SNDWAY

手持式激光测距仪
Laser Distance Meter

用户手册
User Manual

SW-M50L SW-M70L SW-M100L SW-M120L

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2024L377-44

产品执行标准：GB/T 14267-2009

安全条例

初次使用仪器前，请先仔细阅读安全条款和操作指南

⚠ 在使用仪器之前请仔细阅读本手册中的所有操作指南和安全条例，没有按照本手册所指引的操作方法使用仪器有可能会造成仪器的损害、影响测量精度、对使用者或第三者的人身伤害。

⚠ 不要用任何方式自行打开或修理仪器，严禁非法改装或改变仪器激光发射器的性能。请妥善保管仪器，不要放置在儿童可以接触到的地方，避免无关人员的使用。

⚠ 严禁用仪器激光器照射自已或他人的眼睛及身体其他部位，严禁将激光器照射在高反光的物体表面上。

⚠ 仪器电磁辐射可能对其他设备和装置造成干扰，请不要在飞机或医疗设备附近使用本仪器，不要在易燃、易爆的环境中使用仪器。

⚠ 仪器更换的废旧电池和报废的仪器不可与生活垃圾一同处理，请按国家或者当地的相关法律规定处理废旧电池和报废仪器。

⚠ 仪器出现任何的质量问题，或对使用仪器有任何疑问时请及时联系当地经销商或深达威仪器厂家，我们将第一时间为您解决。

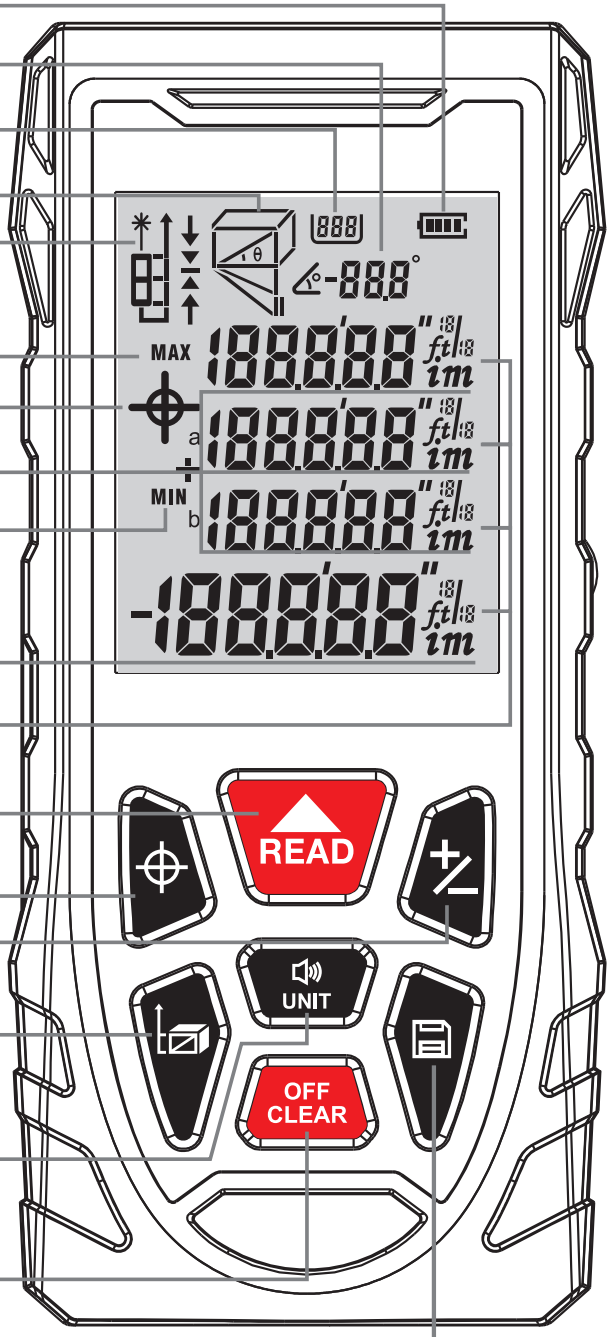
感谢您购买 SNDWAY 深达威®仪器 手持式激光测距仪系列产品！

专业铸造品质　品质成就品牌

显示屏、按键

● 显示屏

- 电量指示
- 角度指示
- 数据存储指示
- 长度/面积/体积/三角测量模式
- 激光发射指示
- 最大值指示
- 投线指示
- 辅显示区
- 最小值指示
- 主显示区
- 单位指示



● 按键

- 开机/测量键
- 投线模式
- 加/减键
- 基准键/模式切换
- 单位切换/声音开关
- 关机/清除键
- 保存键

锂电电池

- 内置3.7V 600mAh 锂电池供电，不可拆装。仪器自带充电电路，具有明晰的欠压指示、充电指示。
- 电池充电：请使用具有安全认证的DC 5V >1A充电器，建议用手机充电器充电。
- 电池用过一段时间后容量不足时，开不了机或开机后，电池符号空白闪烁显示，需要及时充电。插入USB充电，电池符号条形柱滚动显示 ，充满电后会显示 ，且闪烁。

电池保养

长时间不使用时，先把产品充满电，并每半年再充电一次，以免电池放电损坏。

启动仪器、功能设置

● 启动仪器和关闭仪器

关机状态下，短按 READ 键，仪器进入待测模式。
开机状态下，长按 OFF CLEAR 键关闭仪器，或者在150秒内未对仪器进行任何操作仪器将自动关闭。

● 单位设定

短按 UNIT 键，进入测量单位调整状态，可重置当前测量单位，出厂默认单位为：0.000m，该仪器提供了6种单位可供选择。

测量单位:

	长 度	面 积	体 积
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

● 测量基准设置

长按 键进行前端基准、中端基准及末端基准的切换。

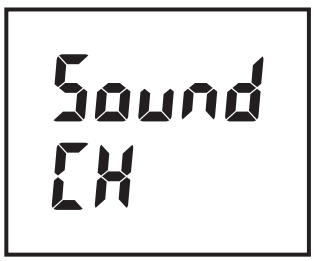
● 背光灯开启/关闭

本仪器背光灯为自动开和关。仪器在键入任一按键后，背光灯会持续打开15秒，15秒后，仪器无操作将自动关闭背光灯，以节省电源。

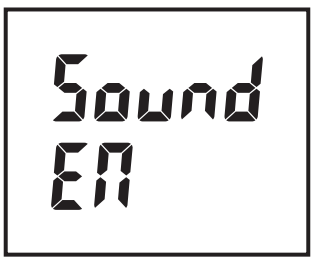
● 声音开启/关闭

长按 UNIT 键可切换中文声音播报、英文声音播报或关闭声音。

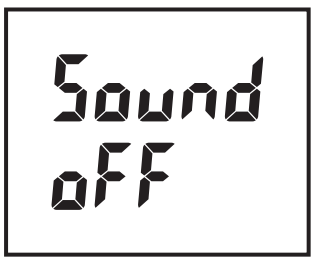
（注：充电时降低功耗不播报语音）



中文声音开



英文声音开



声音关

自助校准功能

为保证仪器的精准度，提供了自助校准功能。

校准方法：在关机状态下，持续按住 OFF CLEAR 键，再按 READ 键开机，松开 READ 键，直到屏幕出现‘CAL’下端有闪烁的数字，进入自助校准模式。此时用户可根据仪器的误差用 ± 键对这个数值进行调整。

调整范围为：-9~9mm。

例如：实际距离为3.780m

若本机测量值为3.778m，比实际值小2mm，则可进入校准模式，用 ± 键将校准值在现有基础上上调2mm。

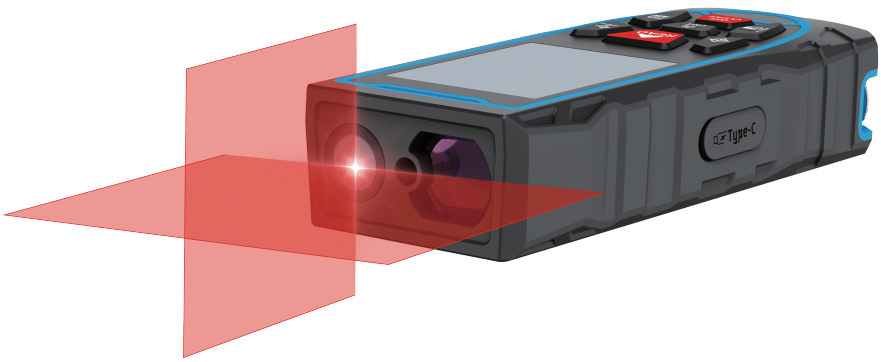
若本机测量值为3.783m，比实际值大3mm，则可进入校准模式，用 ⊕ 键将校准值在现有基础上下调3mm。

调整完毕后，按 READ 键保存校准结果。

投线模式

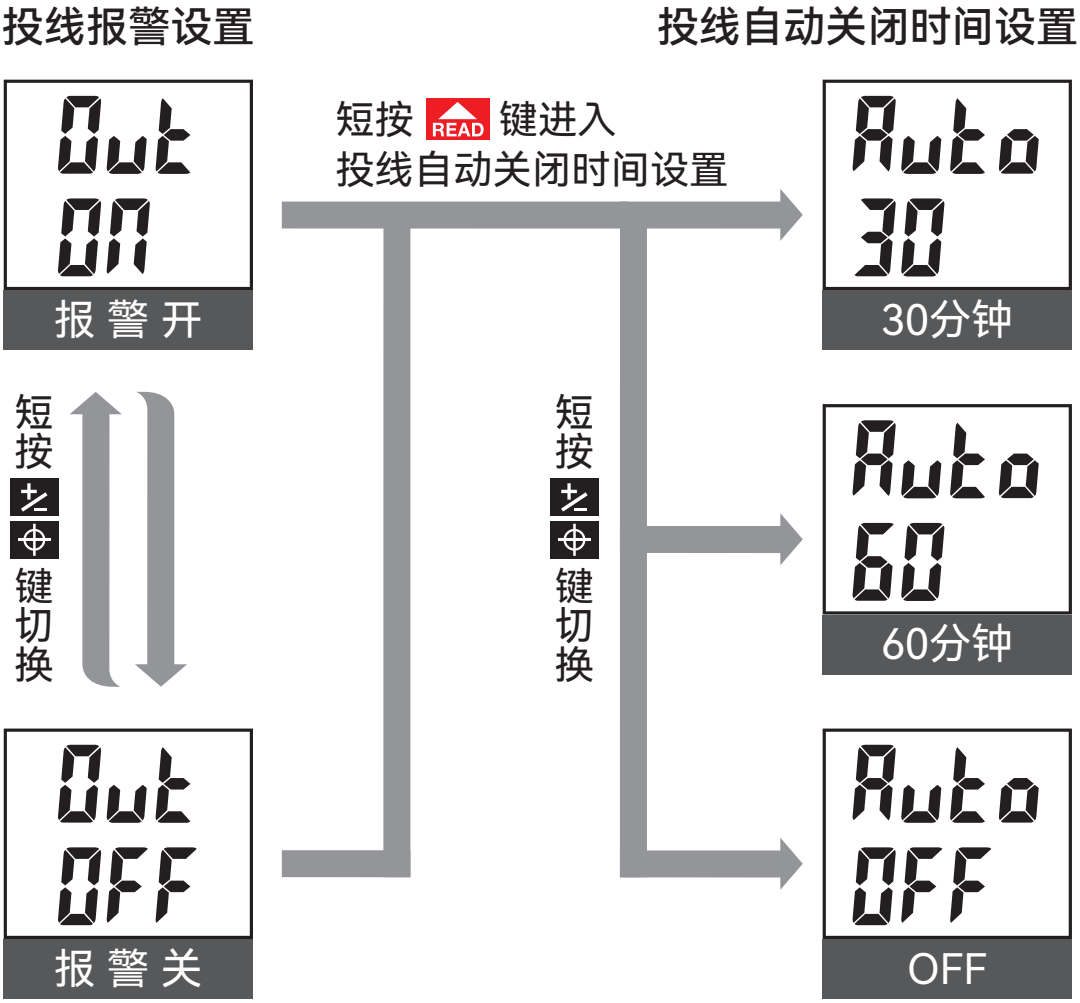
仪器短按 ⊕ 键，进入投线模式，仪器开启十字激光。

投线模式角度测量方向参考【角度测量】章节。



● 投线设置

投线模式下，长按 ⊕ 键，进入投线设置：



最后短按 READ 键保存并返回投线模式。

投线设置模式下，短按 OFF CLEAR 键退出设置。

● 投线报警功能

报警开启：角度大于±4°，屏幕闪烁显示 Out ，激光快速闪烁。

报警关闭：激光不再闪烁，屏幕显示 HoLd 。

单次测量

操作步骤如下:

1. 待测模式下，短按 READ 键，仪器激光发射。
2. 锁定测量目标，短按 READ 键，仪器测得一次距离，并显示在屏幕的主显示区。 在辅助显示区，会显示最近三次测得的历史数据，可短按 OFF CLEAR 键清除。

连续测量

此模式方便用户找到某一距离点，而勿需频繁的按键，即可得到需要的数据。操作步骤如下:

1. 待测模式下，长按 READ 键，仪器进入连续测量模式，屏幕会显示最大值MAX和最小值MIN以及最大最小差值，主显示区会显示当前测量值。
2. 短按任意键，退出连续测量。

测量停止后，测量结果自动保存到存储介质中，以方便随时查阅。

面积测量

短按 键一次，屏幕显示 ▭ ，长方形一条边闪烁。
根据提示完成下列操作:

按 READ 键进行第一条边的测量（长）
按 READ 键进行第二条边的测量（宽）
仪器会自动进行面积和周长运算，结果显示在主显示区。辅助显示区显示长方形的长和宽以及周长值。

在测量过程中，还可以短按 OFF CLEAR 键清除本次测量结果重新测量。按 OFF CLEAR 键两次，退出面积测量状态，进入长度测量模式。

体积测量

短按 键二次，屏幕显示 ，立方体一条边闪烁。
根据提示完成下列操作:

按 READ 键进行第一条边的测量（长）
按 READ 键进行第二条边的测量（宽）
按 READ 键进行第三条边的测量（高）
仪器会自动进行体积运算，结果显示在主显示区。辅助显示区显示立方体的长宽高的测量值。

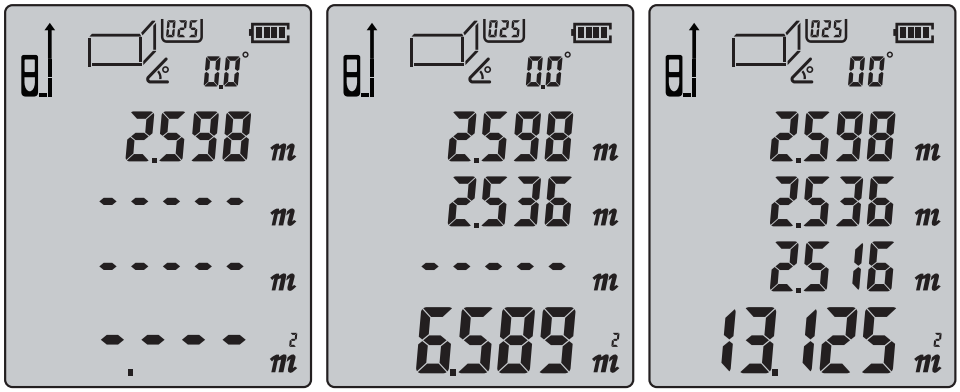
在测量过程中，还可以短按 OFF CLEAR 键清除本次测量结果重新测量。按 OFF CLEAR 键两次，退出体积测量状态，进入长度测量模式。

墙面面积测量

短按 键三次，屏幕显示 ，墙面一条边闪烁。
根据提示完成下列操作:

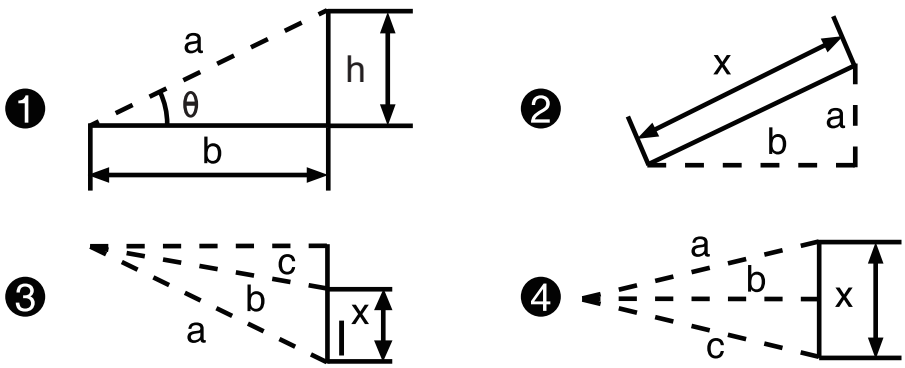
按 READ 键，测得墙面的高度;
按 READ 键，测得墙面1的宽度1;
仪器会自动计算墙面的面积=高度x宽度1;
按 READ 键，测得墙面2的宽度2;

仪器会自动计算墙面的面积总和
面积总和= 高度 x（宽度1+宽度2）;
依次类推，按 READ 键，测得墙面n的宽度n;
面积总和=高度 x（ 宽度1+宽度2+.....+宽度n）;



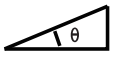
在测量过程中，还可以短按 OFF CLEAR 键清除本次测量结果重新测量。按 OFF CLEAR 键两次，退出墙面面积测量状态，进入长度测量模式。

勾股定理间接测量



仪器预设有四种利用勾股定理测量三角形单边距离模式，方便用户在特定复杂环境下进行间接测量。

❶ 测角测高

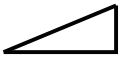
短按 键四次，屏幕显示:  ，三角形的斜边闪烁

按 READ 键依屏幕提示先测出虚线直角边斜边的长度(a)

同时测出斜边与底边夹角 θ 。

仪器自动计算水平距离b与垂直高度h。

❷ 测量三角形两直角边，间接测量斜边长度

短按 键五次，屏幕显示:  ，三角形的直角边闪烁

按 READ 键依屏幕提示测出一条虚线直角边的长度(a)

按 READ 键测出另一条虚线直角边的长度(b)

仪器自动计算实线斜边的长度(x)

❸ 测量三角形三条虚线边，间接测量三角形一条边的长度

短按 键六次，屏幕显示: ，三角形的斜边闪烁

按 READ 键依屏幕提示先测出一条虚线斜边的长度(a)

按 READ 键测出中间一条虚线斜边的长度(b)

按 READ 键测出另一条虚线底边的长度(c)

仪器自动计算出实线三角形一条边的长度(x)

❹测量三角形三条虚线边，间接测量直角边长度

短按 键七次，屏幕显示: ，三角形的斜边闪烁

按 READ 键依屏幕提示测出一条虚线斜边的长度(a)

按 READ 键测出如图虚线边的长度(b)

按 READ 键测出如图另一条虚线斜边的长度(c)

仪器自动计算出实线直角边的长度(x)

勾股测量模式下，直角边必须小于斜边长度仪器才能计算，否则仪器会显示错误信号提示。在勾股测量模式下，为保证测量的精度，须确保从同一个起始点测量，并按斜边、直角边测量顺序测量。

加减测量功能

单段距离测量可通过加/减运算进行累加或累减操作。用户在测量单段距离得到一次测量结果后，再通过 键进入累加累减功能选择，短按 键，当屏幕出现“+”，进入累加测量模式，屏幕显示上次测量值与当次测量值的累加值。

再次短按 键，当屏幕出现“-”，进入累减测量模式，屏幕显示上次测量值与当次测量值的差值。

累加累减模式通过 键循环选择。

不仅距离可累加累减，面积和体积也可进行累加累减。下面举例说明面积的累加累减功能，体积的累加累减与此类似。

面积累加:

1. 测量第一个面积，得到结果如下图1所示。
2. 短按 ±/ 键，进入累加模式，再测量第二个面积，得到结果如下图2
3. 短按 UNIT 键，得到两次面积求和的结果，结果如图3所示。

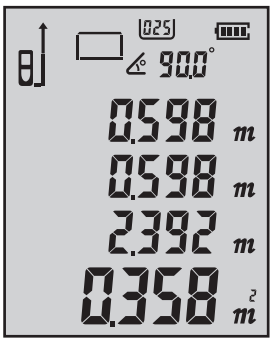


图1

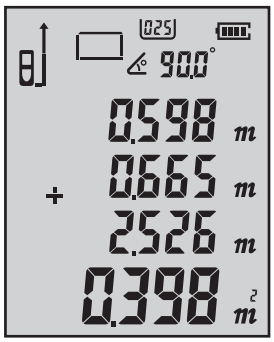


图2

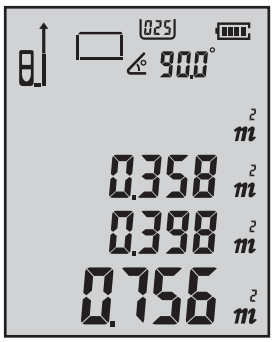


图3

多次面积累加:

在面积累加第2步操作之后，继续测量，可再次累加下一个面积，重复该步骤，可进行多次累加，最后执行第3步求和。

面积累减:

重复短按 ±/ 键，可切换累加/累减模式。累减及多次累减操作和累加类似，请参考累加操作。

测量记录存储功能

测量模式下，当前数据有效时，仪器将自动存储到内存中，屏幕顶部记录号 88 不断累加。

在面积，体积，三角形间接测量模式下，当所有测试结束后，也可进行存储，此时仪器会保存该测量模式下该次测量的完整记录。

● 浏览/删除记录

操作如下:

短按 键查看记录

短按 键切换记录

短按 OFF CLEAR 键或者 READ 键退出记录

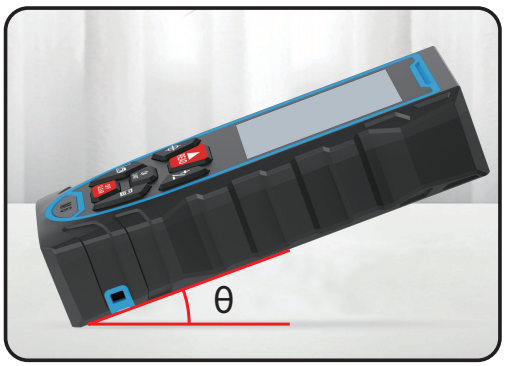
长按 OFF CLEAR 键删除单条记录

同时长按 OFF CLEAR 键删除全部记录

角度测量

显示屏上方时刻显示有角度信息，角度的测量范围是-90° ~ 90°。

X轴角度参考示意图



Y轴角度参考示意图

注：投线模式角度方向为X轴(左右)方向，其它模式角度方向为Y轴(前后)方向。

错误信息

在仪器出现Err x 信息时，表示仪器可能无法进行正确测量，下面提出了可能会遇到的错误提示及解决办法。

错误信息	含义及解决办法
Err 1	反射信号太弱，增加反光板
Err 2	反射信号太强，测试不同的反射面
Err 3	电池电压太低，对电池进行充电
Err 4	存储器错误返厂进行维修
Err 5	勾股定理错误重新测量
Err 6	超出测量范围
Err 8	角度传感器错误返厂进行维修

技术参数

■ 测距参数

项目	SW-M50L/M70L/M100L/M120L
测量距离范围	0.05-50m/70m/100m/120m
距离测量精度	±(2mm+dx1/10000)室内标准反射面**
倾角测量范围	±90°
角度精度	±1°
连续测量功能	✓
面积/体积/ 墙面面积测量	✓
勾股测量功能	✓
测角测高功能	✓
加减测量功能	✓
面积/体积加减	✓
最大/最小值	✓
自助校准功能	✓
语音播报	✓
屏幕	2.2寸黑白屏
激光等级	Class II
激光类型	630-670nm，<1mW
测距电池工作时间	≥5500次 (仅激光测距)
存储记录笔数	100笔
自动切断激光	20秒 (单次测量)
自动关机	150秒 (激光测距)

■ 投线参数

投线激光波长	630-670nm
投线激光等级	II
线功率	<1mW @10cm
投线工作距离	5m (<300Lux)
线宽	≤3mm (5m处)
投线电池工作时间	5小时 (连续)
自动关机	30分钟 (激光投线仪工作时间，可选)

■ 机械卷尺参数

卷尺量程	2m
卷尺最小刻度	1mm
卷尺单位	单面公英制
尺带宽度	9.0mm
尺带厚度	0.1mm
尺带材质	65锰钢（黄底黑字）
尺带精度	±1mm
卷尺自锁功能	不支持

■ 其它参数

工作温度	0˚C~40˚C
存储温度	-20˚C~60˚C
存储湿度	10%-90%RH
使用电池	3.7V 600mAh内置锂电池
充电时间	约1.5小时
外形尺寸	118x54x26mm

* “d”表示实际距离

① 在恶劣的环境下，如阳光过于强烈、环境温度波动过大、反射面反射效果较弱、电池电量不足等情况，测量结果会有较大的误差，此种情况配合目标反射板测量效果更佳。

② 电池工作时间/次数，以实验室环境测试结果为准。

仪器日常保养

- 禁止将仪器长期放置在高温高湿的环境中储存，长期不使用仪器时，请把仪器放置在随机的仪器套内放在阴凉干爽处存放。
- 请保持仪器表面清洁，可用湿的软布擦拭表面灰尘，不可用带有腐蚀性洗液清洁仪器。可按照擦拭光学器件表面的方法擦拭激光器窗口和聚焦镜。

装箱清单

购买仪器时请按下列清单认真检查仪器所有附件是否完整。

项目	名称	单位	数量	备注
1	主机	台	1	
2	仪器便携包	个	1	
3	锂电池	块	1	内置不可拆
4	Type-C线	条	1	
5	挂绳	条	1	
6	说明书	本	1	
7	保修合格证	张	1	
8	彩盒	个	1	

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 perfor-mance 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 or explosive environment.

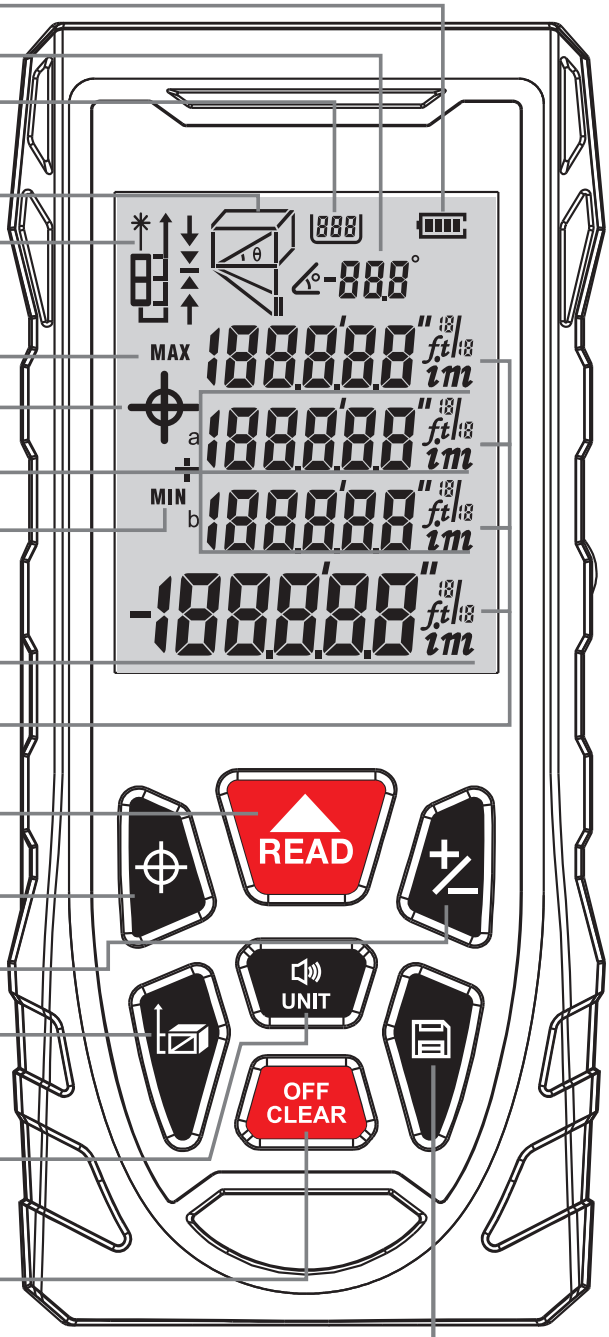
⚠ Discarded meter device should not be processed just like household garbage, please handle it in line with related law and regulations.

⚠ If there are any quality problems with the instrument or any questions about the use of the instrument, please contact local distributors or manufacturer in time, we are ready to offer solutions for you.

Display / Keys

Display

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



Keys

- Turn on/ Measure
- Laser Level Mode
- Addition/Subtraction
- Benchmark/ Mode Switch
- Unit Switch/ Sound
- Turn off/ Clear
- Save

Lithium Battery

- The built-in 3.7V 600mAh lithium battery is non-removable. The instrument has its own charging circuit, with clear undervoltage indication and charging indication.
- Battery charging: Please use a DC5V>1A charger with safety certification. A mobile phone charger is recommended.
- The instrument shall be charged in time when running out of battery or its battery symbol shows blank and flashes due to insufficient battery capacity. Insert USB to charge, and the battery symbol scrolls to display . When fully charged, will display and flash.

Battery Maintenance

Keep the product with full charge if no operations for a long time, and charge it once every half a year to avoid battery damage from discharge.

Start the Instrument/Menu Setting

• Turn On/Off the Instrument

Under Off state, short press READ , the device enters the test mode.

Under On state, long press OFF CLEAR to turn the device off. The device will automatically shut down without any operation within 150 seconds.

● Unit Setting

Short press UNIT to enter the unit switching state. The factory default unit is: 0.000m. There are 6 units for selection.

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

● Reference Point Setting

Long press to switch among front-end reference, middle-end reference and end reference.

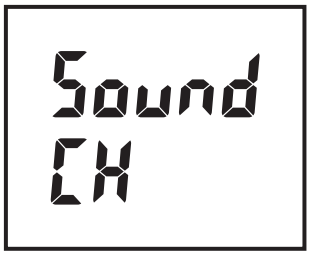
● Backlight On/Off

The backlight will automatically turn On and Off.
The backlight can be on for 15s while operating, and it will be off automatically after 15s if there is no operation to save power.

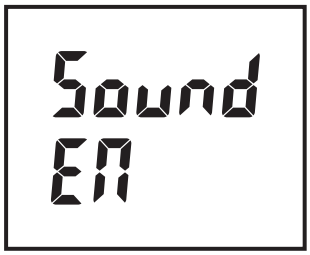
● Sound On/Off

Press and hold UNIT to switch among Chinese broadcast, English broadcast, or turning off sound.

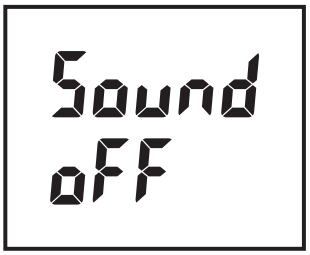
(Notes: The device do not broadcast voice while charging in order to reduce power consumption)



Chinese On



English On



Voice Off

Self-Calibration

In order to ensure the accuracy of the device, self-calibration function is provided.

Calibration method: In the shutdown state, hold down OFF CLEAR, then press READ to power on. Release READ until the screen displays flashy number at the lower end of 'CAL', then the device enters the self-calibration mode. Then user can adjust the value with ± ⊕ according to the accuracy of the device.

Adjusting range: -9 to 9mm.

For example, the actual distance is 3.780m.

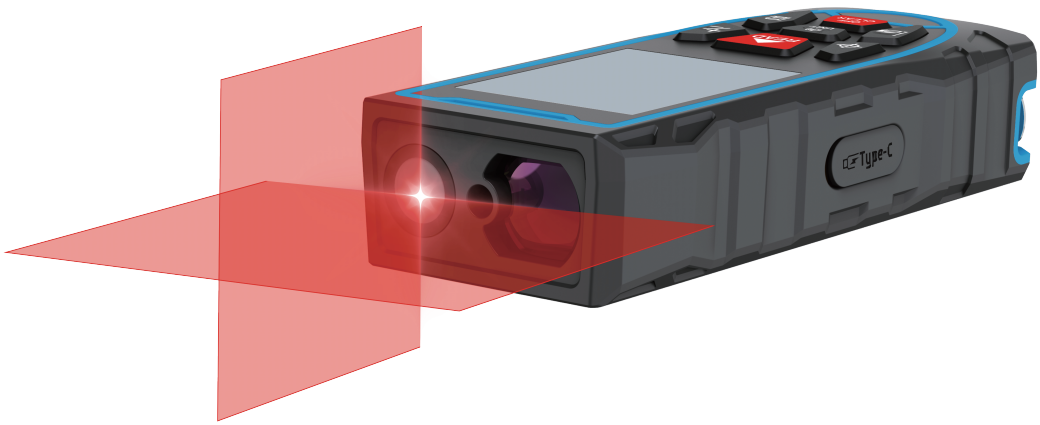
If the measured value is 3.778m, 2mm smaller than the actual value, the calibration value can be adjusted up by 2mm on the existing basis with ± through the calibration function.

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

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

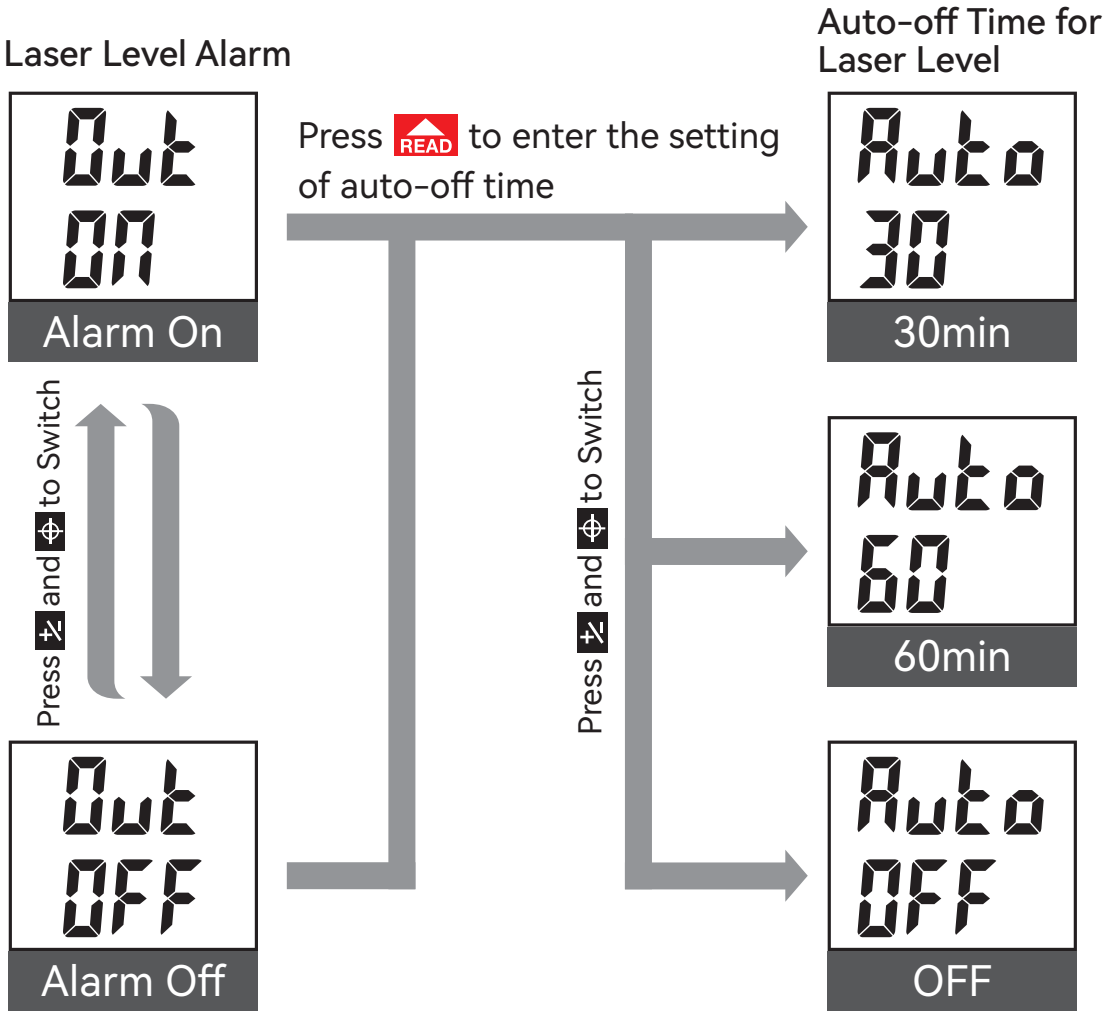
Laser Level Mode

Short press ⌖ to enter the laser level mode, and the device turns on the cross laser line. The angle measurement direction of the laser level mode is referred to the section "Angle Measurement".



● Laser Level Setting

In Laser Level Mode, long press ⊕ to enter the laser level setting:



Finally, press READ to save and return to the laser level mode.
In laser level setting mode, press OFF CLEAR to exit the setting.

● Laser Level Alarm

Alarm on: the Angle is greater than ±4°, the screen flashes to display Out, and the laser flashes rapidly.

Alarm off: The laser stops flashing, and the screen displays HoLd.

Single Distance Measurement

The steps are as follows:

1. In the measurement mode, press READ and the instrument laser will be emitted.
2. Lock the measurement target, press READ, the instrument measures the distance once, and it is displayed in the main display area. In the auxiliary display area, the historical data of the last three measurements will be displayed, which can be cleared by pressing OFF CLEAR .

Continuous Measurement

This mode is convenient for users to find a certain distance point. Without frequent pressing, you can get the required data. The steps are as follows:

1. In the measurement mode, long press READ , the instrument will enter the continuous measurement mode, the screen will display the maximum value MAX, minimum value MIN and the maximum and minimum difference, and the main display area will display the current measurement value.
2. Short press any button to exit continuous measurement mode.

After the measurement stops, the measurement results are automatically saved to the storage media for easy access at any time.

Area Measurement

Press , ▭ shows on the screen. One of the side of rectangle blinking on the display. Follow the prompts to complete the following:

Press READ to measure the first side (length);
Press READ to measure the second side (width);
The instrument automatically performs area and perimeter calculations, and the results are displayed in the main display area. The auxiliary display area displays the length and width of the rectangle as well as the perimeter values.

In the measurement process, user can also press OFF CLEAR to clear the measurement result and measure again. Press OFF CLEAR twice to exit the area measurement state and enter the length measurement mode.

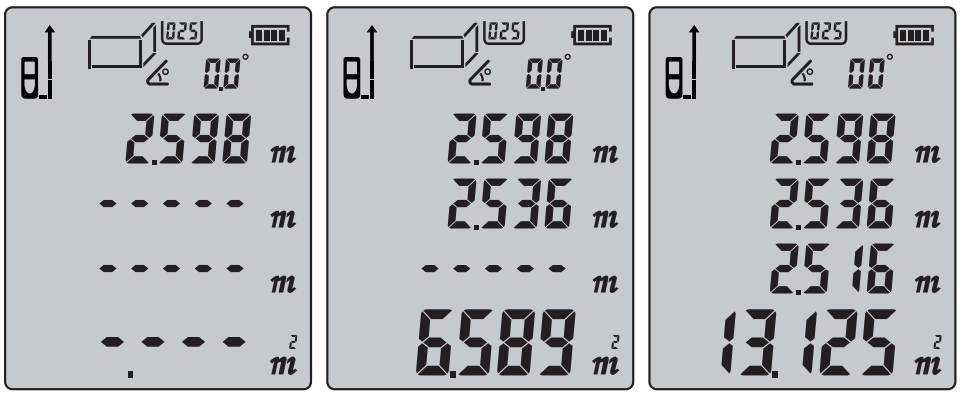
Volume Measurement

Press twice, shows on the screen. One of the side of cube blinking on the display. Follow the prompts to complete the following:
Press READ to measure the first side (length);
Press READ to measure the second side (width);
Press READ to measure the third side (height);
The instrument automatically performs volume calculations and the results are displayed in the main display area. The auxiliary display area displays measurements of the length, width and height of the cube.
In the measurement process, user can also press OFF CLEAR to clear the measurement result and measure again. Press OFF CLEAR twice to exit the volume measurement state and enter the length measurement mode.

Wall Area Measurement

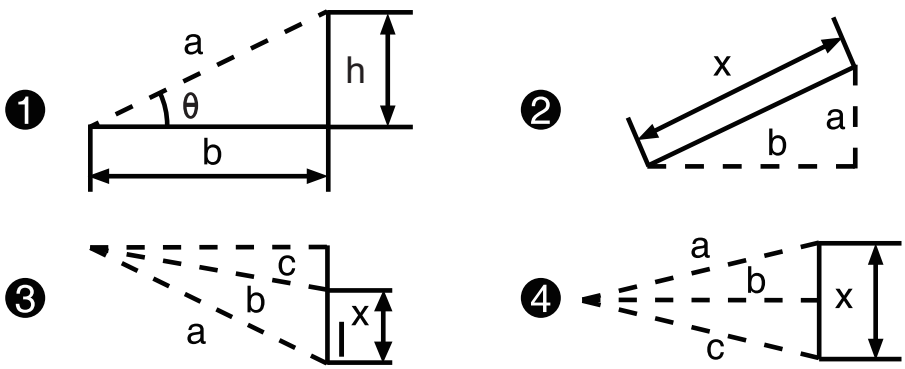
Short press three times, the screen displays , and one side of the wall is blinking.
Follow the prompts to complete the following:

Press READ to measure the height of the wall first;
Press READ to measure the width 1 of the wall 1, and the instrument automatically calculates the area of the wall = height x width 1;
Press READ to measure the width 2 of wall 2, and the instrument calculates the total area of the walls automatically;
Sum of areas = height x (width 1+ width 2);
By analogy, press * to measure the width n of the wall n;
Sum of areas = Height x (width 1+ width 2+.....) + width n);



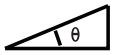
During the measurement process, user can short press OFF CLEAR to clear the measurement result and measure again. Press OFF CLEAR twice to exit the wall area measurement state and enter the length measurement mode.

Pythagorean Measurement

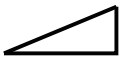


There are four modes of measuring the triangular unilateral distance by means of Pythagorean theorem, which are convenient for users to measure indirectly in specific complex environments.

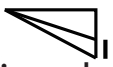
❶ Angle and Height Measurement.

Short press [icon] four times,  shows on the screen, and the hypotenuse of the triangle flashes
Press READ according to the screen prompt first measure the length of the hypotenuse of the right Angle of the dotted line (a) and measure the Angle between the hypotenuse and the bottom edge.
The device automatically calculates the horizontal distance (b) and vertical height (h) .

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

Short press [icon] five times,  shows on the screen, the right side of the triangle flashes
Press READ to measure the length of the right Angle of a dotted line according to the screen prompt (a)
Press READ to measure the length of the right side of the other dotted line (b)
The device automatically calculates the length of hypotenuse (x)

❸ Measure the three dotted edges of the triangle, and indirectly measure the length of one side of the triangle.

Press [icon] six times,  shows on the screen, the hypotenuse of the triangle flashes
Press READ to measure the length of the hypotenuse of a dotted line (a).
Press READ to measure the length of the hypotenuse of a dotted line in the middle (b).

Press READ to measure the length of the bottom of the other dotted line (c).
The device automatically calculates the length of one side of the solid triangle (x).

❹ Measure the three dotted edges of the triangle, and indirectly measure the length of one side of the triangle.

Press seven times, shows on the screen, the hypotenuse of the triangle flashes
Press READ to measure the length of the hypotenuse of a dotted line (a).
Press READ to measure the length of the dotted line as shown (b).
Press READ to measure the length of the hypotenuse of the other dotted line in the picture (c).
The device automatically calculates the length of the right Angle side of the solid line (x).

In the Pythagorean Measurement Mode, the right Angle side must be less than the hypotenuse length of the instrument to calculate, otherwise the instrument will display an error signal prompt. In the Pythagorean Measurement Mode, to ensure the accuracy of the measurement, it is necessary to ensure that the measurement is taken from the same starting point and in the order of the hypotenuse and right Angle side measurements.

Addition / Subtraction Measurement

Single distance measurement can be added or subtracted by adding/subtracting operations.

After measuring a single distance, the user can press ± to enter the cumulative addition/subtraction. Press ± , when "+" appears on the screen, the user enters the cumulative addition measurement mode and the screen displays the summation value of the last measurement value and the current measurement value.

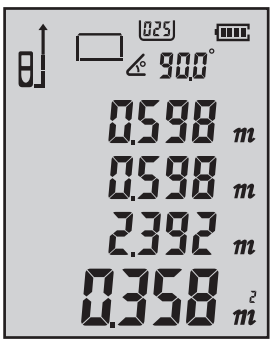
Press ± again. When "-" appears on the screen, the system enters the cumulative subtraction measurement mode. The screen displays the difference between the last measurement and the current measurement.

cumulative addition/subtraction modes are selected by ± .

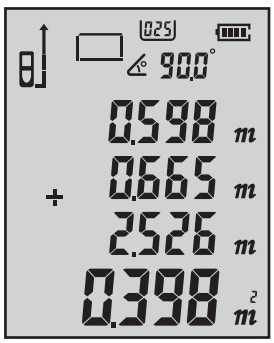
Not only distance can be calculated in addition and subtraction, but area and volume can do the calcu-lation as well. Take area as sample:

Area cumulative function:

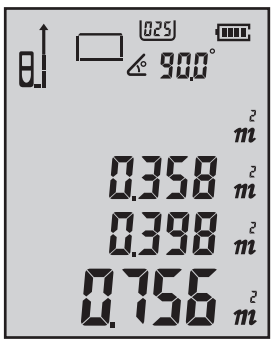
1. Measure the first area as shown in PIC1.
2. Short press ± , and enter the cumulative addition mode, then measure the second area as shown in PIC2,
3. Short press UNIT to get the summation result of these two areas which is showing in PIC3.



PIC1



PIC2



PIC3

Multiple Area Addition:
After the area accumulation step 2 operation, continue the measurement, you can add the next area again, repeat this step, you can do multiple accumulations, and finally perform the sum step 3.

Multiple Area Subtraction:
Repeat to press ± to switch the addition/subtraction mode. The cumulative subtraction and multiple cumulative subtraction operations are similar to cumulative addition operations. For details, see Cumulative Operations.

Record Function

In measurement mode, when the current data is valid, the instrument will automatically store it in memory, and the record number [88] at the top of the screen will continuously add up.

In the area, volume, triangle indirect measurement mode, it can also be stored when all the tests are completed, at which time the instrument will save the complete record of the measurement in that measurement mode.

● Read / Delete the Record:

operation is as follows:

Press 💾 to view the records

Press ± ⊕ to switch records

Press OFF CLEAR or READ to exit the record

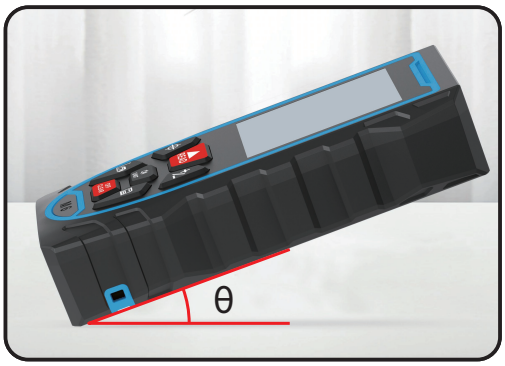
Hold down OFF CLEAR to delete a single record

Hold down OFF CLEAR and 💾 at the same time to delete all the records

Angle Measurement

The angle information is displayed at the top of the screen, and the angle measurement range is -90.0° to 90.0°.

X axis angle reference diagram



Y axis angle reference diagram

Notes: The angle direction of the laser level mode is the X axis (left and right) direction, and the angle direction of other modes is the Y axis (front and back) direction.

Error Information

When Err x information appears on the instrument, it indicates that the instrument may not be able to perform correct measurement. The following are possible error information and solutions.

Error Information	Cause & Solution
Err 1	The reflection signal is too weak. Use a reflector
Err 2	The reflection signal is too strong. Test different reflective surfaces
Err 3	Low battery voltage. Charge the battery
Err 4	Memory error. Return to factory for repair
Err 5	Pythagoras error. Remeasure
Err 6	Out of measuring range
Err 8	Angle sensor error. Return to factory for repair

Technology Specifications

Ranging Parameters

ITEM	SW-M50L/M70L/M100L/M120L
Measuring Range	0.05-50m/70m/100m/120m
Measuring Accuracy	±(2mm+dx1/10000) Indoor standard reflective surfaces **
Angle Range	±90°
Angle Accuracy	±1°
Continuous Measure Ment Function	✓
Area/Volume/Wall Area Measurement Function	✓
Pythagorean Measurement Function	✓
Angle and Height Measurement	✓
Add and Subtract Measurement Function	✓
Area/Volume Addition Subtraction	✓
Min/Max value	✓
Self-Calibration	✓
Voice Broadcast	✓
Screen	2.2" segment LCD
Laser Class	Class II
Laser Type	630-670nm，<1mW
Operating Time	≥5500 times (Only laser ranging)
Max storage	100units
Automatically cut off laser	20s (Single measurement)
Automatic shutdown	150s (Laser ranging)

■ Laser Distance Parameters

Wavelength	630-670nm
Laser Class	II
Laser Line Power	<1mW @10cm
Working Distance	5m(<300Lux)
Line Width	≤3mm (5m)
Battery Working Time	5 hours (continuous use)
Auto-off	30 minutes (laser level working time, optional)

■ Tape Parameters

Measuring Range	2m
Minimum Scale	1mm
Unit	Single sided Metric & Imperial System
Tape Width	9.0mm
Tape Thickness	0.1mm
Tape Material	65 manganese steel (black characters on yellow background)
Tape Accuracy	±1mm
Self-locking Function	No

■ Other Parameters

Working Temperature	0˚C~40˚C
Storage Temperature	-20˚C~60˚C
Storage Humidity	10%-90%RH
Battery	Built-in 3.7V 600mAh Li-ion
Charging Time	About 1.5 hours
Dimension	118x54x26mm

Note: * "d" indicates the actual distance.
① In harsh environment, such as: sunlight is too strong, the ambient temperature fluctuates excessively, the reflection effect of the object's surface is weak and the battery is low, the measurement results will have a large error. Please use the target reflector to assist the measurement.
② Battery working time/times, is subject to laboratory test results.

Instrument Maintenance

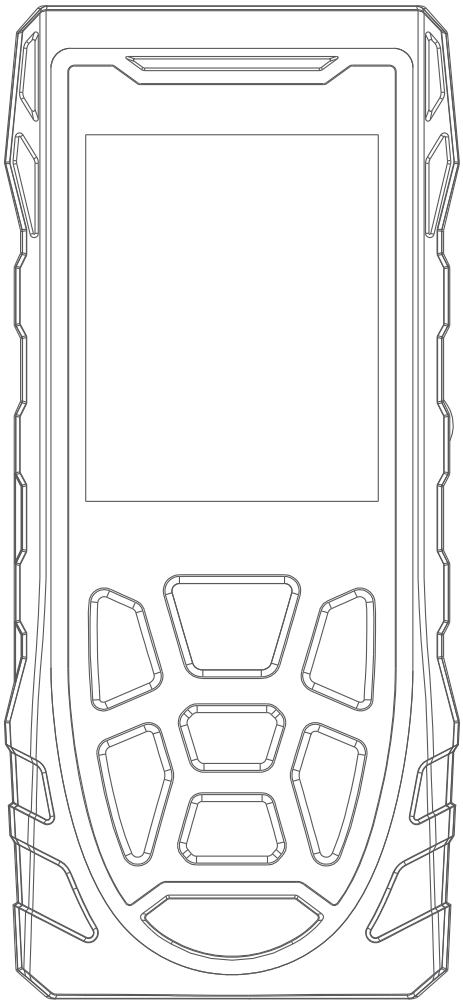
- Do not store the instrument in a high temperature and humidity environment for a long time. If the instrument is not used for a long time, please put it in the pouch and store it in a cool and dry place.

- 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. The laser window and focusing lens can be wiped in the same way as the optical device surface.

Packing List

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

No.	Item	Unit	QTY	Note
1	Meter	PC	1	
2	Portable Pouch	PC	1	
3	Lithium Battery	PC	1	Built-in and non-removable
4	Type-C Cable	PC	1	
5	Hand Strap	PC	1	
6	User Manual	PC	1	
7	Gift Box	PC	1	



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