

Surftest SV-3100

SERIES 178 – Surface Roughness Tester

- Mitutoyo's Surftest SV-3100 Series provides highly accurate, high level, multi-functional analysis and measurement of fine contour, as well as conventional surface roughness measurement.
- Peripheral devices such as the auto-levelling table are available to enhance operability and enable automatic measurement.
- Includes FORMTRACEPAK data analysis software. FORMTRACEPAK provides data management in a consistent format, from the work site to the laboratory.
- The X1-axis drive unit guide is made of superbly anti-abrasive ceramic and provides a choice of traverse distance of 100 or 200 mm, according to model. No lubrication is required.
- High-accuracy glass scales, built-in on the X1 axis (resolution: 0.05 μm) and Z2 axis (column, resolution: 1 μm) ensure high-accuracy positioning. The SV-3100 series produces high-reliability, particularly in horizontal roughness parameters (S, Sm), that require high-accuracy X1-axis travel.
- Equipped with a highly accurate detector stylus.
- Capabilities include a *straightness compensation* function, which improves the straightness of the X1-axis; a *circular compensation* function for the vertical movement of the stylus; and a *stylus-tip-radius compensation* function.
- The stylus and the skid are easily replaced. Optional styli and skids are available for a wide variety of roughness measurement applications, such as measurement of small holes, deep holes, etc.
- Comes with an easy-to-operate remote box independent of the main unit allowing positioning, measurement start/stop, retraction, and other operations to be performed remotely. The Drive Unit up/down position and the X1-axis traverse can be finely controlled manually.

Surftest SV-3100H4 with PC



Technical Data

X1 axis (drive unit)	
Resolution:	0.05 μm
Scale:	Linear encoder
Drive speed:	0 - 80 mm/s
Measuring speed:	0.02 - 5 mm/s
Inclination range:	$\pm 45^\circ$ (with X1-axis inclination unit)
Z2 axis (column)	
Resolution:	1 μm
Scale:	ABSOLUTE linear encoder
Drive speed:	0 - 20 mm/s
Detector	
Range/resolution:	800 μm /0.01 μm , 80 μm /0.001 μm , 8 μm /0.0001 μm (up to 2400 μm with an optional stylus)
Measurement method: Skidless/skidded	
Type: Differential inductance	

MiCAT

Mitutoyo Intelligent Computer Aided Technology

the standard in world
metrology software
FORM

Evaluation Capability: FORMTRACEPAK

Conformable standards: JIS 1982/JIS 1994/JIS 2001/ISO 1997/

Assessed profiles:	
Parameters:	
Graphs:	
Waviness motif parameters:	
Analysis graphs:	
Digital filter:	
Data compensation:	
Filters:	
Cutoff length:	
Supported languages:	

ANSI/VDA
Primary profile, roughness profile, envelope residual curve, filtered waviness curve, band pass waviness curve, waviness curve, rolling circle waviness curve, roughness motif, waviness motif, DIN4776 curve
Ra, Rq, Sk, Ku, Rp, Rv, Ry, RyDIN, RzDIN, Rt, Rc, Rz, R3z, R3y, S, Δa , Δq , λa , λq , Lo, Ir, Rk, Rpk, Rvk, Mr1, Mr2, A1, A2, Sm, Pc, HSC, mr, mrd, δc , Vo, Rx, AR, R, NR, NCRX, CPM, SR, SAR, Wx, AW, W, Wte, NW, SW, SAW
Amplitude distribution graphs, BAC1, BAC2, power spectrum curve, auto correlation curve, inclination angle distribution curve, peak point height distribution curve, parameter distribution curve
Wte, Wx, W, AW, SW, SAW, NW
ADC, BAC1, BAC2, power spectrum chart, autocorrelation chart, Walsh power spectrum chart, Walsh auto-correlation chart, slope distribution chart, local peak distribution chart, parameter distribution chart
2CR-75%, 2CR-50%, 2CR-75% (phase corrected), 2CR-50% (phase corrected), Gaussian-50%
Tilt compensation, R-surface compensation, ellipse compensation, parabola compensation, hyperbolic compensation, polynomial compensation, conic automatic compensation
Gaussian filter, 2CRPC75, 2CRPC50, 2CR75, 2CR50, robust spline filter
 λc : 0.025, 0.08, 0.25, 0.8, 2.5, 8, 25, 80 mm arbitrary
 λs : 0.8, 2.5, 8, 25, 80, 250, 800 μm arbitrary
Japanese, English, German, French, Italian, Spanish, Polish, Hungarian, Swedish, Czech, Simplified Chinese, Traditional Chinese, Korean, Turkish, Portuguese