

# 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)<br>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<br>(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 <sup>1)</sup> ) |  |
| MINIMUM DISPLAY  |  |
| Fine/Rapid measurement   | 0.0001 m (0.001 ft./ 1/16 inch) or<br>0.001 m (0.005 ft./ 1/8 inch)  |
| Tracking measurement   | 0.001 m (0.005 ft./ 1/8 inch) or<br>0.01 m (0.1 ft./ 1/2 inch)   |
| Distance unit  | m/ft./US ft./inch (selectable)   |

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| DISTANCE ACCURACY   |   |
|---|---|
| Circular or 360° Prism ATP1   | Fine: 2 mm (0.006 ft.) + 2 ppm<br>Rapid: 5 mm (0.016 ft.) + 2 ppm   |
| Reflective sheet <sup>*3</sup>  | Fine: 2 mm (0.006 ft.) + 2 ppm<br>Rapid: 5 mm (0.016 ft.) + 2 ppm   |
| Reflectorless (White) <sup>*4</sup>   | Fine:<br>2 mm (0.006 ft.) + 2 ppm (0.3 to 200 m)<br>5 mm (0.016 ft.) + 10 ppm (200 to 350 m)<br>10 mm (0.032 ft.) + 10 ppm (350 to 1000 m)<br><br>Rapid:<br>6 mm (0.020 ft.) + 2 ppm (0.3 to 200 m)<br>8 mm (0.026 ft.) + 10 ppm (200 to 350 m)<br>15 mm (0.049 ft.) + 10 ppm (350 to 1000 m) |
| Measurement mode  | Fine measurement (single/repeat/average)<br>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)/<br>- 31 to 140°F (in 1°F step)  |
| Pressure input range  | 500 to 1,400 hPa (in 0.1 hPa step),<br>375 to 1,050 mm Hg (in 0.1 mm Hg step),<br>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<br>No/Yes K=0.142  |
| Sea level correction  | Yes K=0.20 (selectable)<br>No/Yes (selectable)  |
| <p>*1: Slight haze, visibility about 20 km, sunny periods, weak scintillation.<br/>*2: No haze, visibility about 40 km, overcast, no scintillation.<br/>*3: Figures when the laser beam strikes within 30° of the reflective sheet target.<br/>*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:<br>± 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<br>RS232C compatible<br>USB Revision 2.0 (FS)<br>Host (Type A)<br>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   |

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## POWER SUPPLY

|                          |   |
|--------------------------|---|
| Power source             | Rechargeable Li-ion battery BDC72   |
| Working duration at 20°C | BDC72: approx. 4 hours<br>BT-73Q (external optional) approx. 6.5 hours<br><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<br>8' / 2 mm on main unit (optional)                 |
| Electronic circular levels | Graphic display range: 6' (inner circle)<br>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