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 TS16 Total Station

ANGLE MEASUREMENT		
Accuracy [1] Hz and V	■ Absolute, continuous, diametrical	1'' (0.3 mgon), 2'' (0.6 mgon), 3'' (1 mgon), 5'' (1.5 mgon)
DISTANCE MEASUREMENT		
Range [2]	■ Prism (GPR1, GPH1P) [3] ■ Non-Prism / Any surface [4,9]	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) [2,5] ■ Single (prism fast) [2,5] ■ Single (any surface) [2,4,5,6]	1 mm + 1.5 ppm / typically 2.4 s 2 mm + 1.5 ppm / typically 1.5 s [11] 2 mm + 2 ppm / typically 2 s [7]
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 [2] / Target locking range [2]	■ Circular prism (GPR1, GPH1P) ■ 360° prism (GRZ4, GRZ122)	■ 1,500 m / 1,000 m ■ 1,000 m / 1,000 m
Accuracy [1,2] / 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 [8] / 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[10]	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)	✔	✔	✗	✔	✔

[1] Standard deviation ISO 17123-3
[2] Overcast, no haze, visibility about 40 km, no heat shimmer
[3] 0.9 m to 2,000 m for 360° prisms (GRZ4, GRZ122)
[4] Object in shade, sky overcast, Kodak Gray Card (90% reflective)
[5] Standard deviation ISO 17123-4
[6] Distance > 500m: Accuracy 4mm+2ppm, Measurement time typ. 6s
[7] Up to 50m; max. measurement time 15 s for full range.
[8] Typical laser beam diameter on white, smooth surfaces with intensity 100%
[9] TS16G R30: 0.9 m to 30 m
[10] Angle accuracies 1" to 3", PinPoint R30 & R1000 variants available
[11] 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**

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

- when it has to be **right**

Leica Geosystems