

# LM50D/LM100D User Manual



- 1. Distance button**  
Short press to enter single measurement mode;  
Long press to enter continuous measurement mode
- 2. Function button**  
Press to switch measurement functions
- 3. Add/language switching**  
Short press to add;  
After entering the history, short press to page up;  
Long press to switch between Chinese/English voice broadcast
- 4. Reference/unit button**  
Short press to select front/tripod mount/rear reference;  
Long press to select unit of m/ft/in/ft+in
- 5. On/off/back button**  
Long press to turn on/off the device;  
Short press to return to single measurement
- 6. History button**  
Short press to enter history;  
Continuously short press to page up
- 7. Subtract/voice button**  
Short press to subtract;  
After entering the history, short press to page down;  
Long press to turn on/off voice
- 8. Wheel measurement button**  
Short press to turn on/off wheel measurement
- 9. Wheel**  
In wheel measurement, roll the wheel along the measurement path to measure the distance.  
Tip: Each time the wheel measurement is turned on, the measured data in the first rolling direction is positive, and the data in the opposite direction is negative.
- 10. Battery compartment**
- 11. Tripod mount**

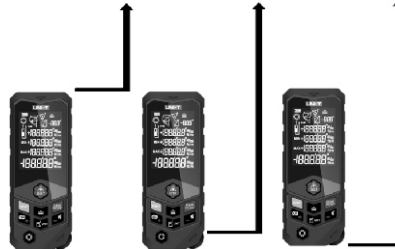
### Measurement Function Icons

	Wheel measurement
	Single/continuous measurement
	Area measurement
	Triangular area measurement
	Volume measurement
	Direct Pythagoras measurement
	Indirect Pythagoras measurement ①
	Indirect Pythagoras measurement ②
	Auto horizontal measurement
	Auto vertical measurement

### Operation Instructions

Turn on the meter and it will enter the single measurement by default. Press and the flashing edge is the edge to be measured.

\* Please pay attention to the measurement reference. The starting point will be different when different reference points are selected. The measurement reference in this manual refers to the rear reference.



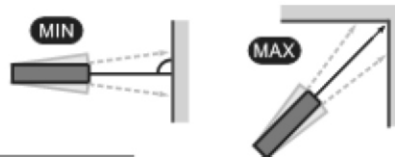
#### Single Measurement

Turn on the meter and it will enter single measurement mode by default. Point the laser at the measurement target, then press and the measurement result will be displayed at the bottom of the screen.

#### Continuous Measurement (Max/Min Measurement)

This function can be used to measure the diagonal of a house, look for levels, stake out, etc. Long press to enter the continuous measurement. Point the laser at the measurement target, then press to stop measuring. The MIN/MAX/current measured value will be displayed on the screen.

\* This function will stop automatically after 5 minutes of continuous measurement.

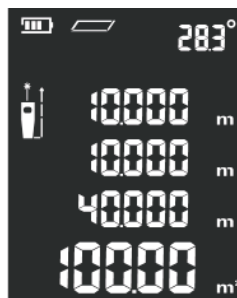


#### Wheel Measurement

Press to turn on the wheel measurement, scroll the wheel from the start point to the end point, then press to end the measurement. The wheel auxiliary measurement can be turned on in single/area/volume measurement modes. Note: Please pay attention to positive and negative directions during wheel measurement. Note: Please try to keep it balanced when measuring.

#### Area Measurement

- 1) Press to switch to area measurement .
- 2) According to the flashing edge, point the laser at the first point of the target, press to measure the first edge (length).
- 3) Point at the second point, press to measure the second edge (width).
- 4) The calculation results of the length, width, circumference and area will be displayed on the screen.



#### Triangular Area Measurement

- 1) Press to select the triangular area measurement .
- 2) According to the flashing edge, press to measure the three edges (①②③) of the triangle separately.
- 3) The calculation result of the triangular area will be displayed at the bottom of the screen. Note: If the measured three edges cannot form a closed triangle, it is a calculation error.

#### Volume Measurement

- 1) Press to switch to volume measurement .
- 2) According to the flashing edge, point the laser at the first point of the target, press to measure the first edge (length).
- 3) Point at the second point of the target, press to measure the second edge (width).
- 4) Point at the third point of the target, press to measure the third edge (height).
- 5) The volume calculation result will be displayed at the bottom of the screen.



#### Pythagoras Measurement

All Pythagoras measurements can be applied to different plane measurements, just ensure that the right-angle side is perpendicular to the object being measured. Note: In Pythagorean Theorem, the right-angle side cannot be longer than the hypotenuse; otherwise a calculation error will occur.

#### Direct Pythagoras Measurement

- 1) Press to switch to direct Pythagoras measurement .
- 2) According to the flashing edge, point the laser at the first point of the target, press to measure the hypotenuse.
- 3) Rotate to the direction perpendicular to the target with the set reference as center, press to measure one right-angle side.
- 4) The calculation result of the other right-angle side is displayed at the bottom of the screen.



#### Indirect Pythagoras Measurement ①

- 1) Press to switch to indirect Pythagoras measurement ① .
- 2) According to the flashing edge, point the laser at the first point of the target, press to measure the first hypotenuse.
- 3) Rotate to the direction perpendicular to the target with the set reference as center, press to measure one right-angle side.

- Rotate to the third point of the target with the same reference as center, press to measure the second hypotenuse.
- The calculation result of the length between the first point and the third point is displayed at the bottom of the screen.



#### Indirect Pythagoras Measurement ②

- Press to switch to indirect Pythagoras measurement ② .
- Point the laser to the first point of the target, press to measure the first hypotenuse.
- Rotate to the second point of the target with the set reference as center, press to measure the second hypotenuse.
- Rotate to the direction perpendicular to the target with the same reference as center, press to measure the third right-angle side.
- The calculation result of the length between the first point and the second point is displayed at the bottom of the screen.



#### Auto Horizontal Measurement

- Press to switch to auto horizontal measurement .
- According to the flashing edge, point the laser to the first point of the target and press .
- The angle degree between the hypotenuse and the horizontal edge, the length of the hypotenuse/vertical edge/horizontal edge will be displayed on the screen from top to bottom.



#### Auto Vertical Measurement

- Press to switch to auto vertical measurement .
- According to the flashing edge, point the laser to the first point of the target, press to measure the first hypotenuse.

- Rotate to the second point of the target with the set reference as center, press to measure the second hypotenuse.
- The angle degree between both hypotenuses, the length of both hypotenuses, the vertical distance will be displayed on the screen in sequence.



#### Point to Point Measurement

- Press to select the point to point measurement and a dialog box of "please wait..." will appear.
- Make sure that the distance meter is not moving, when the dialog box disappears, point at the first point of the target according to the red edge indication. Press to measure the length to the first point ①.
- Rotate to the second point of the target with the set reference as center, press to measure the length to the second point ②.
- The angle degree between both hypotenuses and the length of ①/②, the length between the two points will be displayed on the screen.

#### Addition/Subtraction

In the single/wheel/area/volume measurement mode, after the first result is measured, you can press +/- buttons to add or subtract the next measurement result. The calculation result will be displayed at the bottom of the screen.

Range (m)	50 or 100
Accuracy (mm)	$\pm(2.0\text{mm}+5\times 10^{-5} D)$
Wheel measurement	✓
Single measurement	✓
Continuous measurement	✓
Area measurement	✓
Triangular area measurement	✓
Volume measurement	✓
Direct Pythagoras	✓
Indirect Pythagoras ①	✓
Indirect Pythagoras ②	✓
Auto horizontal measurement	✓
Auto vertical measurement	✓
Point to point measurement	✓
Addition/Subtraction	✓
Angle sensor	✓
Display type	2.4" EBTN screen
Voice broadcast	Chinese/English
Measurement references	Front/tripod mount/ rear reference
Measurement units	m/ft/in/ft+in
Data logging	20 groups
Auto power off	3 minutes without operation
Laser class	2
Laser type	630-670nm, <1mW

Battery type	3 AAA batteries or AAA rechargeable batteries
Operating temperature	0°C ~ +40°C (32°F ~ +104°F)
Storage temperature	-20°C ~ 70°C (-4°F ~ 158°F)
Size (mm)	137 x 55 x 26
Weight (g)	125g

#### 1. Range

The range data is based on the rear reference (default); the maximum range may vary depending on the model version, please refer to the product packing for the actual ranges.

#### 2. Accuracy ("D" represents the measured length)

Under good measurement conditions (good measurement surface/room temperature/indoor lighting, etc.): up to the rated range.

Under bad measurement conditions (too much light, weak reflection on the surface of the measured objects or large temperature difference, etc.): the error may increase.

Tip: Use a target board or a good reflective surface in case of poor daylight or target reflection.

#### 3. In the ideal state, the short distance accuracy

can be up to 1mm (Ideal state refers to constant speed (speed < 1m/s) and flat contact surface; short distance means <1.5m)

#### 4. Angle Error

0.1° is the error caused by the temperature, D is +/-0~45°.

For example, the 0 degree error is +/-0.3° at room temperature, the 45 degrees error is +/-0.85° at non-room temperature.

#### Fault Code – Problems and Solutions

All information is displayed in code or "Error". The following shows the codes and their explanations and the corresponding solutions:

Code	Problems	Solutions
204	Calculation error	Follow the instructions and operate again
220	Low battery	Please replace the battery or charge it
255	The reflected light received is weak, or the measurement time is too long	Please improve the reflective surface (use a reflector, white paper, etc.)
256	The received signal is too strong	Please improve the reflective surface (use a reflector, or do not aim at strong light)
261	Over range	Please measure within the range
500	Hardware malfunction	If it still appears after the meter has been turned on/off multiple times, please contact your dealer.

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