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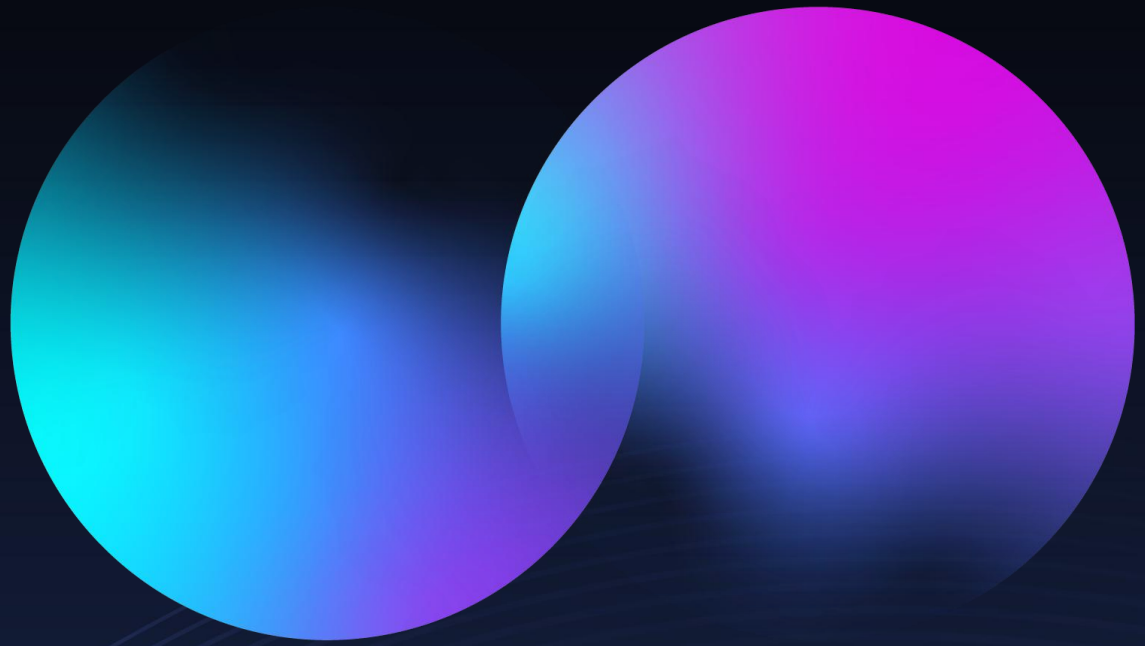
Centauri Carbon Introduction



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Centauri Carbon

Introduction & Specification

Specification

Body

Build Volume: 256 × 256 × 256 mm
Build Plate Size: 260 × 260 mm
Product Size: 398 × 404 × 490 mm
Package Size: 475 × 480 × 560 mm
Net Weight: 17.5 kg
Gross Weight: 21 kg

Speed

Printing Speed: ≤ 500mm/s
Acceleration: 20000 mm/s²

Temperature

Ambient Temperature: 5–40℃
Max. Heated Bed Temperature: 110℃
Max. Nozzle Temperature: 320℃

Electrical Requirement

Power: 1100W@220V, 350W@110V
Voltage: 100–240 V, 50/60 Hz

Specification

Tool Head
Nozzle: 1
Nozzle Diameter: 0.4mm (default)
Printing Accuracy: ± 0.1mm
Layer Thickness: 0.1–0.4 mm (Recommended 0.2 mm)
Extruder Type: Hardened Steel Dual-Gear Extruder
Reduction Ratio: 5.2

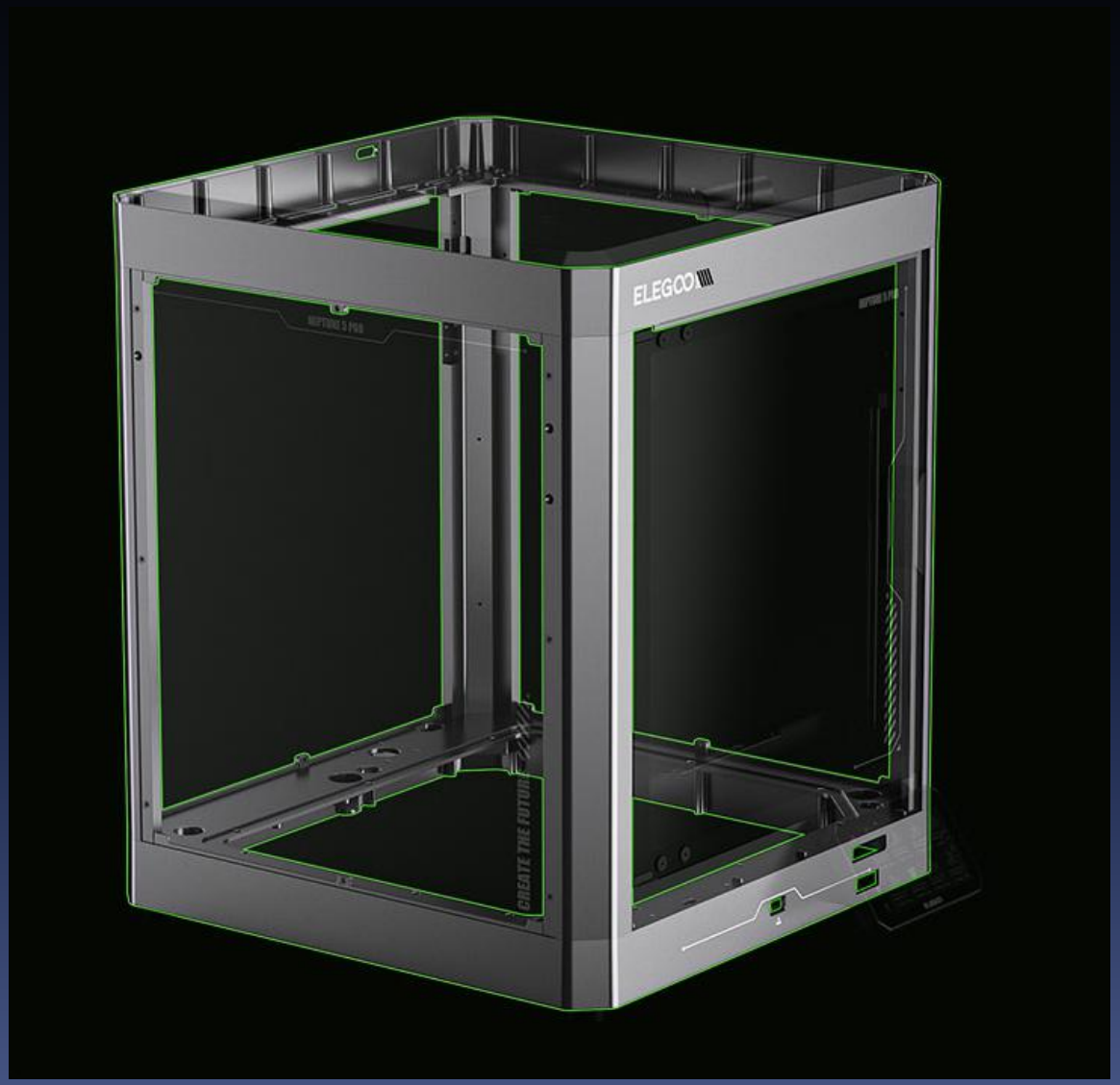
Supported Filament
Recommended: PLA, PETG, TPU, ABS, ASA, PLA-CF
Compatible: PETG-CF, ABS-CF, ASA-CF, PET-CF, PA-CF, PET, PC, PA
Filament Diameter: 1.75mm
Filament Cutter: Yes

Sensors
Camera: Yes
Filament Run-out Sensor: Yes
Power-Loss Recovery: Yes

Cooling
High Speed Model Cooling Fan: Closed Loop Control
Auxiliary Part Cooling Fan: Closed Loop Control
Control Board Fan: Closed Loop Control
Chamber Temperature Regulator Fan: Closed Loop Control
Air Filter: Nano-Mineral Crystal Filters

Electronics
Connectivity: USB Flash Drive, Wi-Fi
Display: 4.3-inch Full-color Capacitive Touch Screen
Motherboard: Dual-Core High-Speed Silent Motherboard

Software
Slicing Software: ELEGOO Slicer (Recommended)
Supported File Formats: STL, OBJ, 3MF, STP
Printing File Format: Gcode



Rugged and Durable Design

Featuring a top frame and chassis crafted with **integrated die-casting**, along with four reinforced aluminum alloy pillars and stainless steel side panels, the Centauri Carbon's design greatly enhances assembly precision and stability, providing a solid foundation for high-speed printing.

Other Brands

- Plastic frame
- Sheet metal frame
- The structure has weaker rigidity

Enclosed Chamber

The enclosed chamber enhances insulation for **precise temperature control**. It prints typical materials like PLA and effortlessly handles ABS, PETG and so on. This reduces internal stress which may cause warping, improving the quality and strength of the prints while offering the freedom to explore a wider range of materials.

Open-framed printer

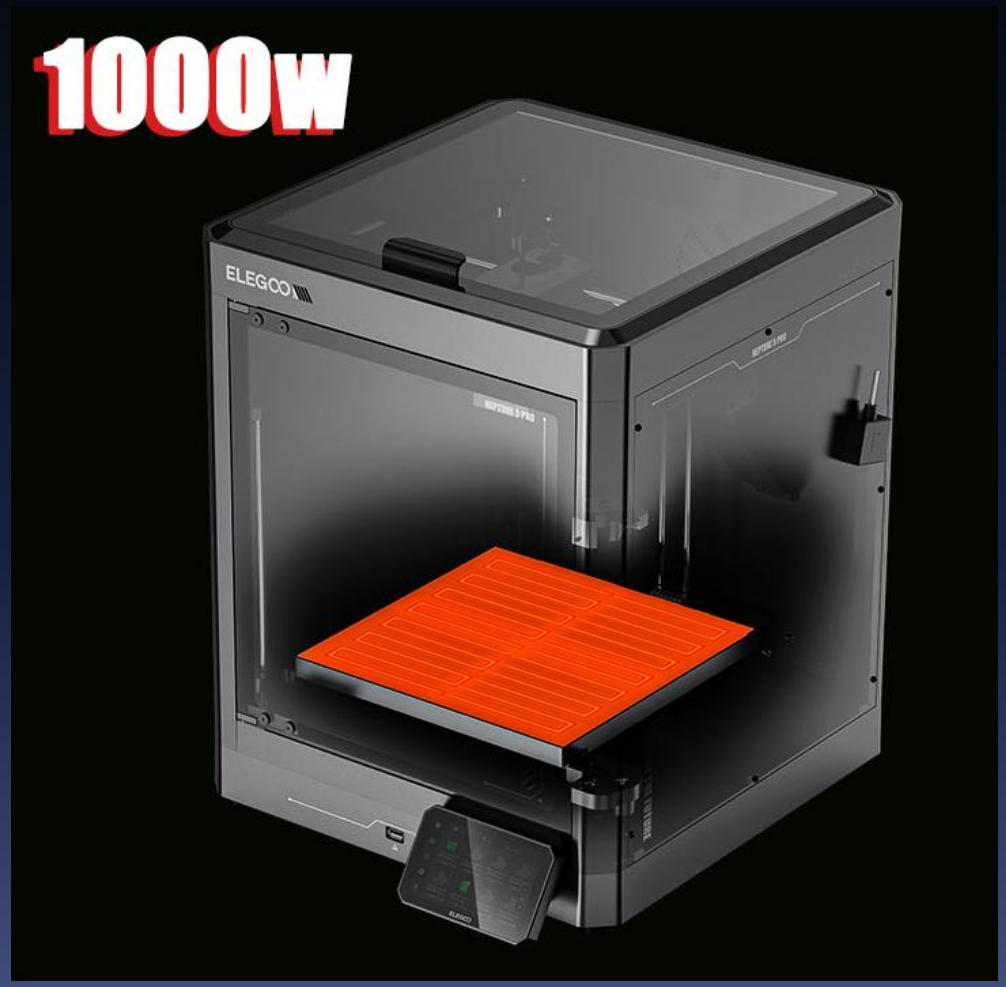
Without a temperature-controllable chamber, the heated bed loses heat quickly, resulting in increased power consumption.

Without temperature control, printing materials like ABS are prone to warping.

Printing is limited to standard materials such as PLA.

Large Printing Volume

With a printing volume of 256 × 256 × 256 mm, it fulfills the printing needs of most users.



High-Power AC Heated Bed

Our heated bed uses AC heating, supporting up to 1000W (at 220V) for rapid heating to the target temperature, reducing printing preparation time.

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It features a newly developed high-speed motherboard with dual-core processors, supporting print via WiFi and USB flash drive. It includes OTA firmware upgrades with 8GB ROM for storing extensive model data. The device uses silent stepper drivers to reduce printing noise effectively.

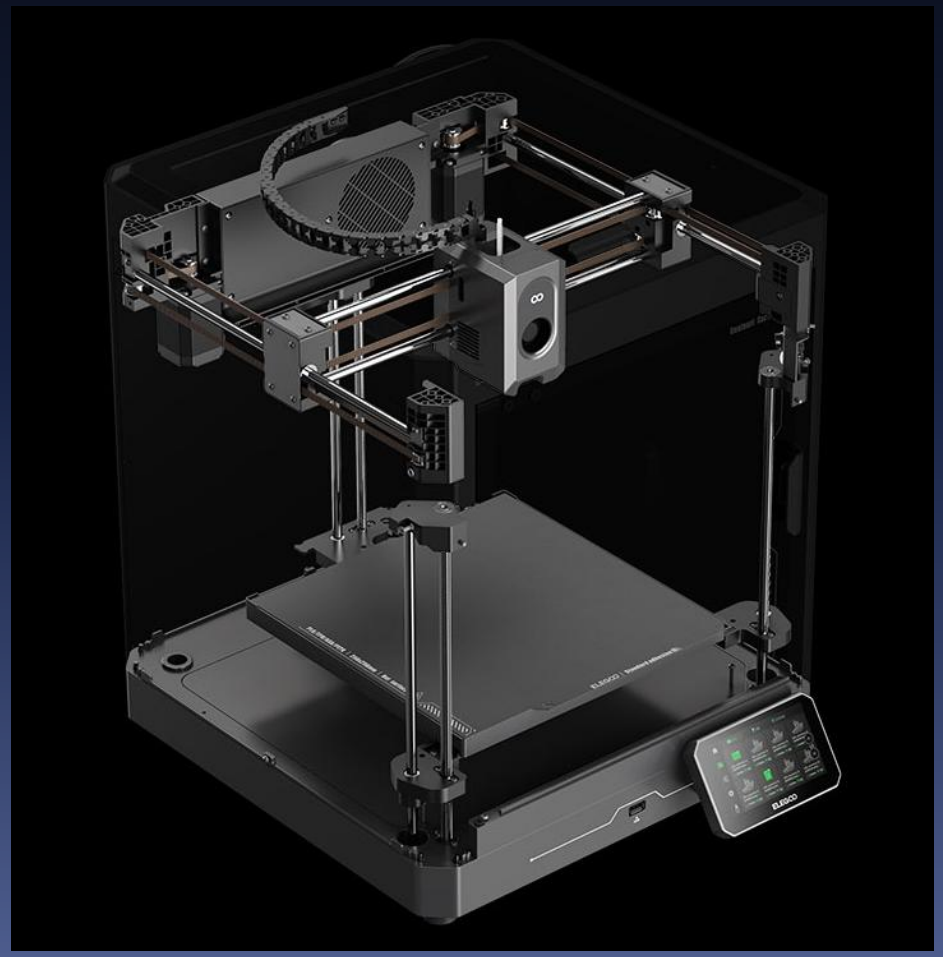
OTA Firmware Update

After connecting to the internet, new firmware updates will be automatically sent to the machine. Users don't need to manually copy firmware updates to a USB drive for upgrades; they simply need to click 'Upgrade' according to the instruction.

If a firmware rollback is necessary, users can use a USB drive to copy and install the previous firmware onto the machine.

CoreXY Motion Structure:

Crafted with CoreXY motion structure, it greatly enhances printing speed, accuracy, and positioning precision.



Speed: Up to 500 mm/s
Acceleration: Up to 20000 mm/s²

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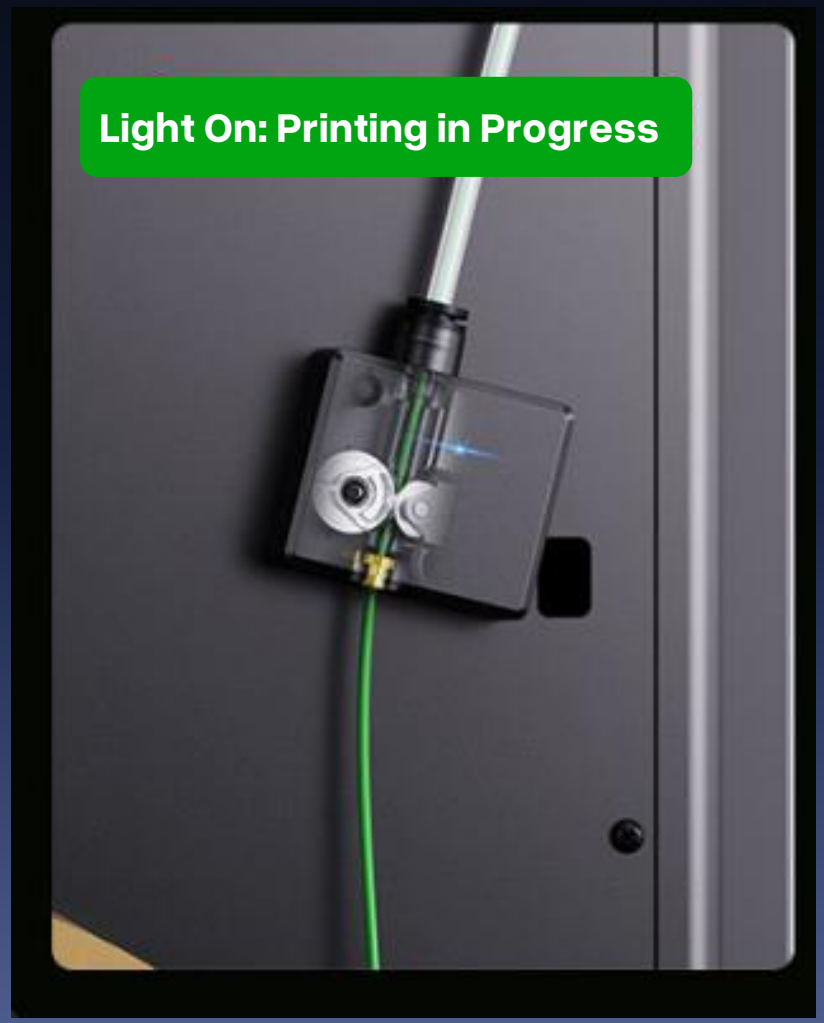
Filament Run-out Sensor, Material Shortage Alert.

Designed with an automatic alarm and pause feature, it detects filament shortages, helping prevent material waste and print failures caused by insufficient filament.



Double-Sided Flexible Magnetic Plate

The build plate has been upgraded with a PLA-specific surface on the reverse side of the standard textured PEI plate, offering improved adhesion. For PLA printing, the heated bed only needs to reach 30°C, ensuring safety and energy efficiency. This design minimizes warping during prints and makes model removal effortless once printing is complete.

Textured PEI Plate

Easy to remove

Heat-resistant, flame-resistant, and wear-resistant

Provides high stability

Compatible with a wide range of materials

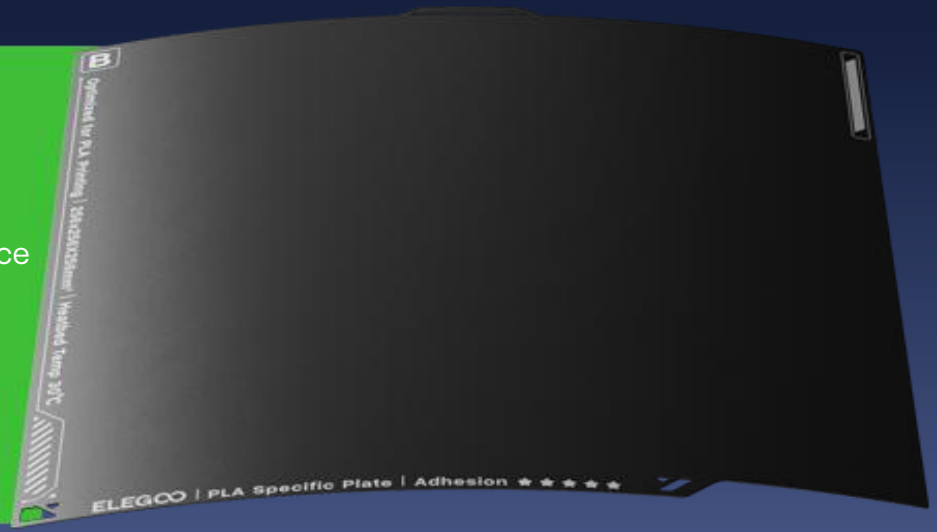
PLA Specific Plate

Smooth surface

Offers high temperature resistance

Supports cool plate printing

*Printing on the cool plate helps reduce clogging



Auto Leveling & Auto Z-axis Compensation

Featuring 4 pressure sensors and a proprietary algorithm, our heated bed design simplifies leveling to a single click. Automatic Z-axis compensation during printing eliminates defects or failures due to uneven surfaces, putting an end to the hassle of using A4 paper.

The typical leveling method is a hassle to manage, requiring manual adjustments after leveling. It's challenging for beginners, and setting it incorrectly can easily damage the PEI platform.

Engineered for a Perfect First Layer

The sensor measures, calibrates, and compensates for the heat bed, ensuring a flawless first layer every time.

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Equipped with Camera for Time-Lapse

Enable the time-lapse feature before printing to capture the entire process, watch live, and record every step of your print.

Built-in Chamber Lighting

The chamber features LED lighting, enabling users to easily monitor the printing process even in dark environments.

4.3-inch Capacitive Touch Screen

Featuring a vibrant 4.3-inch capacitive touch screen, it offers effortless navigation and an enhanced interactive design for a smoother user experience.

Resistive Screen
Low touch sensitivity, poor user experience.

VS

Capacitive Screen
Higher touch sensitivity, greater precision, better user experience.

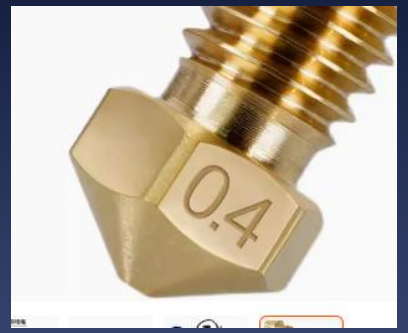
Right-Side Filament Holder Design

Located on the machine's right side, the filament holder offers convenience for replacing and monitoring filament supply.

Most machines position the filament holder at the rear, making it inconvenient to replace the filament and monitor the remaining filament in real time.

Fast Heating with Hardened Steel Hot End & Nozzle

The nozzle, crafted from brass and hardened steel, enhances print flow while providing long-lasting durability (above 60HRC). This design allows the hotend to reach a maximum temperature of 320°C. Equipped with a 60W ceramic heater, the hotend quickly heats up to the target temperature, ensuring efficient printing.



Hardened steel nozzle
Capable of printing carbon fiber filaments

VS

Standard brass nozzle
Cannot print carbon fiber filaments
Short lifespan

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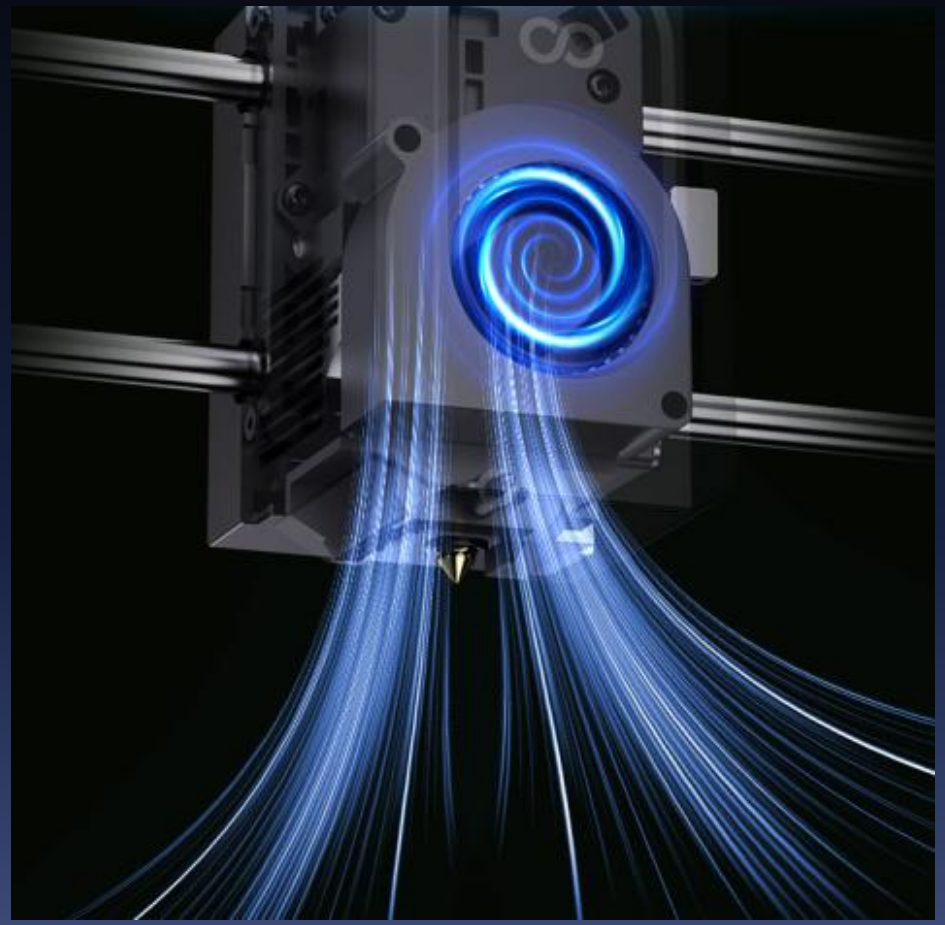
High Speed Model Cooling Fan

The cooling system for the model utilizes a 5020 high-speed four-wire fan equipped with speed feedback and precise speed control, ensuring every detail of the model is perfectly presented.

Cooling fans from other brands' models: 4020, 5015
Lower airflow, resulting in poorer cooling performance.

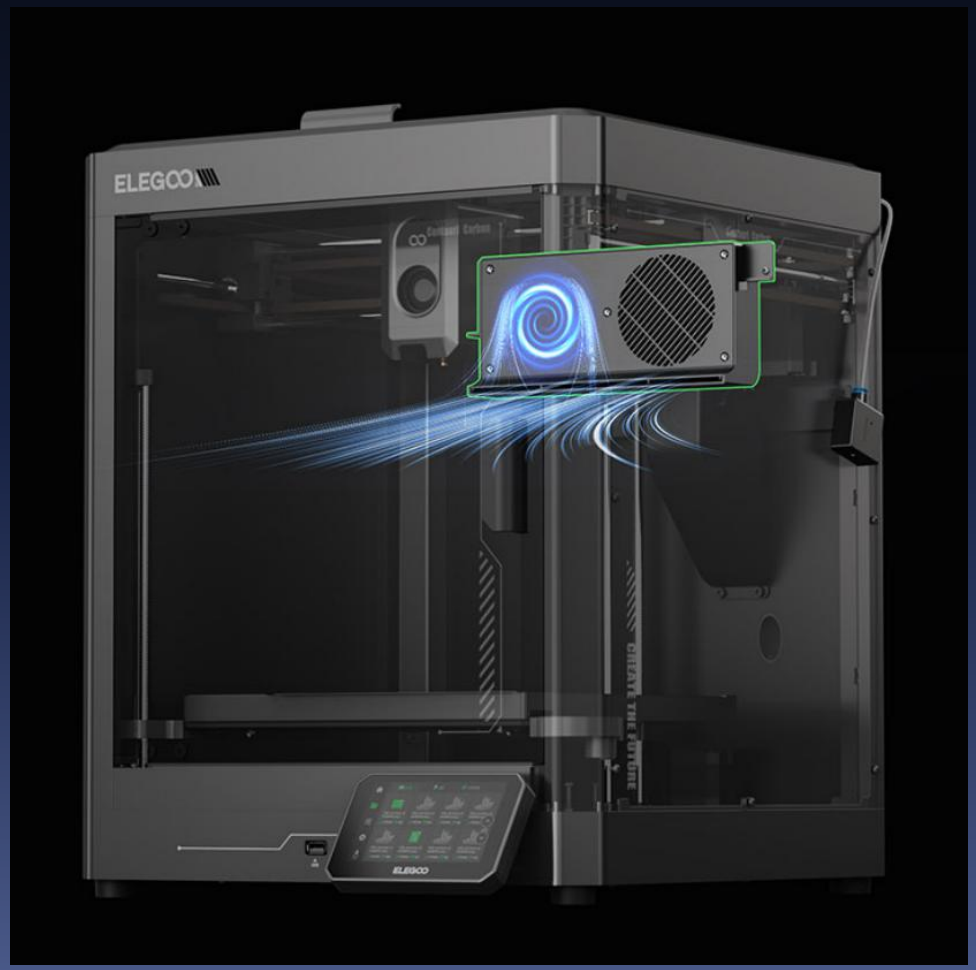
VS

Centauri Carbon cooling system: 5020 fan
Higher airflow, delivering efficient cooling performance.



Auxiliary Part Cooling Fan

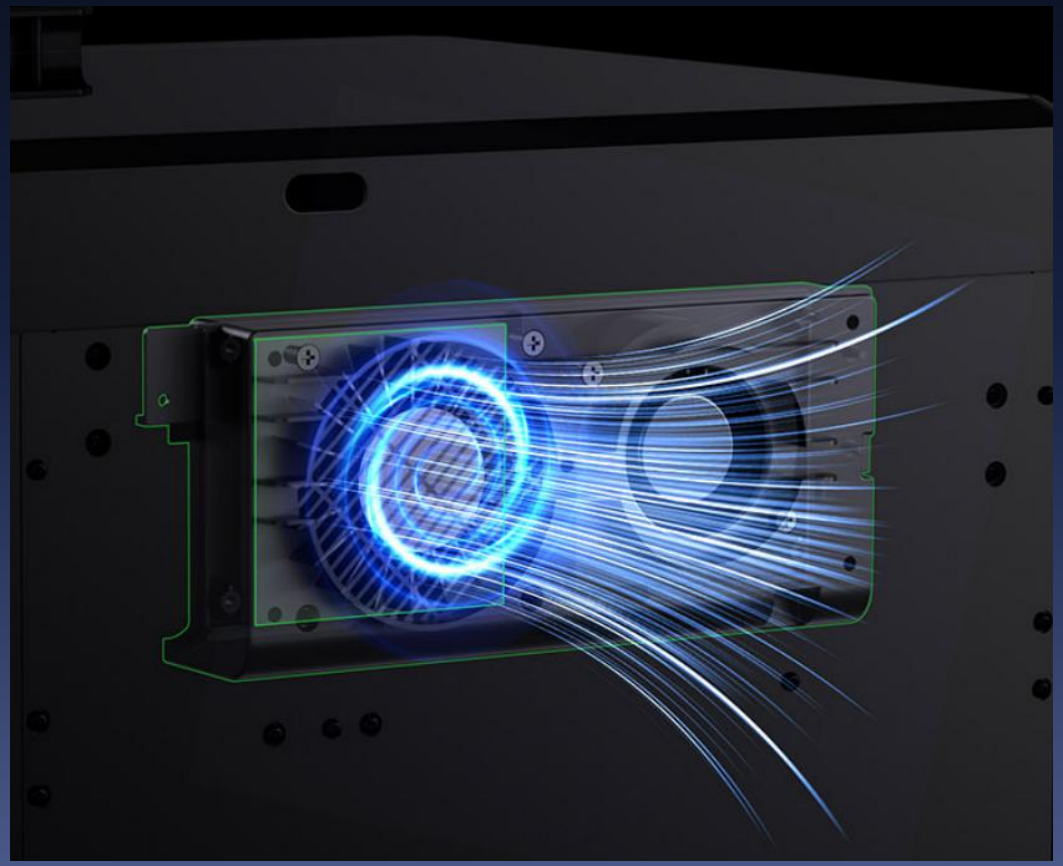
The machine features a high-power external circulation cooling fan designed to enhance cooling efficiency for high-speed printing models.

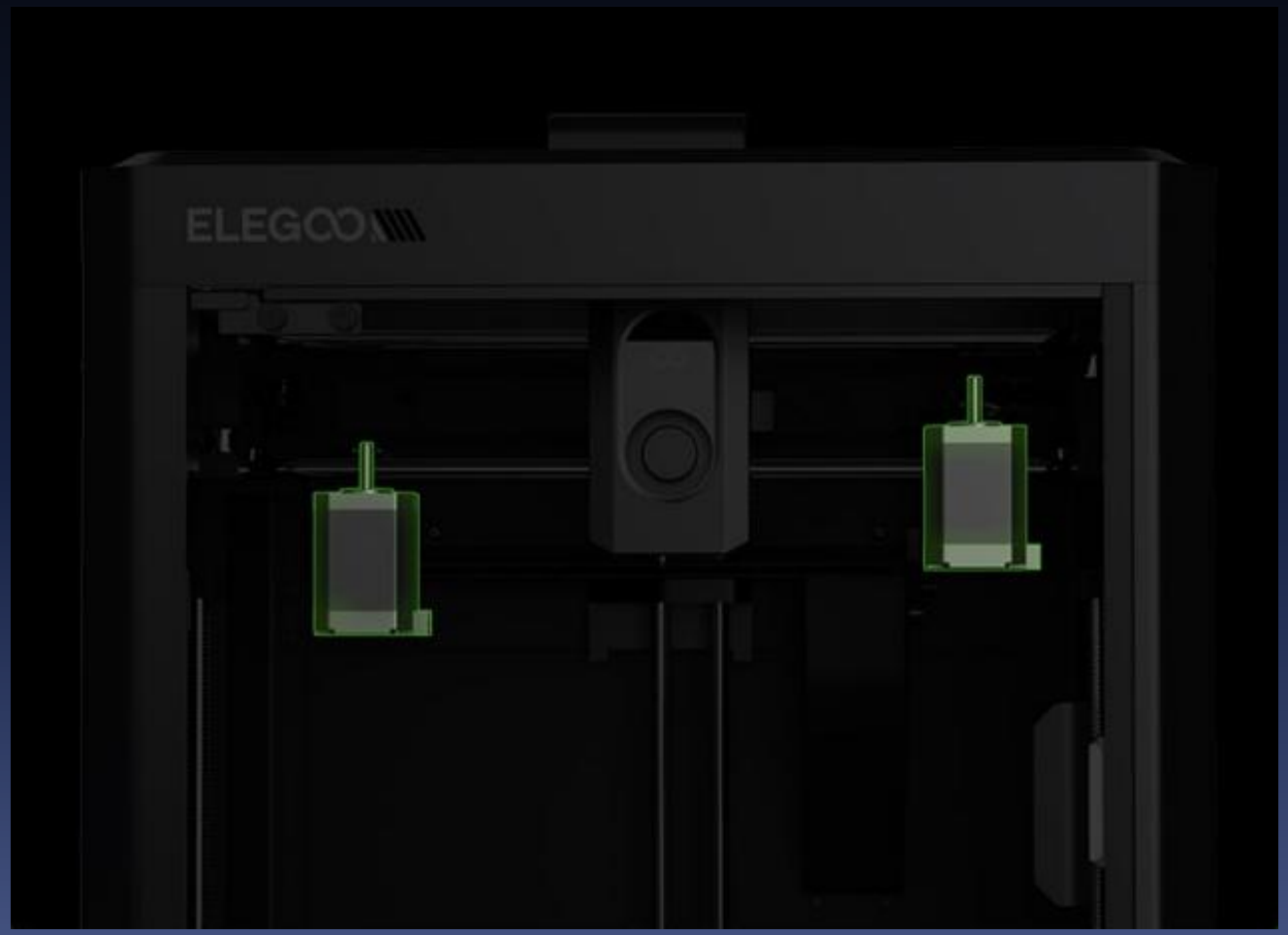


Equipped with an external enclosure cooling fan, with built-in nano-mineral crystal filters:

The external fan effectively regulates chamber temperature to accommodate various filament types during printing.

Built-in nano-mineral crystal filters efficiently capture odors and particulates released during printing.



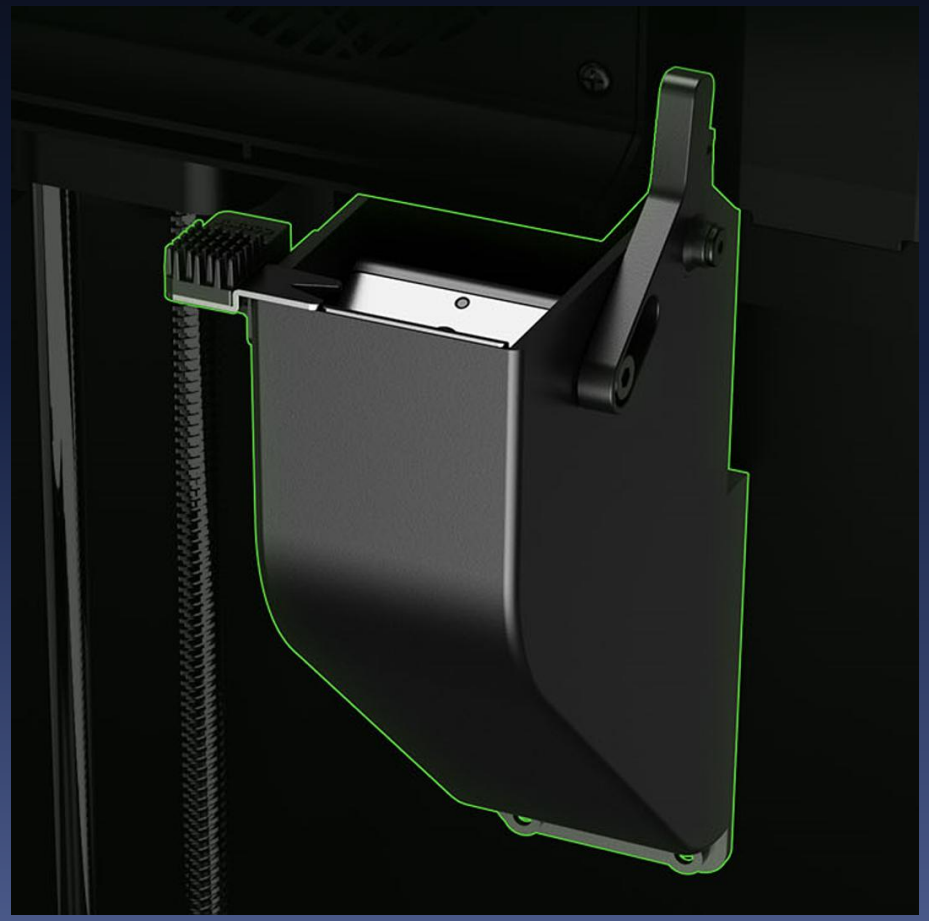


High Performance Stepper Driver

X and Y axis are equipped with high-speed, high-performance 4260 stepper drivers, providing strong power for stable and rapid printing.

Filament Waste Bin

Centauri Carbon comes with a filament waste bin, enabling the expulsion of excess residue from the machine to maintain cleanliness inside.



Silicone Nozzle Cleaning Brush

With the pre-installed silicone nozzle cleaning brush on the heated bed, the prints stay flawless by preventing residue from affecting print quality.

Glass Panels for Easy Observation

Both the door and top cover are crafted from durable tempered glass, enabling real-time monitoring of the printing process.

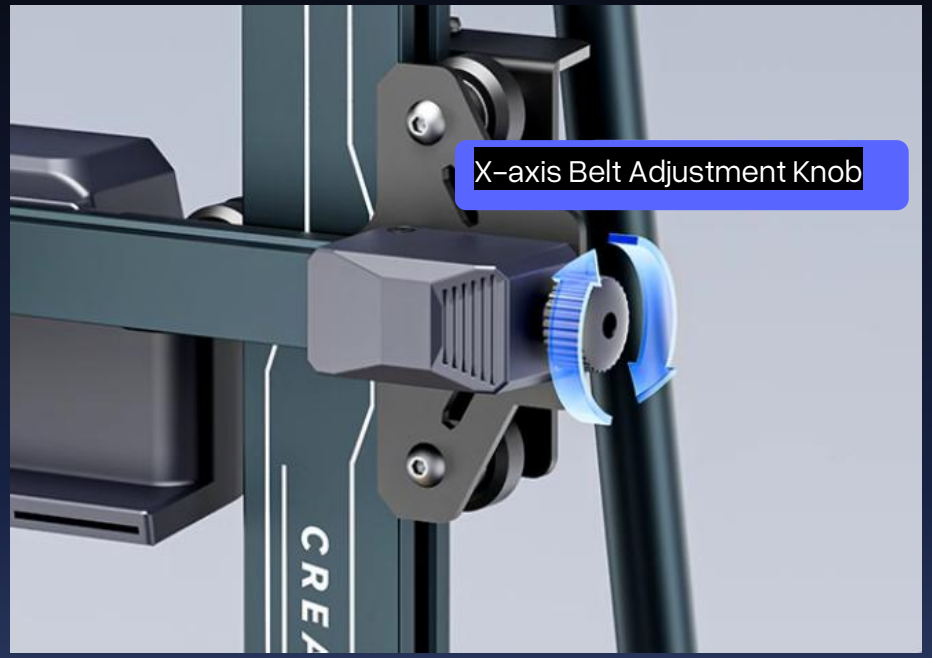
VS

Other printers use PC and acrylic materials.

Low-quality texture and durability.

Semi-Auto Belt Tensioning Structure

The timing belts for the X, Y, and Z axes feature semi-automatic belt tensioning mechanisms, ensuring consistent belt tension at its best.



Traditional belt tension adjustment

Lack of precise adjustment can impact print quality and potentially damage the machine if the tension is too loose or tight.

Hardened Steel Dual-Gear Extruder

The hardened extruder gears enhance durability and ensure stable filament extrusion. The upgraded proximal extruder delivers consistent performance and precise retraction, resulting in higher-quality prints.

Common Single Extruder Gear

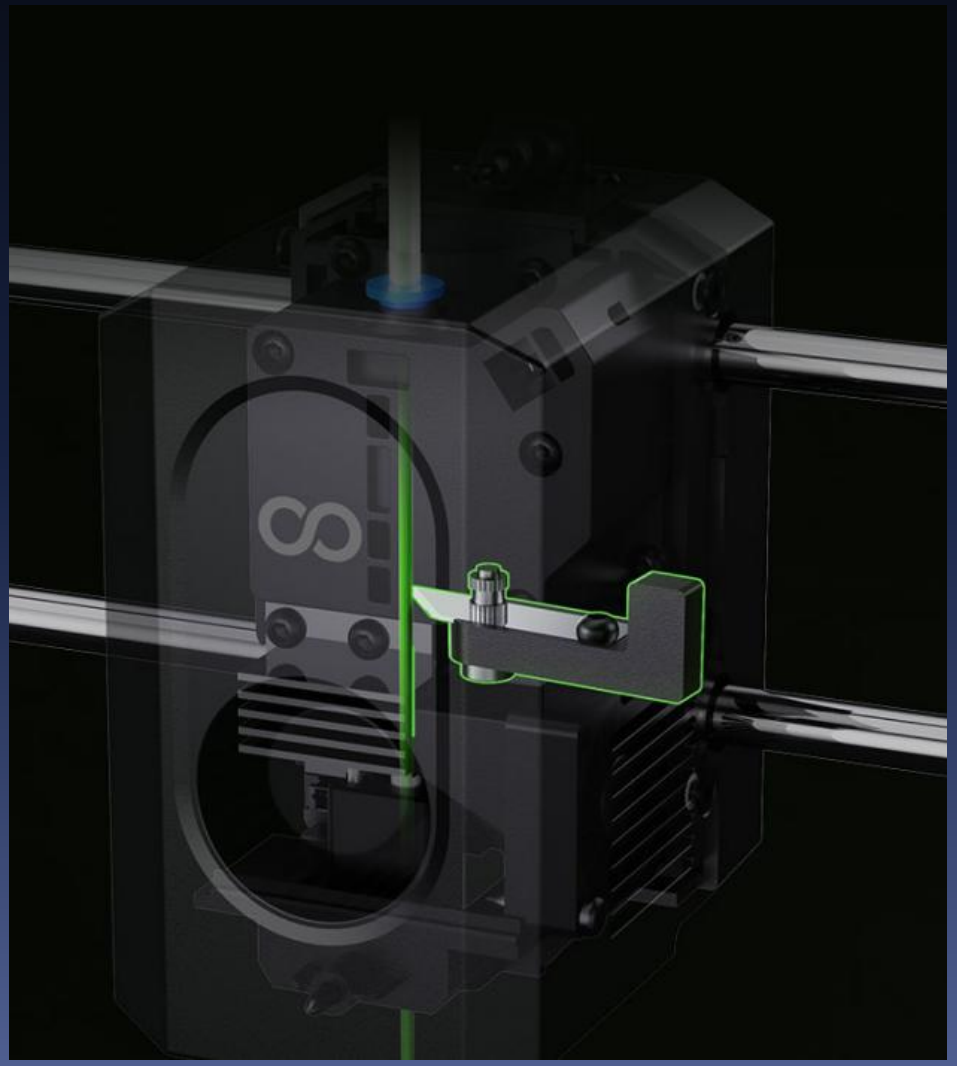
Unstable extrusion
Low extrusion force
Not suitable for high-speed printing

Standard Hardness Extruder Gear

Low hardness
Not wear-resistant
Short lifespan
Unable to print carbon fiber materials

Filament Cutter

The extruder features an integrated filament cutter for automatic cutting and retraction of filament.



Extruder without Cutter

When retracting the filament, it needs to be heated to the target temperature first, which leads to longer waiting times.

Power-Loss Resume Printing

The motherboard supports power-loss resume printing, ensuring the prints can carry on uninterrupted even if the power goes out.

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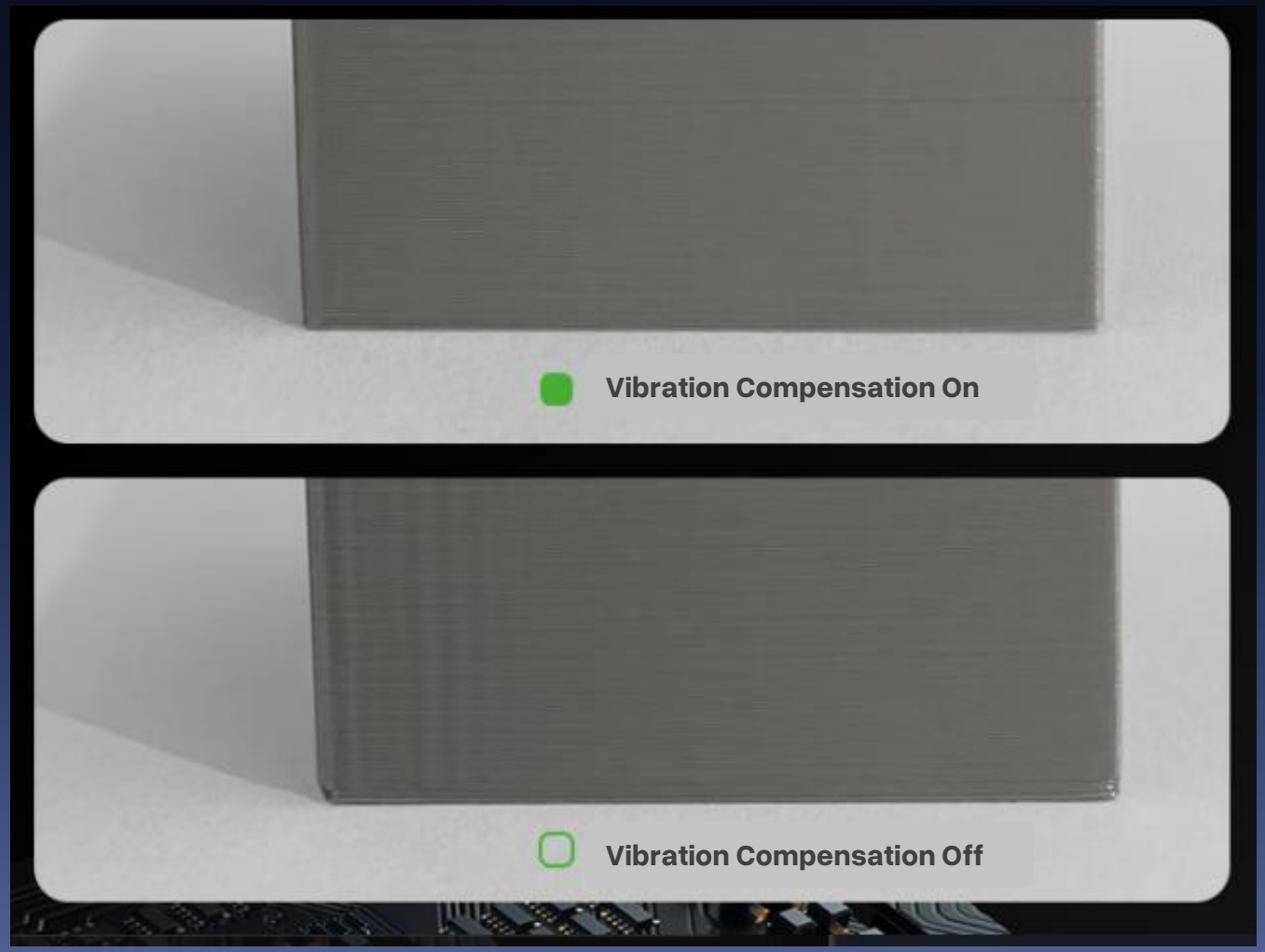
Vibration Compensation, Pressure Advance Compensation

The machine is equipped with an accelerometer to capture vibration compensation data, reducing model ripples. Optimized pressure compensation data ensures more stable and smoother extrusion.



Print Out of the Box

No need for complicated installation or setup—just unpack, follow the instructions, and it's ready to start printing with ease.

I3 3D Printer

The machine is shipped unassembled, requiring users to assemble it themselves, which can be quite complicated.

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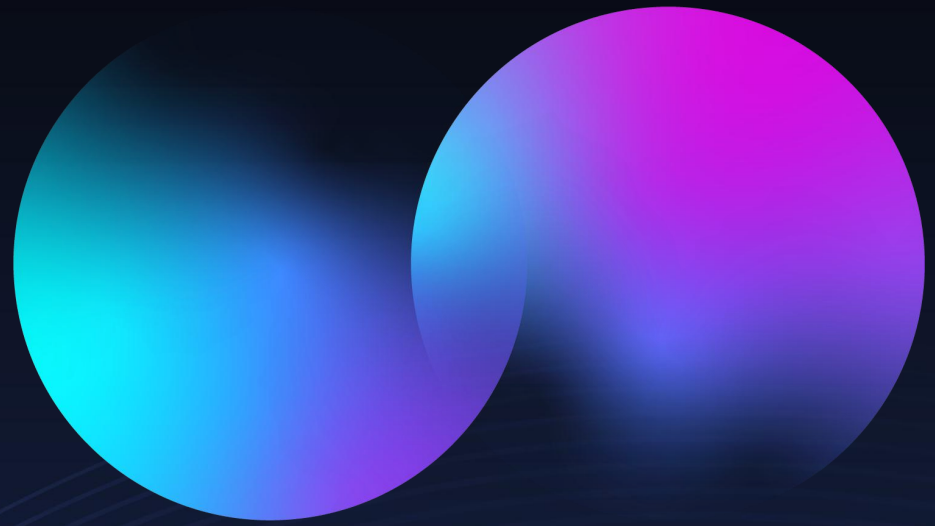

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