

## ACMER P2 33W

# ACMER P2 33W Laser Engraver and Cutting Machine User Manual

Model: P2 33W | Brand: ACMER

## INTRODUCTION

This manual provides essential information for the safe and efficient operation of your ACMER P2 33W Laser Engraver and Cutting Machine. This powerful device features a dual laser output, offering 33W (33,000mW) of laser power for precise engraving and cutting across a wide range of materials. Please read this manual thoroughly before initial use to ensure proper setup, operation, and maintenance.

## SAFETY INFORMATION

The ACMER P2 33W laser engraver is designed with multiple safety features to protect the user during operation. Adherence to these guidelines is crucial for safe use.

- **Safety Lock:** The machine is equipped with a safety lock that must be engaged before operation.
- **Emergency Stop Button:** An emergency stop button is present to immediately halt machine operation in case of an accident.
- **Tilt/Movement Sensor:** If the laser engraving machine moves or tilts by 15° during processing, it will automatically stop to prevent accidents.
- **Built-in Flame Sensor:** A flame sensor detects flames and triggers an alarm, providing an additional layer of safety during cutting tasks.
- **Observable Shield:** Provides a visual barrier while allowing observation of the engraving process.
- **Child Safety Lock:** Prevents unauthorized use.
- **Alarm Lights and Buzzers:** Provide audible and visual alerts for various conditions.

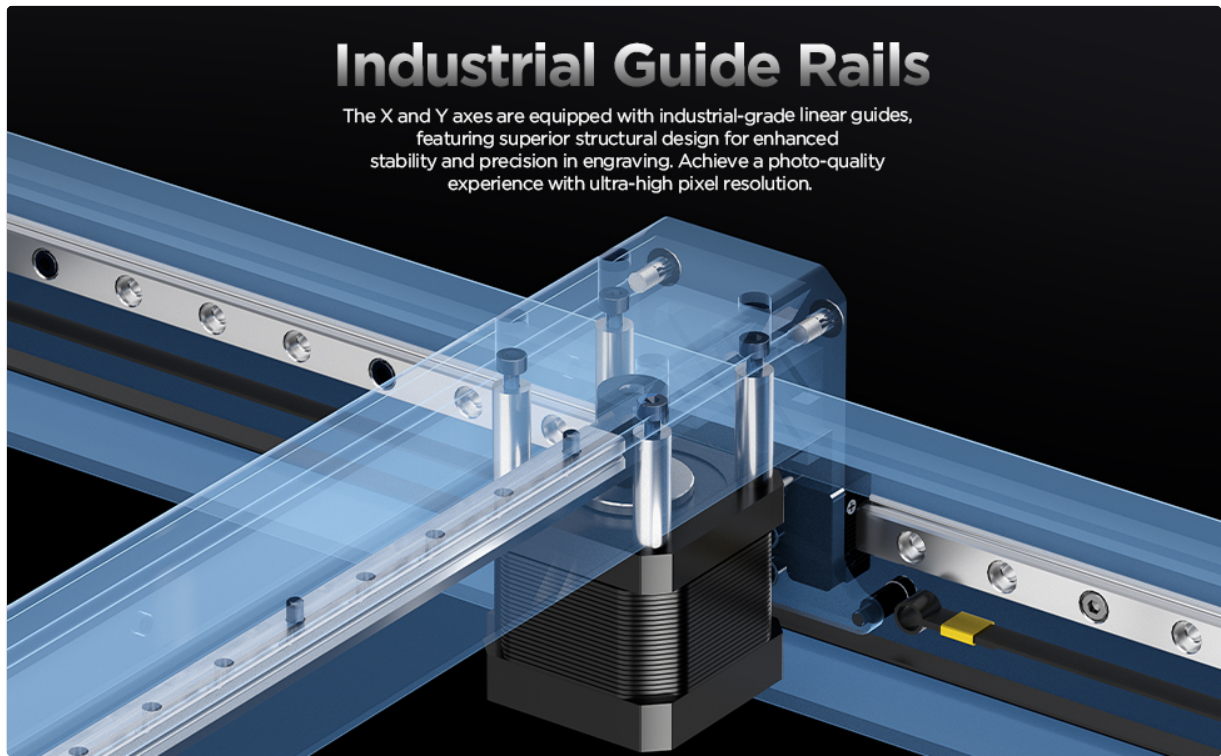


Figure 1: Overview of ACMER P2 Safety Features.

## PRODUCT OVERVIEW AND COMPONENTS

The ACMER P2 33W Laser Engraver features a robust all-metal design for stability and precision. Key components are clearly labeled for easy identification and setup.

# The Fusion of Industry and Technology

## Sturdy All-metal Humanised design

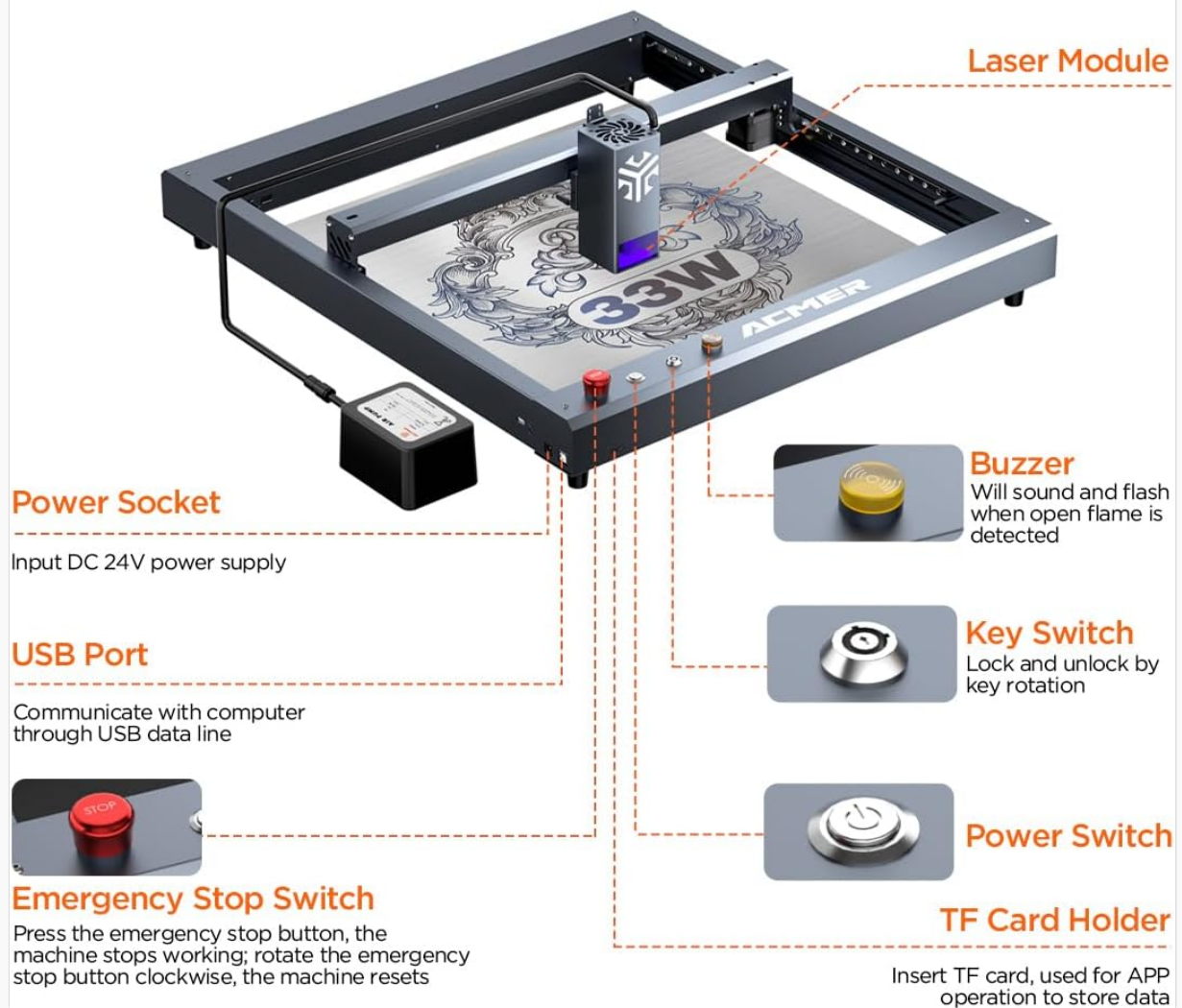


Figure 2: Main Components of the ACMER P2 Laser Engraver.

- **Laser Module:** The core component responsible for laser emission, featuring 33W output power.
- **Power Socket:** Input for the DC 24V power supply.
- **USB Port:** Used for communication with a computer via USB data line.
- **Emergency Stop Switch:** Press to immediately stop the machine; rotate clockwise to reset.
- **Buzzer:** Sounds and flashes when an open flame is detected.
- **Key Switch:** Used to lock and unlock the machine by key rotation.
- **Power Switch:** Controls the main power to the unit.
- **TF Card Holder:** Insert TF card for offline use and data transfer via mobile app.



Figure 3: The ACMER P2 33W Laser Engraver with example projects.

## SETUP GUIDE

The ACMER P2 33W Laser Engraver is designed for minimal assembly, with most components pre-assembled. Follow these steps for initial setup:

1. **Unpacking:** Carefully remove all components from the packaging. The packaging is designed with labeled compartments for the Material Package, Laser Module, Accessory Package, safety glasses, and air pump.
2. **Frame Assembly:** The main frame is largely pre-assembled. Ensure all connections are secure.
3. **Laser Module Installation:** Attach the laser module to the designated carriage on the frame.
4. **Air Pump Connection:** Connect the air pump to the laser engraver as per the instructions.
5. **Power Connection:** Connect the power supply to the power socket.
6. **Software Installation:** Install the necessary engraving software (LaserGRBL, LightBurn, or ACMER APP) on your computer or mobile device.
7. **Initial Calibration:** Perform any initial calibration steps as outlined in the detailed installation and usage instructions provided with the product.

# Industrial Guide Rails

The X and Y axes are equipped with industrial-grade linear guides, featuring superior structural design for enhanced stability and precision in engraving. Achieve a photo-quality experience with ultra-high pixel resolution.

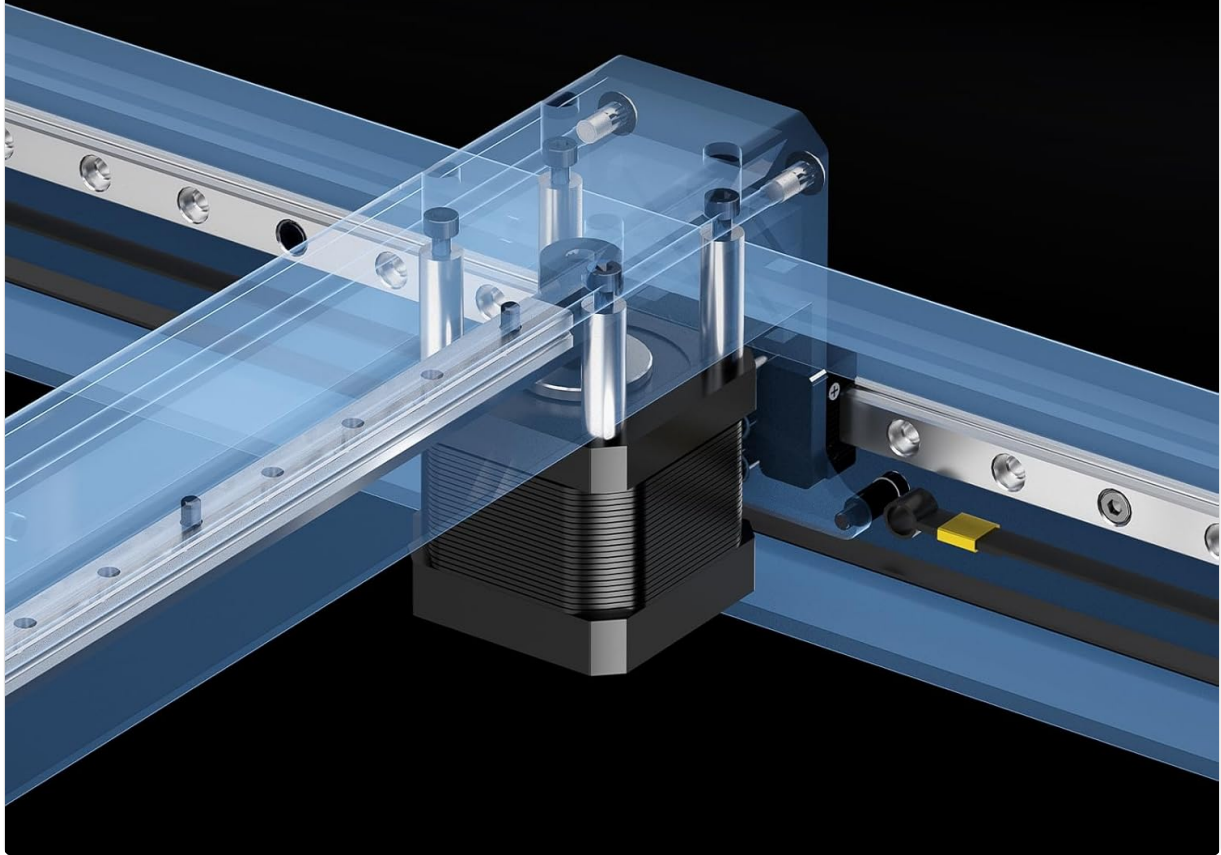


Figure 4: Industrial-grade guide rails for enhanced stability and precision.

## OPERATING INSTRUCTIONS

The ACMER P2 33W Laser Engraver offers high precision and speed for various applications. Follow these guidelines for optimal performance.

### Material Compatibility and Cutting Ability

The 33W laser output allows for efficient cutting and engraving of a wide range of materials. The machine can cut 8mm plywood and 18mm acrylic board in a single pass.

# Incredible cutting ability

The combination of 33 watts of output power and air assist provides unexpected laser performance for cutting thick materials while dramatically reducing operating hours.

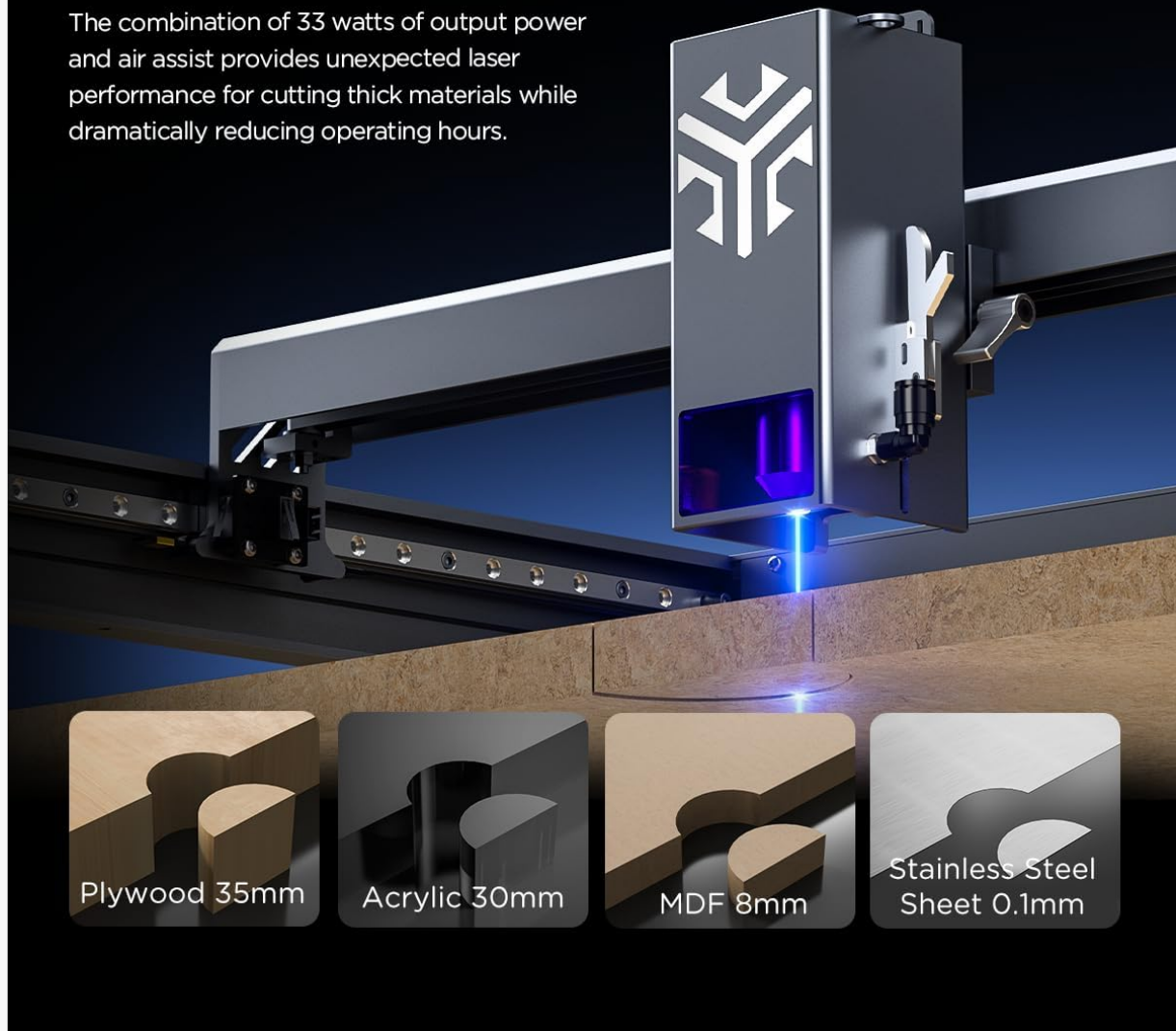


Figure 5: Cutting capabilities on different materials.

Compatible materials include, but are not limited to: wood, bamboo, paper, acrylic, leather, PCB board, anodized aluminum, and various metals. The large engraving area of 420x400mm provides ample space for creative projects, with an optional expansion kit for 200% expansion to 420x800mm.

## Precision and Speed

The P2 33W features an ultra-fine compressed spot size of 0.08mm x 0.06mm, enabling industrial-grade engraving precision for detailed and lifelike images. The maximum engraving speed can reach up to 30,000mm/min, significantly enhancing efficiency.

# 0.08\*0.1mm ultra-fine spot size

Advanced laser synthesis compression technology generates a more powerful laser output by maintaining a fine beam size.

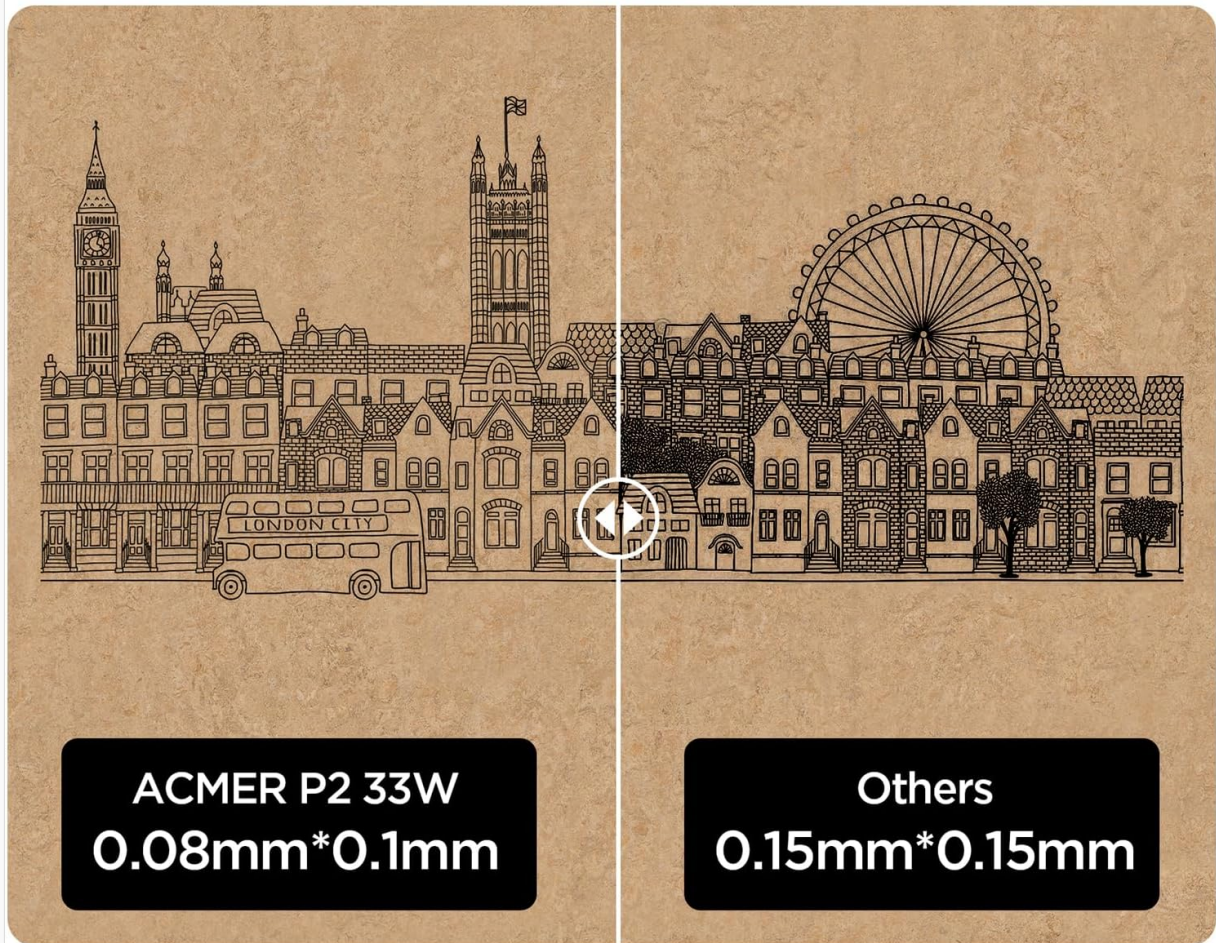


Figure 6: Comparison of engraving spot size for superior detail.

# Incredibly Fast! Higher Efficiency!

The maximum engraving speed can reach 30,000mm/min, which is 5 times that of traditional frame machines.

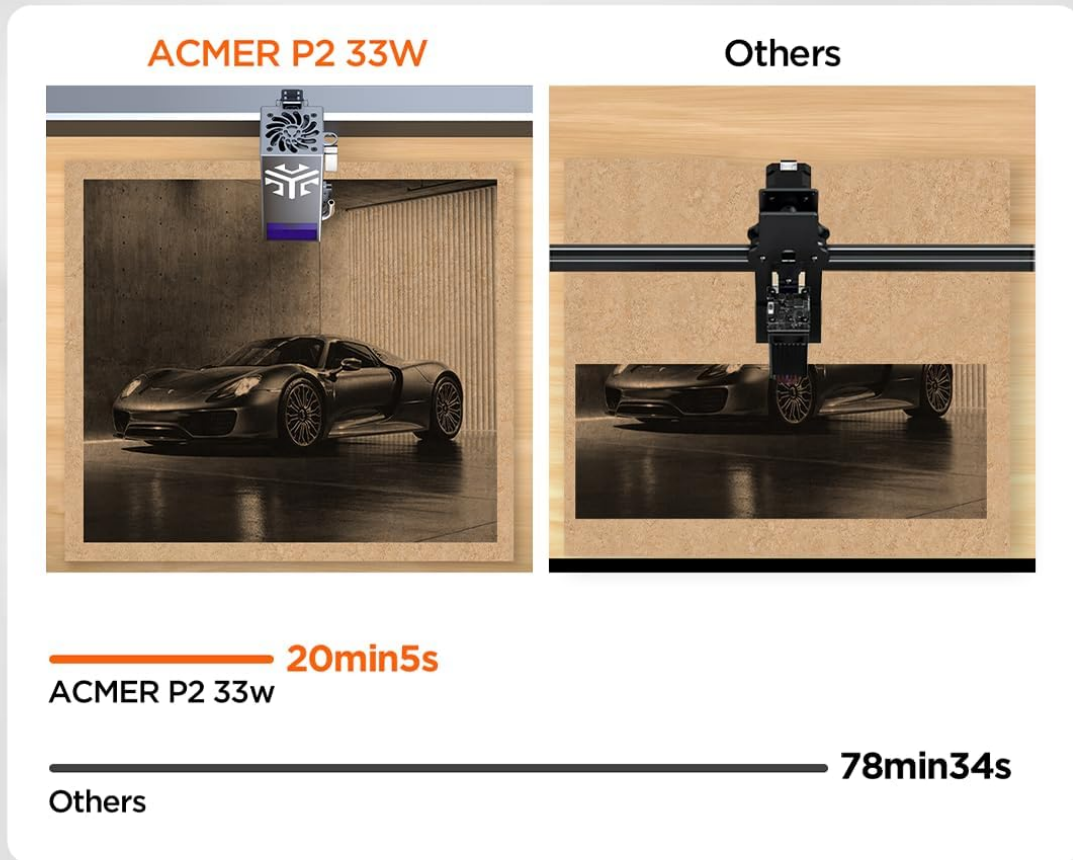


Figure 7: Speed efficiency comparison.

## Software Compatibility and Connectivity

The machine is widely compatible with professional engraving software such as LaserGRBL and LightBurn. It supports Windows, macOS, and mobile applications. Data transfer can be done via Wi-Fi, USB cable, or TF card, allowing for offline use.

# 100% compatible with lightburn, LaserGRBL and ACMER APP

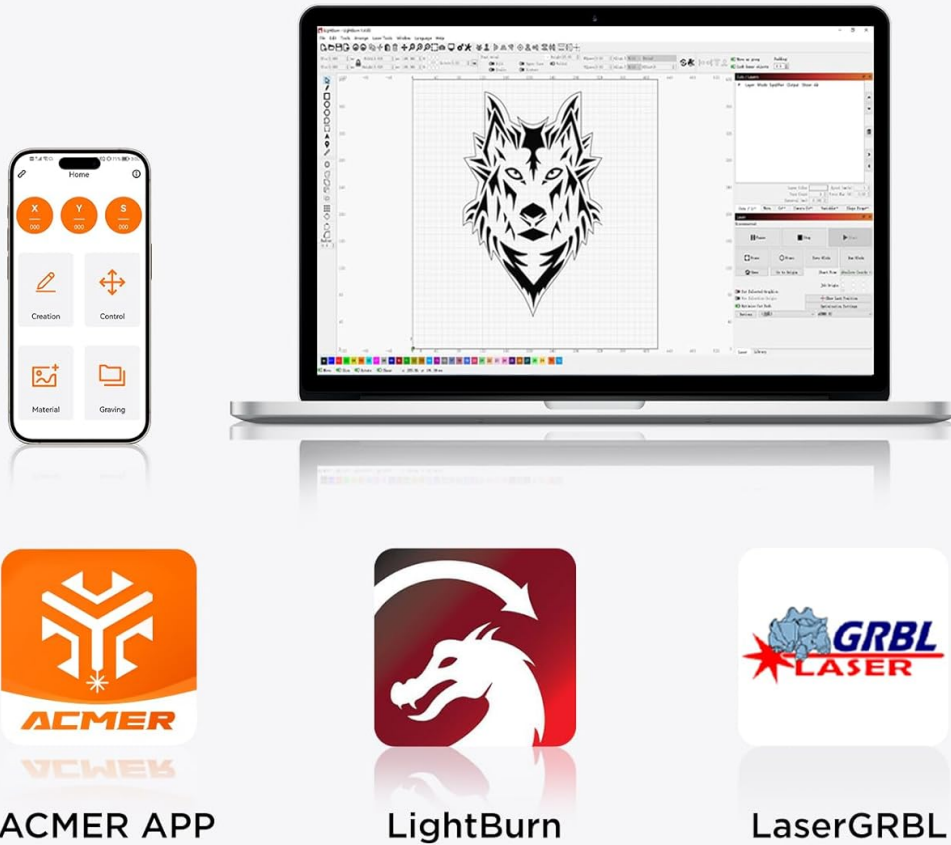


Figure 8: Software and operating system compatibility.

## Optional Accessories

Enhance your laser engraving capabilities with optional accessories:

- **Rotary 360° Roller:** For engraving cylindrical objects like insulated cups.
- **Laser Enclosure Box:** Improves indoor air quality by eliminating smoke and provides a more environmentally friendly operation.
- **Time-lapse Camera:** For precise positioning and monitoring of the engraving process.
- **Expansion Kit:** Increases the engraving area to 800x420mm for larger projects.

# Start Your Business Journey Now!

Higher Power, Faster Speed, Greater Productivity - Stay One Step Ahead!

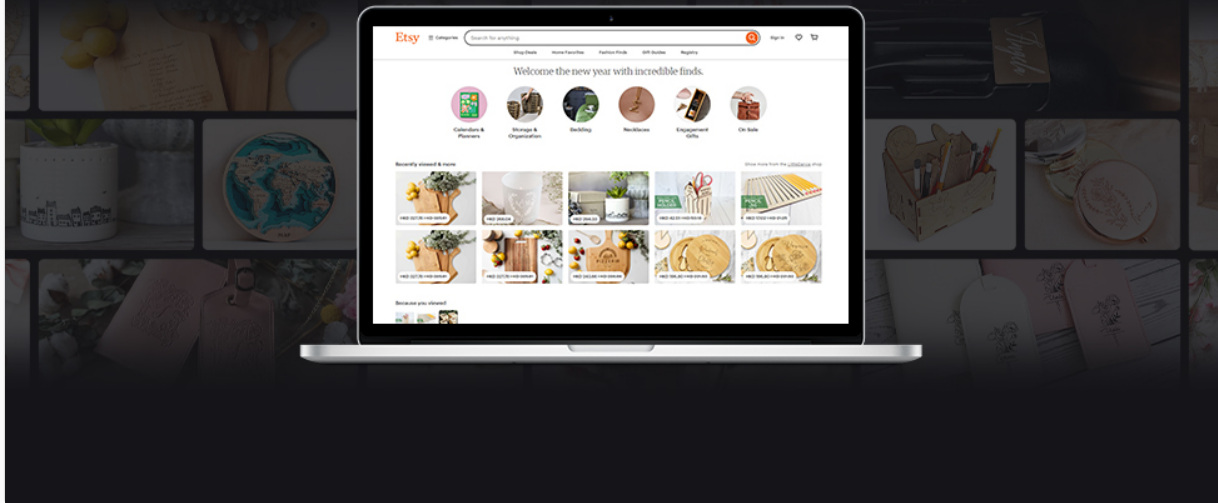


Figure 9: Optional accessories for expanded functionality.

## MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your ACMER P2 Laser Engraver. Always disconnect power before performing any maintenance.

- **Cleaning the Laser Lens:** Periodically clean the laser lens with a soft, lint-free cloth and lens cleaning solution to maintain engraving quality.
- **Lubricating Guide Rails:** Apply a small amount of lubricant to the industrial guide rails to ensure smooth movement of the laser module.
- **Workspace Cleanliness:** Keep the engraving area clean and free of debris to prevent interference with laser operation and to reduce fire hazards.
- **Air Pump Filter:** Check and clean or replace the air pump filter as needed to ensure efficient air assist.

## TROUBLESHOOTING

This section provides solutions to common issues you might encounter with your ACMER P2 Laser Engraver.

Problem	Possible Cause	Solution
Laser not firing or weak output.	Dirty laser lens, incorrect focus, laser module not properly connected, or power issue.	Clean the laser lens. Adjust the focus. Check all cable connections. Ensure power supply is adequate.

Problem	Possible Cause	Solution
Machine not responding to software commands.	Incorrect software settings, USB/Wi-Fi connection issues, or emergency stop engaged.	Verify software settings (COM port, baud rate). Reconnect USB cable or Wi-Fi. Ensure emergency stop button is disengaged.
Engraving quality is poor or inconsistent.	Incorrect speed/power settings, material not flat, or dirty guide rails.	Adjust speed and power settings for the specific material. Ensure material is flat and secured. Clean and lubricate guide rails.
Machine stops unexpectedly.	Safety sensor triggered (tilt, flame), or power interruption.	Check for tilt or flame. Ensure stable power supply. Reset the machine after addressing the cause.

For further assistance, please refer to the detailed user manual included with your product or contact ACMER customer support.

## SPECIFICATIONS

Feature	Detail
Product Dimensions	29.13 x 27.36 x 8.86 inches
Item Model Number	P2 33W
Laser Output Power	33W (33,000mW)
Machine Power	144W
Engraving Precision	0.01mm
Repeatable Positioning Accuracy	0.001mm
Ultra-fine Compressed Spot Size	0.08mm x 0.06mm
Maximum Engraving Speed	30,000mm/min
Working Area	420mm x 400mm (expandable to 420mm x 800mm with kit)
Connectivity	Wi-Fi, USB cable, TF card (offline use)
Software Compatibility	LaserGRBL, LightBurn, ACMER APP
Operating System Support	Windows, macOS, Mobile Apps
Item Weight	27.7 pounds
Manufacturer	ACMER
Date First Available	July 3, 2023

## WARRANTY AND SUPPORT

ACMER provides comprehensive support for your laser engraver.

- **Warranty Period:** The product comes with a 12-month warranty period.
- **Customer Support:** A dedicated support team is available 24/7 to provide assistance with any queries or issues you may encounter.
- **Certifications:** The P2 33W laser cutter holds Class 4 laser certification and has been tested according to IEC 60825-1 standards, with NRTL documentation.

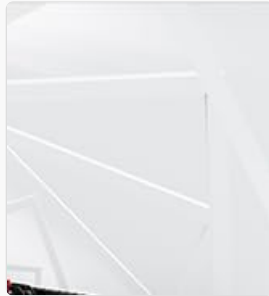


Figure 10: Product Certifications.



Figure 11: 24/7 Online Support availability.