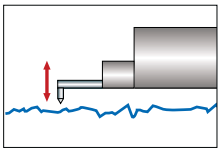
Surftest SJ-410

SERIES 178 – Portable Surface Roughness Tester

- Skidded and skidless measurements are both possible with this series. Measures 46 roughness parameters that conform to the latest ISO, DIN, ANSI, and JIS standards.
- A wide range, high-resolution detector and efficient drive unit provide superior high-accuracy measurement.
- A skidless detector and a curved surface compensation function provide efficient evaluation of cylinder surface roughness.
- Ultra-fine steps, straightness and waviness can be measured by using the skidless measurement function.
- The handheld data processing unit and the 5.7-inch colour graphic LCD touch-panel provides superior readability and operability. The LCD also includes a backlight for improved visibility in dark environments.
- The excellent user interface provides intuitive and easy-to-understand operability.
- Measured data can be output to a PC with an optional RS-232C or USB cable.
- Digital filter function for accurate roughness profiles.
- GO/±NG judgement function.
- Auto-calibration function.
- The display interface supports 16 languages, which can be freely switched.
- Simplified contour analysis function supports four types of measurement: step, level change, area and coordinate difference.
- Access to each feature can be password protected, which prevents unintended operations and enables established settings to be protected.
- The optional attachments for mounting on a column stand significantly increase the application range.

MeasurLink® ENABLED
Data Management Software by Mitutoyo



Skidless measurement.

Surftest SJ-411

Technical Data

X axis (drive unit)	
Traverse direction:	Backward
Traverse straightness:	0.3 µm/25 mm (SJ-411), 0.5 µm/50 mm (SJ-412)
Positioning:	±1.5° (tilting), 10 mm (up/down)
Detector	
Skid radius of curvature:	40 mm
Type:	Differential inductance
Storage	
Internal memory:	Setups (10 sets)
Memory card (option):	500 setups, 10,000 measured profiles, 500 display images, text file (setups / measured profile / assessed profile / bearing area curve / amplitude distribution curve), 500 statistical data, etc.
Dimensions (W x D x H)	
Display unit:	275 x 109 x 198 mm
Height-tilt adjustment unit:	131 x 63 x 99 mm
Drive unit:	128 x 36 x 47 mm (SJ-411), 155 x 36 x 47 mm (SJ-412)
Control unit mass:	Approx. 1.7 kg
Height-tilt adjustment unit:	Approx. 0.4 kg
Drive unit:	0.6 kg (SJ-411), 0.7 kg (SJ-412)

Evaluation Capability

Applicable standards:	JIS'82, JIS'94, JIS'01, ISO'97, ANSI, VDA, Free
Digital filter:	2CR, PC75, Gaussian
Cutoff length:	λc: 0.08, 0.25, 0.8, 2.5, 8 mm λs: 2.5, 8, 25 µm (availability of switching depends on the selected standard)
Sampling length:	0.08, 0.25, 0.8, 2.5, 8, 25*mm; or an arbitrary length in the range 0.1 to 25 mm (0.1 to 50 mm: SJ-412) in 0.01 mm increments
Number of sampling lengths:	1, 2, 3, ~20 (limited by traverse range)
Printer:	Thermal type
Printing width:	48 mm (paper width: 58 mm)
Recording magnification	
Vertical:	10X to 100,000X, auto
Horizontal:	1X to 1,000X, auto
Function	
Customize:	Selection of display/evaluation parameter
Data compensation:	R-surface, tilt compensation
Ruler function:	Step, level change, area and coordinate difference
DAT function:	Helps to level workpiece prior to skidless measurement. Displacement detection mode enables the stylus displacement to be input while the drive unit is stopped.
Statistical processing:	Max. value, min. value, mean value, standard deviation (s), pass ratio, histogram
GO/±NG judgement:	Maximum value rule, 16% rule, average value rule, standard deviation (1σ, 2σ, 3σ)
Calibration:	Auto-calibration with the entry of numerical value/average calibration with multiple measurement (max.12 times) is available
Power saving function:	Auto-sleep-function, auto shutdown of backlight by ECO mode

*Only for SJ-412.

Specifications

Model		**SJ-411**		**SJ-412**	
Code No. (inch/mm)		**178-581-01E**	**178-581-02E**	**178-583-01E**	**178-583-02E**
Measuring range		25 mm		50 mm	
Speed		Measuring: 0.05, 0.1, 0.2, 0.5, 1.0 mm/s, returning: 0.5, 1, 2, 5 mm/s			
Range/resolution		800 µm/0.0125 µm, 80 µm/0.00125 µm, 8 µm/0.000125 µm (up to 2400 µm with an optional stylus)			
Measurement method		Skidless/skidded			
Stylus tip	Angle	60°	90°	60°	90°
	Radius	2 µm	5 µm	2 µm	5 µm
Detector measuring force		0.75 mN	4 mN	0.75 mN	4 mN
Assessed profiles		P (primary profile), R (roughness profile), DF (DF profile), W (filtered waviness profile), roughness motif, waviness motif			
Evaluation parameters		Ra, Rq, Rz, Ry, Rp, Rv, Rt, R3z, Rsk, Rku, Rc, RPc, RSm, Rmax(VDA, ANSI), Rz1max(ISO'97), S, HSC, RzJIS(JIS'01), Rppi, RΔa, RΔq, Rlr, Rmr, Rmr(c), RδcRk, Rpk, Rvk, Mr1, Mr2, A1, A2, Vo, δq, Lo, Rpm, tp(ANSI), Htp(ANSI), R, Rx, AR, W, AW, Wx, Wte			
Analysis graphs		Bearing Area Curve (BAC), Amplitude Distribution Curve (ADC)			
Power supply		Via AC adapter or rechargeable battery			
Rechargeable battery		Recharge time: 4 hours (for a maximum 1000 measurements without printing)			

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Therefore the company reserves the right to change any or all aspects of any product specification without notice.