

BST-LDM10

Laser Distance Meter



## INSTRUCTION MANUAL





**Please read the complete instructions including safety precautions before attempting any testing.**

Please read all of the operational guide and safety regulations in this manual before operation. Improper operations without complying with this manual guided could cause damage to the device, influence on measurement result or bodily injury to the user.

The instrument is not allowed to disassemble or repair on any ways. It is forbidden to do any illegal modification or performance change for laser emitter. Please keep it out of reach of children and avoid using by any irrelevant personnel.

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 any objects' surface with strong reflecting.

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.

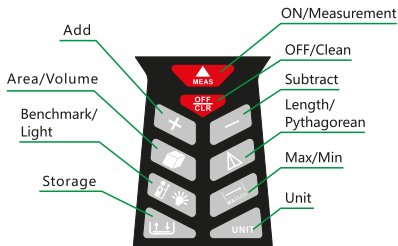
Discarded batteries or meter device shall not process just like household garbage, please handle them in line with related law and regulations.

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.

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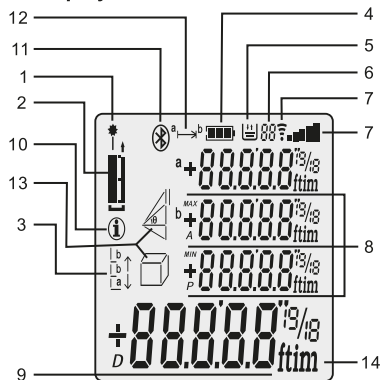
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### Keyboard:



BST-LDM10

### LCD Display:





1. Laser emission on
2. Measurement of edge
3. Lofting function
4. Battery condition
5. Data storage
6. Quantity of the data storage
7. Signal strength
8. Auxiliary display
9. The lord measurement display
10. Delay measurement
11. Blue-tooth
12. Distance measurement
13. Instructions of area, volume, Pythagorean Theorem Indirect measurement
14. Measurement unit ( $m^2$  and  $m^3$  included)

## Battery:





1. Discharge the battery door on the back of device, and place battery according to the correct polarity.
2. Only 1.5V AAA Alkaline battery is available.
3. Please take out the battery to avoid battery corrosion to the device body if not used for a long time.

## Turn on/off




1. Under off state, press , instrument and laser get starting simultaneously and stand by for measurement.
2. Under on state, long press  for 3 seconds to shut off the device. The back light will be off if no operation within 15 seconds; the laser will be off if no operation within 30sec. The device will be auto-off if no operation within 150sec.

## Measurements:



### 1. Single measurement




Short press  to turn on the device, Re-press  key for single measurement of distance, then the measured results will display on the Screen, and the results will also be stored in the system automatically.

### 2. Continuous Measurement



Short press  to turn on the device, the laser get starting. Long press  for 2 sec to start continuous measurement. The main display screen indicates the very measured result, and the Max and Min measurement results will display on the auxiliary screen. Press  to exit the mode.





### 3. Area measurement

Turn on the device, short press , the screen will show , one of the edges will flash. Complete the following operations as below.


Short press  to measure the first edge (Length)  
 Short press  to measure the second edge (Width)  
 Area will be calculated automatically by the device, and the result will show on the main display screen.  
 Press  key to remove previous results and get ready for the next measurement.





### 4. Volume measurement

Turn on the device, short press , the screen will show , one of the edges will flash. Complete the following operations as below.

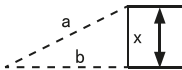
Short press  to measure the first edge (Length)  
 Short press  to measure the second edge (Width)  
 Short press  to measure the third edge (Height)  
 Area will be calculated automatically by the device, and the result will show on the main display screen.  
 Press  key to remove previous results and get ready for the next measurement.






### 5. Pythagorean proposition indirect measurement.

There are 3 kinds of pre-designed measuring mode to get unilateral distance of triangle by ways of Pythagorean proposition. This is convenient for users to do indirect measuring in certain complex environment. Press  to make mode selection.

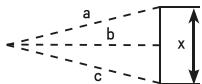
5.1) Press  key and you will see  on the screen. That is triangle with hypotenuse will flash. Press  to firstly measure the length (a) of dotted line hypotenuse according to screen prompt (as the figure). Press  to measure the length (b) of the dotted line right side (as the figure).






Then length(x) of the solid line right side will be calculated automatically by the meter.

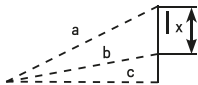


5.2) Press  key and you will see  on the screen. That is triangle with hypotenuse will flash. Press  to firstly measure the length (a) of dotted line hypotenuse according to screen prompt (as the figure). Press  to measure the length (b) of the dotted line middle side (as the figure). Press  to measure the length (c) of the dotted line (as the figure).

Then length(x) of the solid line right side will be calculated automatically by the meter.




5.3) Press  key and you will see  on the screen. That is triangle with hypotenuse will flash. Press  to firstly measure the length (a) of dotted line hypotenuse according to screen prompt (as the figure). Press  to measure the length (b) of the dotted line (as the figure). Press  to measure the length (c) of the dotted line (as the figure). Then length (x) of the solid line right side will be calculated automatically by the meter.








#### CAUTION:

Under Pythagorean proposition measurement mode, length of right side must be shorter than hypotenuse length so that instrument can make out calculation, otherwise the instrument will display error signal. Under Pythagorean proposition measurement mode, to ensure the accuracy of measurement, it must be measured from the same starting point with a measuring order of hypotenuse and right side.

#### Lofting

Press  key enter lofting mode, take the initial value on the main display screen as "a", the initial value on the auxiliary display screen as "b".

\* Then set value "a", press + to adjust the number to your desired value among 1-9, press  to adjust the digit, press one time, move one digit from right to left. Long press  to complete the lofting setting and enter into lofting measurement mode.

- \* In lofting mode, Press  to finish the measurement. The reference value a & value b still display on the screen.
- \* If press  key while setting value a, then you can set value b. If press  key while setting value b, then end the setting mode and enter into lofting measurement.
- \* After lofting measurement mode, the distance value on the auxiliary screen is the lofting value, and the value on main screen is the distance to the lofting point. If the value is positive, it means the measuring distance is further than the lofting point. If the value is negative, it means it is still not get to the lofting distance. Besides, the device will generate "beep, beep" when the device is getting to the closest lofting point, less than 0.1m. (it won't beep beep if the buzzer is off) . When arriving at the lofting point, the sound of the buzzer is obviously different.


\* The lofting distance is  $a+bxn$  ("n" is an arbitrary natural number expect zero. )

### Add / Subtract Measurement


Single distance measurement can be done through adding / subtracting to get accumulated add or subtract operation.

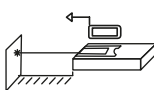
Press +/-, then the icon +/- will display on the main screen. Choose accumulated adding or subtracting measurement mode.

In the distance mode, the accumulative value or differences between previous measured value and the very measurement results will be displayed on the screen directly.

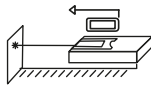
In the Area or Volume mode, after measured area or volume , Re-press  to calculate. The result will display on the main display screen.

### Measurement benchmark setting

Press  key to enter into setting of switching between front benchmark and end benchmark. System usually takes end benchmark as default.




front benchmark



end benchmark

### Function setting switch

Long press  until the icon flashes on the screen.


### Battery power instruction

When the segment are full, it means the battery is in full capacity. When the segment reduces, which mean the battery capacity is less. Pls replace new battery when the icon flashes.

### Signal strength

When the five signal segments show, it means the echo signal is strong. If the segments are less, it means the echo signal is weak.

### Data storage / Invoke

Press  key to enter into storage function, all the testing data will display on the screen. Press + - key to check your desired data.

## Units

Long press the UNIT could switch 6 kinds of recycled unit (attached photo), and the last unit will be stored when turn off.

Length	Area	Volume
0.000 m	0.000 m <sup>2</sup>	0.000 m <sup>3</sup>
0.00 m	0.00 m <sup>2</sup>	0.00 m <sup>3</sup>
0.00 ft	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup>
0' 0" <sup>1/16</sup>	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup>
0.0in	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup>
0 <sup>1/16</sup> in	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup>

## Code error display and solutions

It may appear as bellow message when using the instrument:

Code	Reasons	solutions
b.L	Low voltage	Change battery
t.L	Low temperature	Equipment heating
t.H	High temperature	Equipment cooling
d.H	Data overflow	Remeasure
S.L	Weak signal	Test strong reflection ability of target
S.H	Strong signal	Test weak reflection ability of target
H.F	Hardware error	Restart, please contact the dealer when try that fail

## Technical parameter

items	
Measurement distance	100m
Measurement precision	±2mm
Unit options	m/in/ft
Test time	0.1-3s
Laser type	II & 635nm & <1mw
Automated calibration precision	v
Continuous measurement	v
Area measurement	v
Volume measurement	v
Pythagorean measurement	v
Add and subtract measurement	v (Length&Area&Volume)
Max&Min value	v
Data storage	v
Signal indicator	v
Power indicator	v
Auto power off	6s
Backlight display	v
Key tone	v
Lofting function	v
The level of bubble	v
The type&life of battery	1.5V X 2 AAA, 15000 times
Working temperature	0~40℃
Storage temperature	-25~60℃
Dimension	108 X 51 X 31mm
Weight	88g

- Avoid to operate in such conditions (such as the environment light is too strong, or the diffuse coefficient of measuring points is too large or too small), otherwise, the measuring accuracy will have large error: ±1mm+40PPM.

- Please use the dam-board when in strong sunlight and weak reflection condition.

## Maintenance

- It is forbidden to store the device in high temperature and high humidity environment for a long time, and please take out of the battery when you not use it, keep it store in cool & dry place.
- Please keeps the device surface cleaning. Wet soft cloth is applied to clean dust, but erosion liquid is never allowed to use for the meter maintenance. Laser output window and its focus lens can be maintained according to maintenance procedures for optical device.

## Standard Packing

No	Item	Unit	QTY	Note
1	Main tester	pcs	1	NA
2	Carry case	pcs	1	NA
3	Hang rope	pcs	1	NA
4	AAA battery	Set	2	NA
5	Manual	Copy	1	NA
6	Reflector board	pcs	1	Only 100m