Surftest

Performs brilliantly in many situations such as in the quality control room,
on the factory floor and on the production line.

Surftest SJ-410
SERIES 178 — Compact Surface Roughness Tester

Dramatic improvement on compact type surface roughness testers

- Equipped with the touch-screen large color graphic LCD to achieve both of the intuitive operation and high operability
- Skidded and skidless measurement are switchable to perform the optimum evaluation according to the measurement condition.
- A wide-range, high-resolution detector and a drive unit provide superior high-accuracy measurement in its class.
  - Detector
    Measuring range: 800µm
    Resolution: 0.0001µm (at 8µm range)
  - Drive unit
    Straightness/traverse length: 0.3µm/25mm (**SJ-411**)
    Straightness/traverse length: 0.5µm/50mm (**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.
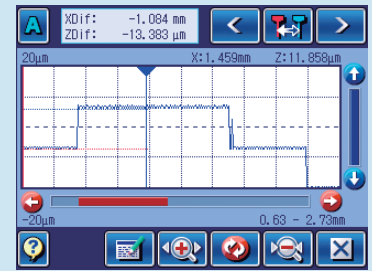
(Coordinate difference)

- 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
- Printer paper: Standard type (x5 packs): **No.270732**
- Printer paper: High-durability type (x5 packs): **No.12AAA876**
- Protective sheet for the touch panel (x10 sheets): **No.12AAN040**
- Memory card (2GB): **No.12AAL069**

Portable Surface Roughness Tester
SURFTEST SJ-410 Series

Portable surface roughness tester evolution
Rich choice of options provide easier, smoother and more accurate measurements

Refer to the Surftest SJ-410 series
(Catalog No.E15014) for more details.

SPECIFICATIONS

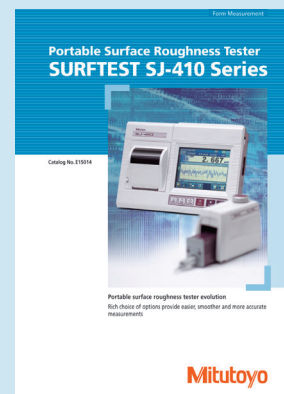| Model No.		SJ-411		SJ-412	
Code No.mm — mm		178-580-01	178-580-02	178-582-01	178-582-02
— inch/mm		178-581-01	178-581-02	178-583-01	178-583-02
Measuring range	X axis	25mm		50mm	
	Z axis (detector)	800µm、80µm、8µm　Up to 2,400µm when using an optional stylus.			
Detector	Detection method	Differential inductance			
	Resolution	0.01µm (800µm range), 0.001µm (80µm range), 0.0001µm (8µm range)			
	Stylus tip shape (Angle/Radius)	60°/2µm	90°/5µm	60°/2µm	90°/5µm
	Measuring force	0.75mN	4mN	0.75mN	4mN
	Radius of skid curvature	40mm			
	Measuring methods	Skidless / Skidded (switchable)			
Drive unit (X axis)	Measuring speed	0.05、0.1、0.2、0.5、1.0mm/s			
	Drive speed	0.5、1、2、5mm/s			
	Straightness	0.3µm / 25mm		0.5µm / 50mm	
Up/down inclination unit	Up/down movement	10mm			
	Inclination adjustment	±1.5°			
Applicable standards		JIS1982 / JIS1994 / JIS2001 / ISO1997 / ANSI / VDA			
Parameters		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, Possible Customize			
Assessed profile		Primary profile, Roughness profile, Waviness profile, DF profile, Roughness motif profile, Waviness motif profile			
Analysis graph		Material ratio curve, Profile height amplitude distribution curve			
Data compensation functions		Parabola, Hyperbolic, Ellipse, Circle, Conic, Tilt, No compensation			
Filter		2CR, PC75, Gaussian			
Cutoff value	λc	0.08、0.25、0.8、2.5、8mm			
	λs *5	2.5、8、25µm			
Sampling length		0.08、0.25、0.8、2.5、8、25mm			
No. of sampling lengths		×1、×2、×3、×4、×5、×6、×7、×8、×9、×10、×11、×12、×13、×14、×15、×16、×17、×18、×19、×20			
Arbitrary length		0.1 to 25mm		0.1 to 50mm	
Calculation display unit	Customization	Selection of display/evaluation roughness parameter			
	Simplified contour analysis function	Step, Step quantity, Area, Coordinate difference			
	DAT 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.			
	GO/NG judgment *6	Maximum value rule, 16% rule, mean value rule, standard deviation (1σ, 2σ, 3σ)			
	Storing measurement condition	Up to 10 (Calculation display unit)			
	Print function (Built-in thermal printer)	Measurement condition / Calculation result / Judgment result / Calculation result per segment / Tolerance value / Assessed profile / Graphic curve / Material ratio curve / Profile height amplitude distribution curve / Environmental setting items / Statistical result (Histogram)			
	Display language	Supports 16 languages (Japanese, English, German, French, Italian, Spanish, Portuguese, Dutch, Polish, Hungarian, Swedish, Czech, Simplified Chinese, Traditional Chinese, Korean, Turkish)			
	Storage	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 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)			
	Maximum power consumption	50W			
External dimensions (W×D×H)	Calculation display unit	275×198×109mm			
	Up/down inclination unit	130.9×63×99mm			
	Drive unit	128×35.8×46.6mm		154.5×35.8×46.6mm	
Mass	Calculation display unit	1.7kg			
	Up/down inclination unit	0.4kg			
	Drive unit	0.6kg		0.64kg	
Standard Accessories		Detector*7/Standard stylus*8 **178-601** Roughness specimen (Ra3µm) **270732** Printer paper: Standard type (x5 packs) **12BAL402** Protective sheet for the LCD (x1 sheet) **12BAG834** Touch pen **12AAN041** Carrying case		AC adapter, Power cable, Flat-blade screwdriver, Phillips screwdriver, Hex wrench, Strap for the touch pen, Operation manual, One-sheet manual, Warranty card	

*1: Calculation is available only when selecting the VDA, ANSI, or JIS 1982 standard.
*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 Code No. of the SJ-410 series main unit, **No.178-396** or **No.178-397** is provided as standard.
*8: Standard stylus (**No.12AAC731** or **No.12AAB403**) supporting the provided detector is provided as standard
　To denote your AC line voltage add the following suffixes (e.g. 178-580-01A).
　A for 120V, C for 100V, D for 230V, E for 230V (for UK), DC for 220V (for China), K for 220V (for Korea)

Mitutoyo