SPEC SHEET

Trimble ST30

SMART TARGET



Measure and move faster with the Trimble® ST30 smart target. With technology designed to boost accuracy, minimize errors and maximize efficiencies, the ST30 revolutionizes your survey and construction workflows to confidently turn challenges into success.

Features	
Passive tracking	✓
Active tracking	✓
Target ID	✓
Trimble GeoLock™ technology with Trimble RTX® corrections	✓
Automatic rod height	✓
Trimble Inertial Platform™ (TIP™) tilt compensation technology	✓
GNSS measurements	Optional subscription

Optical		
Tracking range [1]		
	Passive	1.5 m - 500 m
	Active	1.5 m - 600 m
Accuracy		
	Horizontal	< 2 mm RMS
	Vertical	< 1 mm RMS

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TIP compensated optical surveying (RMS)[5]		
Rod height	**Horizontal error**	**Vertical error**
0.2 m	TS + 1.5 mm + 0.1 mm/°tilt	TS + 1 mm + 0.1 mm/°tilt
1.6 m	TS + 2 mm + 0.2 mm/°tilt	TS + 1 mm + 0.1 mm/°tilt
2.0 m	TS + 2.5 mm + 0.25 mm/°tilt	TS + 1 mm + 0.1 mm/°tilt

Note on Optical TIP measurements: The stated accuracies reflect degrees tilted from the vertical axis. For example, measuring tilted 5 degrees right-side up yields the same accuracy as measuring tilted 5 degrees upside down. For tilt angles above 35 degrees the accuracy can be affected by side effects like rod bending. This can be mitigated if rod height is kept minimal.

Optical hardware

Prism constant	+6.2 mm
Number of channels for Active tracking	8
360 Prism configuration	8 prisms, 2 cm diameter each
Prism coating	Silver
Tracking LEDs wavelength	780 nm
Viewing angle	30°

GNSS

Satellite tracking	GPS: L1C/A,L2C,L5 GLONASS: L1C/A,L2C/A GALILEO: E1, E5A QZSS: L1C/A, L2C, L5 NavIC (IRNSS): L5 BEIDOU: B1,B1C,B2A SBAS: WAAS, EGNOS, GAGAN, MSAS, SDCM
Operating modes	Autonomous, SBAS, Network RTK, RTX
Accuracy [2, 3, 6]	
SBAS [7]	Horizontal: 0.6 m RMS Vertical: 1.2 m RMS
Single baseline (<30 km)	Horizontal: 10 mm + 1 ppm RMS Vertical: 20 mm + 1 ppm RMS
Network RTK [4]	Horizontal: 10 mm + 0.5 ppm RMS Vertical: 20 mm + 0.5 ppm RMS
Trimble CenterPoint® RTX	Horizontal: 20 mm + 1 ppm RMS Vertical: 50 mm + 1 ppm RMS < 1 min convergence time in Trimble RTX Fast regions < 15 min convergence time in non Trimble RTX Fast regions
TIP compensated GNSS surveying (at 2 m) [5]	Horizontal: (RTK or RTX) + 3 mm + 0.3 mm/° tilt

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Automatic rod height

Supported rod	Trimble ST Rod telescoping 1.55 m to 2.6 m (1.12 kg) (p/n 133119)
Update rate	1 Hz
Height measurement accuracy	± 0.6 mm RMS

Communications

USB-C	Supports USB 2.0 full speed communications for firmware update

Wireless communications

NFC	Yes	
Bluetooth® wireless technology[8]	Bluetooth Low Energy version 5.4	
	Frequency	2.4 GHz
	Max radiated power (EIRP)	+20 dBm (100 mW)

Battery/Power

Battery	Trimble Li-35 Li-Ion (7.26 V typical, 35 Wh) Rechargeable, removable Lithium-ion smart battery with LED status indicators Part number: 120200 and 220200
External power	ST30 can be powered by USB-C Power Delivery source (battery charging not supported) Compatible USB Power Delivery: 5 V/2.25 A and 9 V/1.25 A minimum
Battery operating time at +25 °C (+77 °F)	• Passive: No battery needed • Passive with rod height: 25 hours • Passive with GNSS: 10 hours • Active Low LED power with GeoLock: 4.5 hours • Active High LED power with GeoLock: 3.5 hours

Mechanical

Dimensions (H × W)	190.5 x 129 mm
Trimble standard target height	135 mm
Weight	1.25 kg with internal battery
	1.0 kg without internal battery

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Environmental	
Operating temperature	-20 °C to +50 °C (-4 °F to +122 °F)
Storage temperature	-30 °C to +70 °C (-22 °F to +158 °F)
Humidity	5-95%, non condensing, MIL-STD 810H Method 507.6 Procedure II
Ingress protection	IP67 for temporary submersion to depth of 1 m, dustproof
Salt spray	MIL-STD-810H Method 509.7
Drops, shock and vibration	
Drops	Designed to survive a 2.6 m pole drop onto concrete
Vibration	Non-operating, MIL-STD-810H Method 514.8E.1, Category 24
	Operating, MIL-STD-810H Method 514.8 C-2, Category 4, vertical profile
Shocks	Operating, MIL-STD 810H Method 516.8, procedure 1, fig 516.8-3

General	
What's in the box	• Trimble ST30 smart target • Trimble Li-35 battery • USB-C cable (2 m) • Bluetooth antenna • Carry case
Pole mount	Female ⅝ in. thread

Supported hardware and field software	
Total stations	Active Tracking: Compatible with Trimble RTS series, Trimble SPS series, and select Trimble S series total stations (all S7, S9, and S9 HP models, as well as S5 models equipped with the Active Tracking option).
	Optical tilt-compensated measurements: Compatible with Trimble S, SPS, RTS series instruments with DR+ EDM and equipped with BLR radio
	Passive Tracking Only: Trimble SX12, Trimble Ri
Controllers	Trimble TSC5, TSC510, TSC7, TSC710, T110, T7, and T70 Android™ and Windows® operating system devices running supported apps
Radio	Trimble Empower™ EM140 module
Field software	Trimble Access™ 2026.20 or later
	Trimble FieldLink 2026.2.0 or later
	Trimble Siteworks 2.0 or later

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Trimble Protected protection plans

Add a Trimble Protected protection plan for worry-free ownership over and above the standard Trimble product warranty. Added enhancements include coverage for wear & tear, environmental damage, and more. Accidental damage is covered with Premium plans, available only at point-of-sale in selected regions. For details, visit trimbleprotected.com or contact a local Trimble dealer.

Features and availability may vary by model, region or configuration.

1. Standard clear atmosphere: No haze. Overcast or moderate sunlight with very light heat shimmer. Range may vary with instrument and EDM type.
2. Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry, interferences, and atmospheric conditions. Always follow recommended practices.
3. Precision and reliability may be subject to anomalies due to multipath, obstructions, satellite geometry, and atmospheric conditions. The specifications stated recommend the use of stable mounts in an open sky view, EMI and multipath clean environment, optimal GNSS constellation configurations, along with the use of survey practices that are generally accepted for performing the highest-order surveys for the applicable application including occupation times appropriate for baseline length. Baselines longer than 30 km require precise ephemeris and occupations up to 24 hours may be required to achieve the high precision static specification.
4. Network RTK PPM values are referenced to the closest physical base station.
5. TIP references the overall positioning error estimate at the tip of the surveying pole throughout the tilt compensation range. Prism/RTK refers to the estimated horizontal precision of the underlying Optical/GNSS position, which is dependent on factors that affect solution quality. The x mm constant error component accounts for residual misalignment between the vertical axes of the receiver and the built-in Inertial Measurement Unit (IMU) after factory calibration, assuming the receiver is mounted on a ST30 carbon fiber range pole which is properly calibrated and free from physical defects. The tilt-dependent error component is a function of the quality of the computed tilt azimuth, which is assumed here to be aligned using optimal conditions.
6. RMS performance based on repeatable in field measurements. Achievable accuracy and initialization time may vary based on type and capability of receiver and antenna, user's geographic location and atmospheric activity, scintillation levels, GNSS constellation health and availability and level of multipath including obstructions such as large trees and buildings.
7. Depends on SBAS system performance.
8. Bluetooth type approvals are country specific.

Specifications subject to change without notice.

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