

TFA

HANDHELD LASER RANGEFINDER

POWER/OUTDOOR/CONSTRUCTION/MAJOR ENGINEERING



WLR SERIES

INFRARED OPTICAL SYSTEM
ACCURATE RANGING FOR THE OUTDOORS

WLR SERIES

7 TEST DISTANCES
ADAPT TO REMOTE TESTING

WLR SERIES

HD OPTICAL LENS
CLEARER OBSERVATION EFFECT

WLR SERIES

DUSTPROOF, WATERPROOF,
SEISMIC
SUITABLE FOR COMPLEX TEST ENVIRONMENTS

ROTARY FOCUSING CLEAR TARGET POSITIONING

BOTH MYOPIA AND PRESBYOPIA CAN BE OBSERVED WITH THE NAKED EYE, AND
THE EYEPIECE DEFINITION CAN BE ADJUSTED FREELY



RANGING ERROR

PRECISION RATIO

± 1 m

98%

EXTERNALIZABLE EXTERNAL TRIGGER CABLE

ADAPT TO A VARIETY OF COMPLEX MEASUREMENT ENVIRONMENTS AND
FACILITATE OUTDOOR MEASUREMENT



PRODUCT DETAILS



TRIPOD INTERFACE
MEASUREMENT ANTI-JITTER
MORE ACCURATE DATA



ALL-OPTICAL COATED LENS
ENHANCE THE OVERALL
TRANSMITTANCE, REDUCE THE
REFLECTION OF THE OPTICAL SYSTEM,
AND MAKE THE PICTURE CLEARER



EASY TO OPERATE
INDEPENDENT BUTTON FOR
MANUAL ADJUSTMENT OF
PARAMETER SETTINGS
ANYTIME AND ANYWHERE

APPEARANCE INTRODUCTION





1 TRIGGER KEY (TK): POWER ON OR EMIT LASER PULSES TO MAKE THE INSTRUMENT RANGE NORMALLY.

2 GATE KEY (GATE) : SET THE DISTANCE GATE OF THE INSTRUMENT. IN THE MAIN SCREEN, PRESS THE DISTANCE GATE VALUE ONCE PLUS 500 METERS.

3 PLUS KEY (A): VALUE CORRECTION. UNDER THE MAIN INTERFACE, PRESS THE PLUS KEY ONCE TO ADD 10 METERS TO THE GATING VALUE.

4 MINUS KEY (V): VALUE CORRECTION. IN THE MAIN INTERFACE, PRESS THE SUBTRACT KEY ONCE TO REDUCE THE GATE VALUE BY 10 METERS.

5 MODE KEY: MENU KEY. PRESS THIS KEY TO SWITCH THE DISPLAY CONTENT.

6 DISPLAY WINDOW: DISPLAY THE DISTANCE VALUE AND OPERATION FUNCTION CHARACTERS OF THE MEASURED TARGET.

7 AIMING EYEPIECE: THE OPERATOR AIMS AT THE TARGET WITH THE EYEPIECE.

8 BATTERY: BATTERY INLET.

9 CONNECTION PLUG: SIGNAL INPUT/OUTPUT FOR INSTRUMENTS AND PERIPHERALS.

10 INSTALLATION INTERFACE: USED FOR INSTRUMENT INSTALLATION IN TRIPOD OR FIXED SPECIAL POSITION.

11 LASER EMISSION PORT: USED TO EMIT LASER, DO NOT EMIT LASER TO PEOPLE.

12 LASER RECEIVING PORT: USED TO RECEIVE THE SIGNAL REFLECTED BY THE LASER.

PRODUCT PARAMETER

PRODUCT MODEL	W5LR	W6LR	W8LR	W10LR	W12LR
MEASURING DISTANCE	30-5000m	30-6000m	30-8000m	30-10000m	30-12000m
PRODUCT MODEL	W15LR	W30LR			
MEASURING DISTANCE	30-15000m	30-30000m			
ILLUMINANT	Nd:YAG		WAVE LENGTH	1064nm	
OUTPUT ENERGY	≥ 5 mj		WORKING LIFE	≥ 20000 TIMES	
RANGING ERROR	± 1 m		RANGE GATING	20~4000m	
PRECISION RATIO	98%		REPETITION RATE	1/10 (6 TIMES/MIN)	
AVERAGE MEASUREMENT DATA: MEASUREMENT DATA STORAGE (10 DATA)					
MEASUREMENT DATA TRANSMISSION (OUTPUT INTERFACE: RS232 SERIAL PORT, 115200, 8, N, 1)					
OLED DISPLAY AND PANEL LIGHTING AND BRIGHTNESS ADJUSTMENT, 30S AUTOMATIC SHUTDOWN WITHOUT ANY OPERATION. LASER SERVICE LIFE ACCUMULATION					
QUERY FUNCTION	LAST 10 RANGE VALUE QUERY, SERIAL NUMBER QUERY, STORAGE AREA DATA QUERY				
JUNCTION DIAMETER	$\Phi 31$ mm		FIELD OF VIEW	6.5°	
MAGNIFICATION	7X		OPERATING TEMPERATURE	-40°C~+50°C	
ENVIRONMENTAL ADAPTATION	DUSTPROOF, WATERPROOF, SEISMIC		EXTERNAL DIMENSION	60mm*130mm*139mm	
WEIGHT	635g				
POWER SUPPLY	LITHIUM POLYMER BATTERY PACK (7.4V OR 11.1V/1000MAH), AT ROOM TEMPERATURE,				
	EACH FULLY CHARGED BATTERY PACK CAN RANGE MORE THAN 2,000 TIMES				

GENERAL USE

1 INSERT THE POSITIVE BATTERY "+" DOWNWARD INTO THE BATTERY COMPARTMENT OF THE LASER RANGEFINDER (INCORRECT INSTALLATION WILL CAUSE DAMAGE TO THE INSTRUMENT), AND PRESS THE INSTRUMENT TRIGGER BUTTON. THE OLED DISPLAY WINDOW SHOWS THE MAIN INTERFACE, INDICATING THAT THE INSTRUMENT IS INITIALIZED AND CAN BE RANGING.

2 AIM AT THE TARGET THROUGH THE OBSERVATION EYEPIECE, AND ALIGN THE CENTER OF THE "CROSS" IN THE OBSERVATION EYEPIECE WITH THE TARGET, AND ADJUST THE VISIBILITY ADJUSTMENT CIRCLE TO MAKE THE TARGET IMAGE THE MOST CLEAR

3 PRESS THE TRIGGER BUTTON, THE INSTRUMENT STARTS TO DISTANCE, AND DISPLAYS THE FOLLOWING RESULTS

1 DISPLAY THE DISTANCE OF THE TARGET. FOR EXAMPLE, 1234M.

2 - ----M INDICATES THAT THE TARGET IS NOT DETECTED OR IS OUTSIDE THE MEASUREMENT RANGE.

3 ON THE HOME SCREEN, THE PERCENTAGE OF BATTERY POWER IS DISPLAYED IN THE UPPER RIGHT CORNER OF THE OLED DISPLAY WINDOW. IF THE BATTERY POWER IS LOWER THAN 10%, THE BATTERY POWER IS LOW. YOU NEED TO CHARGE OR REPLACE THE BATTERY PACK.

4 AT THE END OF EACH NORMAL RANGING, THAT IS, AFTER OBTAINING A VALID RANGING VALUE, 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 POWERFUL AUXILIARY FUNCTIONS FOR SPECIAL USE. INCLUDING: STROBE, AVERAGE, DATA STORAGE, DATA TRANSMISSION, DATA RETRIEVAL, PRODUCT SERIAL NUMBER DISPLAY, CROSS LINE BRIGHTNESS ADJUSTMENT, LCD BACKLIGHT BRIGHTNESS ADJUSTMENT.

IN SPECIAL USE, NO MATTER WHAT STATE IS ENTERED, LONG PRESS THE "MODE" KEY FOR TWO SECONDS TO EXIT THIS STATE AND RETURN TO THE MAIN INTERFACE.

MODE, MINUS, PLUS, AND STROBE KEYS ARE FUNCTION KEYS.

1 STROBE FUNCTION:

IF THERE ARE MULTIPLE TARGETS IN THE AIMING OPTICAL PATH, THE GATING FUNCTION CAN BE USED FOR SELECTIVE RANGING (GATING RANGE OF 20~4000 M).

1 AFTER STARTING THE DEVICE, ENTER THE MAIN SCREEN. THE GATING DISTANCE IS 20 METERS WHEN THE GATING DISTANCE IS DISPLAYED AT THE BOTTOM OF THE SCREEN. EVERY TIME YOU PRESS THE "GATE" KEY, THE GATE VALUE INCREASES BY 500 METERS. PRESS THE UP AND DOWN ARROW BUTTONS TO MODIFY THE GATE VALUE. EVERY TIME YOU PRESS THE GATE KEY, THE GATE VALUE IS MODIFIED BY 10 METERS.

2 AFTER CORRECTING THE GATE VALUE, PRESS THE TRIGGER KEY TO MEASURE THE DISTANCE OF THE TARGET AFTER THE GATE VALUE.

2 AVERAGE FUNCTION (AVG) :

IF THE TARGET DISTANCE VALUE NEEDS TO BE ACCURATELY MEASURED, THE AVERAGE DISTANCE CAN BE MEASURED, AND THE EFFECTIVE AVERAGE NUMBER OF TIMES IS 10.

4.2.1 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, AND THE LAST LINE "AVERAGE: XXXM" IS THE AVERAGE VALUE OF THE 10 MEASUREMENTS.

3 STORAGE FUNCTION (SAV) :

IF IT IS DIFFICULT TO RECORD THE DATA ON THE SPOT OR WANT TO USE THE COMPUTER TO PROCESS THE DATA CENTRALLY, THE STORAGE FUNCTION IS AVAILABLE.

1 THE SYSTEM AUTOMATICALLY RECORDS THE LATEST 1000 MEASUREMENTS AND STORES THEM IN THE MEMORY. EACH SET OF DATA CAN BE QUERIED AND READ THROUGH THE SERIAL PORT OF THE COMPUTER.

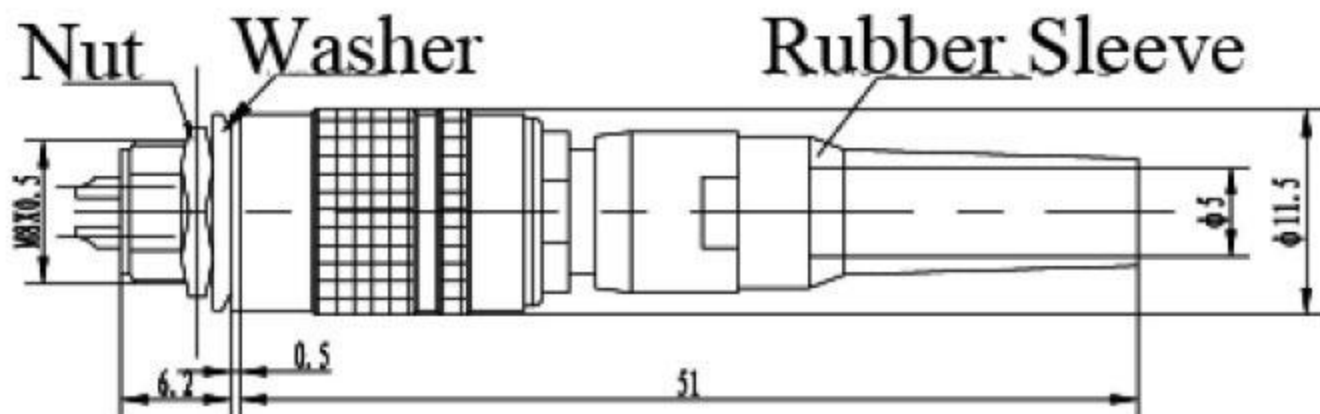
2 HOLD DOWN THE TRIGGER KEY TO EXIT THE CURRENT STATUS AND ENTER THE HOME SCREEN.

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 EQUIPMENT NORMALLY THROUGH A SPECIAL CABLE.

INSTRUMENT SOCKET PINS ARE SHOWN IN THE TABLE BELOW:



Socket(welded surface)



Plug(non-welded surface)

SUBSCRIPT	FEATURE
1	SIGNALLY
2	+VDD
3	TRIGGER
4	TXD
5	RXD
6	CHARGING PORT

2 IN THE SINGLE RANGING STATE, A DISTANCE VALUE IS SENT FOR EACH DISTANCE MEASUREMENT.

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.

ERECTION 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 11.1V/1000MAH SPECIAL POLYMER LITHIUM BATTERY PACK, WHEN THE INSTRUMENT SHOWS THAT THE BATTERY IS UNDER 1 VOLTAGE, PLEASE CHARGE OR REPLACE THE SPECIAL BATTERY IN TIME, IN ORDER TO PREVENT INJURY OR FIRE, PLEASE DO NOT LET

METAL CONTACT THE BATTERY ELECTRODE, IN ORDER TO PREVENT DAMAGE TO THE BATTERY PACK, DO NOT OPEN THE BATTERY PACK PACKAGING, PLEASE KEEP THE BATTERY DRY, DO NOT PUT THE BATTERY INTO THE FIRE (THERE IS AN EXPLOSION IN THE FIRE IT IS RECOMMENDED TO USE A DEDICATED CHARGER TO CHARGE THE BATTERY PACK, THE USE OF POOR QUALITY CHARGERS MAY CAUSE DAMAGE TO THE BATTERY PACK, BATTERY CHARGING PLEASE KEEP THE AMBIENT TEMPERATURE BETWEEN 0°C TO 40°C, RELATIVE HUMIDITY < 80%, INAPPROPRIATE USE OF THE ENVIRONMENT MAY CAUSE HARM TO BATTERY PERFORMANCE. THE USE OF THE ENVIRONMENT MAY CAUSE HARM 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.

OPERATION FUNCTION AND SERIAL PORT

1 SEARCH TABLE

- RANGING ----- MEASURING DISTANCE
- GATING ----- SET THE MINIMUM DISTANCE DOOR
- ILLUMINATION ----- TURN ON LCD AND PANEL LIGHTING
- MODE ----- FUNCTION MODULE
- AVERAGE RANGING FUNCTION
- REGIONAL DATA STORAGE FUNCTION
- MEASUREMENT DATA IS SENT SERIAL
- DATA RETRIEVAL
- QUERY THE LATEST 10 MEASUREMENT DATA
- SERIAL NUMBER QUERY
- BATTERY LIFE QUERY
- RANGE LIFE QUERY
- LIGHTING BRIGHTNESS ADJUSTMENT
- PANEL BRIGHTNESS ADJUSTMENT
- LIQUID CRYSTAL BRIGHTNESS ADJUSTMENT

2. CONNECTION METHOD OF SERIAL PORT COMMUNICATION BETWEEN INSTRUMENT AND PC

ON THE HARDWARE, THE SERIAL PORT IS USED FOR CONNECTION. THE RIGHT SIDE OF THE FIGURE BELOW IS THE RANGEFINDER SIGNAL PIN DEFINITION, AND THE LEFT SIDE IS THE PC CONNECTOR NINE-PIN DB-9 PIN DEFINITION.

RS232C SIGNAL LINE AND DB-9 PIN DEFINITION			CONNECTION MODE	INSTRUMENT OUTPUT SOCKET PIN DEFINITION	
SYMBOL	NAME	LEAD		SUBSCRIPT	FEATURE
DCD		1		1	SIGNALLY
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
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INSTRUMENT MAINTENANCE

1 ROUTINE MAINTENANCE OF INSTRUMENT:

1. REGULARLY CHECK THE APPEARANCE OF THE INSTRUMENT AND REMOVE THE DUST, DIRT, GREASE AND MILDEW ON THE SURFACE. THE DISTANCE METER IS STORED FOR ABOUT THREE MONTHS, SHOULD BE CONNECTED TO THE DISTANCE, AND CHECK WHETHER IT WORKS NORMALLY, AND IF THERE IS A PROBLEM, IT SHOULD BE PROMPTLY SENT TO THE SPECIAL MAINTENANCE DEPARTMENT FOR REPAIR.
2. USE A SOFT DRY CLOTH WHEN CLEANING EYEPIECES, OBJECTIVES OR LASER EMISSION WINDOWS. IT IS STRICTLY PROHIBITED TO USE HARD OBJECTS TO AVOID DAMAGE TO THE OPTICAL PROPERTIES.
3. THIS MACHINE IS A HIGH-PRECISION INSTRUMENT INTEGRATED WITH OPTICAL, MECHANICAL AND ELECTRICAL, WHICH SHOULD BE HANDLED WITH CARE DURING USE. IT IS STRICTLY PROHIBITED TO SQUEEZE OR FALL FROM A HEIGHT TO AVOID DAMAGE TO THE INSTRUMENT.
4. THE TEMPERATURE OF THE WAREHOUSE IS KEPT WITHIN THE RANGE OF 25±5°C, AND THE RELATIVE HUMIDITY IS BELOW 70%; THE GROUND SHOULD BE FLAT AND AT LEAST 40 CM HIGHER THAN THE NEARBY GROUND PLANE. DO NOT PLACE THE PRODUCT NEAR A DIRECT EXPOSURE TO THERMAL RADIATION.

2 TROUBLESHOOTING:

USER TROUBLESHOOTING IS LIMITED TO LOADING AND UNLOADING AND BATTERY REPLACEMENT AND SOME TESTS THAT DO NOT REQUIRE THE OPENING OF THE INSTRUMENT. IF YOU FIND A FAULT, YOU SHOULD CONTACT THE COMPANY IN TIME. IT IS STRICTLY FORBIDDEN TO OPEN THE INSTRUMENT WITHOUT PERMISSION TO PREVENT THE HIGH PRESSURE INSIDE THE MACHINE FROM HURTING PEOPLE OR FURTHER EXPANDING THE FAULT. IF NO LASER IS EMITTED AFTER YOU PRESS THE TRIGGER BUTTON, TAKE OUT THE BATTERY AND POWER ON AGAIN.

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

PRODUCT DISPLAY





TFA

激光测距仪

Distance: 0%
----. M

Gating: 20 m

MODE



GATE





PACKING LIST

SERIAL NUMBER	NAME	QUANTITY	NOTE NOTE
1	INSTRUMENT BOX	1	
2	DISTANCE METER	1	
3	RECHARGER	1	
4	BATTERY PACK	1	
5	EXTERNAL TRIGGER CABLE	1	
6	FLANNEL	1	
7	CERTIFICATE OF CONFORMITY	1	
8	SPECIFICATION	1	