ELEGOO Mars 4 Ultra

ELEGOO Mars 4 Ultra 9K Mono LCD MSLA 3D Printer User Manual

Comprehensive instructions for setup, operation, maintenance, and troubleshooting.

1. Product Overview

The ELEGOO Mars 4 Ultra is a high-performance MSLA (Masked Stereolithography) 3D printer designed for detailed resin printing. It features a 9K monochrome LCD screen, a powerful Linux operating system, and convenient Wi-Fi connectivity for efficient operation.



Figure 1: ELEGOO Mars 4 Ultra 3D Printer and a sample print.

Key Features:

- **9K Mono LCD Screen:** Equipped with a 7-inch 9K mono LCD, offering an impressive 8520 x 4320 resolution and an 18 µm XY resolution for sharp, detailed models. The screen is protected by 9H tempered glass for durability.
- **Powerful Linux Operating System:** Integrated with 4G RAM, the Linux OS ensures faster file loading, smoother operation, and efficient resource management.
- **Wi-Fi Connectivity:** Seamless file transfer via built-in Wi-Fi, supporting both 2.4G and 5G networks with transfer speeds of 6-10 Mbps.
- **Effortless 4-Point Leveling:** Simplifies setup, requiring only a single leveling process for consistent, perfect prints. The laser-sculpted build plate enhances model adhesion, reducing print failures.
- **Advanced ACF Film:** Features a new ACF film with reduced release tension, contributing to a high print success rate even at faster printing speeds.

- **User-Friendly Touchscreen:** A 4-inch HD IPS touchscreen with 800x480 pixels resolution and support for 12 languages for easy navigation.
- **Purified Printing Environment:** Includes a plug-in air purifier with an upgraded activated carbon filter to effectively reduce resin odors during printing.
- **Robust All-Metal Body:** Enhances printer stability and durability. The central plate is designed with a raised step to prevent resin from flowing into internal components.

2. What's in the Box

Your ELEGOO Mars 4 Ultra MSLA 3D Printer package includes the following items:

- ELEGOO Mars 4 Ultra MSLA 3D Printer
- Build Plate
- Resin Vat
- USB Drive
- Power Adapter
- Tool Kit (Allen wrenches, scraper, etc.)
- Air Purifier
- User Manual

3. Setup and Initial Operation

3.1 Unboxing and Placement

1. Carefully remove all components from the packaging.
2. Place the printer on a stable, level surface away from direct sunlight and dust. Ensure adequate ventilation.
3. Remove any protective films or packaging materials from the printer.

3.2 Power Connection and Initial Boot

1. Connect the power adapter to the printer and a suitable power outlet.
2. Press the power button on the front of the printer. The ELEGOO logo will appear on the touchscreen as the system boots up.

3.3 Leveling the Build Plate

The Mars 4 Ultra features an effortless 4-point leveling system. Follow these steps for initial calibration:

1. Ensure the resin vat is removed from the printer.
2. Loosen the four screws on the build plate.
3. Place a sheet of A4 paper on the LCD screen.
4. On the touchscreen, navigate to **Tools > Manual > Home**. The build plate will descend to the home position.
5. Gently press down on the build plate to ensure it is flat against the LCD screen, then tighten the four screws.
6. On the touchscreen, navigate to **Tools > Set Z=0**. This sets the current position as the Z-axis zero point.
7. Raise the build plate slightly, remove the A4 paper, and reinstall the resin vat.



Figure 2: The 4-point leveling system for precise calibration.

3.4 Wi-Fi Setup

Connect your printer to a Wi-Fi network for convenient file transfer:

1. On the touchscreen, navigate to **System** > **Network**.
2. Select your desired Wi-Fi network and enter the password.
3. Once connected, you can transfer sliced print files wirelessly from your computer.

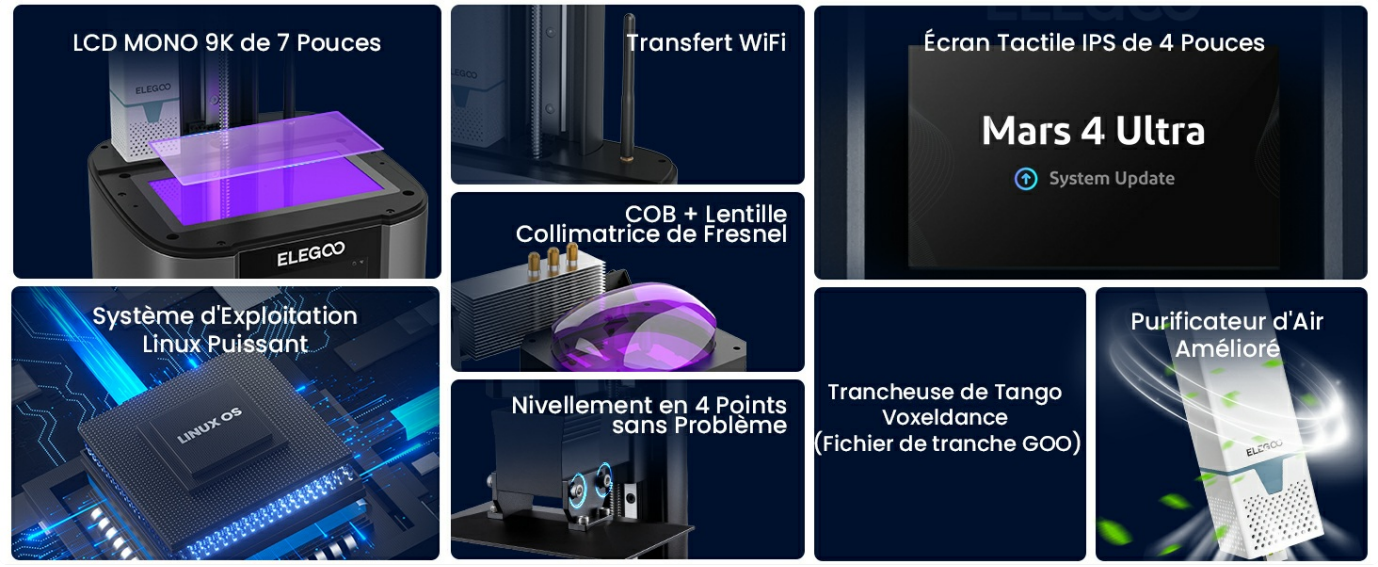


Figure 3: Wireless file transfer via Wi-Fi connectivity.

4. Operating Instructions

4.1 Preparing a 3D Model for Printing

1. Use a compatible slicing software (e.g., Chitubox, VoxelDance Tango) to prepare your 3D model (STL format).
2. Configure print settings such as layer height, exposure time, and support structures according to your resin and model requirements.
3. Slice the model and save the output file (GOO format) to a USB drive or transfer it via Wi-Fi.

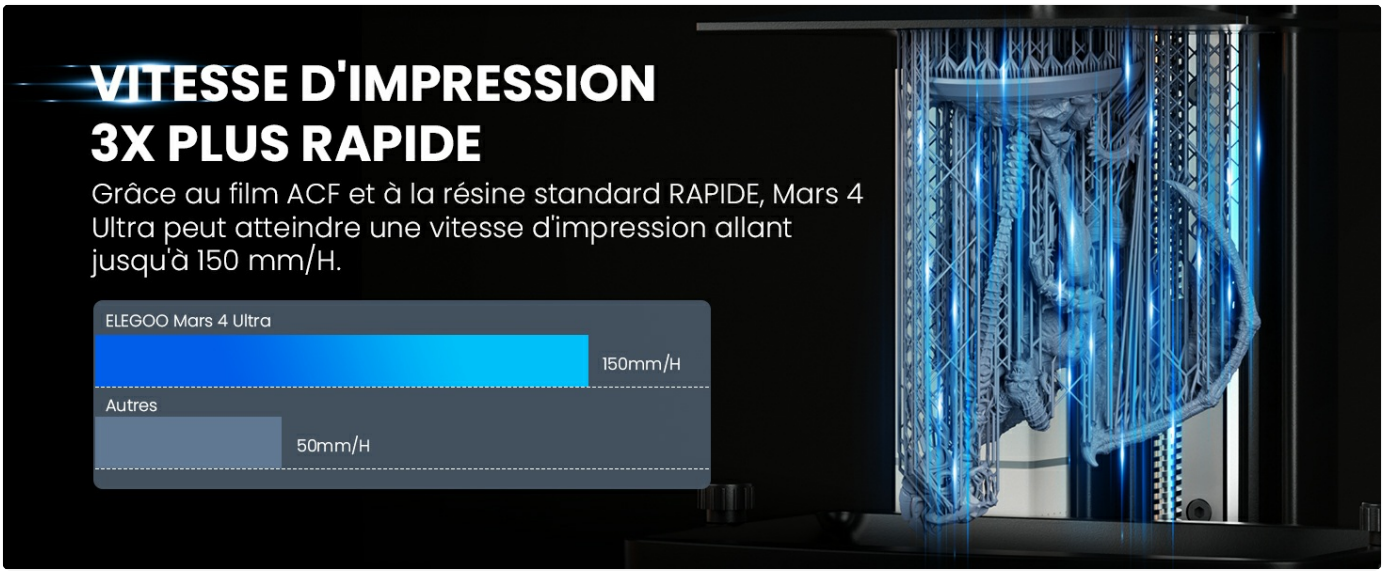


Figure 4: Preparing a 3D model using VoxelDance Tango slicer.

4.2 Starting a Print

1. Pour resin into the resin vat, ensuring it does not exceed the MAX fill line.
2. Insert the USB drive with your sliced file into the printer's USB port, or ensure the file has been transferred via Wi-Fi.
3. On the touchscreen, navigate to **Print**, select your file, and confirm to start printing.
4. The build plate will descend, and the printing process will begin.

Video 1: ELEGOO Mars 4 Ultra Product Overview. This video demonstrates the printer's features and the printing process.

4.3 Post-Printing

1. Once printing is complete, carefully remove the build plate.
2. Use the provided metal scraper to detach the printed model from the build plate.
3. Wash the model in isopropyl alcohol (IPA) to remove uncured resin.
4. Cure the model under UV light using a curing station for optimal hardness and strength.



Figure 5: A detailed miniature model printed with the Mars 4 Ultra.

5. Maintenance

5.1 Cleaning the Resin Vat and Build Plate

- After each print, clean the build plate with IPA and a soft cloth.
- If changing resin colors or if there is cured resin in the vat, clean the resin vat thoroughly. Use a plastic scraper to gently remove any cured resin from the FEP film.

- Ensure the LCD screen is clean and free of resin spills. Use a soft cloth and IPA for cleaning.

5.2 Air Purifier Maintenance

The plug-in air purifier contains an activated carbon filter that should be replaced periodically to maintain effective odor filtration. Refer to the air purifier's specific instructions for replacement frequency.

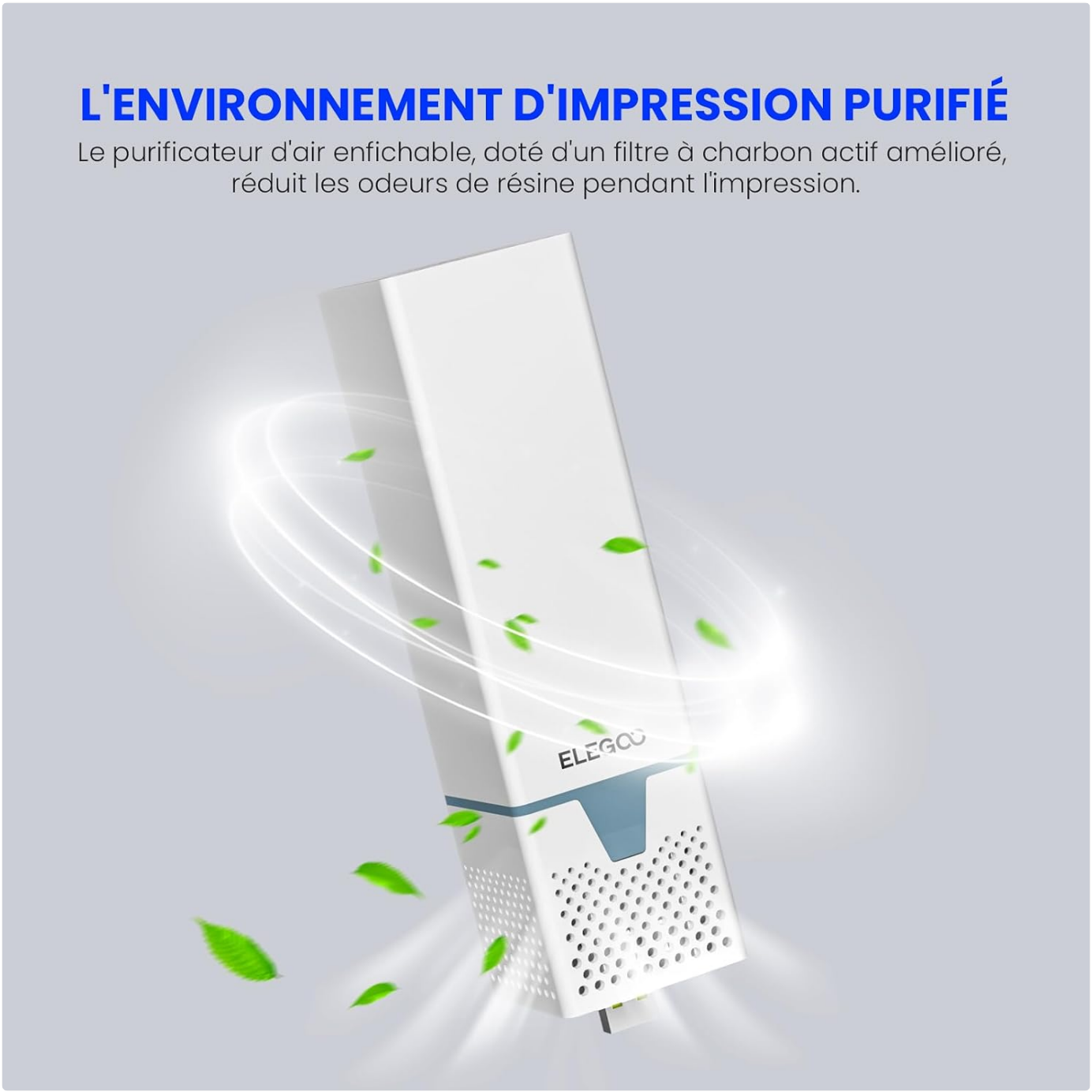


Figure 6: The integrated air purifier helps maintain a clean printing environment.

5.3 Component Replacement

Periodically inspect components like the FEP film, LCD screen, and Z-axis for wear and tear. Replace them as needed to ensure optimal print quality.

Video 2: ELEGOO Mars 4 Ultra DC Port Replacement. This video provides a step-by-step guide on how to replace the DC port.

Video 3: ELEGOO Mars 4 Ultra Limit Switch Replacement. This video provides a step-by-step guide on how to replace the limit switch.

6. Troubleshooting

6.1 Common Printing Issues

- **Model not sticking to build plate:** Ensure the build plate is properly leveled. Increase bottom exposure time in slicing software. Check if the build plate surface is clean and free of grease.
- **Print failures (partial prints, detached layers):** Verify exposure settings for your specific resin. Ensure the resin is well-mixed and at an appropriate temperature. Check for damage to the FEP film.
- **Layer lines visible:** Reduce layer height or adjust anti-aliasing settings in your slicing software. Ensure the Z-axis is stable and free of wobble.

6.2 Printer Malfunctions

- **Printer not powering on:** Check power cable connections. Ensure the power adapter is functioning correctly.
- **LCD screen not displaying:** Perform an LCD screen exposure test via the touchscreen menu (Tools > Screen Exposure) to check if the screen lights up. If not, the screen may need replacement.
- **Z-axis not moving:** Check the motor cable connection. Ensure the limit switch is correctly installed and functioning.

7. Specifications

Feature	Specification
Brand	ELEGOO
Model	Mars 4 Ultra
Printing Technology	MSLA
LCD Screen	7-inch 9K Mono LCD
XY Resolution	18 µm (8520 x 4320)
Build Volume (LWH)	153.36 x 77.76 x 165 mm^3
Operating System	Linux
Connectivity	USB, Wi-Fi (2.4G/5G)
Supported File Format	STL
Power Consumption	72 Watt
Material	Metal
Item Weight	8.3 Kilograms
Product Dimensions	60.5D x 27W x 28.5H centimeters

8. Warranty and Support

The ELEGOO Mars 4 Ultra comes with a manufacturer's warranty of 1 year. For technical support, troubleshooting assistance, or warranty claims, please contact ELEGOO customer service directly.

You can find additional resources and contact information on the official ELEGOO brand store:ELEGOO Brand Store.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question