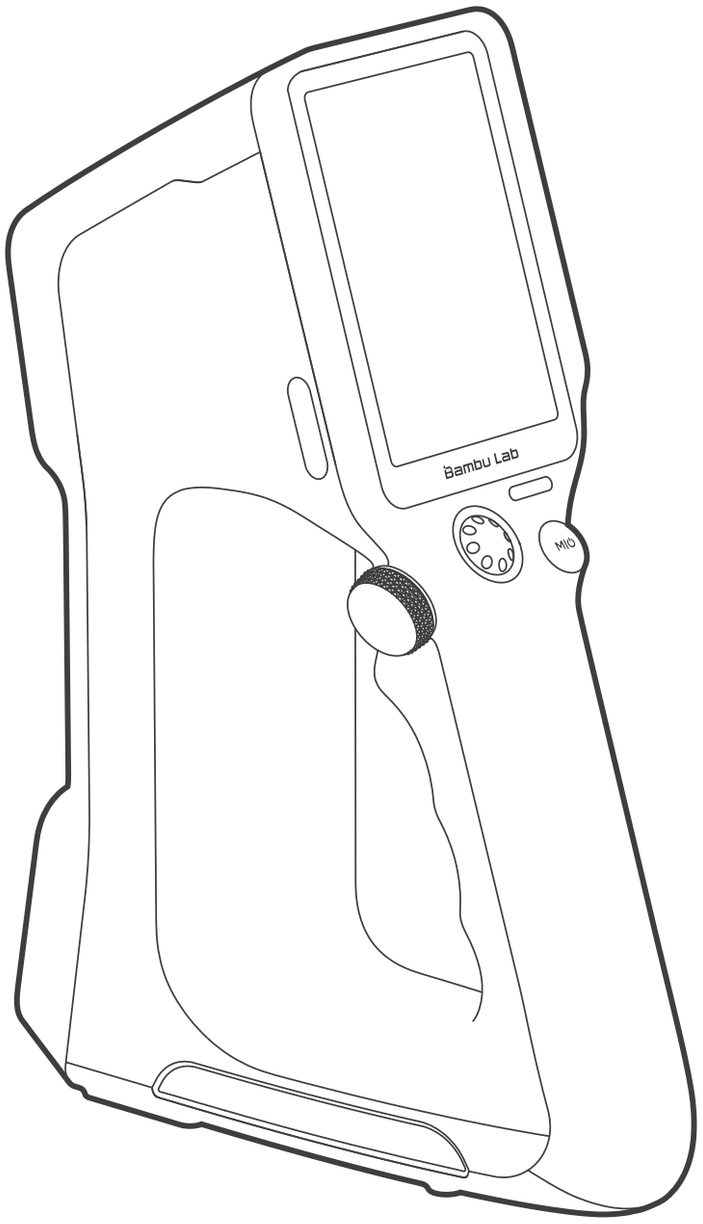
Bambu Lab S1 3D Scanner

Quick Start Guide

Please review the entire guide before using the product.



DS001

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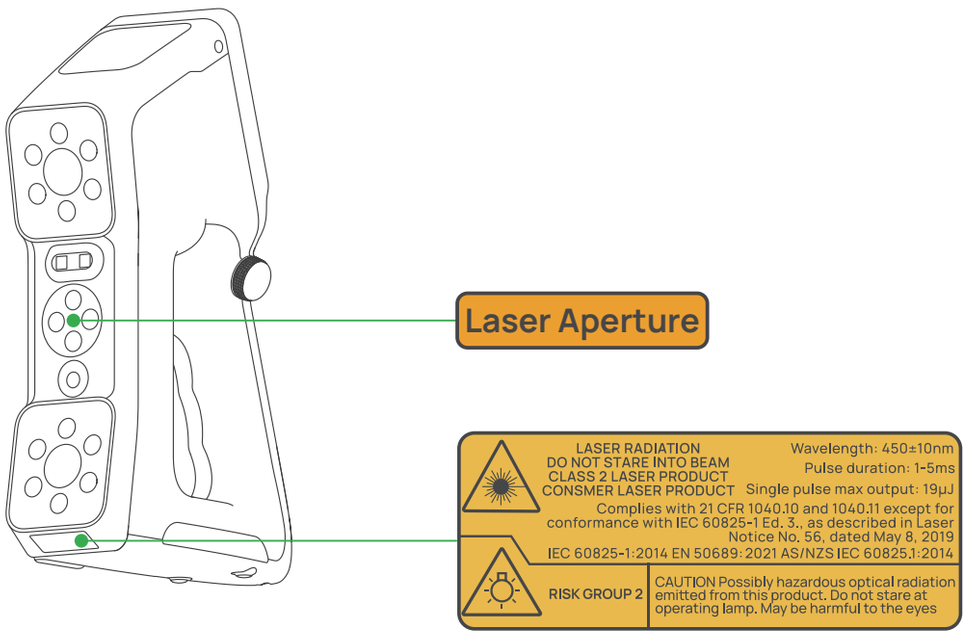
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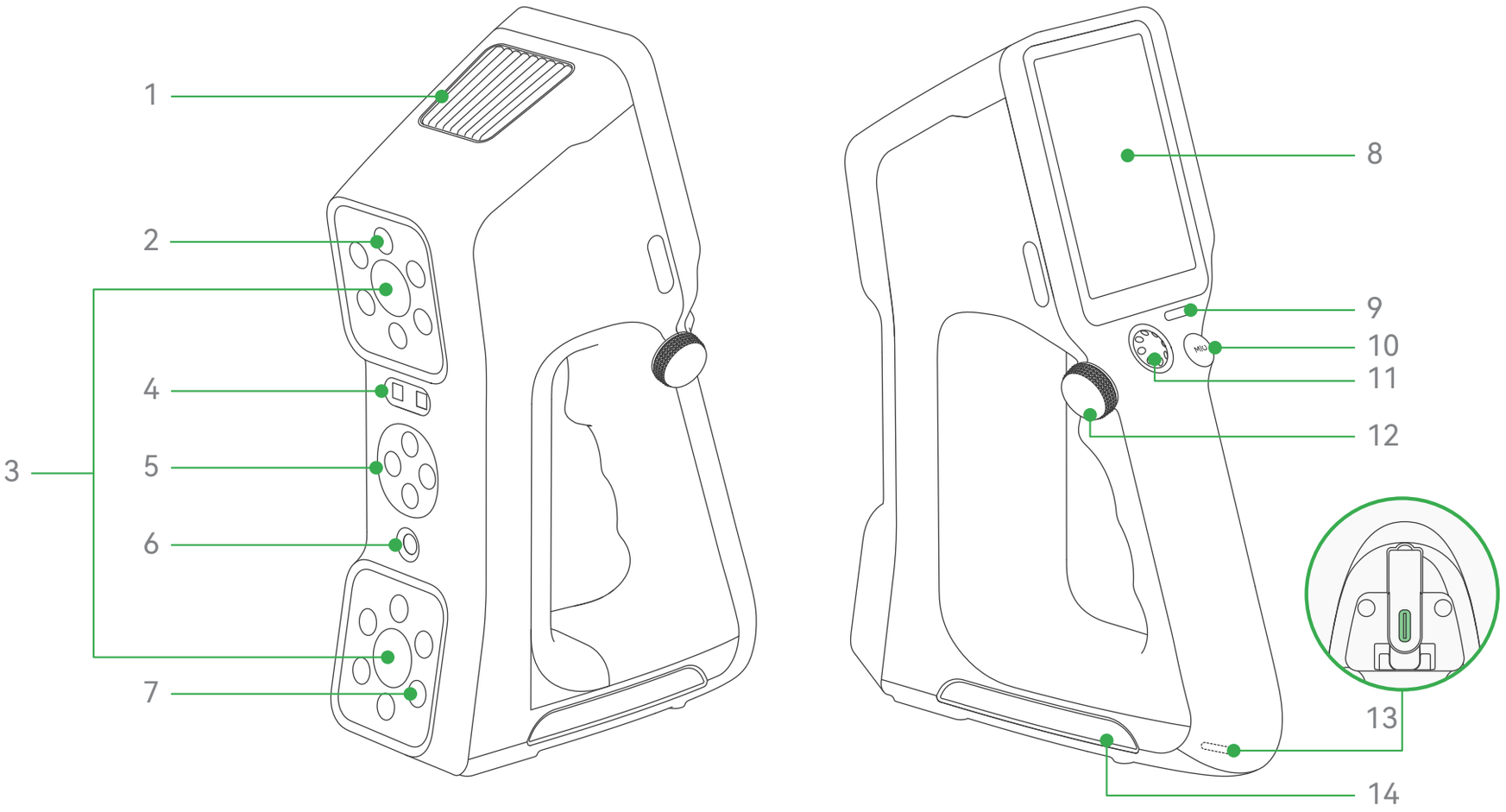
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1. Read Before Use

- Do not look directly at the structured light or laser projected by the scanner.
- Do not expose the scanner to liquids, high levels of dust, or corrosive gases.
- The Product is not allowed to be used by children. Please keep it out of reach of children.
- Avoid direct sunlight on the surface of the object to be scanned. It is recommended to scan it indoors without direct light.
- When scanning dark or black objects, it is recommended to use automatic exposure or adjust the laser brightness.
- Without markers, the scanner is suitable for objects with complex surface texture (color variation) and rich geometric features. For objects with uniform color and smooth surfaces, applying markers is recommended for better alignment.
- When using markers, apply them 3 cm-5 cm apart on the object surface or on nearby fixed objects. During scanning, make sure "Markers" is selected in the scan preset.
- Laser aperture and warning sign



2. Component Introduction



1) Vent
2) Blue-and-White Fill Light
3) Black-and-White Camera
4) Structured Light Projector
5) Blue Laser Projector (Cross/Single/Parallel Laser Lines)
6) RGB Camera
7) Infrared Fill Light
8) 3.5-Inch Touchscreen
9) Status Indicator
10) Mode Switch/Power Button
11) Confirm Button
12) Scroll Wheel
13) Type-C Port (Bottom)
14) Vent

3. Button and Indicator Introduction

Confirm Button:

- Confirm the current selection.
- Press to start or pause scanning, or press and hold to finish scanning.

Mode Switch/Power Button:

- Press and hold for 2 seconds to power on or off.
- Switch views during scanning.

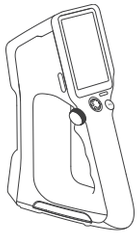
Scroll Wheel:

- When setting parameters, scroll to select a parameter, and press to confirm the current selection.
- During scanning, you can adjust exposure, or zoom in and out.

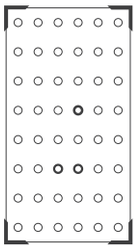
Status Indicator:

- Solid green: Connected to Bambu Scan and ready to scan
- Green flashing fast: Scanning started or finished
- Blue flashing slowly: Connecting to Wi-Fi
- Solid blue: Not connected to Bambu Scan
- Solid yellow: Firmware updating
- Yellow flashing: Battery, memory, or temperature warning
- Solid red: Low battery (powered on); charging (powered off)
- Red flashing fast: Too close, too far, feature loss, or a device malfunction

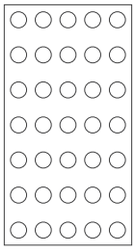
4. Included Accessories



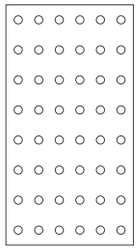
1) S1 3D Scanner



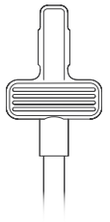
2) Calibration Board



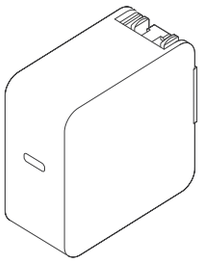
3) 6 mm Marker



4) 3 mm Marker



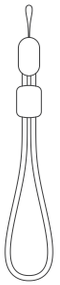
5) Type-C Cable



6) Fast-Charging Adapter



7) Bag



8) Lanyard

5. Install Bambu Scan

Before installation, make sure your computer meets the following requirements:
Windows:

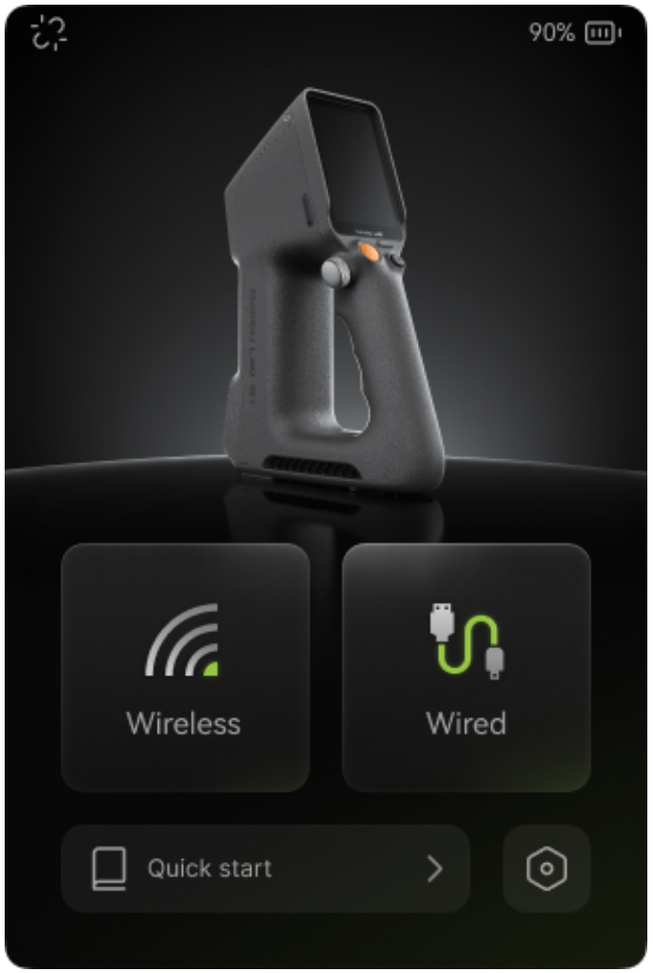
- Minimum: Intel i7 7th Gen or AMD Ryzen 7 series; 64-bit Windows 10/11; RAM ≥ 16 GB; Nvidia 2060 or newer with at least 6 GB
- Recommended: Intel i7 13th Gen or AMD Ryzen 9 series; 64-bit Windows 10/11; RAM ≥ 32 GB; Nvidia 3060 or newer with at least 8 GB

macOS:

- Minimum: Processor: M1 or later; OS: macOS 12 or later; RAM: ≥ 16 GB
- Recommended: Processor: M3 or later; OS: macOS 14 or later; RAM: ≥ 32 GB

Depending to your operating system, visit bambulab.com/download to download and install Bambu Scan.

6. Connect the Scanner



Press and hold the power button for 2 seconds to power on the scanner. Then, you can choose a connection method.

- Wireless connection: Tap **Wireless**. Connect your computer to the Wi-Fi network named Bambu-xxxxx. After Bambu Scan shows that the connection is successful, you can start scanning.
  If your computer does not support Wi-Fi 6, we recommend purchasing an official Wi-Fi Adapter to connect the scanner for best performance.
- Wired connection: Tap **Wired**. After opening Bambu Scan, connect the scanner to the computer with the provided Type-C cable. Wait a few seconds for a successful connection, then start scanning.

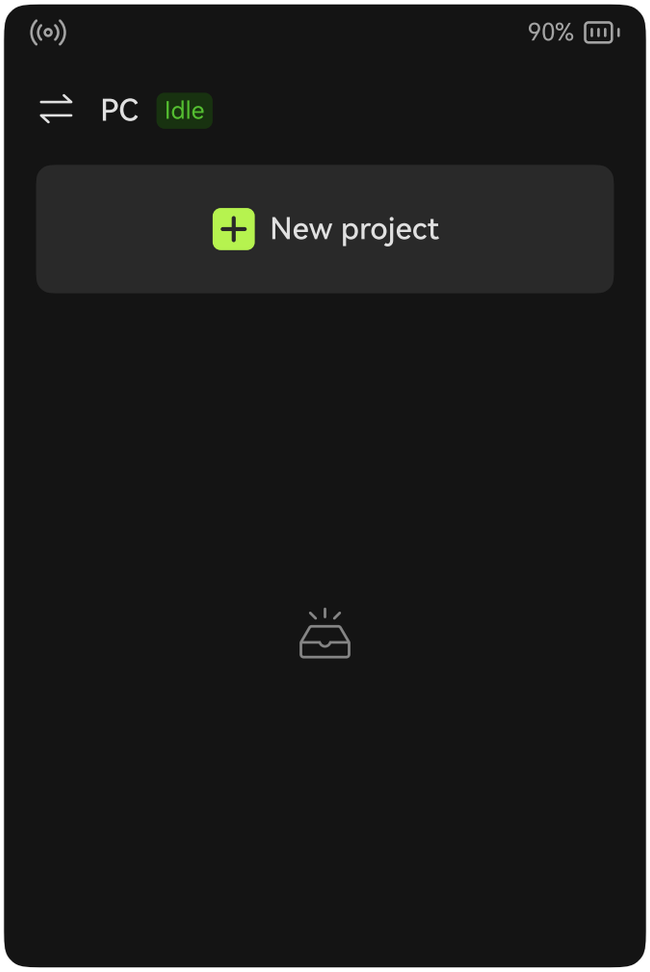
7. Calibrate the Scanner



After calibration, the scanner can work at its best accuracy. Calibration is required before the first scan. Also, if the scanner has not been used for a long time, or if the current ambient temperature differs significantly from the last calibration, it is recommended to calibrate the scanner before use.

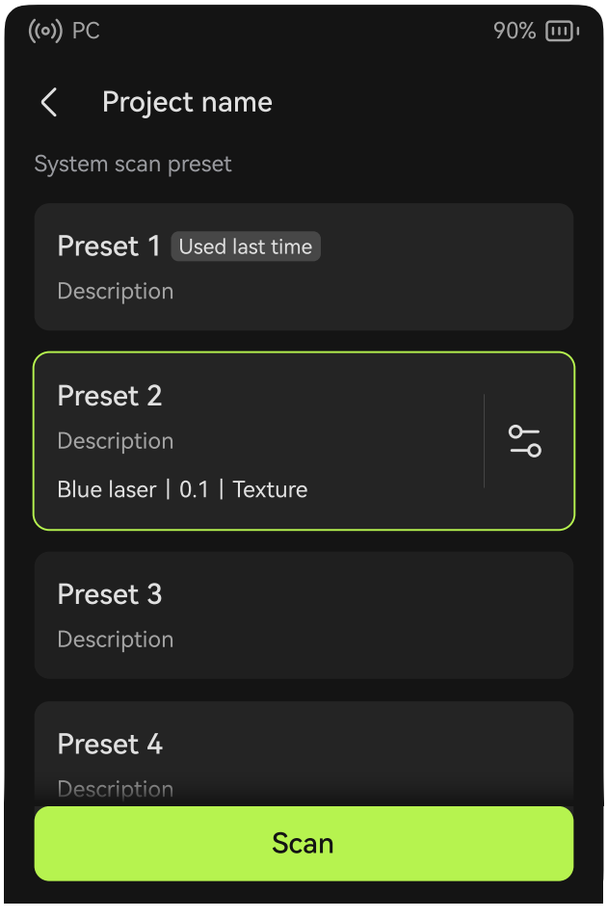
1) Place the calibration board on a level surface, and make sure nothing is blocking it.
2) In Bambu Scan, click **Calibration**, or swipe up from the bottom of the touchscreen to open the control center and tap **Calibration**, then follow the on-screen instructions.
   The scanner has already been bound to the provided calibration board, so you do not need to scan the QR code. If you have an additional board, tap ⇄ and scan its QR code to bind it before calibration.
3) After calibration is complete, you can proceed to first scan.

8. First Scan



1) Create a new project on the touchscreen or in Bambu Scan.

8. First Scan



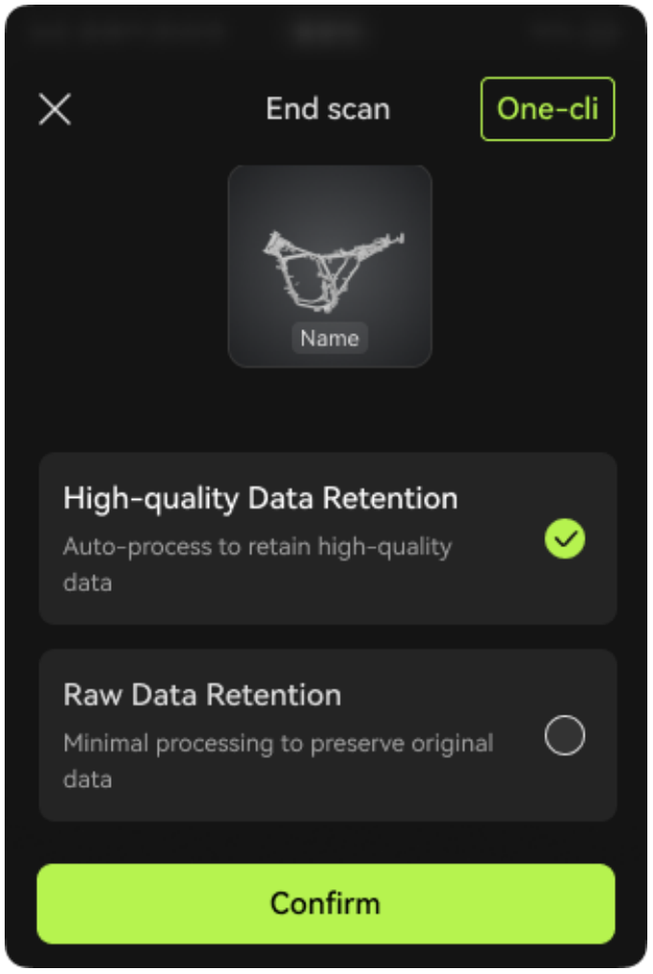
2) Select a preset based on the type of object, then tap **Scan**.
   The scanner includes multiple presets for common scenarios:
   - Human body/face: Use IR structured light mode.
   - Small, detailed objects (longest side smaller than 20 cm): Use parallel laser line mode for higher accuracy. Markers must be applied before using this mode. They are typically applied to fixed objects around the one to be scanned.
   - General large objects (longest side over 50 cm): Use cross laser line mode for higher scanning speed. Markers must be applied before using this mode. They are typically applied to the object surface.
   - Deep holes: If the object has deep holes, you can use "Deep Hole" mode.

8. First Scan



3) Adjust the scanning distance between the scanner and the object, place the object within the frame, then press the confirm button to start scanning.
   - During scanning, watch the distance indicator on the right side of the screen, and try to keep it in the middle of the green zone. If the scanner is too far from or too close to the object, it will affect scan quality.
   - During scanning, press the confirm button to pause or resume scanning.
4) After scanning is complete, press the confirm button to pause scanning, then press and hold the confirm button to finish scanning.

8. First Scan



5) Select a processing mode and tap **Confirm**. Then, you can proceed to Bambu Scan to complete wrap, texture, and other operations. Visit the official Wiki (wiki.bambulab.com/s1) for detailed guides on scan modes, parameters, post-processing, and more.

9. Specifications

Operating Mode	Blue Single Laser Line	Blue 7-Line Laser	Blue 34-Line Laser	IR Structured Light
Accuracy*	Up to 0.02 mm			Up to 0.06 mm
Volumetric Accuracy*	0.02 mm+0.06 mm/m			0.06 mm+0.1 mm/m
Scanning Speed	Up to 108,000 points/s	Up to 756,000 points/s	Up to 1,836,000 points/s	Up to 2,880,000 points/s
Frame Rate	Up to 90 FPS			Up to 30 FPS
Point Spacing/Resolution	0.1 mm	0.05 mm	0.1 mm	0.2 mm
Minimum Scan Volume	5*5*5 mm			150*150*150 mm
Scanning Area	• 310*184 mm@300 mm • 370*245 mm@400 mm • 431*306 mm@500 mm • 491*367 mm@600 mm			• 431*306 mm@500 mm • 612*490 mm@800 mm • 732*612 mm@1000 mm
Working Distance	180-600 mm	180-400 mm	180-600 mm	200-1000 mm
Laser Wavelength	450 nm ± 10 nm			850 nm ± 10 nm
Texture	Supported			Supported

9. Specifications

Alignment Mode	Texture-based/feature-based/marker-based alignment and any combination			Texture-based/ feature-based alignment and any combination
Fill Light	6 Blue-and-White Fill Lights and 6 Infrared Fill Lights			
Laser Safety	Class 2	Class 1	Class 2	Class 1
Net Weight	700 g			
Dimensions	233*160*77 mm			
Calibration Board	High-precision Glass Calibration Board			
Screen Size	3.5 inches			
Battery	4800 mAh * 2			
Runtime	3.5 hours			
Charging Time	1.5 hours (0% to 100% with the included Fast-Charging Adapter)			
Wi-Fi	• Operating Frequency: ◦ 5150 - 5250 MHz, 5745 - 5825 MHz (CE) ◦ 5725 - 5850 MHz (SRRC) • Wi-Fi Transmitter Power (EIRP): ◦ 5.1G: ≤23 dBm (CE) ◦ 5.8G: ≤14 dBm (CE), ≤33 dBm (SRRC) • Wi-Fi Protocol: Wi-Fi 6, IEEE 802.11 a/n/ac/ax			
OS Support	Windows and macOS			

9. Specifications

Computer Requirements	Windows: • Minimum: Intel i7 7th Gen or AMD Ryzen 7 series; 64-bit Windows 10/11; RAM ≥ 16 GB; Nvidia 2060 or newer with at least 6 GB • Recommended: Intel i7 13th Gen or AMD Ryzen 9 series; 64-bit Windows 10/11; RAM ≥ 32 GB; Nvidia 3060 or newer with at least 8 GB macOS: • Minimum: Processor: M1 or later; OS: macOS 12 or later; RAM: ≥ 16 GB • Recommended: Processor: M3 or later; OS: macOS 14 or later; RAM: ≥ 32 GB
Operating Temperature	-10 °C-40 °C
Operating Humidity	10%~90% RH (non-condensing)

* Accuracy data is based on tests in a standard laboratory environment. Actual scan results may vary depending on the environment, scanned object, and operating conditions.

10. Technical Support

If you need technical support, please follow any of the following methods:

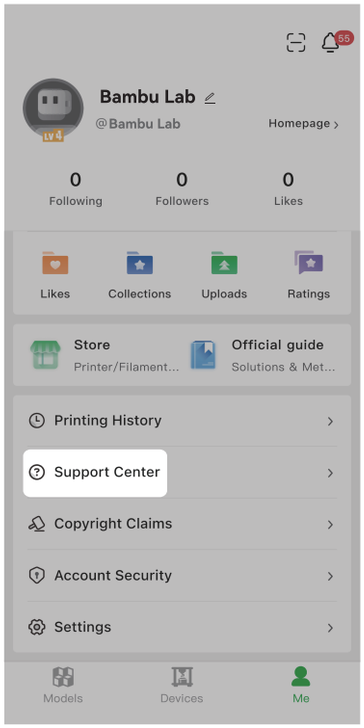
Method 1: Visit the Bambu Lab Wiki for tutorials and maintenance guidance.
wiki.bambulab.com

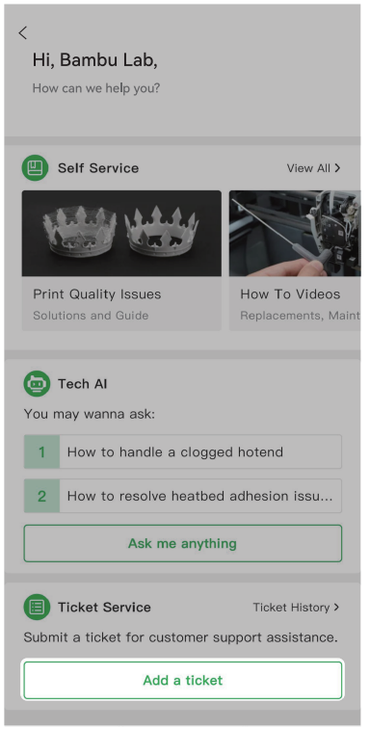
Bambu Lab Wiki

Method 2: Get in touch through one of the options listed in the Contact Us section of our Support Center.
bambulab.com/support

Bambu Lab Support Center

Method 3: Create a support ticket on Bambu Handy, from the Support Center section.







Bambu Lab

www.bambulab.com