

Technical Specifications SonoDur3

Measuring Specifications						
Measuring principle		UCI Method, corresponds to DIN 50159, ASTM A1038				
Test indenter		Vickers diamond 136°				
Test loads Newton scale (1kgf = 9.81 N)		Motor probes: 1N (0.1 kgf), 3N (0.3kgf) and 8.6 N (0.9 kgf) Handheld Probes: 10N (1 kgf), 49N (5kgf), 98N (10kgf) (Other test loads on request)				
Hardness scales and range (according to relevant standards), in this case table A1 respectively T1, T2 (low alloy steel). Different measuring ranges are valid for other materials. When exceeding the limits the conversion range will be extended. The calculated values are highlighted in red besides the original data in HV. Note: Conversions are acc. to latest ASTM E140-12b ^{e1} (2013) und EN ISO 18265:2014. Conversions into tensile strength: 98N (10kgf) test load only.		Vickers	HV	10 – 1999 (9999)		
		Brinell	HB	76 – 618		
		Rockwell	HRB	41 – 105		
		Rockwell	HRC	20,3 – 68		
		Rockwell	HRE	70 – 108,5		
		Rockwell	HRF	82,6 – 115,1		
		Rockwell	HRA	60,7 – 85,6		
		Rockwell (EN ISO 18265 only)	HRD	40,3 - 76,9		
		Rockwell	HR45N	19,9 – 75,4		
		Knoop (ASTM E140 only)	HK	87 – 920		
		Shore (ASTM E140 only)	HS	34,2 – 97,3		
		Tensile strength	MPa	255 - 2180		
Measurement uncertainty*		< 4 % (HV5, HV 10). For other test loads and ranges see table below.				
Relative repeatability*		< 5 % (HV5, HV 10). For other test loads and ranges see table below.				
*exceeds DIN 50159, dependent on test load and range (see table below). Specifications are valid for 5 measurements using Vickers reference blocks and according to test conditions given in standard DIN 50159.						
Hardness scale	Measurement uncertainty [%]				Relative repeatability [%]	
	< 250 HV	250 HV - 500 HV	500 HV - 800 HV	> 800HV	< 250 HV	> 250 HV
HV0,1	5	6	7	8	8	6
HV0,3	5	6	7	8	8	6
HV0,8	4	4	5	6	8	6
HV1	4	4	5	6	8	6
Mechanical and Environmental (Instrument and probe)						
Operating time		>10 hours in measurement operation (depending on system performance, temperature and instrument settings), up to 8 hours continuous operation, quick exchangeable battery pack (3.7V 3900mAh LiPolymer)				
Operating Temperature		Probe: 0°C to ~ +45°C Instrument: -10° ~ +50°C // Charging +10°C ~ +40°C				
Storage Temperature		-20°C ~ +70°C				
Humidity		Max. 90%, non-condensing				
Dimensions		Instrument ca. 164x86x23 mm Motor probe Ø38mm, L=190 mm Handheld probe Ø25 mm, L=176 mm (free length oscillation rod ca. 12,5 mm) Handheld probe Ø25 mm, L=207 mm (free length oscillation rod ca. 43 mm)				
Weight		Instrument ca. 320 gr (incl. battery pack) Handheld probe ca. 280 gr Motor probe ca. 370 gr				
Instrument						
Processor and Memory		ARM® Cortex™-A53 Octa Core 1.3 GHz / System 2GB RAM /				



	storage memory 16 GB eMMC / Micro SD card 4 GB (up to 32 GB)
Operating system	Android 5.1 (Android 7.0)
Keypad	4 function keys, system touch keyboard
Power	Main battery: 3,7V / 3900mAh, LiPo hard pack, quick exchange Charging time: <3h to 80% capacity (Instrument off) Shelf Hours: Up to 6 month AC Power supply/charger: 90V to 264VAC 50/60Hz to 5VDC
Display	5" sunlight readable multi touch display (1280x720 pixel), LED-backlight (500 Cd/m2), adjustable
Interfaces	Round power jack 5VDC operating / charging Docking connector (charging) USB 2.0 Micro USB (PC) / probe connector Lemo 4 pos. Micro SD-card 4 GB (up to 32 GB) WLAN 802.11 a/b/g/n Bluetooth 4.0 (supports BLE mode) GPS / AGPS / GLONASS 2x SIM card NFC GSM/GPRS/EDGE (b2/b3/b5/b8) WCDMA/HSDAP/HSPUA, FDD-LTE / TDD-LTE) Speaker, microphone
Sensors / Camera / LED	Light sensor, G-sensor, proximity sensor, rear camera 8 mega-pixel, multicolor status LED
IP-Proof	IP65 according IEC 60529 Edition 2.1:2001-02
Drop test	MIL-STD-810G Methode 516.6, 4 ft.
Shock Test	MIL-STD-810G Methode 516.6 Prozedur I
Vibration Test	MIL-STD-810G Methode 514.6 Prozedur I
Instrument Language	D, EN, IT, FR, SP, PL, CZ, CN - more on request

