

Leica Viva TS12 Robotic Datasheet



Best-in-class Electronic Distance Measurement (EDM)

With PinPoint EDM, Leica Viva TS12 Robotic delivers the optimal balance of range, accuracy, reliability, beam visibility, laser dot size and measurement time.

- 1 mm + 1.5 ppm to prism
- 2 mm + 2 ppm to any surface
- 1000 m range without a prism



Best-in-class Robotic Surveying

Leica Viva TS12 Robotic uses years of experience to optimally combine the world's best total station sensors: angles, distances, drives and the patented PowerSearch target recognition camera.

- **Search** – the unique PowerSearch finds your prism within seconds
- **Lock** – Leica Viva TS12 Robotic stays locked onto your prism in the most demanding environments
- **Measure** – PinPoint EDM seamlessly harmonizes with precise angle sensors to complete the measurement process



Leica Viva TS12 Robotic

	TS12A	TS12P
Angle measurement	●	●
Distance measurement (Prism)	●	●
Distance measurement (Non-Prism)	●	●
Motorized	●	●
Automatic Target Aiming (ATR)	●	●
PowerSearch (PS)	–	●
Guide Light (EGL)	●	●
Remote Control Unit CS10 / RadioHandle	●	●

● = Standard

– = Not available

- when it has to be **right**

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Technical Specifications TS12 Robotic



Leica Viva TS12 Robotic

Angular Measurement



Accuracy Hz, V ¹	2" (0.6 mgon), 3" (1 mgon), 7" (2 mgon)
Display resolution	0.1" (0.1 mgon)
Method	absolute, continuous, diametrical
Compensation	Quadruple axis compensation
Compensator setting accuracy	0.5" (0.2 mgon), 1.0" (0.3 mgon), 1.5" (0.5 mgon)

Distance Measurement



Distance Measurement (Prism)	
Range²	
Round prism (GPR1)	3500 m (12000 ft)
360° prism (GRZ4, GRZ122)	2000 m (7000 ft)
Mini prism (GMP101)	2000 m (7000 ft)
Accuracy^{3,4} / Measurement Time	
Standard	1 mm + 1.5 ppm / 2.4 s
Tracking	3 mm + 1.5 ppm / < 0.15 s
Distance Measurement (Non-Prism)	
Range⁵	
PinPoint R400 / R1000	400 m (1310 ft) / 1000 m (3280 ft)
Accuracy^{3,6} / Measurement Time	
PinPoint R400 & R1000	2 mm + 2 ppm / typ. 3 s
General	
Display resolution	0.1 mm
Laser dot size (Non-Prism)	At 30 m: 7 mm x 10 mm, at 50 m: 8 mm x 20 mm

General



Telescope	
Magnification	30 x
Free objective aperture	40 mm
Field of view	1° 30' (1.66 gon) / 2.7 m at 100 m
Keyboard and Display	
Display / Keyboard	1/4 VGA (320*240 px), color, illumination, touch screen / 28 keys
Operation	
Sensitivity of Circular Level	6' / 2 mm
Centering accuracy of Laser plummet	1.5 mm at 1.5 m
Power Management	
Internal Battery / Voltage / Capacity / Operating Time	Lithium Ion / 7.4V / 4.4Ah / 5 - 8 h (GEB221)
Weight and Dimensions	
Weight of Total Station / Battery GEB221 / Tribrach GDF121	4.8 - 5.5 kg / 0.2 kg / 0.8 kg
Environmental specifications	
Working / Storage temperature range	-20° C to +50° C / -40° C to +70° C
Dust / water (IEC 60529) / Humidity	IP54 / 95%, non-condensing
Guide Light (EGL)	
Working Range	5 - 150 m
Positioning accuracy	5 cm at 100 m
Motorization	
Rotation speed	45° (50 gon) / s



Leica Viva Robotic Surveying

Automatic Target Aiming (ATR)



Range	ATR Mode	Lock Mode
Round prism (GPR1)	1000 m (3300 ft)	800 m (2600 ft)
360° prism (GRZ4, GRZ122)	800 m (2600 ft)	600 m (2000 ft)
Mini prism (GMP101)	500 m (1600 ft)	400 m (1300 ft)
Shortest measuring distance to 360° prism	1.5 m	5 m
Accuracy¹ / Measurement Time		
ATR angle accuracy Hz, V	1" (0.3 mgon)	
Measurement Time for GPR1	3 - 4 s	
Maximum speed (Lock Mode)		
Tangential (standard mode)	5 m / s at 20 m, 25 m / s at 100 m	
Radial (tracking mode)	5 m / s	
Searching		
Definable search windows / Search time in field of view	Yes / Typ. 1.5 s	

Power Search (PS)



Range	
Round prism (GPR1)	300 m (1000 ft)
360° reflector ⁷ (GRZ4, GRZ122)	300 m (1000 ft)
Mini prism (GMP101)	100 m (330 ft)
Shortest distance	1.5 m
Searching	
Typical search time	5 - 10 s
Definable search windows / Default search area	Yes / Hz: 360° (400 gon), V: 36° (40 gon)

¹ Standard deviation ISO 17123-3

² Overcast, no haze, visibility about 40 km; no heat shimmer

³ Standard deviation ISO 17123-4

⁴ To Round Prism GPR1

⁵ Object in shade, sky overcast, Kodak Grey Card

(90% reflective)

⁶ Distance >500 m 4 mm + 2 ppm

⁷ Target perfectly aligned to the instrument



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Distance meter (Prism), ATR and PowerSearch:
Laser class 1 in accordance with IEC 60825-1 resp. EN 60825-1

Laser plummet:
Laser class 2 in accordance with IEC 60825-1 resp. EN 60825-1

Distance meter (Non-Prism):
Laser class 3R in accordance with IEC 60825-1 resp. EN 60825-1



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