

GTL-1200

 **TOPCON**

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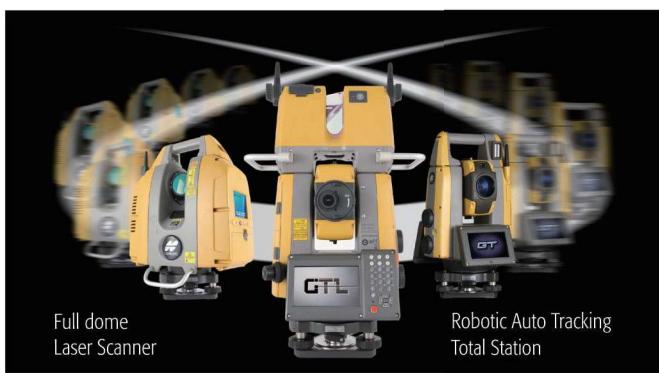
Laser Scanner Total Station



Get more density point cloud data!

- Total station surveying and laser scanner measurement in a single unit
- Twice the point cloud density of conventional machines
- Ideal for construction management by BIM
- Ideal for civil engineering, surveying, and maintenance management
- Onboard program MAGNET Field

One single unit operation saves work time drastically!!



Drastic reduction of the investment cost, the working hours and the number of workers!

Robotic total station and full dome laser scanner got integrated into GTL-1200 ! In addition to the investment cost, GTL-1200 improves the workflows. It gives you more benefits.

Investment cost

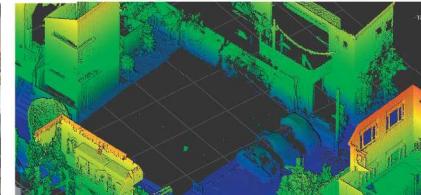
Working hours

Number of workers

Applications for GTL-1200

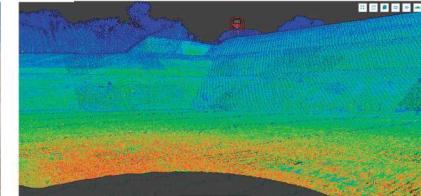
Works for Survey/Registered land & building investigator

Enabled by MAGNET Field and office software, GTL-1200 efficiently performs land survey application. You can leverage GTL-1200 for public survey works like control points establishments. Regarding terrain survey, not only the general survey works but also you can scan terrains to capture 3D point clouds.



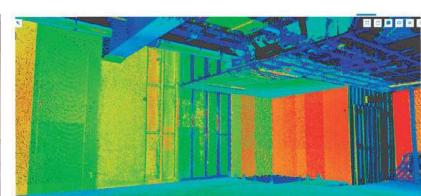
ICT construction

ICT construction is to promote the productivity improvements of the construction sites. Especially, laser scanner, UAV technologies have been leveraged for terrain survey, progress and deliverable management. You can remarkably save the construction time of earthworks, paving, slope shaping, structure installation works and inspection documents submission.



BIM (Building Information Modeling)

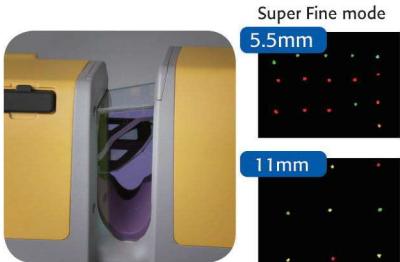
The divers BIM applications or GTL-1200 include scanning terrains, As-built checking for refurbishment of outdoor and indoor area. You can leverage 3D point clouds data for the design data creation. Once you complete the scanning at the site, you can utilize it for the maintenance and renovation afterwards.



Main features

Improve scan speed & point cloud density

A full dome scan completes about 1 minute. You can get 3D point cloud data quickly. GTL-1200 has a super fine mode. Fine spacing of point clouds can be obtained more than before so you can respond to a wider range of work types than ever before.



One man survey

As robotic total station, one man survey can be done to measure each point. Besides that, those area which cannot be scanned such as inside the bush, can be measured with total station.



Data storage on SD card

Data storage is done on SD card. The points measured by total station and 3D point cloud data captured by scanner are both stored on SD card as the package file.

Various types of measuring targets

For high precise measurement, it can use the prism as well as reflective target. Reflectorless mode is also available. 360 degree prism is useful for the control points to be measured from any scanning positions.



Laser pointer

It can emit the precise laser point by tapping the button. The rod man can move to the point with laser pointer.

Set Collection

GTL-1200 can be purely used for Surveying. Set collection can be done automatically.



Field
Highly graphical and intuitive data collection and stakeout software



MAGNET Field is a powerful and intuitive field application software that enables you to collect survey mapping data and perform construction and road layout using total stations, levels, GNSS receivers and GTL-1200.

Allied Office software **CLEAREDGE^{3D}**

Faster, More Accurate 3D Modeling



Automatically Extract BIM Model Elements from Point Cloud Data



Construction Verification Software



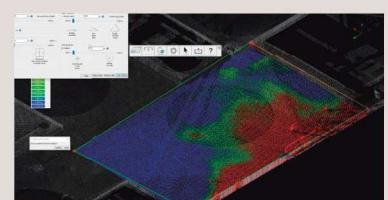
Automatically Compare Point Clouds vs BIM Model and Visualize Installation Accuracy



Floor Flatness and Levelness Analysis Software



Efficiently Analyze Floor Flatness and Levelness Using Point Cloud Data



SPECIFICATIONS

Type	Laser Scanner Total Station	
Model	GTI-1203	
Auto Pointing /Auto Tracking / Motor		
Auto Pointing	●	
Auto Tracking	●	
Motor Type	Direct drive by ultrasonic motor	
Rotation speed/Auto Tracking speed	180 degree/sec / 20 degree/sec	
Auto Pointing/Auto Tracking distance measuring range ^{*1}	360 degree Prism ATP1/ATPI: 2 to 600m ^{*2} Prism-5: 1.3 to 500m Prism-2: 1.3 to 1,000m Reflective sheet RS10/30/50: 5 to 50m ^{*3} RS90N-K: 10 to 50m ^{*5}	
Telescope		
Magnification / Resolving power / Length / Aperture / Image / Field of view / Minimum focus	30x / 2.5" / 142mm / 38mm (EDM: 38mm) / Erect / 1 degree 30' (26m / 1,000m) / 1.3m	
Angle measurement		
Minimum display	1" / 5"	
Accuracy	3"	
Range of compensation	+/- 6'	
Distance measurement		
Laser classification ^{*4}	Reflectorless mode: Class 3R Prism and reflective sheet: Class 1	
Measuring range	Reflectorless ^{*6} : 0.3 to 800m (to 1,000m) ^{*7} Reflective sheet ^{*8} : RS90N-K : 1.3 to 500m, RS50N-K : 1.3 to 300m, RS10N-K : 1.3 to 100m Prism-5 ^{*9} : 1.3 to 500m Prism-2 ^{*9} : 1.3 to 5,000m 360 degree Prism ATP1/ATPI: 1.3 to 1,000m	
Minimum display	Fine measurement: 0.0001m/0.001m Rapid measurement: 0.0001m/0.001m Tracking/Road measurement: 0.001m/0.01m	
Accuracy ^{*5} (Fine measurement)	"Reflectorless": (2+2ppm X D)mm ^{*10} Reflective sheet ^{*8} : (2+2ppm X D)mm Prism: (1+2ppm X D)mm ["]	
Measuring time ^{*11}	Fine measurement ^{*11} : Less than 1.5 sec + every 0.9 sec or less Rapid measurement ^{*11} : Less than 1.3 sec + every 0.6 sec or less Tracking/Road measurement ^{*11} : Less than 1.3 sec + every 0.4 sec or less	
OS / Control panel / Memory / Communication		
Operation system	Windows Embedded Compact 7	
Control panel	Display: 4.3 inch Transmissive TFT VWGA color LCD, touch panel, key backlight Keyboard: 24 keys with key backlight	
Trigger key	Yes (right side)	
Memory	Internal: 1GB (includes memory for program files) External: USB flash drive (up to 32GB)	
Data transfer	RS-232C compatible, USB2.0 (Type A / miniB)	
Wireless communication	Bluetooth Class 1, Usable range: to 100m ^{*12*13} W-LAN 302.11 n/b/g ^{*14}	

General	
Guide Light ^{*15}	Visible distance range: 1.3 to 150m, Resolving power at center area (width): 4'
Laser-pointer function ^{*15}	ON/OFF (selectable)
Sensitivity of levels	Electric circular levels (graphic): 6' (inner circle) Circular level (on base plate): 10' / 2mm Circular level (for main unit) (optional accessory) 8' / 2mm
Plummet	Optical plummet - Image:Erect, Magnification: 3X, Minimum focus:0.5m Laser plummet (optional) - Class 2 laser, beam diameter: less than 1mm in 1.3 m height, brightness adjustment function
Tribrach	Detachable
Dust and water resistance / Operating temperature	IP54 (IEC 60529:2001) / - 10 C° to 50 C°
Dimension	282 (W) x 180.7 (D) x 428 (H)mm
Instrument height	192.5mm from tribrach mounting surface
Weight	7.07 kg (except for BDC72)
Power Supply	
Power source BDC72	Rechargeable lithium-ion battery
Working duration BDC72	Approx. 1.3 hours ^{*16}
Scan Unit	
Scanning data rate	Maximum of 200,000 points per second
Laser classification ^{*4}	Class1
Wave length	870 nm
Resolving power	
Point increment	Super Fine 5.5mm (at 10m), Fine 11mm (at 10m), Standard 22mm (at 10m)
Maximum point number	V 8,640 points/line (270°), H1,520 points/line (360°)
Field of view	V: 270 degree / H: 360 degree (maximum)
Range of measurement ^{*17*19}	0.6 to 70m
Distance accuracy ^{*18*19}	σ 4mm@10m, σ 6mm@20m, σ 8mm@30m
Surface accuracy ^{*19}	σ 3mm@10m, σ 5mm@20m, σ 7mm@30m
Coordinate accuracy ^{*19}	σ 5mm@10m, σ 7mm@20m, σ 10mm@30m
Camera	
Field of view	V: 180 degree / H: 130 degree (maximum)
Number of effective pixels	5M pixels
Interface	
Card slot	SD card (Class 10 or more, up to 32GB (FAT32))

*1:No haze, visibility over 20 km, slightly overcast (less than 30000 lx), no scintillation. *2:When using a reflective sheet for Auto Pointing, the size of sheet (10 to 90 mm) must be selected to correspond to the distance being measured. Use smaller reflective sheets for shorter distances. *3:Figures when the Auto Pointing beam strikes within 15° of the reflective sheet target. *4: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.50, dated June 24, 2007.) *5 : Slight haze, visibility about 20 km, sunny periods, weak scintillation. *6 : Figures when using Kodak Gray Card White side (reflection factor 90%), brightness level is less than 5,000 lx and the laser beam strikes orthogonally the White side. *7 : Figures when using Kodak Gray Card White side (reflection factor 90%), brightness level is less than 500 lx and the laser beam strikes orthogonally the White side. *8 : Figures when the laser beam strikes within 30° of the reflective sheet target. *9 : Face the prism toward the instrument during the measurement with the distance at 10 m or less. *10 : Accuracy is (5 + 2 ppm X D) mm for distance range 0.3 to 0.66 m. *11 : No haze, visibility about 40 km, overcast, no scintillation. *12:No obstacles, few vehicles or sources of radio emissions/interference in the near vicinity of the instrument, no rain. *13:Usage range could be shorter depending on specifications of Bluetooth device to communicate. *14:Wireless LAN function may not be built in depending on telecommunications regulations of the country or the area where the instrument is purchased. Contact your local dealer for the details. *15:Guide Light and Laser-pointer dose not work at the same time. *16: Figures will change depending on the operating environment including temperatures and observation conditions. *17:Face the object toward the instrument. *18:Overall EDM accuracy considering surface accuracy and linearity. *19:Surface of reflection factor 90%



Standard Package Components

- Main unit
- Battery (BDC72) x3
- Charger(CDC77)
- Power cable(EDC113)
- Stylus pen
- Lens cap
- Lens hood
- Tool pouch
- Screw driver
- Lens brush
- Adjusting pin x2
- Hexagonal wrench
- Silicon cloth
- Quick guide
- Startup guide
- SD card
- USB flash drive (Manual)
- Laser caution sign-board
- Carrying case
- Carrying strap
- Export restrictions card

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