

### KEY FEATURES

- One universal total station satisfies all site positioning and grade control needs
- Servo, Autolock, Robotic, Reflectorless and ATS Grade Control modes of operation all in a single instrument
- Industry-leading, incredibly fast 20 Hz dynamic positioning update rate
- DR300+ long-range reflectorless measurement allows high accuracy measurement without the risk and delay of walking the surface with a target
- Trimble MagDrive™ servos provide unmatched instrument turning and tracking speeds and silent precise operation
- Trimble SurePoint™ technology autocorrects instrument pointing for mis level so you'll always capture accurate 3D information
- Unique Trimble MultiTrack™ technology allows operation with conventional prisms or active targets



### THE ALL-IN ONE, UNIVERSAL TOTAL STATION

The Trimble® SPS730 and SPS930 Universal Total Stations provide five ways to measure with one instrument. Servo, Autolock, Robotic, Reflectorless and ATS Grade Control modes provide the ability to tackle any measurement, stakeout, reflectorless or grade control task on the jobsite – all from one instrument.

#### Accuracy to Match Job Site Requirements

The SPS930 provides 1 second horizontal and vertical angle accuracy for any precise measurement, stakeout or fine grading task.

The SP730 provides 2 second vertical and 3 second horizontal angle accuracy to meet the needs of all but the highest precision measurement or stakeout functions on site.

#### DR300+ long-range reflectorless measurement

The DR300+ long range reflectorless measurement capability allows you to quickly and safely measure hard-to-reach or unsafe places 300 meters away and beyond. There is no need to walk the surface with a target. You'll realize significant increases in productivity and safety when measuring stockpiles, profiling cuttings and rock faces.

#### Trimble MultiTrack Technology

Trimble MultiTrack technology locks on and tracks passive prisms for applications such as monitoring or control measurements and active targets for dynamic measurement, stakeout and grade control applications.

Active targets provide enhanced dynamic tracking performance and guaranteed lock to the correct target, especially in dusty construction site conditions. Up to 16 unique channels of target identification can be used to differentiate survey crews and grade checkers from machine control operations, eliminating down time caused by unnecessary interference.

#### Unmatched Dynamic Positioning

Grade control for earthmoving and fine grading machinery requires an updated, highly accurate position delivered on a very frequent basis. The more data provided, the smoother the hydraulic control and the higher gear that the machine can operate in. The Trimble SPS730 and SPS930 instruments deliver an unmatched 20 hertz update rate combined with low latency, synchronized data measurements for unmatched machine performance. Combined with the Trimble MT900 active machine target they can operate at ranges up to 700 meters at +/-45 degree slopes, in the highest gear and in the dustiest conditions at the same time delivering the smoothest and most accurate finish available. Repeatability in the accuracy of graded layers results in fewer passes, reduced fuel and maintenance, reduced rework not to mention material savings, time and associated cost benefits.

## Market-leading Trimble Technology

Whether site positioning or operating machines, tracking the target especially at short range or in areas where the rate of change of angle is high always creates a challenge. Having fast response time and fast servos allows the instrument to change direction, and track more reliably. The Trimble SPS730 and SPS930 utilize Trimble's patented MagDrive fourth generation servo technology, which utilizes magnetic levitation to eliminate direct drive and friction from the servo system. Combined with the USB communications network for the fastest command response time, the instruments deliver the fastest tracking, fastest turning, most responsive instrument available, perfect for high speed dynamic operation for grade control applications.

Total stations depend on being level to deliver accurate results. When an instrument is knocked, buffeted by wind or subjected to ground vibration or settlement it's level is affected. Dual axis compensation corrects the angle measurement system for mislevel, but doesn't change the instruments pointing to account for the associated errors. Trimble's patented Surepoint technology not only corrects the angles for mislevel, it also continually adjusts the instruments pointing for that mislevel delivering the most accurate automated positioning system available.

## Powered by Trimble SCS900 Site Controller Software

The power of the instrument is unleashed through the software that drives it. SCS900 software has been developed as a contractor's tool, to provide simple easy to understand workflows which are dedicated to the construction jobsite. Combined with Trimble's Intelligent Data Tracking technology, SCS900 will meet all of your stakeout, measurement, grade control and quality control requirements.

The Trimble SPS730 and SP930 Universal Total Stations are packed with market leading features such as

- Long life integrated smart batteries
- Bluetooth for cable free operation
- Ergonomic servo focus
- Detachable control unit
- Eccentric and detachable handle for a full vertical sweep of the telescope

Combined, these features make the instrument the simplest yet most sophisticated instrument available for all your jobsite needs. No matter what job they are doing, SPS total stations will deliver unmatched user experience, all round capability and incredible results.

# TRIMBLE SPS730 AND SPS930 UNIVERSAL TOTAL STATIONS

## UNIQUE PERFORMANCE SPECIFICATIONS

### SPS730 Universal Total Station

Angle Measurement  
Horizontal Accuracy  
Standard deviation based on DIN 18723 ..... 3" (1.0 mgon)  
Vertical Accuracy  
Standard deviation based on DIN 18723 ..... 2" (0.6mgon)  
Angle Reading (least count)  
Standard mode ..... 1" (0.3 mgon)  
Tracking mode ..... 1" (0.3 mgon)  
Automatic level compensator ..... Dual-axis compensator  
±6' (±100 mgon)

### SPS930 Universal Total Station

Angle Measurement  
Horizontal Accuracy  
Standard deviation based on DIN 18723 ..... 1" (0.3mgon)  
Vertical Accuracy  
Standard deviation based on DIN 18723 ..... 1" (0.3mgon)  
Angle Reading (least count)  
Standard mode ..... 1" (0.1 mgon)  
Tracking mode ..... 1" (0.1 mgon)  
Automatic level compensator ..... Dual-axis compensator  
±6' (±100 mgon)

## COMMON PERFORMANCE SPECIFICATIONS

### SPS730 and SPS930 Universal Total Stations

Distance Measurement Accuracy  
Prism Mode  
Standard mode ..... ± (3 mm + 2 ppm) ± (0.01 ft + 2 ppm)  
Tracking mode ..... ± (10 mm + 2 ppm) ± (0.032 ft + 2 ppm)  
Dynamic Measurement Capability  
Synchronized angle and distance measurements ..... Yes  
Position update rate ..... Up to 20Hz  
3D Positioning Accuracy  
Note: 3D positioning accuracy is based on the following parameters  
Horizontal and Vertical angle accuracy  
Distance from instrument  
Tracker lock on accuracy  
Static or moving target  
Instrument state of adjustment

The following 3D positioning accuracies provide an indication of total system accuracy at commonly encountered ranges from the instrument on a horizontal sighting. On steeper sightings, horizontal accuracy increases and vertical accuracy decreases.

#### SPS930

Distance (m) / (ft)	Position Accuracy (m) / (ft)	Height Accuracy (m) / (ft)
50 / 164	0.003 / 0.010	0.003 / 0.010
100 / 328	0.003 / 0.010	0.003 / 0.010
200 / 656	0.004 / 0.013	0.004 / 0.013
300 / 984	0.004 / 0.013	0.004 / 0.013

#### SPS730

Distance (m) / (ft)	Position Accuracy (m) / (ft)	Height Accuracy (m) / (ft)
50 / 164	0.003 / 0.010	0.003 / 0.010
100 / 328	0.004 / 0.013	0.003 / 0.010
200 / 656	0.004 / 0.013	0.004 / 0.013
300 / 984	0.006 / 0.020	0.005 / 0.016

DR Reflectorless mode  
Standard mode ..... ± (3 mm + 2ppm) ± (0.01 ft + 2 ppm)  
Tracking mode ..... ± (10 mm + 2ppm) ± (0.032 ft + 2 ppm)

Measuring Time - Prism mode  
Standard mode ..... 1.2 s  
Tracking ..... 0.4 s  
Measuring mode - Reflectorless mode  
Standard mode ..... 1-5 s  
Tracking mode ..... 0.4 s

Measurement Range - Prism Mode (under clear conditions 1,2)  
1 Prism ..... 2,500 m (8,202 ft)  
1 prism (long range mode) ..... 5,500 m (18,044 ft)  
3 prism ..... 3,500 m (11,482 ft)  
3 prism (long range mode) ..... 5,500 m (18,044 ft)

Measurement Range - DR Mode  
Kodak Gray Card (18% reflective)<sup>3</sup> ..... >300 m (984 ft)  
Kodak Gray Card (90% reflective)<sup>3</sup> ..... >800 m (2625 ft)  
Concrete: ..... 300-400 m (984-1312 ft)  
Wood construction: ..... 200-400 m (656-1312 ft)  
Metal construction: ..... 200-250 m (656-820 ft)  
Light rock: ..... 200-300 m (656-984 ft)  
Dark rock: ..... 150-200 m (492-656 ft)  
Reflective foil: 20 mm ..... 800 m (2,625 ft)  
Reflective foil: 60 mm ..... 1600 m (5,249 ft)  
Shortest possible range: ..... 2m (6.56 ft)

Light source ..... Pulsed laser diode 870 nm, Laser class 1  
Laser pointer coaxial (standard) ..... Laser class 2  
Beam divergence  
Horizontal ..... 4 cm/100 m (0.13 ft/328 ft)  
Vertical ..... 8 cm/100 m (0.26 ft/328 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 LC- display ..... 0.3" (0.1 mgon)  
Centering  
Centering system ..... Trimble 3-pin  
Optical plummet ..... Alidade optical plummet  
Magnification/shortest focusing distance ..... 2.3x/0.5 m-infinity  
(1.6 ft-infinity)  
Servo system ..... MagDrive servo technology, integrated servo/angle sensor electromagnetic direct drive  
Rotation speed ..... 115 degrees/sec (128 gon/sec)  
Clamps and slow motions ..... Servo-driven, endless fine adjustment  
Positioning speed 180 degrees (200 gon) ..... 3.2 sec

Telescope  
Magnification ..... 30x  
Aperture ..... 40 mm (1.57 in)  
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)  
Track light built in ..... Standard  
Focus type ..... Servo assisted on side cover  
Operating temperature ..... -20 °C to +50 °C (-4 °F to +122 °F)  
Dust and water proofing ..... IP55

# TRIMBLE SPS730 AND SPS930 UNIVERSAL TOTAL STATIONS

## Power supply

Internal battery	Rechargeable Li-Ion battery 11.1 V, 4.4 Ah
Operating time <sup>4,5</sup>	
One internal battery	Approximately 6 hours
Triple battery pack	Approximately 18 hours
TCU Robotic holder	Approximately 12 hours

## Weight

Instrument (Servo/Autolock)	5.15 kg (11.35 lb)
Instrument (Robotic)	5.25 kg (11.57 lb)
Trimble CU controller	0.4 kg (0.88 lb)
Tribrach	0.7 kg (1.54 lb)
Internal battery	0.35 kg (0.77 lb)

Trunnion axis height	196 mm (7.71 in)
Handle	Detachable and eccentric for unrestricted sighting

## ROBOTIC SPECIFICATIONS

### Range

Robotic	700 m (2,297 ft)
Autolock	700 m (2,297 ft)
Shortest search distance	0.2 m (0.65 ft)

Autolock pointing precision at 200 m (656 ft)	<2 mm (0.007 ft)
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### Angle reading (least count)

Standard mode	1" (0.1 mgon)
Tracking mode	2" (0.5 mgon)
Averaged observations	0.1" (0.01 mgon)

Type of radio	Internal / External 2.4GHz Spread Spectrum
Search time (typical) <sup>5</sup>	2–10 s
Search area	360 degrees (400 gon) or defined horizontal and vertical search window

## ATS MODE FOR GRADE CONTROL

Range to target (MT900) <sup>1,2,6</sup>	700 m (2,297 ft)
Search time (typical) <sup>5</sup>	2–10 s
Search area	360 degrees (400 gon) or defined horizontal and vertical search window
Maximum radial acceleration of target at short distance (2 m / 6.56 ft)	148 degrees/sec (165 gon/sec)
Maximum velocity of target	
Radial speed	114°/sec
Axial speed	6 m/s
Data output	
Rate	20 Hz
Timing	+/- 1 ms
Latency over radio	40 ms
Latency over USB connection	23 ms
Synchronized measurement data	<1 ms

## Accuracy to a target moving at 1 m/s<sup>6</sup>

Horizontal	± (2 mm + 14 ppm) ± (0.007 ft + 14 ppm)
Vertical	± (2 mm + 14 ppm) ± (0.007 ft + 14 ppm)
Slope Distance	± (2 mm + 14 ppm) ± (0.007 ft + 14 ppm)

## TRACKER PERFORMANCE CHARACTERISTICS

*Autolock and Robotic Total Stations Only*

- Coaxial with telescope
  - Passive tracking capability
  - Active target capability
- |                                  |     |
|----------------------------------|-----|
| Number of Target ID channels     | 16  |
| Automatic lock on sighting prism | Yes |

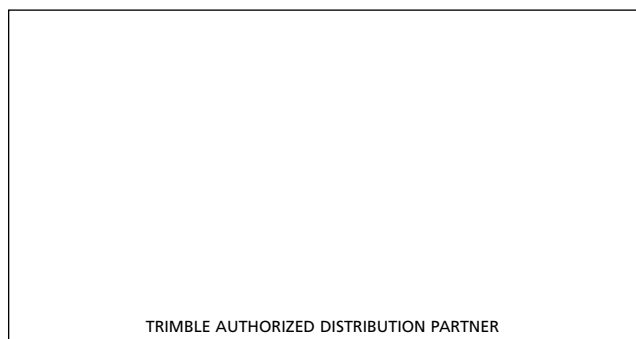
*Note: USB Stick or CF Card can be connected to Robotic holder or docking cradle to transfer information from controller to stick or card*

- 1 Standard clear: No haze. Overcast or moderate sunlight with very light heat shimmer.
- 2 Range and accuracy depend on atmospheric conditions, size of prisms and background radiation.
- 3 Kodak Gray Card, Catalog number E1527795.
- 4 The capacity at -20 °C (-5 °F) is 75% of the capacity at +20 °C (68 °F).
- 5 Dependent on selected size of search window.
- 6 The accuracy stated is valid for a static target or a target moving at constant speed. During acceleration or retardation, or a target moving with high speed > 15 kph (9.3 mph) the accuracy will decrease.

Specifications subject to change without notice.



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TRIMBLE AUTHORIZED DISTRIBUTION PARTNER

## NORTH AMERICA

Trimble Construction Division  
5475 Kellenburger Road  
Dayton, Ohio 45424  
USA  
800-538-7800 (Toll Free)  
+1-937-245-5154 Phone  
+1-937-233-9441 Fax

## EUROPE

Trimble GmbH  
Am Prime Parc 11  
65479 Raunheim  
GERMANY  
+49-6142-2100-0 Phone  
+49-6142-2100-550 Fax

## ASIA-PACIFIC

Trimble Navigation  
Singapore PTE Ltd.  
80 Marine Parade Road, #22-06  
Parkway Parade  
Singapore, 449269  
SINGAPORE  
+65 6348 2212 Phone  
+65 6348 2232 Fax



www.trimble.com