

# Leica Viva TS11

## Datasheet



### Simply productive surveying software

With clear graphics, non-technical terminology and simplified workflows SmartWorx Viva is incredibly easy to use.

- Survey, coding and lineworks
- Including full application package



### 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



### Leica Viva Smart Station Add-on

Add full GNSS functionality to your Viva TS11 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

- when it has to be **right**

**Leica**  
Geosystems

# Technical Specifications TS11



Angle Measurement (Hz, V)		
Accuracy <sup>1)</sup>	1" (0.3 mgon) / 2" (0.6 mgon) / 3" (1 mgon) / 5" (1.5 mgon)	✓
Method	Absolute, continuous, diametrical: at all models	✓
Display resolution	0.1" / 0.1 mgon	✓
Compensation	Quadruple Axis compensation: at all models	✓
Compensator Setting Accuracy	0.5"/0.5"/1"/1.5"	✓



Distance Measurement with Reflector		
Range <sup>2)</sup> Round prism (Leica GPR1)	3.500 m	✓
Range <sup>2)</sup> Reflective tape (60 mm x 60 mm)	250 m	✓
Accuracy <sup>3)</sup>	Standard: 1.0 mm + 1.5 ppm Fast: 2.0 mm + 1.5 ppm Tracking: 3.0 mm + 1.5 ppm	✓
Typical Measurement time <sup>4)</sup>	1.0 s	✓



Distance Measurement without Reflector <sup>3)</sup>		
Range <sup>5)</sup> PinPoint R500 / R1000	> 500 m / > 1000 m	✓/○
Accuracy <sup>3) 6)</sup>	2 mm + 2 ppm	✓
Laser dot size	At 30 m: approx. 7 x 10 mm At 50 m: approx. 8 x 20 mm	✓



Data storage / Communication		
Internal memory	1 GB	✓
USB memory stick	1 GB	○
SD Card	8 GB	○
Interfaces	- Serial (Baudrate up to 115'200) - USB Type A and mini B, - Bluetooth® Wireless, class 1 - Bluetooth® > 1000 m (with TCP529)	✓ ✓ ✓ ✓
Data formats	Custom ASCII, DXF, LandXML, FBK, RW5, RAW	✓



Guide Light (EGL)		
Working Range (average atmospheric conditions)	5 m - 150 m	✓
Positioning accuracy	5 cm at 100 m	✓



Telescope		
Magnification	30 x	✓
Resolving power	3"	✓
Field of View	1° 30' (1.66 gon) 2.7 m at 100 m	✓
Focusing range	1.7 m to infinity	✓
Reticle	Illuminated, 10 brightness levels	✓



Keyboard and Display		
Display	High resolution Color & Touch display, 65'000 colors, graphics, Full-VGA, display illumination, 10 brightness levels	✓
Keyboard	36 keys, (12 function keys, 12 alphanumeric keys), illumination	✓
Position	Face I, Face II	✓/○

Operating System		
Windows CE	6.0	✓

Laserplummet		
Type	Laser point, 5 brightness levels	✓
Centering accuracy	1.5 mm at 1.5 m Instrument height	✓

Internal Battery		
Type	Lithium-Ion	✓
Operating time <sup>7)</sup>	approx. 14 hours	✓

Weight		
Total station including GEB222 and tribrach	5.8 kg	✓

Environmental		
Temperature range (operation)	-20° C to +50° C (-4° F to +122° F)	✓
	Arctic Version -35° C to 50° C (-31° F to +122° F)	○
Dust / Water (IEC 60529) Humidity	IP55, 95%, non condensing	✓



Leica Viva Imaging: Wide-angle Camera		
Sensor	5 Mpixel CMOS sensor	○
Focal Length	21 mm	○
Field of view	15.5° x 11.7° (19.4° diagonal)	○
Frame rate	20 frames per second	○
Focus	2 m (6.5 feet) to infinity	○
Image storage	JPEG up to 5 Mpixel (2560 x 1920)	○
Zoom	3-step (1x, 2x, 4x)	○
Whitebalance	Automatically and user definable	○
Brightness	Automatically and user definable	○



Leica Viva SmartStation		
Supported GNSS antennas	GS12, GS15, GS08plus	○○
Position accuracy <sup>9) 10)</sup>	Horizontal: 10 mm + 1 ppm, Vertical: 20 mm + 1 ppm	○

RTK Initialization		
Reliability / Time of initialization	>99.99% / Typically 8 s, with 5 or more satellites on L1 and L2	○

Range	Up to 50 km, assuming reliable data-link is available	○
RTK Data formats for data reception	Leica proprietary formats (Leica, Leica 4G), GPS and GNSS real-time data formats, CMR, CMR+, RTCM v2.1 / 2.2 / 2.3 / 3.x	○



Leica SmartWorx Viva Onboard Software		
Included Application Programs	Survey & Coding with Lineworks	✓
	Stakeout	✓
	DTM Stakeout	✓
	Station Setup	✓
	Surface & Volumes	✓
	Remote Height	✓
	Hidden Point	✓
	Offset	✓
	Reference Line/Arc	✓
	Cogo	✓
	Traverse	✓
	Sets of Angles	✓
	Determine Coordinate Systems	✓
	Alignment Tool Kit	✓
Extra Application Programs	Reference Plane	○
	Cross Section	○
	Road Runner	○
	Road Runner Rail	○
	Road Runner Tunnel	○
	Road Runner Importer	○
	Athletics	○

# Model Comparison: Configurations & Options of Manual Total Stations

	Leica FlexLine TS02plus	Leica FlexLine TS06plus	Leica FlexLine TS09plus	Leica Viva TS11
1" angular accuracy	–	○	○	○
Enhanced measurement accuracy to prism	1.5 mm + 2 ppm	1.5 mm + 2 ppm	1.5 mm + 2 ppm	1.0 mm + 1.5 ppm
Reflectorless measurement range	500 m option	500 m included/1000 m option	500 m included/1000 m option	500 m included/1000 m option
Display with graphics and display illumination	Black & White high resolution	Black & White high resolution	Q-VGA Color & Touch	Full-VGA Color & Touch
Full alpha-numerical keyboard with function keys	–	✓	✓	✓
Second Keyboard	○	○	○	○
Keyboard illumination	–	–	✓	✓
Electronic Guide Light	–	○	✓	✓
USB Type A and mini B	–	✓	✓	✓
Bluetooth® Wireless	–	✓	✓	✓
SD Card interface	–	–	–	✓
Imaging capability	–	–	–	○
Smart Station capability	–	–	–	○
Onboard software (package content)	FlexField plus (standard)	FlexField plus (advanced)	FlexField plus (full)	SmartWorx Viva (pro)

## Legend:

- <sup>1</sup> Standard deviation ISO-17123-3
- <sup>2</sup> Overcast, no haze, visibility about 40 km; no heat shimmer
- <sup>3</sup> Standard deviation ISO-17123-4
- <sup>4</sup> Fast Mode
- <sup>5</sup> Under optimal conditions on Kodak Grey Card (90% reflective). Maximum range varies with atmospheric conditions, target reflectivity and surface structure.
- <sup>6</sup> Range > 500m, 4 mm + 2 ppm
- <sup>7</sup> Single Measurement every 30 second by 25° C. Battery time may be shorter if battery is not new.
- <sup>8</sup> Reflectorless measurement time may vary according to measuring objects, observation situations and environmental conditions.
- <sup>9</sup> Measurement precision, accuracy and reliability are dependent upon various factors including number of satellites, geometry, obstructions, 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.
- <sup>10</sup> When used within reference station networks the position accuracy is in accordance with the accuracy specifications provided by the reference station network.

- ✓ Included
- Option
- Not available

