

## On account of DTOF. The list of technology Spot Lidar LS series

FiveZero Hz Measure the speed; Ten Meter measurement distance; outdoor resistance to ambient light

SevenZeroK Lux; Excellent cost performance

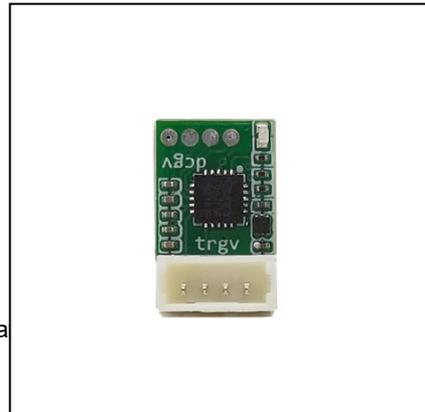
### Distinguishing feature

- Based on the time-flight algorithm (Dimensionirect Time Of Flight)
- Maximum measuring range:TenMedium size
- Measure the blind spot:FiveCm
- Frequency of ranging:FiveZero Hz
- Absolute accuracy:  $\pm 5\text{cm}(<5\text{m})$ ,  $1\%(\geq 5\text{m})$
- Resolution:OneMillimeter
- Working temperature:-Two $0^{\circ}\text{C}$  ~ + sixZero $^{\circ}\text{C}$
- Supply electricityVoltage: FiveVDC.
- Small volume:12 Unknown Seven.5 Unknown Nine.1 Millimeter
- Weight: One Generation
- Resistant to ambient light:SevenZero kLarge sizeUx



### Apply

- The drone set the height and avoid obstacles.
- Robot obstacle avoidance
- Industrial-grade light curtain
- AGV. Avoid obstacles
- High-speed measurement and safety monitoring in the field of tra



### One,Product overview

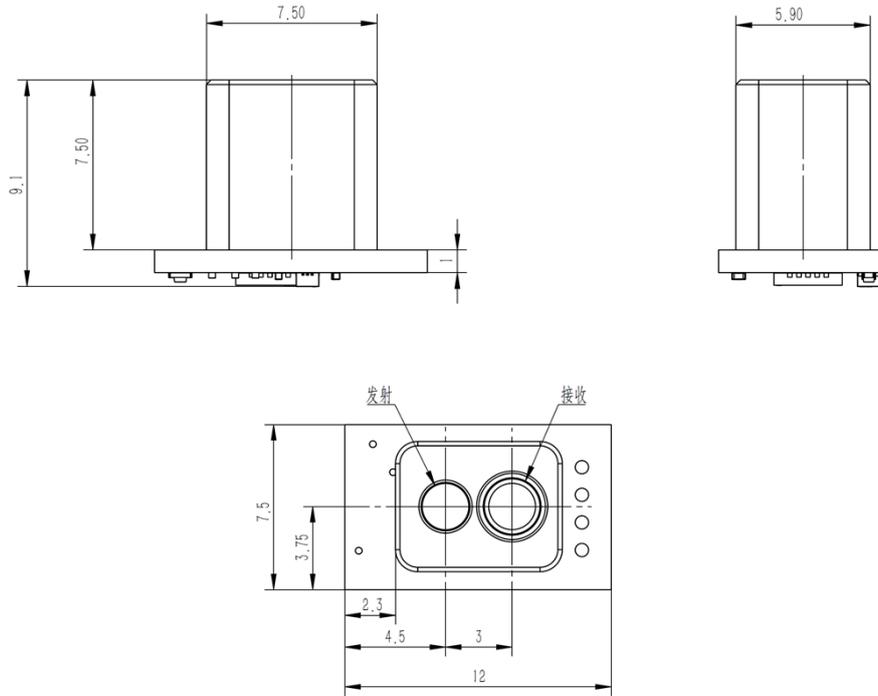
LS seriesLidar is a new laser ranging solution launched by our company for UAVs, sweeping robots,

industrial robots and other fields. This product is based on the principle of DTOF ranging, with small size, low cost, excellent performance and strong resistance to environmental light interference. And other characteristics, can be used as an upgraded alternative product in related fields. This product Use UART transmission Distance information, easy to use, flexible installation, and convenient expansion.

**Two, Specification parameters**

#	Model	LS series
One	Measuring range	0.0 Five - Ten Medium size(Nine0% reflectivity),0.0 Five - Five Medium size(One0%
Two	Frequency of ranging	FiveZero Hz
Three	Absolute accuracy	±5cm(<5m), 1%(≥5m)
Four	Repeat accuracy ULZ 000138 10	10mm
Five	Ability to resist ambient light	2m@7Zero kLarge sizeUx
6	Measure the wavelength of the laser	Nine40Nm
Seven	MeasureLaser grade	ClassOne
Eight	Measure the laser field of view angle	Three°
Nine	Indicate the wavelength of the laser	N/A
Ten	Indicate the laser level	N/A
11	InputVoltage	Four.Five-5.5VDC.
12	Peak current	N/A
13	Average current	N/A
OneFour	AveragePower consumption	<0.OneW(Support low power consumption mode)
15	Communication method	UART
One6	Protection level	N/A
OneSeven	Dimensions (LengthUnknownWideUnknownHigh)	12 Unknown Seven.5 Unknown Nine.1 Millimeter
18	Weight	OneGeneration
19	Working temperature	-Two0°C~+6Zero°C
20	Cable specifications	4pin 1.25mm terminal, 10cm tin-soaked loose wire
Twenty-one	Scope of customization	Support shape structure customization, support output protocol customization

### 3、 Product size



### 4、 Pin definition

UART	
Default rate	460800 (adjustable)
Data bit	Eight
Stop bit	One
Oddity check	Not have

		
Pin	Definition	User interface
One	TX	RX
Two	RX	TX
Three	GND.	External power supply is negative
Four	Five V	The external power supply is positive

## 5. Communication protocol

### Five.1 Communication interface

## 5.2 Output format

RootAfter the series ranging module is powered on, it actively outputs data (4 bytes per frame of data), and outputs 65535 when it cannot be measured.

Example: 5C 02 11 EC

5C: Fixed frame header 1 byte

02 11: Two bytes indicate the measurement distance of 4354mm, small end mode, range 0-65535mm

EC: From the beginning of 02 to the end of 11, do and check to take the reverse, one byte

## 6、 Verification function: (from the second byte to the penultimate byte, find the sum and take the inverse)

```
uint8_t Check_Sum(uint8_t *_pbuff, uint16_t _cmdLen)
{
    uint8_t cmd_sum=0;
    uint16_t i;
    For(i=0;i<_cmdLen;i++)
    {
        Cmd_sum += _pbuff[i];
    }
    Cmd_sum = (~cmd_sum);
    Return cmd_sum;
}
```

## 7、 Precautions for use ULZ 000279 - The product has no reverse connection and overvoltage protection. Please supply and wire the power and wiring correctly according to the specifications.

- The product has no reverse connection or overvoltage protection. Please power supply and wiring correctly according to the specification.

- The product laser is Class1. Please do not look directly at the lens after the product is powered.

- When used in a dusty environment, it is recommended to add red glass or acrylic panels to the product

lens (940The transmittance of nm band is not less than 85%)

- When touching the product, please wear anti-static gloves to avoid product failure.
- The product is at risk of failure when measuring high-altitude objects (such as 3M tape), mirrors, etc.

### 8、 Update the resume

File version	Update time	Updated content
V1.0	December 24th and 30th	According to the current design scheme, sort out the first version
V2.0	March 25, 05	Modify some parameter data