

Flash Measuring Machines VX Series

One Touch Measurement
Efficient Accurate



VX8000 series



VX1000 series



VX5000 series



VX3500 / VX8500



VX4000 series

Parameters

Model No.		Novator333	Novator342	Novator562	Novator682
Travel Range	X	300 mm	300 mm	500 mm	600 mm
	Y	300 mm	400 mm	600 mm	800 mm
	Z	300mm	200mm	200mm	200mm
Structure Type		Bridge			
Base Material		Granite			
Monitor		24" LCD(1920×1080)			
Image Sensor		5MP High definition colorful industrial camera			
Resolution of Glass Scale		0.1μm			
Lens		13.3X motorized lens			
Magnification		Optical Zoom: 0.6X~8.0X, Image Zoom: 17X~380X			
F.O.V.		Max: 13x11mm; Min: 1.0x0.8mm			
Light	Back Light	Telecentric transmission illumination			
	Ring Light	6 rings and 8 segments (256 levels) surface light(or RGB surface light, Optional)			
	Coaxial Light	LED			
Accuracy*1	X/Y	(1.6+L/250) μm	(1.6+L/250) μm	(1.8+L/250) μm	(2.0+L/250) μm
	X⊥Y	(2.0+L/250) μm	(2.0+L/250) μm	(2.2+L/200) μm	(2.5+L/200) μm
	Z	(3.0+L/200) μm	(3.0+L/200) μm	(3.0+L/200) μm	(3.0+L/200) μm
3D Scanning*2 (Optional)	Z Measuring Range*3	5mm			
	Scanning Width*4	30mm			
	Repeatability*5	±1 μm			
	Z Accuracy*5	±0.1% F.S.			
	Scanning Speed	10~80mm/s			
Fly-Shooting Mode		Support			
Navigation Camera		Support			
Sensor Options		(1) Touch probe; (2) Optical probe			
Max Speed	XY	500 mm/s			
	Z	100 mm/s			
Size		1300×900×1920mm	1000×1380×1700mm	1100×1820×1700mm	1200×2030×1700mm
Weight		1160kg	1200kg	1650kg	2000kg
Loading Capacity		25kg	25kg	50kg	50kg
Power		2000W	2000W	2500W	2500W
Motion Control		Servo control system			
Software		VisionX			
Input		AC200~240V, 50/60Hz			
Working Environment		Temp. 20°C ±2°C, Humidity 20~80%, Vibration<0.002g, Less than 15Hz			

Note:

*1 In the focus position, the environment temperature is +20 °C ± 1.0 °C, and the load on the table is 5 kg or less;

L is the moving range of the table (mm)

*2 Optional line-scanning probe is required.

*3 Measuring range 5mm~40mm optional.

*4 Scanning width 30mm~145mm optional.

*5 Environment temperature is +20 °C ± 1.0 °C

Efficient measurement

5000+ pcs

Once up to 5000+ features

- Auto illumination
- Auto focusing

1024 pcs

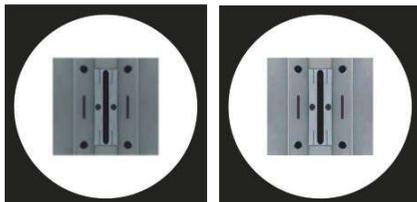
Once up to 1024 workpieces

2 secs

In 2 seconds Finish the measurement



Dedicated Optical Lens

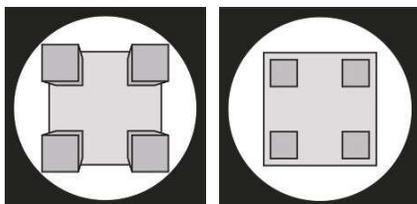


Normal Lens

Our Dedicated lens

Clear image even if there are stages

Equipped with a high depth optical lens and automatic focusing, the flash measuring machine only needs to focus at the tested object once. Even if there are variations in height, the images remain clear.

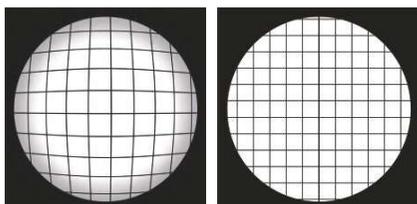


Normal Lens

Our Dedicated lens

Always real size even if there are stages

With a double telecentric optical lens, the size of objects in the image is always real and accurate, even features that are located at edge of the field of view.

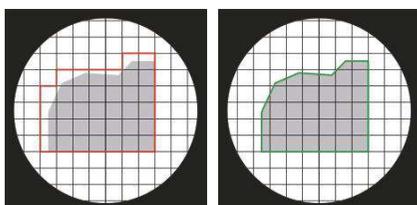


Normal Lens

Our Dedicated lens

Zero distortion in the full field of view

Thanks to the double telecentric optical lens with high depth of field and high resolution, it is almost zero distortion of the image in the full field of view. Test result is always the same in any position of the object table.



Normal Lens

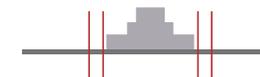
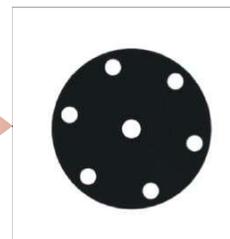
Our Dedicated lens

Sub-pixel processing of edges

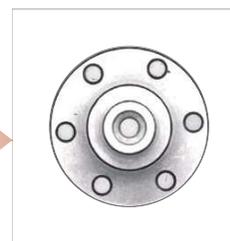
With algorithms of high-order interpolation and numerical fitting, the software can perform sub-pixel processing of the edges.

Light Source

Back light



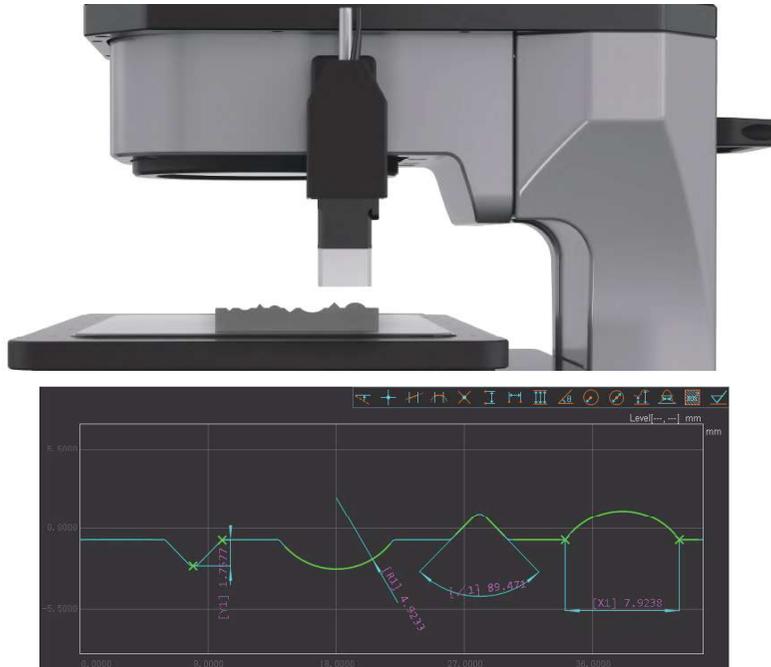
Coaxial light



75°Ring light

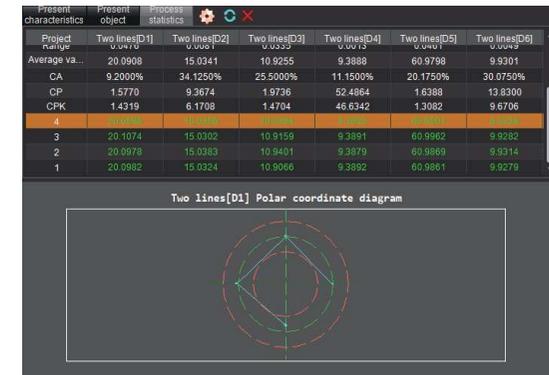


Height probe



It is a white light confocal probe, and can be used to measure thickness, height difference, flatness, parallelism, etc. Moreover, this probe can scan the contour of the sample.

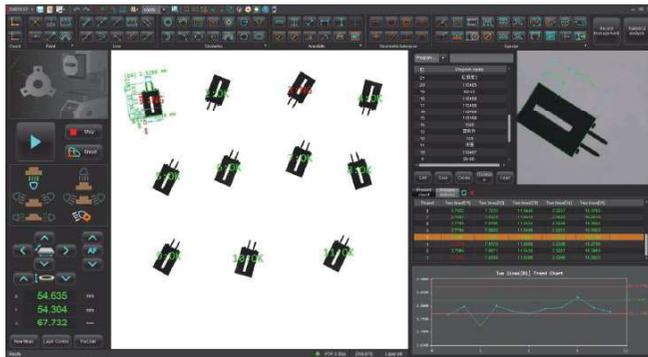
Rotary chuck



Rotary chuck can rotate 360°. It is convenient to measure the sizes in different section according to rotation angle specified by the operator. It is an ideal solution to measure all kinds of cylindrical parts, such as shaft, etc.

Software

VisionX professional visual measurement software is completely independently developed by CHOTEST, and CHOTEST has independent intellectual property rights. VisionX has friendly user interface, convenient operation, powerful and practical functions, support more than 80 kinds of extraction and analysis tools, including feature extraction tool, auxiliary tool, annotation tool and special application tool, etc. Moreover, functions can be customized according to user's need, so as to improve work efficiency more effectively.



Home Interface

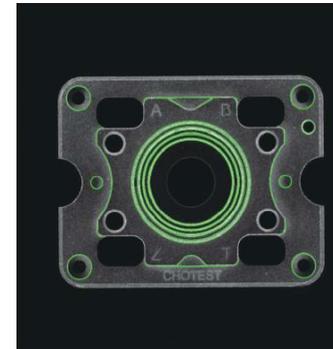
Features

Geometric Tolerance	Straightness, Roundness, Concentricity, Symmetry, Positional Tolerance, Parallelism, Perpendicularity, Profile Tolerance, etc.
CNC Mode	Modify CNC program anytime, as well as adding or reducing features OK or NG is concluded according to tolerance in CNC program
Automatic	Only need to select the measuring features, after placing the workpiece, measuring results can be obtained quickly by one key
Coordinate System	Can create coordinate system by Point-line, Line-line, and translate & rotate coordinate system, as well as create multi-coordinate system
Special tools	Rounded corner, Contour, Thread, Slot, Perimeter, Pitch distance, Thickness, Chamfer, Spring, Gear, Sealing gasket, Area, Pitch Angle, Boundary width

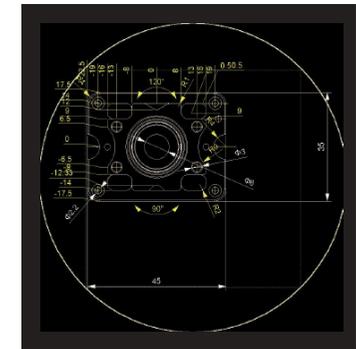


DXF Import

Measurement data can be obtained from CAD drawings. Even if the test object is not physically available, you can still create measurement programs quickly. The system can automatically assign features and dimensions from the DXF drawing to the sample, including surface dimensions.



Sample



Automatically assign DXF features to the sample

Work with Robot

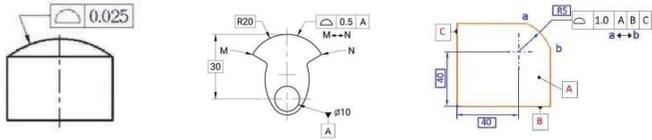
Measurement data is transmitted to the MES system of the customer via socket or HTTP protocols in real time.

VisionX also could receive commands from the external server to load the program and begin measurement, so it is compatible with robotic arms to achieve unmanned measurements.

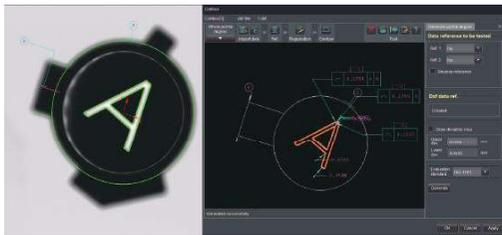


Profile tolerance

- This tool has three evaluation methods: No reference (only shape error evaluation), Single reference, Multiple references.

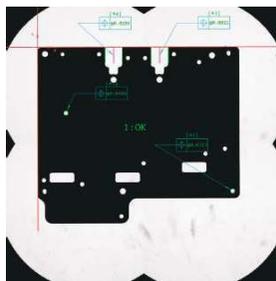


- Multiple annotations: Multiple profile tolerance can be annotated in a single program. No need to establish a coordinate system: Just need to enter the reference in the drawing. Measurement of profile tolerance in different coordinate systems can be achieved in a single program.
- Multiple types: Evaluate the profile tolerance by scanning the entire contour; Or evaluate the profile tolerance by measuring point with specifying coordinate values.



Position Tolerance

It can measure both point position tolerance and line position tolerance. Evaluation can be performed by XY coordinates in Cartesian coordinate system or radius & angle in polar coordinate system.



Statistical Analysis

The statistical analysis interface has the tabs of [Statistical Value], [Trend Chart], [Histogram] and [Data List]

- Automatic recording and sorting

Measurement results and its main statistical information (e.g. average value, σ , 3σ , 6σ , Ca, Cp, Cpk etc) will be automatically recorded and saved. Operator could search records by different conditions.



Statistic

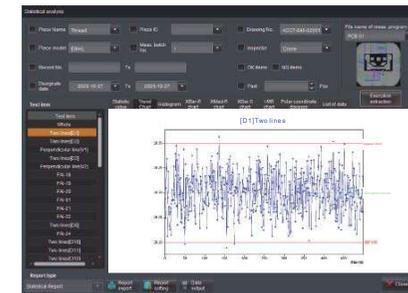


Tabled data

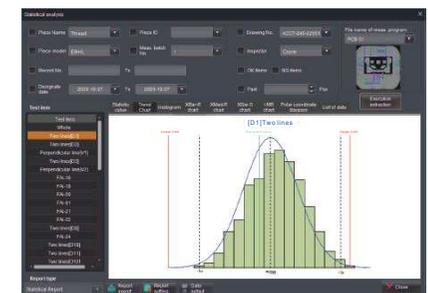
- Control production process and improve product quality

The trend chart monitors the abnormalities of generating equipment and production process by regularly changing trend of measured values. Such as the monotonic and periodic changes of the measured values.

The histogram reflects the fluctuation and distribution of product quality, and transmits information about process quality, which can be used to judge and predict product quality and unqualified rate.



Trend Chart



Histogram

Application

Flash measuring machines are widely used in industry of machinery, electronics, mold, injection molding, hardware, rubber, low-voltage electrical appliances, magnetic materials, precision stamping, connectors, connectors, terminals, mobile phones, home appliances, printed circuit boards, medical equipment, watches, tools, etc.



Phone case



Phone accessories



Watch inner parts



Watch chain



Machining parts



Stamping parts



Sheet metal parts



Plastic injection parts



Magnetic component



Cutting tools



Small metal parts



Gear



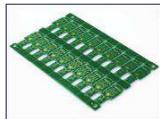
Rubber ring



Spring



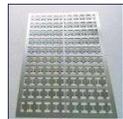
Thread, Shaft



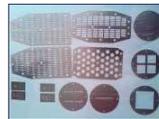
Rigid PCB



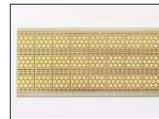
Soft PCB



Shielding case



Mask board



Ceramic plate



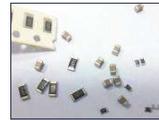
Car monitor frame



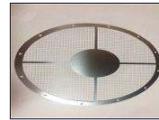
Connectors



Battery



Resistors



Filter mesh



Die cutting



Medical drill



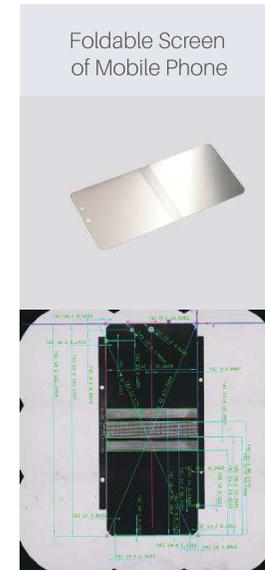
Sieve



Radius gauge



Thread template



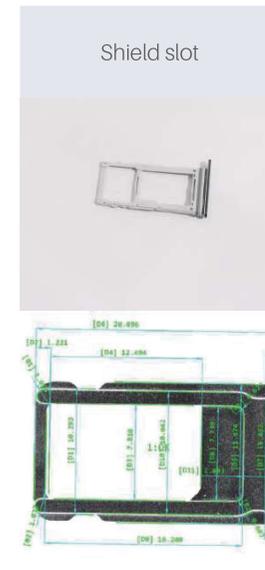
Foldable Screen of Mobile Phone



Phone Casing



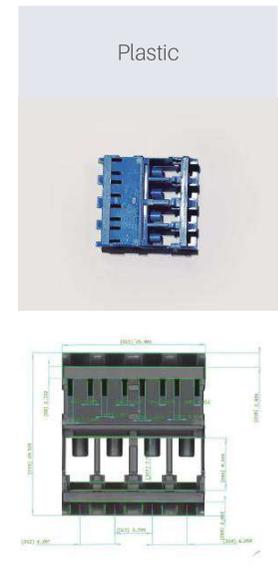
Shielding Covers



Shield slot

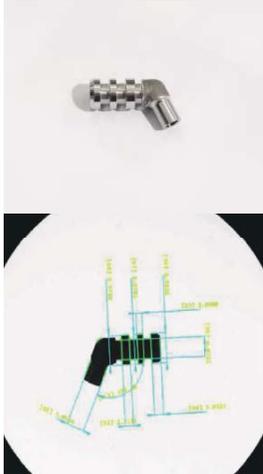


Back Cover Glass of Mobile Phone

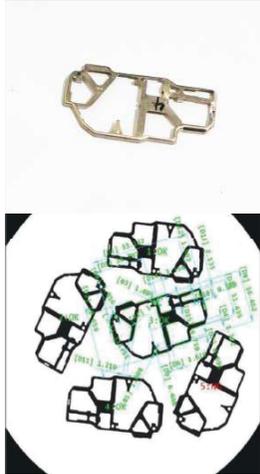


Plastic

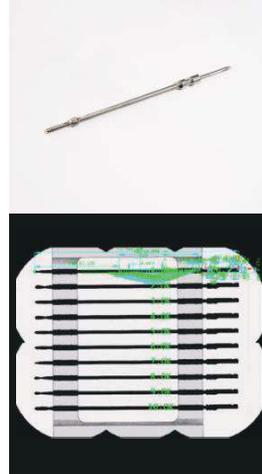
Terminal



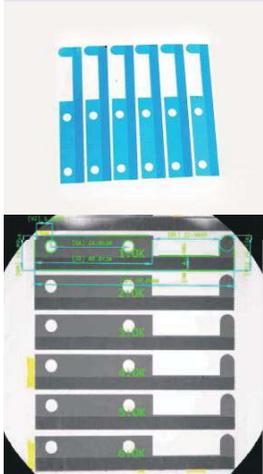
Shielding Covers



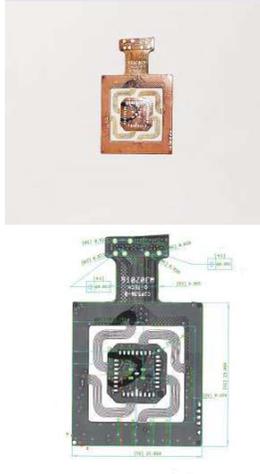
Medical drill



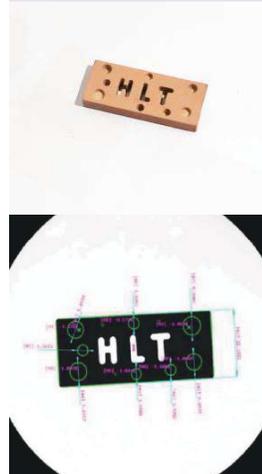
Die Cutting



Soft PCB



Filter



Parameters

Model No.		VX8100	VX8200	VX8300	VX8306D
Image Sensor		20MP CMOS			
Monitor	Built-in	10.4" LCD (XGA: 1024x768)			
	Outside	24" LCD XGA(1920x1080)(Optional)			
Acceptance Lens		Double Telecentric Lens			
Light	Ring Light	Four-segment illumination(White Light)			
	Back Light	Telecentric transmission illumination(Green Light)			
	Coaxial Light(Optional)	LED parallel light			
F.O.V.	Wide Field(mm)	200x100 (4 Angles R50)	200x200 (4 Angles R50)	300x200 (4 Angles R50)	230x130
	High Precision(mm)	130x20	130x130	230x130	216x116
Resolution		0.1μm			
Repeatability of Image Meas.	Wide Field	Without Stitching*1	±1μm		±0.5μm
		With Stitching*2	±2μm		±1μm
	High Precision	Without Stitching*1	±0.5μm		±0.1μm
		With Stitching*2	±1.5μm		±0.5μm
Accuracy of Image Meas.	Wide Field	Without Stitching*1	±3μm		±2μm
		With Stitching*2	±(5+0.02L)μm		±(4+0.02L)μm
	High Precision	Without Stitching*1	±1.5μm		±0.7μm
		With Stitching*2	±(3+0.02L)μm		±(2+0.02L)μm
Horizontal Rotary Unit (Optional)	Rotation Angle	Range 360°, Resolution 0.02°			
	Rotation Speed	0.2~2rev/s			
	Max Diameter	Φ60mm			
Height Meas. (Optical Probe) (Optional)	Measuring Range(X*Y)		120*110mm		
	Max Depth/Diameter(H/Φ)		1.64		
	Dia. of Beam		Φ100μm(Φ18μm optional)		
	Resolution		0.25μm		
	Z Non-movement	Range(Z)	±2mm		
		Accuracy	±2μm		
	Z Movement	Range(Z)	75mm		
Accuracy		±(6+0.01H)μm, H is Z movement height in mm			
XY Object Table	X Travel Range	110mm		210mm	
	Y Travel Range	/		110mm	
	Loading Capacity	2kg		7.5kg	
Z-Axis Travel Range		35mm		75mm	
Size(LxWxH) mm		500x280x670	531x386x731	531x503x731	
Weight		30kg		49kg 75kg	
Input		AC100~240V, 50/60Hz, 2A, 300W			
Working Environment		Temp. 10 °C~35 °C, Humidity 20~80%, Vibration<0.002g, Less than15Hz			

Note:

*1 In the focus position, the environment temperature is +20 °C ± 1.0 °C

*2 In the focus position, the environment temperature is +20 °C ± 1.0 °C, and the load on the table is 2 kg or less; L is the moving range of the table (mm)

Parameters

Model No.	VX1100	
Image Sensor	20MP CMOS	
Monitor	24" LCD(XGA:1920×1080)	
Acceptance Lens	Double Telecentric Lens	
Light	Ring Light	Four-segment illumination(White Light, Manual up & down)
	Back Light	Telecentric transmission illumination(Green Light)
F.O.V.	Φ100mm	
Repeatability of Image Meas.	±1μm	
Accuracy of Image Meas.*1	±3μm	
Software	VisionX	
Resolution	0.1μm	
Z Axis Travel Range	35mm	
Loading Capacity	5kg	
Size(L×W×H)	500×280×670mm	
Weight	25kg	
Input	AC100~240V, 50/60Hz, 2A, 300W	
Working Environment	Temp.10°C~35°C, Humidity 20~80%, Vibration<0.002g, Less than15Hz	

Note:

*1 In the focus position, the environment temperature is +20 °C ± 1.0 °C

Parameters

Model No.	VX4230S	VX4230
Image Sensor	25MP CMOS	12MP CMOS
Outside Monitor	24" LCD (XGA: 1920×1080)	
Acceptance Lens	Double Telecentric Lens	
Back Light	Parallel transmission illumination(White Light)	
F.O.V	Φ230mm	200x150mm
Depth of Field	50mm	50mm
Working Distance	400mm	
Repeatability	±2μm	
Accuracy of Image Meas.*1	±5μm	
Z Axis Travel Range	65mm	100mm
Software	VisionX	
Resolution	0.1μm	
Loading Capacity	15kg	
Size(L×W×H)	830×605×1500mm	
Weight	375kg	
Input	AC100~240V, 50/60Hz, 4A, 600W	
Working Environment	Temp.10°C~35°C, Humidity 20~80%, Vibration<0.002g, Less than15Hz	

Note:

*1 In the focus position, the environment temperature is +20 °C ± 1.0 °C

Parameters

Model No.	VX5100	
Image Sensor	5MP CMOS	
Outside Monitor	24" LCD (XGA: 1920×1080)	
Acceptance Lens	Double Telecentric Lens	
Back Light	Telecentric transmission illumination	
F.O.V.	Φ100mm	
Repeatability	±2μm	
Accuracy*1	±5μm	
Software	VisionX	
Resolution	0.1μm	
Motorized XY Object Table (Optional)	Rotational Speed	0.2~2 Revolutions/s
	Diameter	Φ60mm
	Capacity	3kg
Size(L×W×H)	736×200×325mm	
Weight	25kg	
Input	AC100~240V, 50/60Hz, 1.3A, 150W	
Working Environment	Temp.10 °C~35 °C, Humidity 20~80%, Vibration<0.002g, Less than15Hz	

Note:

*1 In the focus position, the environment temperature is +20 °C ± 1.0 °C

Parameters

Model No.	VX 3500		VX 8500		
Image Sensor	5MP CMOS		20MP CMOS		
Monitor	24"LCD(XGA :1920x1080)				
Acceptance Lens	Double Telecentric Lens				
Light	Ring Light	Four-segment illumination(White Light/Green Light)			
	Back Light	Telecentric transmission illumination(Green Light)			
F.O.V.	Large Field	500x400mm(4 Angles R50)			
	High Precision	430x330mm			
Resolution	0.1μm				
Repeatability of Image Meas.	Wide Field	Without Stitching ¹	±1μm	±1μm	
		With Stitching ²	±2μm	±2μm	
	High Precision	Without Stitching ¹	±0.5μm	±0.5μm	
		With Stitching ²	±1.5μm	±1.5μm	
Accuracy of Image Meas.	Wide Field	Without Stitching ¹	±5μm	±3μm	
		With Stitching ²	±(7+0.02L) μm	±(5+0.02L) μm	
	High Precision	Without Stitching ¹	±2μm	±1.5μm	
		With Stitching ²	±(4+0.02L) μm	±(3+0.02L) μm	
Horizontal Rotary Unit (Optional)	Rotation Angle	Range 360°, Resolution 0.02°			
	Rotation Speed	0.2~2rev/s			
	Max Diameter	Φ60mm			
Height Meas. (Optical Probe) (Optional)	Measuring Range(X×Y)	300×300mm			
	Max Depth/Diameter(H/Φ)	1.64			
	Dia. of Beam	Φ100μm(Φ18μm optional)			
	Resolution	0.25μm			
	Z Non-movement	Range(Z)	±2mm		
		Accuracy	±2μm		
Z Movement	Range(Z)	200mm			
	Accuracy	±(6+0.01H) μm, H is Z movement height in mm			
XY Object Table	X Travel Range	410mm			
	Y Travel Range	310mm			
	Loading Capacity	20kg			
Z- Axis Travel Range	200mm				
Size(LxWxH)	900x1340x1600mm				
Weight	950kg				
Input	AC100~240V, 50/60Hz, 10A, 2500W				
Working Environment	Temp.10 °C~35 °C , Humidity 20~80%, Vibration<0.002g, Less than15Hz				

Note:

*1 In the focus position, the environment temperature is +20 °C ± 1.0 °C

*2 In the focus position, the environment temperature is +20 °C ± 1.0 °C, and the load on the table is 2 kg or less;

L is the moving range of the table (mm)