LM50A/LM70A/LM100A/LM120A
Laser Distance Meter User Manual

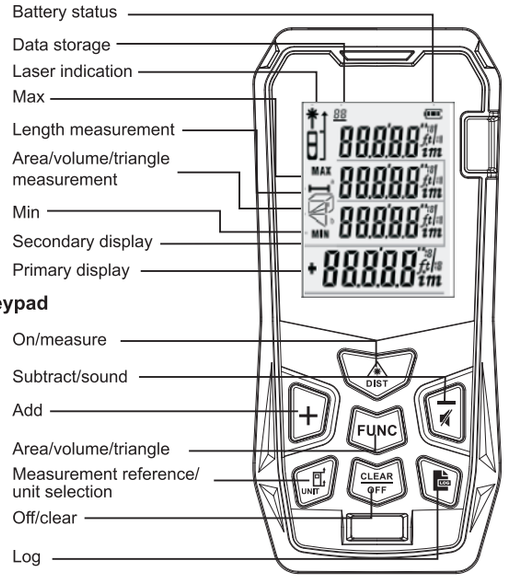
Safety Information

Before using the meter for the first time, please read the safety information and operating instructions carefully.

- Use the meter only as specified in this manual. Otherwise, it may cause damage to the meter, affect measurement accuracy and result in personal injury.
- Do not disassemble or repair the meter without authorization. Do not refit or change the performance of the laser transmitter illegally. Please keep the meter properly, do not place it where children can reach it, and avoid use by irrelevant personnel.
- Do not irradiate the laser at eyes and other parts of the body, and on the surface of highly reflective objects.
- The electromagnetic radiation of the meter may cause interference to other equipment. Please do not use the meter near airplanes, medical equipment or in flammable and explosive environments.
- The replaced batteries and discarded meters cannot be disposed of together with domestic garbage. Please dispose of them in accordance with relevant national or local laws and regulations.
- If the meter has any quality problems, or if users have any questions about the use of the meter, please contact the local dealer or manufacturer in time.

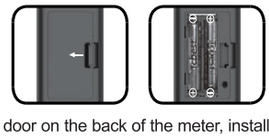
Product Introduction

Display



Keypad

Batteries



1. Open the battery door on the back of the meter, install the battery according to the polarity instructions, and close the battery door.
2. The meter can only use 1.5V AAA alkaline batteries.
3. When the meter is not used for a long time, please take out the battery to prevent it from corroding the meter's main body.

Power On and Function Settings

1. Power On/Off

In the shutdown state, press DIST, the meter and the laser will be started at the same time.

In the power-on state, press and hold CLEAR/OFF for 3 seconds to turn off the meter. If no operation is performed within 150 seconds, the meter will automatically shut down.

2. Unit Settings

Long press UNIT to enter the unit setting state and the current unit can be reset. The default unit of the meter is 0.000m. There are 6 optional units.

Measurement units:

	Length	Area	Volume
1	0.000 m	0.000 m^2	0.000 m^3
2	0.00 m	0.00 m^2	0.00 m^3
3	0.0 in	0.00 ft^2	0.00 ft^3
4	0 1/16 in	0.00 ft^2	0.00 ft^3
5	0'00" 1/16	0.00 ft^2	0.00 ft^3
6	0.00 ft	0.00 ft^2	0.00 ft^3

3. Measurement Reference Settings

Short press UNIT to measure from front or end. The default setting is end measurement.

4. Backlight

The backlight is automatically turned on and off. It will turn on for 15 seconds when any button is pressed. The backlight will automatically turn off if there is no operation after 15 seconds to save power.

5. Sound

Long press to turn on or off the sound of the beeper.

6. Self-Calibration

Self-calibration function can ensure the measurement accuracy.

Calibration method: In the shutdown state, press and hold CLEAR/OFF, and then short press DIST to turn on the meter. When the screen shows 'CAL' with a flashing number at the bottom, the meter enters the self-calibration mode. At this time, users can press + to calibrate values according to the error of the meter.

Calibration range: -9~9mm

Examples: The actual distance is 3.780m.

If the measured value is 3.778m, which is 2mm smaller than the actual value, press **+** to increase the calibration value by 2mm.

If the measured value is 3.783m, which is 3mm larger than the actual value, press to lower the calibration value by 3mm.

After adjustment, press DIST to save the calibration results.

Measurement Modes

1. Single Measurement

While the meter is on, press DIST to transmit the laser. Press DIST again to make the distance measurement. The measurement results will show on the primary display.

2. Continuous Measurement

While the meter is on, long press DIST to enter the continuous measurement state. The maximum and minimum values during the measurement will show on the secondary display. The measurement results will show on the primary display. Short press DIST or CLEAR/OFF to exit the continuous measurement.

3. Area Measurement

Press **FUNC** 1x. The ▭ symbol will appear on the display and one side of the rectangle will flash.

Press DIST to make the first measurement (length).

Press DIST again to make the second measurement (width).

The meter will automatically calculate the area, and the result will show on the primary display. The length and width will show on the secondary display.

During the measurement process, press CLEAR/OFF to clear the measurement result and re-measure.

Press CLEAR/OFF to exit the area measurement and enter the length measurement mode.

4. Volume Measurement

Press **FUNC** 2x. The symbol will appear on the display.

Press DIST to make the first measurement (length).

Press DIST again to make the second measurement (width).

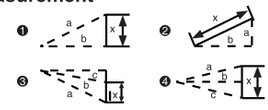
Press DIST again to make the third measurement (height).

The meter will automatically calculate the volume, and the result will show on the primary display. The length, width and height will show on the secondary display.

During the measurement process, press CLEAR/OFF to clear the measurement result and re-measure.

Press CLEAR/OFF to exit the volume measurement and enter the length measurement mode.

5. Indirect Measurement



The meter has four modes that use the Pythagorean theorem to measure the distance of one side of a triangle, which is convenient for users to perform indirect measurement in a complex environment.

(1) Measure the hypotenuse and base-side, indirectly measure the height

Press **FUNC** 3x.
Press DIST to measure the length of the hypotenuse (a).
Press DIST to measure the length of the base-side (b).
The meter will automatically calculate the length of the leg (x).

(2) Measure the leg and base-side, indirectly measure the hypotenuse

Press **FUNC** 4x.
Press DIST to measure the length of the leg (a).
Press DIST to measure the length of the base-side (b).
The meter will automatically calculate the length of the hypotenuse (x).

(3) Press FUNC 5x, the hypotenuse flashes

Press DIST to measure the length of the hypotenuse (a).
Press DIST to measure the length of another hypotenuse (b).
Press DIST to measure the length of the base-side ©.
The meter will automatically calculate the length of the leg (x).

(4) Press FUNC 6x, the hypotenuse flashes

Press DIST to measure the length of the hypotenuse (a).
Press DIST to measure the length of the base-side (b).
Press DIST to measure the length of another hypotenuse ©.
The meter will automatically calculate the length of the leg (x).

In the Pythagorean measurement mode, the length of the leg must be less than the length of the hypotenuse; otherwise the meter will display an error signal prompt. In order to ensure the measurement accuracy, users should make sure to measure from the same starting point and in the order of hypotenuse and leg.

6. Addition/Subtraction

The single distance measurement values can be added or subtracted. After getting the result when taking a single distance measurement, press + to enter the addition/subtraction mode.

Short press +, the "+" symbol will show on the primary display, and then it will enter the addition mode. The addition value of the last and the current measurement values will show on the display.

Short press −, the " - " symbol will show on the primary display, and then it will enter the subtraction mode. The subtraction value of the last and the current measurement values will show on the display.

Not only the distance can be added and subtracted, but also the area and the volume.
Area addition: Measure the first area and get the result, as shown in Figure 1 below. Then press M to measure the second area and get the result, as shown in Figure 2 below, and a plus sign will be displayed in the lower left corner. Finally, press DIST to get the result of adding these two areas, as shown in Figure 3. The addition and subtraction of volume is similar to it.

Figure 1

Figure 2

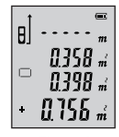


Figure 3

7. Data Storage

If the current data is valid when measuring, press and hold M for 3 seconds, and the data will be automatically stored in the meter memory. In the area, volume and indirect measurement modes, the data can also be stored after all the tests are over. At this time, the meter will store the complete measurement record under this mode.

8. View/Delete Data

Short press M to query the stored data. Press + to scroll forwards, and press − to scroll backwards. When viewing data, short press CLEAR/OFF to delete the current record, and long press CLEAR/OFF to delete all records. Press M or DIST to exit.

Error Codes

Code	Cause	Resolution
Err	Out of distance measurement range	Use the meter in designated environments.
Err1	Signal too weak	Measure the target point with strong reflection ability.
Err2	Signal too strong	Measure the target point with weak reflection ability.
Err3	Battery power too low	Replace batteries.
Err4	Out of operating temperature range	Use the meter within the range.
Err5	Pythagorean measurement error	Re-measure to ensure that the hypotenuse is longer than the leg.

Specifications

Items	LM50A	LM70A	LM100A	LM120A
Measurement range	50m	70m	100m	120m
Measurement accuracy	±(2mm+5*10^{-5}D)			
Continuous measurement	✓			
Area/volume measurement	✓			
Pythagorean measurement	✓			
Addition/subtraction	✓			
Area/volume addition/subtraction	✓			
Max/min	✓			
Self-calibration	✓			
Laser class	Class II			
Laser type	Class 2 630-670nm, ＜1mW			
Data storage	99 groups			
Auto laser off	20s (single measurement)			
Auto power off	About 150s			
Battery life	Up to 8000 measurements			
Sound prompt	✓			
Storage temperature	−20˚C~60˚C			
Operating temperature	0˚C~40˚C			
Storage humidity	20%~80%RH			
Batteries	1.5V 2xAAA			
Product size	112x50x25mm			

* "d" means actual distance.
** Under harsh environments, such as excessive sunlight and ambient temperature fluctuations, weak reflection on reflective surfaces, and insufficient battery power, the measurement results will have errors. At this time, using the target reflector can improve the measurement accuracy.

Maintenance

Do not place the meter in a high temperature and humidity environment for a long time. When not using the meter for a long time, please take out the battery and put the meter in the carrying bag, and store it in a cool and dry place.

Remove dirt with a moist, soft cloth. Do not use aggressive detergents or solutions. The laser window and focusing lens can be wiped according to the method of wiping the optical device.

Packing List

All accessories are shown in the table below.

Items	Accessories	Quantity
1	Meter	1
2	Carrying bag	1
3	AAA batteries	2
4	User manual	1
5	Gift box	1

UNI-T
UNI-TREND TECHNOLOGY (CHINA) CO., LTD.
No.6, Gong Ye Bei 1st Road,
Songshan Lake National High-Tech Industrial
Development Zone, Dongguan City,
Guangdong Province, China