Elitech®

Innovation Preceding All

Laser Distance Meter
LDM-50D

Safety Regulations

Please read the safety regulations and operation guide carefully before operating.

⚠ Please read all of the operational guide and safety regulations in this manual before operation. Improper operations without complying with this manual may cause damage to the device, influence on measurement result or cause personal injury to the user or a third party.

⚠ The instrument is not allowed to disassemble or repair in any ways. It is forbidden to do any illegal modification or performance change for the laser emitter. Please keep it out of reach of children and avoid being used by any irrelevant person.

⚠ It is strictly prohibited to shoot eyes or other parts of body with the laser. It is not allowed to take the laser to shoot the surface of any highly reflective objects.

⚠ Due to electromagnetic radiation interference to other equipment and devices, please don't use the meter in the plane or around medical equipment, don't use it in inflammable, explosive environment.

⚠ Discarded batteries or meter device should not be processed just like household garbage, please handle them in line with related law and regulations.

⚠ Any quality issues or any questions on the meter, please contact local distributors or manufacturer in time, we are ready to offer solutions for you.

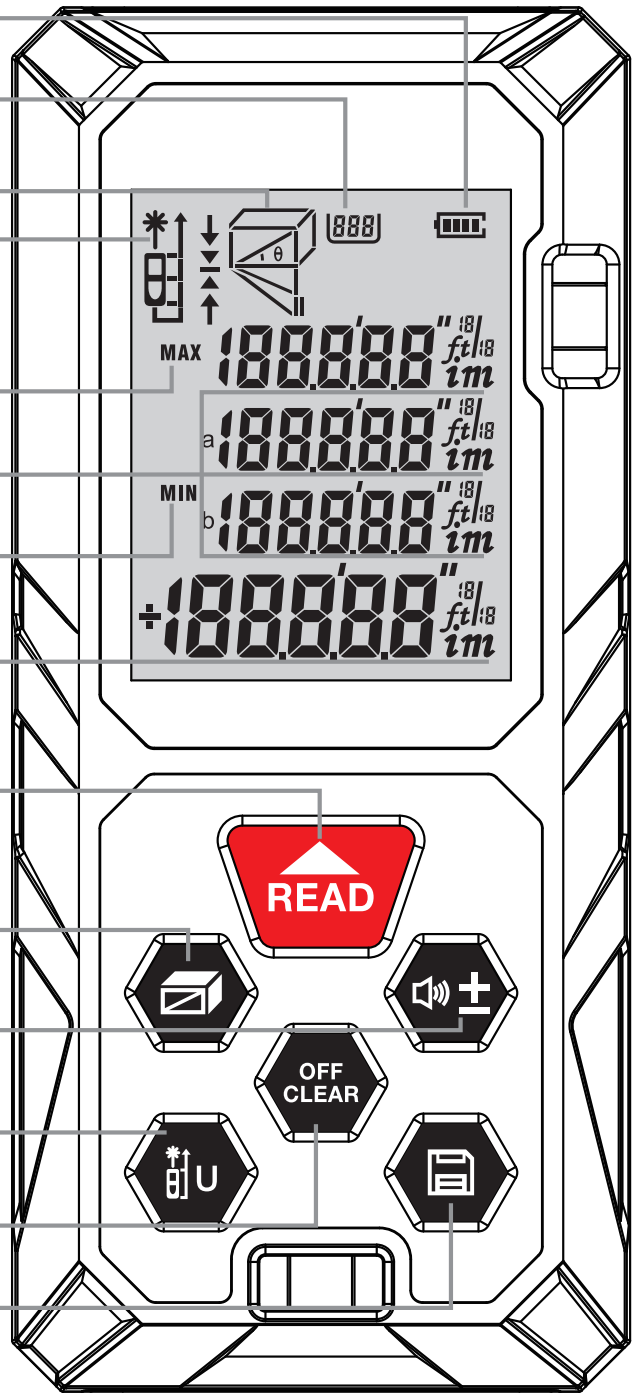
1. Display / Button

Display

- Power Supply
- Record
- Length, Area, Volume and Pythagorean
- Laser on
- Maximum Value
- Auxiliary Display
- Minimum Value
- Major Display

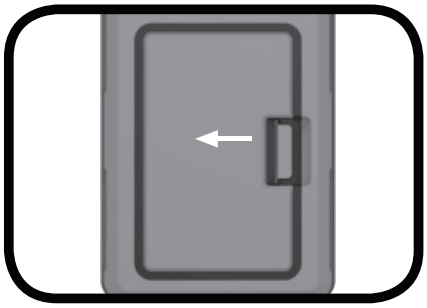
Button

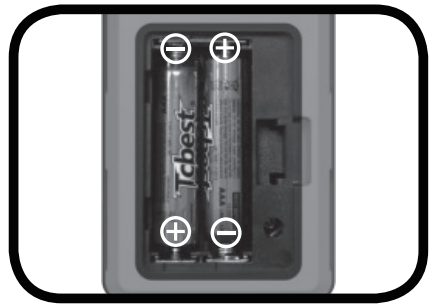
- Turn on/Measuring
- Area/Volume/ Pythagorean Mode
- Addition & Subtration/Sound
- Reference Point/ Unit Switch
- Turn off/Remove
- Save



2. Batteries Installation

- **Battery Installation and Replacement**





- Open the battery door on the back of device, and place batteries according to correct polarity, then close the battery door.
- 1.5 V AAA battery is applied to the meter.
- If not used for a long time, please take out the batteries to avoid battery corrosion to meter body.

3. Start the Instrument / Menu Setting

- **Turn On/Off the Instrument**

  Under off state, press READ , device and laser get started simultaneously and the device enters the measurement mode.

  Under on state, long press OFF CLEAR for 3 seconds to turn the device off. The device can also be shut off without any operation within 150 seconds.

● Unit Setting

Long press U reset current measurement unit, the default unit is: 0.000m. There are 6 units for selection.

Measurement units:

	Length	Area	Volume
1	0.000m	0.000 m^2	0.000 m^3
2	0.00m	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

● Changing Reference Point

Short press U to change the reference point.
The default reference point is the terminal baseline.

● Backlight on/off

The backlight is set to turn on and off automatically. The backlight will be on for 15 seconds if any key is pressed. The backlight will automatically turn off if there is no operation within 15 seconds to save power.

● Keys Sound

Long press ◁)) to turn on or off the buzzer.

4. Self-Calibration

Self-calibration function is provided to ensure the precision of the device.

First, make sure the device is power off, long press OFF CLEAR then press READ to start the device. Next, loose READ when "CAL" and a twinkling figure show at the display. Then the device enters self-calibration mode. At this time, the user can adjust the figure by ±/speaker and save icon according to the error of the instrument.

The adjustment range is -9~9mm. Finally, long press READ to save the setting.

For example, the actual distance is 3.780m.

If the measured value is 3.778m, 2mm smaller than the actual value, the calibration value can be adjusted up by 2mm on the existing basis with ±/speaker through the calibration function.

If the measured value is 3.783m, 3mm larger than the actual value, the calibration value can be lowered by 3mm on the existing basis with save icon through the calibration function.

After the adjustment, press READ to save the calibration result .

5. Single Measurement

Under the test mode, press READ , and the instrument emits laser to lock the measuring point. Press READ again for single distance measurement, and the measurement result will be displayed in the major display area.

6. Continuous Measurement

Under the test mode, long press READ to enter the continuous measurement mode, and the maximum and minimum measured values measured in the continuous measurement process will display in the auxiliary display area.

The current measurement value will display in the main display area. Short press READ or OFF CLEAR to exit the continuous measurement mode.

7. Area Measurement

Press , ▭ shows at the screen. One of the side of rectangle blinks at the display, please follow the below instructions for area measurement:

Press READ once for length
Press READ again for width

The device automatically calculates the area and shows the result in the major display area. The measuring results of the length and width of the rectangle will be showed in the auxiliary display area.

Press OFF CLEAR , clear off the result and measure again if necessary.

Press OFF CLEAR again to exit the mode.

8. Volume Measurement

Press twice to enter volume measurement mode. A will show at the top of the screen. Please follow the below instruction for volume measurement:

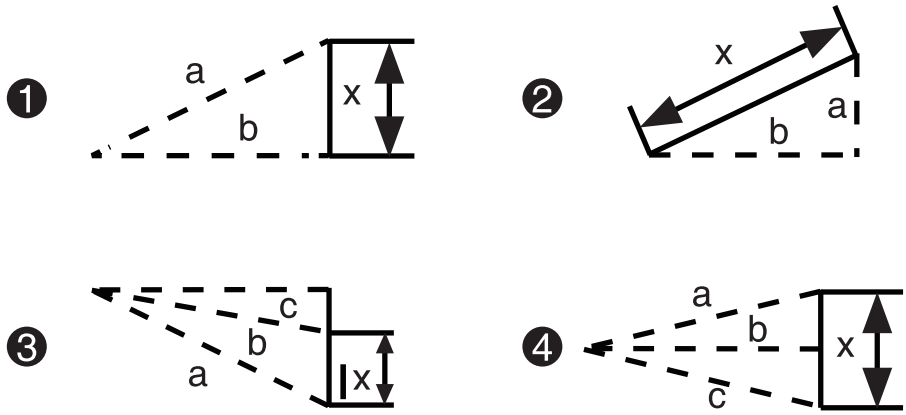
Press READ for length
Press READ again for width
Press READ thirdly for height

The device automatically calculates the volume and shows the result in the major display area.
The measuring results of the length, width and height of the cube will be showed in the auxiliary display area.

Press OFF CLEAR , clear off the result and measure again if necessary.

Press OFF CLEAR again to exit the mode.

9. Pythagoras



There are four Pythagoras modes which is convenient for indirect measurement in a specific complex environment.

1. Calculate the second leg by measuring the hypotenuse and another leg.

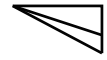
   Short press [▭] three times to enter Pythagoras mode, the hypotenuse of ◺ blinking.

   Press [READ], measure the length of hypotenuse (a)
   Press [READ], measure the length of one leg (b)
   Device automatically calculates the length of another leg (x)

2. Calculate the hypotenuse by measuring the length of two legs.

   Short press [▭] four times, when one leg of ◺ is blinking.

   Press [READ], measure the length of one leg (a)
   Press [READ], measure the length of another leg (b)
   Device automatically calculates the length of hypotenuse (x)

3. Press [ ] five times till the one side of  blinking on the screen.

Press [READ], measure the length of one side (a)
Press [READ], measure the length of the median line (b)
Press [READ], measure the length of another side (c)
Device calculates the length of the leg in full line (x)

4. Press [ ] six times till the hypotenuse of  blinking on the screen.

Press [READ], measure the length of one hypotenuse (a)
Press [READ], measure the length of one leg (b)
Press [READ], measure the length of another hypotenuse(c)
Device calculates the length of the leg in full line (x)

Legs must be shorter than hypotenuse, or there will be "err" showed at screen. In order to guarantee the accuracy, please make sure all measurements are started from the same point and in the order of hypotenuse and legs.

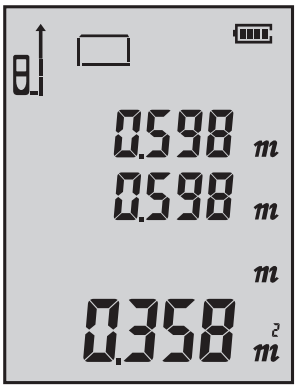
10. Addition / Subtraction

The device can be used for the addition and subtraction of single measurement distance. After obtaining the result of a single measurement, enter the selection of addition/subtraction function through [±].
Short press [±], when "+" shows in the major display area, the device enters addition mode. The screen displays the sum of the last measured value and the current measured value.

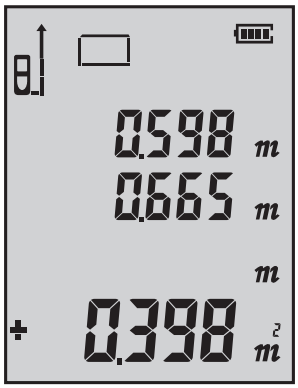
Short press , when "-" shows in the major display area, the device enters subtraction mode. The screen displays the difference between the last measured value and the current measured value.

Not only length can be caculated by addition and subtraction, but also area and volume. Take area as an example:

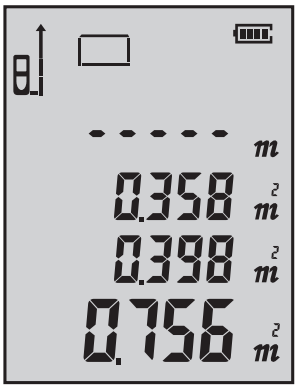
Measure the first area and the result is shown in PIC1. Then press to measure the second area and the result is shown in PIC2, and "+" will appear in the lower left corner of the screen. Finally, press READ to get the sum of two areas, as shown in PIC3.



PIC1



PIC2



PIC3

11. Record Function

Long press [M] for 3s to record your measuring result under measuring mode.

It can also record the result under Area, Volume and Pythagoras mode. All the calculating records can be saved by the device.

● Read / Delete the Records

Short press [M] , read the records by press [±] [▭] . Shortpress [OFF CLEAR] to delete recent record and long press [OFF CLEAR] to clear up all the records. Press [READ] or [M] to exit record mode.

12. Tips

During use, the following prompts may be displayed in the major display area:

Prompt	Cause	Solution
Err	Out of the measurement range	Use the device within the measurement range.
Err1	Signal is too weak	Choose the surface with stronger reflection. Use the reflecting plate.
Err2	Signal is too strong	Choose the surface with weaker reflection.
Err3	Low battery voltage	Replace batteries.
Err4	Beyond working temperature	Use the device in the specified temperature.
Err5	Pythagoras measuring breaks the rules	Re-measure and ensure that hypotenuse is longer than legs.

13. Technology Specifications

ITEM	LDM-50D
Working Range	0.05-50m
Precision	±(2mm+d*1/10000)*
Continuous Measurement	√
Area/Volume Measurement	√
Pythagorean Measurement	√
Add and Subtract Measurement	√
Area &Volume Addition/Subtraction	√
Min/Max Value	√
Self-Calibration	√
Voice Prompt	√
Laser Level	II
Laser Type	630-670nm, <1mW
Max Storage	99 units
Automatically Cut off Laser	20s (single measurement)
Auto Power-off	150s
Battery Life	8000 times for single measurement
Storage Temperature	-20° C~60° C
Working Temperature	0° C~40° C
Storage Humidity	20%~80% RH
Battery	2x1.5V AAA
Dimension	112x50x25mm

* "d" indicates the actual distance.
** In harsh environments, such as strong sunlight, large fluctuations in ambient temperature, the reflecting surface with weak reflection effect, and low battery, there will be a large error in the measurement results. In this case, to enhance the measurement effect, please use the target reflector.

14. Instrument Maintenance

- The meter should not be stored in high temperature and humid environment for a long time. If it is not used very often, please take out the battery and place the meter in the portable bag and store it in cool and dry place.
- Please keep the device surface clean. Use a soft wet cloth to wipe the dust on the surface. Do not use corrosive liquid to clean the device. Use the same method as wiping optical devices to wipe the meter and focusing mirror.

15. Packing List

Please check if all accessories are complete according to the following list.

No.	Item	Unit	QTY	Note
1	Meter	pc	1	
2	1.5V AAA Battery	pc	2	
3	User Manual	pc	1	
4	Gift Box	pc	1	
5	Hand Strap	pc	1	

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the detailed manual