ELEGOO Saturn 4 Ultra 16K

ELEGOO Saturn 4 Ultra 16K Resin 3D Printer User Manual

Model: Saturn 4 Ultra 16K (3D-S4U16K)

Introduction

This manual provides essential information for the safe and efficient operation of your ELEGOO Saturn 4 Ultra 16K Resin 3D Printer. Please read this manual thoroughly before operating the printer and keep it for future reference. The ELEGOO Saturn 4 Ultra 16K is designed for high-resolution resin 3D printing, featuring advanced technologies for speed, precision, and user convenience.

Figure 1: ELEGOO Saturn 4 Ultra 16K Resin 3D Printer.

1. Setup

1.1 Unboxing and Initial Inspection

Carefully remove all components from the packaging. Verify that all items listed in the "What's in the Box" section are present and undamaged. Report any discrepancies or damage to ELEGOO support immediately.

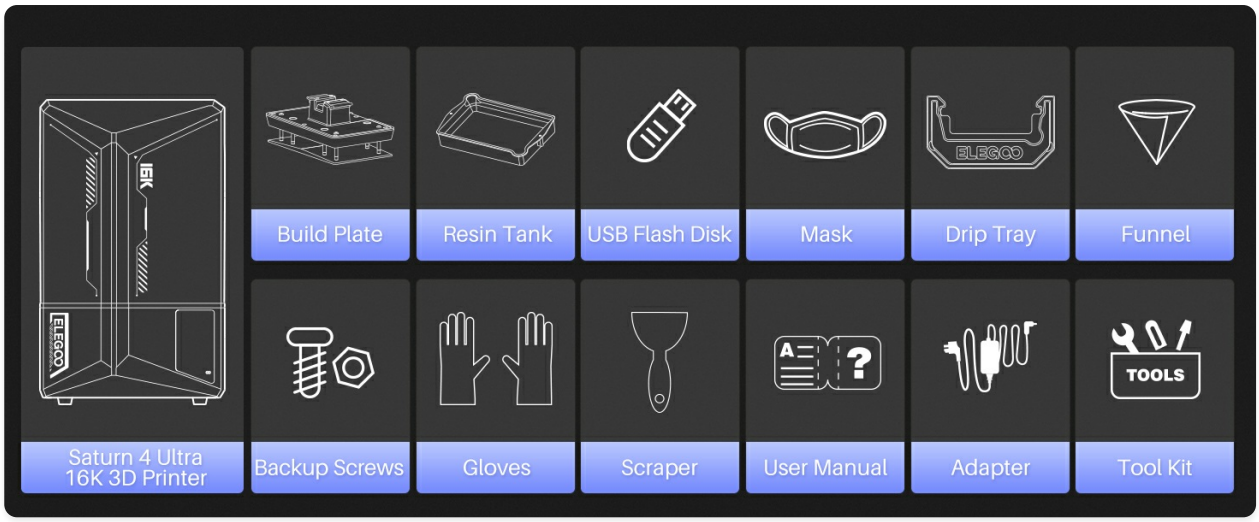

Figure 2: Included components with the ELEGOO Saturn 4 Ultra 16K.

1.2 Power Connection

Connect the power adapter to the printer and then to a grounded power outlet. Ensure the power switch is in the OFF position before connecting.

1.3 Resin Tank and Build Plate Installation

1. Place the resin tank securely onto the LCD screen, ensuring it aligns with the mounting points.
2. Attach the build plate to the Z-axis arm and tighten the locking knob. The one-touch build plate lock simplifies this process.

1.4 Automatic Leveling

The Saturn 4 Ultra features an automatic leveling system with a smart mechanical sensor. For initial setup or if manual leveling is required, follow the on-screen instructions for one-click calibration. The spring mechanism assists in precise leveling.

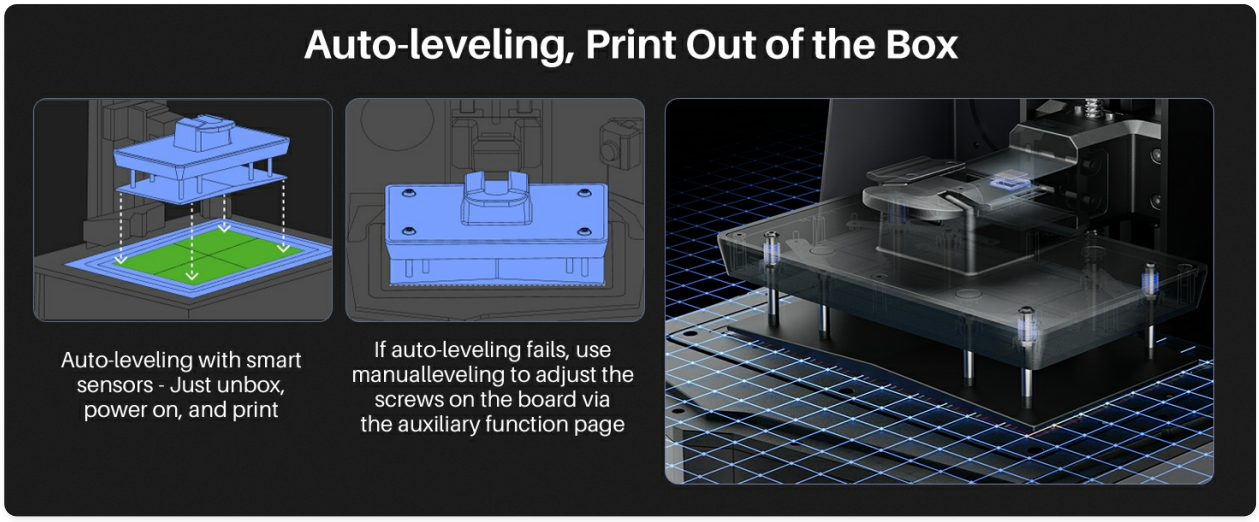

Figure 3: Auto-leveling and manual leveling assistance.

2. Operating

2.1 Slicing Software

Prepare your 3D models for printing using compatible slicing software such as Chitubox. This software allows

you to add supports, hollow models, and configure print settings specific to your resin and desired print quality.

2.2 File Transfer

Transfer sliced print files to the printer via USB drive or utilize the WiFi Cluster Printing feature for wireless transfer. The printer supports 2.4G and 5G networks with speeds of 6-10Mbps, enabling efficient file management and remote printing within the same LAN.

Figure 4: WiFi Cluster Printing setup.

2.3 Starting a Print

Once the file is transferred and resin is added to the tank, select your model from the 4.0-inch capacitive touchscreen and initiate the print. The printer's tilt-release technology and fast printing speed (up to 150mm/h) optimize the printing process.

Figure 5: Tilt Release Technology for Ultra-Fast Printing.

2.4 Monitoring and Smart Features

The built-in AI camera allows for real-time monitoring of your prints and supports time-lapse photography. It can detect issues such as empty build plates or model warping. The smart mechanical sensor also detects low resin levels, debris, and high lamp temperatures, and the printer can resume printing after a power loss.

Figure 6: AI Camera and Illuminated Lamp for monitoring.

The intelligent resin tray heating system maintains resin at a constant 25°C, with 24-hour preheating support for optimal printing conditions.

Figure 7: Intelligent Tank Heating for optimal resin temperature.

3. Maintenance

3.1 Cleaning the Resin Tank and Build Plate

After each print, carefully clean the build plate and the resin tank. Use isopropyl alcohol (IPA) and a soft cloth to remove any uncured resin. Ensure no hardened resin particles remain in the tank, as these can damage the LCD screen or cause print failures.

3.2 Resin Handling and Storage

Always wear appropriate personal protective equipment (PPE), including gloves and a mask, when handling resin. Store resin in its original opaque bottle in a cool, dry place away from direct sunlight. Unused resin can be filtered back into the bottle after printing.

3.3 FEP Film and Screen Protector

Regularly inspect the FEP film at the bottom of the resin tank for any damage or cloudiness. Replace the film if necessary to ensure optimal print quality. The 9H tempered glass screen protector helps protect the 16K mono

LCD screen from scratches and resin spills.

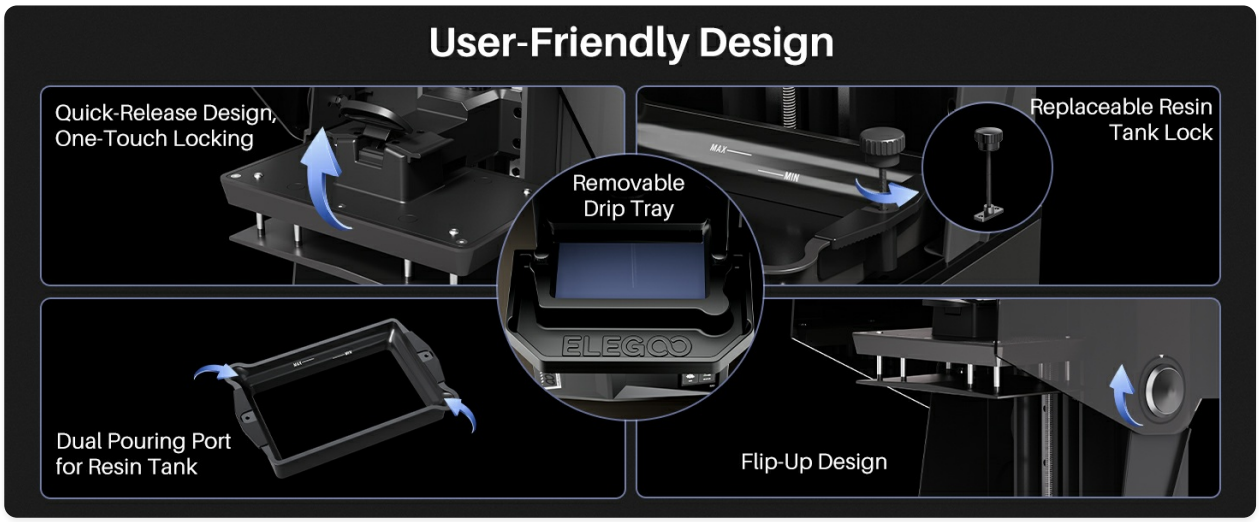

Figure 8: User-Friendly Design features aiding maintenance.

4. Troubleshooting

4.1 Common Print Issues

- **Failed Prints/Poor Adhesion:** Ensure the build plate is properly leveled and clean. Verify exposure settings for your specific resin. Resin temperature should be maintained around 25°C using the intelligent tank heating.
- **Model Warping:** Check resin temperature and ensure proper support placement in your slicing software. The AI camera can help detect warping early.
- **Resin Curing in Tank:** Ensure the resin tank is not exposed to UV light when not in use. Filter resin regularly to remove cured particles.

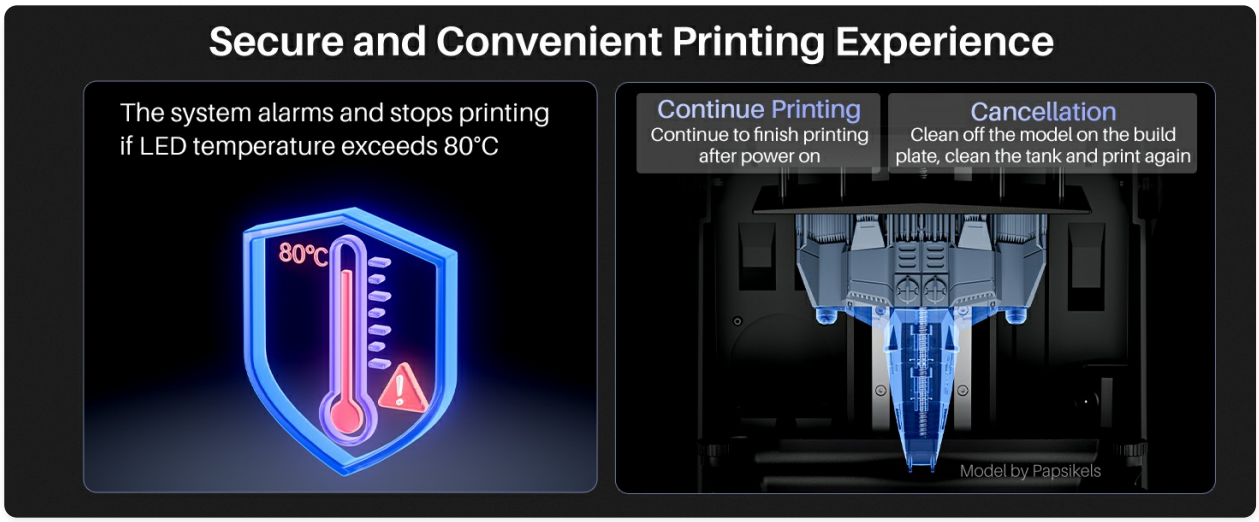

Figure 9: Secure and Convenient Printing Experience with error handling.

4.2 Error Messages

Refer to the printer's touchscreen for specific error messages. The smart mechanical sensor provides alerts for issues like low resin or high lamp temperature. Follow the on-screen prompts to resolve the issue.

4.3 Firmware Updates

Regularly check for and install OTA (Over-The-Air) firmware updates to ensure optimal performance and access to new features. This can be done via the WiFi connection.

5. Specifications

Feature	Specification
Product Dimensions	26.1 x 17.83 x 17.95 inches (66.3 x 45.3 x 45.6 cm)
Item Weight	40.9 pounds (18.61 Kilograms)
Model Number	3D-S4U16K
Screen Resolution	16K Mono LCD (15120*6230px)
XY Resolution	14*19μm
Printing Speed	Up to 150mm/h
Build Volume	211.68 x 118.37 x 220 mm^3
Material	Metal
Connectivity	USB, WiFi (2.4G & 5G)
Display	4.0-inch Capacitive Touchscreen

6. Warranty and Support

ELEGOO offers various protection plans for your Saturn 4 Ultra 16K 3D Printer, including 3-Year and 4-Year Protection Plans, and a Complete Protect monthly plan. These plans provide extended coverage beyond the standard manufacturer's warranty.

For technical support, troubleshooting assistance, or warranty claims, please visit the official ELEGOO support website or contact their customer service directly. Detailed contact information can usually be found on the ELEGOO website or in the product packaging.

It is recommended to keep your purchase receipt and product serial number handy when contacting support.