## ELEGOO Centauri Carbon

# ELEGOO Centauri Carbon 3D Printer User Manual

Model: Centauri Carbon

Brand: ELEGOO

## 1. Introduction

The ELEGOO Centauri Carbon 3D Printer is a high-performance additive manufacturing device designed for both beginners and experienced users. Featuring a CoreXY structure, high-speed printing capabilities, and advanced material compatibility, it offers precise and reliable results for a wide range of applications. This manual provides essential information for setting up, operating, maintaining, and troubleshooting your Centauri Carbon 3D Printer.


Figure 1: ELEGOO Centauri Carbon 3D Printer overview.

## 2. Setup

### 2.1 Unboxing and Initial Placement

The ELEGOO Centauri Carbon 3D Printer arrives fully assembled and pre-calibrated, minimizing setup time. Carefully remove the printer from its packaging. Place the printer on a stable, level surface in a well-ventilated area, away from direct sunlight and excessive humidity. Ensure adequate space around the printer for operation and maintenance.


Figure 2: The Centauri Carbon is ready to print right out of the box.

## 2.2 Power Connection

Connect the power cable to the printer and then to a grounded electrical outlet. Ensure the power switch is in the OFF position before connecting. Once connected, you may switch the printer ON.

## 2.3 Build Volume and Plate

The printer features a 256x256x256 mm (10x10x10 inches) build volume, suitable for a variety of print sizes. It includes an upgraded dual-sided flexible plate with a PLA Specific Surface, designed for excellent adhesion and minimal warping, even at lower heatbed temperatures.


Figure 3: The generous 256x256x256 mm build volume.

## 3. Operating Instructions

### 3.1 Auto Calibration

The Centauri Carbon features one-click full-auto calibration. This system meticulously handles bed-leveling to Z-offset adjustments, ensuring hassle-free, flawless first layers every time. Simply initiate the calibration process via the intuitive touchscreen controls.


Figure 4: Automated bed leveling and calibration in progress.

## 3.2 High-Speed Printing

Leverage the advanced CoreXY structure for ultra-fast printing. The printer can achieve speeds up to 500 mm/s and 20000 mm/s² acceleration. Combined with a high-flow hotend and powerful heated bed, it facilitates rapid production of large and detailed parts.


Figure 5: High-speed printing capabilities with CoreXY motion system.

### 3.3 Material Compatibility

The Centauri Carbon is optimized for advanced filaments, including carbon fiber reinforced filament, thanks to its 320°C brass-hardened steel nozzle and enclosed chamber with enhanced cooling. This allows for the creation of strong, lightweight, and heat-resistant parts.

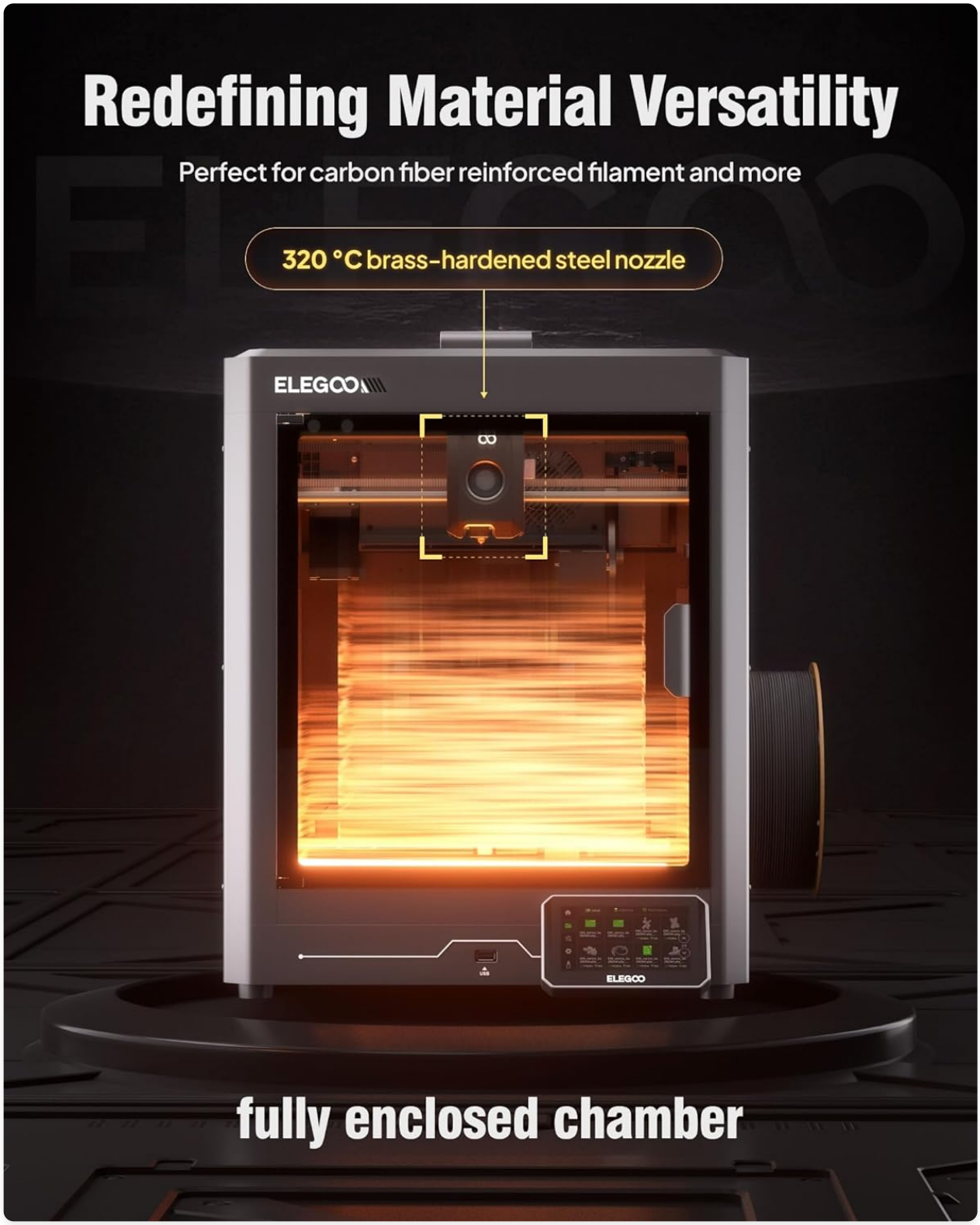


Figure 6: Optimized for high-performance materials.

## 3.4 Smart Monitoring

Monitor your prints in real-time using the built-in chamber camera and dual LED lighting. This feature enables seamless troubleshooting, remote adjustments, and the capture of time-lapse videos of your printing process.

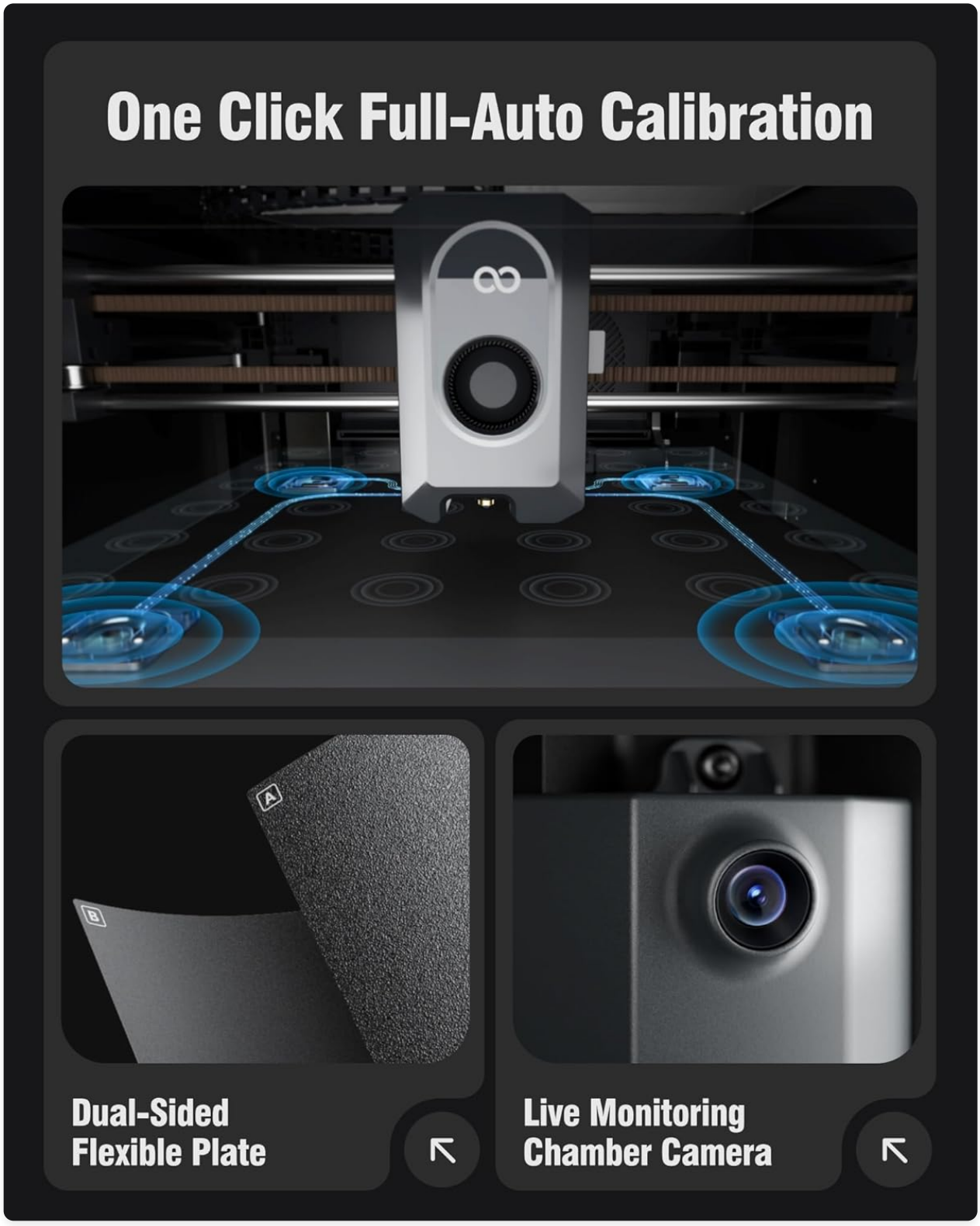


Figure 7: Integrated chamber camera for real-time monitoring.

## 3.5 Additional Features

- **Rock-Solid Die-Cast Frame:** The rigid, integrated die-cast aluminum frame minimizes vibrations, ensuring exceptional stability and consistent, high-quality prints even at high speeds.
- **Automatic Vibration Compensation:** Works in conjunction with pressure advance to deliver smooth first layers and overall print quality.
- **Auto Filament Unloading:** Simplifies filament changes.
- **Filament Run-Out Detector:** Prevents failed prints due to depleted filament.
- **Quick-Heating Bed:** Ensures rapid heating to optimal printing temperatures.

# 4. Maintenance

## 4.1 Cleaning the Print Bed

Regularly clean the dual-sided flexible plate with isopropyl alcohol to ensure optimal adhesion and prevent residue buildup. Allow the plate to cool before cleaning.

## 4.2 Nozzle Maintenance

Periodically inspect the brass-hardened steel nozzle for wear or clogs. If necessary, perform a cold pull or use a nozzle cleaning needle to clear any obstructions. Refer to advanced guides for detailed nozzle replacement procedures if required.

## 4.3 General Cleaning

Keep the printer's interior and exterior free from dust and filament debris. Use a soft, dry cloth for external surfaces. For internal components, use compressed air or a soft brush, ensuring the printer is powered off and unplugged.

# 5. Troubleshooting

## 5.1 Common Printing Issues

- **Poor First Layer Adhesion:** Ensure the print bed is clean and properly calibrated. Adjust Z-offset if necessary. Verify heatbed temperature settings for your specific filament.
- **Filament Not Extruding:** Check for tangled filament on the spool. Verify the filament is correctly loaded and the hotend is at the correct temperature. Inspect the nozzle for clogs.
- **Layer Shifting:** Ensure the printer is on a stable surface. Check belt tension and ensure all moving parts are free from obstruction.
- **Poor Print Quality (Stringing, Blobs):** Adjust retraction settings in your slicing software. Ensure filament is dry and stored properly.

For more detailed troubleshooting, consult the official ELEGOO support resources or community forums.

# 6. Specifications

| Feature | Specification |
| --- | --- |
| Product Dimensions | 15.67 x 15.9 x 19.29 inches (39.8 x 40.4 x 49 cm) |
| Item Weight | 38.5 pounds (17.5 Kilograms) |
| Build Volume | 256x256x256 mm (10x10x10 inches) |
| Max Printing Speed | 500 mm/s |
| Max Acceleration | 20000 mm/s² |
| Nozzle Temperature | Up to 320°C |
| Nozzle Type | Brass-hardened steel |
| Frame Structure | Integrated die-cast aluminum |

| Feature | Specification |
| --- | --- |
| Connectivity | Compatible with Laptop, Personal Computer |
| Operating System | Windows 10 (recommended) |
| On-mode Power Consumption | 350 watts |

## 7. What's in the Box

- ELEGOO Centauri Carbon 3D Printer
- Power Cable
- Tool Kit (includes necessary tools for basic maintenance)
- Sample Filament
- User Manual (this document)

## 8. Warranty and Support

ELEGOO provides a standard warranty for the Centauri Carbon 3D Printer. For specific warranty terms, technical support, and service inquiries, please visit the official ELEGOO website or contact their customer service. Keep your purchase receipt as proof of purchase for warranty claims.
Official ELEGOO Website: www.elegoo.com

## 9. Safety Information

Please read and understand all safety warnings and instructions before operating the ELEGOO Centauri Carbon 3D Printer to prevent injury or damage to the device.

- Always operate the printer in a well-ventilated area.
- Do not touch the hotend or heated bed during operation, as they reach high temperatures.
- Keep hands and loose clothing away from moving parts.
- Ensure the power cable is securely connected and not damaged.
- Do not leave the printer unattended during long print jobs.
- Keep out of reach of children and pets.
- Only use recommended filaments and accessories.