For more information on Precision Measuring Instruments, see page 2325.

INSIZE Mahr TESA TECHNOLOGY brown & sharpe

Handheld Surface Roughness Testers with On-Board Probe & Display

Built with an on-board probe and digital display, the entire unit can be placed directly on the surface of a feature or workpiece. The retractable probe extends from the body in multiple orientations. They have a simple digital display that can cycle through standard measurements such as Ra and Rz of a surface.

Marsurf Pocket Surf Iv 40TF45

Measuring Range	Profile Resolution	Probe Tip Radius	Parameters Measured	Drive Unit Principle	Detector Measuring Force	No. of Sampling Spans	Sampling Length	Transverse Cutoff Length	Brand	Mfr. Model	Item No.
Insize C002 Series											
6299 µin	0.01µin	5 um	Ra, Rz, Rq, Rv, Rp, RS, R3z, R3y, Rt, Rz (JIS), Rk, Rku, Rsm, Rpc, Rpk, Rvk, Rsk, Mr1, Mr2, Ry (JIS), Rmax	Skid	2.78 mN	1, 2, 3, 4, 5	0.2 in	0.01 in; 0.03 in; 0.1 in	Insize	ISR-C002	**463L43**
Insize C003 Series											
2 to 590 µin, 4 to 1968 µin	0.01µin	10 um	Ra, Rz, Rq, Rt	Skid	3.34 mN	3	0.2 in	0.01 in; 0.03 in; 0.1 in	Insize	ISR-C003	**463L44**
Insize S1000B Series											
0 µin to 3937 µin, 1.97 µin to 15748 µin	0.01µin	5 um	Ra, Rq, Rt, Rz, Rc, Rmax, Rsm, Rpc, Rmr, R, Ar, Rx	Skid	0.83 mN	1, 2, 3, 4, 5	0.63 in	0.01 in; 0.03 in; 0.1 in	Insize	ISR-S400	**463L26**
Marsurf Pocket Surf IV Series											
Ra: 6.35 µm/250 µin, Ry, Rmax, Rz: 25.3 µm/999 µin	0.01 micron, 1 microinch	10 um	Ra, Rmax/Ry, Rz	Skid	15 mN	1, 2, 3, 4, 5	0.030 in, 0.090 in, 0.150 in	0.8 mm, 0.03 mm	Mahr	2191800	**40TF45**
Marsurf Pocket Surf Iv Series											
Ra: 6.35 µm/250 µin, Ry, Rmax, Rz: 25.3 µm/999 µin	0.01 micron, 1 microinch	5 um	Ra, Rmax, Ry, Rz	Skid	15 mN	1, 2, 3, 4, 5	0.030 in, 0.090 in, 0.150 in	0.8 mm, 0.03 in	Mahr	2191802	**40TF46**
RugoSurf 20 Series											
400 µm/0.0157 in, 16 mm/0.63 in	0.001µm	5 um	Ra, Rq, Rt, Rc, RSm, RPc, Rmr, Rz, Rmax, PPc, Pmr	Standard	0.75 mN	2	—	0.25 mm, 0.8 mm, 2.50 mm	Tesa Brown & Sharpe	06930013	**38N887**

INSIZE Mahr Mitutoyo Starrett®

Portable Surface Roughness Testers with Wired External Display

SJ-210 Series 5RCG9

▪ See Grainger.com® for parameters measured

Portable surface roughness testers are built with a probe that can extend from the body and digital display to reach large workpieces, hard-to-reach areas, and take other measurements in complex positions. They can cycle through standard measurements such as Ra and Rz of a surface.

Measuring Range	Profile Resolution	Probe Tip Radius	Drive Unit Principle	Detector Measuring Force	No. of Sampling Spans	Brand	Mfr. Model	Item No.
ISR-C300 Series								
689 to 12598 µin, 6299 to 6299 µin	0.01µin	5 um	Traverse	4 mN	1, 2, 3, 4, 5	Insize	ISR-C300	**54XJ13**
Marsurf Ps 10 Series								
0.350 mm	8 nm	5 um	Standard	0.75 mN	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	Mahr	6910230	**446F42**
0.350 mm	8 nm	2 um	Standard		1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	Mahr	6910232	**446F41**
SJ-210 Series								
17.50 mm	—	5 um	Standard	4 mN	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Mitutoyo	178-561-12A	**5RCG9**
SJ-412 Series								
800µm	0.01micron (800 micron Range) / 0.001 micron (80 micron Range) / 0.0001 micron (8 micron Range), 0.4 microinch (32000 microinch) / 0.04 microinch (3200 microinch) / 0.004 microinch (320 microinch)	2 um	Traverse	4 mN	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20	Mitutoyo	178-583-12A	**39X224**
SR300 Series								
200 micrometers	10 nm	5 um	Skid	3 mN	2	Starrett	SR300	**53VE73**
SR400 Series								
360 micrometers	5 nm	5 um	Skid	3 mN	2	Starrett	SR400	**53VE74**

INSIZE Mitutoyo Starrett®

Mechanical 1ARV2

Digital 463T24

Handheld Durometers

Shore A durometers can measure more flexible materials, such as the rubbers used to make hydraulic O rings and automotive tire treads. Shore D durometers can measure harder materials, such as those used to make hard hats and solid truck tires. **Analog durometers** have peak-retaining hand functions that help provide error-free readings. **Digital durometers** have a data-hold function that can retain readings on the LCD or allow them to be downloaded to a computer.

Range	Res.	Indenter Shape	Tip Angle	SPC Output	Durometer Body Style	Brand	Item No.
Handheld Analog Durometers							
Shore A Scale							
0 to 100	—	Blunt Taper	35 °	—	—	Insize	**463T31**
10 to 90	—	Blunt Taper	35 °	—	—	Insize	**463T35**
10 to 90	—	Blunt Taper	35 °	—	Long Leg	Mitutoyo	**1ARV2**
Shore D Scale							
0 to 100	—	Sharp Point	30 °	—	—	Insize	**463T33**
20 to 90	—	Sharp Point	30 °	—	—	Insize	**463T41**
20 to 90	—	Sharp Point	30 °	—	Long Leg	Mitutoyo	**1ARV4**
Handheld Digital Durometers							
Shore A Scale							
0 to 100	0.5 HA	—	—	No	—	Starrett	**53VE96**
0 to 100	0.1 HA	—	35 °	Yes	—	Insize	**463T24**
10 to 90	0.1 HA	—	35 °	Yes	Compact	Mitutoyo	**1ZRT4**
Shore D Scale							
0 to 100	0.1 HD	—	30 °	Yes	—	Insize	**463T26**
20 to 90	0.1 HD	—	30 °	Yes	Long Leg	Mitutoyo	**1ARV5**
20 to 90	0.1 HD	—	30 °	Yes	Compact	Mitutoyo	**1ZRT6**

ESCHENBACH OPTIK Better vision. Better life. AVEN PEAK Bausch & Lomb INSIZE

3H230

Loupes

Loupes are small magnifying lenses held up to the eye to bring small details into focus. These magnifying glasses are commonly used for close jewelry inspection, watchmaking, dentistry, photography, printing, and detailed scientific research

Item	Power	Focal Distance	Lens Dia.	Diopter	Brand	Item No.
Clip-on System Kit	1.7X to 7X	160 mm, 180 mm, 250 mm, 32 mm, 400 mm, 55 mm	—	2.5D to 28D	Eschenbach Optik Gmbh	**3DUX9**
Eye Loupe	10X	0.8 in	12.70 mm	40D	Aven	**39AN75**
Fixed Focus Loupe	10X	1 in	24.00 mm	16D	Peak	**49CT48**
	10X	1 in	25.40 mm	16D	Peak	**49CT47**
	15X	0.8 in	19.10 mm	16D	Peak	**49CT49**
	22X	0.8 in	19.10 mm	16D	Peak	**49CT50**
Focus Light Loupe	10X	1 in	25.40 mm	16D	Peak	**49CT51**
	15X	0.8 in	20.30 mm	16D	Peak	**49CT52**
Focus Scale Loupe	10X	1 in	20.00 mm	16D	Peak	**49CT54**
	15X	0.8 in	13.00 mm	16D	Peak	**49CT55**
General Loupe	5X	2 in	25.40 mm	16D	Peak	**49CT46**
Hastings Triplet Loupe	10X	1.1 in	15.80 mm	40D	Bausch & Lomb	**2RPA3**
Illuminated Pocket Magnifier	4X	2.5 in	—	16D	Eschenbach Optik Gmbh	**4XKP9**
Measuring Loupe Combo Set	10X	1 in	20.30 mm	16D	Peak	**49CT57**
Table Magnifier	2.25X	—	4.80 in	5D	Insize	**55VP09**
Watchmakers Loupe	4X	2.5 in, 6.4 cm	25.40 mm	16D	Bausch & Lomb	**3H423**
	5X	2 in, 5.1 cm	25.40 mm	20D	Bausch & Lomb	**3H421**
	7X	1.4 in	25.40 mm	28D	Bausch & Lomb	**3H372**
	10X	1.1 in	25.40 mm	40D	Bausch & Lomb	**3H230**