

## SPECIFICATIONS

|   |   |  |
|---|---|--|
| Type  | Laser Scanner Total Station   |  |
| Model   | GTL-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 <sup>1)</sup>                        | 360 degree Prism ATP1/ATP1S: 2 to 600m <sup>2)</sup><br>Prism-5: 1.3 to 500m<br>Prism-2: 1.3 to 1,000m<br>Reflective sheet RS10/30/50: 5 to 50m <sup>3)</sup><br>RS90N-K: 10 to 50m <sup>3)</sup>   |  |
| 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 <sup>4)</sup>  | Reflectorless mode: Class 3R<br>Prism and reflective sheet: Class 1   |  |
| Measuring range   | Reflectorless <sup>5)</sup> : 0.3 to 800m (to 1,000m) <sup>7)</sup><br>Reflective sheet <sup>8)</sup> : RS90N-K: 1.3 to 500m, RS50N-K: 1.3 to 300m, RS10N-K: 1.3 to 100m<br>Prism-5 <sup>9)</sup> : 1.3 to 500m<br>Prism-2 <sup>9)</sup> : 1.3 to 5,000m<br>360 degree Prism ATP1A/ATP1S: 1.3 to 1,000m |  |
| Minimum display   | Fine measurement: 0.0001m/0.001m<br>Rapid measurement: 0.0001m/0.001m<br>Tracking/Road measurement: 0.001m/0.01m  |  |
| Accuracy <sup>10)</sup> (Fine measurement)  | "Reflectorless <sup>5)</sup> : (2+2ppm X D)mm" <sup>10)</sup><br>Reflective sheet <sup>8)</sup> : (2+2ppm X D)mm<br>Prism: (1+2ppm X D)mm"  |  |
| Measuring time <sup>11)</sup>   | Fine measurement <sup>12)</sup> : Less than 1.5 sec + every 0.9 sec or less<br>Rapid measurement <sup>13)</sup> : Less than 1.3 sec + every 0.6 sec or less<br>Tracking/Road measurement <sup>14)</sup> : 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 WVGA color LCD, touch panel, key backlight<br>Keyboard: 24 keys with key backlight   |  |
| Trigger key   | Yes (right side)  |  |
| Memory  | Internal: 1GB (includes modemory for program files)<br>External: USB flash drive (up to 32GB)   |  |
| Data transfer   | RS-232C compatible, USB2.0 (Type A / miniB)<br>Bluetooth Class 1, Usable range: to 100m <sup>15)</sup>  |  |
| Wireless communication  | W-LAN 802.11 n/b/g <sup>16)</sup>   |  |
| General   |   |  |
| Guide Light <sup>15)</sup>  | Visible distance range: 1.3 to 150m, Resolving power at center area (width): 4'   |  |
| Laser-pointer function <sup>15)</sup>   | ON/OFF (selectable)   |  |
| Sensitivity of levels   | Electric circular levels (graphic): 6" (inner circle)<br>Circular level (on base plate): 10' / 2mm<br>Circular level (for main unit) (optional accessory) 8' / 2mm  |  |
| Plummet   | Optical plummet - Image: Erect, Magnification: 3X, Minimum focus: 0.5m<br>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 <sup>16)</sup>  |  |
| Scan Unit   |   |  |
| Scanning data rate  | Maximum of 200,000 points per second  |  |
| Laser classification <sup>15)</sup>   | 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°), H11,520 points/line (360°)  |  |
| Field of view   | V: 270 degree / H: 360 degree (maximum)   |  |
| Range of measurement <sup>17)</sup>   | 0.6 to 70m  |  |
| Distance accuracy <sup>18)</sup>  | σ 4mm@10m, σ 6mm@20m, σ 8mm@30m   |  |
| Surface accuracy <sup>19)</sup>   | σ 3mm@10m, σ 5mm@20m, σ 7mm@30m   |  |
| Coordinate accuracy <sup>19)</sup>  | 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% \*20: Processed with the smoothing function of MAGNET Collage at least Ver. 2.3 or later.



# GTL-1200

## Laser Scanner Total Station



### 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



### 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!

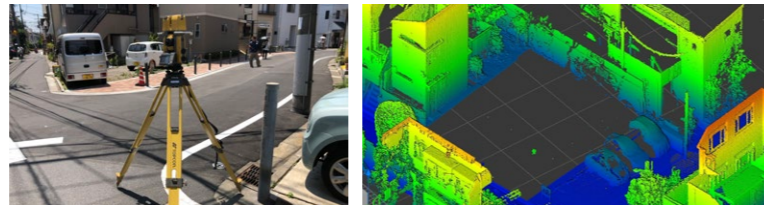
Robotic total station and full dome laser scanner got integrated into GTL-1200 ! In addition to the investment cost, GTL-1200 improves the workflows. It gives you more benefits.



## Applications for GTL-1200

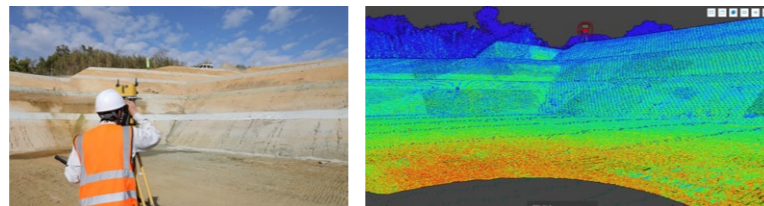
### Works for Survey/Registered land & building investigator

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.



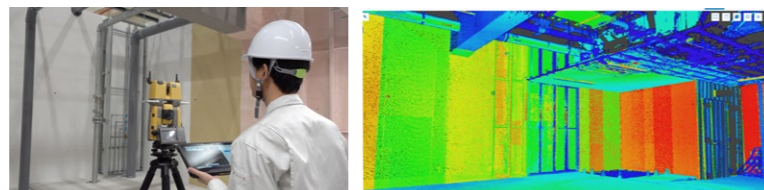
### ICT construction

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)

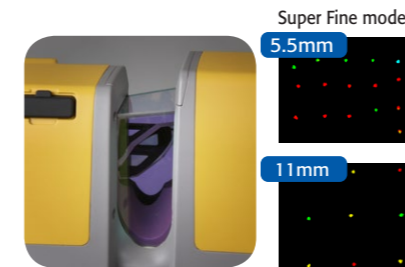
The divers BIM applications or GTL-1200 include scanning terrains, As-built checking for refurbishment of outdoor and indoor area. You can leverage 3D point clouds data for the design data creation. Once you complete the scanning at the site, you can utilize it for the maintenance and renovation afterwards.



## 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.

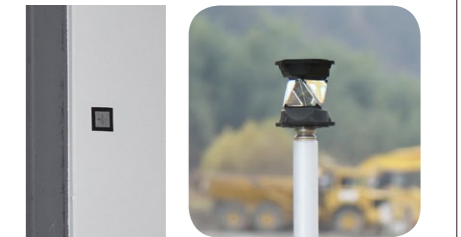


### Data storage on SD card

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.

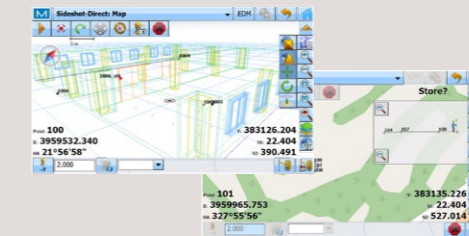
### Set Collection

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<sup>3D</sup>**

Faster, More Accurate 3D Modeling



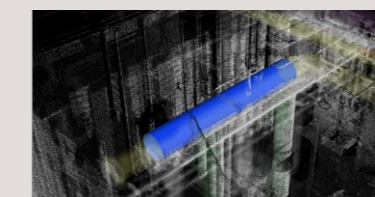
Automatically Extract BIM Model Elements from Point Cloud Data



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

