SainSmart BLM-393R

SainSmart BLM-393R Dual Laser Measuring Tool User Manual

Model: BLM-393R

1. Introduction

The SainSmart BLM-393R Dual Laser Measuring Tool is a precision instrument designed for accurate distance and angle measurements. Featuring dual-laser technology, a backlit LCD, and multiple measurement modes, it is suitable for various professional and DIY applications. This manual provides comprehensive instructions for safe and effective use of the device.

2. Package Contents

Verify that all items are present in the package:

- SainSmart BLM-393R Dual Laser Measuring Tool
- USB Type-C Charging Cable
- User Manual
- Carrying Pouch
- Wrist Strap

3. Product Overview

The SainSmart BLM-393R is engineered for precision and durability, offering a range of features to enhance measurement tasks.

Figure 1: SainSmart BLM-393R Dual Laser Measuring Tool. This image displays the front view of the device, highlighting its compact design and user interface.

Figure 2: Key Features Overview. This graphic illustrates the device's electronic angle, automatic screen rotation, magnetic suction, ±2mm high accuracy, IP54 protection, 100 sets of data storage, unit switching, and Type-C charging.

3.1 Display and Interface

Figure 3: 2.4-inch Dual LCD Display. The image shows the device's screen in both day and night modes, demonstrating its clear readability in varying light conditions.

Figure 4: Color Backlit Display with Auto-Rotation. This image highlights the 360° flexible screen rotation and the option to long-press to lock the screen, ensuring optimal viewing angles.

3.2 Dual Laser Technology

The device features dual lasers for bilateral distance measurement, allowing for simultaneous measurement in two directions. This significantly improves efficiency and accuracy compared to single-laser or manual methods.

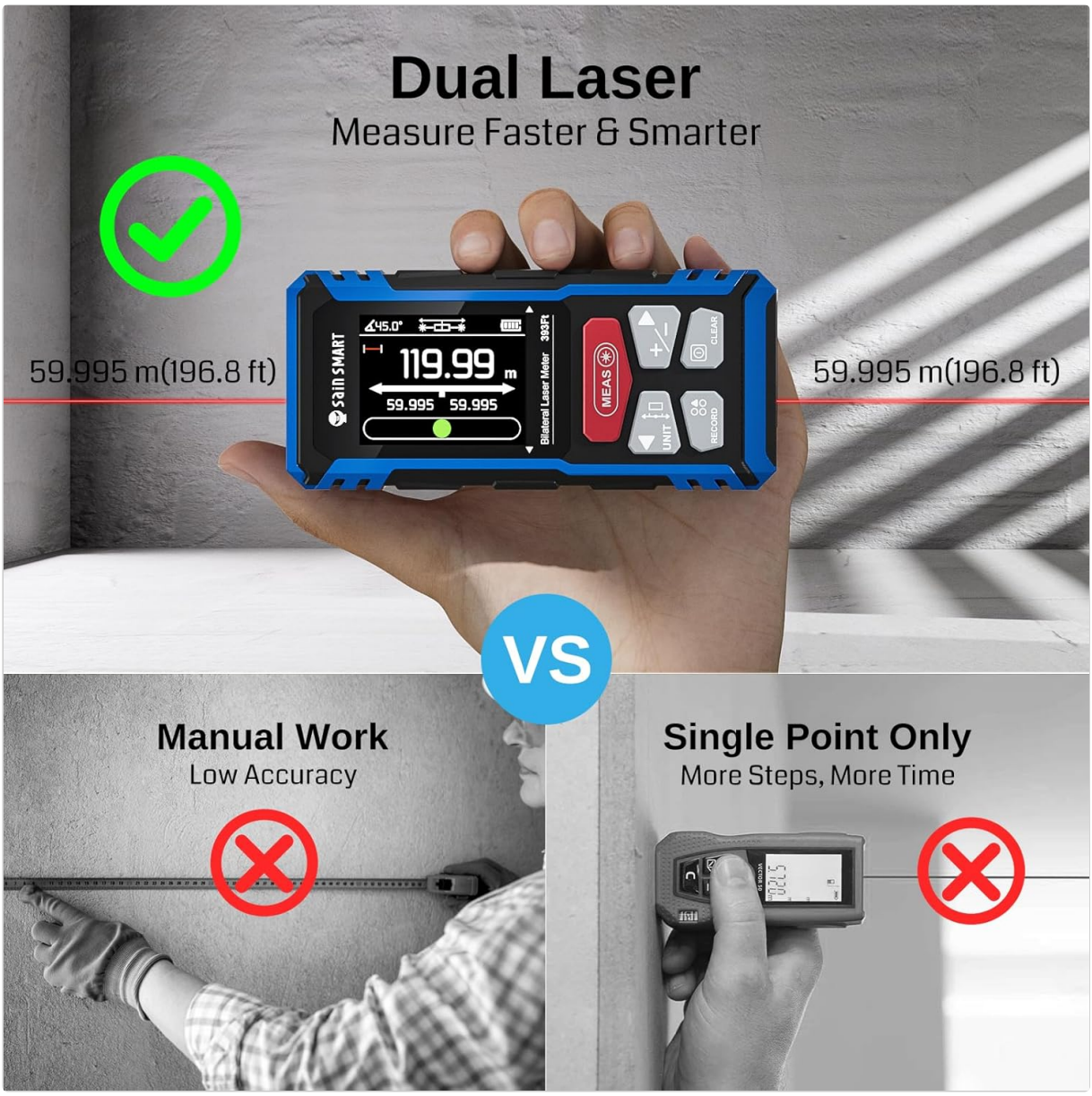

Figure 5: Dual Laser Precision. This graphic compares dual laser measurement with manual work and single-point measurement, illustrating the efficiency and accuracy benefits of the dual-laser system.

4. Getting Started

4.1 Battery Installation and Charging

The BLM-393R is equipped with a built-in 850mAh rechargeable Lithium-Ion Polymer battery.

- To charge the device, connect the provided USB Type-C cable to the charging port on the device and a compatible USB power source.
- A full charge supports up to 8000 dual measurements or 5000 single measurements.

Figure 6: Battery and Charging. This image shows the device being charged via its Type-C port, highlighting the 850mAh battery capacity and fast charging capability.

4.2 Power On/Off

- To power on: Press and hold the **MEAS** button.
- To power off: Press and hold the **CLEAR** button. The device will also automatically power off after a period of inactivity to conserve battery.

5. Basic Operation

5.1 Unit Switching

The device supports multiple units of measurement.

- Press the **UNIT** button to cycle through available units: meters (m), inches (in), and feet (ft).

Figure 7: Unit Switching and Device Features. This image demonstrates the unit switching functionality, along with other features like strong magnetic suction, IP54 protection, 1/4" copper nut for tripod mounting, and a belt buckle.

5.2 Reference Point Selection

Measurements can be taken from the front or rear of the device. This is crucial for accurate results depending on the measurement scenario.

- Press the **REF** button (often integrated with UNIT or MEAS button, refer to device markings) to switch the measurement reference point.

5.3 Single Measurement

- Point the laser at the target.
- Press the **MEAS** button once to emit the laser.
- Press the **MEAS** button again to take the measurement. The result will be displayed on the screen.

5.4 Continuous Measurement

- From standby mode, press and hold the **MEAS** button to activate continuous measurement.
- Move the device to measure minimum and maximum distances. The display will update in real-time.
- Press the **MEAS** button again to stop continuous measurement.

6. Advanced Measurement Modes

The BLM-393R offers 9 versatile measurement modes for various applications.

Figure 8: Multiple Measurement Modes. This image displays various measurement modes including Length, Area, Volume, Wall Area, Height Calculation by Measuring Angle, Height Calculation of Right Triangle, Hypotenuse Calculation of Right Triangle, Sum Calculation of Triangle Base Sides, and Auxiliary Height Calculation of Right Triangle.

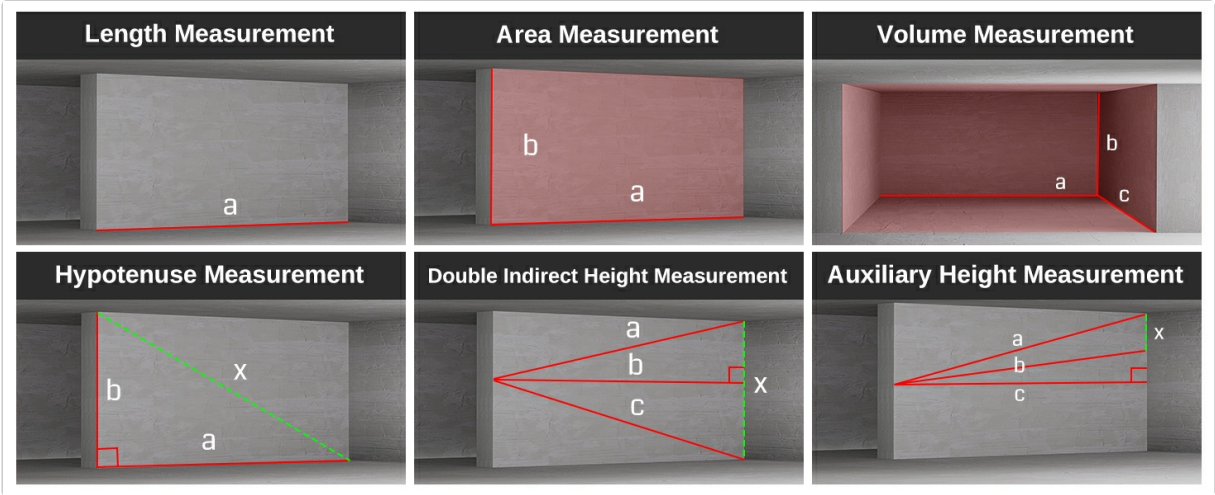

Figure 9: Visual Guide to Measurement Functions. This graphic provides visual examples for Length, Area, Volume, Hypotenuse, Double Indirect Height, and Auxiliary Height measurements.

- To select a mode: Press the **MODE** button (often labeled with a square icon) repeatedly until the desired mode icon appears on the display.

- Follow the on-screen prompts to perform measurements for each specific mode.

6.1 Area Measurement

Measures the area of a rectangular surface.

- Select Area Mode.
- Measure the length of the first side.
- Measure the length of the second side. The device will automatically calculate and display the area.

6.2 Volume Measurement

Measures the volume of a space.

- Select Volume Mode.
- Measure length, width, and height sequentially. The device will calculate and display the volume.

6.3 Pythagorean Measurement (Indirect Height)

Calculates height indirectly using the Pythagorean theorem.

- Select Pythagorean Mode (e.g., single or double indirect height).
- Follow the on-screen instructions to take the required measurements (e.g., hypotenuse and base). The device will calculate the height.

6.4 Angle Measurement / Electronic Level

The integrated tilt sensor allows for fast and accurate angle and layout tasks, functioning as an electronic level.

Figure 10: Angle Measurement and Electronic Level. This image shows the device measuring an angle of 45 degrees, with an electronic horizontal bubble indicator.

Figure 11: Digital Bubble Level Mode. This graphic illustrates the digital bubble level, simulating a real bubble level to measure horizontal and vertical tilt, with color indicators for different angle ranges.

7. Data Management

7.1 Data Storage

The device can store up to 100 sets of measurement data.

- Press the **RECORD** button to view stored data.
- Use the arrow buttons to navigate through the records.

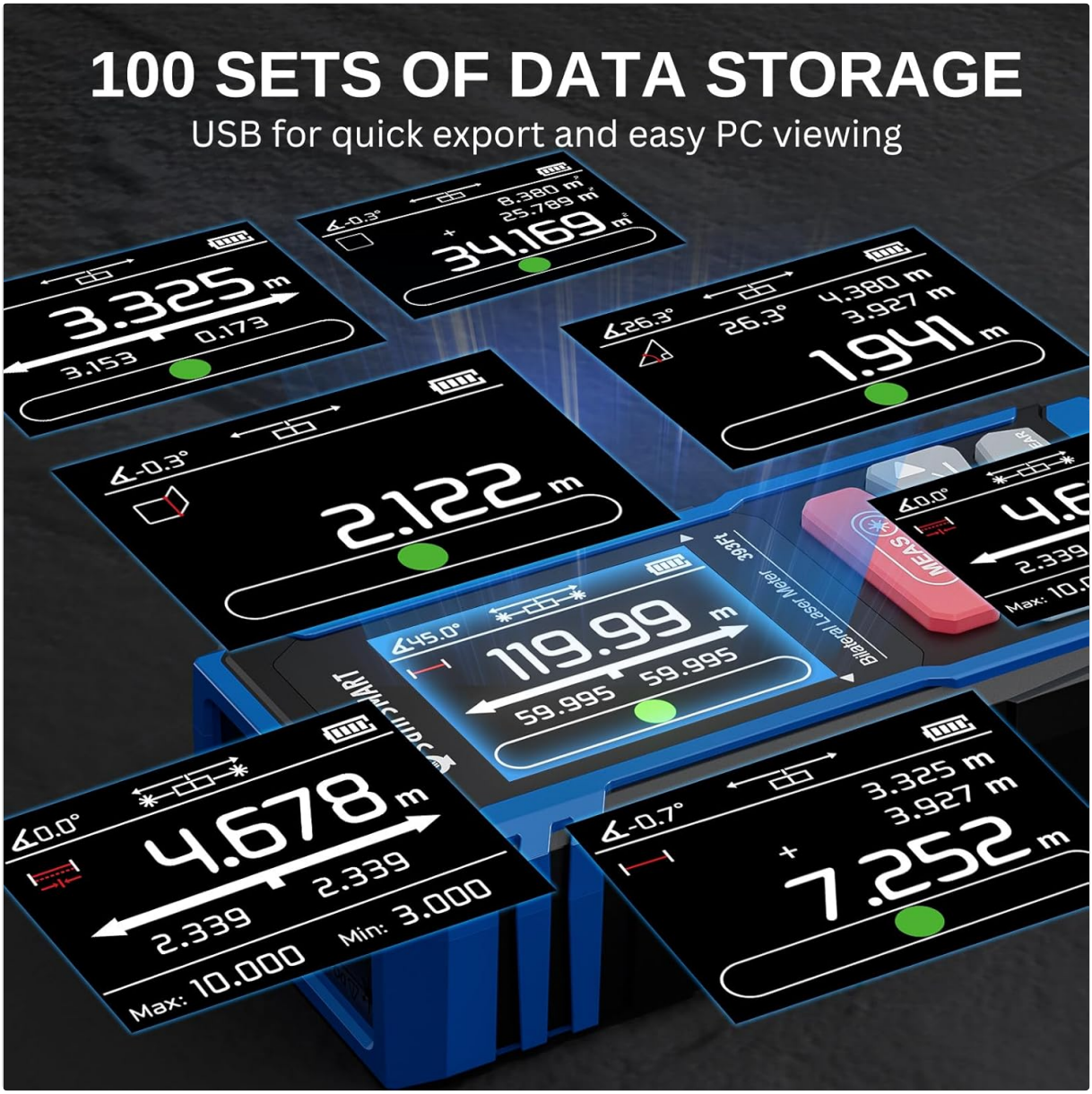

Figure 12: Data Storage. This image shows the device's display with multiple stored measurement data sets, indicating its capacity for 100 records.

7.2 PC Data Transfer

Measurements can be transferred to a PC for further analysis.

- Connect the device to a computer using the USB Type-C cable.
- The device will appear as a removable drive, allowing you to transfer data (e.g., to Excel or CAD software).

8. Care and Maintenance

- Keep the device dry and clean. Wipe with a soft, damp cloth. Do not use harsh chemicals or abrasive cleaners.
- Store the device in its carrying pouch when not in use to protect it from dust and impacts.
- Avoid exposing the device to extreme temperatures or direct sunlight for prolonged periods.

- The device has an IP54 rating, making it dustproof and splash-proof, but it is not waterproof. Do not immerse it in water.

9. Troubleshooting

If you encounter issues, refer to the following common solutions:

Problem	Possible Cause	Solution
Device does not power on	Low battery; Device malfunction	Charge the battery; Contact support
Inaccurate measurements	Incorrect reference point; Obstruction in laser path; Unstable surface	Verify reference point; Clear laser path; Ensure stable measurement surface
Display not visible	Screen backlight off; Extreme lighting conditions	Adjust backlight settings; Move to a suitable lighting environment

10. Specifications

- **Measuring Range:** Up to 393ft (120m)
- **Accuracy:** ±2mm
- **Laser Type:** Red Laser
- **Battery:** 850mAh Lithium-Ion Polymer (Rechargeable via USB Type-C)
- **Display:** 2.4-inch TFT LCD with Backlight and Auto-Rotation
- **Measurement Modes:** Length, Area, Volume, Pythagorean (various types), Angle, Wall Area, Continuous
- **Data Storage:** 100 sets
- **Protection Class:** IP54 (Dustproof, Splash-proof)
- **Material:** ABS+TPE
- **Item Weight:** 300 g
- **Model Number:** BLM-393R
- **UPC:** 810168141992

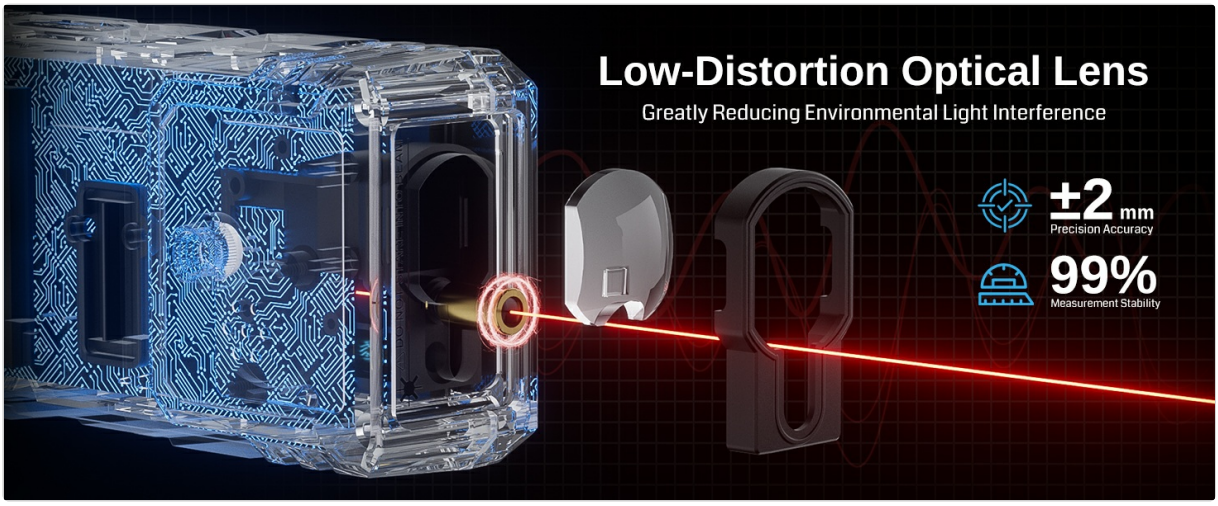

Figure 13: Low-Distortion Optical Lens. This image highlights the optical lens design, which greatly reduces environmental light interference, contributing to ±2mm precision accuracy and 99% measurement stability.

11. Warranty and Support

SainSmart products are backed by a manufacturer's warranty. For specific warranty details, please refer to the warranty card included in your package or visit the official SainSmart website.
For technical support, troubleshooting assistance, or to inquire about replacement parts, please contact SainSmart customer service through their official website or the contact information provided in your product documentation.

Related Documents - BLM-393R

	SainSmart Genmitsu Controller Board (GRBL) User Manual Comprehensive user manual for the SainSmart Genmitsu Controller Board (GRBL) with ABS case and built-in fan, compatible with CNC routers like 3018, 3018-PRO, and 1810-PRO. Covers setup, connections, Vref setting, firmware updates, and accessories.
	SainSmart Ender-3 3D Printer User Manual User manual for the SainSmart Ender-3 3D Printer, providing assembly instructions, setup guides, software installation, troubleshooting, and support information.
	SainSmart 4th Axis Rotary Kit Quick Start Guide Quick start guide for the SainSmart 4th Axis Rotary Kit, providing resources, documentation, and setup instructions for the 4040 Pro CNC. Includes links to user manuals, installation guides, and machining resources.
	Creality Ender-3 V2 3D Printer User Manual Comprehensive user manual for the Creality Ender-3 V2 3D Printer by SainSmart. Covers assembly, operation, preparation, printing with slicers, maintenance, and troubleshooting. Includes detailed specifications and safety guidelines.
	CNC Bits Buying Guide: Select the Right Milling Bits Comprehensive guide to selecting the appropriate CNC milling bits for various materials and applications. Features detailed specifications and compatibility charts for SainSmart CNC bits.
	SainSmart CNC Bits Buying Guide: Specifications and Applications A comprehensive guide to SainSmart CNC router bits and end mills, detailing model specifications, types, materials, coatings, and ideal applications for various machining tasks and materials.