

xTool F2 Ultra

xTool F2 Ultra Dual Laser Engraver User Manual

Model: F2 Ultra

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your xTool F2 Ultra Laser Engraver. Please read this manual thoroughly before using the device to ensure proper setup, operation, and maintenance. The xTool F2 Ultra is a versatile dual-laser system, combining a 60W MOPA fiber laser and a 40W diode laser for engraving and cutting a wide range of materials.

2. SAFETY INFORMATION

The xTool F2 Ultra is a Class 4 laser engraver. Adherence to safety guidelines is crucial to prevent injury and damage. Always operate the machine in a well-ventilated area and wear appropriate personal protective equipment (PPE), including laser safety glasses. Never look directly into the laser beam. Ensure the machine's enclosure is closed during operation to prevent laser leakage.

- **Eye Protection:** Always wear certified laser safety glasses when the machine is operating.
- **Ventilation:** Operate in a well-ventilated space to dissipate fumes and particles.
- **Enclosure:** Keep the machine's fully enclosed design closed during operation.
- **Material Compatibility:** Only engrave or cut materials approved for laser processing. Avoid highly reflective or flammable materials without proper precautions.
- **Emergency Stop:** Familiarize yourself with the emergency stop button location.

3. SETUP AND ASSEMBLY

This section outlines the steps for setting up your xTool F2 Ultra laser engraver. Ensure all components are present before beginning assembly.

3.1 Unpacking

Carefully remove all components from the packaging. Verify that all items listed in the packing list are included. Retain packaging for future transport or storage.

3.2 Component Identification

Identify the main unit, power adapter, USB cable, and any included accessories such as the conveyor module (if applicable).

Master All Materials Effortlessly

• 60W MOPA Laser • 40W Diode Laser

100+ Colors with One Click

Simplify Laser to the Max

All Metal Projects Covered

15,000^{mm}/s

Over 50% Higher Efficiency

Enclosed Design

48MP Dual Cameras

Precise Alignment & Detail

220x500mm

Image: xTool F2 Ultra main unit with various accessories. This image shows the compact design of the engraver and its accompanying parts.

3.3 Connecting Power and Data

1. Connect the power adapter to the engraver and then to a suitable power outlet.

2. Connect the engraver to your computer using the provided USB cable.

3.4 Software Installation

Download and install the latest version of the xTool software from the official xTool website. Follow the on-screen instructions for installation.

For software download and detailed instructions, visit: <https://s.xtool.com/mt/985>

4. OPERATING INSTRUCTIONS

This section details the steps for operating your xTool F2 Ultra for engraving and cutting tasks.

4.1 Material Preparation

Place the material to be processed onto the working platform. Ensure it is flat and securely positioned. The dual 48MP AI cameras assist with precise positioning.

Get Your Color Palette One-click Stunning Engraving

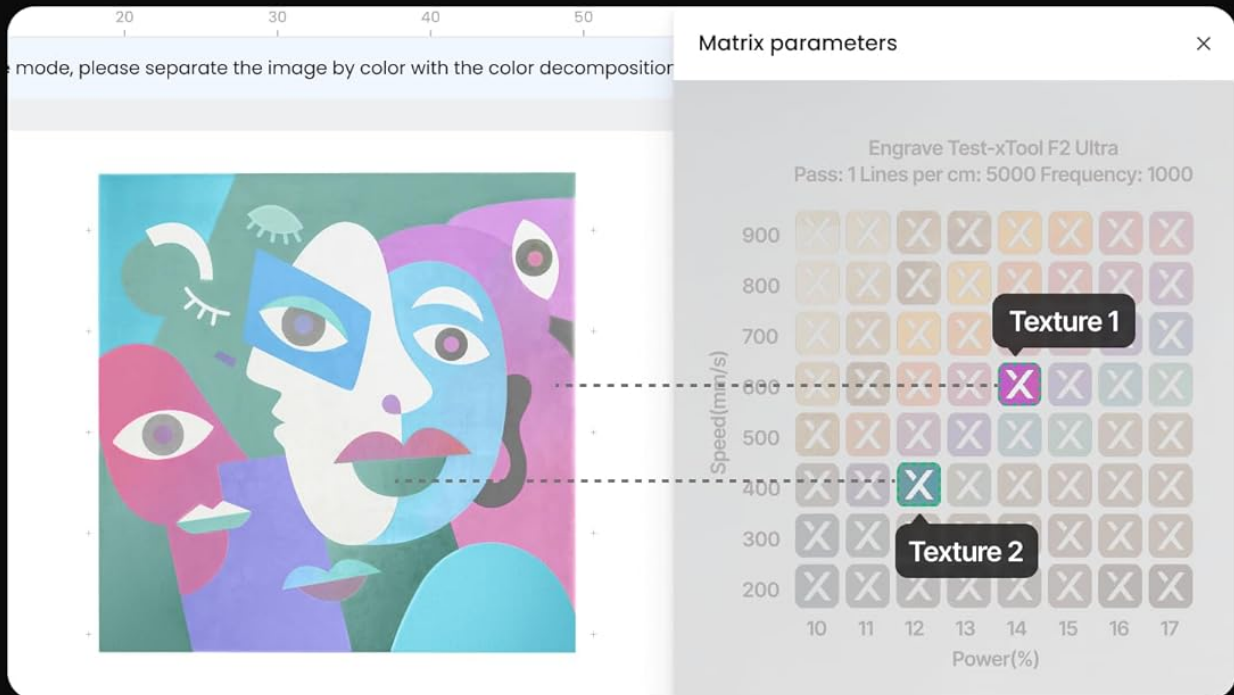


Image: Illustration of the xTool F2 Ultra's dual 48MP cameras providing precise alignment and detail for engraving.

4.2 Software Workflow

1. Open the xTool software and import your design.
2. The AI system can auto-detect materials and suggest optimal settings. Verify or adjust these settings as needed.
3. Use the one-click focus and preview function to ensure accurate placement and desired outcome.
4. Select the appropriate laser (60W MOPA for metals, 40W Diode for other materials) based on your project

requirements.

5. Initiate the engraving or cutting process. Monitor the operation closely.



Image: Screenshot of the xTool software interface demonstrating AI-powered material detection and suggested settings.

4.3 Using the Conveyor Module (Optional)

For automated batch processing and larger materials, attach the conveyor module. This expands the working area from 8.7"x 8.7" to 8.7" x 19.7".



Image: Comparison of the xTool F2 Ultra's working area, illustrating the standard 220x220mm area and the expanded 220x500mm area with the conveyor module.

4.4 Laser Capabilities

- **60W MOPA Fiber Laser:** Ideal for all metals, including 3D embossing, deep engraving, color engraving (100+ colors), and cutting up to 2mm metal. Also supports black marking on aluminum, laser cleaning, and thin metal welding.
- **40W Diode Laser:** Suitable for non-metal materials such as wood, acrylic (up to 20mm cut), leather, glass, rubber, and fabric (up to 23mm wood cut).

The Most Powerful Dual Laser

World's First 60W MOPA + 40W Diode Dual Laser. Effortlessly Master All Materials.



**60W
MOPA**



**40W
Diode**



*F2 Ultra features dual lasers (60W MOPA + 40W Diode).
F2 Ultra (single) includes 60W MOPA only.

Image: An internal diagram illustrating the dual laser system of the xTool F2 Ultra, highlighting the 60W MOPA and 40W Diode lasers.

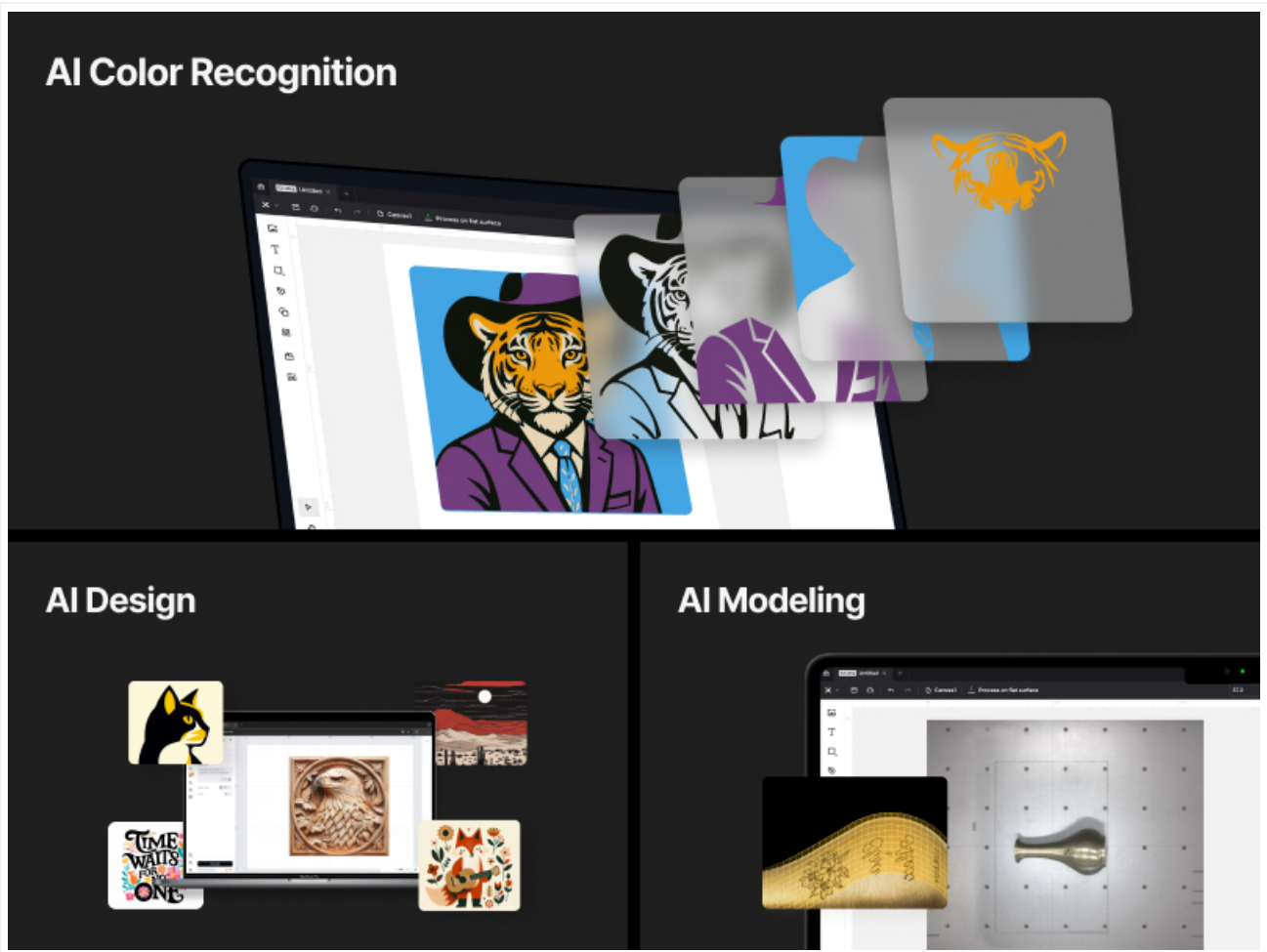


Image: Examples of various metal engraving techniques possible with the MOPA laser, including color engraving, deep engraving, and embossing.



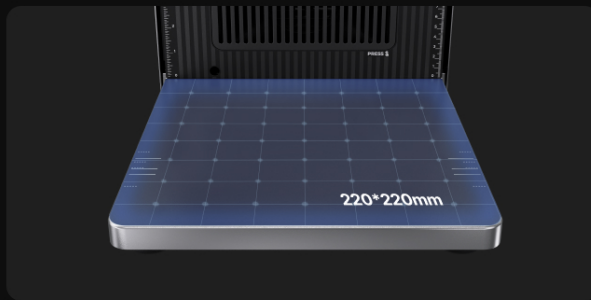
Video: A demonstration of the xTool F2 Ultra laser engraver in action, showing the engraving process on wood and cutting on leather, followed by a heat press application.

5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your xTool F2 Ultra.

- **Cleaning the Lens:** Periodically clean the laser lens with a soft, lint-free cloth and lens cleaning solution to maintain laser precision.
- **Dust Removal:** Use a soft brush or compressed air to remove dust and debris from the interior and exterior of the machine.
- **Ventilation System:** Ensure the ventilation system is clear of obstructions to maintain proper airflow.
- **Firmware Updates:** Regularly check for and install firmware updates for improved functionality and performance.

Larger, Unlock Bigger Project Possibilities



Up to 220 × 220 mm work area, ideal for one-off projects and detailed pieces.



With the conveyor, the bed size expands to 220 × 500 mm, perfect for handling urgent bulk orders on your own.

Image: Diagram highlighting the safety features and design elements of the xTool F2 Ultra, including its fully enclosed design and safety sensor.

6. TROUBLESHOOTING

This section provides solutions to common issues you might encounter.


Problem	Possible Cause	Solution
Laser not firing	Power cable loose, emergency stop engaged, software error.	Check power connections, disengage emergency stop, restart software and machine.
Poor engraving quality	Incorrect focus, dirty lens, unsuitable material settings.	Perform one-click focus, clean the laser lens, adjust material settings in software.
Machine not connecting to computer	USB cable issue, driver not installed, software conflict.	Try a different USB port/cable, reinstall drivers, ensure no other software is interfering.

7. SPECIFICATIONS

Feature	Detail
Laser Type	60W MOPA Fiber Laser & 40W Diode Laser
Engraving Speed	Up to 15,000 mm/s
Camera	Dual 48MP AI Cameras
Positioning Accuracy	0.2mm
Working Area (Standard)	8.7" x 8.7" (220mm x 220mm)
Working Area (with Conveyor)	8.7" x 19.7" (220mm x 500mm)
Metal Cutting Capability	Up to 2mm metal (with 60W MOPA)
Acrylic Cutting Capability	Up to 20mm acrylic (with 40W Diode)

Feature	Detail
Wood Cutting Capability	Up to 23mm wood (with 40W Diode)
Safety Class	Class 4 Laser Product

Why xTool F2 Ultra Stands Out?



xTool F2 Ultra

Power

60W MOPA + 40W Diode

Speed

15,000 mm/s

Camera

- 48MP Camera×2
- Auto Positioning

Metal Cutting

Up to 2mm Metal

- Auto-ID Materials
- Auto Streamline™ Production


Exclusive Tech

Working Area

- 8.66" × 8.66"
- 8.66" × 19.69" (with conveyor)

Safety

Enclosed Design



Others

60W MOPA Only

10,000 mm/s

×

Up to 1.5mm Metal

×

6.89" × 6.89"

Unprotected

Image: A comparison table highlighting the key features and specifications of the xTool F2 Ultra against other laser engravers, detailing power, speed, camera, metal cutting, exclusive tech, working area, and safety.

8. WARRANTY INFORMATION

For detailed warranty information, please refer to the official xTool website or the warranty card included with your product. Typically, xTool products come with a limited warranty covering manufacturing defects for a specified period from the date of purchase. Keep your proof of purchase for warranty claims.

9. CUSTOMER SUPPORT

If you require technical assistance, have questions about your xTool F2 Ultra, or need to report an issue, please contact xTool customer support through their official website. Provide your product model and serial number for faster service.

- **Online Support:** Visit the xTool official website for FAQs, tutorials, and contact forms.
- **Community Forums:** Engage with other xTool users for tips and solutions.

