

Surftest SJ-410 SERIES 178 — Compact Surface Roughness Tester



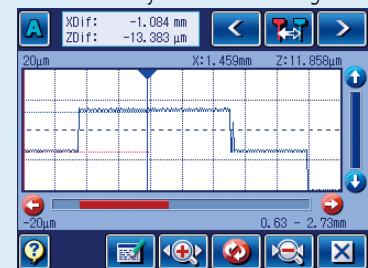
SPECIFICATIONS

Model No.		SJ-411		SJ-412	
Order No.	mm	178-580-11	178-580-12	178-582-11	178-582-12
	inch/mm	178-581-11	178-581-12	178-583-11	178-583-12
Measuring range	X axis	25 mm		50 mm	
	Z axis (detector)	800 μm, 80 μm, 8 μm Up to 2,400 μm when using an optional stylus.			
Detector	Detection method	Differential inductance			
	Resolution	0.0125 μm (800 μm range), 0.00125 μm (80 μm range), 0.000125 μm (8 μm range)			
	Stylus tip shape (Angle/Radius)	60°/2 μm	90°/5 μm	60°/2 μm	90°/5 μm
	Measuring force	0.75 mN	4 mN	0.75 mN	4 mN
	Radius of skid curvature	40 mm			
	Measuring methods	Skidless/Skidded (switchable)			
Drive unit (X axis)	Measuring speed	0.05, 0.1, 0.2, 0.5, 1.0 mm/s			
	Drive speed	0.5, 1, 2, 5 mm/s			
	Straightness	0.3 μm/25 mm		0.5 μm/50 mm	
Up/down inclination unit	Vertical travel	10 mm			
	Inclination adjustment angle	±1.5°			
Applicable standards		JIS 1982/JIS 1994/JIS 2001/ISO 1997/ANSI/VDA			
Parameter		Ra, Rq, Rz, Ry, Rp, Rv, Rt, R3z, Rsk, Rku, Rc, RPC, RSm, Rmax* ¹ , Rz1max* ² , S, HSC, RzJIS* ³ , Rppi, RΔa, RΔq, Rlr, Rmr, Rmr(c), Rσc, Rk, Rpk, Rvk, Mr1, Mr2, A1, A2, Vo, λa, λq, Lo, Rpm, tp* ⁴ , Htp* ⁴ , R, Rx, AR, W, AW, Wx, Wte Customizable			
Filtered profile		Primary profile, Roughness profile, DF profile, Waviness profile, Roughness motif profile, Waviness motif profile			
Analysis graph		Material ratio curve, Profile height amplitude distribution curve			
Data compensation functions		Parabola, Hyperbola, Ellipse, Circle, Tilt, No compensation			
Filter		2CR, PC75, Gaussian			
Cutoff value	λc	0.08, 0.25, 0.8, 2.5, 8 mm			
	λs *5	2.5, 8, 25 μm			
Sampling length		0.08, 0.25, 0.8, 2.5, 8, 25 mm			
Number of intervals		x1, x2, x3, x4, x5, x6, x7, x8, x9, x10, x11, x12, x13, x14, x15, x16, x17, x18, x19, x20			
Arbitrary length		0.1 to 25 mm		0.1 to 50 mm	
Calculation display unit	Customization	Selection of display/evaluation roughness parameter			
	Simplified contour analysis function	Step, Step quantity, Area, Coordinate difference			
	D.A.T. (Digimatic Adjustment Table) function	Helps to level workpiece prior to skidless measurement			
	Real sampling function	Inputs the displacement of the detector while stopping the drive unit			
	statistical processing	Calculates the maximum value, minimum value, average value, standard deviation, pass rate and histogram for each parameter.			
	Judgment* ⁶	Maximum value rule, 16% rule, mean value rule, standard deviation (1σ, 2σ, 3σ)			
	Storing measurement condition	Max. 10 (calculation display unit)			
	Print function (Built-in thermal printer)	Measurement condition/Calculation result/Judgment result/Calculation result per segment/Tolerance value/Evaluation curve/Graphic curve/Material ratio curve/Profile height amplitude distribution curve/Environmental setting items/Statistical result (Histogram)			
	Display language	16 languages (Japanese, English, German, French, Italian, Spanish, Portuguese, Korean, Chinese (simplified/traditional), Czech, Polish, Hungarian, Turkish, Swedish, Dutch)			
	Storage function	Built-in memory: Measurement condition (Up to 10) Memory card (optional): 500 measurement conditions, 10000 measured profiles, 500 display images, 10000 text files, 500 statistical data, 1 backup file of device setting data, 10 data of Trace 10			
External I/O functions		USB I/F, Digimatic output, RS-232C I/F, Foot switch I/F			
Power supply	Battery	Built-in battery (rechargeable Ni-MH battery)/AC adapter			
	Charging time/Endurance	Charging time of the built-in battery: about 4 hours (may vary due to ambient temperature) Endurance: about 1000 measurements (differs slightly due to use conditions/environment)			
External dimensions (WxDxH)	Max. power consumption	50 W			
	Calculation display unit	275x198x109 mm			
	Up/down inclination unit	130.9x63x99 mm			
Mass	Drive unit	128x35.8x46.6 mm		154.5x35.8x46.6 mm	
	Calculation display unit	1.7 kg		0.64 kg	
	Up/down inclination unit	0.4 kg			
Standard Accessories	Drive unit	0.6 kg			
	Detector* ⁷ /Standard stylus* ⁸				
	178-601	Roughness specimen (Ra3 μm)		AC adapter, Power cable, Flat-blade screwdriver, Phillips screwdriver, Hex wrench, Strap for the touch pen, Operation manual, One-sheet manual, Warranty card	
	270732	Receipt paper (Standard type: 5-roll set)			
	12BAL402	Protective sheet for the LCD (x1 sheet)			
	12BAS07	Touch pen			
	12AAN041	Carrying case			

*1 Calculation is available only when selecting the VDA, ANSI, or JIS 1982 standards.
 *2 Calculation is available only when selecting the ISO 1997 standard. *3 Calculation is available only when selecting the JIS 2001 standard.
 *4 Calculation is available only when selecting the ANSI standard. *5 Not available when selecting the JIS 1982 standard.
 *6 Only the mean value rule is available for the ANSI standard. 16% rule is not available when selecting the VDA standard.
 *7 Depending on the Order No. of the SJ-410 Series main unit, 178-396 (0.75 mN) or 178-397 (4 mN) is provided as standard.
 *8 Standard stylus (12AAC731 or 12AAB403) supporting the provided detector is provided as standard.

Dramatic improvement on compact type surface roughness testers

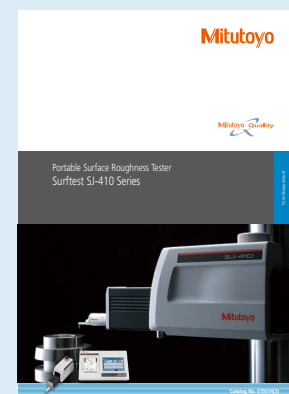
- Equipped with a large, touch-screen color graphic LCD to achieve both intuitive operation and high operability.
- Skidded and skidless measurement are switchable to perform optimum evaluation according to the measurement setup.
- A wide-range, high-resolution detector and a very accurate drive unit provide superior high-accuracy measurement in its class.
- **Detector**
Measuring range: 800 µm
Resolution: 0.0001 µm (when the measuring range is 8 µm)
- **Drive unit**
Straightness/Drive length: 0.3 µm/25 mm (SJ-411)
Straightness/Drive length: 0.5 µm/50 mm (SJ-412)
- Simplified contour analysis (Step, Step quantity, Area, Coordinate difference) is available using the point cloud data collected to evaluate the surface roughness.
Allows the evaluation of detailed shapes that cannot be achieved by contour measuring instruments.



- Allows the evaluation of surface roughness in a circumferential direction using the skidless measurement and R-surface compensation functions.
- Conforms to the latest ISO standard and ANSI/VDA standard in addition to the JIS standard (2001/1994/1982).
- Achieves the performance of a desktop type surface roughness tester in combination with the simplified stand and associated optional accessories.

Optional Accessories for SJ-410 Consumables

- Receipt paper Standard type (5-roll set) **270732**
- Receipt paper High-durability paper (5-roll set) **12AAA876**
- Protective sheet for the touch panel (x10 sheets) **12AAN040**
- Memory card (2 GB) **12AAW452**



Refer to the Surftest SJ-410 Series Brochure (E15014) for more details.