

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 ¹⁾ | 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 ²⁾ Round prism (Leica GPR1) | 3.500 m | ✓ |
| Range ²⁾ Reflective tape (60 mm x 60 mm) | 250 m | ✓ |
| Accuracy ³⁾ | Standard: 1.0 mm + 1.5 ppm Fast: 2.0 mm + 1.5 ppm Tracking: 3.0 mm + 1.5 ppm | ✓ |
| Typical Measurement time ⁴⁾ | 1.0 s | ✓ |



| Distance Measurement without Reflector ³⁾ | | |
|--|--|-----|
| Range ⁵⁾ PinPoint R500 / R1000 | > 500 m / > 1000 m | ✓/○ |
| Accuracy ^{3) 6)} | 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 TCP29) | ✓ ✓ ✓ ✓ |
| 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 ⁷⁾ | 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 ^{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 | ○ |



| 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:

- ¹ Standard deviation ISO-17123-3
- ² Overcast, no haze, visibility about 40 km; no heat shimmer
- ³ Standard deviation ISO-17123-4
- ⁴ Fast Mode
- ⁵ Under optimal conditions on Kodak Grey Card (90% reflective). Maximum range varies with atmospheric conditions, target reflectivity and surface structure.
- ⁶ Range > 500m, 4 mm + 2 ppm
- ⁷ Single Measurement every 30 second by 25° C. Battery time may be shorter if battery is not new.
- ⁸ Reflectorless measurement time may vary according to measuring objects, observation situations and environmental conditions.
- 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.

- ✓ Included
- Option
- Not available



Scan the code
to play
the video!

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



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 FlexLine
TS09plus**
Product brochure



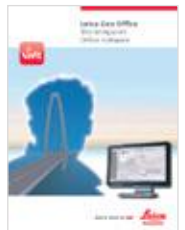
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Overview brochure



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