

Automatic Video Measuring Machines CHT Series

Precision, Versatile



Bridge-Type

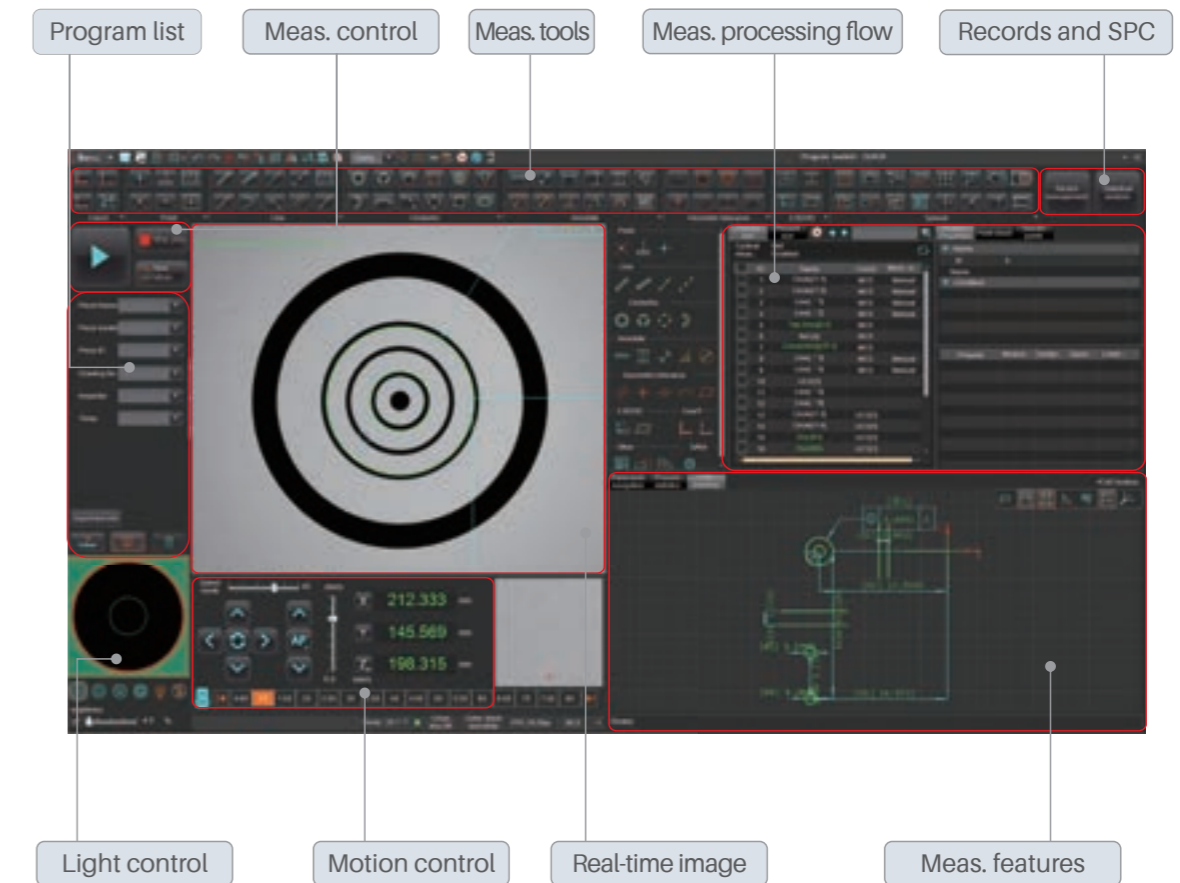
Column-Type

Description

Automatic video measuring machines CHT series covers different measurement ranges and offers powerful functionality. It can perform precise measurements of surface dimensions, contours, angles, positions, and geometric tolerances for various complex parts.

Automatic video measuring machines CHT series can be used in machinery, electronics, mold, injection molding, hardware, rubber, low-voltage electrical appliances, magnetic materials, precision stamping, connection Plug-ins, connectors, terminals, mobile phones, home appliances, printed circuit boards, medical equipment, clocks, knives, measurement and testing, etc.

Software Interface



User-Friendly Operation Interface

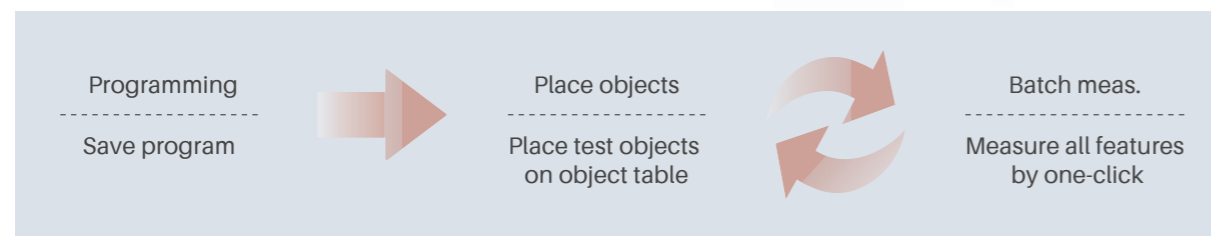
Auto data export

- Support exporting data to designated excel file according to designated template in real time
- Can output Excel, Word, PDF, TXT reports and AutoCAD files.
- Support Q-DAS transmission according to designated format.
- Support data exchanging via HTTP or socket protocol
- Output SPC analysis report, which includes statistical values (such as CA, PPK, CPK, PP, etc.) and control charts (such as mean and range charts, mean and standard deviation charts, median and range charts, single value and moving range chart).



Easy to operate

With user-friendly software,
anyone can be trained to use it quickly



Measurement Function



Extraction Tools

Scanning to extract edge points, multi-segment edge point extraction, circular edge point extraction, ellipse extraction, frame selection to extract contour lines, focus points, closest points, etc.



Annotation Tools

Point, line, circle (center coordinates, radius, diameter), arc, center, angle, distance, line width, hole position, aperture, number of holes, distance from hole to hole, distance from hole to edge, distance from arc center to hole, the distance from the center of the arc to the side, the distance from the high point of the arc to the high point of the arc, and the distance from the intersection to the intersection, etc.



Construction

Intersection point, center point, extreme point, end point, line connecting two points, parallel line, perpendicular line, tangent line, bisector, Centerlines, line segment fusion, radius circle, three-line inscribed circle, two-line radius inscribed circle, etc.



GD&T

Straightness, roundness, position, parallelism, symmetry, perpendicularity, concentricity, profile and position tolerance



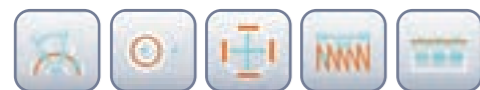
Coordinate

Instrument coordinate system, point to line, point to point, line to line and other workpiece coordinate systems; image registration coordinate system; Can translate, rotate, manually adjust the coordinate system



Special Tools

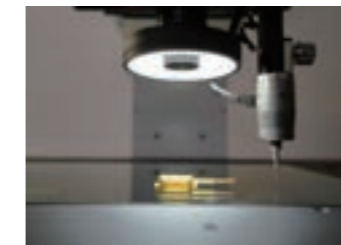
R angle, horizontal pitch, circumferential pitch, screen, slot, contour comparison, spring, O-ring and other special tools for rapid measurement.



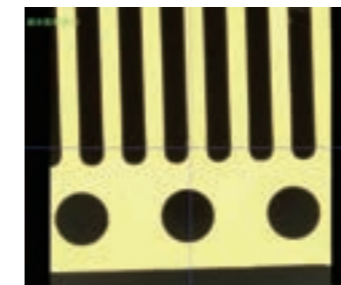
Support tolerance batch setting, scale classification, and color custom management

Flexible shooting and precise calculation

Support segmental programming control of surface light, transmitted light and coaxial light, automatically identify the measurement position, and obtain uniform and stable measurement results every time.



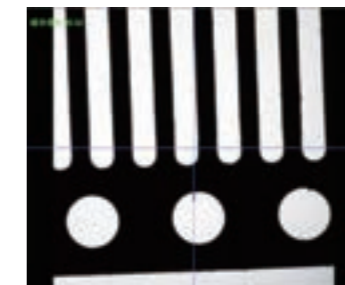
Ring light



Surface features are clear



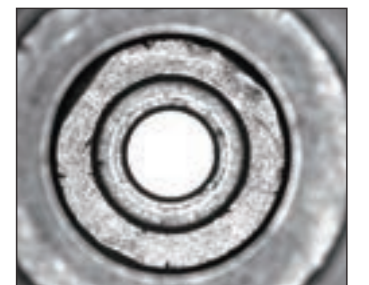
Back light



Easy to measure profile features



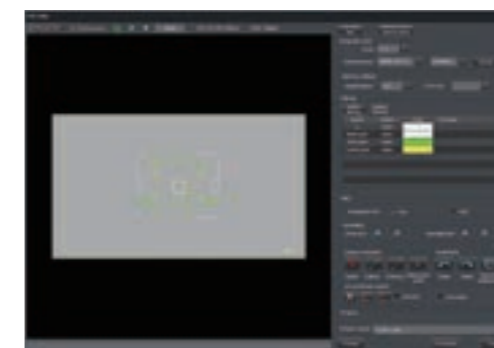
Coaxial light



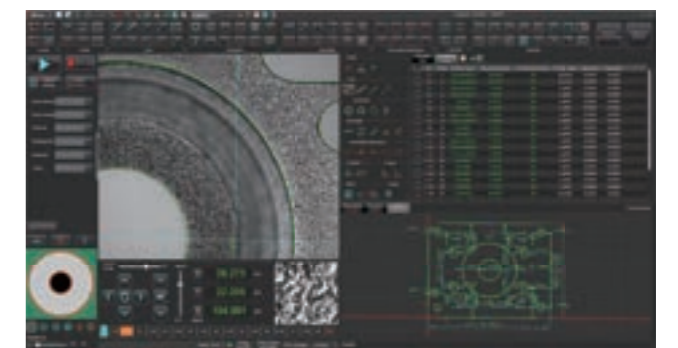
Measure diameter of blind hole

Auto batch measurement

- The program matches the coordinate system of the workpiece, automatically executes the measurement process, supports the import of CAD drawings and Gerber drawings, and coordinates system matching measurement;
- In the CNC fixed coordinate system mode, batch measurement can be performed quickly and accurately.



Import CAD drawing to build a program



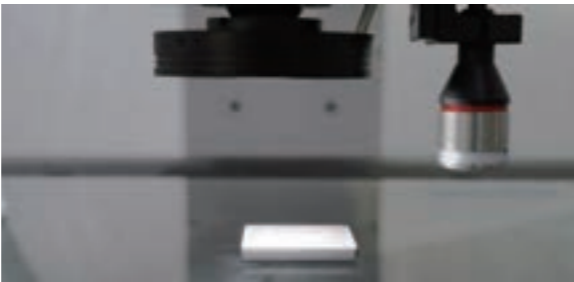
CNC batch measurement

Various accessories

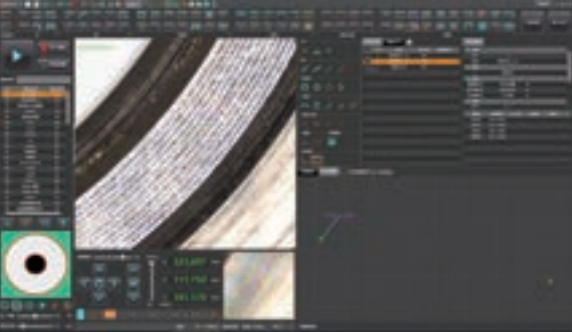
- Equips a touch probe or optical probe to measure height and flatness and realize 2.5D space measurement;
- Supports external input from digital calipers and height gauges; Supports label printers.



Height measurement



Flatness measurement



Height result



Flatness result

Application



Phone accessories



Machining parts



Plastic injection parts



Rigid PCB



Mask board



Car monitor frame



Small metal parts



Die cutting



Connectors

Parameters

Model No.		CHT322A	CHT432A
Travel Range	X	300 mm	400 mm
	Y	200 mm	300 mm
	Z	200 mm	200 mm
Structure Type		Column	
Base Material		Granite	
Monitor		24" LCD(1920×1080)	
Image Sensor		1.6MP High definition colorful industrial camera	
Resolution of Glass scale		0.5μm	
Lens		6.5X manual lens	
Magnification		Optical Zoom: 0.7X~4.5X, Image Zoom: 32~206X	
Light	Back light	Telecentric transmission illumination	
	Ring Light	5 rings and 8 segments (255 levels) surface light	
Accuracy*1	X/Y	(2.5+L/200)μm	
	X⊥Y	(3.0+L/200)μm	
	Z*2	(5.0+L/200)μm	
Max Speed	XY	500 mm/s	
	Z	100 mm/s	
Size		760×1220×1670 mm	860×1350×1670 mm
Weight		600 kg	650 kg
Loading Capacity		25 kg	
Power		1500W	2000W
Sensor Option		(1)Touch probe; (2)Laser probe	
Motion Control		Servo control system	
Software		VisionX	
Input		AC200~240V, 50/60Hz	
Working Environment		Temp.20℃ ±2℃ , Humidity 20~80%, Vibration<0.002g ,Less than15Hz	

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 in mm.
*2 It is mechanical accuracy, and actual accuracy depends on object surface where lens focuses.

Parameters

Model No.		CHT322U	CHT432U
Travel Range	X	300 mm	400 mm
	Y	200 mm	300 mm
	Z	200 mm	200 mm
Structure Type		Column	
Base Material		Granite	
Monitor		24" LCD(1920×1080)	
Image Sensor		160MP High definition colorful industrial camera	
Resolution of Glass scale		0.1μm	
Lens		8.3Xmotorized lens	
Magnification		Optical Zoom: 0.6~5.0X, Image Zoom: 27~229X	
Light	Back light	Telecentric transmission illumination	
	Ring Light	6 rings and 8 segments (255 levels) surface light	
	Coaxial Light	LED(Optional)	
Accuracy ^{*1}	X/Y	(2.0+L/200)μm	
	X⊥Y	(3.0+L/200)μm	
	Z ^{*2}	(4.5+L/200)μm	
Max Speed	XY	500 mm/s	
	Z	100 mm/s	
Size		760×1220×1670 mm	860×1350×1670 mm
Weight		600kg	650 kg
Loading Capacity		25 kg	
Power		1500W	2000W
Sensor Option		(1)Touch probe; (2)Laser probe	
Motion Control		Servo control system	
Software		VisionX	
Input		AC200~240V, 50/60Hz	
Working Environment		Temp.20℃ ±2℃ , Humidity 20~80%, Vibration<0.002g,Less than15Hz	

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 in mm.
*2 It is mechanical accuracy, and actual accuracy depends on object surface where lens focuses.

Parameters

Model No.		CHT322S	CHT432S
Travel Range	X	300 mm	400 mm
	Y	200 mm	300 mm
	Z	200 mm	200 mm
Structure Type		Column	
Base Material		Granite	
Monitor		24" LCD(1920×1080)	
Image Sensor		1.6MP High definition colorful industrial camera	
Resolution of Glass scale		0.1μm	
Lens		13.3X motorized lens	
Magnification ^{*1}		Optical Zoom: 0.6~8.0X, Image Zoom: 17~380X	
Light	Back light	Telecentric transmission illumination	
	Ring Light	6 rings and 8 segments (255 levels) surface light(or RGB surface light, Optional)	
	Coaxial Light	LED	
Accuracy ^{*1}	X/Y	(1.8+L/250)μm	
	X⊥Y	(2.2+L/250)μm	
	Z ^{*2}	(3.0+L/200)μm	
3D Scanning ^{*3}	Z measuring range ^{*4}	5mm	
	Scanning width ^{*5}	30mm	
	Repeatability ^{*6}	± 1 μm	
	Meas. Accuracy ^{*6}	±0.1%F.S.	
	Scanning speed	10~80mm/s	
Fly-Shooting Mode		Support	
Navigation Camera		Support	
Sensor Option		(1)Touch probe; (2)Laser probe	
Max Speed	XY	500 mm/s	
	Z	100 mm/s	
Size		760×1220×1670mm	860×1350×1670 mm
Weight		600kg	650 kg
Loading Capacity		25 kg	
Power		1500W	2000W
Motion Control		Servo control system	
Software		VisionX	
Input		AC200~240V, 50/60Hz	
Working Environment		Temp.20℃ ±2℃ , Humidity 20~80%, Vibration<0.002g,Less than15Hz	

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 It is mechanical accuracy, and actual accuracy depends on object surface where lens focuses.
*3 Optional line-scanning probe is required.
*4 Measuring range 5mm~40mm optional.
*5 Scanning width 30mm~145mm optional.
*6 Environment temperature is +20 °C ± 1.0 °C

Parameters

Model No.		CHT452	CHT562	CHT682
Travel Range	X	400 mm	500 mm	600 mm
	Y	500 mm	600 mm	800 mm
	Z	200 mm	200 mm	200 mm
Structure Type		Bridge		
Base Material		Granite		
Monitor		24" LCD(1920×1080)		
Image Sensor		1.6MP High definition colorful industrial camera		
Resolution of Glass scale		0.1μm		
Lens		8.3Xmotorized lens		
Magnification		Optical Zoom: 0.6~5.0X, Image Zoom: 27~229X		
Light	Back light	Telecentric transmission illumination		
	Ring Light	6 rings and 8 segments (255 levels) surface light		
	Coaxial Light	LED(Optional)		
Accuracy*1	X/Y	(2.5+L/200)μm		
	X⊥Y	(3.0+L/200)μm		
	Z*2	(4.5+L/200)μm		
Max Speed	XY	500 mm/s		
	Z	100 mm/s		
Size		950×1320×1700mm	1100×1600×1700mm	1200×2000×1700 mm
Weight		1400 kg	1500 kg	2000 kg
Loading Capacity		25 kg		
Power		2000W	2500W	2500W
Sensor Option		(1)Touch probe；(2)Laser probe		
Motion Control		Servo control system		
Software		VisionX		
Input		AC200~240V, 50/60Hz		
Working Environment		Temp.20℃ ±2℃ , Humidity 20~80%, Vibration<0.002g,Less than15Hz		

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 in mm.
*2 It is mechanical accuracy, and actual accuracy depends on object surface where lens focuses.

Parameters

Model No.		CHT0810	CHT1012	CHT1215
Travel Range	X	800 mm	1000 mm	1200mm
	Y	1000 mm	1200 mm	1500mm
	Z	200 mm	200 mm	200 mm
Structure Type		Bridge		
Base Material		Granite		
Monitor		24" LCD(1920×1080)		
Image Sensor		1.6MP High definition colorful industrial camera		
Resolution of Glass scale		0.1μm		
Lens		8.3Xmotorized lens		
Magnification		Optical Zoom: 0.6~5.0X, Image Zoom: 27~229X		
Light	Back light	Telecentric transmission illumination		
	Ring Light	6 rings and 8 segments (255 levels) surface light		
	Coaxial Light	LED(Optional)		
Accuracy*1	X/Y	(3.0+L/200)μm	(3.5+L/200)μm	
	X⊥Y	(4.0+L/200)μm	(4.5+L/200)μm	
	Z*2	(4.5+L/200)μm	(4.5+L/200)μm	
Max Speed	XY	500 mm/s		
	Z	100 mm/s		
Size		1750×2220×1700	2150×2620×1700	2550×3220×1700
Weight		2900 kg	3600 kg	4500kg
Loading Capacity		50kg		
Power		2500W	2500W	2500W
Sensor Option		(1)Touch probe； (2)Laser probe		
Motion Control		Servo control system		
Software		VisionX		
Input		AC200-240V, 50/60Hz		
Working Environment		Temp.20℃ ±2℃ , Humidity 20~80%, Vibration<0.002g,Less than15Hz		

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 in mm.
*2 It is mechanical accuracy, and actual accuracy depends on object surface where lens focuses.

Automatic Video Measuring Machines Novator Series



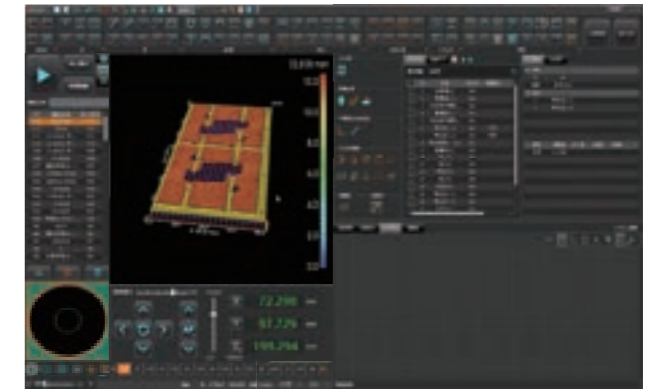
Functions

1. Measurement tools: Extracting edge points by scanning, extracting edge points by multi-segment, extracting edge points by circle, ellipse extraction, extracting contour line by frame selection, focus point, nearest points, etc.
2. Measure geometric features: Point, line, circle (center coordinate, radius, diameter), arc, center, angle, distance, line width, hole site, aperture, number of holes, distance from hole to hole, hole to edge, distance from the arc center to the hole, distance from the arc center to the edge, distance from the arc high point to the other arc high point, distance from the intersection to the intersection, etc.
3. Construction features: Intersection, center point, extreme point, endpoint, two-point connection, parallel line, perpendicular line, tangent, bisector, center line, line segment fusion, drawing circle by radius, drawing inscribed circle among three lines, drawing inscribed circle by two lines & radius, etc.
4. Geometric tolerance: Straightness, roundness, contour, position, parallelism, symmetry, perpendicularity, concentricity, profile and position tolerance evaluation.

Features



Replaceable RGB surface light



Integrate 3D topography measurement

- **Stable moving stage, high measurement accuracy**
 1. Precision marble body, good stability and high precision.
 2. Precision linear slide rail and servo control system, smooth and silent movement.
 3. Three axes x/y/z programmable, realize batch inspection for complex features.
- **Laser scanning imaging, 3D composite measurement**
 1. Support spot-type laser probe to scan profile in height direction.
 2. Support 3D line-scanning laser probe.
 3. VisionX supports a variety of contour measurements and 3D spatial measurements, seamlessly connecting 2D/3D hybrid measurements.
- **Strobe lighting source, high speed fly-shooting**
 1. Equipped with strobe lighting source, support strobe and normal lighting modes.
 2. Support fly-shooting measurement mode, measurement efficiency is increased by 5~10 times.
 3. Support the stitching measurement function of the flash measuring machines.
- **Replaceable RGB surface light, independent lifting up and down**
 1. RGB and white light can be replaced to adapt to a variety of complex colors and material surfaces.
 2. The surface light can be lifted independently to better observe the sample surface.
 3. Support programmable back light, coaxial light and 6 rings and 8 segments of the surface light.
- **Automatic and fast batch measurement**
 1. The program matches the workpiece coordinate system and automatically executes the measurement process.
 2. Support CAD drawing and Gerber drawing import.
 3. Can execute quickly and accurate batch measurement in CNC fixed coordinate system mode.
- **Easy operation, hassle-free**
 1. Equipped with a large FOV navigation camera for fast workpiece positioning.
 2. Mechanical lens anti-collision function
 3. User-friendly operation interface, anyone can easily set and measure.

Parameters

Model No.		Novator333	Novator432	Novator562	Novator682
Travel Range	X	300 mm	400 mm	500 mm	600 mm
	Y	300 mm	300 mm	600 mm	800 mm
	Z	300 mm	200 mm	200 mm	200 mm
Structure Type		Bridge	Bridge	Bridge	Bridge
Base Material		Marble	Marble	Marble	Marble
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 (255 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	Z measuring range*3	5mm			
	Scanning width*4	30mm			
	Repeatability*5	±1μm			
	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)Laser probe			
Max Speed	XY	500 mm/s			
	Z	100 mm/s			
Size		900×1280×1700mm	1000×1380×1700mm	1100×1820×1700mm	1200×2030×1700mm
Weight		800kg	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℃ ±2℃ , Humidity 20~80%, Vibration<0.002g, Less than15Hz			

*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.

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