

# Leica TS16

## Data sheet



Leica TS16 robotic total station is a self-learning hard worker, just like yourself. It combines the engaging **Leica Captivate field software**, **ATRplus** for a robust targeting performance, **PowerSearch** for prism fast search, a **camera** for image-assisted surveying and documentation. You can keep your instrument safe by adding **LOC8**, our theft deterrence and location solution. **AutoHeight** and the optional **DynamicLock** feature can make your work even more efficient. The TS16 is the key to absolute control over any surveying situation or environmental condition.

### LEICA TS16 ROBOTIC TOTAL STATION: SURVEY IT.

- **Best-in-class automated total station for the widest variety of measurement tasks and applications:** including one-person or two-person instrument operation for surveying and stakeout.
- **Topographic surveying to create digital reality for mapping:** control point measurements, adjustments, computations, and data collection with powerful coding and line work routines.
- **Highest efficiency and productivity for stakeout and construction measurements:** stakeout design data, as-built checks, BIM and clearance checks.
- **Site preparation and machine guidance in heavy construction projects:** site control, surveying, layout of design data, as-built checks, machine guidance, and road, rail and tunnel focused workflows.
- **Quick and reliable monitoring of locations, buildings, and objects in real-time in any environment:** perfect for campaign monitoring and scaling up to an automated monitoring solution.

leica-geosystems.com



- when it has to be **right**

**Leica**  
Geosystems

# Leica TS16 Total Station

## ANGLE MEASUREMENT

Accuracy <sup>1</sup> Hz and V	■ Absolute, continuous, diametrical	1" (0.3 mgon), 2" (0.6 mgon), 3" (1 mgon), 5" (1.5 mgon)
--------------------------------	-------------------------------------	--

## DISTANCE MEASUREMENT

Range <sup>2</sup>	■ Prism (GPR1, GPH1P) <sup>3</sup> ■ Non-Prism / Any surface <sup>4,9</sup>	0.9 m to 3,500 m R500: 0.9 m to >500 m R1000: 0.9 m to >1,000 m
Accuracy / Measurement time	■ Single (prism) <sup>2,5</sup> ■ Single (prism fast) <sup>2,5</sup> ■ Single (any surface) <sup>2,4,5,6</sup>	1 mm + 1 ppm / typically 2.4 s 2 mm + 1 ppm / typically 1.5 s <sup>11</sup> 2 mm + 2 ppm / typically 2 s <sup>7</sup>
Laser dot size	At 50 m	8 mm x 20 mm
Measurement technology	System analyser	Coaxial, visible red laser

## IMAGING

Overview camera	■ Sensor ■ Field of view ■ Frame rate	5 megapixel CMOS sensor 19.4° Up to 20 frames per second
-----------------	---	--

## AUTOMATIC AIMING - ATRplus

Target aiming range <sup>2</sup> / Target locking range <sup>2</sup>	■ Circular prism (GPR1, GPH1P) ■ 360° prism (GRZ4, GRZ122)	■ 1,500 m / 1,000 m ■ 1,000 m / 1,000 m
Accuracy <sup>1,2</sup> / Measurement time	ATRplus angle accuracy Hz, V	1" (0.3 mgon), 2" (0.6 mgon), 3" (1 mgon), 5" (1.5 mgon) / typically 3-4 s

## LASER GUIDE

Spot Size <sup>8</sup> / Range	■ Daylight: 30 mm @250 m ■ Darkness: 65 mm @300 m	250 m 500 m
--------------------------------	--	----------------

## POWERSEARCH

Range / Search time	360° prism (GRZ4, GRZ122)	300 m / typically 5 s
---------------------	---------------------------	-----------------------

## GUIDE LIGHT (EGL)

Working range / Accuracy		5 - 150 m / typically 5 cm @ 100 m
--------------------------	--	------------------------------------

## GENERAL

Operating System / Field Software	Windows EC7 / Leica Captivate with apps	
Processor	TI OMAP4430 1GHz Dual-core ARM® Cortex™- A9 MPCore™	
AutoHeight module for automatic instrument height measurement	■ Distance accuracy ■ Distance range	1.0 mm (1 Sigma) 0.7 m to 2.7 m
Display and keyboard	5" (inch), WVGA, colour, touch, face I standard / face II optional	37 keys, illumination
Power management	Exchangeable Lithium-Ion battery	Operating time up to 8 h
Data storage	Internal memory / Memory card	2 GB / SD card 1 GB or 8 GB
Interfaces	RS232, USB, Bluetooth®, WLAN	
Weight	Total station including battery	5.1 - 5.8 kg
Environmental specifications	■ Working temperature range ■ Dust & Water (IEC 60529) / Humidity	-20°C to +50°C IP55 / 95%, non-condensing

LEICA TS16 TOTAL STATIONS	TS16 M	TS16 A	TS16 G <sup>10</sup>	TS16 P	TS16 I
Angular measurement	✓	✓	✓	✓	✓
Distance measurement to prism	✓	✓	✓	✓	✓
Distance measurement to any surface	✓	✓	✓	✓	✓
Automatic target aiming (ATRplus)	✗	✓	✓	✓	✓
Laser Guide	✗	✗	✓	✗	✗
PowerSearch (PS)	✗	✗	✗	✓	✓
Overview camera	✗	✗	✗	✗	✓
Guide Light (EGL)	✓	✓	✗	✓	✓

<sup>1</sup> Standard deviation ISO 17123-3

<sup>2</sup> Overcast, no haze, visibility about 40 km, no heat shimmer

<sup>3</sup> 0.9 m to 2,000 m for 360° prisms (GRZ4, GRZ122)

<sup>4</sup> Object in shade, sky overcast, Kodak Gray Card (90% reflective)

<sup>5</sup> Standard deviation ISO 17123-4

<sup>6</sup> Distance > 500m: Accuracy 4mm+2ppm, Measurement time typ. 6s

<sup>7</sup> Up to 50m; max. measurement time 15 s for full range.

<sup>8</sup> Typical laser beam diameter on white, smooth surfaces with intensity 100%

<sup>9</sup> TS16G R30: 0.9 m to 30 m

<sup>10</sup> Angle accuracies 1" to 3", PinPoint R30 & R1000 variants available

<sup>11</sup> Initial measurement time typically 2 s



Laser radiation, avoid direct eye exposure.  
Class 3R laser product in accordance with IEC 60825-1:2014.

The Bluetooth® trademarks are owned by Bluetooth SIG, Inc. Windows is a registered trademark of Microsoft Corporation. Other trademarks and trade names are those of their respective owners. Copyright Leica Geosystems AG, 9435 Heerbrugg, Switzerland. All rights reserved. Printed in Switzerland - 2020. Leica Geosystems AG is part of Hexagon AB. 929657en - 11.20



Integrate with LOC8 - Lock & Locate

For more information visit: [leica-geosystems.com/LOC8](http://leica-geosystems.com/LOC8)

**Leica Geosystems AG**  
Heinrich-Wild-Strasse  
9435 Heerbrugg, Switzerland  
+41 71 727 31 31

- when it has to be **right**

**Leica**  
Geosystems