Laser distance meter
HDM-Little Friend

Manual

Safety Regulations

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

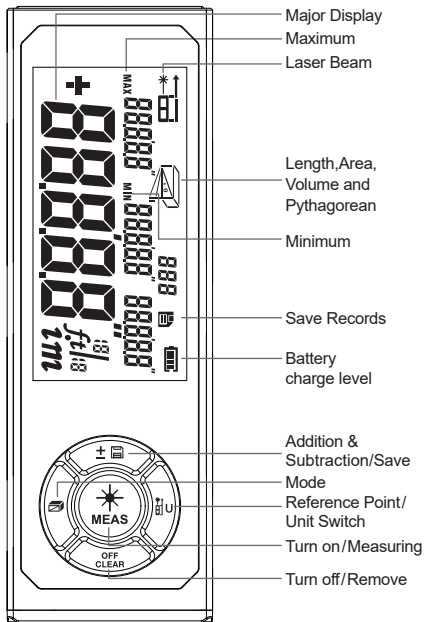⚠ Please read all of the operational guide and safety regulations in this manual before operation . Improper operations without complying with this manual may cause damage to the device, influence on measurement result or cause personal injury to the user or a third party.

⚠ The instrument is not allowed to disassemble or repair in any ways. It is forbidden to do any illegal modification or performance change for 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 meter device should not be disposed of just like household garbage, please handle it 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.

Major Display

Maximum

Laser Beam

Length, Area, Volume and Pythagorean

Minimum

Save Records

Battery charge level

Addition & Subtraction / Save

Mode

Reference Point / Unit Switch

Turn on / Measuring

Turn off / Remove

MEAS

OFF CLEAR

Lithium Battery

- The built-in 3.7V 850mAh Li-ion battery is non-removable. The instrument has its own charging circuit, with clear undervoltage indication and charging indication.

- Battery charging: The charging head should be of good quality and DC5V >0.5A output. It is recommended to use the mobile phone charging head for charging.

- The instrument should be charged in time when running out of battery or its battery symbol shows empty and flashes after being turned on due to its insufficient battery charge level. Insert USB to charge, and the battery symbol scrolls display ⬛. When fully charged, it will display ⬛ and flash.

Battery Maintenance

Keep it with full power if no operations for a long time; and charge it once every half year to avoid the battery damage.

Start the Instrument / Menu Setting

- **Turn on/off the Instrument**

  When OFF , press button ▣ , device starting and stand by for measurement.

  When ON, press and hold button ▣ for 3 seconds to turn the device off. The device can also be shut off without any operation for 150 seconds.

- **Unit Setting**

  Long press button 🔘 to switch units, There are 6 units for selection.

  Units:

	Length	Area	Volume
1	0.000m	0.000 m²	0.000 m³
2	0.00m	0.00 m²	0.00 m³
3	0.0 in	0.00 ft²	0.00 ft³
4	0 1/16 in	0.00 ft²	0.00 ft³
5	0'00" 1/16	0.00 ft²	0.00 ft³
6	0.00 ft	0.00 ft²	0.00 ft³

- **Setting Reference Point**

  Short press 🔘 key to set the reference point.
  The device reference point by default is the rear.

- **Back Light On/Off**

  The back light is set to turn on and off automatically.
  The back light can be on for 15s while operating, and it will be shut off automatically in 15s when there is no operation to the device.

- **Keys sound**

  Long press 🔘 button to turn on or off the beep sound.

bı oN	bı oFF
(Turn on sound)	(Turn sound off)

Self-Calibration

This function can keep the precision of the device.
Instruction: Power off, press and hold button ![OFF CLEAR], and then press ![MEAS]. Release the button ![MEAS], then release button ![OFF CLEAR] till "CAL" and a figure shows on the screen.
User can adjust the figure with button ![icon] ![iↄU] according to the accuracy of the meter.
Adjusting range: -9 to 9mm, then, press button ![MEAS] to save the calibration result.

Single Distance Measuring

Turn on the laser beam by short press of the button ![MEAS] under measuring mode, press the button ![MEAS] again for single measurement of length, then the measured results are displayed in the major display area.

Continuous Measuring

Long press button ![MEAS] under measuring mode and enter into continuous measuring mode.
Maximum and Minimum measuring results are displayed in auxiliary display area.

Present result is displayed in major display area.
Short press any button to exit continuous measuring mode.

Area Measurement

Press button 🔲 , ☐ will show on the screen. One of the side of rectangle blinking will showon the display, please follow the below instructions for area measuring:

Press ✳ once for length

Press ✳ again for width

The device calculates and shows the result in the major display area.

The resent measuring result of length is displayed in the auxiliary display area. Press ⌫ , to clear the measurement result and measure again if necessary.

Press ⌫ again to exit the mode.

Volume Measurement

Press button 🔲 twice to enter volume measurement mode. A ▱ will show on the top of screen. Please follow the below instruction for volume measuring:

Press ✳ for length

Press ✳ again for width

Press ✳ thirdly for height

The device calculates and shows the result in the major display area.

Press ⌫ , to clear the measurement result and measure again if necessary.

Press ⌫ again to exit the mode.

Wall Area Measurement

Press button 🖂 three times till ⬜ shows in the display.

Press 🔆 to measure the height of the wall first;

Press 🔆 to measure the bottom edge of the first wall, get the first area in the major display area;

Press 🔆 to measure the bottom edge of another wall, get the sum of these two walls.

Repeat these operations for more walls. Press button 🔘 to clear the previous measuring result and start new measurement.

Press 🔘 again to exit the mode.

Pythagoras
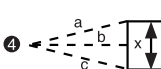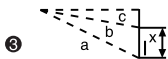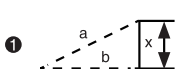
There are four Pythagoras modes in case that user gets hard to reach the target.

❶ Calculate the second leg by measuring the hypotenuse and one leg.

Short press ⬛ four times to enter Pythagoras mode, until the hypotenuse of ◺ starts blinking.

Press ⬛, measure the length of hypotenuse (a)
Press ⬛, measure the length of one leg (b)
Device calculates the length of the other leg (x)

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

Short press ⬛ five times, until one leg of ◹ starts blinking.

Press ⬛, measure the length of one leg (a)
Press ⬛, measure the length of the other leg (b)
Device calculates the length of hypotenuse (x)

❸ Calculate the auxiliary height by measuring the length of the two hypotenuses and one leg.

Press ⬛ six times till one side of ◥ starts blinking.

Press ⬛, measure the length of one hypotenuse (a)
Press ⬛, measure the length of the other hypotenuse (b)
Press ⬛ measure the length of the leg (c)
Device calculates the length of the leg in full line (x)

❹ Calculate the sum of the legs by measuring the length of the two hypotenuses and the height.

Press ⬛ seven times till the hypotenuse of ◁ starts blinking.

Press ![MEAS], measure the length of one hypotenuse (a)

Press ![MEAS], measure the length of one leg (b)

Press ![MEAS], measure the length of another hypotenuse(c)

Device calculates the length of the leg in full line (x)

Legs must shorter than hypotenuse, otherwise there will be "err" shown on screen. In order to guarantee the accuracy, please make sure all measurements are taken from the same point.

Addition / Subtraction

The device can be used for length addition and subtraction. Press ![+=] to select the function once you get a length measuring result.

Short press ![+=], "+" shows in the major display area, entering addition mode. Value of last measurement and the result of cumulation will be shown on the screen.

Short press ![+=], "-" shows in the major display area, entering subtraction mode. Value of last measurement and the result of subtraction will be shown on the screen.

Do round-robin selection between continous addition and continuous subtraction by pressing button ![+=].

Not only length can be caculated in addition and subtraction, but area and volume can be calculated in this way, as well. Take area as sample:

Area summation:
1. Measure the area once, and the result is shown in Figure 1;
2. Press ⊞ to enter the addition mode, and then measure the second area, as shown in Figure 2;
3. Short press the ⚹ key to obtain the sum of two areas, as shown in Figure 3
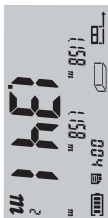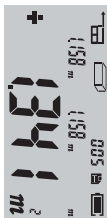
PIC1   PIC2   PIC3

Multiple area summation:
After the second step of area addition, press ⊞ again to add the next area. Repeat this step for multiple addition. Finally, perform the third step for the sum.

Area subtraction:
After the first step of area subtraction, press ⊞ repeatedly to switch the addition and subtraction mode. However, after the second area measurement, user cannot switch the addition and subtraction, but can only continue the selected mode. Subtraction and multiple subtraction operations are similar to addition.
For details, see addition operations.

In measurement mode, the instrument will automatically store the measurements, and the record number [888] at the top of the screen will continue to accumulate.

● **Read / Delete the Record:**

Press and hold button ⊞, read the records by pressing button 🖉 ⬚U .Press and hold ᴼᶠᶠ ᴄʟᴇᴀʀ to clear all the records. Press ᴼᶠᶠ ᴄʟᴇᴀʀ or ✳ ᴹᴱᴬˢ to exit record mode.

Tips

You may get some warning information as below:

Info message	Cause	Solution
Err	Out of distance measurement range	Use the device within the range
Err1	Signal is too weak	Chose the surface with stronger reflectance. Use the reflecting plate.
Err2	Signal is too strong	Chose the surface with weaker reflectance. Use the reflecting plate.
Err3	Low battery level	Charge the battery
Err4	The working temperature is out of working range	Use the device in the specified temperature.
Err5	Pythagoras measuring error.	Re-measure and ensure that hypotenuse is larger than a leg.

Technical Specifications

ITEM	HDM-60
Working Range	0.05-60m
Distance measurement precision	±(2mm+d*1/10000) *
Continuous measurement function	✓
Area and Volume measurement function	✓
Pythagorean proposition measurement function	✓
Add and subtract measurement function	✓
Area measurement function	✓
Wall area measurement	✓
Min/Max value	✓
Self-Calibration	✓
Laser class	II
Laser type	630-670nm，<1mW
Max storage	100 records
Automatical laser cut-off	20s (single measurement)
Automatic shutdown	150s
Operating times	8000 times (at full charge)
Buttons/Keys sound	✓
Storage temperature	-20°C~60°C
Working temperature	0°C~40°C
Storage humidity	20%~80%RH
Battery	3.7V 850mAh Li-ion
Charger specification	DC5V 0.5A Type-C
Dimensions	100.3x33.4x18.3mm

Note:* "d" indicates the actual distance.
** In harsh environment, such as: sunlight is too strong, the ambient temperature fluctuates excessively, the reflection effect of the object's surface is weak, the battery is low, the measurement results will have a large error, a reflecting plate may be needed.

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 place the meter in the box and store it in cool and dry place.

● Please keep the device surface clean. Use a soft damp cloth to wipe the dust on the surface. Do not use corrosive liquid to clean the device. Use the same method as for wiping optical devices to wipe the meter and focusing mirror.

Packing List

Please check if the accessories are completed according to the below list.

No.	Item	Unit	QTY	Note
1	Meter	pc	1	
2	Type-C Cable	pc	1	
3	User Manual	pc	1	
4	Fabric case	pc	1	