Specifications SPS620 DR Total Station

Angle Measurement	
Horizontal Accuracy (Standard deviation based on DIN 18723)	5" (1.5 mgon)
Vertical Accuracy (Standard deviation based on DIN 18723)	5" (1.5 mgon)
Angle Reading (least count)	
Standard	1" (0.3 mgon)
Tracking	2" (0.6 mgon)
Automatic Level Compensator	Dual-axis compensator +/- 5.4' (+/- 100 mgon)
Distance Measurement Accuracy (Standard Deviation), Prism Mode	
Standard	±(2 mm + 2 ppm) ±(0.0065 ft + 2 ppm)
Tested standard deviation according to ISO17123-4	±(1.5 mm + 2 ppm) ±(0.0049 ft + 2 ppm)
Tracking	±(5 mm + 2 ppm) ±(0.016 ft + 2 ppm)
Dynamic Measurement Capability (Standard Deviation)	
Synchronized Angle and Distance Measurements	No
Maximized Position Update Rate	2.5Hz
DR Mode	
Standard Measurement	±(3 mm + 2 ppm) ±(0.01 ft + 2 ppm)
Tracking	±(10 mm + 2 ppm) ±(0.032 ft + 2 ppm)
Measuring Time, Prism Mode	
Standard	2.0 seconds
Tracking	0.4 seconds
Measuring Time, DR Mode	
Standard	3 to 15 seconds
Tracking	0.4 seconds
Range (under clear conditions), Prism Mode	
1 prism	2,500 m (8,202 ft)
1 prism Long Range mode	N/A
3 prism	5,000 m (16,404 ft) max range
Shortest possible range	0.2 m (0.65 ft)
Range (under clear conditions), DR Mode	
Kodak Gray Card (18% reflective)	>300 m (984 ft)
Kodak Gray Card (90% reflective)	>800 m (2625 ft)
Range (under difficult conditions), DR Mode	
Kodak Gray Card (18% reflective)	>150 m (492 ft)
Kodak Gray Card (90% reflective)	>200 m (656 ft)
Typical ranges, DR Mode	
Concrete	
Wood construction	
Metal construction	
Light rock	
Dark rock	
Reflective foil 20 mm x 20 mm (0.7 in x .07 in)	>200 m (656 ft)
Reflective foil 60 mm x 60 mm (2.3 in x 2.3 in)	>500 m (1640 ft)
Shortest possible range	1.5m (4.9 ft)
DR Extended Range Mode	
Kodak Gray Card (18% reflective)	N/A
Kodak Gray Card (90% reflective)	N/A
Accuracy	N/A
DR surface scan and surface profile speed	

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Specifications SPS620 DR Total Station

Light Source	Laser diode 660 nm, Laser class 1 in Prism mode laser class 3R in DR mode
Laser pointer coaxial (standard)	Laser class3R
Beam Divergence in Prism Mode	
Horizontal	4 cm/100 m (0.13 ft/328 ft)
Vertical	4 cm/100 m (0.13 ft/328 ft)
Beam Divergence in DR Mode	
Horizontal	2 cm/50 m (0.066 ft/164 ft)
Vertical	2 cm/50 m (0.066 ft/164 ft)
Atmospheric Correction	–130 ppm to 160 ppm continuous
Leveling	
Circular level in Tribrach	8'/2 mm (8'/0.007 ft)
Electronic 2-axis level in the LCD	0.3" (0.1 mgon)
Servo system	MagDrive servo technology, integrated servo/angle sensor electromagnetic direct drive
Rotation speed	86 degrees/sec (96 gon/sec)
Positioning speed 360/180 degrees (400/200 gon)	3.2 sec
Positioning speed - Change Face I to Face II	3.2 sec
Clamps and slow motions	Servo-driven, endless fine adjustment
Centering	
Centering system	Trimble 3-pin
Optical plummet	Alidade optical plummet
Magnifcation/shortest focusing distance	2.3×/0.5 m – infinity (1.6 ft – infinity)
Telescope	
Magnification	30x
Aperture	40 mm (1.57 inches)
Field of view at 100 m (328 ft)	2.6 m at 100 m (8.5 ft at 328 ft)
Shortest focusing distance	1.5 m (4.92 ft)–infinity
Illuminated crosshair	Variable (10 steps)
Built-in tracklight	Standard
Operating temperature	–20 ºC to +50 ºC (–4 ºF to +122 ºF)
Dust and water proofing	IP55
Focus type	Servo assisted on side cover
Power Supply	
Internal battery	Rechargeable Li-Ion battery 11.1 V, 4.4 Ah
Operating Time	
One internal battery	Approximately 6 hours
Three internal batteries in multi-battery adaptor	Approximately 18 hours
Robotic holder with one internal battery	Approximately 12 hours
Weight	
Instrument (Servo/Autolock)	5.15 kg (11.35 lb)
Instrument (Robotic)	5.25 kg (11.57 lb)
Trimble CU Controller	N/A
Tribrach	0.7 kg (1.54 lb)
Internal batery	0.35 kg (0.77 lb)
Trunnion axis Height	196 mm (7.71 in)
Handle	Detachable and eccentric for unrestricted sighting
Range	
Robotic	300 - 500 m (984 - 1,640 ft)
Autolock	300 - 500 m (984 - 1,640 ft)
Autolock to Trimble MT1000 Target	500 m (1,640 ft)
Shortest search distance	0.2 m (.65 ft)
Autolock pointing precision at 200 m (656 ft) (Standard deviation)	<2 mm (0.007 ft)
Angle Reading	
Standard	1" (0.3 mgon)
Tracking	2" (0.6 mgon)
Averaged observations	0.1" (0.03 mgon)
Type of radio	2.4 GHz frequency-hopping, spread-spectrum radios
Search time	2 – 10 s
Search area	360 degrees (400 gon) or defined horizontal and vertical search window
Communication	USB, Serial

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Specifications SPS620 DR Total Station

Machine Control Specifications	
Machine Control Capable	No
Range to target (MT900)	
	N/A
Search time	N/A
Search area	N/A
Maximum acceleration of target at short distance 2 m (6.5 ft) radial acceleration	N/A
Maximum velocity of target	
Radial speed	N/A
Axial speed	N/A
Data Output	
Rate	N/A
Data Timing	N/A
Data Latency	N/A
Synchronized measurement data	N/A
Accuracy to a target moving at 1 m/s (Standard deviation)	
Horizontal	N/A
Vertical	N/A
Slope Distance	N/A
Models Available	Robotic only
Upgradable	No

Specifications subject to change without notice.

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