Laser Distance Meter

## User's Manual

D80 PRO

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 guided could cause damage to the device, influence on measurement result or physical injury to the user.

⚠ 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 using by any irrelevant personnel.

⚠ It is strictly prohibited to shoot eyes or other parts of body with the laser; it is not allowed take the laser to shoot any objects' surface with strong reflectivity.

⚠ 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 anflammable, explosive environment.

⚠ Discarded batteries or meter device shall 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.
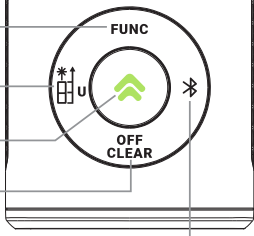
DISPLAY KEYBOARD

● **Display**

- • Power Supply
- • Bluetooth
- • Record
- • Laser indicator
- Length, Area, Volume and Pythagorean
- • Angle
- • Maximum
- • Secondary Display
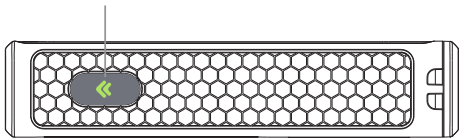- • Minimum
- • Major Display
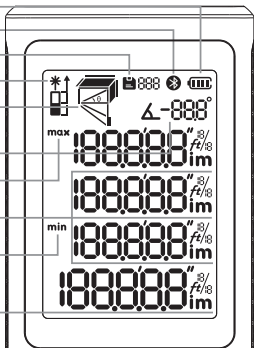
● **Keyboard**

- • Size, Volume And Triangle/check Record
- • Reference Point Unit Switch
- • Turn on/Measuring
- • Turn off/Clear
- • Bluetooth

• Turn on/Measuring

Lithium Battery

- Built-in and non-detachable 3.7V 1000mAh Lithium battery

- Charge: Phone chargers are recommended. Please use 5V 1A chargers and Type-C charging cables to charge.

- When we can not activate instruments or there is a blank battery symbol flickering after it has been used for a period of long time, we should charge it in time. After inserting USB into it, the battery symbol bar 🔋 scrolls to display, and when fully charged, 🔋 will display and flicker.

Battery Care

Charge the instrument fully and do it every 6 months to avoid damage to batteries when the Instrument are not in use for a long time.

Power On/off And Settings

● **Power on/off the instrument**

In the shutdown state, press ⬣ to start the instrument and prepare to measure.

In the power-on state, press OFF/CLEAR and hold for 3 seconds to turn off the instrument. The instrument will be power off automatically after 150 seconds with no operation on the instrument.

● **Unit setting**

In the measurement mode, long press ⬣ to switch between different measurement units. The instrument offers 6 units to choose from.

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

● **Measurement Datum Settings**

Short press ⬣ to switch front/middle/rear datum. The system defaults to the rear datum.

● Backlight On/off

The instrument`s backlight is power on/off automatically. The instrument will open the backlight for 15 seconds after you press any keys of the instrument. And the instrument will power off the backlight to save power after 15 seconds of no operation on the instrument.

Self-calibration and sound settings

To ensure the accuracy of the instrument, a self-calibration function is provided. Calibration method: In the power-off state, press and hold OFF/CLEAR and ∧ at the same time until the screen shows 'CAL' and there are flashing numbers at the bottom. At this time, you enter the self-calibration mode. Then, the user can press 🔲 ⚡ to adjust the value according to the error of the instrument. The adjustment range is -9~9mm.

For example: the actual distance is 3.780m

If the measured value of the instrument is 3.778m, which is 2mm lower than the actual value, you can enter the calibration mode, and press ⚡ to increase the calibration value by 2mm on the existing basis.

If the measured value of the instrument is 3.783m, which is 3mm higher than the actual value, you can enter the calibration mode, and press 🔳 to lower the calibration value by 3mm on the existing basis. After adjustment, press 🔼 to save the calibration result.

Press 🔼 to save calibration result and enter sound settings, the screen shows " 5ound " and there are flashing letters at the bottom. Press 🔳 ⚡ to switch sound on/off, " on " is sound on, " off " is sound off. After the setting is completed, press 🔼 to exit the setting.

Distance Measurement, Size, Volume And Pythagoreanindirect Measurement

● **Single Measurement**

When the instrument prepares to measure, press 🔼 to emit the laser, lock the measurement point. Then press 🔼 again to measure single distance and the result shows in the main display area.

● **Continuous Measurement**

When the instrument prepares to measure, press and hold 🔼 to enter continuous measurement mode. During the continuous measurement, the maximum and minimum value and the difference between maximum and minimum show on the secondary display area.

The main display area shows current measurement value, short press ![up] or ![OFF CLEAR] to exit continuous measurement mode.

● **Size Measurement**

Press ![FUNC] once, the screen shows ![triangle], and one side of the triangle flickers.

Complete the following actions as prompted:

Press ![up] to measure the first side(width)

Press ![up] to measure the second side(length)

The instrument will calculate the size automatically, and the result shows on the main display area.

The secondary display area will show the measurement value of the length and width.

During measurement, the user can press ![OFF CLEAR] to clear the result and remeasure.

When there is no data in the display area, press ![OFF CLEAR] to exit size measurement mode, and enter single measurement mode.

● **Volume Measurement**

Press ![FUNC] twice, the instrument enter volume measurement mode, There will be a cube ![cube] flickering on the screen.

Complete the following actions as prompted:

Press 🔼 to measure the first side(width)

Press 🔼 to measure the second side(length)

Press 🔼 to measure the third side(height)

The instrument will calculate the volume automatically, the calculation result shows in the main display area. And the length, width and height of the cube show in the secondary display area.

During measurement, we can press 🔳 to clear the measurement result and remeasure. When there is no data in the display area, press 🔳 to exit volume measurement mode and enter single measurement mode.

● **Pythagorean Measurement**
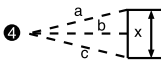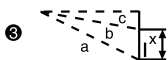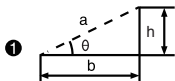
There are four preset modes of the instrument to measure the distance of one side or a triangle by using the Pythagorean theorem.

It is convenient for users to perform indirect measurement in a specific complex environment.

1. Angle and height measurement ∠⌐.
Short press **FUNC** three times to enter angle and height mode:
Press ⌃ to measure the length of hypotenuse (a) according to prompts on the screen and measure bottom edge angle θ.

The instrument automatically figures out horizontal distance(b) and vertical distance(h)
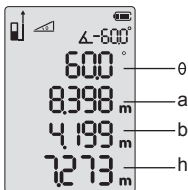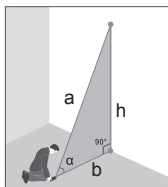
2. Right-angledsidemeasurement
Measure the length of hypotenuse ∠⌐ indirectly.
Short press **FUNC** four times, the screen shows: ∠⌐ (right-angled side flickering)
Press ⌃ to measure the length of one leg according to prompts on the screen (b)
Press ⌃ to measure the length of another side (a)
Device automatically figures out the length of hypotenuse (x)

3. Short press **FUNC** five times, the screen shows: ◣ (hypotenuse flickering).

Press ⌃ to measure the length of one leg (a)
Press ⌃ to measure the length of the middle side (b).
Press ⌃ to measure the length of another side (c).
Device automatically calculates the length of hypotenuse (x).

4. Short press **FUNC** six times, the screen shows: ◁ (hypotenuse flickering),

Press ⌃ to measure the length of one leg according to prompts on the screen (a)
Press ⌃ to measure the length of one leg (b)
Press ⌃ to measure the length of another side (c)
Device automatically figures out the length of right-angled side (x)

In Pythagorean measurement mode, the right-angled side must be less than the length of the hypotenuse before the instrument can calculate, otherwise the instrument will display an error signal prompt. In the Pythagorean measurement mode, in order to ensure the measurement accuracy, it is necessary to ensure that the measurement is from the same starting point, and the measurement is performed in the order of the hypotenuse and the right-angled side.

Data Storage Function

The measurement results are saved automatically. the user can export the recording through Apps.

Bluetooth Function

It will automatically record the data when the instrument figures out the final results. And the user can press and hold FUNC to check the recordings.Complete the following actions as prompted to check the recordings:
1. Short press ⛁ ✳ to switch recordings.
2. Long press OFF CLEAR to clear all recordings.
3. Short press OFF CLEAR to exit checking recordings.

Android App Download

The App name is " AF MAGIC " . The Android user can search for the App in Google Play, and the Apple user can search for the App in App Store.

Prompts

During use, the following prompts may appear in the main display area

Prompts	Reason	Solution
Err1	Signal is too weak	Measure the targetwith strong reflectivity
Err2	Signal is too strong	Measure the target with weak reflectivity
Err3	Battery voltage is too low	Charge the battery
Err5	Pythagorean measurement violations	Re-measureto make sure the hypotenuse is larger than the right-angled side
Err6	Exceeds the measurement distance range	Make the instrument use within the range
Err8	The angle sensor is wrong	returned to the factory for repair

Prompts

Project	D80 PRO
Range	0.05-80m
Precision	±(2mm+D * 1/10,000th)*
Continuous measurement	✓
Bluetooth	✓
Bluetooth distance	10m
Size/Volume measurement	✓
Pythagorean measurement	✓
Max/Mini	✓
Self-calibration	✓
Laser class	II
Laser type	630-680nm, <1mW
The number of storage records	100
Auto laser off	20s
Auto power off	150s
Charging time	About 2.5h
Working times (full charged)	15000 times
Sound prompts	✓
Storage temperature	-20˚C~60˚C
Working temperature	0˚C~40˚C
Storage humidity	20%~80%RH
Battery	3.7V 1000mAh Lithium Battery
Charging port	Type-C, DC 5V═1A
Angle range	±90˚
Net weight	129g
Dimension	118x50x25mm

*The minimum of the range refers to the distance measured by front-end datum

* ' D ' refers to actual distance

**There will be a large error in the measurement results in harsh environments such as: strong sunlight, fluctuating temperature, weak reflectivity of reflective surface andinsufficient battery power. In this case, it is better to use the target reflector. Conditions that affect the measurement include: the objective lens or laser tube is blocked by foreign matter; the measurement target is unclear, such as water surface, glass, mirror surface; laser jitter during measurement, etc.

Daily Care

● It is forbidden to store the instrument in a high temperature and high humidity environment for a long time. When the instrument is not used for a long time, please put the instrument in the random instrument cover and store it in a cool and dry place.

● Please keep the surface of the instrument clean, wipe the dust on the surface with a damp soft cloth, and do not clean the instrument with corrosive lotion. The laser output window and its focus lens can be wiped according to maintenance procedures for optical device.

Packing List

Please carefully check whether all the accessories are completed according to the packing list when purchasing.

NO.	Item	Unit	QTY	Note
1	Laser distance meter	pc	1	
2	Portable bag	pc	1	
3	Hand strap	pc	1	
4	Lithium Battery	pc	1	non-removable
5	User' s manual	pc	1	
6	Gift box	pc	1	
7	Reflector	pc	1	
8	Type-C cable	pc	1	

FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

?Reorient or relocate the receiving antenna.

?Increase the separation between the equipment and receiver.

?Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

?Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

RF Exposure Information

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.