

## SG SURGOAL Elite G-120

# SG SURGOAL Elite G-120 Laser Measuring Meter Instruction Manual

Model: Elite G-120 | Brand: SG SURGOAL

## 1. INTRODUCTION

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The SG SURGOAL Elite G-120 is an advanced green laser distance meter designed for precise and versatile measurements. It combines high visibility, accuracy, and a range of functions suitable for both professionals and home users. This device offers a measuring range of up to 120 meters (393.7ft) with an accuracy of  $\pm 2.0\text{mm}$ , featuring a highly visible green laser beam that is up to 4 times brighter than traditional red lasers, especially in bright conditions. It includes a built-in electronic angle sensor for real-time tilt readings, enhancing measurement accuracy and alignment.

Key functions include length, area, volume, continuous scanning, and Pythagorean calculations. The device also supports addition/subtraction features and can store up to 30 groups of data. Designed with user safety and efficiency in mind, it incorporates intelligent energy-saving features such as automatic laser power-off and complete shutdown to conserve battery life.

## 2. PACKAGE CONTENTS

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Upon opening your SG SURGOAL Elite G-120 package, please ensure all the following items are present:

- Laser Measuring Meter (main unit)
- 3 AAA Batteries
- Lanyard
- User Manual
- Gift Box

## 3. PRODUCT OVERVIEW

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### 3.1 Device Components



Image: Front view of the SG SURGOAL Elite G-120 Laser Measuring Meter with key components labeled, including the display screen, 90° bubble, reference switch/plus key, function switch, 0° bubble, outdoor mode button, power on/measuring key, minus key/unit switch, and clear/off button.

### 3.2 High-Visibility Green Laser

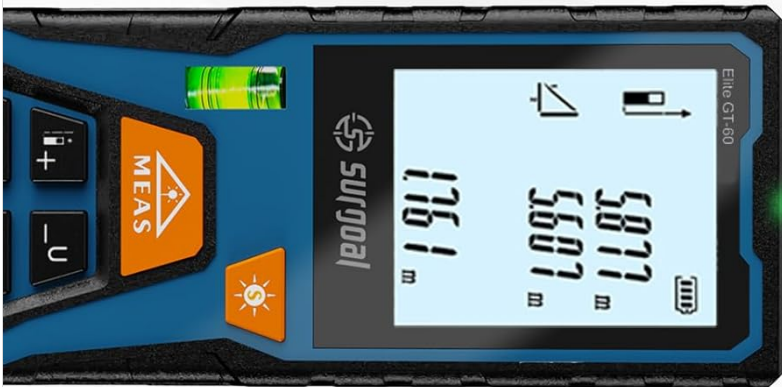
# HIGH-VISIBILITY GREEN LIGHT

Accuracy ▲ Speed ▲ Stability ▲

Comprehensively improve



OUTDOOR  
MODE DESIGN  
laser en-hanced



## OUTDOOR EFFECTIVE RANGE

Low-Frequency Red Laser		>10%
High-Visibilitygreen Light		<50%

*Image: A visual comparison demonstrating the superior visibility of the green laser beam from the SG SURGOAL Elite G-120 compared to a traditional red laser, especially in outdoor conditions. The image highlights the enhanced accuracy, speed, and stability provided by the green laser technology.*

## 4. SETUP

### 4.1 Battery Installation and Charging

The device requires 3 AAA batteries (included). Ensure correct polarity when inserting the batteries. For models with rechargeable batteries, use the provided USB cable for charging.

*Video: This video demonstrates the battery installation process and how to charge the device using a Type-C fast charging cable. It highlights the 700mAh battery capacity, capable of over 5,000 measurements, and a full charge time of 30 minutes.*

## 5. OPERATING MODES

## 5.1 Power On/Off

- **Power On:** Short press the 'MEAS' button to turn on the device. The laser will stand by for measurement.
- **Power Off:** Long press the 'OFF' button to turn off the device. The device will automatically shut off without any operation within 120 seconds (laser shuts off after 30 seconds).

## 5.2 Basic Measurement Functions

# SCENE DISPLAY



*Image: An illustration depicting multiple measurement methods available on the device, including single measurement, continuous measurement, distance, area, volume, and Pythagorean calculations.*

- **Single Measurement:** Press the 'MEAS' button once to activate the laser, then press again to take a single distance measurement.
- **Continuous Measurement:** Long press the 'MEAS' button for 2-3 seconds to enter continuous measurement mode. The maximum, minimum, and current values will be displayed. Short press 'MEAS' again to stop.
- **Area Measurement:** Press the function switch button until the area symbol appears. Take two consecutive measurements (length and width). The device will calculate and display the area.
- **Volume Measurement:** Press the function switch button until the volume symbol appears. Take three consecutive measurements (length, width, and height). The device will calculate and display the volume.
- **Pythagorean Mode:** Press the function switch button until the Pythagorean symbol appears. Follow the on-screen prompts to take the required measurements (e.g., hypotenuse and one side) for indirect length

calculation. For best accuracy, use a tripod for indirect measurements.

*Video: This video demonstrates various measurement functions including Pythagorean theorem for indirect measurements, area calculation, and volume calculation, showing the step-by-step process for each mode.*

### 5.3 Angle Measurement

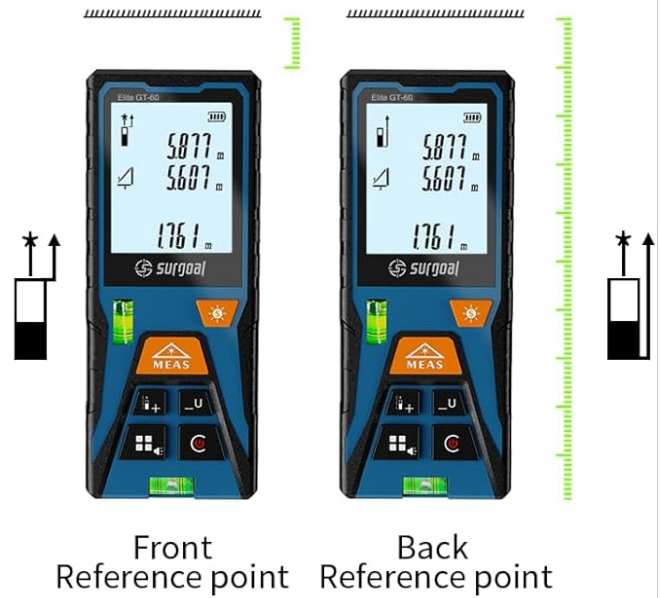


*Image: The SG SURGOAL Elite G-120 Laser Measuring Meter is shown displaying a real-time angle of 90 degrees, indicating its built-in level function. This feature replaces traditional bubble levels for more intuitive and precise angle measurements.*

*Video: This video illustrates the electrical angle measurement feature, demonstrating how the device displays tilt in real-time, replacing traditional bubble levels for intuitive operation.*

## 6. UNIT AND REFERENCE POINT SETTINGS

### 6.1 Unit Switching



## UNIT CONVERSION

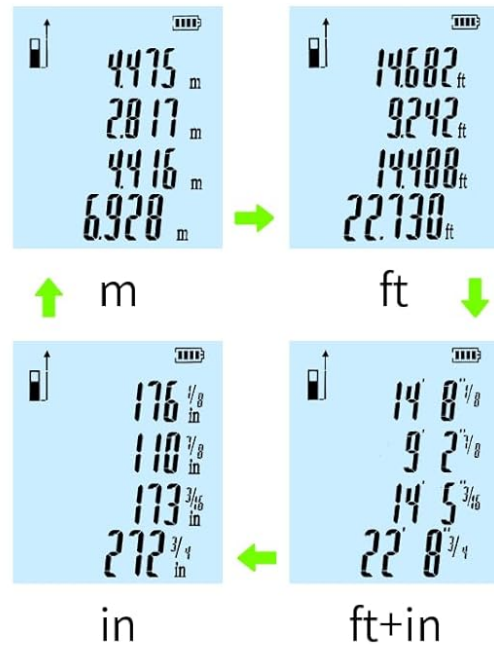


Image: A visual guide demonstrating the unit conversion capabilities of the device, showing how to switch between meters (m), feet (ft), and inches (in) for various measurement displays.

To switch measurement units (Ft/Ft+in/in/M), long press the 'U' button. The device supports various units to suit your preference.

## 6.2 Reference Point Adjustment

The device allows you to change the measurement reference point (front, rear, or tripod mount). By default, the measurement is taken from the rear of the device. To change the reference point, press the reference switch button (usually indicated by an icon showing the reference point). This is crucial for accurate measurements depending on where the device is placed.

## 7. DATA MANAGEMENT

The SG SURGOAL Elite G-120 can store up to 30 groups of measurement data. This feature is useful for recording multiple measurements without needing to write them down immediately.

- **Saving Data:** After a measurement is taken, the result is automatically stored. You can navigate through stored data using the arrow buttons.
- **Deleting Data:** To clear the current measurement or delete stored data, use the 'CLEAR/OFF' button. A quick press usually clears the current display, while a long press can clear stored memory or turn off the device.

## 8. SELF-CALIBRATION

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To ensure the highest accuracy, the device may require self-calibration. Refer to the detailed instructions in the included user manual for the specific steps to perform self-calibration. Typically, this involves measuring a known distance multiple times and adjusting the device's internal settings to match the known value.

## 9. TROUBLESHOOTING

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If you encounter any issues with your SG SURGOAL Elite G-120, please refer to the following common problems and solutions:

- **Error Message: Out of Range**  
Cause: The measured distance is outside the device's specified range (120m/393.7ft).  
Solution: Measure a target within the operational range.
- **Error Message: Low Battery**  
Cause: Batteries are low.  
Solution: Replace the 3 AAA batteries or recharge if using rechargeable batteries.
- **Error Message: Signal Too Weak/Strong**  
Cause: The laser signal is too weak (e.g., measuring a dark or distant object) or too strong (e.g., highly reflective surface at close range).  
Solution: Use a high-reflectivity target plate for weak signals or a low-reflectivity target for strong signals. Ensure the target is within optimal conditions.
- **Inaccurate Measurements:**  
Cause: Unstable measurement, incorrect reference point, or environmental factors (e.g., strong sunlight, uneven surface).  
Solution: Ensure the device is stable, verify the correct reference point is selected, and perform measurements under favorable conditions. Consider using a tripod for long distances or indirect measurements.

## 10. SPECIFICATIONS

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Feature	Detail
Measuring Range	120 m (393.7 ft)
Accuracy	±2.0mm
Laser Class	Class 2
Laser Type	490-690nm, <1mW (Green Beam)
Response Time	0.5 seconds
Angle Sensor	Real-time electronic angle readings

Memory	30 groups of data
Auto Laser Off	30 seconds
Auto Power Off	120 seconds
Batteries	3 AAA batteries (included)
Material	Plastic, Rubber
Product Dimensions	12.7 x 5.08 x 2.54 cm
Item Weight	200 g
Water Resistance Level	Waterproof

## 11. SAFETY INFORMATION

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Please read and adhere to the following safety guidelines to prevent injury and ensure proper operation of your laser measuring meter:

- This product is a Class II laser device (<1mW).
- **DO NOT** stare directly into the laser beam.
- **DO NOT** point the laser beam at people or animals.
- Avoid direct eye exposure to the laser beam.
- Keep the device out of reach of children.
- Use the device only for its intended purpose as described in this manual.

## 12. WARRANTY AND SUPPORT

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The SG SURGOAL Elite G-120 Laser Measuring Meter is covered by a 2-year warranty. This warranty covers defects in materials and workmanship under normal use.

For any questions, technical assistance, or warranty claims, please contact our responsive customer support team. Details can be found on the product packaging or our official website.