Usopp-X

Usopp-X03k
Ballistic Rangefinder

Usopp-X03K is a high-performance ranging product developed based on the 1535nm erbium glass laser independently developed by our company, which belongs to Class 1 eye-safe products (laser pointer belongs to Class 3B).
The main functions include: single-point ranging, continuous ranging, ballistic calculation, laser indication, temperature, humidity and pressure measurement, OLED display, battery indicator, Bluetooth transmission, APP interconnection, and interconnection with Kestrel anemometer, and external communication serial port. Mainly used for outdoor use by individual soldiers, it is small in size, lightweight, and can be quickly disassembled.

- Ballistic calculation
- Small size and light weight
- Long battery life
- 5000 times measurement
- Infrared and green laser dual-spectrum indication
- Quick install
- APP wireless data transmission

Usopp-X

Product Name	Usopp-X03k
Laser Type	1535nm
Range Building	10~4000m
Eye Safety	Class 1 (indicating laser belongs to Class 3B)
Adjustable Range	±3°
indication Distance	500m (Night)
Accuracy	±1m
Range freq.	1Hz
Detection	⩾98%
Divergence	~0.6mrad
Angle measuring range	Pitch angle：±90°(±1°)　Roll angle：0~180°(±1°)
Temperature measuring range	-40~+60℃ (±1℃)
Humidity measuring range	0~100% (±5%)
Altitude measuring range	0~5000m (±20m)
Power Supply	DC 2.2~5V
Battery type	CR123A×1
Battery Endurance	5000 times
Display Size	1.3" OLED
Weight	230g (Battery included)
Dimensions	76x56x47mm (L×W×H)
Operating Temp.	-40~+55℃
Storage Temp.	-50~+65℃
IP rating	IP67
Connector	Uart (TTL_3.3V) to USB
Wireless transmission	Bluetooth 5.0
Other	Mobile APP interconnection

Note：Table data measured in a laboratory environment

Ballistic Rangefinder
User Manual

Dear users,

Before starting to operate the product, please read this manual carefully to ensure that you use it correctly and obtain accurate measurement results, while ensuring the safety of the equipment and extending the service life of the equipment!

Class 1 Laser Product

CE RoHS

Doc. Compiled Date: Oct. 2024

Doc. No: ELR00307001

Table of Contents

1. Attention

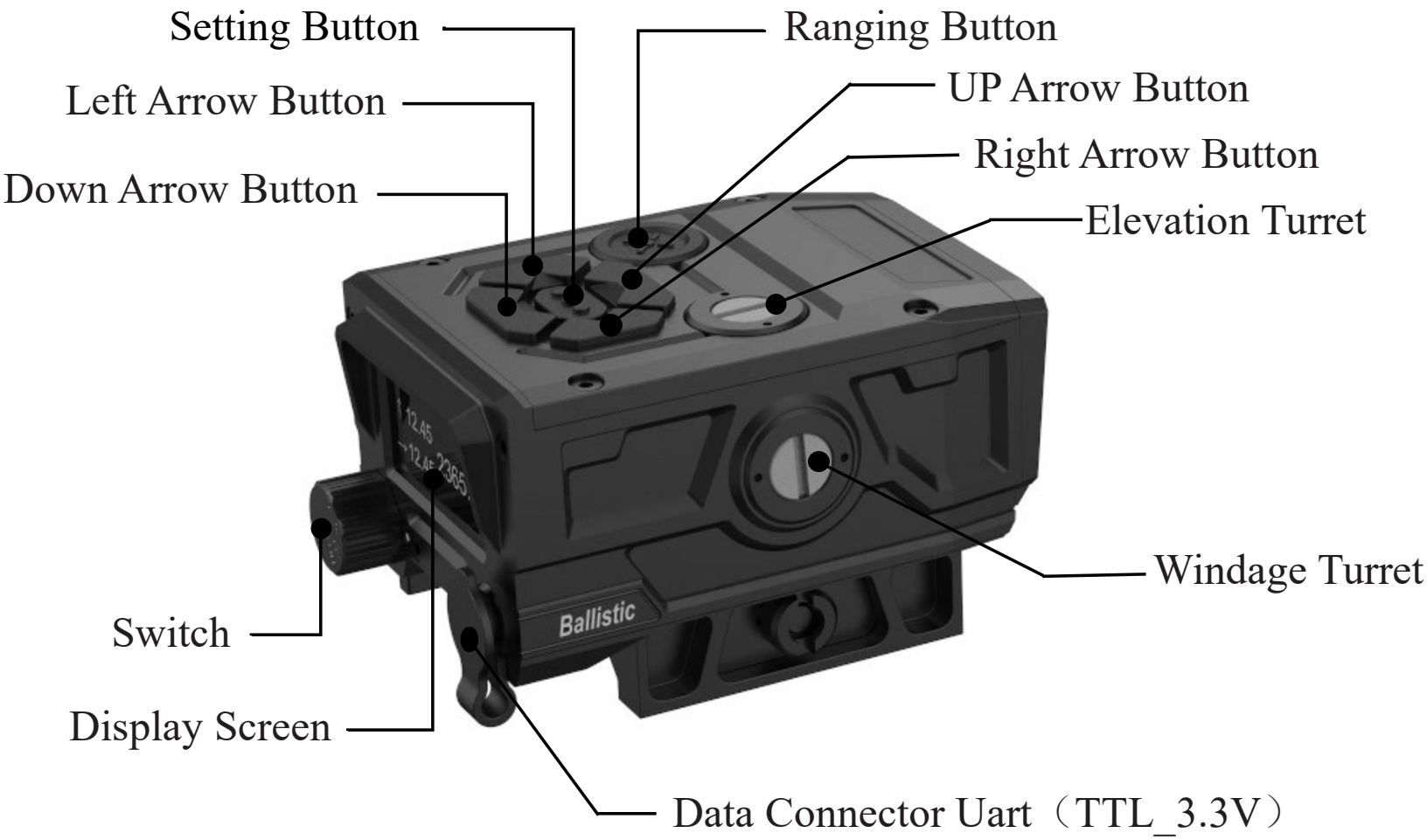
* The laser safety category of this product is Class 3R, please do not look directly at the laser!
* Do not distance the target within 5m to avoid damaging the instrument!
* Do not disassemble the corresponding parts of the product, non-standard operation will cause damage to the product and will invalidate the warranty!
* Please keep the optical glass surface (laser, screen) clean!
* Do not measure the distance through glass or other translucent materials, so as not to cause the ranging error to become larger!
* Extreme weather conditions such as rain, snow, fog, haze, and dust will affect the ranging performance!
* If you do not use the product for a long time, please remove the batteries!

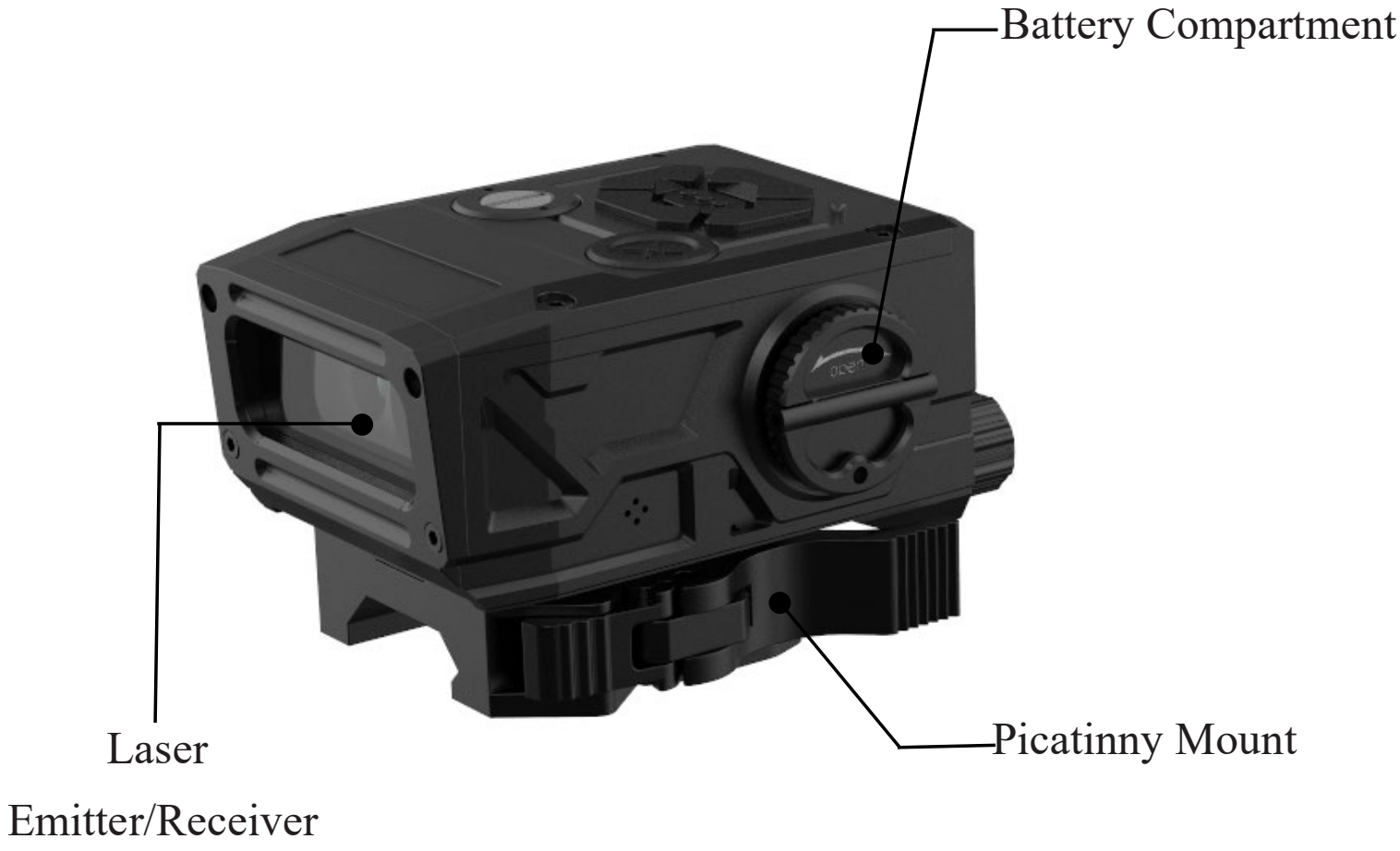
2. Product overview

Rangefinder is a high-performance ranging product developed based on the 1535nm erbium glass laser independently developed by our company，which belongs to Class 1 eye-safe products (laser pointer belongs to Class 3B).

The main functions include: single-point ranging, continuous ranging, ballistic calculation, laser indication, temperature, humidity and pressure measurement, OLED display, battery indicator, Bluetooth transmission, APP interconnection, and interconnection with Kestrel anemometer, and external communication serial port. Mainly used for outdoor use by individual soldiers, it is small in size, lightweight, and can be quickly disassembled.

3. Know the product




Battery Compartment
Laser
Emitter/Receiver
Picatinny Mount

Ranging Button		• Takes Range • Hold for 2 seconds to continuous ranging • Back to the home page from the Settings menu and ranging
Setting Button		• Opens the Settings Menu • Confirm the Settings on the Settings Menu
UP Arrow Button		• Navigates Up in Menu Structure • Increases Manually Inputted Values
Down Arrow Button		• Navigates Down in Menu Structure • Decreases Manually Inputted Values
Left Arrow Button		• Navigates Back in Menu Structure • Navigates Left when Manually Inputting Values
Right Arrow Button		• Navigates Deeper into the Menu Options • Navigates Right when Manually Inputting Values

4. Technical data

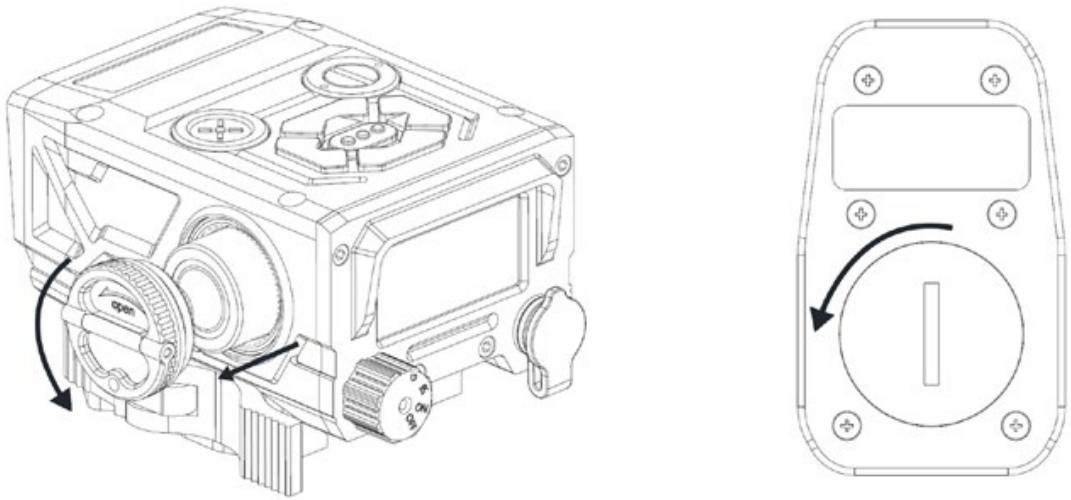
SN	Project	Ballistic Rangefinder
1	Laser Type	1535nm
2	Range Building	10~4000m
3	Eye Safety	Class 1（indicating laser belongs to Class 3B）
4	Adjustable Range	±3°
5	Indication Distance	500m（Night）
6	Accuracy	±1m
7	Range freq.	1Hz
8	Detection	≥98%
9	Divergence	~0.6mrad
10	Angle range	Pitch angle：±90°（±1°） Roll angle：0~180°（±1°）
11	Temperature range	-40~+60℃ (±1℃)
12	Humidity range	0~100% (±5%)

13	Altitude range	0~5000m (±20m)
14	Power Supply	DC 2.2~5V
15	Battery type	CR123A×1
16	Battery Endurance	5000 times
17	Display Size	1.3” OLED
18	Weight	230g（Battery included）
19	Dimensions	76x56x47mm（L×W×H）
20	Operating Temp.	-40~+55℃
21	Storage Temp.	-50~+65℃
22	IP rating	IP67
23	Connector	Uart（TTL_3.3V）to USB
24	Wireless transmission	Bluetooth 5.0
25	Other	Mobile APP interconnection

5. Preparation Before Use

5.1 Changing the battery

Turn the handle in the direction of the arrow on the battery cover to open the battery compartment. One battery is installed in series, The positive electrode faces in, otherwise no power. The product comes standard with 1 CR123A battery, compatible with 16340 rechargeable battery.



To replace the Bluetooth remote battery, use a flat tool to insert the slot, and turn the battery cover counterclockwise, then put in one new CR2032 battery,

The negative electrode faces in, and turn the battery cover clockwise.

The current power will be displayed in the upper right corner of the home page after Power on. When the power is low, please replace the battery in time.

5.2 Power On/Off

Turn the knob clockwise, when the “ON” on the knob is against the white circle mark on the back shroud, the rangefinder will power on. The screen will display the Home page of Range finder mode or ballistic Mode, depending on the mode selection when the last shutdown was performed.

Turn the knob anticlockwise, when the “OFF” on the knob is against the white circle mark on the back shroud, the rangefinder will Power off.

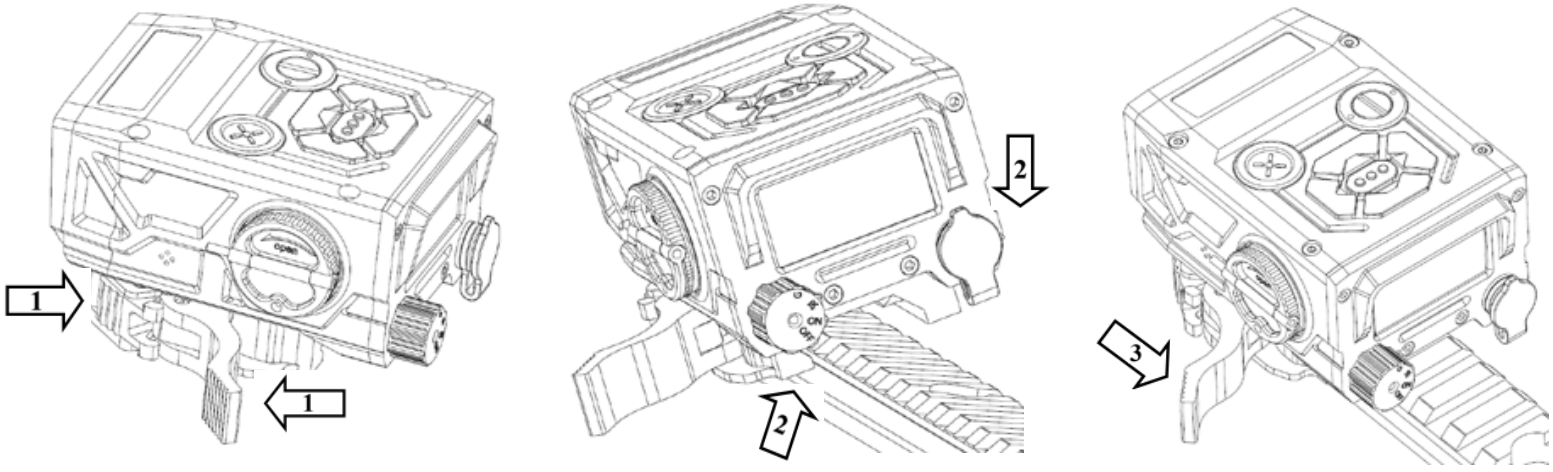
If there is no operation for a long time, the rangefinder will auto off. see the details of auto of on page**.

5.3 Mounting Rangefinder

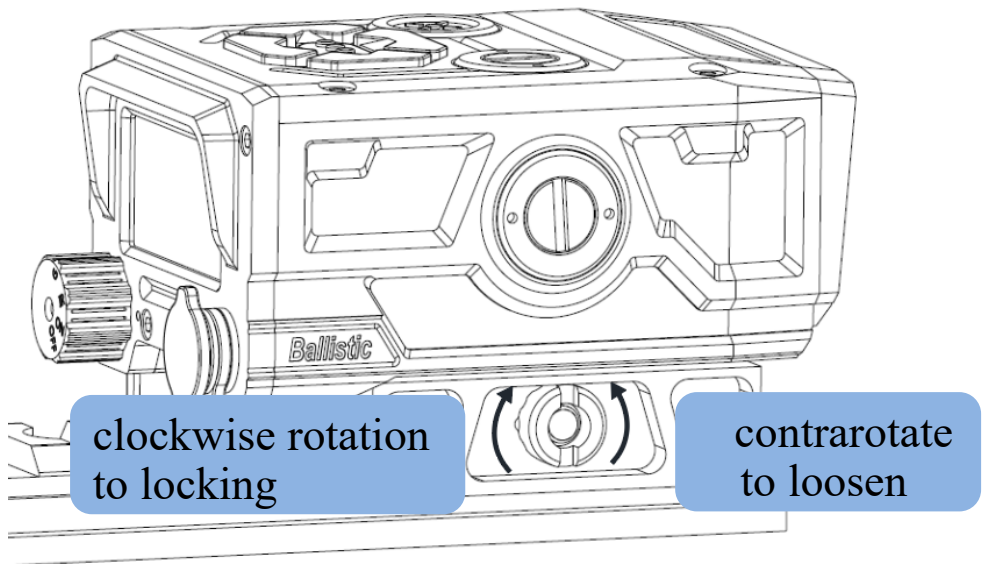
1.Press the self-locking block in front of the mount, and flick the handle outward at the same time, the mount will open;

2.Put The left side of the mount against the left edge of the Picatinny rail, press down the right side of the mount at the same time, let rod fall into the groove of Picatinny rail.

3. Flick the handle inward to locking the mount.



If the rangefinder shakes after installed on the Picatinny rail, or the handle cannot be pulled to the locking position, you can turn the nut on the right side of the mount, Until the rangefinder is fixed on the Picatinny rail stably.

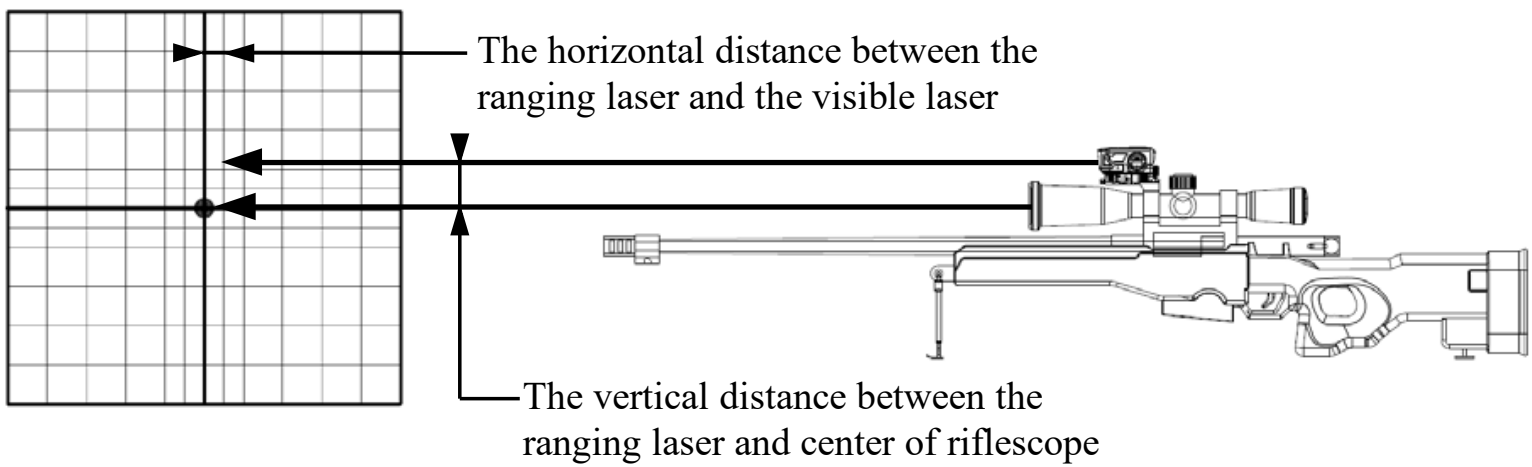


5.4 Zeroing

To ensure the accuracy of ranging and ballistics, the angefinder must be zeroed parallel to the riflescope, Before zeroing, the riflescope must be properly mounted and zeroed.

1.Stick the target paper at a distance of 50-100 yards in front of the weapon. Align the reticle of the riflescope with the cross center of the target paper.

2. Turn the knob clockwise, when the “G” on the knob is against the white circle mark on the back shroud, the green laser will light on.



3. Use the matched tool to adjust the Elevation and Windage Turrets to align the position of the visible laser.

4. Adjust the position of the visible laser so that it is on the line to the right of the center of the target paper, the same vertical distance from the center of the target paper and the distance from the rangefinder light to the cross center of the riflescope.

5.5 Connect with bluetooth remote

Before the first time to connect Bluetooth remote with rangefinder, Please make sure that the bluetooth remote is equipped with battery, The rangefinder is powered on, The distance between them is not more than 10 yard.

1.Open the add page of bluetooth. Turn on the Bluetooth in the Settings menu, and then enter the Add page, the screen will display “Search…”.

2.Press the “Ranging Button” of bluetooth remote，the red LED will blink，and the bluetooth remote will search the rangefinder ;

3. On the Add page of rangefinder, select the SN of bluetooth remote that needs to be connected, and press the "Setting Button" of rangefinder to start the connection. Once the connect succeed, the green LED of bluetooth remote will blink 5 times, then standby.

4.The bluetooth remote will connect with rangefinder automatic when it powered on next time, you can delete the devices in the settings menu.

6. Directions for use

6.1 Main Function

1) Ranging: Measuring the straight line distance between target guides (slant distance).
2) Ballistics: Measuring the distance, and provide the ballistic correction .
3) Green & IR Laser pointer.
4) Data transmission.

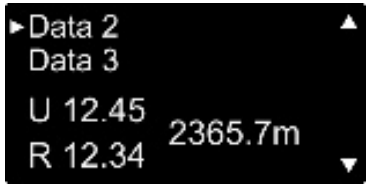
6.2 Setting menu

Press the setting button to enter the setting menu interface and set various functions.

6.2.1 Range Mode

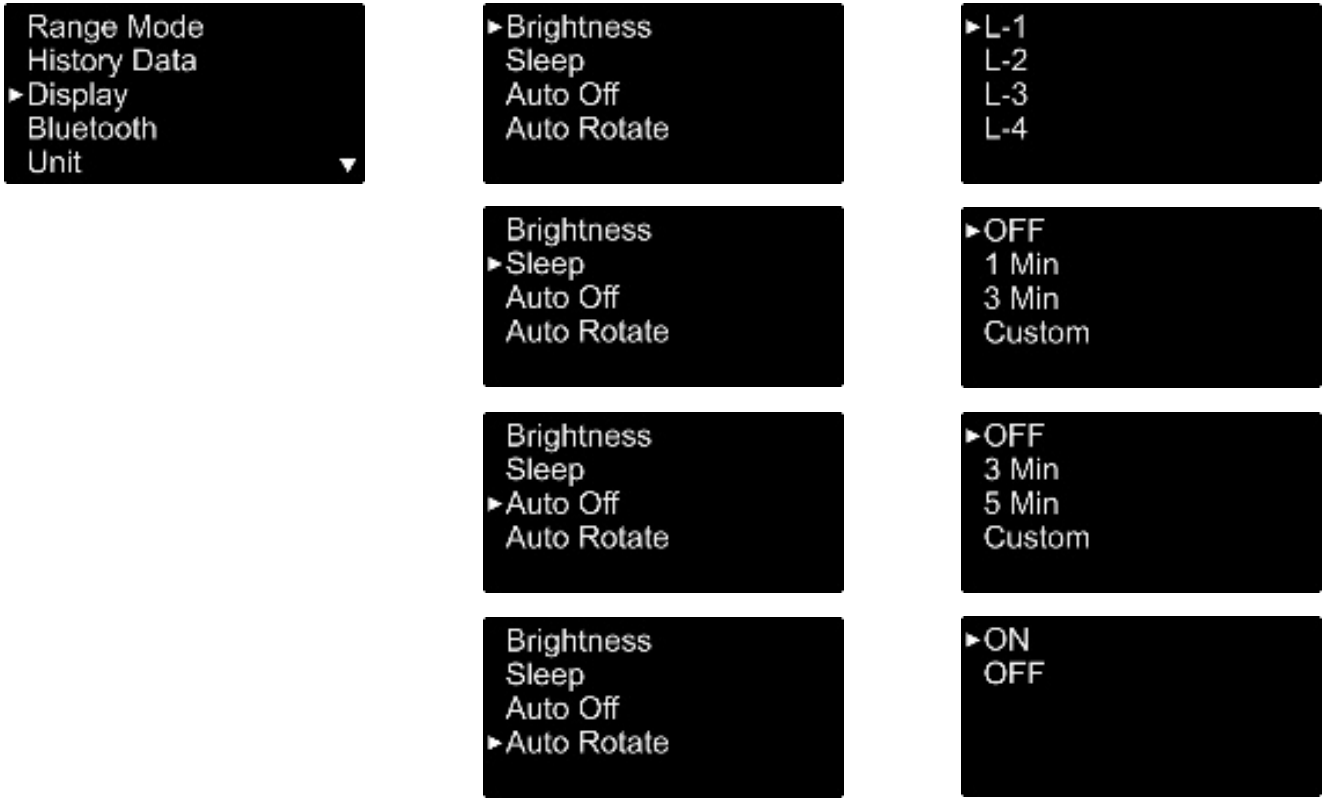
The rangefinder includes 2 mode, LOS means Light of Sight, the straight-line distance to target. BAM means Ballistic Mode, measure the straight-line distance to target, and provide ballistics at the same time.

6.2.2 History Data



History data support to view 10 historical data in the corresponding mode.

6.2.3 Display



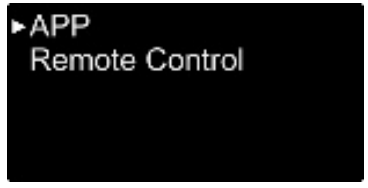
On the display page, you can set the “Brightness”, “Sleep”, “Auto off”, “Auto rotate”.

The brightness is divided into "L-1... L-4 "four levels; The screen sleep can

be closed or select the suitable time, or you can input the sleep time by yourself; The auto off can be closed or select the suitable time, or you can input the sleep time by yourself; when Auto rotate is on, the display direction of home page will change automatic depends on the angel of rangefinder.

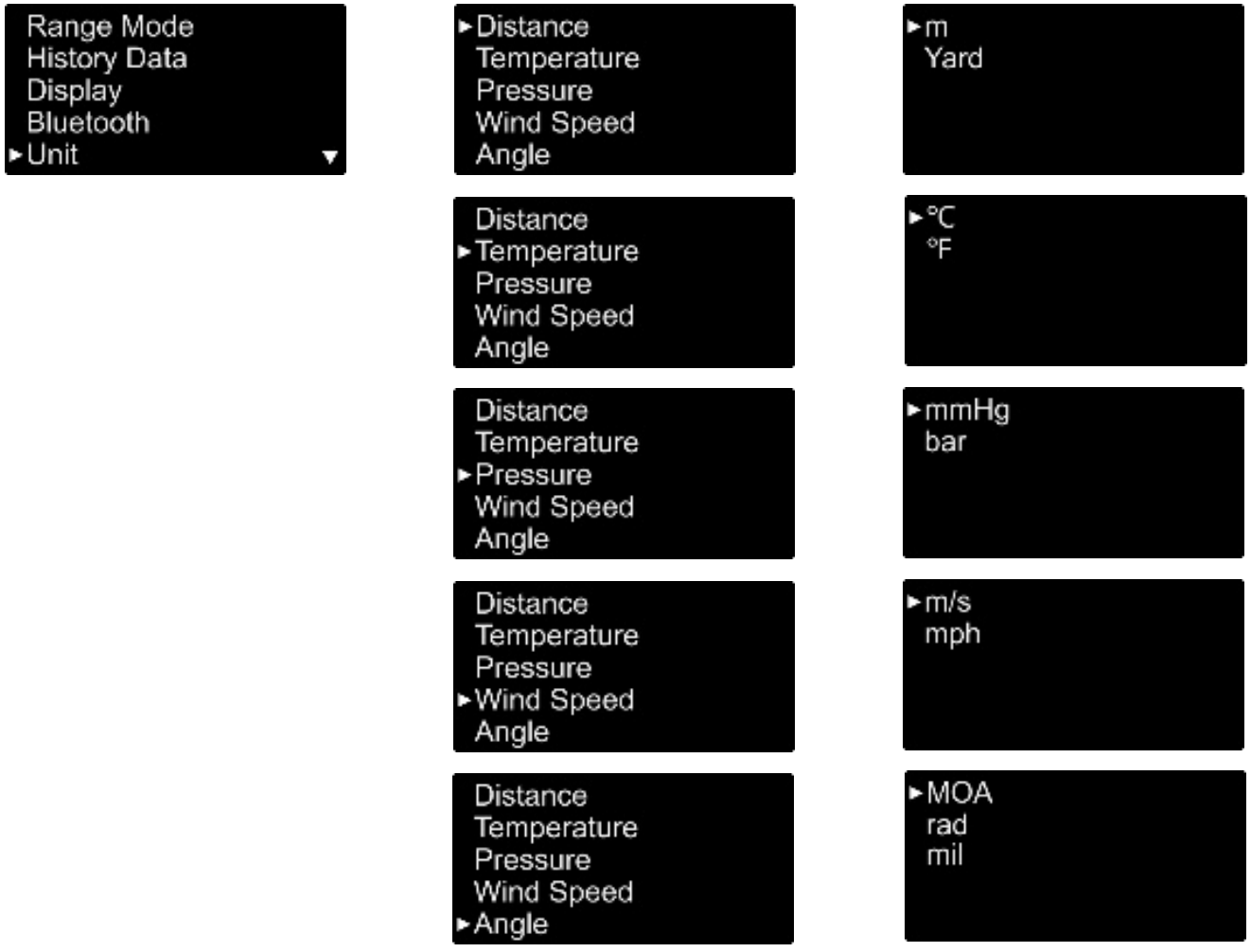
The unit of “Sleep”& “Auto off” is minutes, when “Sleep”& “Auto off” both on, the time of “Auto off” cannot be less than the time of the “Sleep”, otherwise the setting is invalid.

6.2.4 Bluetooth



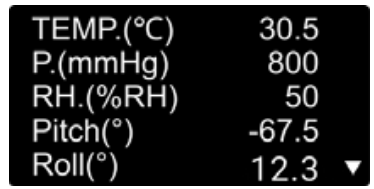
Bluetooth can be turned on or off by setting. Select "View" to view and delete the currently connected device. Select "Add" to connect a new device.

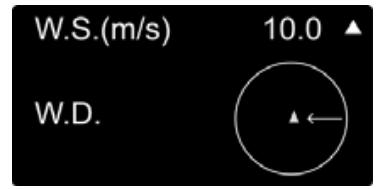
6.2.5 Unit


Range Mode
History Data
Display
Bluetooth
►Unit
►Distance
Temperature
Pressure
Wind Speed
Angle
►m
Yard
Distance
►Temperature
Pressure
Wind Speed
Angle
►°C
°F
Distance
Temperature
►Pressure
Wind Speed
Angle
►mmHg
bar
Distance
Temperature
Pressure
►Wind Speed
Angle
►m/s
mph
Distance
Temperature
Pressure
Wind Speed
►Angle
►MOA
rad
mil

Through the "Unit" function, you can set the units of various display units, including the units of Distence, Temperature, Pressure, Wind Speed, and Angle.

6.2.6 Environment





The "Environment" function allows you to view the current environment information, including Temperature, Pressure, humidity, posture, wind speed, and wind direction.

You can also manually enter the wind speed and direction information.

6.2.7 Ballistic Profiles

The "Ballistic Profiles" function can be used to set a table of commonly used bullet types, and the gun information and bullet information can be modified after selecting the corresponding title