



2025 PRODUCT CATALOG

Phase Laser Distance Sensor
Pulse Laser Rangefinder Sensor
Laser Rangefinder



PROFESSIONAL MANUFACTURER OF LASER RANGING SENSORS
Chengdu Meskernel Integrated Technology Co., Ltd.

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About Meskernel



Chengdu Meskernel Integrated Technology Co., Ltd. is an innovator in the laser measurement industry, with a focus in the R&D and manufacturing of laser measurement sensing chips and ToF principle based laser distance sensors. The products are characterized by high accuracy, compact design, low power consumption, stable performance, and reasonable price. After over 20 years of development, now Meskernel has gained widespread recognition and trust around the globe. Meskernel currently has more than 100 employees, including 40+ R&D engineers and a factory around 4000+ m².

Meskernel has gained certificates such as National High-tech Enterprise, Sichuan Province Specialized and Special New Enterprise, Sichuan Province Chengdu Continuous Gazelle Enterprise, and Chengdu Enterprise Technology Center, ISO, CE, RoHs, FCA, FDA and over 70 intellectual property rights etc. The products are widely used across various industries and fields such as engineering construction, industrial automation, unmanned autonomous system, geodesy, security and defense etc.

Why Meskernel

➤ Extensive Experience

Devoted to laser distance measurement for more than 20 years.

➤ TUV Certified Factory

TUV certified, with scale around 4000 m².

➤ Multiple Patent Certifications

Comply with CE, RoHS, FCC, FDA production standards.

➤ Strong OEM&ODM Customize Capability

More than 40+ R&D technical engineers.

➤ Quality Inspection

Strict quality inspection from incoming material to shipment.

➤ Fast Delivery

Regular sample order can be delivered within 3 days.

➤ Comprehensive After-Sales Support

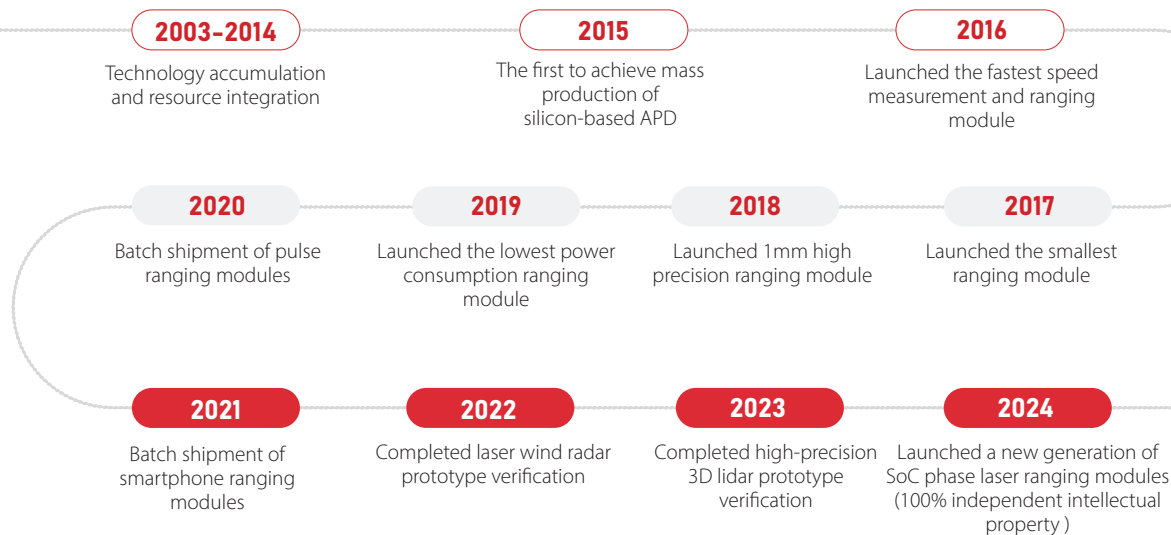
Reliable service, technical assistance, and timely solutions.

➤ Reasonable Price

Cost-effective solution.



Development History



CERTIFICATES

ISO Certificates



CE/RoHS/FCC/FDA



Patented Technologies (36 Invention Patents, 3 Design Patents, and 15 Utility Model Patents)

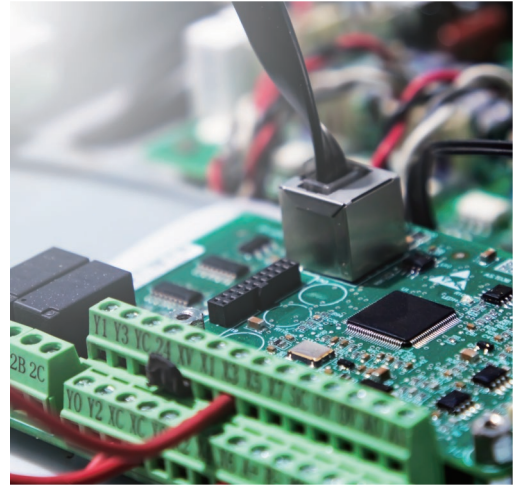
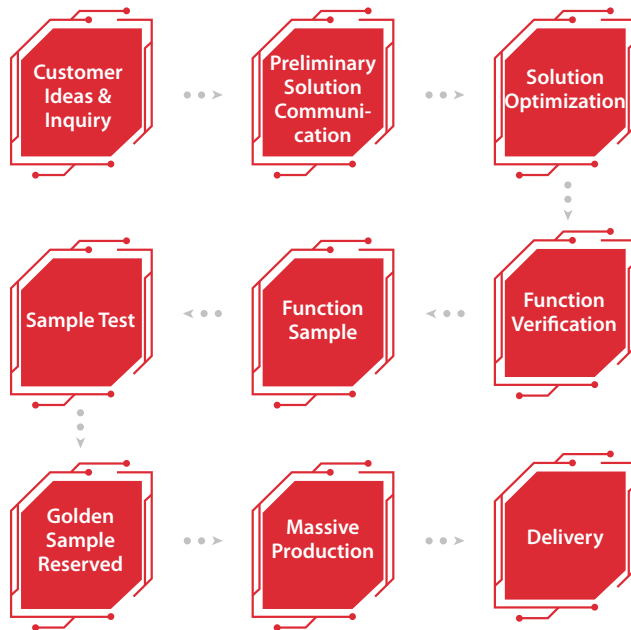


20 Software Copyrights



OEM&ODM Customize Capability

OUR CUSTOM PROCESS



The R&D team has been at the forefront of laser ranging technology for many years, with a team size of over 40 engineers and around 70 patents to its name. Many of the innovations have been awarded as the Chengdu High-tech Enterprise Certificates

CUSTOMIZATION PROJECTS

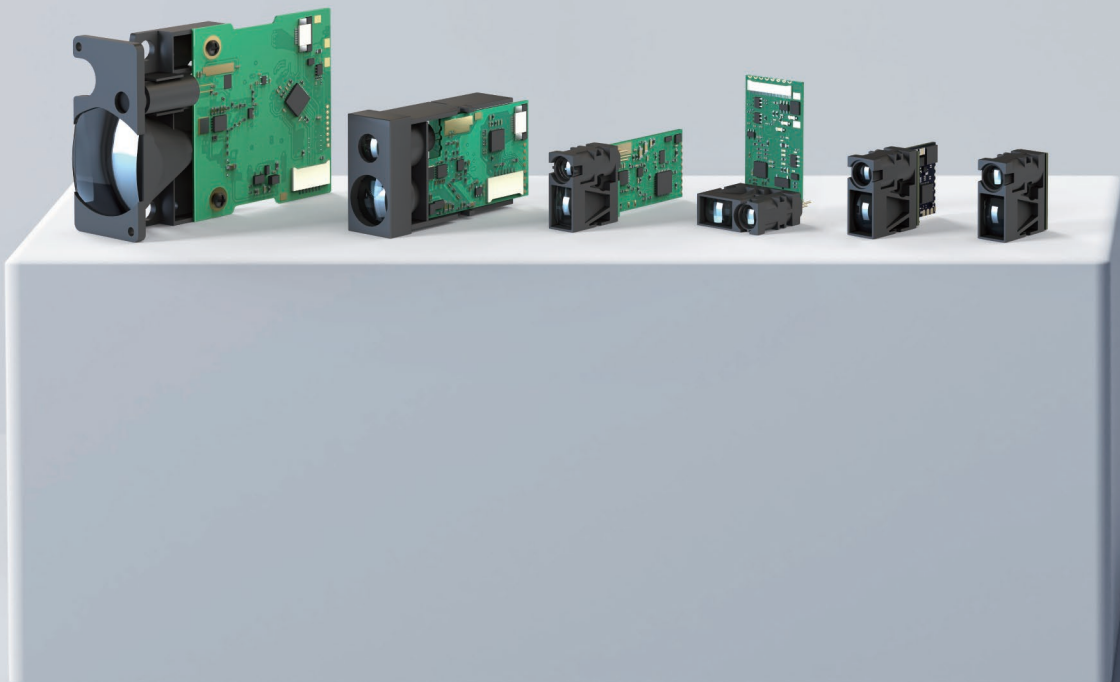
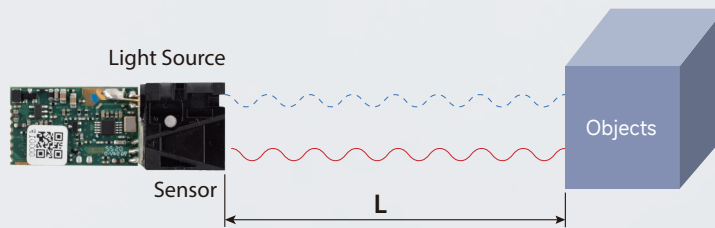
Project Type	Contents
Basic Parameters	Measuring range
	Measuring accuracy
	Measuring speed
	Measuring resolution
	Operating temperature range
	Laser class
	Power supply mode (dry cell, lithium battery or DC power supply)
	External interface&connector (FPC or other connector)/direct wire welding
Communication Interface and Protocol	Hardware interface, support TTL/CMOS, USB, RS-485, RS-232, CAN
	Communication baud rate
	Multi-module BUS communication
	Communication protocol: custom ASCII mode, custom HEX mode, MODBUS
	Wireless communication: Bluetooth module, etc
Enclosure	Tailor the modules' structure to fit for customer's enclosure
	IP protection level IP54, IP65, IP67, IP68
	Environmental adaptability (temperature and humidity control)
Applicable for laser Distance meter module	Display customization
	Keypad number and keypad position customization
	Operation logic customization
	Distance measurement related peripherals (communication module, voice and tilt functions, etc.)

High Precision Laser Distance Module Series

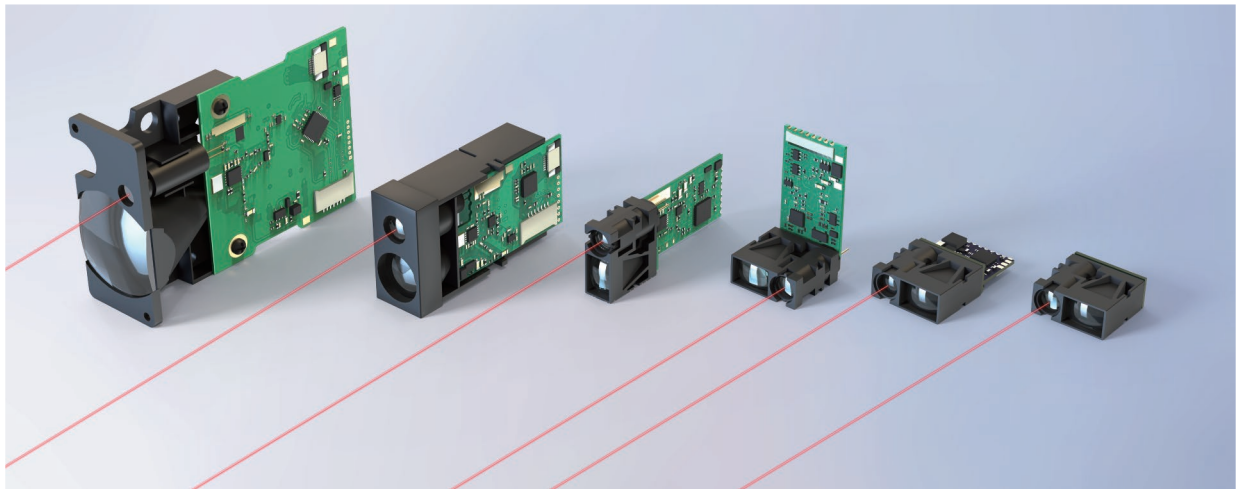
ITOF Distance Measurement Principle

The iToF usually refers to the method of indirectly measuring the time of flight of light by modulating the emitted laser and analyzing the change of the relevant characteristics of the modulated laser after the propagation of a certain distance. This method is most commonly used for the analysis of the phase characteristics of the modulated laser.

The phase information carried by the transmitted modulated laser and the modulated laser received after reflection will be different, and the phase difference can be calculated by analyzing the phase of the transmitted and the received phase. The actual propagation distance of the laser can be calculated by combining the phase difference information and the specified modulation frequency.



Phase Laser Distance Module (Red Laser Beam)



Key Features

Wide Distance Options

Wide range of selectable distances, making it suitable for various applications.

Fast Response Speed

Rapid data acquisition capabilities, completing distance measurements within milliseconds.

Multiple Communication Interfaces

Supports various communication interfaces and protocols, including RS232, RS485, Bluetooth, Modbus and UART, facilitating integration with existing control system.

High Measurement Precision

With precision typically in the millimeter range, this sensor meets the high accuracy requirements of applications such as geodetical and construction engineering scenarios.

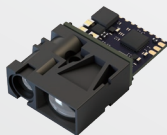
Stable Performance

The sensor maintains a narrow range of data fluctuations and exhibits very low repeatability error.

Non-Contact Measurement

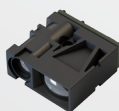
Non-contact measurement allows for more flexible measurement of moving objects, objects with high or low temperature surfaces, liquids, and irregularly shaped targets etc.

Product Model



LDL-T

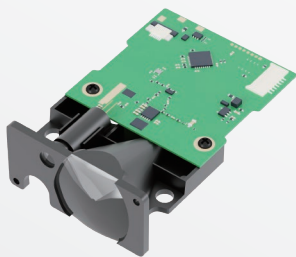
Distance	0.03~60/80/100m	Laser Wavelength	610-690nm,<1mW
Size	27.87x17.03x7.01mm	Power Consumption	<80mA@3.3V
Weight	3g	Working Temperature	0~40°C
Accuracy	$\pm(1\text{mm}+D*(1/10000))$	Interface	USART/RS485/RS232
Frequency	5/30/100Hz		



LDL-S

Distance	0.03~60/80/100m	Laser Wavelength	610-690nm,<1mW
Size	16.57x17.03x7.01mm	Power Consumption	<80mA@3.3V
Weight	2g	Working Temperature	0~40°C
Accuracy	$\pm(1\text{mm}+D*(1/10000))$	Interface	USART/RS485/RS232
Frequency	5/30Hz		



**LDJ**

Distance	0.03~100/150/200m	Laser Wavelength	610-690nm,<1mW
Size	62.91x40.00x18.00mm	Power Consumption	<160mA@3.3V
Weight	14±1.4g	Working Temperature	0~40°C
Accuracy	±(3mm+D*(1/10000))	Interface	USART/RS485/RS232
Frequency	3/10/30Hz		

**LDK**

Distance	0.03~40/60m	Laser Wavelength	610-690nm,<1mW
Size	46.80x26.00x13.00mm	Power Consumption	<100mA@3.3V
Weight	9±0.9g	Working Temperature	0~40°C
Accuracy	±(3mm+D*(1/10000))	Interface	USART/RS485/RS232
Frequency	3/10/20Hz		

**LDL**

Distance	0.03~10/20/40m	Laser Wavelength	610-690nm,<1mW
Size	42.00x17.10x7.06mm	Power Consumption	<80mA@3.3V
Weight	4±0.5g	Working Temperature	0~40°C
Accuracy	±(3mm+D*(1/10000))	Interface	USART/RS485/RS232
Frequency	3/10/20Hz		

**LDLL**

Distance	0.03~10/20/40m	Laser Wavelength	610-690nm,<1mW
Size	30.45x17.10x19.47mm	Power Consumption	<80mA@3.3V
Weight	4±0.5g	Working Temperature	0~40°C
Accuracy	±(3mm+D*(1/10000))	Interface	USART/RS485/RS232
Frequency	3/10/20Hz		

Main Application Cases**Geographical Surveying**

This series can monitor tunnel/railway deformation, river levels/floodgate positions for water outflow, and aid forestry investigations.

**Crane Positioning**

This series can be used in the crane scenarios to effectively detect obstacles, help for precise positioning, and avoid collisions etc.

**Conveyor Monitoring**

This series ensures precise positioning and speed control on conveyors, optimizing efficiency and reducing errors in automated systems.

Phase Laser Distance Module (Green Laser Beam)

Key Features

Better Visibility

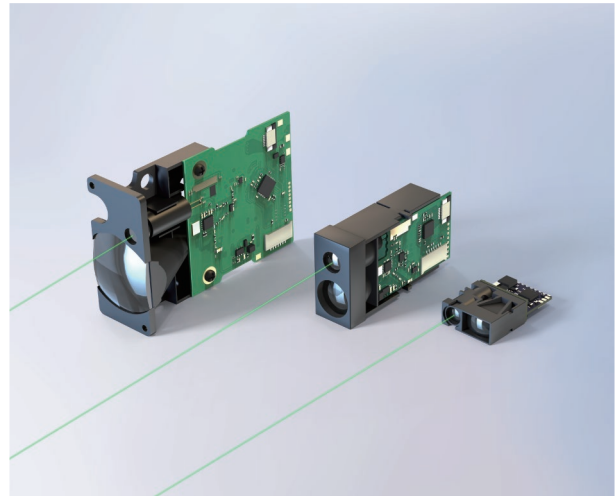
510~550nm are more visible to the human eyes. Less likely to be affected by ambient light.

Higher Penetration

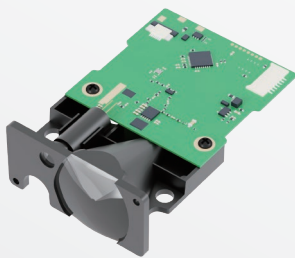
It can penetrate liquids and can be used for liquid level measurement scenarios, - high reliability in challenging environment.

Longer Range and Stability

Interacts differently with various surfaces. Providing more accurate readings on certain materials' surfaces, which makes it good for outdoor use.

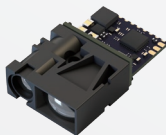


Product Model



LDJG

Distance	0.03~100/150/200m	Laser Wavelength	510~550nm,<1mW
Size	62.91x40.00x18.00mm	Power Consumption	<250mA@3.3V
Weight	14±1.4g	Working Temperature	0~40°C
Accuracy	±(3mm+D*(1/10000))	Interface	USART/RS485/RS232
Frequency	3/10/30Hz		



LDJG-T

Distance	0.03~60/80/100m	Laser Wavelength	510~550nm,<1mW
Size	27.87x17.03x7.01mm	Power Consumption	<100mA@3.3V
Weight	3g	Working Temperature	0~40°C
Accuracy	±(1mm+D*(1/10000))	Interface	USART/RS485/RS232
Frequency	5/30/100Hz		

Main Application Cases



Dam Monitoring

This series ensures precise measurement for dam stability, detecting deformations, monitoring water levels, and supporting maintenance planning.



Outdoor Measurement

Green laser beam has better visibility, and stronger measuring ability under sunlight.



Level Monitoring

This series ensures accurate level measurement, supporting liquid storage, flow control, and real-time monitoring for various industries.



Industrial Protective Housing

The IP protection rating, based on IEC 60529, indicates a device's resistance to dust and water ingress. It ensures safe and reliable operation of the devices. Choosing products with the right IP rating is crucial for suitability, reliability, and compliance.

Key Features

Aluminum Alloy Material

Metal shell is robust, stable and durable.

Splashproof and Dustproof

High-level protection performance, it can provide good protection for some extreme environments.

Multiple Communication Interface

Support USART/RS485/RS232 interface.



Product Model



LDJ-P7/LDJG-P7

Distance	0.03~100/150/200m	Laser	Red/Green Laser
Size	122.00x84.00x37.00mm	Protection Grade	IP67
Weight	446g	Working Temperature	-10~50°C
Accuracy	$\pm(3\text{mm}+D*(1/10000))$	Interface	USART/RS485/RS232
Frequency	3/10/20/30Hz		



LDJ-P4/LDJG-P4

Distance	0.03~100/150/200m	Laser	Red/Green Laser
Size	85.00x62.00x22.00mm	Protection Grade	IP54
Weight	90g	Working Temperature	-10~50°C
Accuracy	$\pm(3\text{mm}+D*(1/10000))$	Interface	USART/RS485/RS232
Frequency	3/10/20Hz		



LDK-P4/LDKG-P4

Distance	0.03~40/60m	Laser	Red/Green Laser
Size	75.00x47.00x21.05mm	Protection Grade	IP54/IP67(Customize)
Weight	69g	Working Temperature	-10~50°C
Accuracy	$\pm(3\text{mm}+D*(1/10000))$	Interface	USART/RS485/RS232
Frequency	3/10/20Hz		



LDL-P4/LDLG-P4

Distance	0.03~40/60/100m	Laser	Red/Green Laser
Size	58.00x42.20x17.40mm	Protection Grade	IP54/IP67(Customize)
Weight	50g	Working Temperature	-10~50°C
Accuracy	$\pm(1\text{mm}+D*(1/10000))$	Interface	USART/RS485/RS232
Frequency	3/30/100Hz		

LDJU-High Frequency Distance Module

Key Features

Wide Measurement Range

Capable of measuring distances from 0.2 to 25 m, making it versatile for various applications.

High Frequency

Measuring frequencies up to 10K Hz on the surface with 70% reflection rate.

Advanced Measurement Method

Adopting phase method for measurement, providing reliable and accurate distance data.

Reliable communication

Employing TTL (3.3V) for communication, ensuring reliable data transmission. Using USART interface, a widely used serial communication protocol. Supporting a high baud rate of 460800, enabling fast data transfer.



Product Model



LDJU

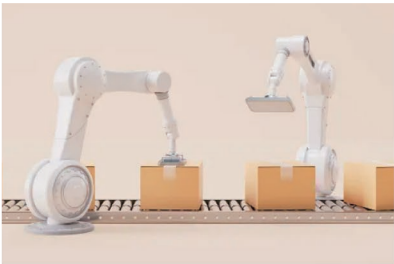
Distance	0.2~25m	Laser	Red Laser
Size	109x40x18mm	Protection Grade	IP54/IP67(Customize)
Weight	170g	Power Consumption	<2.5W
Accuracy	±(3mm+D*(1/10000))	Working Temperature	-10~50℃
Frequency	1K/3K/10K Hz	Interface	USART/RS485/RS232

Main Application Cases



Smart Logistics

High-frequency laser distance sensor ensures precise positioning and inventory control, optimizing warehouse automation and robotic handling.



Robotic Arm Integration

High-frequency laser distance sensor enables precise positioning, improving robotic arm accuracy and operational efficiency.



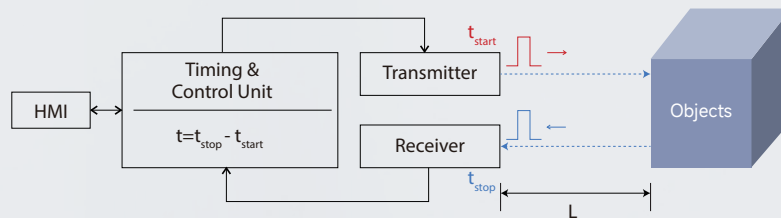
Tunnel Monitoring

High-frequency laser distance sensor provides real-time structural assessment, detecting deformations and ensuring tunnel safety and maintenance.

Long Range Laser Rangefinder Sensor Series

DTOF Distance Measurement Principle

The dToF is a direct measurement of the time difference between transmitting laser and receiving laser, and inverse calculation of the distance of laser travel according to the speed of light. Based on the speed of light, this method requires the circuit related to the measurement of optical time of flight to have a very high reaction speed to improve the resolution of the measurement of time of flight, so as to improve the final ranging distance resolution. In view of the current technical level of the device, its distance division rate can be centimeter.



TS1224-Mini Laser Rangefinder Sensor

Key Features

Long Distance

Measures up to 2KM, ideal for vast projects.

Ultra-Compact & Space-Saving Design

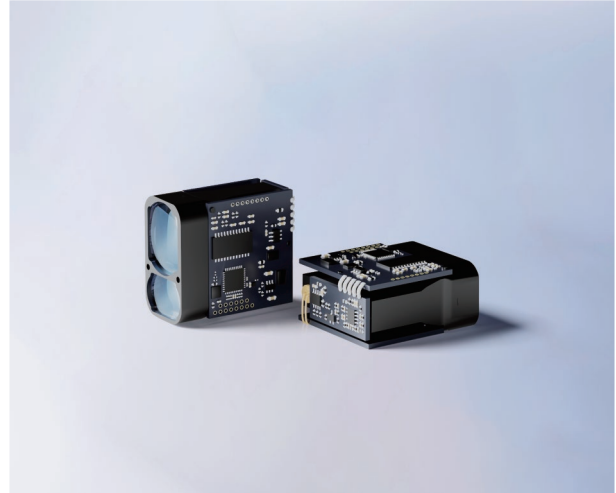
Max side smaller than a coin, significantly reduces the space required for integration.

Unmatched Signal Reception

High-transmittance glass maximizes signal reception, resulting in clearer, more accurate measurements across longer distances.

Metal Shell Design

Equipped with a metal shell, durable and long-lasting.



Product Model



TS1224

Distance	5~1500/2000m	Laser Wavelength	905nm, Class I
Size	25.72x24.60x13.40mm	Power Consumption	330mW@3.3V
Weight	10g	Working Temperature	-20~60°C
Accuracy	±1m	Interface	UART/RS485/RS232
Frequency	1~5Hz		

Main Application Cases



UAV

TS1224 can help UAVs to realize positioning&navigation, obstacle detection&avoidance, precision operation & monitoring.



Aiming Device

TS1224 distance sensor pioneers precise sighting capabilities.



Monitor Camera

TS1224 distance sensor enhances security monitoring systems with high-precision distance measurement, real-time dynamic monitoring, and improved intelligence.



PTFS-Square Rangefinder Sensor

Key Features

Moderately Long Range

Multiple distance options, providing measurement ranges of 100 meters, 400 meters, 700 meters, and 1300 meters.

High Frequency

Customizable frequencies ranging from 50 to 500 Hz, making it ideal for applications requiring rapid response times.

Easy Integration

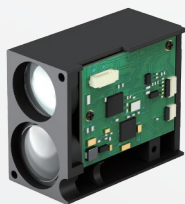
The square structure is easy to integrate into system.

Classic Module Excels in Durability

Made by using the pulsed technology and 905nm laser, it has been a flagship product in Meskernel's category after technical iterations and updates, and is well accepted by clients in different regions.

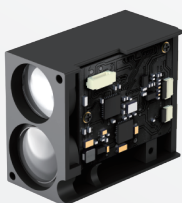


Product Model



PTFS-H Red/green laser pointer optional

Distance	3~100/200/300/400m	Laser Wavelength	905nm, Class I
Size	42.79x35.19x21.37mm	Power Consumption	330mW@3.3V
Weight	30g	Working Temperature	-20~50°C
Accuracy	±1m	Interface	UART/RS485/RS232
Frequency	50~500Hz		



PTFS

Distance	3~400/700/1300m	Laser Wavelength	905nm, Class I (400m); Class II (700/1300m)
Size	42.79x35.19x21.37mm	Power Consumption	330mW@3.3V
Weight	30g	Working Temperature	-20~50°C
Accuracy	±1m	Interface	UART/RS485/RS232
Frequency	1~3Hz		

Main Application Cases



Railway Platform Security

PTFH detects unauthorized crossing in safety zones, enhancing passenger protection and railway platform security.



Port Berthing Systems

Laser rangefinders sensors enhance vessel safety during docking by providing real-time, accurate distance measurements, helping prevent collisions.



Road Speed Monitoring

Provides precise vehicle speed measurement and distance tracking, ensuring reliable road traffic monitoring and stable performance.

TC25-Cylinder Rangefinder Sensor

Key Features

Wide Distance

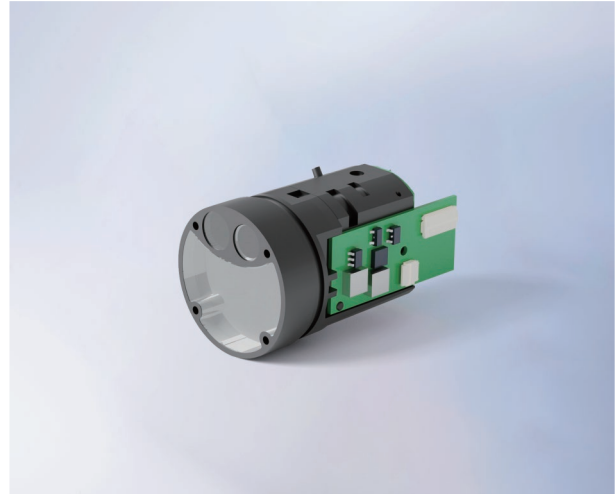
Multiple distance options, providing measurement ranges of 1000 meters, and 1500 meters. This versatility allows it to meet the needs of both medium-range and long-range applications, delivering exceptional performance in large areas or remote monitoring.

Cylindrical Shape

The cylindrical shape makes it easier to integrate into products such as drones and gun sights.

High Precision

The sensor offers a measurement accuracy of up to 1 meters, providing reliable and precise data for long-distance measurements.



Product Model



TC25

Red/green laser pointer optional

Distance	3~1200m
Size	Φ25.00x47.00mm
Weight	18g
Accuracy	±1m
Frequency	1~3Hz

Laser Wavelength	905nm, Class I
Power Consumption	<330mW@3.3V
Working Temperature	-20~50°C
Interface	UART/RS485/RS232

Main Application Cases



Thermal Integration

TC25 enables precise distance measurement with thermal imaging, enhancing target detection, security monitoring, and industrial inspections.



Border Security

TC25 provides accurate distance measurement for border surveillance, enhancing intrusion detection, perimeter monitoring, and threat assessment.



Hunting Equipment

TC25 can be integrated into gunshot devices to help target the preys and even plays an important role in the defense industry where accurate distance of the targets are emphasized.



PTFG-Telescope Rangefinder Sensor

Key Features

Eyesafe Laser

We use 905nm invisible light, which is less harmful to human eyes and is less likely to be affected by sunlight.

High-transmittance LCD Display Screen

The measurement results are displayed on the screen, and the user can see the measurement data immediately, which is easy to make quick decisions and adjustments.

Telescope Eyepiece

6x monocular telescope, multi-layer coating, 6x monocular telescope provides a bright and clear field of view. Multi-layer coating can improve the transmittance, reduce reflection, and increase contrast. The coating also protects the surface of the lens against scratches, stains, and dust, increasing the durability of the lens.



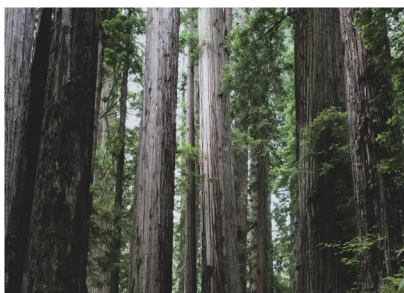
Product Model



PTFG

Distance	5~1500/3000m	Laser Wavelength	905nm, Class I
Size	92.00x54.00x33.10mm	Power Consumption	<330mW@3.3V
Weight	66g	Working Temperature	-20~50°C
Accuracy	±1m	Interface	UART/RS485/RS232
Frequency	3Hz		

Main Application Cases



Tree Height Measurement

PTFG enables precise tree height measurement, supporting forestry research, biomass estimation, and environmental monitoring.



Golf Rangefinding

PTFG provides accurate distance measurement to the flag, helping golfers improve shot precision, club selection, and overall performance.



Hunting

PTFG enables precise distance measurement in forests, assisting hunters with target accuracy, trajectory estimation, and improved shot placement.

PTFS-P4 Protective Housing

Key Features

Enhanced Adaptability

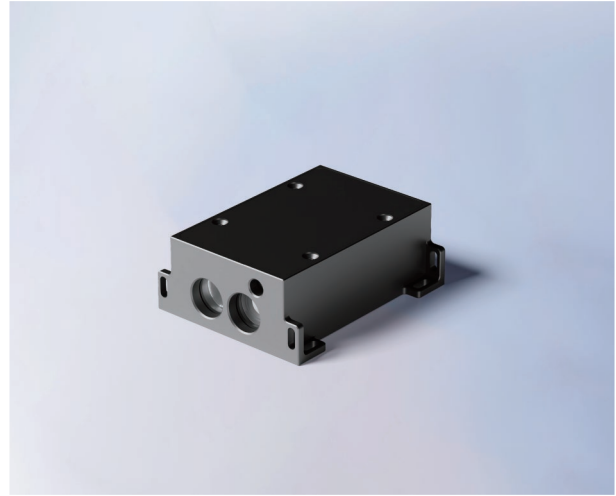
The industrial protective housing is compactly designed to adapt to various wet and humid environment.

Traditional Connection

The housing is equipped with multiple communication interfaces like RS232 and RS485, facilitating easy connection and data transmission with various devices.

Protection of Sensor Modules

Industrial protective housings feature robust casing designs that effectively safeguard sensor modules from physical damage. Additionally, these housings guard against electromagnetic interference and electrostatic discharge issues, ensuring the sensor operates stably and accurately.



Product Model



PTFS-P4 Red/green laser pointer optional

Distance	0.5~400/700/1300m	Laser Wavelength	905nm
Size	80x65x32mm	Power Consumption	330mW@3.3V
Weight	188g	Working Temperature	-20~50°C
Accuracy	±1m	Interface	UART/RS485/RS232
Frequency	3Hz/50~500Hz		

Main Application Cases



Port Berthing Systems

This product enhances vessel safety during docking by providing real-time, accurate distance measurements, helping prevent collisions.



Vehicle Speed Measurement

This product provides accurate speed detection on highways, supporting traffic monitoring, law enforcement, and safety management.



Container Security Monitoring

This product enables precise distance measurement for container monitoring, ensuring cargo safety, intrusion detection, and efficient logistics management.



Laser Rangefinder



S80

Distance: 0.03~80m
Size: 110x32x18mm
Accuracy: ± 3 mm
Laser: 610-690nm, <1mW, Class II
Power Supply: 3.7V 500mAh, Lipo
Material: Aluminium Alloy
Color: Black



P100

Distance: 0.03~100m
Size: 184x135x50mm
Accuracy: ± 5 mm
Laser: 510-550nm, <1mW, Class II
Power Supply: 1.5V 2*AAA Battery
Material: ABS
Color: Black/Red



P120

Distance: 0.03~120m
Size: 184x135x50mm
Accuracy: ± 3 mm
Laser: 610-690nm, <1mW, Class II
Power Supply: 1.5V 2*AAA Battery
Material: ABS
Color: Black/Red



JQ40

Distance: 0.03~40m
Size: 100x32x12.6mm
Accuracy: ± 3 mm
Laser: 610-690nm, <1mW, Class II
Power Supply: 3.7V 200mAh Lipo
Material: ABS
Color: Black



L120

Distance: 0.03~120m
Size: 100x32x13mm
Accuracy: ± 3 mm
Laser: 610-690nm, <1mW, Class II
Power Supply: 3.7V 200MAh, Lipo
Material: Aluminium Alloy
Color: Silver



C80

Distance: 0.03~80m
Size: 137x71x39mm
Accuracy: ± 3 mm
Laser: 610-690nm, <1mW, Class II
Power Supply: 1.5V 2*AAA Battery
Material: ABS
Color: Black+Blue



3-IN-1 Measure Tape

Distance: 0.03~40m+5m Steel Tape
Size: 83x78x52mm
Accuracy: ± 3 mm
Laser: 610-690nm, <1mW, Class II
Power Supply: 1.5V 2*AAA Battery
Material: ABS
Color: Black



Venture

Distance: 3-1800/2400m
Size: 146x111x51mm
Accuracy: ± 0.5 m
Laser: 905nm, <1mW, Class I
Power Supply: CR2 3V Battery
Material: Alluminum Alloy
Color: Black/Dark Green



Hyper

Distance: 3-1200m/1500m/3000m
Size: 105x75x35mm
Accuracy: ± 0.5 ~1m
Laser: 905nm, <1mW, Class I
Power Supply: 3.7V 400mAh, Lipo
Material: ABS
Color: White

Notes

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Chengdu Meskernel Integrated Technology Co., Ltd.

Focusing on developing stronger, faster, and more accurate laser measurement kernel



Website



WhatsApp



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