

ROBOTIC TOTAL STATION SYSTEM SPECIFICATIONS

The Contractor agrees to provide a robotic total station system per the following specifications:

ROBOTIC TOTAL STATION SPECIFICATIONS:

ANGLE MEASUREMENT		
	Accuracy (Std. Dev. Based on DIN 18723)	3 seconds
	Angle reading (least count) horizontal & vertical	
	Standard measurement	1 second
	Fast Standard	1 second
	Tracking	2 seconds
	Arithmetic mean value (D-bar)	
	Horizontal & vertical angle	1 second
	Automatic level compensator	Dual-axis compensator ⚡6 minutes
DISTANCE MEASUREMENT		
	Accuracy (standard deviation)	
	Prism	
	Standard measurement	⚡(0.01 ft + 3 ppm)
	Fast Standard	⚡(0.025 ft + 3 ppm)
	Tracking	⚡(0.032 ft + 3 ppm)
	Arithmetic mean value (D-bar)	⚡(0.01 + 3 ppm)
	Reflective foil	
	Standard measurement	⚡(0.01 ft + 3 ppm)
	Fast Standard	⚡(0.025 ft + 3 ppm)
	Tracking	⚡(0.032 ft + 3 ppm)
	Arithmetic mean value (D-bar)	⚡(0.01 + 3 ppm)
	Direct Reflex mode (16.4 ft to 656 ft)	
	Standard measurement	⚡(0.01 ft + 3 ppm)
	Fast Standard	⚡(0.025 ft + 3 ppm)
	Tracking	⚡(0.032 ft + 3 ppm)
	Arithmetic mean value (D-bar)	⚡(0.01 + 3 ppm)
	> 656 ft	⚡(0.016 ft + 3 ppm)
	Shortest possible range	
	To prism	6.56 ft
	Direct Reflex	6.56 ft
	Reflective foil	6.56 ft
	Measuring time	
	Prism Mode	
	Standard measurement	3 sec.
	Fast Standard	3 sec.
	Tracking	0.4 sec.
	Arithmetic mean value (D-bar)	3.5 sec. per measurement
	Direct Reflex mode	
	Standard measurement	3 to 7 sec.
	Fast Standard	3 to 7 sec.
	Tracking	0.4 sec.
	Arithmetic mean value (D-bar)	3.5 sec. per measurement

	Range (under standard clear conditions)	
	Range using prism	
	1 prism	8,200 ft
	1 prism Long Range mode	18,040 ft
	3 prisms	8,200 ft
	3 prisms Long Range mode	18,040 ft
	Range Direct Reflex measurement	
	Kodak Gray Card (18% reflective)	656 ft
	Kodak Gray Card (90% reflective)	1,968 ft
	Concrete	656 ft to 984 ft
	Wood construction	492 to 984 ft
	Metal construction	492 to 656 ft
	Light rock	492 to 820 ft
	Dark rock	328 to 492 ft
	Range using reflective foil in Direct Reflex mode	
	Reflective foil 20 mm	2,624 ft
	Reflective foil 60 mm	5,248 ft
GENERAL SPECIFICATIONS		
	Light Source	Pulsed laserdiode 870 nm, Laser Class 1
	Beam divergence	
	Horizontal	0.4 mrad (0.13 ft/328 ft)
	Vertical	0.8 mrad (0.26 ft/328 ft)
	Atmospheric correction	-60 to 195 ppm continuously
	Leveling	
	Circular level in tribrach	8 ft per 0.007 ft
	Electronic 2-axis level in the LC-display with a resolution of	6 sec.
	Clamps and slow motions	Servo-drive. Endless fine adjustment
	Centering	
	Centering system	3-pin
	Optical plummet	Optical plummet in tribrach
	Magnification	2.4x
	Shortest focusing distance	1.6 ft to infinity
	Telescope	
	Magnification	26x
	Aperture	1.57 in.
	Field of view at 328 ft.	8.5 ft.
	Shortest focusing distance	5.58 ft. to infinity
	Illuminated crosshair	Variable (15 steps)
	Tracklight	Standard (autolock & robotic)
	Operating temperature	-5 °F to 122 °F
	Power Supply	
	Internal battery	Rechargeable NiMH battery 12V, 1.8 Ah, Operating time approx 3 hr (servo only)
	External battery	Rechargeable NiMH batteries 12 V, 3.8 to 11.4 Ah, operating time approx 9 hr robotic (at 11.4 Ah)
	Weight	
	Instrument (not including controller)	14.5 lbs
	Tribrach	1.5 lbs

	Internal battery	0.9 lb
	Instrument for Robotic surveying (incl. Tracker & built in radio)	16.5 lbs
	Trunion axis height	8.1 in.
ROBOTIC SURVEYING SPECIFICATIONS		
	Range	
	Robotic	Up to 3,900 ft
	Autolock	Up to 7,200 ft
	Shortest search distance	6.5 ft
	Tracker pointing precision at 656 ft (standard deviation)	<0.007 ft
	Angle reading (least count)	
	Standard measurement	1 sec.
	Fast standard	1 sec.
	Tracking	2 sec.
	Arithmetic mean value (D-bar)	1 sec.
	Measuring time DR	
	Standard measurement	5 to 8 sec.
	Fast standard	5 to 8 sec.
	Tracking	0.4 sec.
	Arithmetic mean value (D-bar)	3.5 sec. per measurement
	Search time (typical)	2 to 10 sec.
	Search area	360 degrees or defined horizontal & vertical window

CONTROLLER SPECIFICATIONS		
	STANDARD SOFTWARE	
	Microsoft Windows Mobile 5.0 software including:	
	Internet Explorer	
	File Explorer	
	Word Mobile	
	Power Point Mobile	
	Excel Mobile	
	Outlook Mobile	
	Windows Media Player Mobile	
	Microsoft ActiveSync technology	
	Microsoft Transcriber (handwriting recognition)	
	Pictures, Picture & Videos, Calendar, Contacts, Tasks & Notes	
	Online Help	
	HARDWARE	
	Size	10.5 in x 5.2 in x 1.9 in
	Weight	2.1 lb including battery
	Memory	128 SDRAM, 512 MB internal non-volatile storage memory
	Expandable Memory	CompactFlash card, Secure Digital card
	Processor	520 MHz Intel PXA 270 XScale CPU
	Wireless	Integrated Wireless LAN 802.11b
	Power	Li-Ion rechargeable pack, 6600 mAh, battery life of 30 hrs under normal operating conditions.

	ENVIRONMENTAL	
	Temperature	
	Operating Temperature	-22 °F to 140 °F
	Storage Temperature	-40 °F to 158 °F
	Humidity	100% condensing, MIL-STD-810F, Method 507.4
	Sand & Dust	Protection against wind-driven according to MIL-STD-810F, and IP6X
	Water	Waterproof IPX7
	Drops	26 drops from 4.0 ft onto hard surface
	Vibration	MIL-STD-810F, Method 514.5, Procedure 1, Fig. 17&18
	Altitude	MIL-STD-810F, Method 500.4, Procedures I, II & III, 15,000 ft at +73 °F
	INTERFACE	
	Display	Color, illuminated TFT, daylight-readable touch screen displayed at 320x240 pixels
	Keyboard	53 key alphanumeric keypad, 8-position spyder key
	Audio	Integrated speaker and microphone for audio system events, warnings & notifications
	Operating System	Microsoft Windows Mobile 5.0
	INPUT/OUTPUT	
	Ports	RS232 9-pin serial port USB Client, USB Host DC Power Port
	Expansion	1 x Type I CompactFlash slot 1 x Type II CompactFlash slot 1 x Secure Data memory card slot