

ELEGOO FR-DP-3D-M4U

ELEGOO Mars 4 Ultra 3D Printer User Manual

Comprehensive guide for setup, operation, and maintenance.

1. INTRODUCTION

Thank you for choosing the ELEGOO Mars 4 Ultra 3D Printer. This manual provides detailed instructions for the safe and efficient use of your new resin 3D printer. The Mars 4 Ultra features a 7-inch 9K mono LCD screen, a powerful Linux operating system, and high-speed WiFi transfer capabilities, designed to deliver exceptional print quality and efficiency.

Please read this manual thoroughly before operating the printer to ensure proper setup, operation, and maintenance. Keep this manual for future reference.

2. SAFETY INFORMATION

Important Safety Precautions:

- Always operate the printer in a well-ventilated area to minimize exposure to resin fumes.
- Wear appropriate Personal Protective Equipment (PPE), including nitrile gloves and safety glasses, when handling liquid resin or cleaning printed models.
- Avoid direct skin and eye contact with liquid resin. In case of contact, wash thoroughly with soap and water. If resin gets into eyes, flush immediately with plenty of water and seek medical attention.
- Keep the printer and resin out of reach of children and pets.
- Do not expose liquid resin to direct sunlight or UV light, as this will cause it to cure. Store resin in opaque, sealed containers in a cool, dry place.
- Ensure the printer is placed on a stable, level surface.
- Do not touch moving parts during operation.
- Unplug the printer from the power outlet before performing any maintenance or cleaning.
- Dispose of cured resin and waste resin responsibly according to local regulations. Do not pour liquid

resin down drains.

3. PACKAGE CONTENTS

Verify that all items listed below are included in your package:

- ELEGOO Mars 4 Ultra 3D Printer
- Build Plate
- Resin Vat
- USB Air Purifier
- Metal Scraper
- Plastic Scraper
- Measuring Cup
- Funnel
- Gloves
- Mask
- USB Disk
- Power Adapter
- Instruction Manual (this document)



Image: ELEGOO Mars 4 Ultra 3D Printer with its accessories, including scrapers, USB air purifier, and a detailed printed model.

4. PRODUCT OVERVIEW

The ELEGOO Mars 4 Ultra is a high-performance MSLA resin 3D printer. Key components include:

- **7-inch 9K Mono LCD Screen:** Offers high resolution (8520x4320) for precise detail. Protected by a 9H tempered glass film.
- **COB+Fresnel Light Source:** Provides uniform light distribution for clearer prints and improved accuracy.
- **Powerful Linux System:** Integrated 4G ROM for efficient operation and faster file transfer.
- **High-Speed WiFi Transfer:** Supports 2.4G and 5G networks for quick file uploads.
- **Activated Carbon Filter:** Built-in filter to absorb and reduce resin odors.
- **Efficient Heat Dissipation:** Pure copper tube and fan cooling system to prolong light source lifespan.

Nouveau système d'exploitation Linux

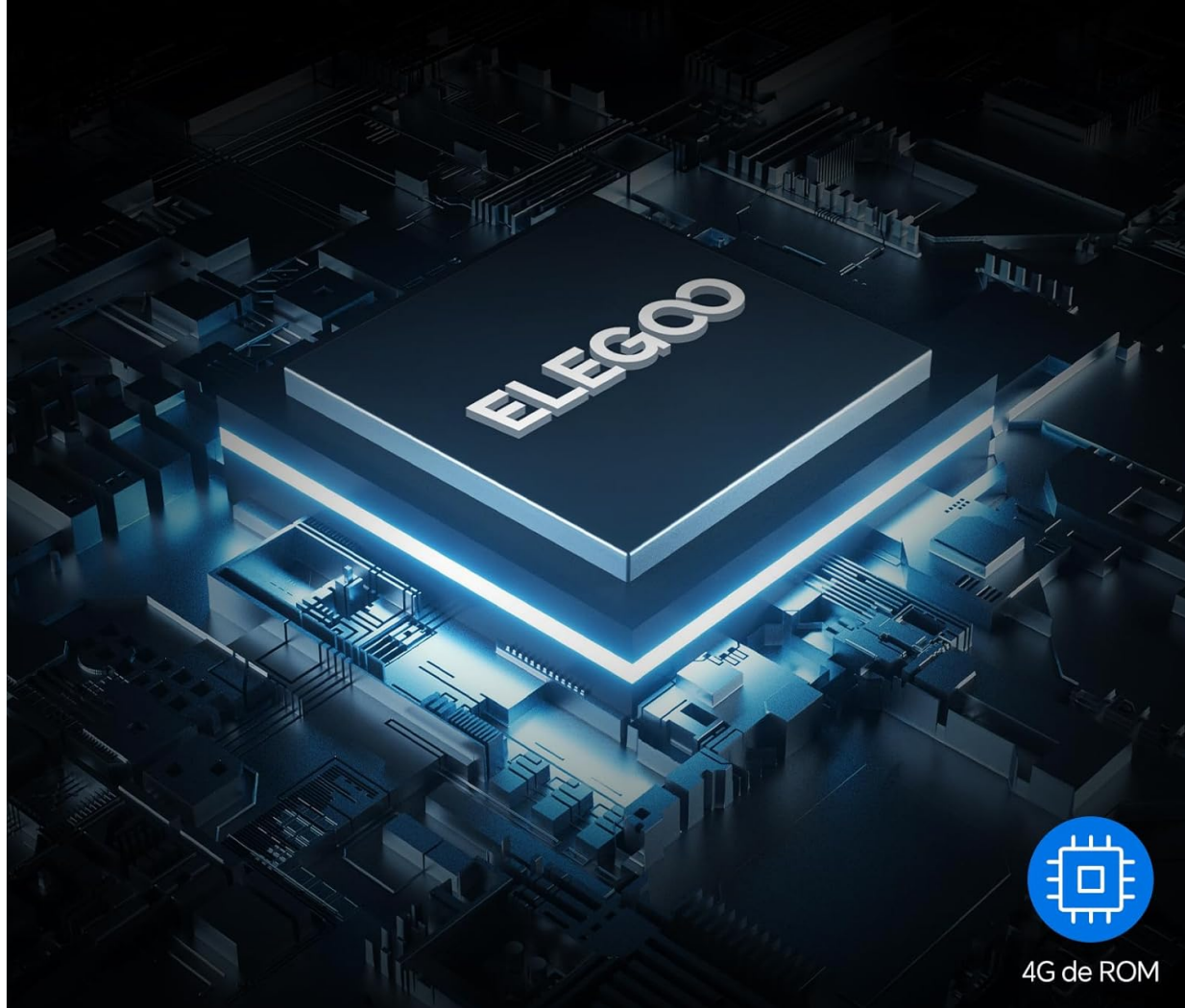


Image: Illustration of the new Linux operating system with 4GB ROM, highlighting the advanced processing capabilities.

7" Écran LCD mono

Film de verre trempé 9H



Image: The 7-inch mono LCD screen, protected by a 9H tempered glass film, crucial for high-resolution printing.

Source de lumière COB+FCLS



Écran LCD mono

Lentille collimatrice de Fresnel

Source de lumière COB

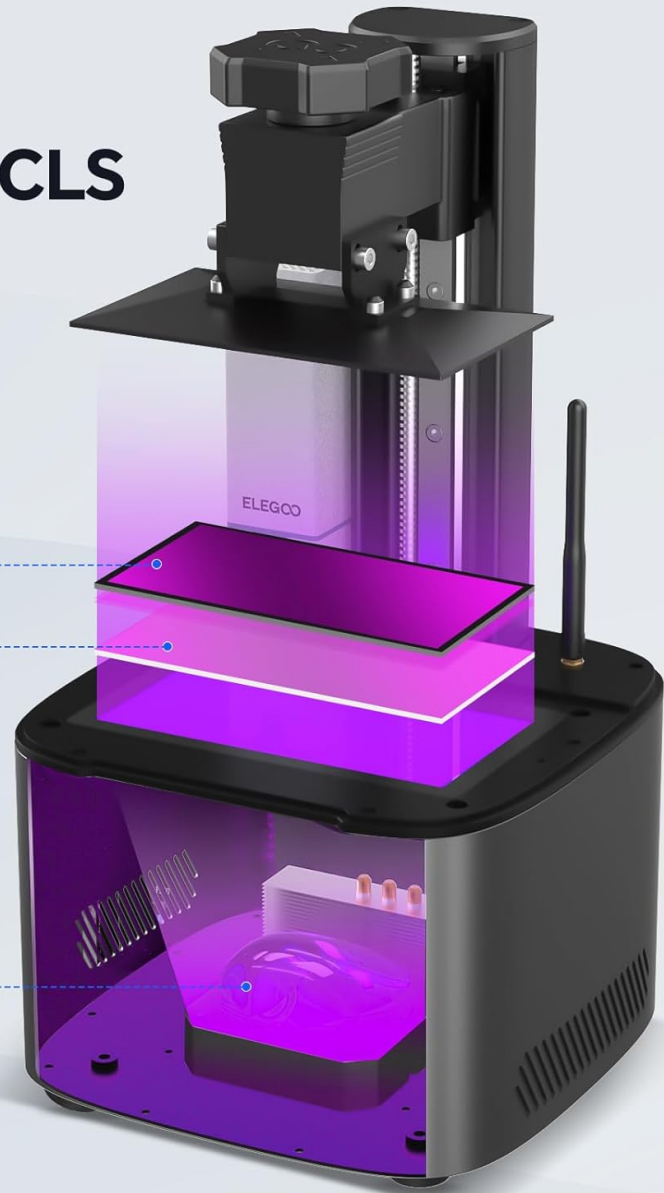


Image: Detailed view of the COB and Fresnel collimating lens light source, illustrating how uniform UV light is projected onto the LCD.

Grande taille d'impression

Taille d'impression: 153,36 mm * 77,76 mm * 165 mm

Taille de la machine : 227 mm * 227 mm * 443,5 mm



Image: Representation of the large build volume (153.36 x 77.76 x 165 mm³) of the Mars 4 Ultra, allowing for printing multiple models simultaneously.

5. SETUP GUIDE

5.1 Unpacking and Initial Inspection

1. Carefully remove the printer and all accessories from the packaging.
2. Inspect the printer for any visible damage that may have occurred during shipping. Contact customer support immediately if any damage is found.
3. Remove all protective films from the printer, especially from the LCD screen.

5.2 Build Plate Installation and Leveling

The Mars 4 Ultra features a four-point leveling system that typically requires only a single leveling process.

1. Install the build plate onto the Z-axis arm and tighten the securing knob.
2. Loosen the two screws on the side of the build plate.
3. Place a leveling card (or a piece of A4 paper) on the LCD screen.
4. On the printer's touchscreen, navigate to **Tools > Manual > Home**. The Z-axis will descend until the

build plate touches the leveling card.

5. Gently press down on the build plate to ensure it is flat against the LCD screen, then tighten the two side screws.
6. On the touchscreen, navigate to **Tools > Z-axis > Set Z=0**. Confirm the setting. This sets the current position as the Z=0 point.
7. Test the Z-axis movement by moving it up a few millimeters and then back down to Z=0 to ensure it returns to the correct position.

5.3 Resin Vat Installation

1. Ensure the LCD screen is clean and free of dust or debris.
2. Carefully place the resin vat onto the LCD screen, aligning it with the mounting points.
3. Tighten the two screws on the sides of the resin vat to secure it in place.

5.4 Software Installation (Slicer)

The ELEGOO Mars 4 Ultra is compatible with popular slicing software like Chitubox. The USB disk included with your printer contains the necessary software and profiles.

1. Insert the USB disk into your computer.
2. Install the slicing software (e.g., Chitubox) from the USB disk.
3. Open the software and add the ELEGOO Mars 4 Ultra printer profile.
4. Configure print settings such as layer height, exposure time, and lift speed according to your resin's specifications.

5.5 First Print Preparation

1. Ensure the resin vat is filled with resin and the build plate is installed and leveled.
2. Shake the resin bottle well before pouring.
3. Carefully pour resin into the vat, ensuring it does not exceed the MAX fill line.
4. Close the UV cover.

6. OPERATING INSTRUCTIONS

6.1 Connecting to the Printer

The Mars 4 Ultra supports high-speed WiFi transfer for convenient file management.

1. Power on the printer.
2. On the touchscreen, navigate to **System > Network** to connect to your local WiFi network (supports 2.4G and 5G).
3. Note the printer's IP address displayed on the screen.

Transfert Wifi haut débit



Image: The ELEGOO Mars 4 Ultra demonstrating high-speed WiFi transfer capabilities, allowing seamless file uploads from a computer.

6.2 Transferring Print Files

1. In your slicing software, slice your 3D model and save it as a .ctb file.
2. You can transfer the file via:
 - **USB Disk:** Save the .ctb file to the USB disk and insert it into the printer's USB port.
 - **WiFi:** Open a web browser on your computer and enter the printer's IP address. You can then upload the .ctb file directly to the printer.

6.3 Starting a Print

1. Ensure the resin vat is filled with resin and the build plate is installed and leveled.
2. Close the UV cover.
3. On the printer's touchscreen, navigate to **Print**.
4. Select the desired .ctb file from the list and tap **Print** to start the printing process.

6.4 Monitoring and Pausing Prints

- The touchscreen will display print progress, remaining time, and current layer.
- To pause a print, tap the **Pause** button on the touchscreen. Tap **Resume** to continue.
- To stop a print, tap the **Stop** button. Confirm to end the print.

6.5 Removing Printed Models

1. Once the print is complete, raise the build plate.
2. Remove the build plate from the Z-axis arm.
3. Using the metal scraper, carefully pry the printed model off the build plate. Be gentle to avoid damaging the model or the plate.
4. Clean the printed model using isopropyl alcohol (IPA) to remove uncured resin.
5. Cure the model under UV light (e.g., a dedicated curing station) to fully harden it.

7. MAINTENANCE

Regular maintenance ensures optimal performance and extends the lifespan of your printer.

7.1 Cleaning the Resin Vat and Build Plate

- After each print, or if changing resin colors, clean the resin vat. Pour any remaining resin back into its bottle using a funnel with a filter.
- Use a plastic scraper to gently remove any cured resin bits from the FEP film in the vat.
- Clean the vat and build plate with IPA and a soft cloth. Ensure they are completely dry before next use.
- Never use sharp objects or metal scrapers directly on the FEP film, as this can damage it.

7.2 FEP Film Replacement

The FEP film is a consumable part and will need replacement over time due to wear or damage (e.g., punctures, cloudiness). Refer to ELEGOO's official guides or videos for detailed replacement instructions.

7.3 Activated Carbon Filter Replacement

The built-in activated carbon filter helps reduce resin odors. Replace the filter periodically (e.g., every 3-6 months, depending on usage) to maintain its effectiveness.

7.4 Light Source and LCD Screen Care

- Keep the LCD screen clean. Use a soft, lint-free cloth and screen cleaner (or IPA) to gently wipe the screen.
- Avoid spilling resin onto the LCD screen. If resin cures on the screen, it can cause permanent damage.
- The COB light source is designed for longevity, but proper heat dissipation (ensuring vents are clear) is crucial for its lifespan.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Prints not sticking to build plate	Build plate not leveled correctly; Insufficient bottom exposure time; Build plate not clean.	Re-level the build plate; Increase bottom exposure time in slicer; Clean build plate thoroughly with IPA.
Failed prints / Partial prints	Incorrect exposure settings; FEP film damaged/cloudy; Resin too cold; Model not supported properly.	Adjust exposure time; Inspect and replace FEP film if necessary; Ensure room temperature is adequate (20-25°C); Add/adjust supports in slicer.
Resin curing in vat / LCD screen issues	UV light leakage; Damaged LCD screen; Resin exposed to ambient UV light.	Ensure UV cover is properly closed; Contact support if LCD is damaged; Store resin away from light.
WiFi transfer issues	Incorrect IP address; Network connectivity problems; Firewall blocking connection.	Verify IP address; Check network connection; Temporarily disable firewall or add exception for printer IP.
Strong resin odor	Activated carbon filter saturated; Poor ventilation.	Replace activated carbon filter; Ensure adequate room ventilation.

9. SPECIFICATIONS

Feature	Detail
Brand	ELEGOO
Model	Mars 4 Ultra
Manufacturer Part Number	FR-DP-3D-M4U
Printing Technology	MSLA (Masked Stereolithography)
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
Light Source	COB + Fresnel Collimating Lens
Operating System	Linux (with 4GB ROM)
Connectivity	USB, WiFi (2.4G/5G)
Power Consumption	72 Watt
Product Dimensions	37P x 34W x 43H cm (approx.)
Item Weight	7 Kilograms

Feature	Detail
Compatible Devices	Personal Computer, Laptop
Supported File Format	CTB
Material	Metal

10. WARRANTY AND SUPPORT

ELEGOO provides a standard warranty for the Mars 4 Ultra 3D Printer. Please refer to the warranty card included in your package or visit the official ELEGOO website for detailed warranty terms and conditions.

For technical support, troubleshooting assistance, or spare parts, please contact ELEGOO customer service through their official website or the contact information provided in your product documentation. When contacting support, please have your model number (FR-DP-3D-M4U) and purchase information ready.

You can also find helpful resources, FAQs, and community forums on the ELEGOO website:

www.elegoo.com