

Surftest Extreme SV-3000CNC

SERIES 178 – CNC Surface Roughness Testers

- A highly accurate measuring instrument that allows CNC measurement of surface roughness and fine contour.
- Each axis has a maximum drive speed of 200 mm/s, permitting high-speed positioning for increased throughput of multiple-profile/multiple-workpiece measurement tasks.
- For models equipped with the α axis, it is possible to perform continuous measurement over horizontal and inclined surfaces by power-tilting the drive unit.
- For models with the Y-axis table, it is possible to expand the measuring range for multiple workpieces, etc., through positioning in the Y-axis direction.
- With optional rotary tables for axes $\theta 1$ and $\theta 2$, designed for use with the CNC models, it is possible to expand the CNC measurement application range.
- Inclined plane measurement is possible through simultaneous control of the X1 and Z2-axes.
- The Z1 axis incorporates an anti-collision safety device to automatically stop the detector unit if it collides with a workpiece or jig.
- An easy-to-operate Remote Box enables the user to make any movement by selecting the required axis using the two joysticks. The current axis selection is easily identified by the icon on the key top.
- Communication with the Data Processing/Analysis section is via USB.

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Technical Data

X1 axis	
Measuring range:	200 mm
Resolution:	0.05 μm
Scale:	Reflective-type linear encoder
Drive speed:	Max. 200 mm/s (CNC) 0 - 60 mm/s (joystick)
Measuring speed:	0.02 - 2 mm/s
Traverse straightness:	0.5 μm / 200 mm
α axis	
Inclination angle:	-45° to +10°
Resolution:	0.000225°
Rotation speed:	1 rpm
Z2 axis (column)	
Vertical travel:	300 mm (500 mm)*
Resolution:	0.05 μm
Scale:	Reflective-type linear encoder
Drive speed:	Max. 200 mm/s (CNC) 0 - 60 mm/s (joystick)
Base size (W x D):	750 x 600 mm
Detector	
Range / resolution:	800 μm / 0.01 μm , 80 μm / 0.001 μm , 8 μm / 0.0001 μm
Measuring force:	4 mN (178-397-2) 0.75 mN (low force type 178-396-2)
Stylus tip:	Diamond, 90° / R5 μm (60° / R2 μm : low force type)
Dimension (W x D x H):	800 x 651 x 1000 mm (800 x 651 x 1200 mm)*
Mass:	240 kg (250 kg)*
* Tall-column model	

Optional Accessories

Vibration isolation stand

Vibration isolation mechanism:	Diaphragm air spring
Natural frequency :	2.5 - 3.5 Hz
Damping mechanism:	Orifice
Levelling mechanism:	Automatic control with mechanical valves
Air supply pressure:	0.4 MPa
Allowable loading capacity:	350 kg
Dimension (WxDxH):	1000 x 895 x 715 mm
Mass:	315 kg

Y-axis table unit

Measuring range:	200 mm
Resolution:	0.05 μm
Scale unit:	Reflective-type linear encoder
Drive speed:	200 mm/s (max., CNC) 0 - 60 mm/s (joystick)
Maximum loading capacity:	20 kg
Traverse straightness:	0.5 μm / 200 mm
Accuracy (at 20°C):	$\pm(2+2L/100)$, L : dimension between two measured points (mm)
Table size:	200 x 200 mm
Dimension (WxDxH):	320 x 646 x 105 mm
Mass:	35 kg

SPECIFICATIONS

Model	SV-3000CNC							
Code No. (100V - 120V)	178-521-1E	178-541-1E	178-522-1E	178-542-1E	178-523-1E	178-543-1E	178-524-1E	178-544-1E
Code No. (200V - 240V)	178-521-2E	178-541-2E	178-522-2E	178-542-2E	178-523-2E	178-543-2E	178-524-2E	178-544-2E
X1-axis measuring range	200 mm							
Z2-axis vertical travel	300 mm	500 mm	300 mm	500 mm	300 mm	500 mm	300 mm	500 mm
Y-axis table unit	—				Installed			
α -axis unit	—		Installed		—		Installed	