

CNC Surface Texture Measuring Instrument FORMTRACER EXTREME CS-5000CNC/CS-H5000CNC



Form Measurement

CNC Surface Texture Measuring Instrument

FORMTRACER EXTREME

CS-5000CNC/CS-H5000CNC

FEATURES

- High-accuracy stylus-type CNC Surface Measuring System that allows batch measurement of surface roughness and form/contour.
- The X1- and Z2-axes have maximum drive speeds of 40mm/s and 200mm/s, respectively. This permits high-speed positioning that can potentially result in a large increase in the throughput of multiple-profile / multiple-workpiece measurement tasks.
- A high resolution linear encoder is incorporated in the X1- and Z1-axes so that high resolution is achieved and batch measurement of form/contour and surface roughness can be made.

SPECIFICATIONS

Model		CS-5000CNC		CS-H5000CNC		
Column type		Type S	Type H	Type S	Type H	
X1 axis	Measuring range	200mm				
	Resolution	0.005 μ m				
	Scale unit	Transmissive-type linear encoder				
	Drive speed	CNC mode	Max. 40mm/s			
		Joystick control mode	0 to 40mm/s			
	Measuring speed	0.02 to 0.2mm/s (surface roughness), 0.02 to 2mm/s (form/contour)				
	Measuring direction	Forward / backward				
	Straightness *1	(with standard stylus)	(0.1+0.0015L) μ m L: traverse length (mm)		(0.05+0.0003L) μ m L: traverse length (mm)	
		(with 2X-long stylus)	(0.2+0.0015L) μ m L: traverse length (mm)		(0.1+0.0015L) μ m L: traverse length (mm)	
Accuracy (20°C)	\pm (0.3+0.002L) μ m L: traverse length (mm)		\pm (0.16+0.001L) μ m L: traverse length (mm)			
Z1 axis (detector unit)	Measuring range	(with standard stylus)	12mm			
		(with 2X-long stylus)	24mm			
	Resolution	(with standard stylus)	0.0008 μ m			
		(with 2X-long stylus)	0.0016 μ m			
	Vertical movement of the stylus	Arc motion				
	Scale type	Transmissive-type linear encoder				
	Accuracy (20°C)	\pm (0.3+ 0.02H) μ m H: probing height (mm)		\pm (0.07+ 0.02H) μ m H: probing height (mm)		
	Measuring force	(with standard stylus)	4mN (Fixed)			
		(with 2X-long stylus)	0.75mN (Fixed)			
	Traceable angle	Ascent: 60°, Descent: 60°, (Depends on the surface texture.)				
	Stylus tip shape	Standard stylus	Tip angle: 40°, Tip radius: 5 μ m, Diamond tip			
		Standard ball stylus	Tip ball radius: 0.25mm, Sapphire			
		2X-long stylus	Tip angle: 40°, Tip radius: 5 μ m, Diamond tip			
2X-long stylus		—	Tip angle: 60°, Tip radius: 2 μ m, Diamond tip			
2X-long ball stylus		Tip ball radius: 0.25mm, Sapphire				
Face of stylus	Downward					
Z2 axis (column)	Travel range	300mm	500mm	300mm	500mm	
	Resolution	0.05 μ m				
	Scale type	Reflective-type linear encoder				
	Drive speed	CNC mode	Max. 200mm/s			
		Joystick mode	0 to 50mm/s			
	Base size (widthxdepth)	750x600mm				
	Base material	Gabbro				
α -axis unit (only for CS-5000CNC)	Inclination angle	-45° (counterclockwise), +10° (clockwise)			Not applicable	
	Rotational speed when inclined	1rpm				
	Resolution of inclination angle	0.000225°				
Safety of laser	General	Low power visible laser is used for linear encoders incorporated into X1 and Z1 axes. Appropriate warning and explanatory labels are affixed to the product.				
	Standards	<div style="border: 1px solid black; padding: 2px; display: inline-block;">CLASS 1 LASER PRODUCT クラス1 レーザ製品</div> <ul style="list-style-type: none"> • Classified as Class 1 laser product according to IEC 60825-1:2014/IEC 60825-1:2007/JIS C 6802:2014. • Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated 24 June 2007. 				
	Laser	Visible semiconductor laser: 659nm				
	Maximum power	Less than 0.39mW				

*1: Inspected by measuring optical flat under the following conditions; Measurement speed: 1mm/s, Measurement in backward direction: λ s=2.5mm

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