

Robotic Total Station

GT-1200/GT-600



Superior performance and precision for all survey and construction applications

The Ultimate Total Station

GT-1200/GT-600

With the GT-1200/GT-600, you get the efficiency of a single-operator robotic system, the power of long-range reflectorless measurements, and the versatility of Hybrid Positioning™, all in your choice of 1", 2" or 3" GT-1200 models or 2", 3" or 5" GT-600 models.

Ultra powerful

Improved, intelligent Ultrasonic motor control provides smoother operation with less wear and tear. Ideal for survey, vertical construction or machine guidance, the solution is designed to stake or layout more points in less time even in challenging conditions.

Ultra accurate

Improved, UltraTrac™ prism tracking for challenging job site environments utilizes optical sensing combined with high-speed Ultrasonic motor control. Whether working at a distance or up close, the instrument maintains prism lock making you more productive in any environment.

Ultra productive

Combine and conquer by accelerating your productivity with our hybrid solutions that utilize both GNSS and robotics so you can capture the shot, regardless of tree cover, loss of line of sight, or hard to reach points. Get to the next level of performance to tackle any project in a fraction of the time.

10 Hz update rates for faster more efficient staking

180°/sec turning speed for exceptional productivity

30% smaller and lighter than any other Topcon series robotic instrument

Stay productive, stay confident with UltraTrac™ prism lock technology

GNSS hybrid ready so you can handle any job site





- 1 Fast and powerful EDM – 1,000 m (3,280 ft) non-prism and 5,000 m (16,404 ft) prism range
- 2 Rugged waterproof and dustproof IP65 design
- 3 Bright color touchscreen display for on-board data collection
- 4 Integrated Bluetooth® and advanced LongLink™ communication for up to 600 m (1,968 ft) fully robotic range
- 5 Direct Drive motors with a turning speed of 180° per-second
- 6 Advanced UltraTrac technology
- 7 Raised multi-key functionality
- 8 Add the RC-5A remote for up to 600 m (1,968 ft) “single tap” prism re-acquisition

Your return on investment

An MEP contractor saved over \$200,000 in labor laying out over 128,000 points for sleeves and inserts over the span of a multiple building project with 109 floors. [HPS Mechanical Case Study](#)

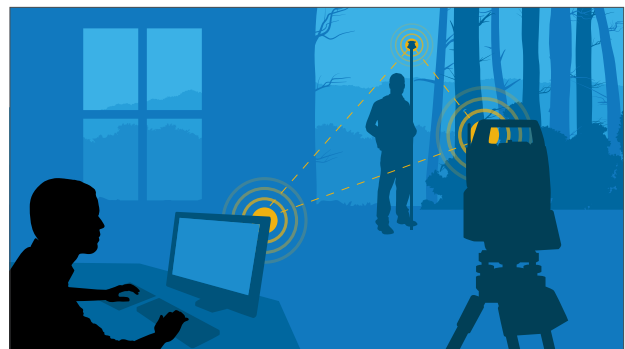
“ The bottom line is that a team equipped with a robotic total station can be five times as fast as team armed only with a set of drawings and a measuring tape. ”

MCAA study

Workdays turned into workflows

Bridge the gap between your mobile workforce and office staff with faster, more efficient cloud-based MAGNET® Enterprise services.

- Use the Point Manager plug-in for Revit and AutoCAD for automated point creation
- Secure connectivity to your active job sites as well as heavy machines using Sitelink3D™
- Instant file sharing with both Autodesk® AutoCAD Civil 3D and Bentley MicroStation



ACCELERATE

PRODUCTIVITY



GT-1200

+



FC-6000 with
MAGNET Field

+



HiPer VR

+



MAGNET
Office



GT-1200/GT-600 Robotic Total Station

- 10 Hz update rates to the FC-6000 field computer for more efficient staking
- Ultrasonic Direct Drive motors with 180° turning speed for exceptional productivity
- 30% smaller and lighter than any other Topcon series robotic instrument
- Optimize productivity by combining the GT-1200/GT-600, FC-6000, and MAGNET software with a HiPer series receiver



FC-6000 Field Computer

- Increased processing speed for data sets large and small with improved graphics
- LongLink™ Bluetooth provides two times longer range than class 1 Bluetooth
- Long lasting, hot swappable battery and an internal battery for additional runtime
- Optional external keyboard and docking station further enhance productivity



HiPer VR Receiver

- Automatically tracks every satellite constellation signal now and into the future
- Withstand the harshest environments with rugged IP67 design
- Compact form factor ideal for Millimeter GPS and Hybrid Positioning
- Capture mis-leveled field measurements out of plumb by as much as 15°



MAGNET Software Suite

- Streamline your most-used routines and ensure a fast and easy data connection from field to office
- Faster, customizable applications for processing, field-to-finish and 3D construction
- Integrate robotic total station and GNSS with increased speed and productivity
- Graphical intuitive software with low learning curve
- Microsoft Bing Maps® for satellite image background



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www.topconpositioning.com/gt1200-600series



GT-600V



Fast, accurate and versatile layout

Built for job site mobility, the flagship GT series Ultrasonic robotic total station gives you accurate and productive workflows for highly demanding building construction applications. Precisely lay out or survey more points in less time and improve quality and consistency. Easy-to-use digital processes with repeatably accurate results mean less rework and better quality control.

- Precise positioning with single-person operation
- High-speed advanced Ultrasonic motors
- Easy-to-use with MAGNET® Field, MAGNET® Field Layout or Topcon Digital Layout software
- Seamless integration into BIM workflows
- Available in 3 or 5 second accuracy levels
- Three-year instrument and five-year motor warranty
- Ultra-rugged IP65 dust and water resistance

TELESCOPE	
Length	142 mm
Aperture	EDM: 38 mm
Magnification	30x
Image	Erect
Resolving power	2.5"
Field of view	1°30'
Minimum focus	1.3 m (4.3 ft.)
Reticle illumination	5 brightness levels
ANGLE MEASUREMENT	
Horizontal and vertical circles type	Rotary absolute encoder
Detecting	2 sides
Angle Units	Degree/Gon/Mil (selectable)
ANGLE ACCURACY (ISO 17123-3 : 2001)	
GT-603V	3" (0.0010 gon/0.015 mil)
GT-605V	5" (0.0015 gon/0.025 mil)
Collimation compensation	On/Off (selectable)
Measuring mode	Horizontal angle: Right/Left (selectable) Vertical angle: Zenith/Horizontal/Horizontal ± 90° /% (selectable)
TILT ANGLE COMPENSATION	
Type	Liquid 2-axis tilt sensor
Minimum display	1"
Range of compensation	± 6' (0.0018 gon)
Automatic compensator	On (V and H/V) / Off (selectable)
Tilt offset	Can be changed
DISTANCE MEASUREMENT	
Measuring method	Coaxial phase shift measuring system
Signal source	Red laser diode 690 nm Class 3R (IEC60825-1 Ed. 3.0: 2014/FDA CDRH 21CFR Part1040.10 and 1040.11 (Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No.56, dated May 8, 2019.))
MEASURING RANGE	
Prism-2 X 1*2	1.3 to 2,000 m (6,561 ft.)
360° Prism ATP1/ATP1S	1.3 to 1,000 m (3,280 ft.)
Prism-5	1.3 to 500 m (1,640 ft.)
Reflective sheet RS90N-K*3	1.3 to 500 m (1,640 ft.)
Reflective sheet RS50N-K*3	1.3 to 300 m (980 ft.)
Reflective sheet RS10N-K*3	1.3 to 100 m (320 ft.)
Reflectorless (White)*2	0.3 to 800 m (2,624 ft.)
(Using the following reflective prism/reflective sheet target during normal atmospheric conditions ¹⁾)	
MINIMUM DISPLAY	
Fine/Rapid measurement	0.0001 m (0.001 ft./ 1/16 inch) or 0.001 m (0.005 ft./ 1/8 inch)
Tracking measurement	0.001 m (0.005 ft./ 1/8 inch) or 0.01 m (0.1 ft./ 1/2 inch)
Distance unit	m/ft./US ft./inch (selectable)

GT-600V

DISTANCE ACCURACY	
Circular or 360° Prism ATP1	Fine: 2 mm (0.006 ft.) + 2 ppm Rapid: 5 mm (0.016 ft.) + 2 ppm
Reflective sheet ^{*3}	Fine: 2 mm (0.006 ft.) + 2 ppm Rapid: 5 mm (0.016 ft.) + 2 ppm
Reflectorless (White) ^{*4}	Fine: 2 mm (0.006 ft.) + 2 ppm (0.3 to 200 m) 5 mm (0.016 ft.) + 10 ppm (200 to 350 m) 10 mm (0.032 ft.) + 10 ppm (350 to 1000 m) Rapid: 6 mm (0.020 ft.) + 2 ppm (0.3 to 200 m) 8 mm (0.026 ft.) + 10 ppm (200 to 350 m) 15 mm (0.049 ft.) + 10 ppm (350 to 1000 m)
Measurement mode	Fine measurement (single/repeat/average) Rapid measurement (single/repeat) / Tracking (selectable)
MEASURING TIME	
Fine measurement	1.5 sec + every 0.9 sec.
Rapid measurement	1.3 sec + every 0.6 sec.
Tracking measurement	1.3 sec + every 0.4 sec.
Temperature input range	- 35 to 60°C (in 0.1°C step)/ - 31 to 140°F (in 1°F step)
Pressure input range	500 to 1,400 hPa (in 0.1 hPa step), 375 to 1,050 mm Hg (in 0.1 mm Hg step), 14.8 to 41.3 inch Hg (in 0.01 inch Hg step)
ppm input range	-499 to 499 ppm (in 0.1 ppm step)
Prism constant correction	-99 to 99 mm (in 0.1 mm step)
Earth curvature and refraction correction	0 mm fixed for reflectorless measurement No/Yes K=0.142
Sea level correction	Yes K=0.20 (selectable) No/Yes (selectable)
<p>*1: Slight haze, visibility about 20 km, sunny periods, weak scintillation. *2: No haze, visibility about 40 km, overcast, no scintillation. *3: Figures when the laser beam strikes within 30° of the reflective sheet target. *4: Figures when using Kodak Gray Card White side (reflection factor 90%) and brightness level is less than 5,000 lx (a little cloudy). When performing reflectorless measurement, the possible measurement range and precision will change depending on the target reflection factor, weather conditions and location conditions.</p>	
ROTATION	
Max revolving speed (turning)	150 degrees per second
Max auto tracking speed	18 degrees per second

ULTRATRAC™ TRACKING RANGE	
Prism-2	1.3 to 800 m (2,624 ft.)
360 degree prism (ATP1)	2 to 600 m (1,960 ft.)
AUTO POINTING ACCURACY	
Standing still at 100 m or less	1.2 mm or better
Standing still greater than 100 m	0.3 mm (0.001 ft.) + 9 ppm
GUIDE LIGHT	
Light source	LED (red 626 nm/green 524 nm)
Visible distance	1.3 to 150 m
Visible angle	Right and Left/Upward and Downward: ± 4° (7 m/100 m)
Resolving power at center area (width)	4' (about 0.12 m/100 m)
Brightness	3 levels (bright/normal/dim)
MEMORY AND DATA	
Internal memory	1GB
External memory	USB flash memory (up to 32GB)
Visible angle	Asynchronous serial RS232C compatible USB Revision 2.0 (FS) Host (Type A) Client (Type mini-B)
LONGLINK™ BLUETOOTH® WIRELESS TECHNOLOGY	
Transmission method	FHSS
Modulation	GFSK (Gaussian-filtered frequency shift keying)
Frequency band	2.402 to 2.48 GHz
Bluetooth® profile	SPP, DUN
Power class	Class 1
Range	600 m (No obstacles, few vehicles or sources of radio omissions/interference in the near vicinity of the instrument, no rain, while in communication)
Authentication	Yes/No (selectable)
WI-FI	
Communication distance	10 m
Access method	Infrastructure mode/ad hoc mode
Frequency range	2,412 to 2,472 MHz (1 to 11ch)
Transmission specification	IEEE802.11b/g/n

GT-600V

POWER SUPPLY	
Power source	Rechargeable Li-ion battery BDC72
Working duration at 20°C	BDC72: approx. 4 hours BT-73Q (external optional) approx. 6.5 hours <i>Fine single measurement = every 30 seconds after worked 180 degrees and locking on prism</i>
Battery state indicator	4 levels
Auto power-off	5 levels (5/10/15/30 min/Not set) (selectable)
External power source	6.7 to 12 V
BATTERY (BDC72)	
Nominal voltage	7.2 V
Capacity	5,986 mAh
Dimensions (w x d x h)	40 x 70 x 40 mm
Weight	approx. 220 g
Charging time at 25°C	approx. 8 hours for two batteries using CDC77 charger
CHARGER (CDC77)	
Voltage	AC100 to 240 V
Charging temperature range	0 to 40°C
Storage temperature range	-20 to 65°C
Size (w x d x h)	94 x 102 x 36 mm
Weight	approx. 250 g
OPERATING SYSTEM	
Windows Compact 7	
DISPLAY	
Color touchscreen 4.3 inch Transmissive TFT VWGA color LCD	
Backlight LED 9 brightness levels	
Touch panel resistance sensitive analog type	

SENSITIVITY OF LEVELS	
Circular level	10' / 2 mm on tribrach 8' / 2 mm on main unit (optional)
Electronic circular levels	Graphic display range: 6' (inner circle) Digital display range: ± 6' 30"
OPTICAL PLUMMET	
Image	Erect
Magnification	3X
Minimum focus	0.5 m
ENVIRONMENTAL	
Operating temperature	Standard models: -20 to 50°C (-4 to 122°F) (no condensation)
Storage temperature	-30 to 60°C (-22 to 140°F) (no condensation)
Dust/Water rating	IP65 (IEC 60529: 2001)
Instrument height	192 mm from tribrach mounting surface
Size with handle (w x d x h)	212 x 172 x 355 mm
Weight (with handle/battery)	5.8 kg
CERTIFICATIONS AND STANDARDS	
USA FCC Class A	
Europe R&TTE-Class1	
Europe EMC-ClassB	
Canada ICES –ClassA	
Australia C-Tick N 13813	
Europe WEEE Directive	
Europe Battery Directive	
California Proposition 65	
California Perchlorate Material CR	
TELEC	

Real-Time Reality Capture Solution

GTL-1200



Construction Verification Every Day

GTL-1200

Quick layout and scanning with a single instrument

Wi-Fi enables point clouds to be transmitted wirelessly

Proven robotic total station design, integrated with a scanner

Full dome scan in seconds, now with 2x point cloud resolution

Scan density tailored to minimize software processing time

Point clouds accurately matched to BIM model coordinates



With this new instrument, one person can cut the time of a conventional topo in half and we no longer have to do the extra day of time and labor for that floor flatness and floor levelness report. That translates to a savings of around 60% in labor costs per pour.



Edgar Valenzuela
TAS Concrete engineer

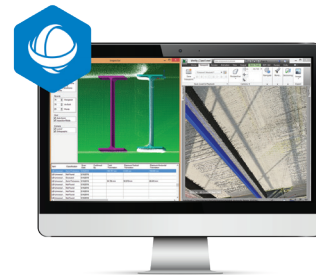


Point Cloud Processing

MAGNET® Collage, Collage Web and Collage Site

Collect, process, and analyze point cloud data from the GTL-1200.

- Effortless point cloud registration process
- Web-based sharing of point clouds and meshes
- Faster processing with true GPU utilization
- Integration with construction verification workflows
- Visualize scan data directly from a computer tablet



Construction Verification

ClearEdge3D Verity for Navisworks®

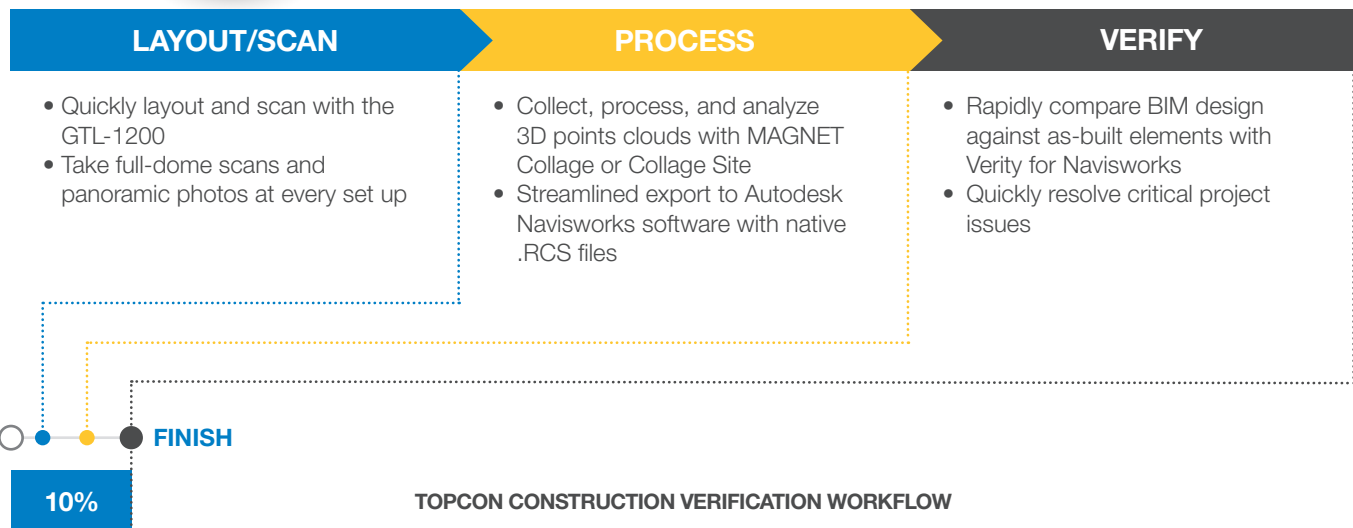
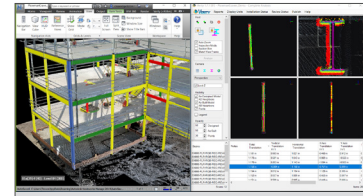
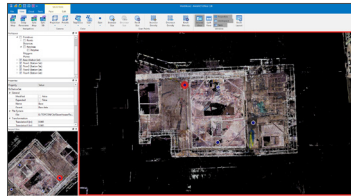
Verify construction quality in a fraction of the time by comparing as-built scans to BIM design and fabrication models.

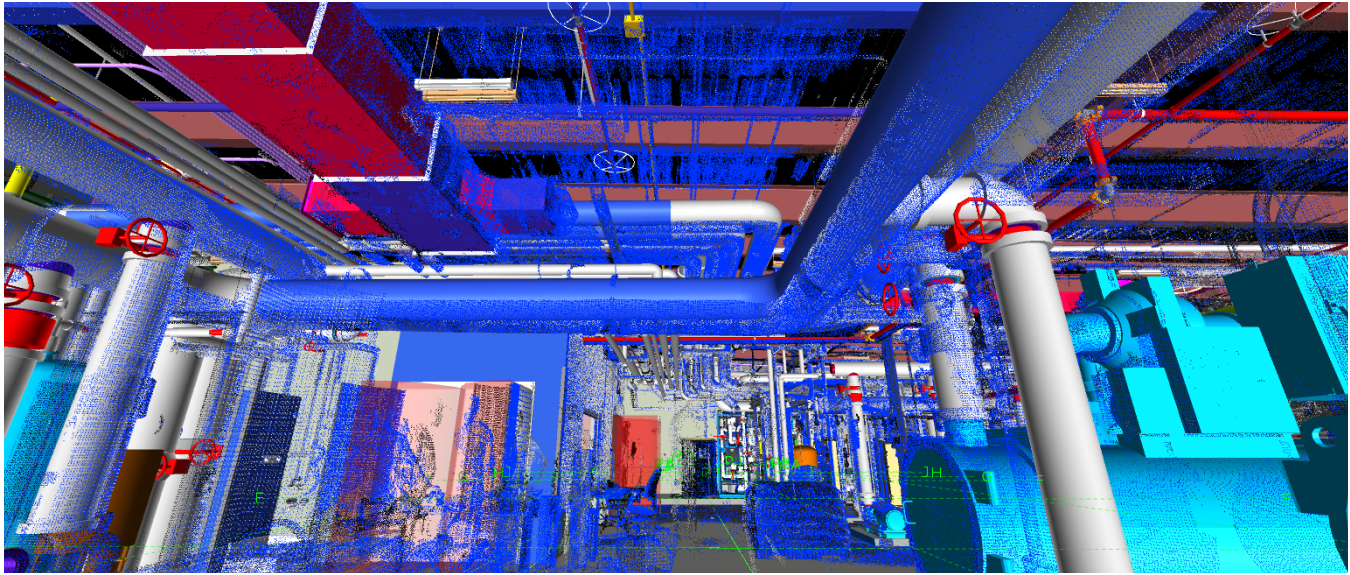
- Reduce risks to budgets and schedules
- Clear indication of whether as-builts are within tolerance
- Increase project profitability by avoiding rework
- Fully integrated with Autodesk® Navisworks
- Quickly update coordination model to as-built conditions



Simplified Construction Verification Workflows

Our scanning solutions help you work more productively, more efficiently, and keep teams better informed. Together with ClearEdge3D Verity, the simplified verification workflows cover a range of applications, including documenting job site as-built conditions and performing construction verification to ensure project accuracy is built 100% to plan.





Increase Productivity and Reduce Costs

Current construction industry estimates show rework and delays bring about 20% higher costs versus budget. Traditional spot checking of completed work leaves verification gaps that result in significant cost overruns and lost profits.

The Topcon real-time construction verification workflow:

- Offers complete scan versus BIM construction verification that’s 10 times faster than traditional methods
- Transforms spot checking to a digital real-time reality capture solution to layout, scan, and verify every day
- Provides digital reports with visual heat maps combined with numerical offset data for as-built confirmation

Applications include:



Mechanical / Plumbing



Structural Steel



Structural Concrete



Plant / Equipment Installation



Layout

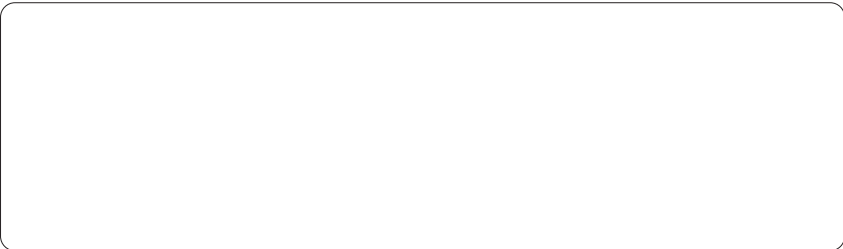


Prefabricated / Modular



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www.topconpositioning.com/gtl-1200



3D Layout Navigator

LN-150



Simple, Precise Layout Navigation

World's first 3D positioning system designed for construction layout

LN-150

The first time you see it, you know it's unlike anything you've experienced before. Everything about the LN-150, from the advanced technology inside, to its clean and innovative design, is a game changer for layout. With Topcon time-proven and robotic total station technologies, the instrument offers a totally new tool that's easy to use, without sacrificing the accuracy and versatility needed for all types of construction layout.

With the press of just one button, the LN-150 automatically self-levels and is ready for action. Pair it with a hand-held, touchscreen controller and you are ready to go to work.

With a ruggedized field controller, call up a simple point layout or large CAD drawings — right in the palm of your hand, anywhere on the job site. Display the design point or line that needs to be staked out, then touch it and the LN-150 immediately points to the exact location. It can also lock onto a prism and guide you to the next design points. One-person layout has never been this easy.

From traditional utility layout, to foundations, electrical, plumbing, walls, ceilings, HVAC, and much more — layout anything on the job site up to 130 m from the LN-150. Never before has construction layout been so powerfully simple.

Building interiors

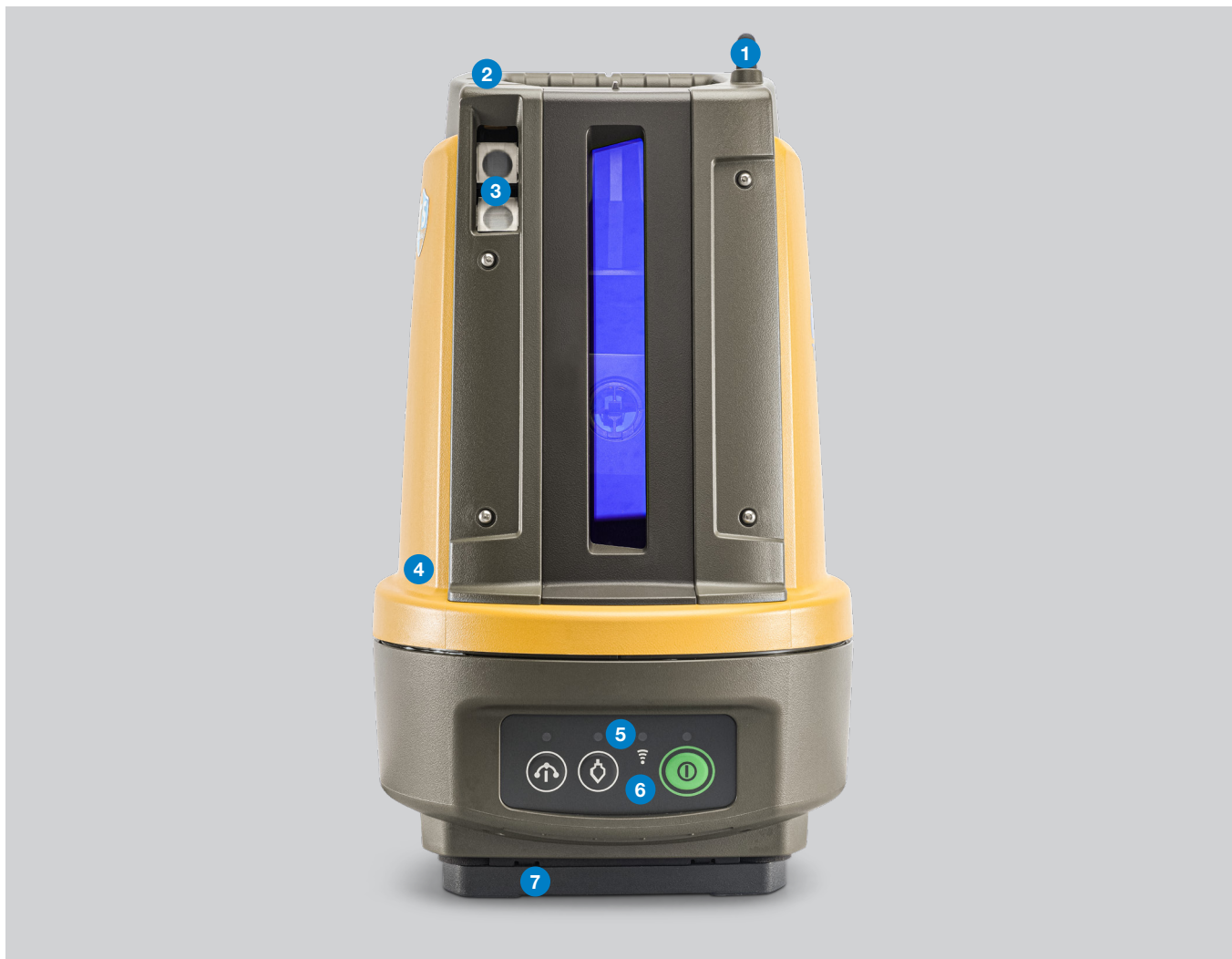
Mechanical, electrical, plumbing

Foundations and footings

Utilities and general layout

Construction layout





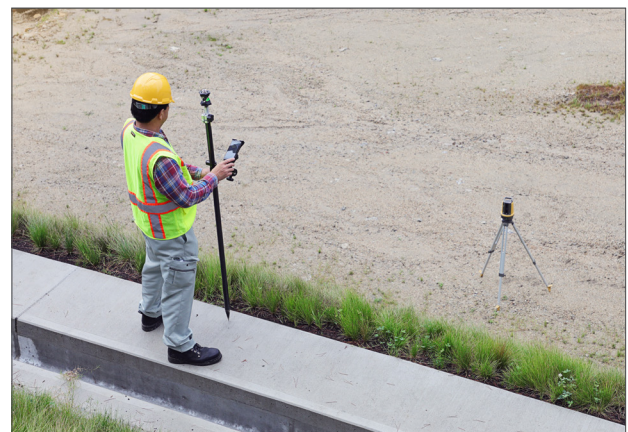
- 1 Interference-free communications
- 2 Easy-grip carrying handle
- 3 High-visibility guide lights
- 4 Completely sealed waterproof and dustproof housing
- 5 LED indicators and bright laser plummet
- 6 Easy, one-button setup
- 7 Self-leveling base

3D layout tool

The LN-150 is a compact, self-leveling, easy-to-setup 3D layout tool designed for construction applications. Use the LN-150 in place of traditional methods such as tapes or other layout tools. Compact, rugged and lightweight, the LN-150 is ideal for construction layout and as-builts.

Building Information Modeling (BIM)

Maintain coordination throughout your projects. Knowing what was done before and working from the same design plan is critical to keep on schedule and avoid costly collisions. With Topcon BIM solutions, you stay connected to the same design.



Intuitive, Self-leveling Robotic Total Station



Rugged compact design

- Small and lightweight
- Waterproof – dustproof design
- Easy to carry
- Completely sealed housing



Easy setup and operation

- On the ground or decking
- Mounts on tripod or column clamp
- Automatic self-leveling
- Alerts user if disturbed



Advanced 3D measuring and layout

- Built-in wireless or Bluetooth® communication connectivity
- 130 m working range
- Automatically turns to layout points
- Tracks a standard prism



Easy to perform as-built checks

- Fast and accurate
- Reliable quality control
- Identify changes from original plans
- Ensure accurate record keeping

Key Components

- LN-150 3D Layout Navigator
- New BDC72 batteries and CDC77 battery charger offer improved working duration
- Carrying case
- TSshield® for theft deterrence and location tracking
- MAGNET Construct optional



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www.topconpositioning.com/ln-150

3D Laser and Field Software for Building Construction

LN-50 with Digital Layout software



User-friendly solution
for layout and measuring

Portable, lightweight,
and easy to use

Easy one-button,
self-leveling setup

Wi-Fi or long-range
Bluetooth®

Layout or measure
up to a range of
50 meters (164 feet)



Dedicated for use
with Topcon Digital
Layout field software



Digital Layout

Construction layout software

- Step-by-step guide to streamline routines and avoid missteps
- Compatible with industry-standard CAD files
- Create PDF reports to summarize work progress and productivity
- Support for

 Windows +  android

Construction layout for building contractors

The LN-50 Layout Navigator provides precise positioning with easy setup, lightweight jobsite mobility, and productive workflows for demanding building construction and BIM applications. Together with our new Digital Layout software, this solution is designed to help new users quickly become adept with digital positioning, enabling them to accurately lay out more points in less time and avoid errors that lead to costly rework.



Self-leveling



Laser
plummet



LongLink™
Bluetooth®



Guide
lights



Your field layout solution

Combining the LN-50 with the intuitive Digital Layout field software enables new and experienced contractors to quickly become more efficient in digital layout, increasing accuracy and productivity.



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Machine Control Station

PS Series



For the toughest requirements,
reliable and always in action
for your needs

Designed for Machine Control. Superior Technology

PS-200 Series

The PS-200 is a professional grade robotic total station, designed for toughest Machine Control use cases. exclusive LongLink™ communication, and an incredibly powerful EDM.

LPS-Setup preinstalled

With LPS-Setup you can get your PS-200 up and running in no time. Load your control points via the integrated USB interface and choose from various stationing options. Your robotic total station is ready for use in just a few minutes and controls your construction machine reliably - in any weather and even in difficult environments.

PowerTrac™ tracking technology

The revolutionary PowerTrac™ engine dramatically increases power for prism tracking. Employing entirely new optics, laser system, and further advanced algorithms, PowerTrac™ provides the unsurpassed ability to keep tracking a moving prism even under the toughest environmental conditions.

LPS-Setup preinstalled

PowerTrac™ tracking technology

Ultra-powerful advanced EDM

Exclusive LongLink™ communications

Advanced angle accuracy

Rugged, waterproof design



LongLink™

The exclusive LongLink™ communications functionality in every PS Series model provides operational capabilities never before offered in a robotic total station.



- 1 600 m range
LongLink™ functionality
 - 2 Fast and powerful EDM
1,000 m non-prism range
 - 3 Advanced angle accuracy
- 4 Rugged waterproof/
dustproof IP65 design
 - 5 Easy access USB Type
A/B flash drive port
 - 6 Color TFT QVGA display
- 7 Built-in *Bluetooth*® technology
 - 8 Ultra-fast servo motor technology
 - 9 PowerTrac™ tracking technology
 - 10 Backlit 25 key keyboard and
directional arrow key





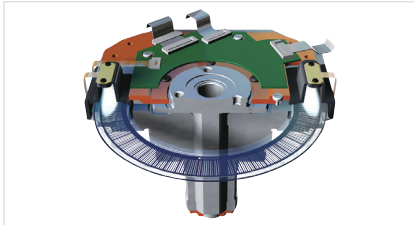
Rugged, waterproof design Ultra-powerful, advanced EDM

- 6,000 m prism range / 1,000 m non-prism range
- Less than 1-second fine measurement
- Coaxial red laser pointer
- Pinpoint, precise beamspot



Easy access USB 2.0 memory

- Environmentally protected
- Compatible with industry standard USB memory stick



Advanced angle accuracy

- Self-calibration
- Proven high accuracy technology
- Angle encoder "Best-in-Class"



Rugged, waterproof design

- Waterproof/dustproof IP65 design handles the toughest environments
- Magnesium-alloy housing providing stable angle accuracy
- Graphic display and alphanumeric keyboard (standard)



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