TronSight

High Precision Measurement Product Catalog

- TS-P Series Laser Displacement Sensors
- TS-C Series Spectral Confocal Displacement Sensors
- TS-I Series Interferometric Thickness Sensors

Suzhou Tronsight Intelligent Technology Co.,Ltd.

Company Profile

About US

Suzhou TronSight Intelligent Technology Co., Ltd. focuses on the research, development, production, and sales of precision inspection systems and sensors, established by a highly educated team in Wu Zhong District, Suzhou. The company adheres to the principles of technology-driven R&D, application demand orientation, and customer service priority, aiming to become an independent brand in the field of precision measurement.

Since its establishment, the company has received numerous honors and funding, independently developed multiple high-precision sensor products, and serves various industries. The company values intellectual property rights and quality certification, dedicated to technological innovation to support the development of China's intelligent manufacturing.

Honors

Suzhou Innovation and Entrepreneurship Leading Talent

High-tech Enterprise Certificate

Innovative and Entrepreneurial Leading Talent of Eastern Wu

Leading companies report

CE & RoHS

Dozens of patent certificates

ISO Quality Management System Certificate

2023 Chinese Invisible unicorns

CONTENTS

Laser Triangulation Displacement Sensor

Principle
Model
Application
Parameters
Dimension Figure

Spectral Confocal Displacement Sensor

Principle
Model
Application
Parameters
Dimension Figure

Interferometric thickness sensor

Principle
Model/Application
Parameters
Dimension Figure

TronSight

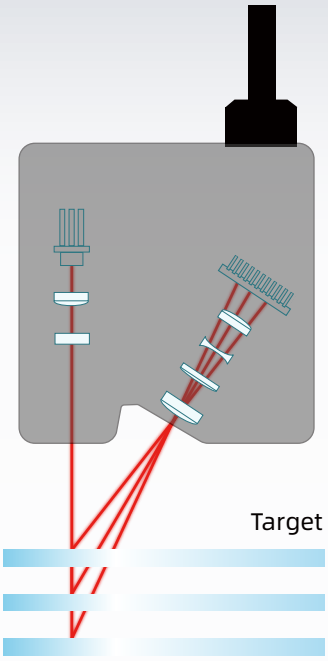
TS-P Series

Laser Triangulation Displacement Sensor

Why choose TronSight?

- Full-frequency Industrial IO
- Controller-Free
- Ultra-fast Sampling Rate
- Ultra-long Measuring Distance
- Self-Developed
- Specular/Diffuse Reflection

Measurement Principle



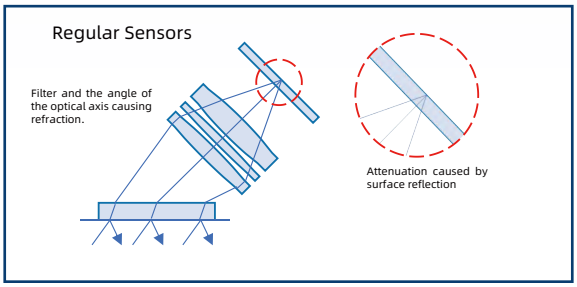
Basic Principle

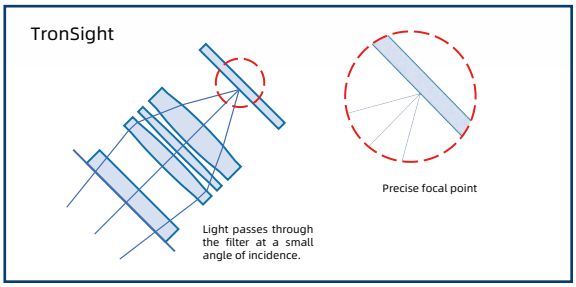
The beam of light emitted by the laser shines on the target; the receiving lens focuses the diffusely reflected / reflected light from the surface of the target and focuses it on the photosensitive element.

When the distance to the target changes, the position of the light spot on the photosensitive element also changes.

Optimization of the receiving lens module

TronSight has improved the structure of the conventional laser triangulation sensor receiving lens module, which can maximize the avoidance of multiple spots caused by multiple reflections on the surface of the filter and the resulting misjudgment of the measurement position. At the same time, it improves the signal-to-noise ratio of the photoelectric data.

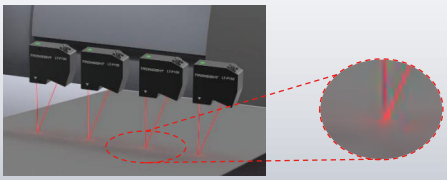




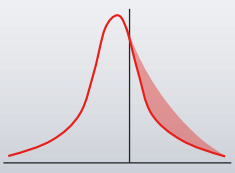
Semi-transparent object measurement algorithm

When the laser penetrates a semi-transparent object, it produces diffuse reflection from below the surface of the object, causing the received light waveform to slowly expand. The self-developed measurement algorithm for semi-transparent objects can eliminate the effect of the expanded waveform and detect the actual peak.

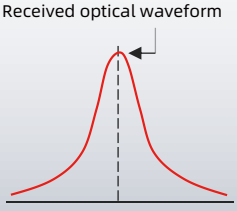
Semi-transparent object measurement algorithm



Received optical waveform

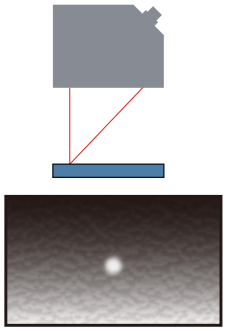


Received optical waveform



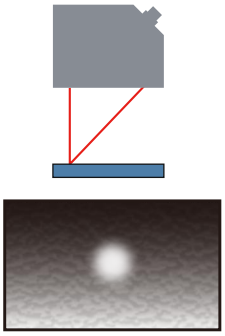
Light Spot Specification Description

Small Spot



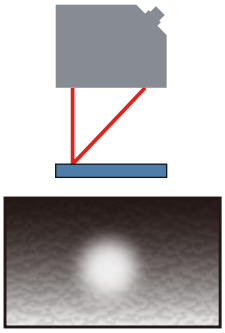
Correctly detect small targets through a minimum ϕ18 μm light spot, very suitable for shape measurement.

Wide Spot



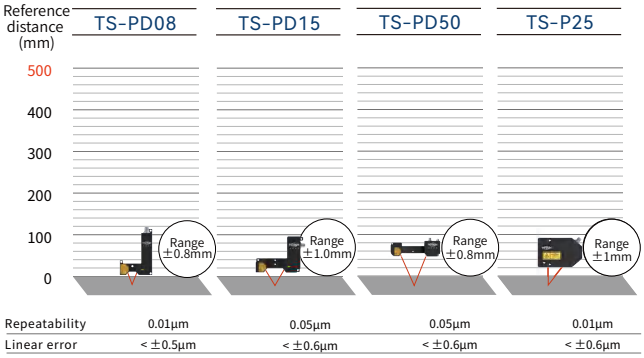
By increasing the measurement spot size, it is more suitable for measuring targets with uneven surfaces, obtaining stable measurement values.

Ultra-wide Spot

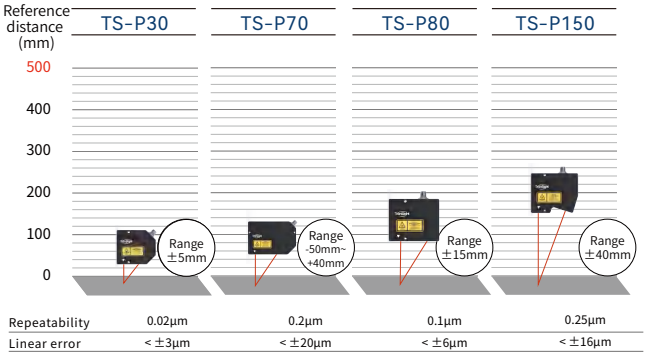


By further increasing the measurement spot size, it is suitable for accurate measurement of objects with greater surface roughness.

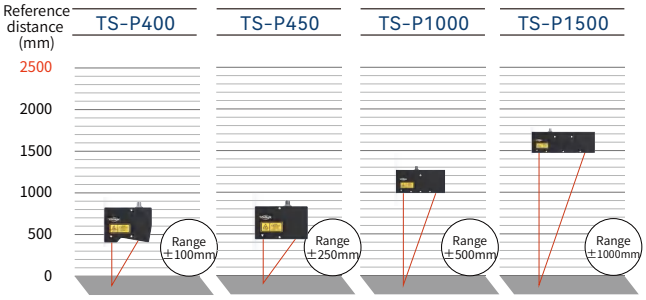
产品规格一览



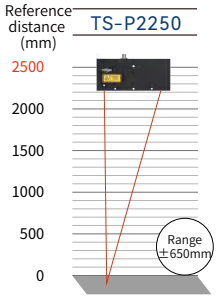
	TS-PD08	TS-PD15	TS-PD50	TS-P25
Repeatability	0.01μm	0.05μm	0.05μm	0.01μm
Linear error	< ±0.5μm	< ±0.6μm	< ±0.6μm	< ±0.6μm



	TS-P30	TS-P70	TS-P80	TS-P150
Repeatability	0.02μm	0.2μm	0.1μm	0.25μm
Linear error	< ±3μm	< ±20μm	< ±6μm	< ±16μm

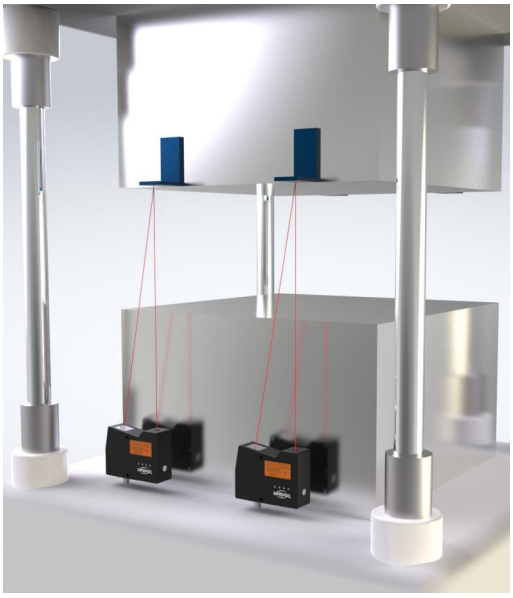


	TS-P400	TS-P450	TS-P1000	TS-P1500
Repeatability	1.5μm	2μm	12μm	30μm
Linear error	< ±60μm	< ±250μm	< ±500μm	< ±1000μm

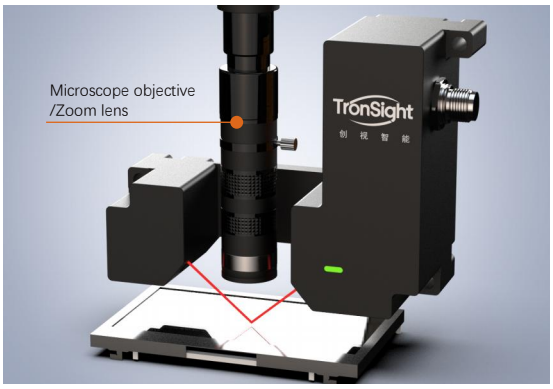


	TS-P2250
Repeatability	50μm
Linear error	< ±650μm

Application

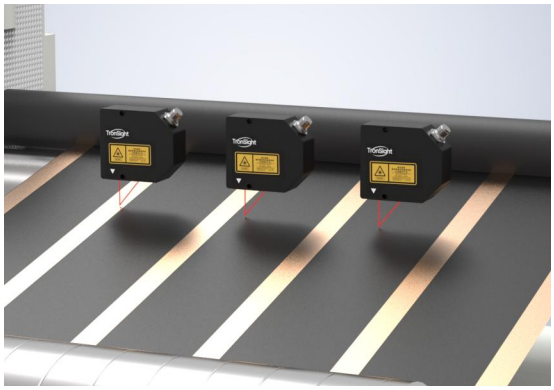


Motion platform position measurement



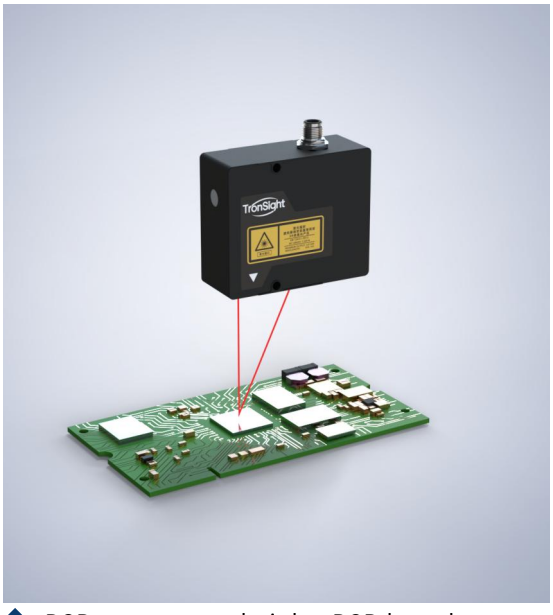
Coaxial height focus measurement

High-frequency vibration measurement



Online Thickness Measurement of Roller Pressed Plates

Road surface smoothness measurement



PCB component height, PCB board thickness measurement

Parameters

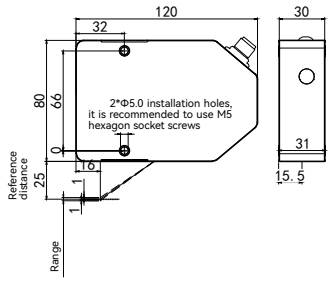
Sensor Head

Model	Reference*1 Distance	Measurement Range	Spot Diameter	Static Noise*2	Static Noise*3	Linearity Error*4	Dimensions	Weight	Sampling Frequency	Light source*5
PD08	8mm	±0.8 mm	Φ20μm	0.03μm	0.01μm	< ±0.5μm	82*115*38.5mm	213 g	Max. 160 kHz	655 nm Max. 4.9mW
PD15	15mm	±1.0mm	Φ35μm	0.05μm	0.01μm	< ±0.6μm	102*137*55.5mm	475g		
PD50	50mm	±0.8 mm	Φ25μm	0.05μm	0.01μm	< ±0.6μm	74*205*110mm	725 g		
P25	25 mm	±1 mm	Φ18μm	0.05μm	0.01μm	< ±0.6μm	120*80*31mm	372 g	Max. 160 kHz	405 nm Max. 4.9 mW
P30	30mm	±5mm	Φ35μm	0.15μm	0.02μm	< ±3μm	87*76*31mm	287 g		655 nm Max. 4.9 mW
P30W			About Φ35*400μm			< ±2μm				
P30U			About Φ35*1100μm	0.075μm					Max. 25kHz	
P70	70mm	-50mm +40mm	Φ70μm	1.3μm	0.3μm	< ±18μm	130*90*31mm	408 g	Max. 160 kHz	
P70W			Φ70*500μm							
P80	80mm	±15mm	About Φ70μm	0.5μm	0.1μm	< ±6μm	93*78*37mm	359 g		
P80W			About Φ70*800μm							
P80U			About Φ70*2200μm	0.25μm					Max. 25kHz	
P150	150mm	±40mm	Φ110μm	1.2μm	0.25μm	< ±16μm	95*80*37 mm	374g	Max. 160 kHz	
P150W			About Φ110*1400μm							
P400	400mm	±100mm	Φ300μm	3μm	1.5μm	< ±60μm	115*85*37mm	438 g		
P400W			About Φ300*3400μm							
P450	450mm	±250mm	Φ320μm	8μm	2μm	< ±250μm	120*75*37mm	416 g		
P450W			About Φ320*4200μm							
P1000	1000mm	±500mm	Φ320μm	12μm	/	< ±500μm	180*85*40mm	785g		655 nm Max. 4.9 mW /660 nm Max.50mW
P1500	1500mm	±1000mm	Φ400μm	30μm	/	<±1000μm	260*85*45mm	1,250g		660 nm Max.50mW
P2250	2250mm	±650mm	Φ700μm	50μm	/	<±650μm	200*85*41mm	924 g		
Customizable Model	8~2250mm	5~2500mm	Model related	20ppm of F.S.	Model related	Typical value ±0.05% of F.S.	Model related	Model related	Max. 160 kHz	Model related
Temperature Drifta	0.01% of F.S./°C									
Industrial *6 Interfaces	Ethernet, RS-485 serial port, analog signal output*7(Max. ±10V, 4-20mA)									
Control Software	Comes with TSLaserStudio control and measurement software and C++, C# software development kitsa									
Operating Mode	Operates independently without a controller. The probe can be configured as a master or slave, the master controls the slave to achieve functions such as synchronous thickness measurement, alternating exposure for interference resistance.									
Power Voltage	DC 9~36V, maximum allowable ±10% fluctuation									
Power Consumption	About 2.5W									
Degree of Protection	IP67									
Ambient Temperature	0 to +50°C									

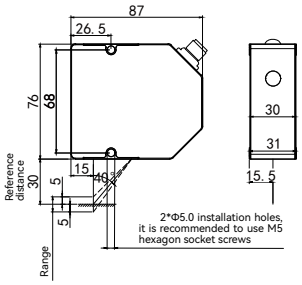
*1 Calculation based on the center position of the measurement range;
*2 Measurement of standard white ceramic sample, 50kHz without averaging, taking the root mean square deviation (1 σ) of 65536 sets of measurement data; U series probes, 8kHz without averaging, taking the root mean square deviation (1 σ) of 65536 sets of measurement data;
*3 Measurement of standard white ceramic sample, 50kHz with 1024 averaging times, taking the root mean square deviation (1 σ) of 65536 sets of measurement data; U series probes, 8kHz with 1024 averaging times, taking the root mean square deviation (1 σ) of 65536 sets of measurement data;
*4 Calibration and verification using nanometer-level high-precision laser interferometer;
*5 Laser power can be customized according to different application requirements, some models provide 405nm blue light version;
*6 The probe can independently provide voltage, current, and RS485 output;
*7 Optional analog voltage/current output module.

Dimension Figure

TS-P25

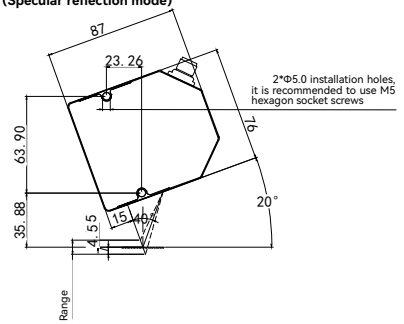


TS-P30

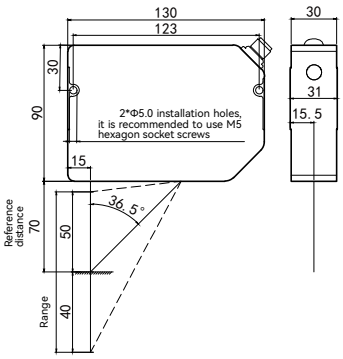


TS-P30 Slanting Installation

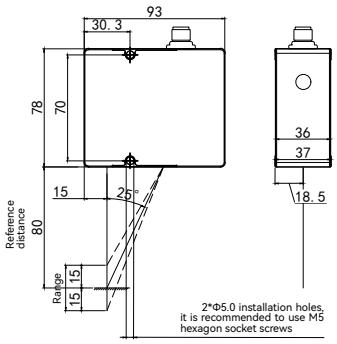
(Specular reflection mode)



TS-P70

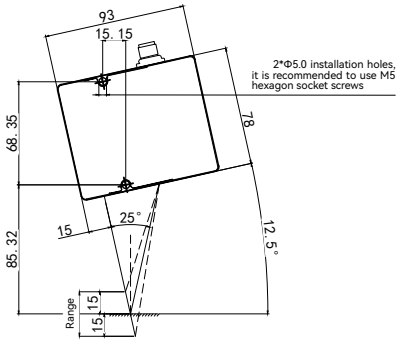


TS-P80

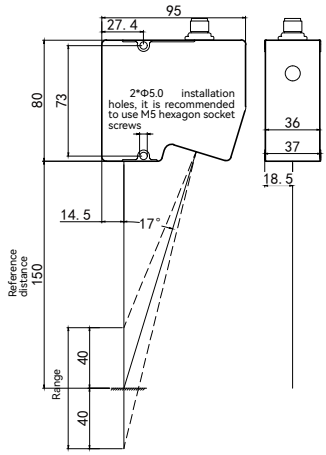


TS-P80 Slanting Installation

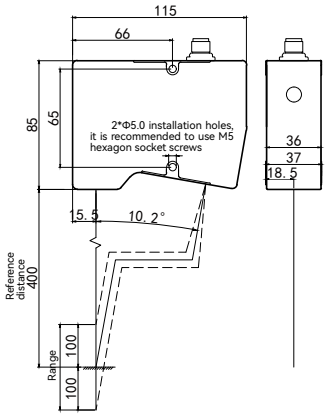
(Specular reflection mode)



TS-P150



TS-P400



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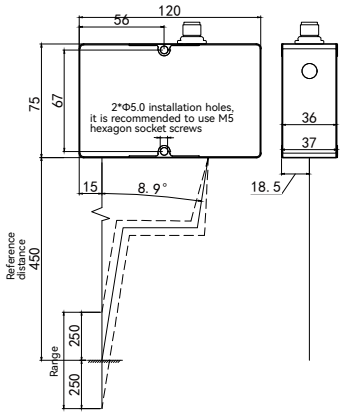
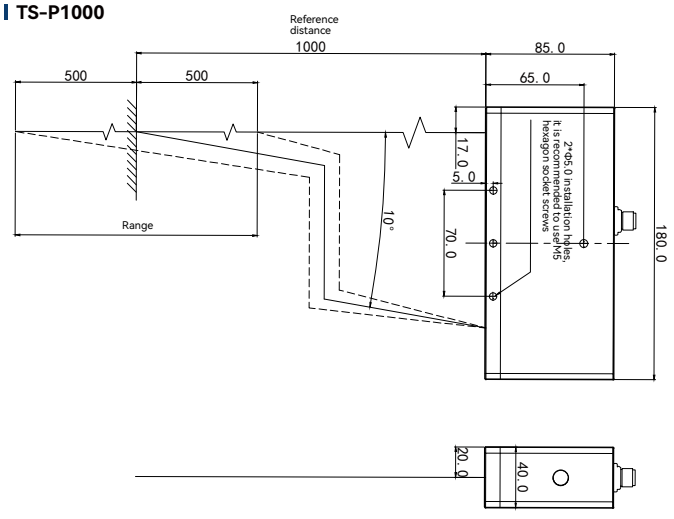
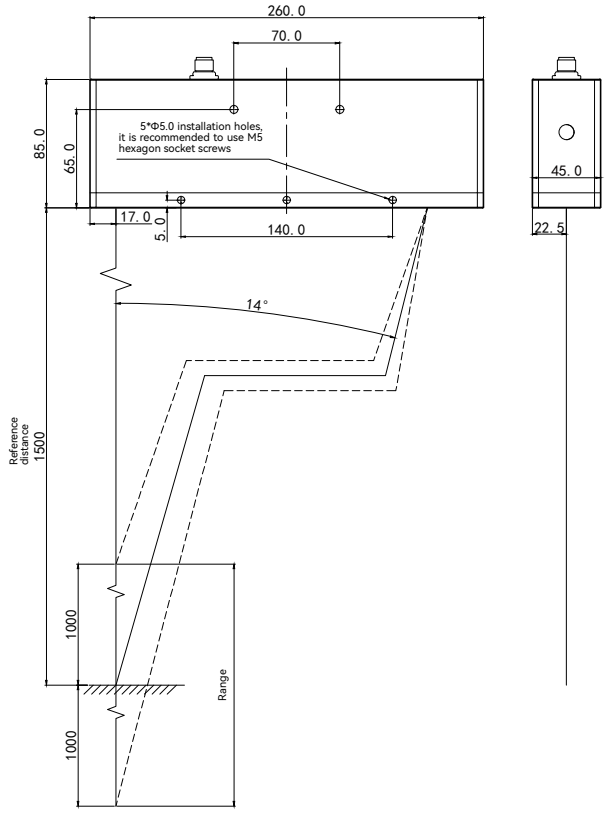


TS-P1000

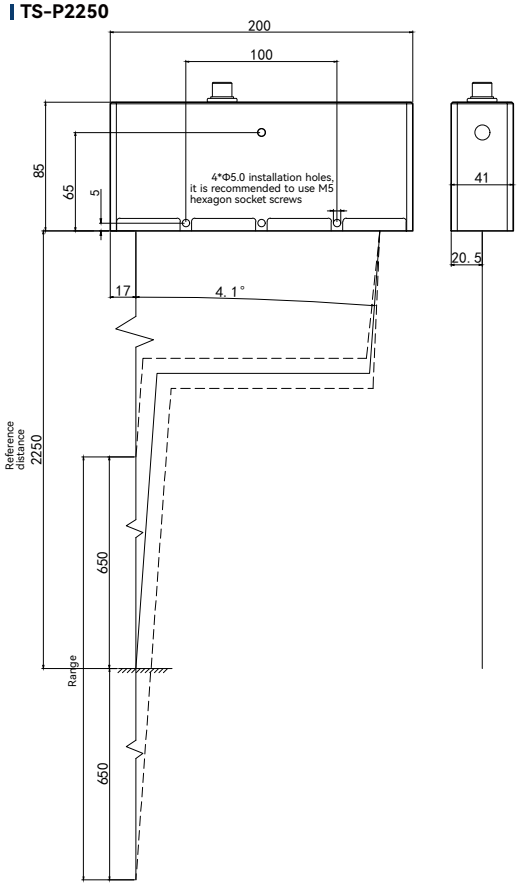


Dimension Figure

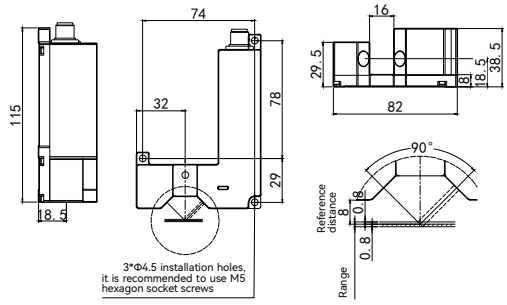
TS-P1500



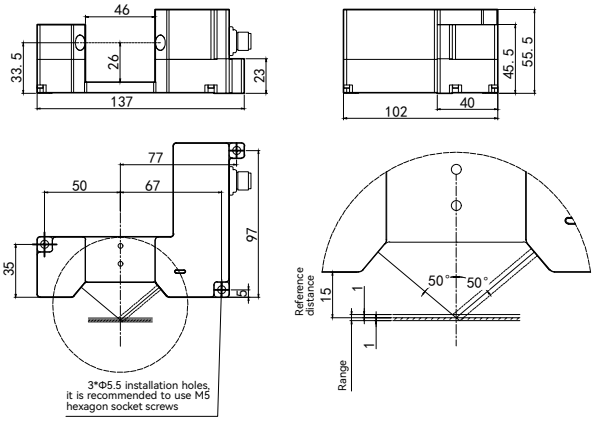
TS-P2250



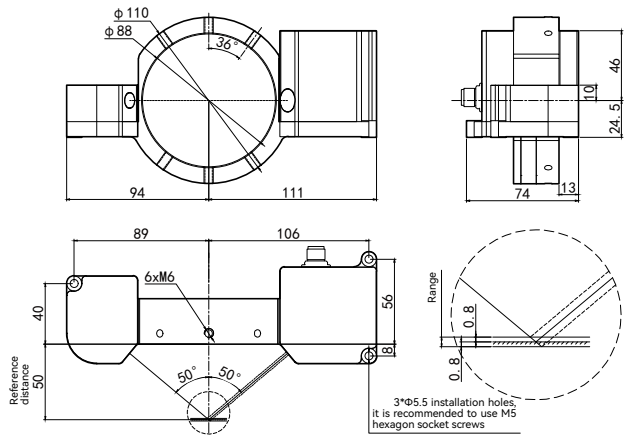
TS-PD08



TS-PD15

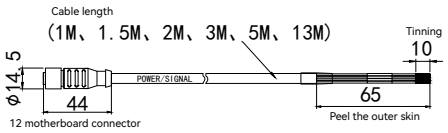


TS-PD50

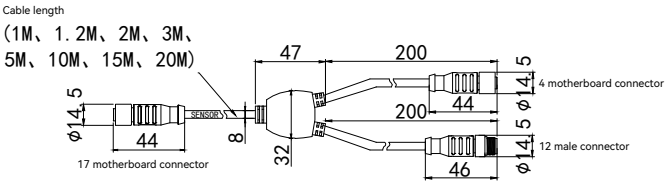


Component Drawings

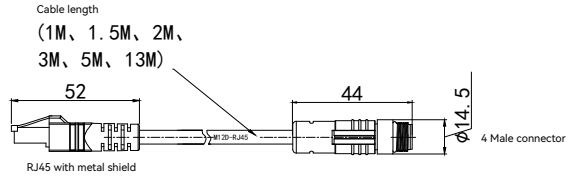
M12-12 Core Shielded Female Connector Harness



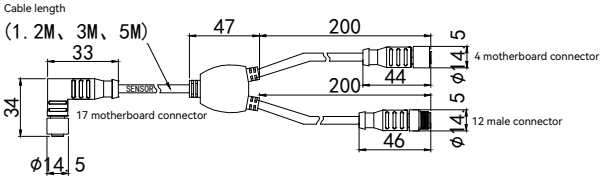
Y-type Splitter



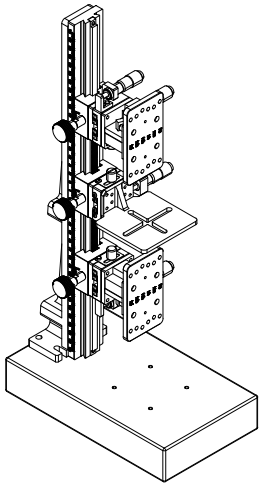
M12d Type Adapter To RJ45 Connector



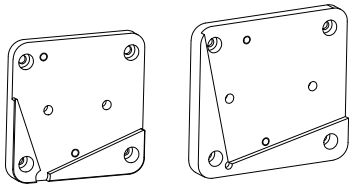
90° Y-type Splitter



Vertical Jig and Fixture

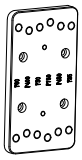


Slanting Installation Board



P30 P80

Connection Board



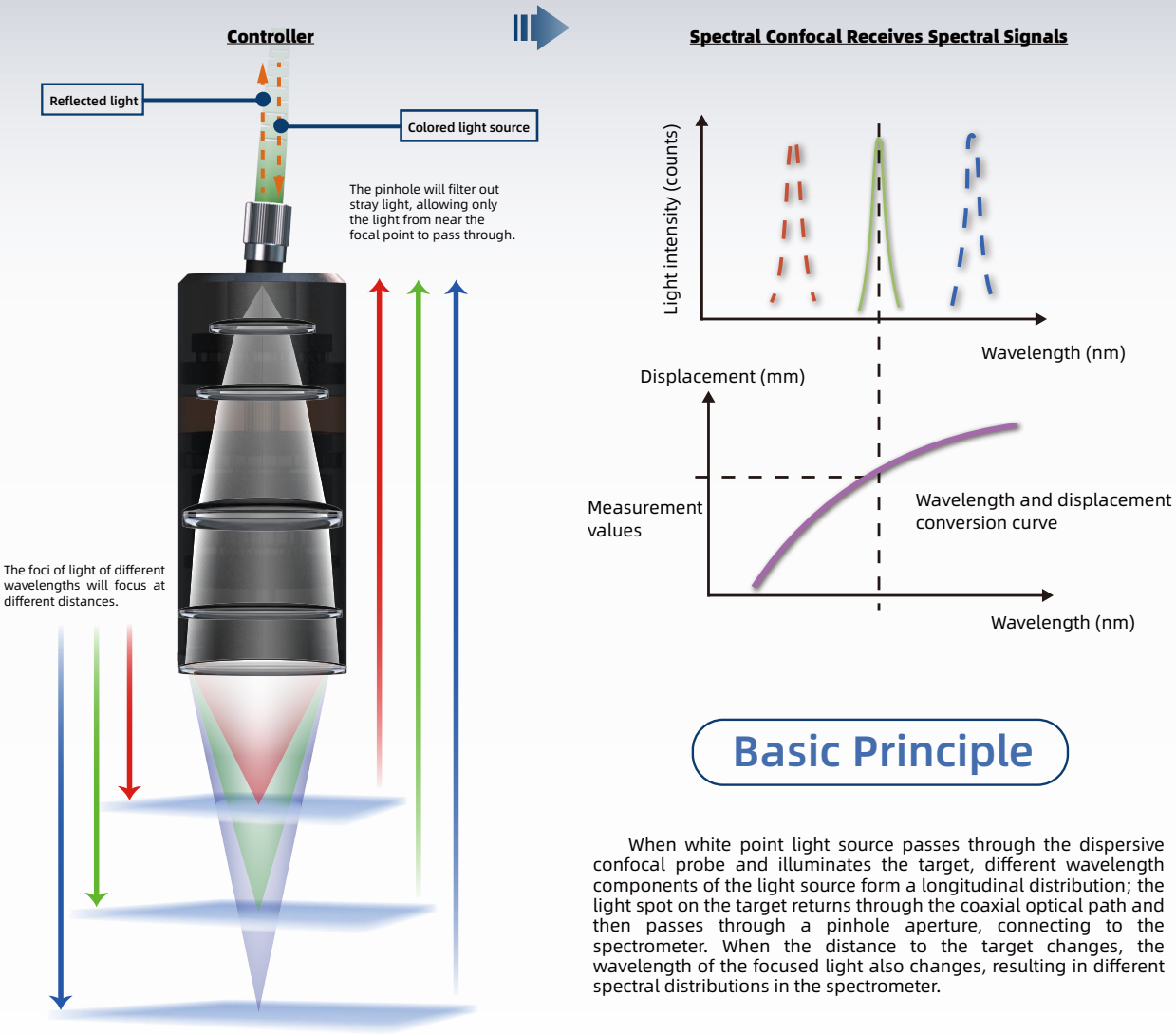
TronSight

| TS-C Series |

Spectral Confocal Displacement Sensor

Why choose TronSight?

- Minimal Measurement Dead Zone
- High Interference Immunity
- Sub-micron Measurement Precision
- Ultra-Smooth Mirror Surface Measurement
- Multi-layer Transparent Material Thickness Measurement
- Axial and Radial Light Emission Measurement



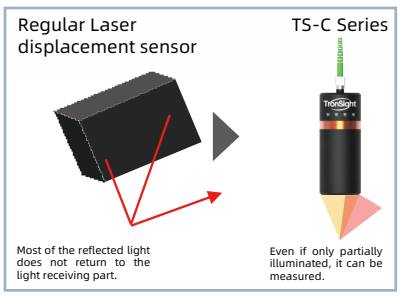
Basic Principle

When white point light source passes through the dispersive confocal probe and illuminates the target, different wavelength components of the light source form a longitudinal distribution; the light spot on the target returns through the coaxial optical path and then passes through a pinhole aperture, connecting to the spectrometer. When the distance to the target changes, the wavelength of the focused light also changes, resulting in different spectral distributions in the spectrometer.

Accurately measure objects with different structural features

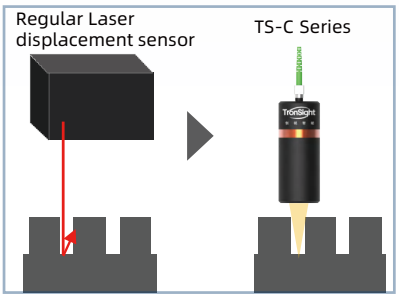
Achieving high-precision measurement of **transparent curved surfaces.**

Even with only partial reflection, high-precision measurements can be achieved.



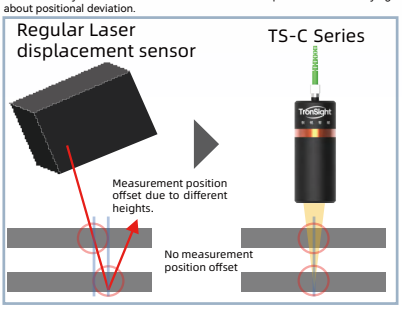
Measure **pits and steps** without blind spots.

Using a confocal coaxial method, it can measure without affecting the installation direction and movement direction of the probe.



Accurate measurement of **transparent and reflective objects.**

Even if the measurement height of transparent or mirrored objects changes, it can accurately measure to the same measurement point without worrying about positional deviation.



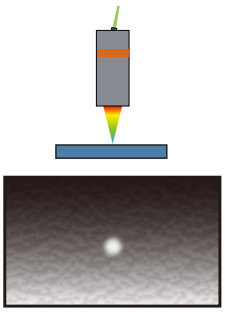
Multiple input and output methods

The standard configuration of the controller includes six types of I/O channels: USB, RS485, Ethernet, analog, digital, and level/encoder trigger. It supports functions such as PC-based upper computer software control, PLC bus control, multi-channel data acquisition by data acquisition card, and external encoder synchronous trigger, which can meet various usage requirements.

USB | RS485 | Ethernet | Analog | Digital | Leveler/Encoder Trigge

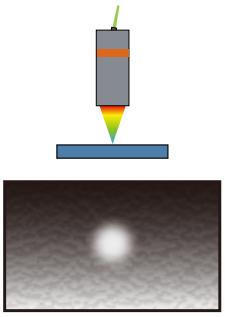
Light Spot Specification Description

Small spot



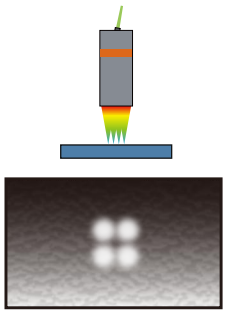
Detecting small targets accurately with a minimum spot size of Φ1.7μm is ideal for shape measurement.

Wide spot



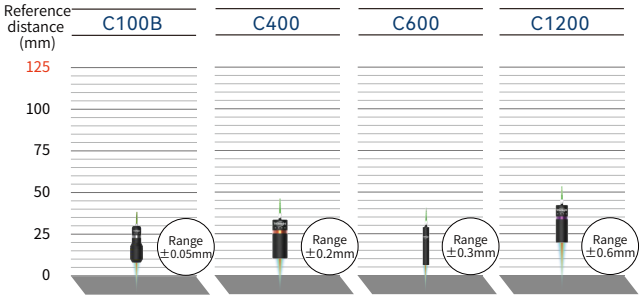
By increasing the measurement spot size, it is more suitable for measuring uneven surfaces, obtaining stable measurement values.

Ultra-wide spot

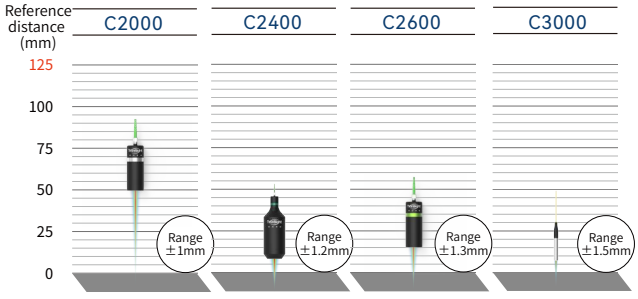


Measuring with four independent spots and performing numerical calculations can eliminate the effects of surface irregularities and roughness.

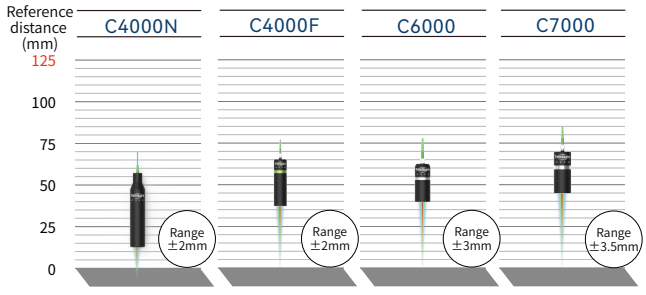
Product Specifications



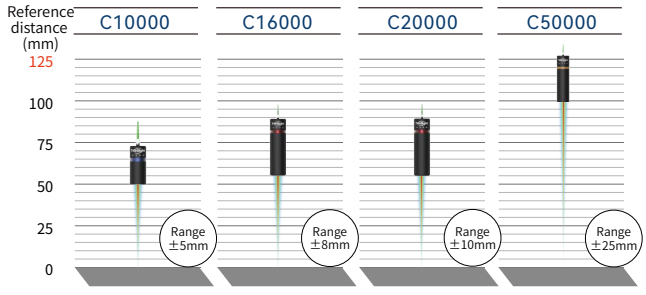
	C100B	C400	C600	C1200
Measure angle	±46.5°	±43°	±32.5°	±32°
Repeatability	3nm	12nm	16nm	30nm
Linear error	< ±0.03μm	< ±0.12μm	< ±0.18μm	< ±0.3μm



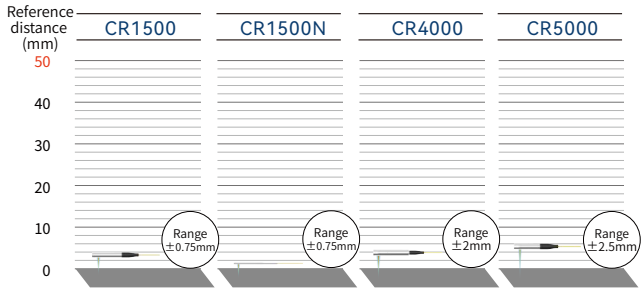
	C2000	C2400	C2600	C3000
Measure angle	±14°	±60°	±31°	±14°
Repeatability	85nm	45nm	50nm	100nm
Linear error	< ±0.6μm	< ±0.48μm	< ±0.3μm	< ±0.6μm



	C4000N	C4000F	C6000	C7000
Measure angle	±21°	±21°	±14°	±15.5°
Repeatability	100nm	100nm	140nm	140nm
Linear error	< ±0.8μm	< ±0.8μm	< ±1.2μm	< ±1.4μm



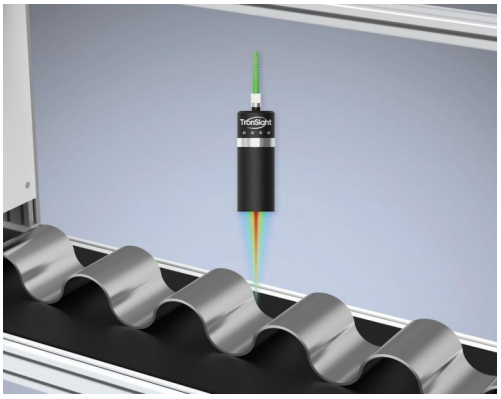
	C10000	C16000	C20000	C50000
Measure angle	±13°	±15.3°	±15.3°	±9.5°
Repeatability	250nm	300nm	300nm	850nm
Linear error	< ±2μm	< ±2μm	< ±2μm	< ±5μm



	CR1500	CR1500N	CR4000	CR5000
Measure angle	±14°	±12°	±12.5°	±13°
Repeatability	80nm	100nm	100nm	100nm
Linear error	< ±0.3μm	< ±0.75μm	< ±1.2μm	< ±2μm

Application

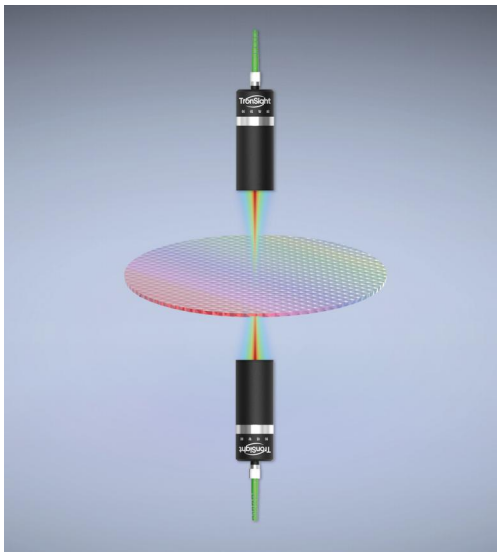
Measurement of the R-curve angle of the mobile phone screen



Metal workpiece profile measurement

Flatness measurement of structural components

PCB component height difference measurement



Wafer Mapping Thickness Measurement

Flatness measurement of structural components

Parameters

Sensor Head

Model	Reference Distance *1	Measurement Range	Spot Diameter *2	Spot Diameter *3	Static Noise *4	Linearity Error *5	Outer Diameter *Length	Weight	Minimum Measurable Thickness	Temperature Characteristics	Degree of Protection
C100B*8	8mm	±0.05mm	±46.5°	Φ2.7μm/5.4μm/43.2μm	3nm	< ±0.03μm	φ40*111.5mm	256g	5%ofF.S.	<0.03%F.S./°C	IP40
C400	10mm	±0.2mm	±43°	Φ7μm/14μm/112μm	12nm	< ±0.12μm	φ40*99.4mm	186g			
C600	6.5mm	±0.3mm	±32.5°	Φ8μm/16μm/128μm	16nm	< ±0.18μm	φ20*110mm	73g			
C1200	20mm	±0.6mm	±32°	Φ9.5μm/19μm/152μm	30nm	< ±0.3μm	φ36*106.3mm	182g			
C2000	50mm	±1mm	±14°	Φ20μm/40μm/320μm	85nm	< ±0.6μm	φ34*90.7mm	162g	10%ofF.S.	~0.1%F.S./°C	
C2400	9mm	±1.2mm	±60°	Φ5.5μm/11μm/88μm	45nm	< ±0.48μm	φ94*267.5mm	2350g	5%ofF.S.	<0.03%F.S./°C	
C2600	15mm	±1.3mm	±31°	Φ9μm/18μm/144μm	50nm	< ±0.3μm	φ36*97.9mm	228g	5%ofF.S.		
C2600H	15mm	±1.3mm	±31°	Φ9μm/18μm/144μm	50nm	< ±0.3μm	φ36*97.9mm	228g			
C3000	7mm	±1.5mm	±12.5°	Φ20μm/40μm/320μm	100nm	< ±0.6μm	φ8*38.7mm	23g*7	10%ofF.S.	~0.05%F.S./°C	IP67
C4000N	14.5mm	±2mm	±21°	Φ12μm/24μm/192μm	100nm	< ±0.8μm	φ32*158.8mm	238g	5%ofF.S.	<0.03%F.S./°C	IP40
C4000F	38mm	±2mm	±21°	Φ16μm/32μm/256μm	100nm	< ±0.8μm	φ36*126.1mm	226g			
C6000	40mm	±3mm	±14°	Φ22μm/44μm/352μm	140nm	< ±1.2μm	φ30*71mm	112g		~0.05%F.S./°C	
C7000	45mm	±3.5mm	±15.5°	Φ20μm/40μm/320μm	140nm	< ±1.4μm	φ36*84.2mm	200g		<0.03%F.S./°C	
C7000L	47mm	±3.5mm	±21°	Φ16μm/32μm/256μm	140nm	< ±1.4μm	φ52*207mm	784g			
C7000S	70mm	±3.5mm	±10°	Φ25μm/50μm/400μm	200nm	< ±1.4μm	φ30*84.2mm	130g			
C10000	50mm	±5mm	±13°	Φ20μm/40μm/320μm	250nm	< ±2μm	φ36*84mm	203g			
C16000	55mm	±8mm	±15.3°	Φ15μm/30μm/240μm	300nm	< ±2μm	φ60*211.1mm	1180g			
C20000	55mm	±10mm	±15.3°	Φ15μm/30μm/240μm	300nm	< ±2μm					
C50000	100mm	±25mm	±9.5°	Φ25μm/50μm/400μm	850nm	< ±5μm	φ60*217.3mm	1154g			
CR1500*6	Axial: 3.92mm Radial:5.75mm	±0.75mm	±14°	Φ20μm	80nm	< ±0.3μm	φ8*47.7mm	23g*7	10%ofF.S.		
CR1500N	Axial: 1.7mm Radial:3mm	±0.75mm	±12°	Φ17μm	100nm	< ±0.75μm	φ3.8*85mm	23g*7			
CR4000	Axial: 4.7mm Radial:8mm*8	±2mm	±12.5°	Φ20μm	100nm	< ±1.2μm	φ8*39mm	24g*7			
CR5000*8	Axial: 6.75mm Radial:12mm	±2.5mm	±13°	Φ19μm	100nm	< ±2μm	φ12*66mm	37g	—	—	
Customizable Model	1~500mm	0.1~50mm	±5°~60°	1~100μm	4~2000nm	Typical value ±0.02%ofF.S.	Model related	Model related	Model related	Model related	

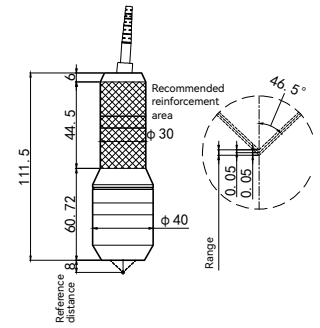
*1 Calculated from the center position of the measurement range;
*2 Tilt test using standard flat mirror at 1kHz sampling rate;
*3 Measurement of sharp glass edges, verified with a sub-micron positioning accuracy motion platform and laser interferometer as the displacement reference, the spot diameter values correspond to the diameters of small spot/large spot/four-spot pattern;
*4 Measurement of standard silver-coated mirror, 1kHz without averaging, root mean square deviation of 10,000 continuous data sets;
*5 Calibration verification using high-precision nanoscale laser interferometer;
*6 Models starting with CR have a 90° side-emitting version suitable for deep hole, inner wall, and side feature measurements;
*7 This probe model includes a 3m tail cable, and the weight in the table includes the weight of the cable;
*8 This model is a new product, actual parameters may vary slightly, refer to the contract.

Controller

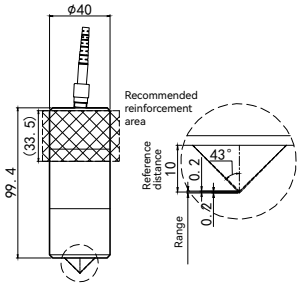
Model		TS-CCS	TS-CCD	TS-CCF	TS-CCH
Sensor Head Connection Capacity		1	2	4	4,8,16
Sampling Frequency		Single Channel Mode: Max. 10 kHz; Dual Channel Mode: Max. 5 kHz; Quad Channel Mode: Max. 2.5 kHz			Single Channel Mode: Max. 20 kHz; Dual Channel Mode: Max. 18 kHz; Quad Channel Mode: Max. 12.5 kHz; Eight Channel Mode: Max. 8 kHz; Sixteen Channel Mode: Max. 4 kHz (The above are preliminary evaluation results, specifications may change at the time of final release)
Input port	Trigger Signal Input	AB / ABZ encoder input, configurable for trigger			
	Trigger Signal Input	Pulse / Level trigger			
Output port	Digital Signal Output	Alarm output, comparator output (configurable as comparator output or data invalid warning)			
	Analog Signal Output	Linear ±10 V analog voltage output / 4~20 mA analog current output (optional module)			
Industrial Interface	Ethernet Interface	100BASE-TX			1000/100Mbps
	USB Interface	Complies with USB2.0 Full-speed standard			USB2.0 High-speed
	RS485	Modbus protocol, 19200~115200 baud rate			
	EtherCAT	\			Optional configuration
Control and Measurement Software	Host Computer Software	TSConfocalStudio Control and Measurement Software			
	Secondary Development Package	C++ and C# Software Development Package			
Rated Power	Supply Voltage	24 VDC			
	Current Consumption	About 0.4 A			About 0.5A (when only one channel is enabled), about 4A (when 16 channels are enabled), it is recommended to configure a power supply of 24V 6A or above
Environmental Tolerance	Operating Temperature	0 to +50°C			
	Relative Humidity	20 to 85% RH (no condensation)			
Weight		About 2,000g			About 2,800g (varies depending on the number of channels and configuration)

Dimension Figure

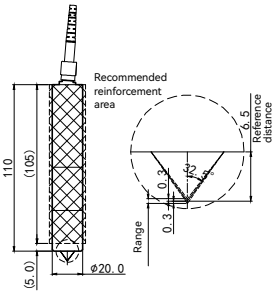
TS-C100



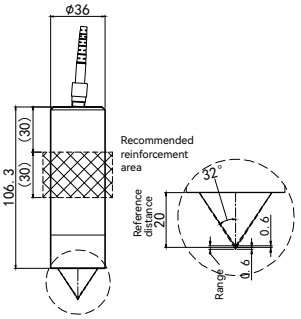
TS-C400



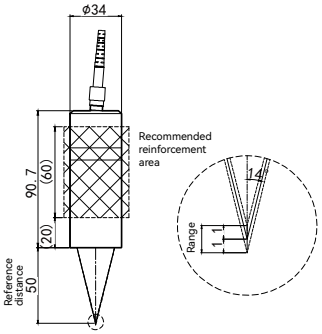
TS-C600



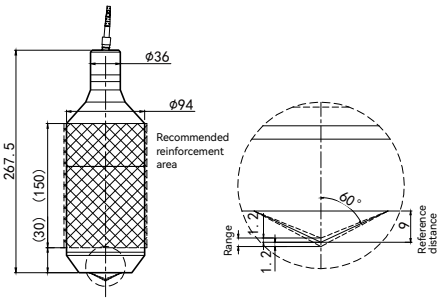
TS-C1200



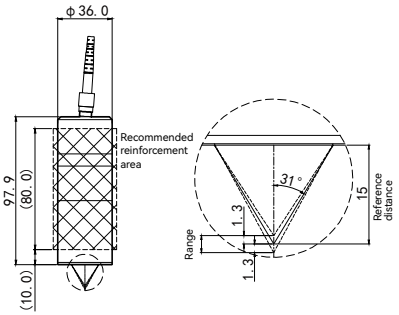
TS-C2000



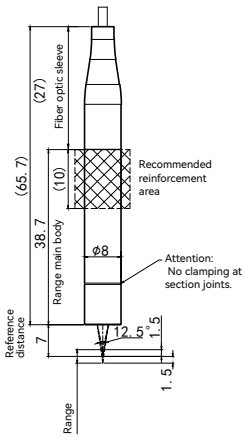
TS-C2400



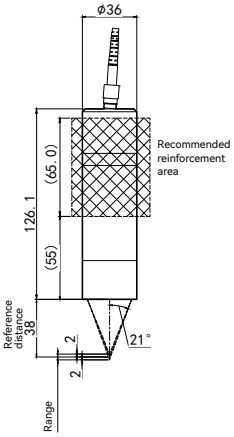
TS-C2600



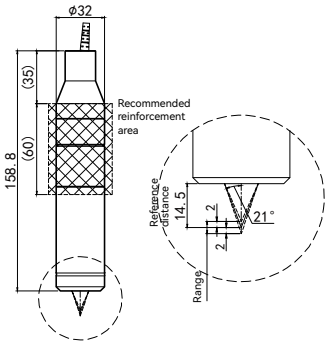
TS-C3000



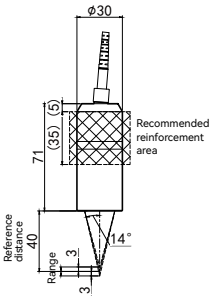
TS-C4000F



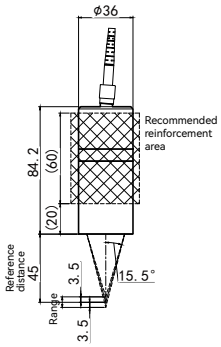
TS-C4000N



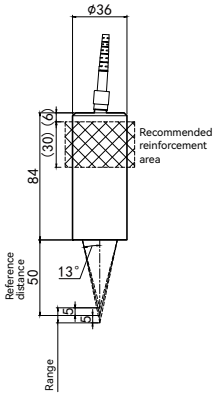
TS-C6000



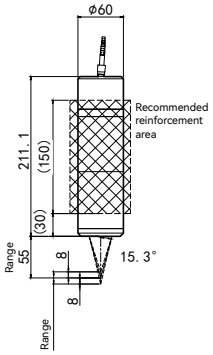
TS-C7000



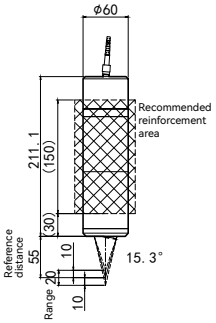
TS-C10000



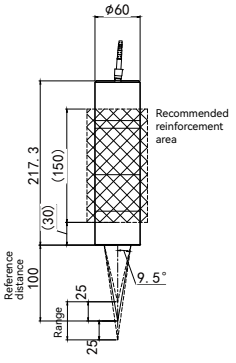
TS-C16000



TS-C20000

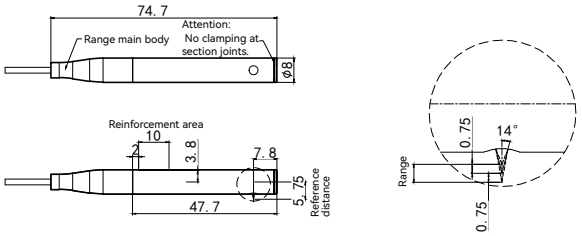


TS-C50000

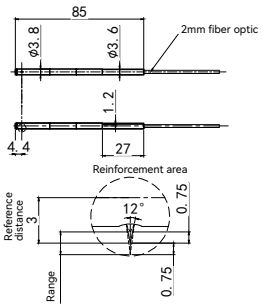


Dimension Figure

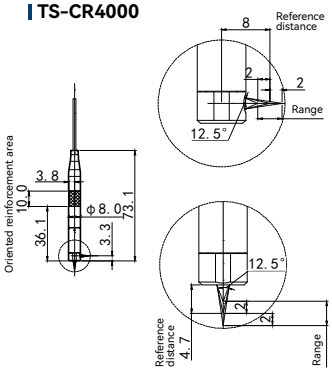
TS-CR1500



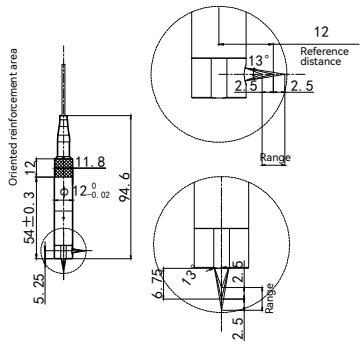
TS-CR1500N



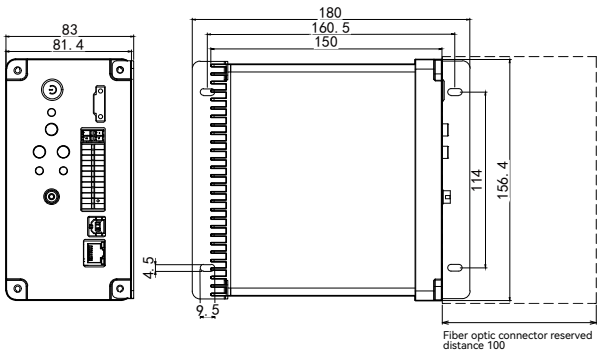
TS-CR4000



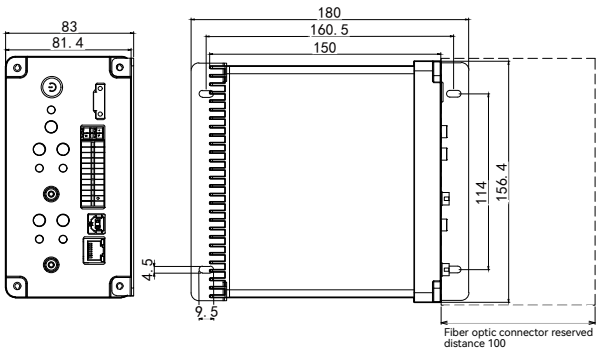
TS-CR5000



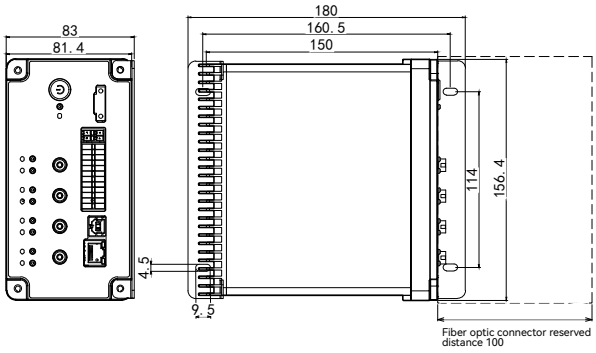
TS-CCS(With Footpad)



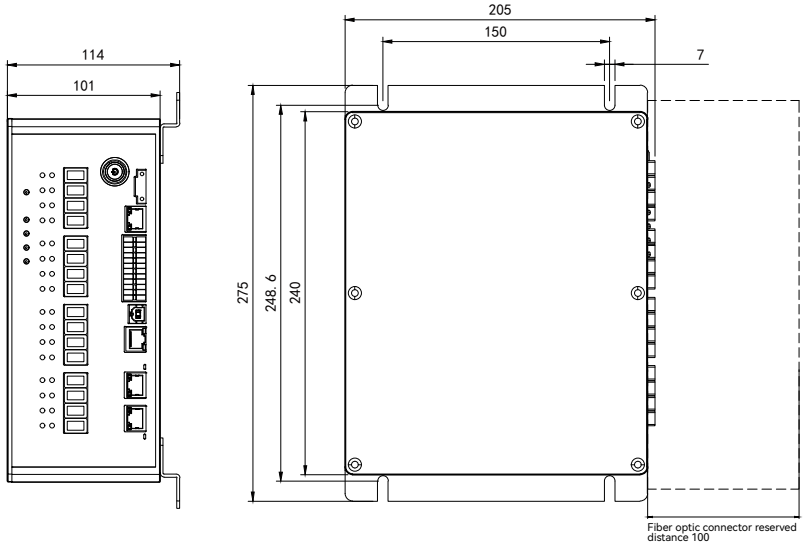
TS-CCD(With Footpad)



TS-CCF(With Footpad)

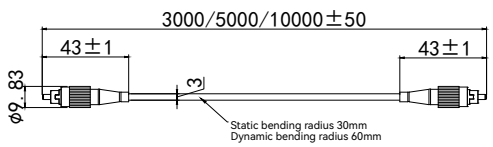


TS-CCH(含脚垫)

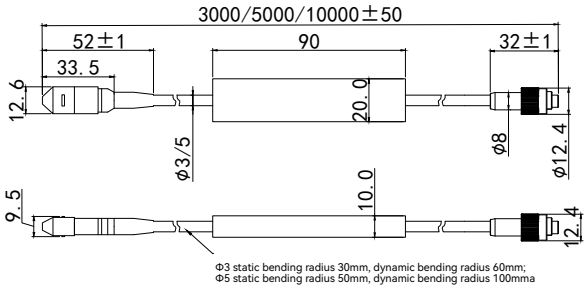


Component Drawings

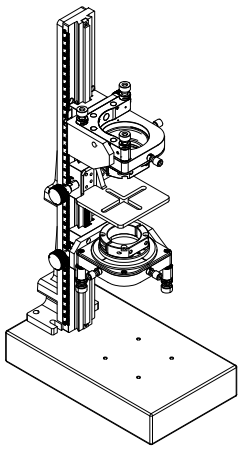
FC Fiber Optic Jumper



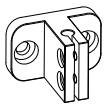
MPO Fiber Optic Jumper



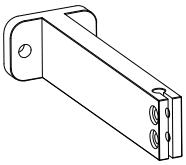
Vertical Jig and Fixture



Clamp Piece



D3.8L15



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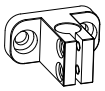

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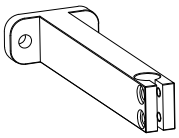

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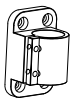
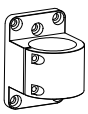


D20



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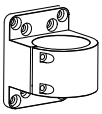
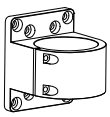
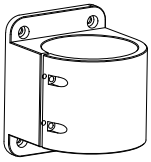


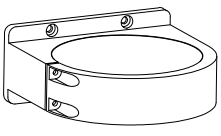
D36



D40



D60

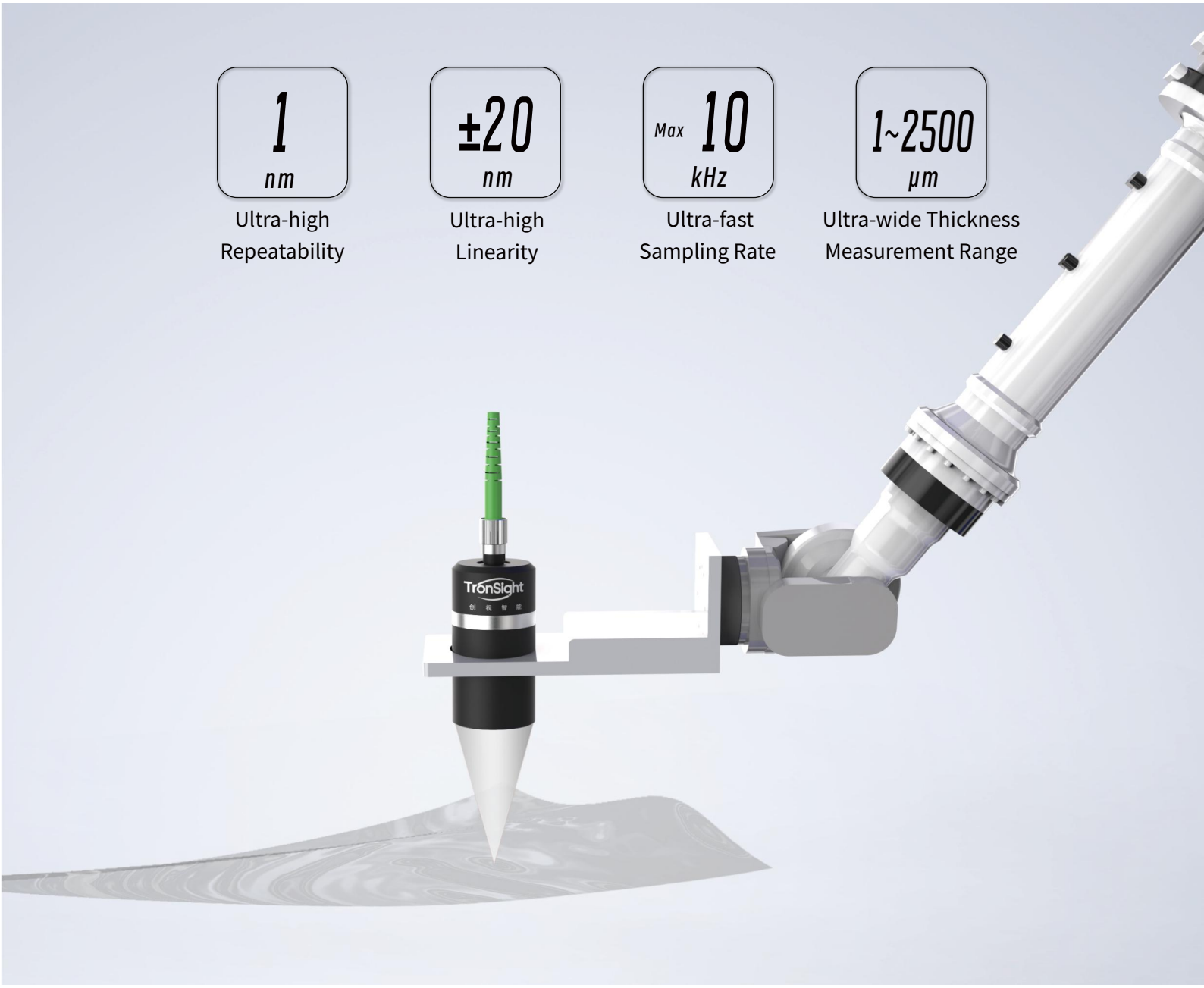


D94

TronSight

| TS-I Series |

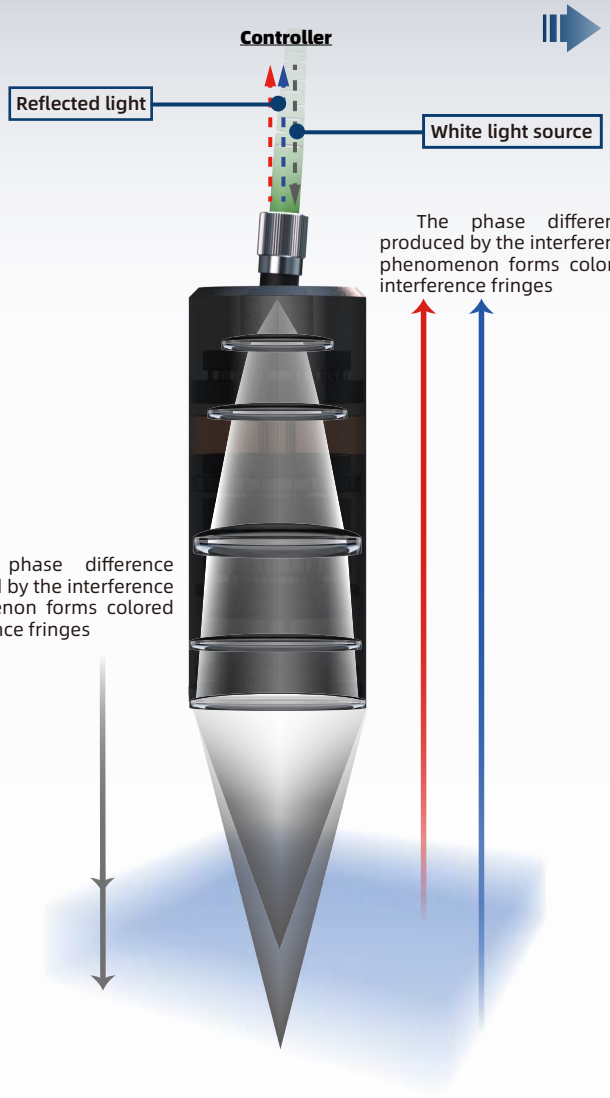
Interferometric Thickness Sensors



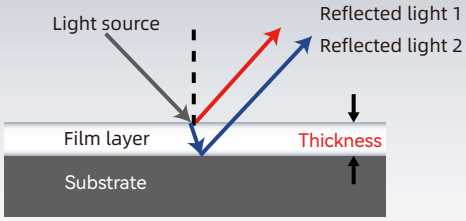
1 nm	±20 nm	Max 10 kHz	1~2500 μm
Ultra-high Repeatability	Ultra-high Linearity	Ultra-fast Sampling Rate	Ultra-wide Thickness Measurement Range

Why choose TronSight?

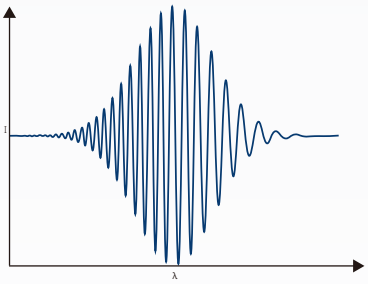
- 360° Minimal Measurement Dead Zone
- High Interference Immunity
- Nanometer-level Measurement Accuracy
- Non-contact Measurement
- Film And Coating Thickness Measurement
- Wide Range Working Distance



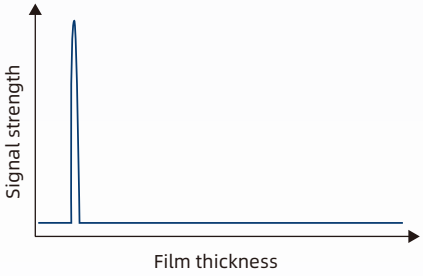
Measurement Principle



White Light Interference Receives Spectral Signals



Interference Signal Analysis And Thickness Mapping



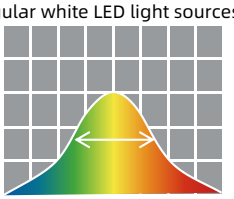
Basic Principle

The white point light spectrum passes through the interferometric probe and illuminates the surface of the sample. The reflected light from the upper and lower surfaces of the sample is simultaneously received by the interferometric probe. The phase difference between the two reflected beams is related to the film thickness, thus allowing the calculation of the film thickness value by analyzing the interference fringes.

High-brightness color laser light source

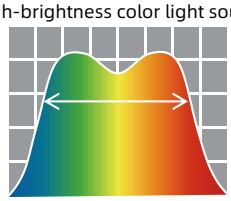
Blue laser light is shone on a phosphor that simultaneously emits red and green light, generating multi-color light. Compared to ordinary white LED light sources, it can achieve stable high-brightness emission over a wider range of wavelengths.

Regular white LED light sources



The wavelength range for high-brightness emission is relatively narrow.

High-brightness color light source

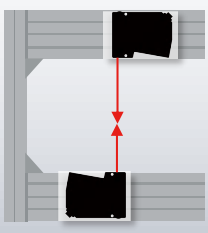


The wavelength range that can emit high-brightness light is relatively wide

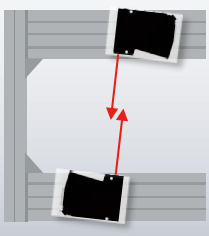
Zero heat-generating probe design

Traditional laser displacement sensors can cause deformation of the fixture and optical axis misalignment due to their own emissions, leading to measurement errors. The probe of this sensor is designed with only lens structures internally. Since there are no electronic components, it does not generate heat, thus preventing the deformation of the fixture where the probe is installed. This design allows for ideal high-precision measurements.

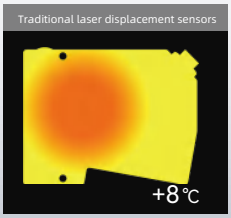
Before the probe heats up

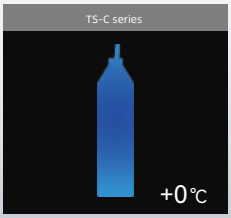


After the probe heats up

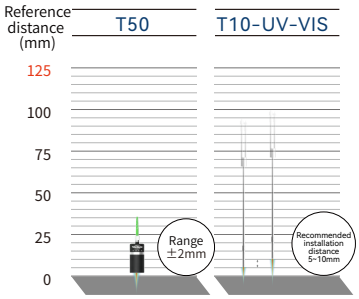


Traditional laser displacement sensors



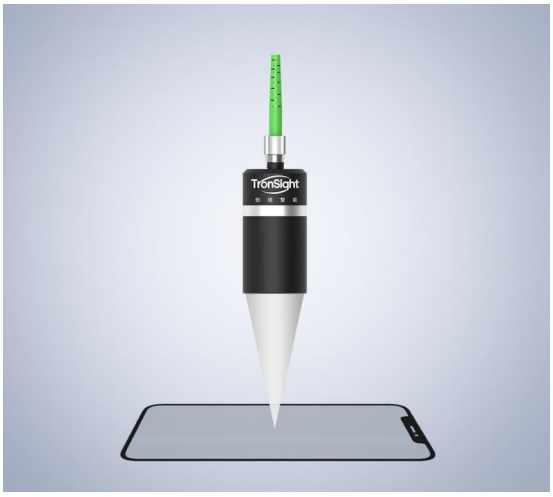


Product Specifications

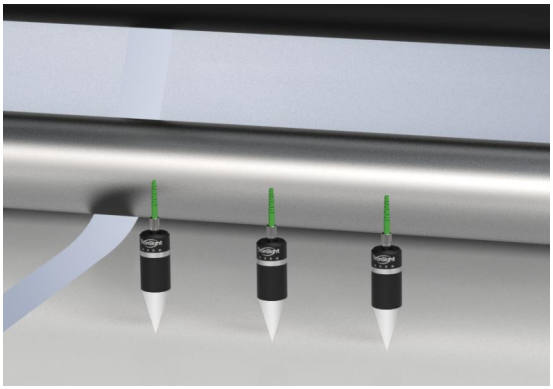


Measure angle	±3°	±10°
Repeatability	1nm	1nm
Linear error	< ±20nm	< ±20nm

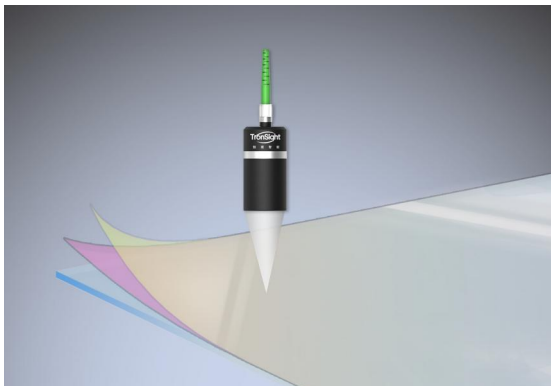
Application



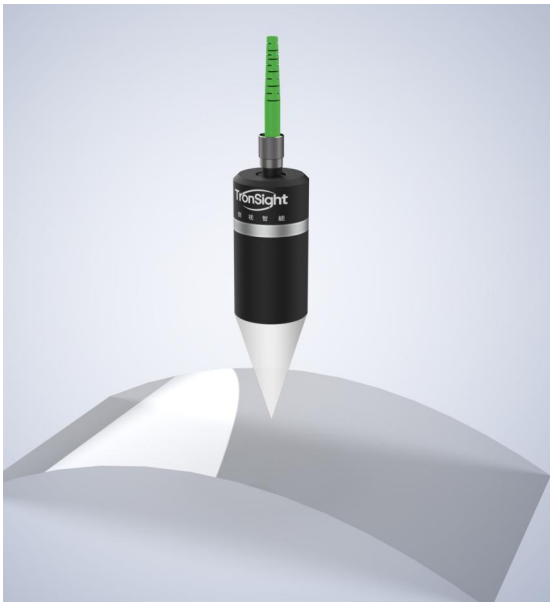
◆ Thickness Measurement of ITO Film for Touch Screens



◆ Thickness Measurement of Lithium-ion Battery Separator



◆ Thickness Measurement of Multilayer PET Films



◆ Thickness Measurement of Ultra-Thin Flexible Glass (UTG)

Parameters

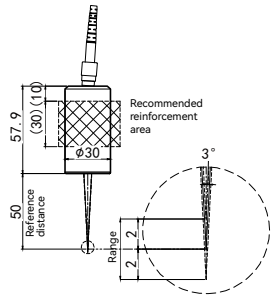
Sensor Head

Series		IVS-100	IVS-100W	IVS-50	IVS-50W
Controller model		IVCS-100	IVCS-100W	IVCS-50	IVCS-50W
Adapt probe model		IVP-T50	IVP-T10-UV-VIS	IVP-T50	IVP-T10-UV-VIS
Reference distance*1		50mm	Non-focused probe	50mm	Non-focused probe
Recommended measurement range		±2mm	The recommended installation distance is 5-10mm	±2mm	The recommended installation distance is 5-10mm
Measurement Angle*2		±3°	±10°	±3°	±10°
Spot type*3		Focus light dots, Φ100μm	Dispersive spot, spot diameter of about 4mm at a mounting distance of 10mm	Focus light dots, Φ100μm	Dispersive spot, spot diameter of about 4mm at a mounting distance of 10mm
Static noise*4		1nm	1nm	1nm	1nm
Linear error*5		<±20nm	<±20nm	<±20nm	<±20nm
External diameter*length		Φ30*58mm	Φ6.35*65mm	Φ30*58mm	Φ6.35*65mm
Probe weight		90g	\	90g	\
Degree of protection		IP40	\	IP40	\
Sensor Head Connection Capacity		1	1	1	1
Sampling frequency		Max.10 kHz			
Scope of thickness measurement		About 2 μm~100 μm (when the refractive index is 1.5		About 1 μ m~50 μ m (when the refractive index is 1.5	
Input port	Encoder input	The AB / ABZ encoder input, which can be configured for triggering		The AB / ABZ encoder input, which can be configured for triggering	
	Trigger signal input	Pulse / level trigger		Pulse / level trigger	
Output port	Digital signal output	Alert output, comparator output		Alert output, comparator output	
	Analog signal output	Linear ± 10 V analog voltage output / 4-20 mA analog current output (optional module)		Linear ± 10 V analog voltage output / 4-20 mA analog current output (optional module)	
Industrial interface	Ethernet Interface	100BASE-TX		100BASE-TX	
	USB joggle	Meet the USB2.0 Full-speed criteria		Meet the USB2.0 Full-speed criteria	
	The RS485 interface	Modbus Protocol, 19200 to 115200 baud rates		Modbus Protocol, 19200 to 115200 baud rates	
TT&C software	Upcomputer software	TSConfocalStudio Measurement and control software		TSConfocalStudio Measurement and control software	
	Secondary development package	C++ and C# software development package		C + + and C # software development package	
Rated power	supply voltage	24 VDC±10%		24 VDC±10%	
	current consumption	About 0.4 A		About 0.4 A	
Environmental resistance	working temperature	From 0 to + 50°C		From 0 to + 50°C	
	relative humidity	20 to 85% RH (no condensation)		20 to 85% RH (no condensation)	
Controller weight		About 2,000g		About 2,000g	

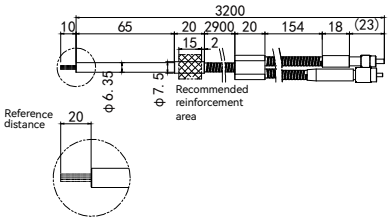
*1 Focus position, where the return signal from the sensor is strongest;
*2 Use a standard flat mirror for tilt testing at a 1kHz sampling rate;
*3 Measure sharp glass edges using a sub-micron positioning accuracy motion platform with a laser interferometer as the displacement reference for verification;
*4 Measure standard film thickness samples, collect 10,000 sets of thickness data continuously at 1kHz without averaging to calculate the root mean square deviation;
*5 Theoretical value

Dimension Figure

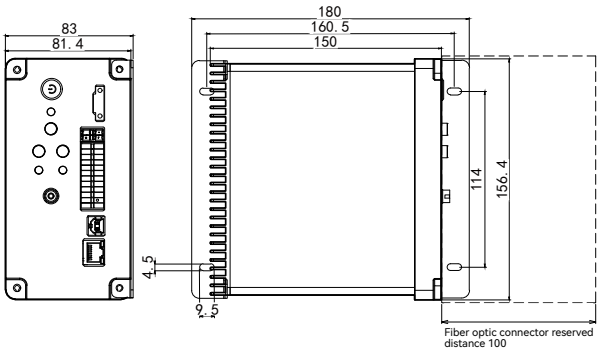
IVP-T50



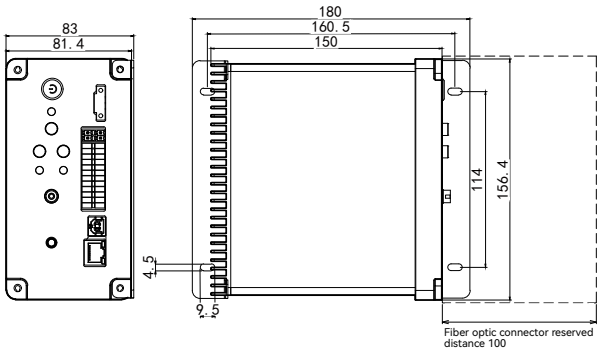
IVP-T10-UV-VIS



TS-IVS50/TS-IVS100(With Footpad)

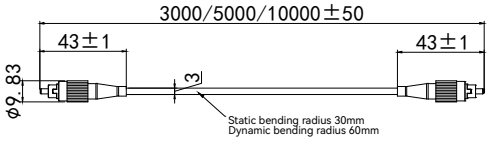


TS-IVS100W(With Footpad)



Component Drawings

FC Fiber Optic Jumper



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