

# DT-300

# DT-300series

Digital Theodolite



## Brand new design with laser pointer for efficient alignment setting work!

Lightweight, compact angular measurement with high-precision laser guidance and up to 30 workdays of power

- Long-lasting Li-ion or AA battery life with up to 30 workdays<sup>\*2</sup> of power
- Convenient high-precision laser guidance
- Brand new product design utilizing Topcon premium quality total station components
- Embedded tilt sensor in 5" model
- Ultra-rugged IP66 dust and heavy rain protection

\*1 As of May, 2020 checked with Topcon as theodolite

\*2 In case of measuring angle with DT-309G/DT-309GL for 8 hours per day

## SPECIFICATIONS

| Model                               |                             | DT-305   | DT-305L                  | DT-309G   | DT-309GL                 |
|-------------------------------------|-----------------------------|--|--------------------------|---|--------------------------|
| Telescope                           | Length                      | 149 mm   | 152 mm                   | 149 mm  | 152 mm                   |
|                                     | Aperture                    | 45 mm  |                          |   |                          |
|                                     | Magnification               | 30X  |                          |   |                          |
|                                     | Image                       | Erect  |                          |   |                          |
|                                     | Field of view               | 1°30' (26 m/1,000 m)   |                          |   |                          |
|                                     | Resolving power             | 2.5"   |                          |   |                          |
|                                     | Minimum focus               | 0.9 m  | 1.0 m                    | 0.9 m   | 1.0 m                    |
|                                     | Stadia ratio                | 100  |                          |   |                          |
|                                     | Stadia constant             | 0  |                          |   |                          |
| Angle measurement                   | Method                      | Rotary absolute encoder  |                          |   |                          |
|                                     | Detecting                   | Horizontal: 1 sides  |                          |   |                          |
|                                     |                             | Vertical: 1 sides  |                          |   |                          |
|                                     | Minimum display             | 1" (0.0002 gon/0.01 mil)/<br>5" (0.001 gon/0.1 mil) (selectable)                   |                          | 10" (0.002 gon/0.05 mil)/<br>20" (0.005 gon/0.1 mil) (selectable) |                          |
| Accuracy <sup>*1</sup>              | 5"                          |  | 9"                       |   |                          |
| Display                             | Unit                        | 2 sides  |                          | 1 sides   |                          |
|                                     | Type                        | Automatic vertical compensator   |                          | —   |                          |
| Tilt angle compensation             | Range of compensation       | ±3' (±0.0555 gon)  |                          | —   |                          |
|                                     | Compensation constant       | Can be changed (compensation is done at the same time with vertical angle 0 point) |                          | —   |                          |
| Optical plummet                     | Magnification               | 3X   |                          |   |                          |
|                                     | Minimum focus               | 0.5 m  |                          |   |                          |
| Sensitivity of levels               | Circular level              | 10' / 2 mm   |                          |   |                          |
|                                     | Plate level                 | 30" / 2 mm   |                          |   |                          |
| Temperature                         | Operating temperature range | -20 to 50°C (-4 to 122°F) <sup>*2</sup>  |                          |   |                          |
|                                     | Storage temperature range   | -30 to 60°C (-22 to 140°F) (no condensation)                                       |                          |   |                          |
| Environmental durability            | Dust and water protection   | IP66 (IEC 60529: 2001)   |                          |   |                          |
| Power Supply (Standard)             | Power source                | 4 AA alkaline batteries  |                          |   |                          |
| Working duration at 20°C (Standard) | Theodolite only             | about 230 hours  |                          | about 250 hours   |                          |
|                                     | Laser only                  | —  | about 80 hours           | —   | about 80 hours           |
|                                     | Theodolite and laser        | —  | about 55 hours           | —   | about 55 hours           |
| Power Supply (Option)               | Power source                | BDC71 (Optional accessory)   |                          |   |                          |
| Working duration at 20°C (Option)   | Theodolite only             | about 300 hours  |                          | about 350 hours   |                          |
|                                     | Laser only                  | —  | about 100 hours          | —   | about 100 hours          |
|                                     | Theodolite and laser        | —  | about 70 hours           | —   | about 70 hours           |
| Tribrach                            | Type                        | Detachable   |                          | Fixing  |                          |
|                                     | Signal source               | —  | Red laser diode (633 nm) | —   | Red laser diode (633 nm) |
| Laser-pointer                       | Maximum output              | —  | 0.6 mW                   | —   | 0.6 mW                   |
|                                     | Laser Class                 | —  | Class 2                  | —   | Class 2                  |
|                                     | Laser beam range            | —  | 50 m (in daylight)       | —   | 50 m (in daylight)       |
|                                     | Size (with handle)          | 173 (D) X 181 (W) X 318 (H) mm<br>(Display on both sides)                          |                          | 173 (D) X 174 (W) X 318 (H) mm<br>(Display on one side)           |                          |
| Others                              | Weight                      | 4.1 kg (9.04 lb)<br>(with batteries and battery holder)                            |                          | 4.0 kg (8.82 lb)<br>(with batteries and battery holder)           |                          |

\*1: ISO 17123-3: 2001 \*2: No direct sunlight for using high temperatures of 50°C (122 °F).

### Standard components

- Main unit • DB-80 Battery holder • Lens cap • Tool pouch • Precision screwdriver • Lens brush • Hexagonal wrench (1.3 mm/2 mm/2.5 mm) • Adjusting pin • Wiping cloth
- Quick start manual • Carrying case • Carrying strap

### Optional accessories

- Plumb bob • Model 13 Diagonal eyepiece • BDC71 Battery • CDC77 Charger



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