Laser range finder

INSTRUCTIONS

Read through carefully and understand
these instructions before use.

Thank you purchasing Hand-held laser distance measuring instrument
Please read the safety terms and instruction carefully before you use this products

1. Safety Rules

♦ Please do read all the clauses and operating instructions in the user manual before you use the product. Noncompliance of these safety terms may result to dangerous laser emission damage, electric shock and personal injuries.

♦ Don't try any ways to change the performance of the laser, which would cause the danger arisen by laser exposure. Turn on the laser only when you need to use the product. Besides, don't look straight at the laser light. The Laser Distance Meter needs safekeeping in case used by irrelevant personnel.

♦ Don't irradiate anyone in darkness deliberately.

♦ Don't irradiate onto the object with high reflective surface.Don't put it in the place where a child can reach it.

♦ Don't repair the meter without authorization. If it is damaged, please contact with local dealers.

♦ Electromagnetic radiation may interfere other equipments and device(for instance the medical instrument like pacemaker or hearing aid)

♦ Don't use the meter in flammable and explosive environment.

♦ Don't use the meter near medical instruments.

♦ Don't use the meter in a plane

♦ Your disposal of the discard meter should be accordance with the local regulation.

2. Overview

Keyboard (see the right figure)
1. Starting up/single-machine measurement
2. Area/volume/Pythagorean/laying off function keys
3. Addition/Subtraction /Unit key
4. Reference edge/ LCD Backlight Display Key
5. Date storage/ function set
6. Clear/shutdown Key

Display screen (see the right figure)
1. Laser on indicator
2. Reference edge measuring indicator
3. Area/volume/ Legs of a triangle laying off indicator
4. Laying off function indicator
5. Battery Level indicator
6. Date storage indicator
7. Date storage number indicator
8. Signal strength indicator
9. Unit indicator (including power and cube)
10. Secondary display area
11. Main display area

3. Stating up

Install/replace battery

Open the cover of the battery and put the battery into the battery compartment correctly, then close the cover.

When the battery level is too low, the indicator for battery level ▭ will appear on the display. Please replace new battery as soon as possible at this time.

• Alkaline battery is suggested being used. In this way, the measure of the alkaline battery will relatively be reduced

• When the meter will be out of use for a long period, please take out the battery.

4. Operation

Starting up/ shutdown

When the battery is installed, the meter will be on. If you long press ▽, the meter will be shut down. Press the button ⬘ when the meter is shutdown, and the meter will be on. The laser light and the backlight will turn off automatically within 60 seconds if there is no operation, and 6 minutes, shutdown itself.

Set

Long press 🄵 unit the icon on the display flickers. Then you can set the automatic turn on or turn off of the laser light and the buzzer, reference correction. You can press the + - to set the parameters and shortly press the ⬘ to switch function set.

Reference edge

The reference edge by default is the back end of the meter. You can switch the reference edge by pressing🄻. The default will be restored when the meter is shutdown.

Unit

Long press 🄴 can switch 6 kinds of units (see the right figure). The meter will remember the the last displayed unit.

Battery level indicator

When the three segment codes in the battery boxes all display, it indicates that the battery level is relatively full. The fewer segment codes displayed the lower battery level. When the boxes are empty, the battery should be replaced.

length	area	volume
0.000m	0.000m²	0.000m³
0.00m	0.00m²	0.00m³
0.00ft	0.00ft²	0.00ft³
0'0"¹/¹⁸	0.00ft²	0.00ft³
0.0in	0.00ft²	0.00ft³
0¹/¹⁸in	0.00ft	0.00ft

Clear function

Shortly press ▽ the last indication. The clear button can clear the measuring result of a single measurement (area or volume) with same function in order to go to the next measurement.

Illumination

Long pressing 🄻 can turn on or turn off the display illumination.

When the five signals segments all displays, it means that the measuring signal strength is high. The fewer segments signals, the weaker measuring signal strength.
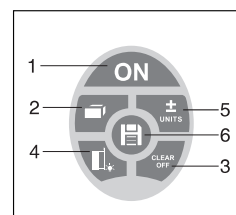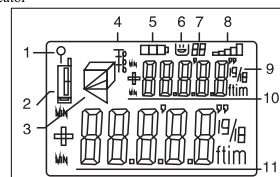
5. Measurement

Signal measurement

When the laser light is off, hort pressing⬘can turn on the laser light. Then the laser indicator in the display will flicker. Short pressing⬘can measure again.

The meter will save the normal measuring result automatically.

Continuous measurement

Shortly press ⬘ to turn on the laser light. And long press ⬘ to start continuous measurement. If you want to stop continuous measurement, stop pressing the button.

During continuous measurement, the real time measurement value is shown in the main display area. And the maximum value (MAX) and the minimum value (MIN) are displayed in the secondary display area.

When continuous measurement in general measuring pattern, the secondary display area shows the minimum value; when continuous measurement in functional measuring pattern, the secondary display areas displays the maximum default of the hypotenuse measurement, and displays the minimum default of horizontal measurement.

Long press 🄴 during measurement can switch between the maximum value and the minimum value.

6. Function

Addition/Subtraction

The measurement of the single distance, area and the volume can be measured through cumulative, regressive by the the addition/subtraction. Shortly pressing 🄴 can switch between addition and subtraction. Operational symbol will be displayed in the main display area.

When the operation method is chosen, the measuring result will be operated automatically in distance measuring pattern. The result will be shown in the main display area, and the latest measuring result will be shown in the secondary display area; in area and volume measuring pattern, press ⚠ to start the operation when the measurement is done. The result will be shown in the main display area and the latest measuring result will be shown in the secondary display area.

Area measurement

Shortly press ▬ until □ is displayed in the display. Press ⚠ to finish the measurement of the first line, and then press ⚠ to finish the measurement of the second line. At last, the area will be calculated automatically and the result will be display in the main display area.

Volume measurement

Shortly press ▬ until ▱ is shown in the display. Press ⚠ to finish the measurement of the three lines and then the volume will be measured automatically. The result will be shown in the main display area.

Pythagorean measurement

Pythagorean measurement is used to measure the target distance that cannot be targeted directly by using the Pythagorean theorem.

Shortly press ▬ until ∠ is display is shown in the display. Shortly press ⚠ to finish the right-angle side -right-angle side measurement or hypotenuse-right-angle side measurement in accordance with the indicator displayed in then screen. The Pythagorean measurement will be done automatically and the result will be display in the main display area.

pressing add 1 and it circulates from 0-9. Adjust the flickering position by pressing ⚠ .One pressing moves one right position, and it circulates from the left to right.

Long pressing ⚠ can finish the laying off setting and enter into laying off situation.

- In laying off situation, press ⚠ can end the measurement. The display screen will remain the value a and b which is set during laying off.
- If you press ▬ again during the setting of b, it switches to the setting of a. if you press ▬ again during the setting of a, the setting ends and meter enter into laying off measuring situation.
- When enter into laying off measuring situation, the secondary display area shows set distance value in the nearest laying off position. And the main display area shows the distance between the present position and the laying off position. Positive value means that it longer that the laying off position distance, vice versa. When the distance to the nearest laying off position is less than 0.1 m, the buzzer will begin to buzz (silent if you turn it off). The voice of the buzzer will change greatly if it reaches the laying off position.
- The distance of the laying off position is a + b×n ("n" is natural numbers that excluded "0")

Data storage/paging out

Short press 📊 to enter into storage function, and ⊔⊔ will display in the display. You can circularly check the latest set of data stored automatically by pressing +-, and can page out the data for all functions of calculation.

8. Technical reference

Specifications and models	D40	D60	D80	D100
Measurement accuracy	+/-1 mm*			
Unit	m/in/ft			
Measurement range (no reflector)	0.03−50	0.03−60	0.03−80	0.03−100
Measurement time	0.1-3 s			
Laser light level	II 级			
Laser light type	635 nm,<1 mw			
Dust proof and waterproof	IP54			
Turn off the laser light automatically	60 s			
Shutdown automatically	480 s			
Illumination	white LED			
Measuring standard switch				
Data clearing				
Battery indicator	√			
Signal strength indicator	√			

9. Maintenance

Immersing the instrument into the water is forbidden. You can use wet and soft cloth to wipe dust off. Don't use erosive lotion.

Clean the surface of the optical component (including the laser light radiating window and the signal received lens) in accordance with the way used in cleaning the glasses and the lens of cameral.

10. Service

To better serve our customers, a warranty card is attached. Please keep it properly in order to enjoy the service we deserved.

1. The product, if it is used properly without overhaul, enjoys 1- year after sales service since the day purchased.
2. The products in the following condition can't enjoy the warranty range:
   - A. The variation of network voltage is so great that the instrument is damaged.
   - B. The instrument is damaged by the overused or artificial reason.
   - C. The instrument is damaged by the vibration during transportation.
3. The user without warranty cards will be charged according to the circumstance.
4. When the user needs warranty service, he should fulfill the warranty card carefully and send to the company.

Shortly press ▬ until ◁ is shown in the display. Press ⚠ to finish collection of the three measuring values in accordance with the indicator in the screen. When collecting the second measuring values, it should be vertical to the object side or be selected the minimum value by the meter automatically using the continuous measurement method. The result will be shown in the main display area.

Shortly press ▬ until ◸ is shown in the display. Press ⚠ to finish collection of the three measuring values in accordance with the indicator in the screen . after the measurement is finished, calculation will be carried out automatically, and the result will be shown on primary display area.

- When measuring under the Pythagorean pattern, the length of right-angle side should be shorter than that of the hypotenuse, or the meter will get an error.
- When measuring under the Pythagorean pattern, it should be ensured that the measurement is start from the the same initial point; in the hypotenuse-right-angle side pattern, it must be ensured that right- angle side is vertical to the plane being measured

Laying off

Long press ▬ to enter into the laying off set. Before laying off, regard the value shown in the liquid crystal display area as the initial value of a. Regard the value shown in the main display area as the initial value of b.

- When entering into the laying off setting, enter in to the setting of b. when the second number in the main display flickers, adjust the number by pressing +-.one

7. Tips code and solution

During the use of the instrument, the instrument may appear the prompts as followed:

Information	reason	solution
b.L	The battery level is too low	Replace with a new battery
t.L	The temperature is too low	Raise the meter temperature
t.h	The temperature is too high	Lower the meter temperature
d.H	Overflowing of data	remeasurement
S.L	The signal is too weak	Measure the target potion with strong reflective ability or use the sighting target.
S.H	The signal is too strong	Measure the target potion with weak reflective ability or use the sighting target.
H.F	Wrong hardware	Restart the meter. If many times of startup & shutdown can't solve the problem, please contact with the local dealer.

Data storage	√
Continuous measurement(max/min)	√
Addition/subtraction	√
Volume/area/ Pythagorean measurement function	√
Laying off	√
Button lifespan	1 billion times
Battery type and lifespan	AAA alkaline battery (2*1.5), until 15 thousand times
Weigh	104 g
Working temperature range	0℃ - 40℃
Storage temperature range	-25℃ - 60℃

*In unfavorable conditions(such as excessively strong ambient light, or excessively large or small of diffuse reflectance of the measuring position), the error will increase:$\pm$ 1 mm + 40 PPM

** In the unfavorable condition in which the sunlight is to excessive or the reflective light is weak, please use sighting target.

Encasement List

Order number	Name	Number	Unit	Remarks
1	main engine	1	tai	
2	AAA battery	2	jie	
3	instrument cover	1	ge	
4	sling	1	gen	
5	user manual	1	ce	