

# Laser Distance Meter

## User's Manual



D80 PRO



## **Safety regulations**

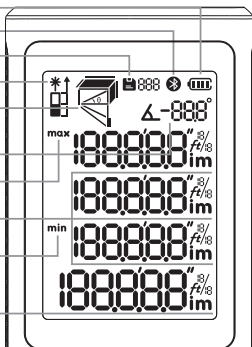
**Please read the safety regulations and operation guide carefully before operating.**

-  **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

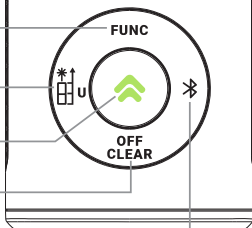
## ● Display

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

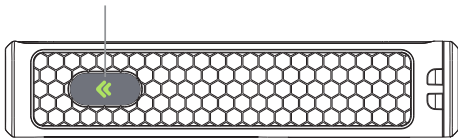


## ● Keyboard

- 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  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 <sup>2</sup> | 0.000 m <sup>3</sup> |
| 2 | 0.00 m     | 0.00 m <sup>2</sup>  | 0.00 m <sup>3</sup>  |
| 3 | 0.0 in     | 0.00 ft <sup>2</sup> | 0.00 ft <sup>3</sup> |
| 4 | 0 1/16 in  | 0.00 ft <sup>2</sup> | 0.00 ft <sup>3</sup> |
| 5 | 0'00" 1/16 | 0.00 ft <sup>2</sup> | 0.00 ft <sup>3</sup> |
| 6 | 0.00 ft    | 0.00 ft <sup>2</sup> | 0.00 ft <sup>3</sup> |

### ● 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  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 “Sound” 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 Pythagorean indirect 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  or  to exit continuous measurement mode.

## ● Size Measurement

Press  once, the screen shows , and one side of the triangle flickers.

Complete the following actions as prompted:

Press  to measure the first side(width)

Press  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  to clear the result and remeasure.

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

## ● Volume Measurement

Press  twice, the instrument enter volume measurement mode, There will be a 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)

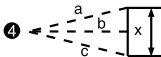
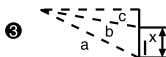
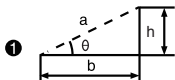
Press  to measure the third side(height)

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 **OFF CLEAR** to clear the measurement result and remeasure.

When there is no data in the display area, press **OFF CLEAR** 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.

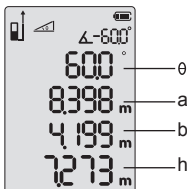
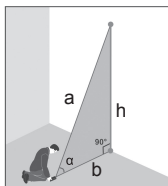
It is convenient for users to perform indirect measurement in a specific complex environment.

## 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  $\theta$ .

The instrument automatically figures out horizontal distance (b) and vertical distance (h)



## 2. Right-angled side measurement

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  to clear all recordings.
3. Short press  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 target with 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-measure to 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                     | $\pm(2\text{mm}+D * 1/10,000\text{th})^*$ |
| 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                   | $\pm 90^\circ$                            |
| 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 and insufficient 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.