B5LR SERIES
HANDHELD LASER RANGEFINDER

Main parameter

Light source: Nd:YAG

Wavelength: 1064nm

Output energy: ≥5 mj

Working life: ≥20,000 times

Ranging range: 30-5000m, 8000m, 10000m, 15000m, 20000m (optional).

Ranging error: ±1m

Distance strobe: 20~4000m (step size is 10m)

Accuracy rate: 98%

Repetition frequency: 1/10 (6 times/min)

Average value of measurement data

Measurement data storage (10 data)

Measurement data transmission (output interface: RS232 serial port, 115200, 8, N, 1)

The OLED display and scoreboard lighting and brightness adjustment are automatically turned off when there is no operation for 30s.Cumulative laser working life

Battery capacity view

Query function: query the last ten ranging values, query the serial number, and query the storage area data.Receiving aperture: Φ31mm

Field of view: 6.5°

Magnification: 7*

Working temperature: -40℃~+50℃

Environmental adaptation: dustproof, waterproof, anti-vibration

Volume: Appearance size: 60mm*130mm*139mm

Weight: 635g

Power supply: Polymer lithium battery pack (7.4V or 11.1V/1000mAh), at room temperature, each battery pack with sufficient power can measure the distance more than 2000 times.

Packing list

| Serial number	name	quantity	Note note
1	Instrument box	1 pc	
2	Rangefinder	1 set	
3	charger	1 pc	
4	Battery pack	1 group	
5	External trigger cable	1 pc	
6	Flannel	1 piece	
7	Certificate of conformity	1 sheet	
8	Manual	1 serving	

Structure and operation function of the rangefinder

Mechanical structure

The mechanical structure of the rangefinder is in the form of a monocular two-in-one optical path structure (that is, the receiving and aiming optical paths are integrated, and the transmitting optical paths are independent).

Control structure

1.Trigger button (TK): Turn on or emit a laser pulse to make the instrument measure the distance normally.
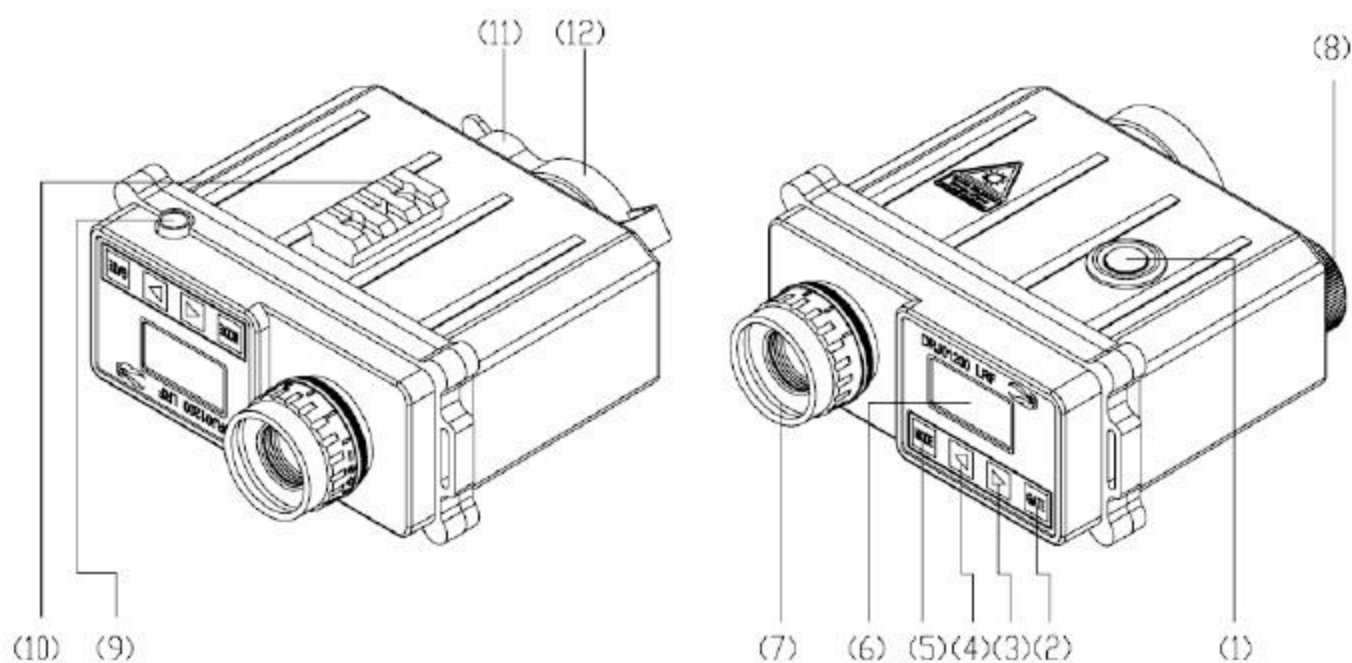
2. Strobe key (GATE): Set the distance door of the instrument.Under the main interface, press the distance gate strobe value once to add 500 meters.

3. Add key (▲): numerical correction.Under the main interface, press the plus key once to increase the strobe value by 10 meters.

4 .Minus key (▼): numerical correction.Under the main interface, press the minus key once to reduce the strobe value by 10 meters.

5.MODE key (MODE): Menu key, press this key to switch the display content.

6.Display window: Displays the distance value and operation function characters of the measured target.

7.Aiming eyepiece: The operator uses this eyepiece to aim at the target.

8.Battery: The battery is loaded into the port.

9.Connection plug: used for signal input/output of instruments and peripheral equipment.

10.Installation interface: Used for the instrument to be installed on a tripod or in a fixed dedicated location.

11.Laser emission port: Used to emit lasers, it is strictly prohibited to emit lasers at people.

12.Laser receiving port: Used to receive the signal reflected back by the laser.

General use

1 .Insert the positive electrode of the battery "+" down into the laser rangefinder battery compartment (incorrect installation will cause damage to the instrument), and press the instrument trigger button.The OLED display window displays the main interface, indicating that the instrument has been initialized and ranging can be carried out.

2. Aim at the target through the observation eyepiece, and aim the center of the "ten" line in the observation eyepiece at the target, and adjust the viewing angle adjustment circle to make the target image aimed at the clearest.

3 .Click the trigger button, the instrument starts ranging and displays the following results:

1 Shows the number of distances to the target.Such as "1234m".

2"-----m" means that no target has been measured or the target is outside the range.

3 In the main interface, the percentage of battery power is displayed in the upper right corner of the OLED display window. If the battery power is less than 10%, it means that the voltage is low and the battery pack needs to be charged or replaced.

4 At the end of each normal ranging, after a valid ranging value is obtained, the current ranging value will be automatically sent through the serial port.

Special use

In this rangefinder, in addition to the most commonly used ranging functions, there are also powerful auxiliary functions for special use.Including: strobe, averaging, data storage, data transmission, data retrieval, product serial number display, crosshair brightness adjustment, LCD backlight brightness adjustment.

In special use, no matter what state you enter, press and hold the "MODE" button for two seconds to exit this state and return to the main interface.

The four keys of mode, minus key, plus key, and strobe are the function keys.

1 Strobe function:

If there are multiple targets in the aiming optical path, you can selectively measure the distance through the strobe function (the strobe range is 20~4000 m).

1 .After booting up, enter the main interface, and "Gating: 20m" is displayed at the bottom of the interface. At this time, the strobe distance is 20 meters.Each time you press the "GATE" button, the strobe value increases by 500 meters.At this time, press the up and down arrow buttons to correct the strobe value. Each time you press it, the strobe value is corrected by 10 meters.

2. After correcting the strobe value, press the trigger button again to measure the distance of the target after the strobe value.

Average function (AVG):

If you need to accurately measure the target distance value, you can perform an average distance measurement, and the effective average number of times is 10 times.4.2.1 Press the "MODE" button, and the system enters the interface for viewing the measured values and averaging the data 10 times.Among them,, the distance value of the last 10 measurements is displayed on the display, and the last line "Average: xxxm" shows the average value of the 10 measurements.

3 Storage Function (SAV) :

If it is difficult to record data on site or you want to use a computer to process the data centrally, the storage function can be used.

1.The system will automatically record the last 1000 measurement data and store it in memory.Each set of data can be queried and read out through the computer serial port.

2.Press and hold the trigger button to exit the current state and enter the main interface.

4 Sending function (TXD) :

If you need to send memory data to peripheral devices for processing, you can use the send function.

1. Connect the instrument and peripheral devices normally through special cables.
Instrument socket pins are shown in the table below:

Nut   Washer   Rubber Sleeve
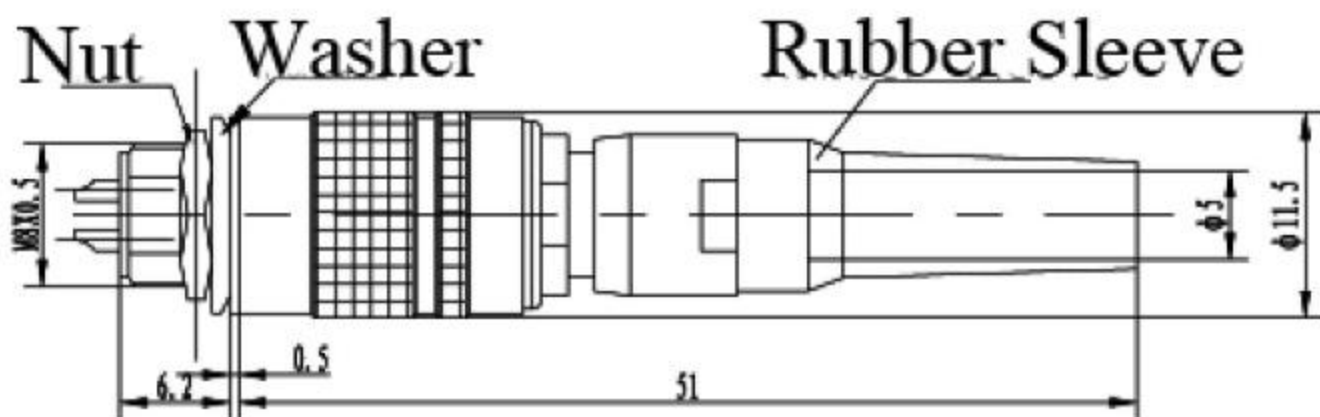
Socket(welded surface)

Plug(non-welded surface)

sequence	function
1	Signal ground
2	+VDD
3	trigger
4	TXD
5	RXD
6	Charging port

2.In the state of single ranging, the distance value is sent once for each ranging.

5 Data retrieval function:

Press MODE. The screen for viewing 10 measurements and averaging data is displayed. The distance values of the last 10 measurements are displayed on the display.

6 Product serial number display function:

Press the "MODE "key to switch to the serial number display function and display the serial number of the instrument.

7 Ranging times display function:

Press the "MODE" key to switch to the range number display function and check the cumulative range number of the instrument.

8 Brightness adjustment function:

This function is used to adjust the brightness of the LCD and the board respectively.

1 Press the "MODE" key to switch to the LCD brightness adjustment menu. Press the up and down arrow buttons to adjust the LCD brightness.

2 Press the MODE key to switch to the display brightness adjustment menu. Press the up and down arrow buttons to adjust the backlight brightness of the partition board.

4.8.3 Press the MODE key for two seconds to exit the preceding state.

Set up and use

If you need a stable and reliable measurement of distant targets, you can use the 1/4 screw hole at the bottom of the instrument connecting plate fixed to the camera frame, or through the dovetail slot of the connecting plate, connected to various theodolites through a special switching mechanism, and remote ranging operation through the external trigger cable.

battery

This instrument uses a 11.1V/1000mAh special polymer lithium battery pack. When the instrument shows that the battery is undervoltage, please charge or replace the special battery in time. In order to prevent injury or fire, please do not let metal objects touch the battery electrode. To prevent damage to the battery pack, please do not open the battery pack packaging, please keep the battery dry, do not put the battery in the fire (there is a risk of explosion in the fire), it is recommended to use a matching special charger to charge the battery pack, the use of inferior chargers may cause damage to the battery pack, please keep the ambient temperature between 0 ℃ and 40℃ when the battery is charged, relative humidity 80%, inappropriate use environment may cause damage to battery performance.

Note: When not used for a long time, please store the special battery pack in the packaging box, do not put it in the rangefinder.

Charger use

Plug the charge into the AC110-240V power supply. At this time, the blue indicator light at the bottom of the charger battery will light up. After loading the uncharged battery, the red indicator light will light up at the bottom of the battery, indicating that charging is underway. After the battery is fully charged, the red light at the bottom of the battery is turned off, and the blue light is turned on. After charging, first unplug the charging adapter from the AC power supply, and then remove the output plug from the instrument socket.

Note: The battery should be charged after being removed from the rangefinder and connected to the charger, otherwise it will cause damage to the instrument.

Operating functions and serial ports

1 Search table

ranging ----------------------- Measuring distance

gating ----------------------- Set the minimum distance door

illumination ----------------------- Turn on LCD and panel lighting

mode ----------------------- Function module

average----------------- Average ranging function

store ----------------- Regional data storage function

send ----------------- Serial transmission of measurement data

retrieve ---------------- Data retrieval

(LTD)-------- The last ten measurement data queries

(S/N)---------- Serial number query

(BAT)-------- Battery life query

(LIF)--------- Ranging life query

adjust (ADJ)------------ Lighting brightness adjustment

(LED)-------- Brightness adjustment of the scoreboard

(LCD)-------- LCD brightness adjustment

2 The connection method of serial communication between the instrument and the PC

On the hardware, the serial port is selected for connection. The right side of the figure below shows the definition of the signal pin of the ranging machine, and the left side shows the definition of the nine-pin DB-9 pin of the PC connector.

RS232C signal line and DB-9 pin definition			Connection mode	Instrument output socket pin definition	
symbol	name	Serial number		Serial number	function
DCD		1		1	Signal ground
RXD	Receiving data line	2		2	+VDD
TXD	Data transmission line	3		3	trigger
DTR		4		4	TXD
GND	Public land	5		5	RXD
DSR		6		6	Charging port
RTS		7			
CTS		8			
RI		9			

3 Data sending Format 8.3.1

Distance value data format:

0x55	0XAA	Packet length	0x02	0x0B	Number of targets
Target distance (decimeter) (Length 3B)			verify	0x66	0xBB

0x55 and 0XAA are packet headers. "Packet Length" is the number of bytes contained in the packet; "Target Number" is the number of targets currently measured; "Target distance" means the distance value of the currently measured target, the unit is decimeter, the length is 3 bytes; The calculation method of "check bit" is: sum all bytes of data before the check bit, and then subtract 256; 0x66 and 0XBB are the packet tail.

8.3.2 Single range command

0x55	0XAA	0x08	0x01	0x23	0x2B	0x66	0XBB

Instrument maintenance

1 Routine maintenance of instrument:

1. Always check the appearance of the instrument and remove dust, grease, mildew, etc. from the surface in time.The rangefinder should be stored for about three months. It should be powered on to measure the distance and checked for normal operation. If there is a problem, it should be sent to a special maintenance department for repair in time.

2.Use a soft dry cloth when cleaning eyepieces, objective lenses, or laser emission windows.It is strictly forbidden to mark with hard objects to avoid damaging the optical properties.

3.This machine is an integrated high-precision instrument of light, machine and electricity. It should be placed carefully during use. It is strictly forbidden to squeeze or fall from a height to avoid damage to the instrument.

4.The temperature of the warehouse should be kept in the range of 25±5℃, and the relative humidity should be below 70%; the ground should be flat and more than 40 cm higher than the nearby ground plane; it is forbidden to place the product close to a place where there is direct exposure to thermal radiation.

2 Fault handling

Troubleshooting by the user is limited to loading, unloading and replacing batteries, as well as some inspections that do not require the instrument to be turned on.If you find a fault, you should contact the company in time.It is strictly forbidden to turn on the instrument privately to prevent the high pressure in the machine from hurting people or further expanding the failure.

If you press the trigger button and there is no laser emission, please remove the battery and reinstall it to power on.

3 Warranty:

From the instrument out of the company, warranty for one year (battery for three months), any quality problems caused by manufacturing or components, by the company free replacement parts and maintenance. If the accident is caused by the user's careless use or improper storage and transportation, it does not belong to the scope of warranty. This product carries out lifelong maintenance, over the warranty period, the company only charges part of the repair fee and maintenance cost.

TFN 激光测距仪

Distance: 0%

----.-M

Gating: 20 m

MODE ◀ ▶ GATE

TFN 激光测距仪

Distance: 0%

----.-M

Gating: 20 m

MODE ◀ ▶ GATE

TFN 激光测距仪

Distance: 0%
----.-M
Gating: 20 m

MODE ◄ ► GATE