Leica Viva TPS Datasheet





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Best-in-class Electronic Distance Measurement (EDM)

With PinPoint EDM, Viva TPS 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 One-Person-Surveying

Viva TPS 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 Viva TPS 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 GNSS Add-on

Add full GNSS functionality to your Viva TPS whenever you want and combine TPS and GNSS in the most efficient way.

- Use SmartStation for TPS setup without the need of control points, traverses and resections
- Use SmartPole to save time with setup 'On-the-fly' and measure parallel with TPS and GNSS for double productivity



- when it has to be **right**

Technical Specifications TPS1200+

Leica Viva TPS 🚟	тс	TCR	TCRM	ТСА	тср	TCRA	TCRP	
Angle measurement	•	•	•	•	•	•	•	
Distance measurement (Prism)	•	•	•	•	•	•	•	
Distance measurement (Non-Prism)		•	•			•	•	
Motorized			•	•	•	•	•	
Automatic Target Recognition (ATR)				•	•	•	•	
PowerSearch (PS)					•		•	
Guide Light (EGL)	0	0	0	•	•	•	•	
Remote Control Unit / RadioHandle	0	0	0	0	0	0	0	
GUS74 Laser Guide				0		0		
SmartStation (GS15, GS09)	0	0	0	0	0	0	0	
	• = Stand	ard	O = Optio					
Angular Measurement	Accuracy Hz, V ¹				(0.3 mgon), 2" (0.6 mgon), 3" (1 mgon), 5" (1.5 mgon)			
	Display resolution			0.1" (0.1 mgon)				
	Method			absolute, continuous, diametrical Quadruple axis compensation				
		Compensation						
Distance Measurement	Compensator setting accuracy 0.5" (0.2 mgon), 0.5" (0.2 mgon), 1.0" (0.3 mgon), 1.5" (0.5 mgon) Distance Measurement (Prism)						5 (0.5 mgon)	
Distance Measurement	Range ²							
± 1	Round prism (GPR1)			3500 m (12000 ft)				
<u>±</u>	3 Round prisms (GPR1)			5400 m (17700 ft)				
		360° prism (GRZ4, GRZ122)			2000 m (7000 ft)			
	360° mini prism (0			1000 m (3300 ft)				
	Mini prism (GMP1)			2000 m (7000 ft)				
	Reflective tape (60 mm x 60 mm) 250 m (800 ft)							
	Accuracy ^{3,4} / Measurement Time							
	Standard			1 mm + 1.5 ppm				
	Fast			3 mm + 1.5 ppm				
	Tracking			3 mm + 1.5 ppm				
	Averaging			1 mm + 1.5 ppm				
	Typical Measurement Time ^s			0.8 s				
	Distance Measurement (Non-Prism)							
	Range ⁶			400 m (1310 ft)				
	PinPoint R400 PinPoint R1000			1000 m (3280 ft)				
	Accuracy ^{3,7} / Measurement Time							
	PinPoint R400 / R1000 2 mm + 2 ppm / typ. 3 s							
	Distance Measurement (Long-range)							
	Long-range ^{2,4} >10000 m (>32800 ft)							
	Accuracy ^{3,6} / Measurement Time							
	Long-range			5 mm + 2 ppm / typ. 2.5 s				
	General							
	Display resolution			0.1 mm				
	Shortest measurable distance			1.5 m				
	Method			System analyzer based on phase shift measurement (coaxial, visible red laser) At 30 m: 7 mm x 10 mm, at 50 m: 8 mm x 20 mm				
	Laser dot size (No	on-Prism)		At 30 m: 7 mm x	10 mm, at 50 m: 8	mm x 20 mm		
General	Telescope			30 x				
	Magnification Free objective aperture			40 mm				
	Free objective aperture Field of view			1° 30′ (1.66 gon) / 2.7 m at 100 m				
	Focusing range			1.7 m to infinity				
	Keyboard and Display							
	Display			1/4 VGA (320*240 pixels), graphic LCD, color, illumination, touch screen				
	Keyboard			34 keys (12 function keys, 12 alphanumeric keys), illumination				
	Position			face I standard / face II optional				
	Data storage							
	Internal memory / Memory card			256 MB (optional) / CompactFlash cards (256 MB)				
	Number of data records			1750 / MB				
	Interface	RS232, Bluetooth	[®] Wireless-Techno	logy (optional)				
	Operation							
	Sensitivity of Circu			6' / 2 mm				
	Centering accuracy of Laser plummet			1.5 mm at 1.5 m				
	Number of drives 1 horizontal / 1 vertical Power Management							
	Power Management Internal Battery Lithium Ion							
	Operating Time			5 - 8 h (GEB221)				
	Voltage / Capacity			7.4 V / 4.4 Ah				
	Weight and Dimensions							
	Weight of Total Station / Battery GEB221 / Tribrach GEB121 4.8 – 5.5 kg / 0.2 kg / 0.8 kg							
	Height / Width / L			345 mm / 226 mm / 203 mm				
	Environmental s							
	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				
0	Positioning accura	CV		5 cm at 100 m				
0								

Leica Viva One-Person-Surveying	. (may 1-3						
Motorization	Rotation speed	45° (50 gon) / s					
+							
Automatic Target Recognition (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)				
	360° mini prism (GRZ101)	350 m (1150 ft) 300 m (1000 ft)					
	Mini prism (GMP101)	500 m (1600 ft)	400 m (1300 ft)				
	Reflective tape (60 mm x 60 mm)	55 m (175 ft)	-				
	Shortest distance to 360° prism	1.5 m	5 m				
	Accuracy ¹ / Measurement Time	Accuracy ¹ / Measurement Time					
	ATR angle accuracy Hz, V						
	Base positioning accuracy	±1 mm					
	Measurement Time for GPR1	3 - 4 5					
	Maximum speed (Lock Mode)						
	Tangential (standard mode)	5 m / s at 20 m, 25 m / s at 100 m					
	Radial (tracking mode)	4 m / s					
	Searching						
	Search time in field of view	Түр. 1.5 s					
	Field of view	1° 30' (1.66 gon)					
	Definable search windows	Yes					
	Method	Digital Image processing					
Power Search (PS)	Range						
	Round prism (GPR1) 300 m (1000 ft)						
	360° reflector ⁸ (GRZ4, GRZ122)	300 m (1000 ft)					
	Mini prism (GMP101)	100 m (330 ft)					
	Shortest distance						
	Searching						
	Typical search time 5 – 10 s						
		Default search area Hz: 36° (40 gon), V: 36° (40 gon)					
	Definable search windows						
	Method	Yes Disital Image processing (retating lacer fam)					
	Method	Digital Image processing (rotating laser fan)					
Leica Viva SmartStation							
GNSS Add-on		Position accuracy ^{9,10} Horizontal: 10 mm + 1 ppm, Vertical: 20 mm + 1 ppm					
A CNSS	RTK Initialization						
	Reliability / Time of initialization		>99.99% / Typically 8 s, with 5 or more satellites on L1 and L2				
	Range	Range Up to 50 km, assuming reliable data-link is available					
	RTK Data formats for data reception	RTK Data formats for data reception Leica proprietary formats (Leica, Leica Lite, Leica 4G), GPS and real-time data formats, CMR, CMR+, RTCM v2.1 / 2.3 / 3.0					
	GNSS Antenna						
	Number of channels	GS15: 120 GS09: 120					
	Dimensions (diameter x height)	GS15: 196 mm x 198 mm GS09: 186 mm x 89 mm					
	Weight (w/o battery)	GS15: 1.34 kg					
		0309. 0.90 Kg	GS09: 0.96 kg				

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 Fast Mode

⁶ Object in shade, sky overcast, Kodak Grey Card (90% reflective)

⁷ Distance >500 m 4 mm + 2 ppm

⁸ Target perfectly aligned to the instrument

⁹ Measurement precision and accuracy in position and accuracy in height are dependent upon various factors including number of satellites, geometry, observation time, ephemeris accuracy, ionospheric conditions, multipath etc. Figures quoted assume normal to favorable conditions. Times can also not be quoted exactly. Times required are dependent upon various factors including number of satellites, geometry, ionospheric conditions, multipath etc. The following accuracies, given as root mean square, are based on real-time measurements.

¹⁰ When used within reference station networks the position accuracy is in accordance with the accuracy specifications provided by the reference station network.

Whether you want to stake-out an object on a construction site or you need accurate measurements of a tunnel or a bridge; whether you want to determine the area of a parcel of land or need the position of a power pole or to capture objects for as-built maps - you need reliable and precise data.

Leica Viva combines a wide range of innovative products designed to meet the daily challenges for all positioning tasks. The simple yet powerful and versatile Leica Viva hardware and software innovations are redefining state-of-the-art technology to deliver maximum performance and productivity. Leica Viva gives you the inspiration to make your ambitious visions come true.

When it has to be right.





Total Ouality Management our commitment to total customer satisfaction.

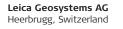
Distance meter (Prism), ATR and PowerSearch: Laser class 1 in accordance with IEC 60825-1 resp. EN 60825-1

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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Leica Viva Overview brochure

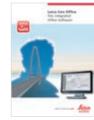
Leica Viva GNSS

Product brochure

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Viva





Leica Zeno Product brochure



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Leica Viva LGO Product brochure

- when it has to be right

