Distance:** 20mm
- **Operating Mode:** Automatic
- **Cooling:** Integrated aluminum heat sink and cooling fan
- **Compatibility:** Genmitsu 3018-MX3, Genmitsu 3018-PROVer (Not compatible with 1810-PRO/3018/3018-PRO)
- **Package Dimensions:** 28 x 19.4 x 8.4 cm
- **Weight:** 1.02 kg

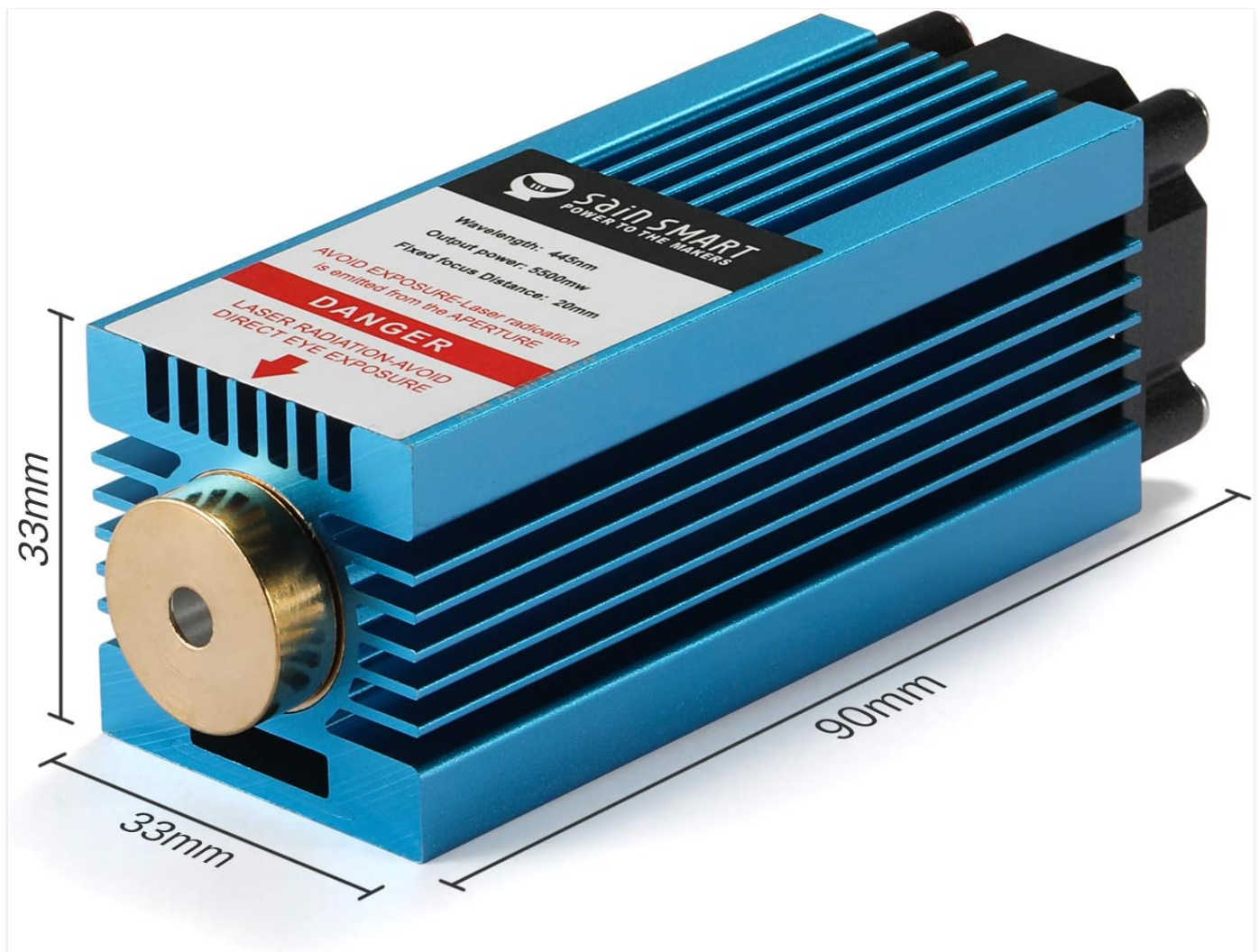


Image: The laser module showing its dimensions: 90mm length, 33mm width, and 33mm height.

4. SETUP

4.1 Package Contents

Verify that all components are present:

- SainSmart 450nm Blue-Violet Laser Module
- Connection Cable
- Mounting Hardware (screws, brackets if applicable)
- Focus Block (typically a metal cylinder for setting focus)

4.2 Installation on CNC Machine

1. **Power Off:** Ensure your Genmitsu CNC machine is powered off and unplugged before beginning installation.
2. **Mount the Module:** Securely attach the laser module to the designated mounting point on your CNC machine's Z-axis carriage using the provided hardware. Ensure it is stable and aligned.
3. **Connect Cables:** Plug the laser module's connection cable into the laser port on your CNC machine's control board. Ensure the connection is firm and correct.

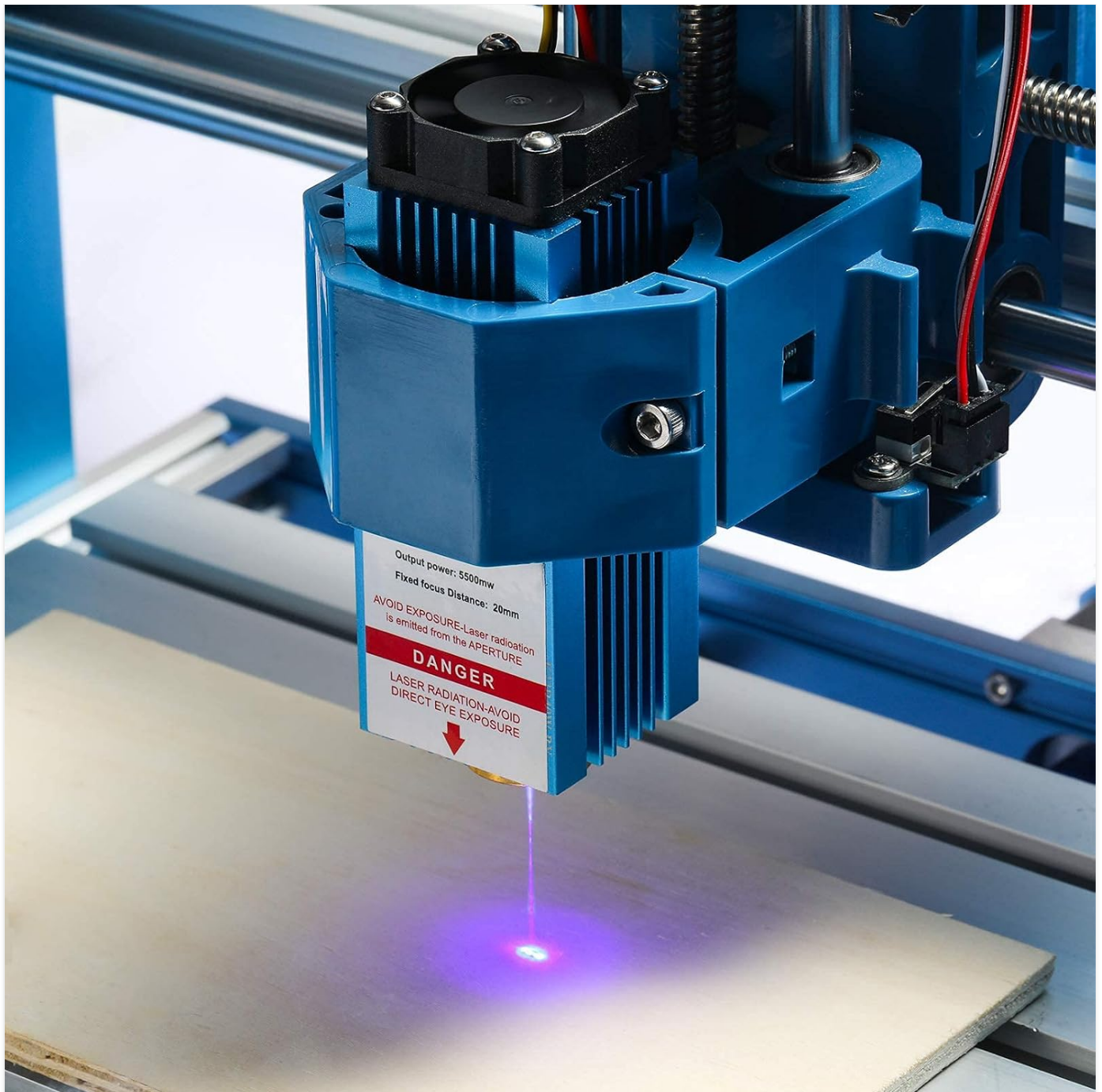


Image: The laser module securely mounted on a CNC machine, ready for operation.

5. OPERATING INSTRUCTIONS

5.1 Initial Power-Up and Safety Check

1. **Wear Safety Glasses:** Put on your laser safety glasses before powering on the CNC machine.
2. **Power On:** Plug in and power on your Genmitsu CNC machine.
3. **Software Connection:** Connect your CNC machine to your computer using appropriate software (e.g., LaserGRBL, LightBurn).

5.2 Focus Adjustment

The laser module features an adjustable focus lens. Proper focus is crucial for optimal engraving and cutting results.

1. **Position Material:** Place your material (e.g., wood, plastic) on the CNC bed.
2. **Use Focus Block:** Place the provided focus block (typically 20mm height) directly on top of your material, underneath the laser lens.

3. **Adjust Lens:** Gently rotate the laser lens until it touches the top of the focus block. This sets the laser's focal point at the material surface.
4. **Remove Block:** Carefully remove the focus block.



Image: The laser module positioned above a focus block, illustrating the focus adjustment process.

5.3 Engraving and Cutting

The laser module is suitable for engraving, cutting, tracing, and drilling on various materials such as wood and plastic.

1. **Prepare Design:** Load or create your design in your CNC control software.
2. **Set Parameters:** Adjust laser power, speed, and passes according to your material and desired outcome. Start with lower power and higher speed for testing.
3. **Start Operation:** Initiate the engraving or cutting process from your software. Monitor the operation closely.

6. 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. Avoid abrasive materials.
- **Cooling System:** Ensure the cooling fan and heat sink are free from dust and debris. A clogged fan can lead to overheating and reduced laser performance.



Image: A detailed view of the integrated cooling fan, essential for heat dissipation.

7. TROUBLESHOOTING

If you encounter issues, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
---------	----------------	----------

Problem	Possible Cause	Solution
No laser output	Loose cable connection, incorrect software settings, laser module failure	Check all cable connections. Verify laser power settings in software. Contact support if issue persists.
Poor engraving/cutting quality	Improper focus, incorrect power/speed settings, dirty lens	Re-adjust laser focus. Optimize power and speed settings for your material. Clean the laser lens.
Laser module overheating	Blocked cooling fan, prolonged high-power operation	Clean the cooling fan and heat sink. Allow the module to cool down between long operations. Ensure adequate ventilation.
Laser not compatible with CNC	Incorrect CNC model	This module is only compatible with Genmitsu 3018-MX3 and 3018-PROVer. It is NOT compatible with 1810-PRO/3018/3018-PRO.

8. WARRANTY AND SUPPORT

SainSmart products are covered by a manufacturer's warranty. For specific warranty details, please refer to the documentation included with your purchase or visit the official SainSmart website. If you require technical assistance or have questions not covered in this manual, please contact SainSmart customer support through their official channels.

Manufacturer: SainSmart

Website: www.sainsmart.com

