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> ELEGOO Saturn 4 Ultra 16K Resin 3D Printer and ELEGOO Mercury XS Bundle with Separate Wash and Cure Station User Manual

ELEGOO Saturn 4 Ultra, Mercury XS

ELEGOO Saturn 4 Ultra 16K Resin 3D Printer and Mercury XS Wash & Cure Station User Manual

Model: Saturn 4 Ultra, Mercury XS

INTRODUCTION

This manual provides comprehensive instructions for the setup, operation, and maintenance of your ELEGOO Saturn 4 Ultra 16K Resin 3D Printer and ELEGOO Mercury XS Wash and Cure Station. Please read this manual thoroughly before using the devices to ensure proper function and safety.



Image: The complete ELEGOO Saturn 4 Ultra 16K Resin 3D Printer and Mercury XS Wash and Cure Station bundle.

SAFETY INFORMATION

Always prioritize safety when operating 3D printers and handling resin. Failure to follow these guidelines may result in injury or damage to the equipment.

- Wear appropriate personal protective equipment (PPE), including gloves and safety goggles, when handling liquid resin.
- Operate the printer and wash/cure station in a well-ventilated area to minimize exposure to resin fumes.
- Keep resin away from direct sunlight and heat sources. Store it in a cool, dark place.
- Do not ingest resin. If contact with skin occurs, wash thoroughly with soap and water. If resin gets into eyes, flush immediately with plenty of water and seek medical attention.
- Ensure the power supply is disconnected before performing any maintenance or cleaning.
- Keep children and pets away from the operating equipment.

PACKAGE CONTENTS

Verify that all components are present upon unpacking:

ELEGOO Saturn 4 Ultra 16K Resin 3D Printer:

- Saturn 4 Ultra 3D Printer Unit
- Resin Vat
- Build Plate
- USB Drive

- Power Adapter
- Tool Kit (Allen wrenches, scraper, etc.)
- Funnel and Filter
- Gloves and Mask

ELEGOO Mercury XS Wash and Cure Station:

- Mercury XS Base Unit
- Wash Bucket with Lid
- Curing Platform
- Wash Basket
- Power Adapter
- Handheld UV Lamp
- UV Protection Goggles



Image: The ELEGOO Mercury XS Wash and Cure Station with its separate wash bucket, curing platform, and handheld UV lamp.

PRODUCT OVERVIEW

ELEGOO Saturn 4 Ultra 16K Resin 3D Printer Features:

- **16K LCD Screen:** Offers enhanced resin 3D printing accuracy with a resolution of 15120x6230 pixels.
- **Smart Tank Heating:** Continuously heats the resin tank to 30°C to improve printing success rates, especially with temperature-sensitive resins.
- **High-Speed Printing:** Capable of printing at speeds up to 150mm/h.
- **Large Printing Size:** Provides a build volume of 8.33 x 4.66 x 8.66 inches.
- **Flip-up Lid:** Convenient access to the build area.
- **New AI Camera with Light:** Allows for monitoring prints remotely, day or night.



Image: Close-up view of the 16K LCD screen, highlighting its high resolution for detailed prints.



Smart Tank Heating

Continuously heat to 30°C to improve
printing success rate

Image: Illustration of the smart tank heating system maintaining resin temperature at 30°C for optimal printing.



New AI Camera with Light

Monitor your printing at any time, day or night.

Model by Loot Studios

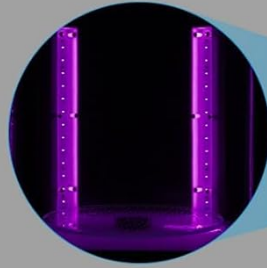
Image: The new AI camera with integrated light, enabling continuous monitoring of the printing process.

ELEGOO Mercury XS Wash and Cure Station Features:

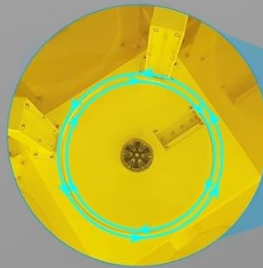
- **Separate Wash and Cure Functions:** Allows for dedicated washing and curing processes, preventing cross-contamination.
- **Large Capacity:** Designed for large resin 3D printed models, compatible with Saturn and Mars LCD 3D Printers.
- **Efficient Curing:** Features 4 UV lamps (405nm) under the plate bottom for faster and more even curing, with 360° timed exposure.
- **Rotatable Curing Platform:** Ensures uniform curing from all angles.
- **Handheld UV Lamp:** Included for curing hard-to-reach areas or internal structures.

Faster and Evenly Cure

4 pcs UVlamp under the plate bottom, improve the quality of models and save the cure time,Coverage with 360° timed exposure



405nm(14PCS)+405nm(14PCS)+405nm(4PCS)
UV curing lamp beads to cure the model fast



Rotatable curing platform
360° rotating under UV light to completely curing



Model by Loot Studios

Image: Diagram illustrating the UV lamp arrangement and rotatable platform for comprehensive curing in the Mercury XS.

SETUP

1. ELEGOO Saturn 4 Ultra 3D Printer Setup:

1. **Unpacking:** Carefully remove all components from the packaging. Inspect for any damage during transit.
2. **Placement:** Place the printer on a stable, level surface in a well-ventilated area, away from direct sunlight.
3. **Build Plate Installation:** Attach the build plate to the Z-axis arm and tighten the securing knob.
4. **Leveling the Build Plate:**
 - Loosen the leveling screws on the build plate.
 - Place a piece of A4 paper on the LCD screen.
 - Lower the build plate until it presses firmly against the paper.
 - Tighten the leveling screws while applying pressure to the build plate.
 - Raise the build plate and remove the paper.

5. **Resin Vat Installation:** Place the resin vat onto the LCD screen, ensuring it is seated correctly and securely.
6. **Power Connection:** Connect the power adapter to the printer and a suitable power outlet.

2. ELEGOO Mercury XS Wash and Cure Station Setup:

1. **Base Unit Placement:** Place the Mercury XS base unit on a stable surface.
2. **Wash Bucket Preparation:** Fill the wash bucket with an appropriate cleaning solution (e.g., 95% IPA or ELEGOO Resin Wash). Do not overfill.
3. **Curing Platform:** Ensure the curing platform is clean and ready for use.
4. **Power Connection:** Connect the power adapter to the Mercury XS unit and a power outlet.

OPERATING INSTRUCTIONS

1. ELEGOO Saturn 4 Ultra 3D Printer Operation:

1. **Software Preparation:** Use a compatible slicing software (e.g., Chitubox) to prepare your 3D model. Import the STL or OBJ file, add supports if necessary, and slice the model for the Saturn 4 Ultra. Save the sliced file to the USB drive.
2. **Add Resin:** Pour resin into the resin vat, ensuring it does not exceed the maximum fill line.
3. **Start Printing:** Insert the USB drive into the printer. Select your file from the printer's touchscreen interface and start the print.
4. **Monitoring:** Utilize the built-in AI camera to monitor the printing progress remotely.
5. **Post-Printing:** Once printing is complete, carefully remove the build plate. Use the provided scraper to detach the printed model from the build plate.

2. ELEGOO Mercury XS Wash Station Operation:

1. **Place Model:** Place the detached 3D print into the wash basket. You can also hang the build plate with the print attached directly into the wash bucket if it fits.
2. **Select Mode:** Set the Mercury XS to "Wash" mode.
3. **Set Time:** Adjust the washing time using the control knob (typically 2-5 minutes depending on model size and resin type).
4. **Start Wash:** Press the start button to begin the washing cycle.
5. **Remove and Dry:** Once complete, remove the model and allow it to air dry or use compressed air to remove excess IPA.

3. ELEGOO Mercury XS Cure Station Operation:

1. **Place Model:** Place the dried 3D print onto the rotating curing platform.
2. **Select Mode:** Set the Mercury XS to "Cure" mode.
3. **Set Time:** Adjust the curing time using the control knob (typically 2-10 minutes depending on resin type and model thickness).
4. **Start Cure:** Press the start button to begin the curing cycle. The platform will rotate, and UV lights will activate.
5. **Handheld UV Lamp:** For models with intricate details or internal cavities, use the handheld UV lamp to ensure complete curing. Wear UV protection goggles when using the handheld lamp.
6. **Finished Model:** Once cured, the model will be hardened and ready for further processing (sanding, painting, etc.).

After Being Washed and Cured

washing and curing can improve the performance of materials



Before

After

Model by Loot Studios

Image: Comparison of a 3D printed model before and after undergoing the washing and curing process, showing improved finish and material performance.

MAINTENANCE

ELEGOO Saturn 4 Ultra 3D Printer Maintenance:

- **Resin Vat Cleaning:** After each print, inspect the resin vat for cured resin bits. Use a plastic scraper to gently remove them. Filter unused resin back into its bottle. Clean the vat with IPA if changing resin types or for long-term storage.
- **Build Plate Cleaning:** Clean the build plate with IPA after each print to remove any resin residue.
- **LCD Screen Protection:** Keep the LCD screen clean and free of dust. If resin spills on the screen, clean it immediately with IPA. Avoid scratching the screen.
- **FEP Film Replacement:** The FEP film in the resin vat is a consumable part. Replace it if it becomes cloudy, scratched, or punctured. Refer to the printer's specific instructions for FEP film replacement.
- **Z-axis Lubrication:** Periodically apply a small amount of lithium grease to the Z-axis lead screw to ensure smooth operation.

ELEGOO Mercury XS Wash and Cure Station Maintenance:

- **Cleaning Solution Management:** Replace the cleaning solution in the wash bucket when it becomes heavily contaminated with resin. Do not pour contaminated IPA down the drain; dispose of it according to local regulations.
- **Wash Bucket Cleaning:** Clean the wash bucket and wash basket regularly to prevent resin buildup.
- **UV Lamp Cleaning:** Keep the UV lamps and curing platform clean to ensure optimal curing performance.

TROUBLESHOOTING

Problem	Possible Cause	Solution
Prints not sticking to build plate	Build plate not leveled; insufficient bottom exposure time; cold resin; dirty build plate.	Re-level the build plate; increase bottom exposure time in slicer; ensure resin is at optimal temperature (use smart tank heating); clean build plate thoroughly.
Print failures (partial prints, detached layers)	Insufficient supports; incorrect exposure time; FEP film issues; resin contamination.	Add more/thicker supports; adjust normal exposure time; inspect/replace FEP film; filter resin.
Washed prints are still sticky/tacky	Insufficient washing time; contaminated cleaning solution; not fully dried before curing.	Increase wash time; replace cleaning solution; ensure prints are dry before curing.
Cured prints are brittle or soft	Insufficient curing time; uneven curing.	Increase curing time; ensure all surfaces are exposed to UV light (use handheld lamp for complex areas).
Printer not powering on	Power cable loose; power outlet issue; faulty power adapter.	Check all power connections; try a different outlet; contact support if adapter is suspected faulty.

SPECIFICATIONS

ELEGOO Saturn 4 Ultra 16K Resin 3D Printer:

- **Printing Technology:** MSLA (Masked Stereolithography Apparatus)
- **LCD Screen:** 16K Monochrome LCD (15120 x 6230 pixels)
- **Build Volume:** 8.33 x 4.66 x 8.66 inches (211.68 x 118.5 x 220 mm)
- **Printing Speed:** Up to 150 mm/h
- **Z-axis Accuracy:** 0.01mm
- **Layer Thickness:** 0.01-0.2mm
- **Connectivity:** USB
- **Supported File Format:** STL, OBJ
- **Material:** Resin
- **Color:** Black

- **Compatible Devices:** Laptop, Personal Computer, Smartphone

ELEGOO Mercury XS Wash and Cure Station:

- **Function:** Washing and Curing
- **Curing Light Source:** 405nm UV LED (4 pcs UV lamp under plate bottom)
- **Maximum Curing Size:** 200mm x 260mm (7.87 x 10.24 inches)
- **Wash Bucket Capacity:** Approximately 7000mL (7L)
- **Dimensions (Wash Station):** 230mm (W) x 183mm (D) x 248mm (H) / 9.05 x 7.2 x 9.76 inches
- **Dimensions (Cure Station):** 246mm (W) x 195mm (D) x 362.5mm (H) / 9.68 x 7.67 x 14.31 inches
- **Power Input:** AC 100-240V, 50/60Hz

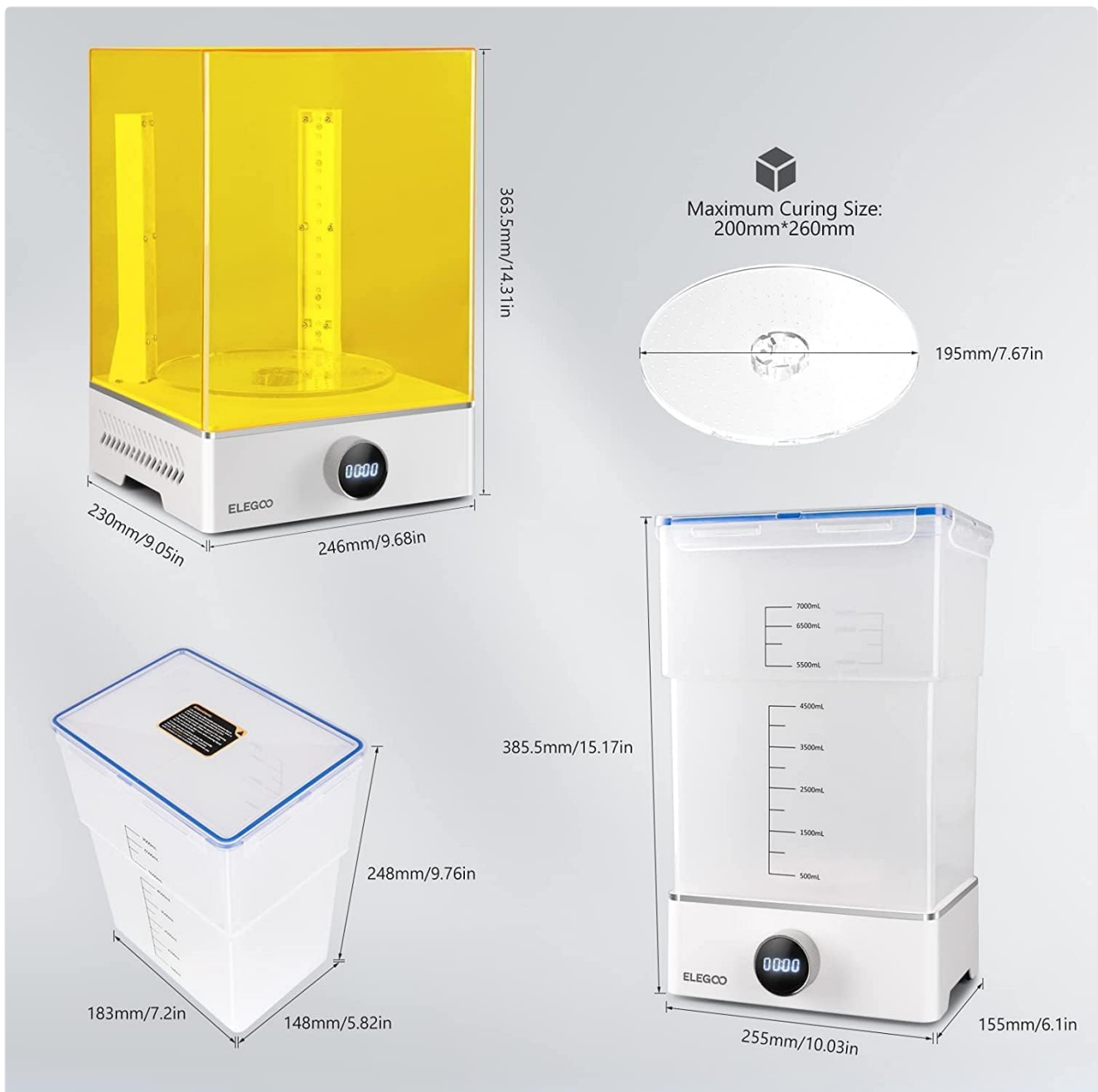


Image: Detailed dimensions for the ELEGOO Mercury XS Wash and Cure Station components.

WARRANTY AND SUPPORT

ELEGOO products typically come with a manufacturer's warranty. Please refer to the warranty card included with

your product 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 packaging. When contacting support, please have your product model number (Saturn 4 Ultra, Mercury XS) and purchase information ready.

You can visit the [ELEGOO Store on Amazon](#) for more information and product updates.