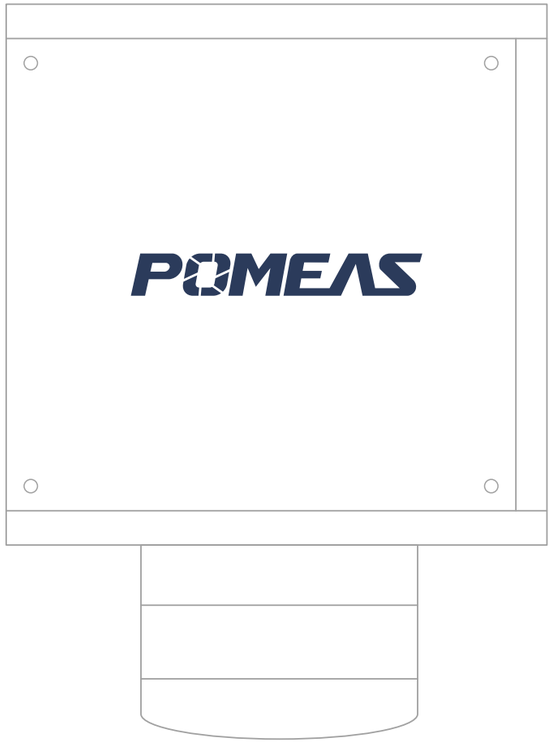
INDUSTRY CAMERA SERIES



According to customer requirements, and combines the characteristics of the machine vision and measurement industry, Pomeas make personalized design of cameras to match with POMEAS lenses, which maximizes the performance of the system. It is suitable for machine vision, industrial inspection, microscopic imaging, visual positioning, dimensional measurement and other industries.

Gigabit Ethernet Industrial Camera Seri

Second-generation industrial surface array camera with a new hardware platform to achieve lower power consumption, equipped with Sony's IMX296 global shutter CMOS chip, low noise, image excellent quality and high cost performance. Image transfer via Gigabit Ethernet interface for fast, real-time transmission of uncompressed data at up to 65.2 fps at full resolution.

PRODUCT ADVANTAGES

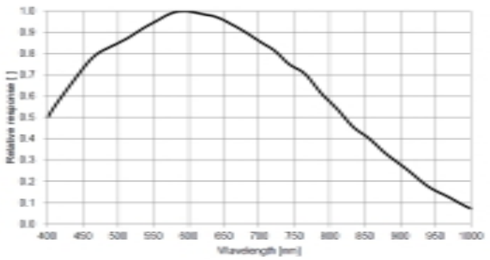
1. New hardware platform, optimize logic resources, significantly reduce power consumption.
2. Support automatic or manual adjustment of gain, exposure time, white balance, LUT, Gamma correction, etc.
3. Camera implanted with noise reduction, CCM and other functions, excellent image quality.
4. Gigabit network interface, without relay, the maximum transmission distance can reach 100m, new generation appearance result design, support four-sided installation.
5. Compatible with GigE Vision V2.0 protocol GenICam standard, seamlessly connect to third-party software.

APPLICATION FIELDS

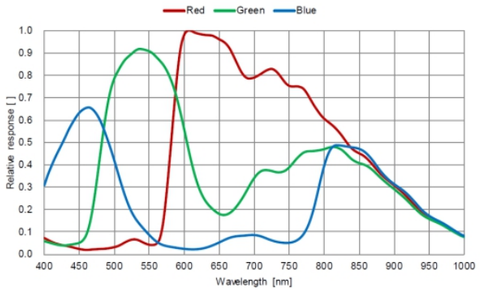
Suitable for electronic semiconductor, factory automation, food and beverage, pharmaceutical packaging, and image measurement industries.

Model	Pixel	Sensor Type	Resolution	Frame Rate(fps)	Dynamic Range	Data interface	Color	Image Eiement(μm)	Sensor
PMS-CCN-013D15BSC	1.3MP	CMOS	1280x1024	60	60db	GigE POE	B&W	4.8x4.8	1/2"
PMS-CCN-013D15CSC	1.3MP	CMOS	1280x1024	60	60db	GigE POE	Color	4.8x4.8	1/2"
PMS-CCN-020M15CSC	2MP	CMOS	1920x1080	22	Support DOL Mode HDR	GigE POE	Color	2.9x2.9	1/2.8"
PMS-CCN-020Q25BSC-30	2MP	CMOS	1920x1200	39	70db	GigE POE	B&W	5.86x5.86	1/1.2"
PMS-CCN-050E15BSC	5MP	CMOS	2448x2048	20	70db	GigE POE	B&W	3.45x3.45	2/3"
PMS-CCN-050E15CSC	5MP	CMOS	2448x2048	20	70db	GigE POE	Color	3.45x3.45	2/3"
PMS-CCN-060C15BSC	6MP	CMOS	3072x2048	18	66db	GigE POE	B&W	2.4x2.4	1/1.8"
PMS-CCN-060C15CSC	6MP	CMOS	3072x2048	18	66db	GigE POE	Color	2.4x2.4	1/1.8"
PMS-CCN-100K15BSC	10MP	CMOS	3840x2748	10	65db	GigE POE	B&W	1.67x1.67	1/2.3"
PMS-CCN-120P15BSC	12MP	CMOS	4096x3000	9	70db	GigE POE	B&W	3.45x3.45	1/1"
PMS-CCN-120P15CSC	12MP	CMOS	4096x3000	9	70db	GigE POE	Color	3.45x3.45	1/1"

Sensor Response Curve

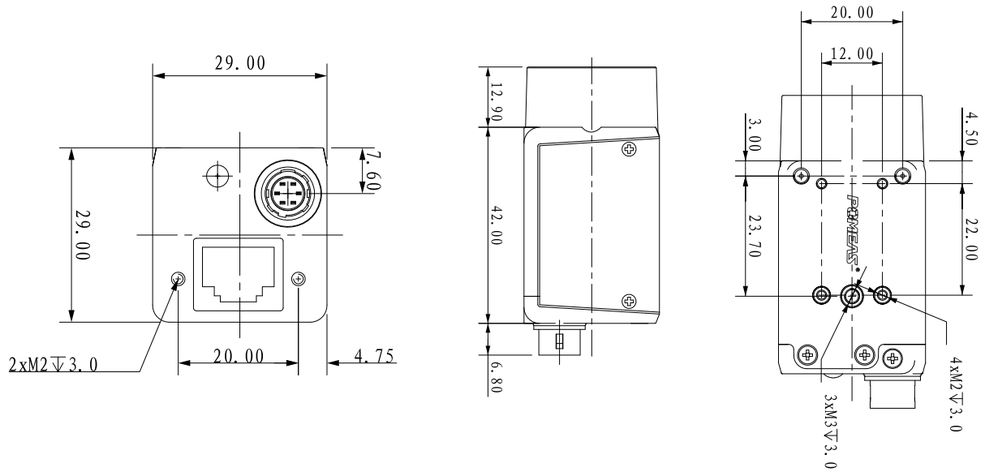


PMS-CCN-016B14BSC Quantum Efficiency

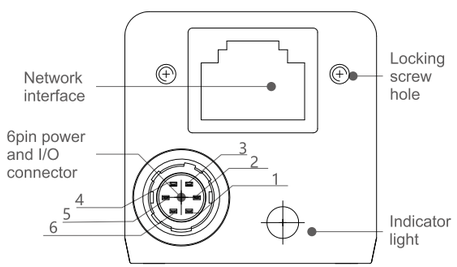


PMS-CCN-016B14CSC Quantum Efficiency

Product Size Diagram



I/O Interface



Pins	Signal	Description
1	Power	+6V-26V DC power supply
2	Line1	Optocoupler isolated input
3	Line2	Configurable IO input/output ports
4	Line0	Optocoupler isolated output
5	IO GND	Optocoupler isolated ground
6	GND	DC power ground

VGA Camera Parameter

Code	PSM-VGA100	PSM-VGA130-A	PSM-VGA130-B
Resolution	1280x720	1280x1024	1280x1024
FPS	60	30	30
Pixel Size	3.75μmx3.75μm	4.4μmx4.4μm	4.4μmx4.4μm
Sensor	1/3"	1/3"	1/2.5"
Output	VGA	VGA	VGA
White Balance	One button set-up,can adjust manually or automatically		
Avold Glare Option	3 grade option	One button	One button
Edge Sharpness Mode	3 grade option	No	No
Color Adjustment	R/G/B adjustable independentdly	R/G/B adjustable independentdly	R/G/B adjustable independentdly
Inner Reticle	Center reticle or 8 movable lines		
Mount	C-Mount	C-Mount	C-Mont
Voltage Input	DC-5V	DC-5V	DC-5V
Dimension	51mmx51mmx57mm	52.5mmx51mmx60mm	61mmx61mmx65mm
Working Temperature	0℃~80℃	0℃~80℃	0℃~80℃
Photo Storage SD	No	No	Sd card

Feature:

1. Mega pixels, 1280x1024;
2. Progressive scanning, ensure sharp image without twinkle;
3. SD card storage function;
4. 8:8:8 RBG full color output;
5. Connect directly with display, vivid color;
6. inbuilt function menu, user friendly;
7. Stable 30fps output, no real-time delay.

HDMI Camera	
Code	PMS-HM200
Resolution	2MP 1920x1080
FPS	60
Pixel Size	3.75μm
Sensor	1/3"
Output	HDMI
White Balance	One Button For White Balance
Avold Glare Option	3 grade option
Edge Sharpness Mode	3 grade option
Color Adjustment	R、G、B adjustable independedly
Inner Reticle	Center reticle or 8 movable lines
Line Width	One Pixel
Mount	C-Mount
Voltage Input	DC-5V
Dimension	61mm x 61mm x 57mm
Working Temperature	0℃~50℃
Photo Storage SD	Memory Card(below 32G),Photoing hand shank/button

Feature:

1. 2MP high resolution, 1920x1080;
2. 60/fps high speed image, no delay in real-time;
3. New color calculation, ensure the real color;
4. HDMI digital high resolution output, support 16:9 display;
5. Independent color adjustment, special multiply wide dynamic function;
6. With cross line, it can be moved and overly;
7. SD card storage function;
8. With edge enhancement mode, it can improve the special image performance.

Large Format Industrial Camera										
Code	Sensor	Sensor Type	Shutter Type	Resolution	Frame rate(fps)	Depth(bit)	Connector	Colour	Pixel(μm)	Target Surface
PMS-CCN-120H15CSF	PYTHON 12K	CMOS	Global	4096x3072	9	10	GigE	coloured	4.5X4.5	4/3"

Code	PMS-CCN-120H15CSF
Pixel	12MP
Signal-to-noise ratio	>41dB
Wide Dynamic	58db
GPIO General Interface	12 pole Hirose connector for external power supply, 3 opto-coupler isolated inputs, 3 opto-coupler isolated outputs, 1 RS232 serial interface
Image Format	Mono8,BayerRG8/10/10Packed, BayerGB8/10/10Packed, YUV422Packed
ROI	Support
Gain	X1~X32
Gamma	Range 0~4, Support LUT
Shutter Exposure	1us~1s
Image Acquisition Model	Software Trigger/Hardware Trigger/Free Motion
Image Buffer	256MB data cache
Memory Channel	Support 2 groups of user-defined configuration saving
Size	72mmX72mmX46mm
Weight	430g
Power Supply	DC12V-26V
Power Consumption	24V≈9W
Lens Interface	M58x0.75
Working Temperature	Storage temperature:-30℃~+80℃;Working temperature:-30℃~+50℃

PRODUCT ADVANTAGE

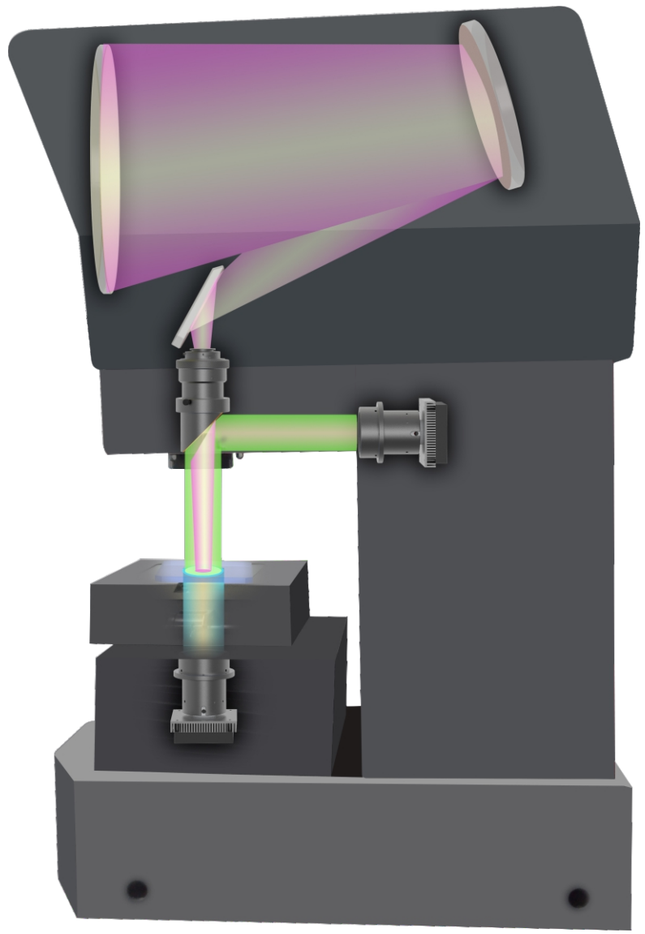
- Gigabit Ethernet interface, providing 1Gbps bandwidth, maximum transmission distance up to 100m.
- 256MB on-board cache for data transmission or image retransmission in burst mode.
- Support software trigger/hardware trigger/free running and other trigger modes.
- Support ISP functions such as sharpness, noise reduction, auto exposure, black level correction, gamma correction, LUT and so on.
- Colour camera support interpolation, white balance, colour conversion matrix, chroma, saturation, etc..
- Support a variety of image data format output, RO1, Binning, mirroring and so on.
- In line with GigE VisionV2.0 protocol and Genlcam standards.
- Support DC12-24V wide voltage power supply.

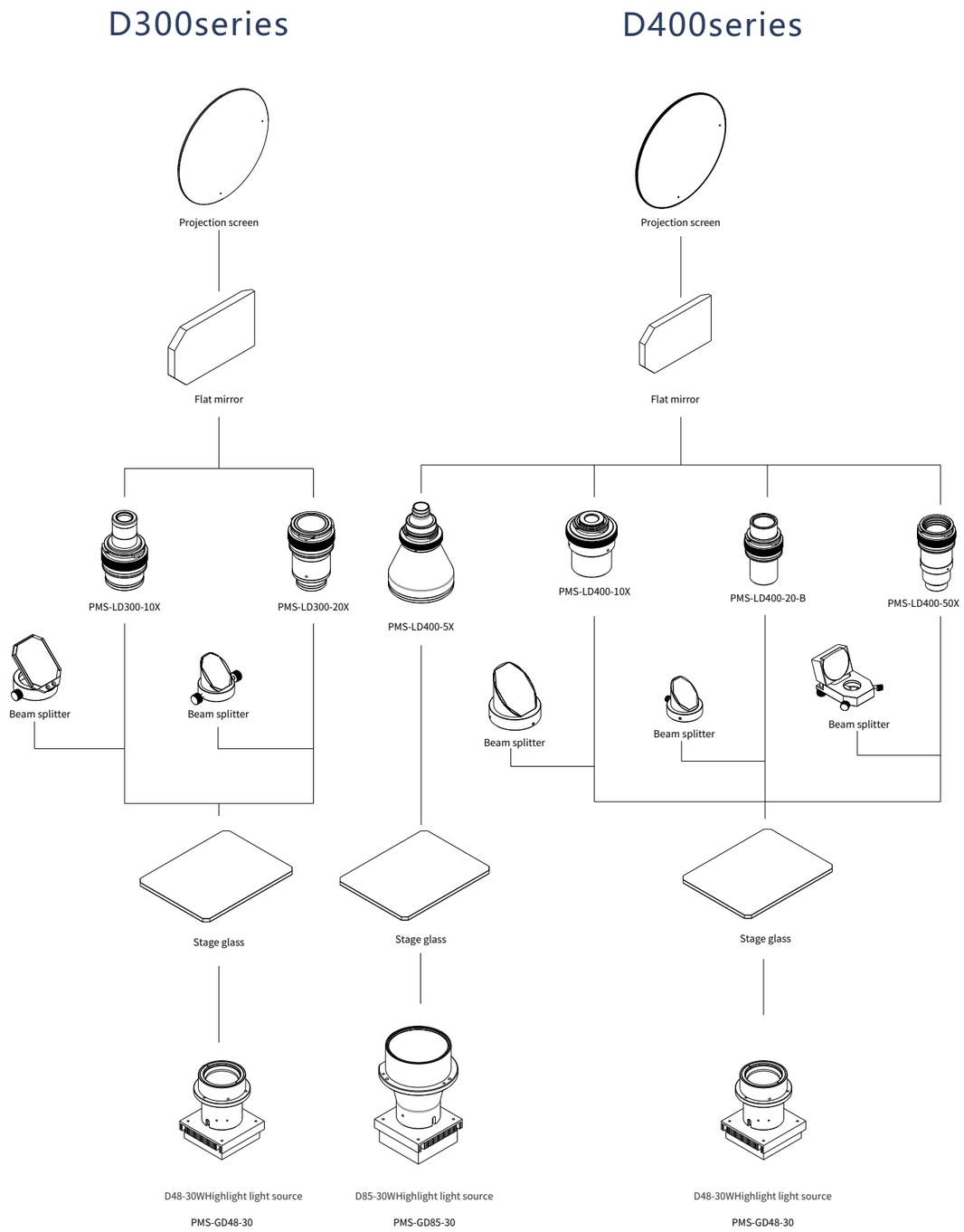
AREAS OF APPLICATION

Suitable for railway industry, LCD industry, glass surface inspection and other kinds of industrial inspection and scientific research.

MEASUREMENT PROFILE PROJECTOR PARTS SERIES

The main products include: projection lens, projection LED light source, projection screen, flat reflector, carrier table glass.





PRODUCT ADVANTAGES

1. High resolution design.
2. Ultra-low distortion.
3. Telecentric.
4. Adjustable magnification.
5. Equipped with coaxial optical module.

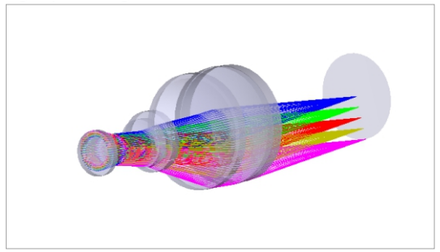
Projection Lens D300 Series

Code	Magnification	Object Resolution(lp/mm)	Telecentricity(°)	Distortion	Object Distance(mm)	Object Field Of View(mm)	Field Of View(mm)	I/O Distance(mm)
PMS-PLD300-10X	10X	Center/Peripheral：125/63	<0.02	<0.01%	80	Ø30	Ø300	1087
PMS-PLD300-20X	20X	Center/Peripheral：160/80	<0.02	<0.01%	67.7	Ø15	Ø300	1087

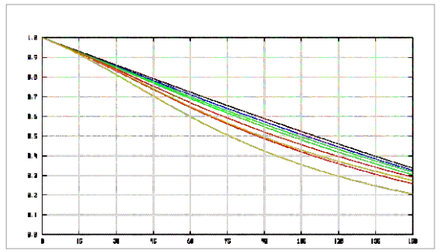
Projection Lens D400 Series

Code	Magnification	Object Resolution(lp/mm)	Telecentricity(°)	Distortion	Object Distance(mm)	Object Field Of View(mm)	Field Of View(mm)	I/O Distance(mm)
PMS-PLD400-5X	5X	Center/Peripheral：80/50	<0.02	<0.01%	58.3	Ø80	Ø400	1234
PMS-PLD400-10X	10X	Center/Peripheral: 125/63	<0.02	<0.01%	79	Ø40	Ø400	1234
PMS-PLD400-200-B	20X	Center/Peripheral：160/80	<0.02	<0.01%	81.5	Ø20	Ø400	1234
PMS-PLD400-50X	50X	Center/Peripheral：160/125	<0.02	<0.01%	52	Ø8	Ø400	1234

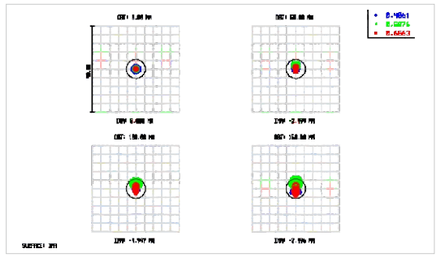
Light path diagram



MTF graph



Spot



Projection Screen With Uniform Surface Frosted Density Andlow Dispersion Loss

PRODUCT ADVANTAGES

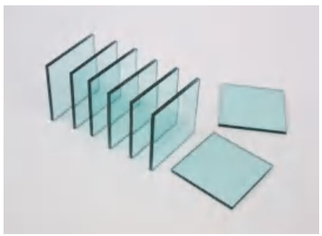
1. Low dispersion loss reduces light energy loss.
2. Surface matte density is uniform, can form a uniform diffusion.
3. Precision scale, clear and sharp lines.

Parameters Table

Code	Diameter / Length And Width (mm)	Thickness (mm)
PMS-PA-320	Ø320	6
PMS-PA-368	Ø368	5
PMS-PA-392	Ø392	6
PMS-PA-380	Ø380	6
PMS-PA-312	Ø312	6

The above can be customized other specifications.

Stage Glass With Visible Light Transmittance> 95% And Flatness <0.01mm



PRODUCT ADVANTAGES

1. Material selection of ultra-white high-quality float glass.
2. Visible light transmittance> 95%.
3. Flatness<0.01mm.
4. The refractive index is 1.51.
5. It can absorb ultraviolet light below 280mm.

Parameters Table

Code	Diameter / Length And Width (mm)	Thickness (mm)
PMS-PG-200/120	200×120	30
PMS-PG-155/155	155×155	6
PMS-PG-126/100	126×100	8
PMS-PG-200/130	200×130	6

Plane Reflector With High Reflectivity And High Surface Accuracy

PRODUCT ADVANTAGES

1. High surface accuracy.
2. Metallized reflective film with high reflectivity.
3. There is a protective film on the surface to avoid scratching and aging of the reflective film.

Parameters Table

Code	Diameter / Length And Width (mm)	Thickness (mm)
PMS-PM-120/60	120×60	12.75
PMS-PM-260	0260	19
PMS-PM-240	0240	19
PMS-PM-80/45	80×45	10
PMS-PM-190	0190	19
PMS-PM-350	0350	19
PMS-PM-280	0280	19
PMS-PM-406	0406	25
PMS-PM-381	0381	19
PMS-PM-470	0470	19
PMS-PM-686	0686	38
PMS-PM-533	0533	38
PMS-PM-762	0762	38
PMS-PM-838	0838	38
PMS-PM-914	0914	51
PMS-PM-240	0240	15
PMS-PM-100	100×10	5
PMS-PM-136/80	130×80	11

The above can be customized other specifications.

High Brightness, High Flatness Good Uniformity Projection Led Light Source

PRODUCT ADVANTAGES

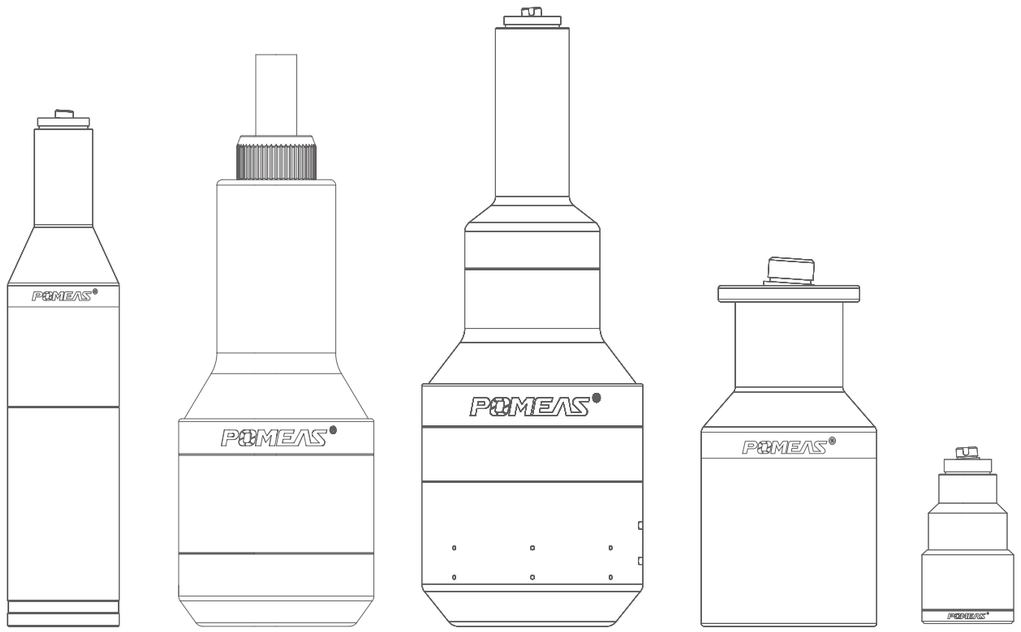
1. High brightness.
2. High parallelism.
3. Good uniformity.

Parameters Table

Code	Beam Diameter (mm)	Forward Voltage (V)	Maximum Current (A)	Colour
PMS-PGS-48/30	48	3.2~3.6	9	yellow-green
PMS-PGS-85/30	85	3.2~3.6	9	yellow-green

SPECTRAL CONFOCAL SENSOR

Measurement Principle : The spectral confocal displacement sensor uses a special color-coded lens to produce an axial dispersion output of visible light, and then analyzes the confocal return signal through a spectral resolver.
The wavelength and displacement conversion curve is used to calculate the workpiece displacement measurement value.



APPLICATION FEATURES

1. Stable measurement of various materials, such as metal/ceramic/mirror/glass, etc.
2. It is suitable for measuring the characteristic dimensions of various workpiece shapes (including deep hole/slant/arc), such as height/section difference/thickness/planarity/profile, etc.
3. It can also be used under severe operating conditions such as high temperature and high pressure.
4. Lightweight probe structure, easy to integrate in various industries of automated measurement applications.

Spectral Confocal Displacement Sensor

Available for all materials - More accurate and stable measurements -Full range of application solutions.

Sensor Parameter Table

Code		PMS-SFS-D8012	PMS-SFS-D8020	PMS-SFS-D8022	PMS-SFS-D8040	PMS-SFS-D8055	PMS-SFS-D8080
Nearest Measurement Distance		13.8mm	20mm	22mm	40mm	55mm	80mm
Measurement Range		1mm	1.6mm	2mm	7mm	6mm	6mm
Max. Light Angle		±29.3°	±45°	±17°	±20.2°	±13.6°	±11°
N.A.		0.45	0.56	0.27	0.31	0.23	0.2
Spot Diameter	ϕ20μm	ϕ4μm	ϕ2.9μm	ϕ15.5μm	ϕ13.6μm	ϕ17μm	ϕ14μm
	ϕ50μm	ϕ10μm	ϕ7.3μm	ϕ38.8μm	ϕ34μm	ϕ42.6μm	ϕ35μm
	ϕ110μm	ϕ22μm	ϕ16μm	ϕ85.4μm	ϕ74.8μm	ϕ93.7μm	ϕ77μm
Outer Diameter		ϕ27mm	ϕ90mm	ϕ31mm	ϕ69mm	ϕ35mm	ϕ50mm
Length. Max		148.45mm	250.39mm	62mm	162.5mm	66.8mm	235.78mm
Maximum linear error		0.02%F.S.	0.02%F.S.	0.02%F.S.	0.02%F.S.	0.02%F.S.	0.02%F.S.

*1: Measurement of the value of our standard workpiece (mirror body) by displacement mode.

APPLICATION INDUSTRIES

- Mobile phone, tablet, computer and other metal chassis machine processing manufacturing industry;
- PCB boards, connectors, IC chips and other electronic industries;
- Panel, glass, tempered film and other industries;
- Semiconductor wafer, new energy, photovoltaic and other industries.

APPLICATION FEATURES

- Stable measurement of all kinds of materials, such as metal/ceramics/mirror/glass;
- Suitable for all kinds of workpiece shape (including deep holes/bevelled surfaces/curved surfaces), such as height/segment difference/thickness/flatness/profile measurement;
- Can be used under severe operating conditions such as high temperature and high pressure;
- The probe is lightweight and easy to integrate into automated measurement applications in a wide range of industries.

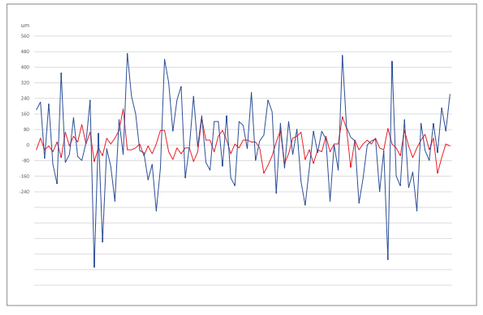
Control Box Introduction

- Dual channel
- XYZ linear scale
- Support scanning point cloud
- Through-beam thickness measurement
- Analog output (seamless piezo actuation)
- Support 1~2 motor trapezoidal acceleration and deceleration control.

Control Box Parameter

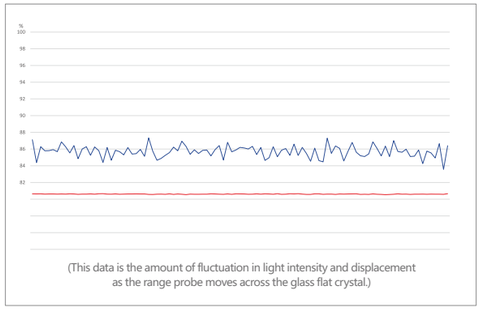
Code	PMS-SFS-C8000D	PMS-SFS-C8000
No. of probe connections	2	1
Sampling Frequency	200 to 2000 points /sec user definable	200 to 2000 points /sec user definable
Illumination	Led illumination	Led illumination
Measurement Mode	Displacement /Thickness	Displacement /Thickness
Communication Control	Ethernet	Ethernet
Encoder	Incremental (item A/B)	Incremental (item A/B)
Compatibility	Compatible with all probe models	Compatible with all probe models
Power Supply/power Consumption	24V DC 2A	24V DC 2A
Working Temperature	5℃~40℃	5℃~40℃
Weight	2KG	2KG

Dynamic displacement fluctuations:



Without any moving average modification, the scanning stability is 4 times higher than conventional models, allowing full 100 nm resolution and accuracy.

Dynamic light intensity fluctuation:

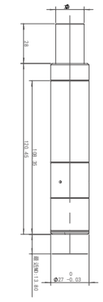


(This data is the amount of fluctuation in light intensity and displacement as the range probe moves across the glass flat crystal.)

Dynamic light intensity fluctuations are more than 10 times more stable than conventional models, and light intensity can be used as another dimension for judgement measurement.

PRODUCT DIMENSIONS

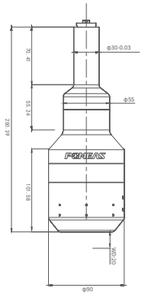
PMS-SFS-D8012



unit:mm

Nearest Measurement Distance: 13.8mm		
Measuring Range: 1mm		
Max. Light Angle: ±29.3°		
N.A.: 0.49		
Outer Diameter: 27mm		
Length: 148.45mm		
Maximum Linear Error: 0.02%F.S.		
Environment Humidity: 20 to 85% RH (no condensation)		
Scanning Frequency: 200/500/1000/2000 HZ (4 segments adjustable)		
Different Fiber Diameter Corresponds To The Min. Light Spot Diameter		
ϕ20μm	ϕ50μm	ϕ110μm
ϕ4μm	ϕ10μm	ϕ22μm

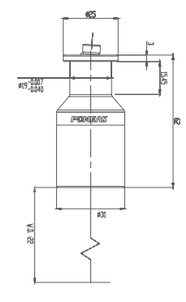
PMS-SFS-D8020



unit:mm

Nearest Measurement Distance: 20mm		
Measuring Range: 1.6mm		
Max. Light Angle: ±45°		
N.A.: 0.56		
Outer Diameter: ϕ90mm		
Length: 250.39mm		
Maximum Linear Error: 0.02%F.S.		
Environment Humidity: 20 to 85% RH (no condensation)		
Scanning Frequency: 200/500/1000/2000 HZ (4 segments adjustable)		
Different Fiber Diameter Corresponds To The Min. Light Spot Diameter		
ϕ20μm	ϕ50μm	ϕ110μm
ϕ2.9μm	ϕ7.3μm	ϕ16μm

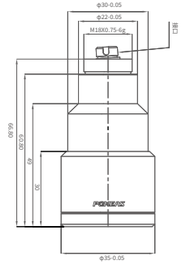
PMS-SFS-D8022



unit:mm

Nearest Measurement Distance: 22mm		
Measuring Range: 2mm		
Max. Light Angle: ±17°		
N.A.: 0.27		
Outer Diameter: ϕ31mm		
Length: 62mm		
Maximum Linear Error: 0.02%F.S.		
Environment Humidity: 20 to 85% RH (no condensation)		
Scanning Frequency: 200/500/1000/2000 HZ (4 segments adjustable)		
Different Fiber Diameter Corresponds To The Min. Light Spot Diameter		
ϕ20μm	ϕ50μm	ϕ110μm
ϕ15.5μm	ϕ38.8μm	ϕ85.4μm

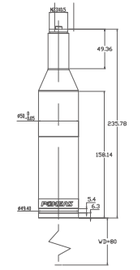
PMS-SFS-D8055



unit:mm

Nearest Measurement Distance: 55mm		
Measuring Range: 6mm		
Max. Light Angle: ±13.6°		
N.A.: 0.23		
Outer Diameter: ϕ35mm		
Length: 66.8mm		
Maximum Linear Error: 0.02%F.S.		
Environment Humidity: 20 to 85% RH (no condensation)		
Scanning Frequency: 200/500/1000/2000 HZ (4 segments adjustable)		
Different Fiber Diameter Corresponds To The Min. Light Spot Diameter		
ϕ20μm	ϕ50μm	ϕ110μm
ϕ17μm	ϕ42.6μm	ϕ93.7μm

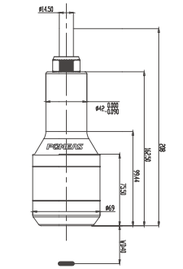
PMS-SFS-D8080



unit:mm

Nearest Measurement Distance: 80mm		
Measuring Range: 6mm		
Max. Light Angle: ±11°		
N.A.: 0.2		
Outer Diameter: ϕ50mm		
Length: 235.78mm		
Maximum Linear Error: 0.02%F.S.		
Environment Humidity: 20 to 85% RH (no condensation)		
Scanning Frequency: 200/500/1000/2000 HZ (4 segments adjustable)		
Different Fiber Diameter Corresponds To The Min. Light Spot Diameter		
ϕ20μm	ϕ50μm	ϕ110μm
ϕ14μm	ϕ35μm	ϕ77μm

PMS-SFS-D8040



unit:mm

Nearest Measurement Distance: 40mm		
Measuring Range: 7mm		
Max. Light Angle: ±20.2°		
N.A.: 0.31		
Outer Diameter: ϕ69mm		
Length: 162.5mm		
Maximum Linear Error: 0.02%F.S.		
Environment Humidity: 20 to 85% RH (no condensation)		
Scanning Frequency: 200/500/1000/2000 HZ (4 segments adjustable)		
Different Fiber Diameter Corresponds To The Min. Light Spot Diameter		
ϕ20μm	ϕ50μm	ϕ110μm
ϕ13.6μm	ϕ34μm	ϕ74.8μm

PMS-SFS-D8080K

Zoom CoaxialSpot Spectrum

4K Zoom Lens

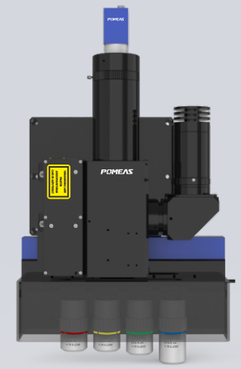
Magnification Range	0.68X~5X					
Working Distance (mm)	80					
Magnification Ratio	0.68X	1X	2.0X	3.0X	4.0X	5X
DOF(mm)*1	1.78	0.89	0.25	0.12	0.08	0.07
N.A.	0.033	0.045	0.08	0.11	0.12	0.12
F NO.	10.3	11	12.4	13.5	16.5	20.6
Resolution (um)	10.17	7.46	4.19	3.05	2.8	2.8
TV Distortion	< 0.02%	< 0.02%	< 0.02%	< 0.02%	< 0.02%	< 0.02%
FOV (mm) 1"	23.53X18.82X14.12	16X12.8X9.6	8X6.4X4.8	5.33X4.27X3.2	4X3.2X2.4	3.2X2.56X1.92
FOV (mm) 2/3"	16.18X12.94X9.71	11X8.8X6.6	5.5X4.4X3.3	3.67X2.93X2.2	2.75X2.2X1.65	2.2X1.76X1.32
FOV (mm) 1/2"	11.76X9.41X7.06	8X6.4X4.8	4X3.2X2.4	2.67X2.13X1.6	2X1.6X1.2	1.6X1.28X0.96
FOV (mm) 1/3"	8.82X7.06X5.29	6X4.8X3.6	3X2.4X1.8	2X1.6X1.2	1.5X1.2X0.9	1.2X0.96X0.72
Max. Image Plane	1"					
Total Length (mm)	328					
Zoom Mode	Manual /Electric					
Mount	C-Mount					

*1: Theoretical calculation value (calculated by taking the diameter of dispersion spot 0.04mm), the effect is better when taking 1/2 of its range in practical application.

PMS-SFS-D8080K Specification Sheet

Measuring Center Distance	80mm
Wavelength Range	500nm~650nm
Measuring Range	±3mm
Max. Light Angle	±11°
Light Point Diameter	φ35μm
Fiber Diameter	φ50μm
Fiber MA	0.14
Accuracy	1μm
Environment Humidity	20 to 85% RH (no condensation)
Scanning Frequency	200/500/1000/2000 HZ(4 segments adjustable)

*1: Measurement of the value of our standard workpiece (mirror body) by displacement mode



The "Focus X" system consists of

- Industrial camera
- Microscope tube module
- Laser sensor modules
- Objective focusing motion module
- Objective lens mounting module
- Apo objective lens

Parameter

Norm	Corresponding parameters with different objective lenses				
Magnification	2X(selectable)	5X	10X	20X	50X
DOF	91	14	3.5	1.6	0.9
Laser focusing frequency	5000Hz(Max)				
Laser focusing working Range (μm)	±7000	±3000	±1500	±600	±250
Accurate	1/4 Depth Of Field				
Laser autofocus cycle time	≤0.4s				
Operating temperature	5℃-50℃				
Z-axis travel	±15mm				

Objective Lens

Item	Product Code	Magnification	Numerical aperture	Working distance (mm)	Focal length (mm)	Resolution (μm)	Depth of field (μm)	Focal length of lens tube (mm)	Maximum image field of view (mm)
Conventional objective lens (image 16mm)	PMS-MPO2	2X	0.055	34	100	5	91	180	8.89
	PMS-MPO5	5X	0.14	35	40	2	14		3.56
	PMS-MPO10	10X	0.28	34	20	1	3.5		1.78
	PMS-MPO20	20X	0.42	20	10	0.7	1.6		0.89
	PMS-MPO50	50X	0.55	13	4	0.5	0.9		0.36
Large field of view objective lens (image 40mm)	PMS-MPO2-J	2X	0.07	32	100	4	56	200	20.00
	PMS-MPO5-J	5X	0.15	36	40	1.8	12		8.00
	PMS-MPO10-J	10X	0.28	32	20	1	3.5		4.00
	PMS-MPO20-J	20X	0.42	20	10	0.7	1.6		2.00

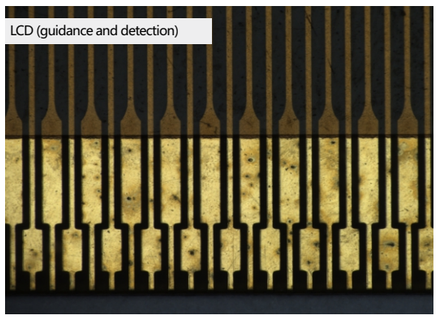
Objective Switcher Parameter List		
Norm	Carousel type objective switcher	In-line objective switcher
Number of supported objective lenses	4-hole/5-hole	
Driving method	Stepper motor	Linear motors
Objective lens switching time	<3μm	<0.5μm
Repeatable positioning accuracy of single hole	<10μm	<1μm
Positioning of different holes with optical axis deviation	<2s	<1.5s
Control method	RS232 communication control	

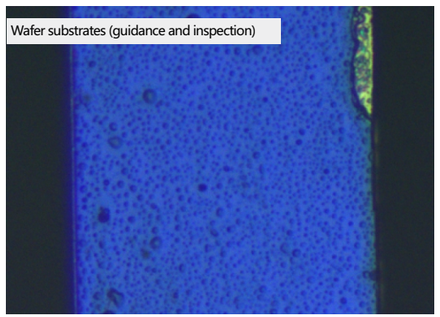
Application Industries

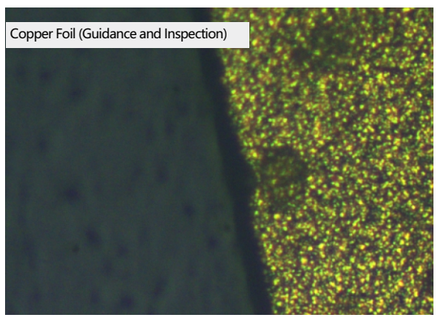
- Mobile Phone, Tablet, Computer And Other Metal Chassis Machine Processing Manufacturing Industry;
- Pcb Boards, Connectors, Ic Chips And Other Electronic Industries;
- Panel, Glass, Tempered Film And Other Industries;
- Emiconductor Wafer, Green Energy, Photovoltaic And Other Industries.

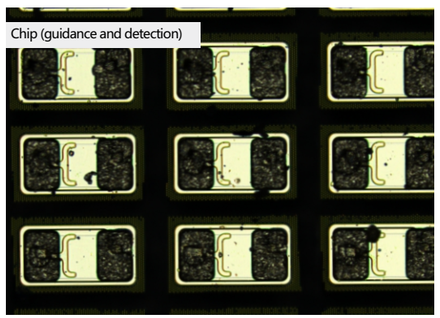
Application Features

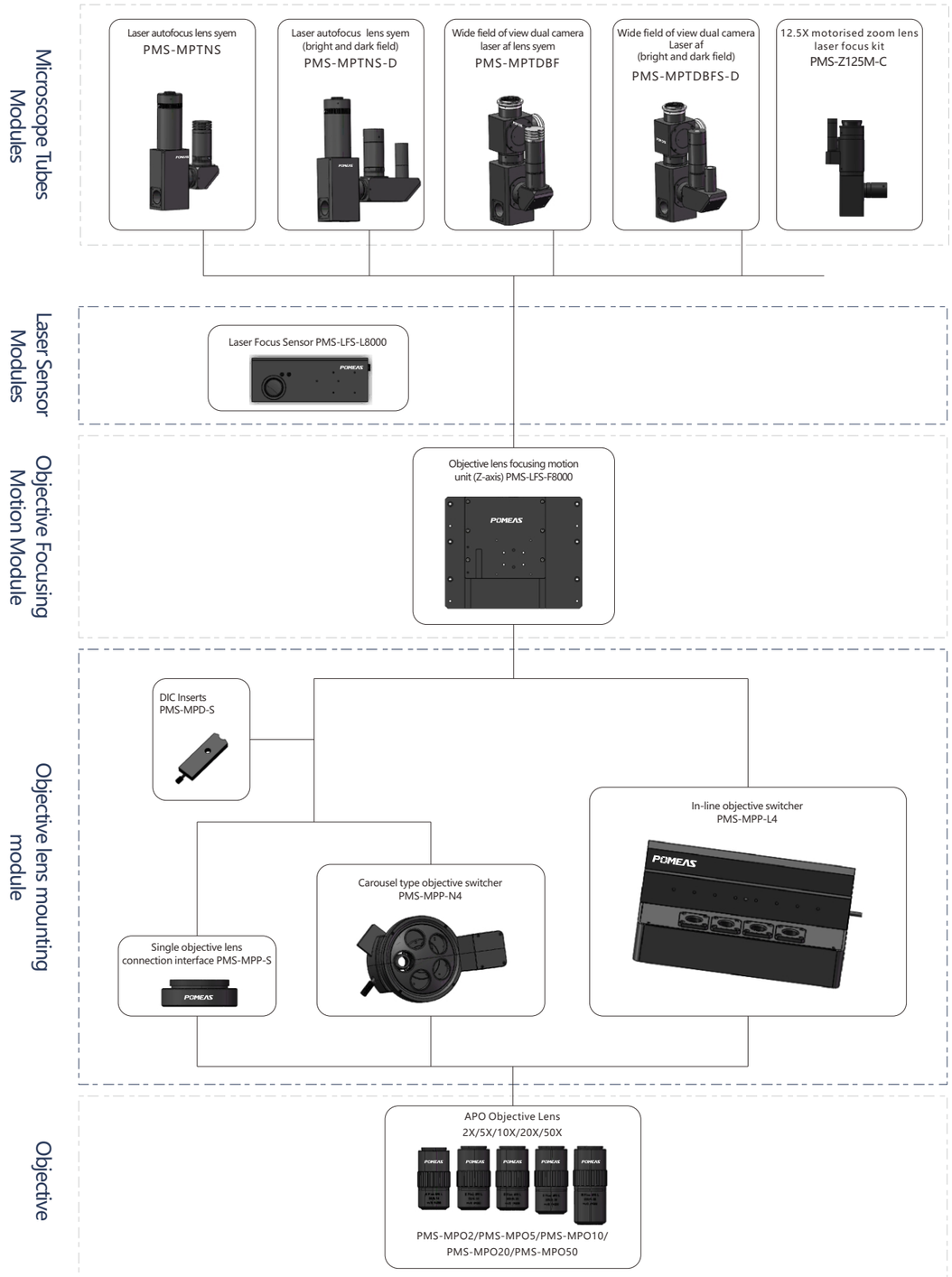
- Stable measurement of all kinds of materials, such as metal/ceramics/mirror/glass;
- Suitable for all kinds of workpiece shape (including deep holes/bevelled surfaces/curved surfaces), such as height/segment difference/thickness/flatness/profile measurement;
- Can be used under severe operating conditions such as high temperature and high pressure;
- The probe is lightweight and easy to integrate into automated measurement applications in a variety of industries.

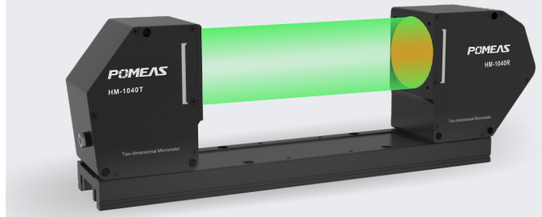






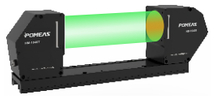




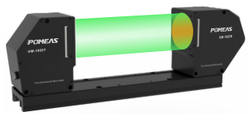


TELECENTRIC MEASUREMENT SYSTEM | HM-Series

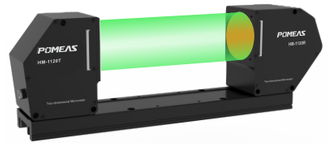
Silhouette-based analysis for guaranteed accuracy



Standard Model	HM-1040
Measuring range	φ40mm
Repeatability	±0.08μm
Measuring position accuracy	±1.0μm

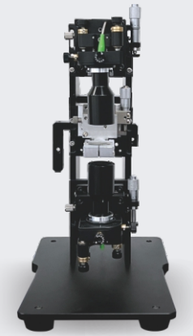


Wide-field model	HM-1065
Measuring range	φ65mm
Repeatability	±0.1μm
Measuring position accuracy	±1.2μm



Ultra-wide-field model	HM-1120
Measuring range	φ120mm
Repeatability	±0.2μm
Measuring position accuracy	±2.5μm

Product Parameter					
Model			HM-1040	HM-1065	HM-1120
Transmitter/receiver Distance			180mm	270mm	436.7mm
Measurement Range	Field Of View	High-accuracy Measurement Area	φ26mm	φ40mm	φ60mm
		Measurement Area	φ40	φ65	φ124
	Depth Of Field	High-accuracy Measurement Area	10mm	20mm	20mm
		Measurement Area	20mm	30mm	40mm
Exposure Time			35/70/150μs (3 adjustable stages)		
Imaging Time (trigger Interval)			Approx. 34ms (when both the vertical and horizontal dimensions of the measurement range are Full) Approx. 5ms (when both the vertical and horizontal dimensions of the measurement range are 1/4)		
Light Source			InGaN Green LEDs		
Measurement position accuracy *1	High-accuracy measurement area		±1 μm	±1 .2μm	±2.5μm
	Measurement Area		±2 μm	±2 μm	±3.5 μm
Repeatability *2			±0.08 μm	±0.08 μm	±0.2 μm
Environmental Resistance	Enclosure rating*3		Ip64		
	Operating ambient temperature		0to +45° C		
	Operating ambient humidity		Below 85%RH (non-condensing)		
Materia			Aluminium	Aluminium	Aluminium
Weight	Transmitter		approx. 620 g	approx. 1300 g	approx. 5900 g
	Receiver		approx. 890 g	approx. 1900 g	approx. 7900 g
	Base		approx. 670 g	approx. 1500 g	approx. 4300 g



Spectral Focus Thickness Measurement Programme

Accurate and efficient non-contact thickness measurement

PRODUCT ADVANTAGE

- Stable measurement of all kinds of materials, such as metal / ceramic / mirror / glass, etc.;
- Can be used under severe operating conditions such as high temperature and high pressure;
- The compact size of the probe makes it easy to integrate into automated measurement applications across a wide range of industries.

AREAS OF APPLICATION

- Metal chassis machining manufacturing industry such as mobile phones/tablets/computers;
- PCB board/connector/IC chip and other electronic industries;
- Panel / glass / tempered film and other industries;
- Semiconductor wafer/new energy/photovoltaic and other industries.

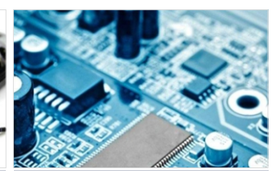
Product Parameter		
Model	PMS-STM22D	PMS-STM55D
Unilateral working distance	22mm	55mm
Alignment Thickness Measurement Range	1mm	1.5mm
accurate	1μm	5μm
sampling frequency	200~2000 Point/sec	
Power Supply/Power Consumption	24V DC2A	
operating temperature	5~40°	

PRODUCT CASES

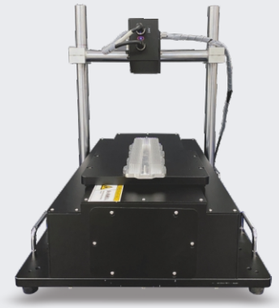
Healthcare Industry

Semiconductor Industry

Mobile Phone Industry



Electronics Industry



Line Laser Displacement Sensing Measurement Solutions

Rapid line-scan dimensional profiling

Model			MHLL-02020 020×020	MHLL-06040 060×040	MHLL-15580 155×080	MHLL-15090 150×090	MHLL-220120 220×120	MHLL-280140 280×140	MHLL-570250 570×250
Mounting Distance (mm)			20	60	155	150	220	280	570
Measurement Range	Z-axis (height) (mm)		± 2.3 (F.S.= 4.6)	± 6.1 (F.S.= 12.2)	± 15 (F.S.= 30)	± 14 (F.S.= 28)	± 21 (F.S.= 42)	± 30 (F.S.= 60)	± 85 (F.S.= 170)
	X-axis (width) (mm)	Proximal	19	39	74	85	116	129	225
		Base Line	20	40	78	90	120	140	250
		Far	20	40	78	90	120	140	250
Sampling Frequency	Full field of view scanning frame rate		1000 frames/s						
	ROI Frame Rate		Up to 4000 frames/s						
Contour data points*1			3840						
biometrics	Z-axis (height)*2		±0.1% F.S.						
Repeatability*3	Z-axis (height) (um)*4		0.4	0.6	3	3	4	7	20
Resolution	Z-axis (height) (um)		0.16	0.4 3	0.9	0.9	1.3	2	5.5
Contour Data Interval	X-axis (width) (um)		5.2	10.5	20 .5	23 .5	31.5	36.5	66
light source	Typology		Blue Semiconductor Laser					Red Semiconductor Laser	
	Wavelength		405 nm (blue violet)					650 nm (red)	
	Laser Classification		Class 2m/2 Laser Products						
Data Interface			Gige Gigabit Ethernet						
Temperature Characteristics*5			0.01% F.s./℃						
Environmental Resistance	Shell protection class		Ip67						
	Environmental Temperature		0 To +50°c						
	Environmental humidity		20 To 85 Per Cent (non-condensing)						
	Vibratory		10 - 57 Hz Dual Amplitude 1.5 Mm, 2 Hours Each In X, Y And Z Directions						
	Impact Resistance		15g Semi-sinusoidal Shock With A Period Of 6ms, Positive And Negative In The X, Y And Z Directions.						
Input Voltage			+24 V						
Makings			Aluminium						
Weights			Reduce 800g	Reduce 950g	Reduce 950g	Reduce1200g	Reduce1300g	Reduce1200g	Reduce1300g
Dimensions (mm)			165.5 ×105.5 ×50	180 × 100 ×57	193 × 105 ×57	255.5 ×110.5 ×57	284.5 ×110.5 ×57	255 × 110 ×57	284 × 105 ×57

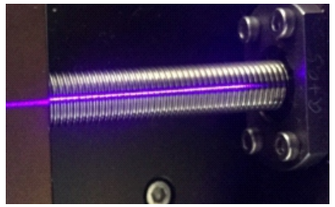
PRODUCT ADVANTAGE

- High-speed, high-precision, non-contact, easy to install, simultaneous measurement of a number of dimensions on a contour.
- Realise the measurement of any contour line dimension of the object, such as height difference, width, angle, radius, etc. It can also realise the defect detection, appearance dimension scanning, surface feature tracking and other functions.

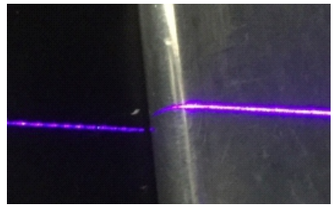
AREAS OF APPLICATION

- Automotive industry, for example: automotive assembly position, gap detection, automotive handle surface detection, tyre detection, complex contour size detection, etc.;
- Mobile phone industry, for example: mobile phone panel assembly alignment, mobile phone component size detection, mobile phone screen thickness detection, mobile phone indicates curved surface measurement;
- Semiconductor industry, for example: PCB board inspection, electronic components height, width, angle detection, IC pin spacing and skew measurement;
- Hardware industry, for example: gear jamming alignment detection, gear tooth pitch detection, bearing height detection, etc..

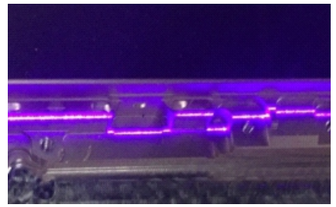
PRODUCT CASES



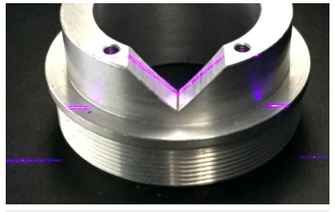
Screw Tooth Pitch Measurement



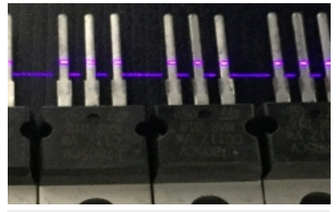
Surface Curvature Measurement



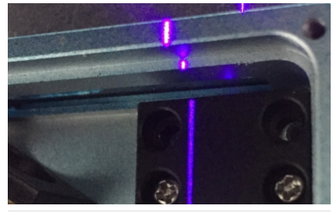
Measurement Of Complex Contour Dimensions



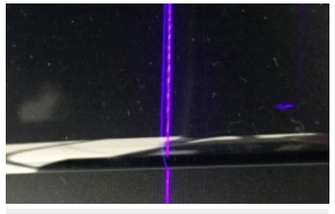
Height, Width, Angle Measurements



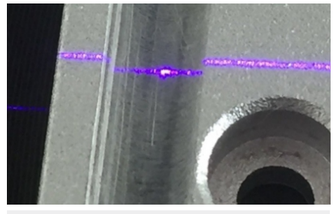
Electronic Device Pin Spacing And Bend Measurement



Assembly Dimension Measurement



Curved Glass Measurement



Hardware Mould Measurement

3D Scanning Measurement Programme

Non-contact surface array fast scanning measurement

PRODUCT ADVANTAGE

- High-precision non-contact measurement: no damage to the product and high measurement accuracy;
- High-speed scanning: the fastest scanning time is only 4s, which can be analysed to produce all the corresponding size reports;
- Powerful data analysis capability: with 2D point fitting, 3D contour analysis, 3D cross-section analysis, 3D auxiliary verification and other comprehensive analysis and processing functions.

AREAS OF APPLICATION

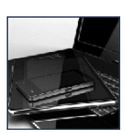
- Dimensional measurement: quickly obtain 2D and 3D dimensional reports of the workpieces to be measured, especially for the dimensional measurement of large-size and complex shaped workpieces with unique advantages;
- Reverse engineering: the 3D model of the sample to be measured can be obtained quickly, and prototype samples can be made quickly for verification through rapid prototyping technology, which greatly shortens the development cycle;
- Defect analysis: by comparing the workpiece measurement data with the design data, it can quickly locate and correct the defective parts applicable to 3D dimension measurement, 3D surface profile comparison, reverse engineering and other projects, and can be equipped with moving parts for automated measurement.

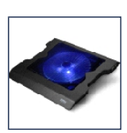
Code	PMS-SCH38	PMS-SCH60	PMS-SCH170	PMS-SCH320
Probe Size (mm)	260x205x76	260x205x76	260x205x76	260x205x76
Light Source	LED blue light	LED blue light	LED blue light	LED blue light
Maximum Scanning Time	4S	4S	4S	4S
Measuring Accuracy (mm)	0.005	0.005	0.01	0.02
Measuring Range(mm)	38x28.5	60x45	170x130	320x240
Measuring Distance (mm)	280	280	280	280
Automation Functioning	Software comes with	Software comes with	Software comes with	Software comes with
Automation Spindle	Two Axes (X, Y)	Two Axes (X, Y)	Two Axes (X, Y)	Two Axes (X, Y)
Working Voltage	210-230VAC	210-230VAC	210-230VAC	210-230VAC
Signal Cable Set	5m	5m	5m	5m
Weight (kg)	32	32	32	32
Operating Temperature Range	23°C-40°C	23°C-40°C	23°C-40°C	23°C-40°C

PRODUCT CASES


3D printing


Automobile Industry


Electronic Product


Wind Power Industry

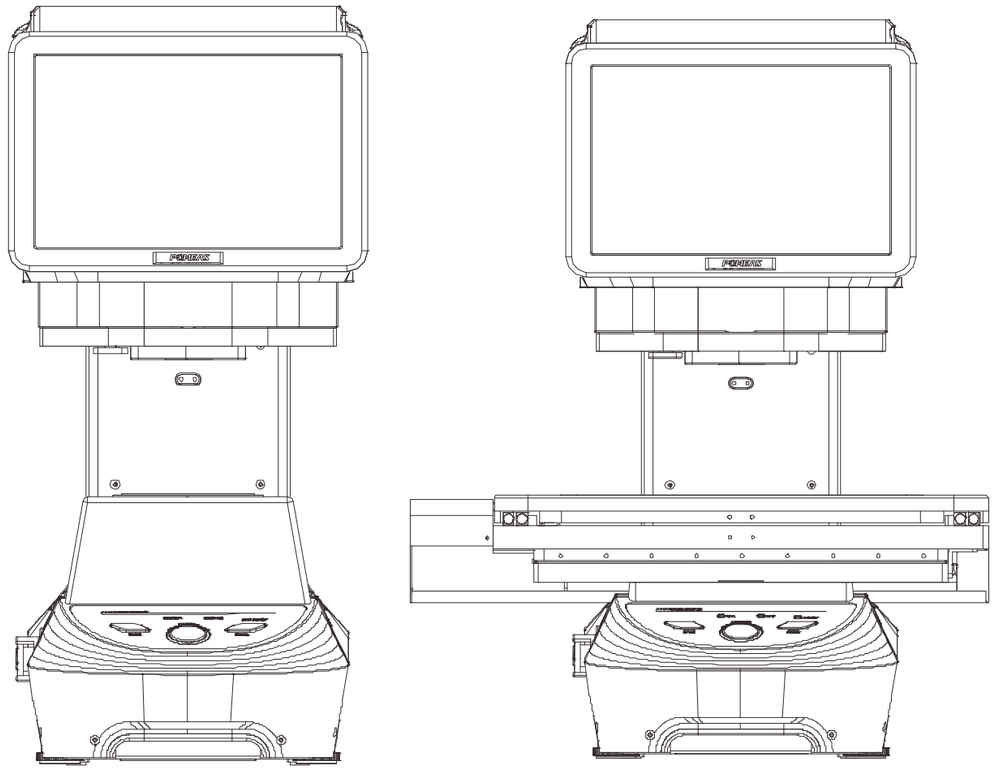

Medical Simulation


Heritage Conservation


Building Furniture Manufacturing

MEASURING SYSTEM

Module: product barcode scanning / dimensional measurement / uploading MES system / sample classification;
Functions: dimensional measurement length / width / diameter / angle;
Segment difference/height/shape tolerance/profile/roughness, etc.;
Application: 3C/new energy/chip/5G etc.;
Application: glass/hardware/plastic parts/electronic parts, etc..



The multi-sensor measurement system consists of : MetX, IMAGE system and 3D morphology analysis system.