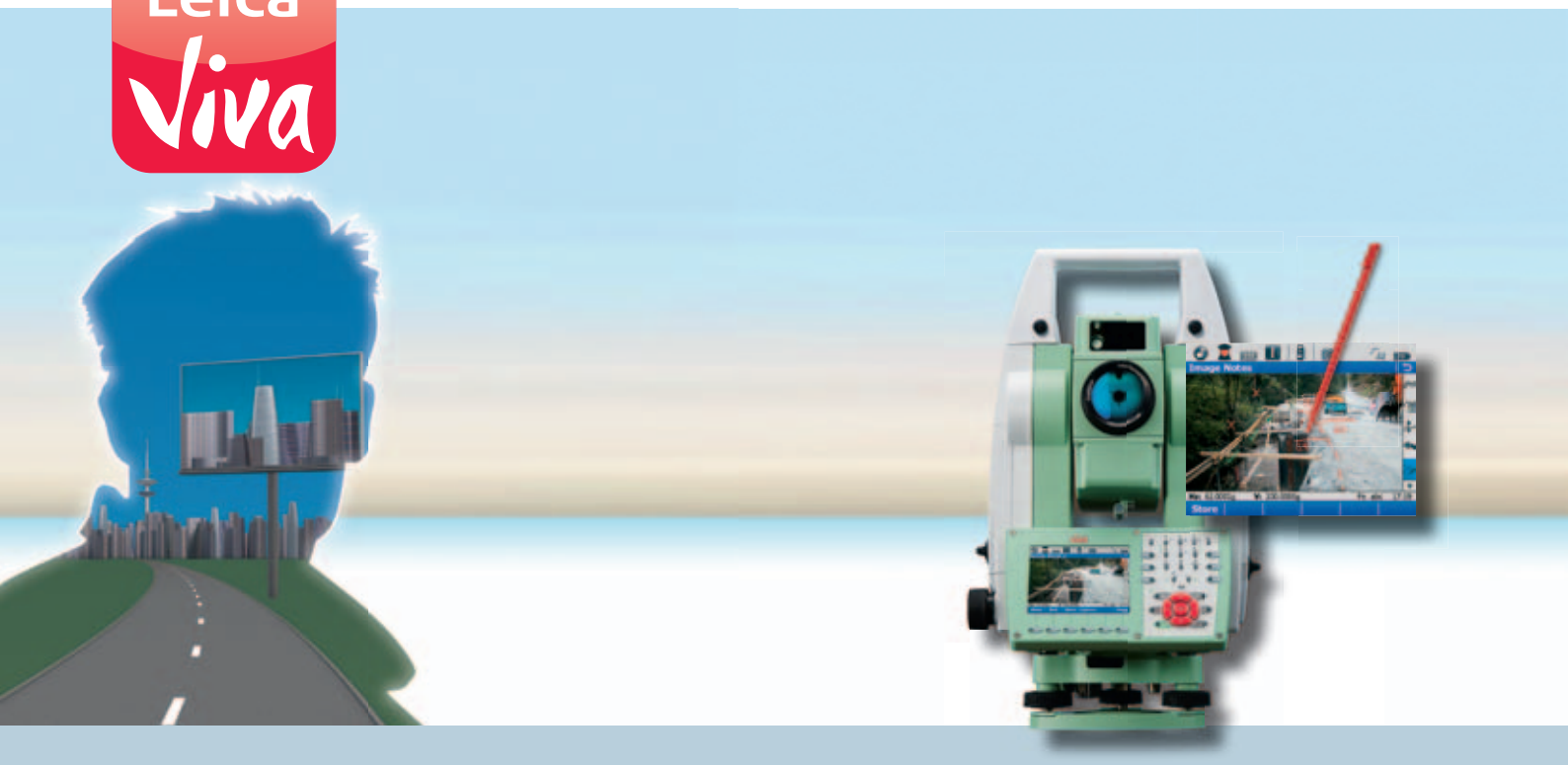
Leica Viva TS11
Datasheet



Best-in-class Imaging

Optimize your productivity with exact photo documentation of site conditions. With live streaming of the total station view, you always know what the total station sees.

- **Image Notes** – Capture an image, screenshot or template, sketch on it and link it to any object in the database.
- **Image Assisted Surveying** – Use the camera's live streaming to speed up the aiming process.

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 GNSS 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

Leica Viva TS11	TS11	TS11 I
Angle measurement	●	●
Distance measurement to prism	●	●
Distance measurement to any surface (reflectorless)	●	●
Wide-Angle Camera	–	●
RS232, USB and SD card interface	●	●
Bluetooth	●	●
Internal Flash Memory (1GB)	●	●
Guide Light (EGL)	○	●
Arctic Option	○	○
SmartStation GS15 GNSS receiver	○	○
SmartStation GS12 GNSS receiver	○	○
CS10/CS15 (Radio) field controller	○	○
	● = Standard	○ = Optional – = Not available
Angular Measurement	Accuracy Hz, V[1]	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
	Compensation	Quadruple axis compensation
	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	**Distance Measurement (Prism)**	
	Range[2]	
	Round prism (GPR1)	3500 m (12000 ft)
	3 Round prisms (GPR1)	5400 m (17700 ft)
	360° prism (GRZ4, GRZ122)	2000 m (7000 ft)
	360° mini prism (GRZ101)	1000 m (3300 ft)
	Mini prism (GMP101)	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 / typ. 2.4 s
	Fast	3 mm + 1.5 ppm / typ. 0.8 s
	Continuous	3 mm + 1.5 ppm / typ. <0.15 s
	Distance Measurement (Any Surface)	
	Range[6]	
	PinPoint R30 / R400 / R1000	30 m (98 ft) / 400 m (1310 ft) / 1000 m (3280 ft)
	Accuracy[3,7] / Measurement Time	
	PinPoint R30 / 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)
	Laser dot size (Non-Prism)	At 30 m: 7 mm x 10 mm, at 50 m: 8 mm x 20 mm
General	**Operating system & Processor**	
	Operating System	Windows CE 6.0
	Processor	Freescale i.MX31 533 MHz ARM Core
	Telescope	
	Magnification	30 x
	Free objective aperture	40 mm
	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	640 x 480 pixel (VGA) color TFT with LED backlight and touch screen
	Keyboard	36 keys (12 function keys, 12 alphanumeric keys), illumination
	Position	face I standard / face II optional
	Memory, Ports & Communication	
	Internal memory / Memory devices	1 GB (nonvolatile NAND Flash) / SD card, USB stick
	Interfaces	RS232, *Bluetooth*® Wireless-Technology, USB mini AB OTG
	Operation	
	Sensitivity of Circular level	6' / 2 mm
	Centering accuracy of Laser plummet	1.5 mm at 1.5 m
	Number of drives	1 horizontal / 1 vertical
	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 – 5.1 kg / 0.2 kg / 0.8 kg
	Height / Width / Length	345 mm / 226 mm / 203 mm
	Environmental specifications	
	Working / Storage temperature range	-20° C to +50° C / -40° C to +70° C
	Dust / water (IEC 60529) / Humidity	IP55 / 95%, non-condensing
Guide Light (EGL)	Working Range	5 – 150 m
	Positioning accuracy	5 cm at 100 m

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	User configurable
	Brightness	User configurable

Leica Viva SmartStation

Add-on GS12 / GS15	**Position accuracy**[9,10]	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
	GNSS Antenna	
	Number of channels	GS15: 120 GS12: 120
	Dimensions (diameter x height)	GS15: 196 mm x 198 mm GS12: 186 mm x 89 mm
	Weight	GS15: 1.34 kg GS12: 1.05 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, 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.
[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.

Swiss Technology
by Leica Geosystems

TQM
ISO 9001 / ISO 14001

Total Quality Management – our commitment to total customer satisfaction.

Distance meter (Prism):
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

Leica SmartWorx Viva
Product brochure

Leica Viva LGO
Product brochure

Leica Zeno
Product brochure

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