

# Leica Viva TS12

## Datasheet



### Best-in-class Electronic Distance Measurement (EDM)

With PinPoint EDM, Leica Viva TS12 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 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 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

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

• = Standard

- when it has to be **right**

**Leica**  
Geosystems

# Technical Specifications TS12

## Leica Viva TPS



### Angular Measurement



|                              |   |
|------------------------------|---|
| Accuracy Hz, V <sup>1</sup>  | 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



|  |  |
|--|--|
| <b>Distance Measurement (Prism)</b>              |  |
| <b>Range<sup>2</sup></b>                         |  |
| Round prism (GPR1)                               | 3500 m (12000 ft)                            |
| 360° prism (GRZ4, GRZ122)                        | 2000 m (7000 ft)                             |
| Mini prism (GMP101)                              | 2000 m (7000 ft)                             |
| <b>Accuracy<sup>3,4</sup> / Measurement Time</b> |  |
| Standard   | 1 mm + 1.5 ppm / 2.4 s                       |
| Tracking   | 3 mm + 1.5 ppm / < 0.15 s                    |
| <b>Distance Measurement (Non-Prism)</b>          |  |
| <b>Range<sup>5</sup></b>                         |  |
| PinPoint R400 / R1000                            | 400 m (1310 ft) / 1000 m (3280 ft)           |
| <b>Accuracy<sup>3,6</sup> / Measurement Time</b> |  |
| Pinpoint R400 / R1000                            | 2 mm + 2 ppm / typ. 3 s                      |
| <b>General</b>                                   |  |
| 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



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

## Leica Viva Robotic Surveying



### 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) |
| Mini prism (GMP101)                                     | 500 m (1600 ft)                    | 400 m (1300 ft) |
| Shortest measuring distance to 360° prism               | 1.5 m                              | 5 m             |
| <b>Accuracy<sup>1</sup> / Measurement Time</b>          |                                    |                 |
| ATR angle accuracy Hz, V                                | 1" (0.3 mgon)                      |                 |
| Measurement Time for GPR1                               | 3 - 4 s                            |                 |
| <b>Maximum speed (Lock Mode)</b>                        |                                    |                 |
| Tangential (standard mode)                              | 5 m / s at 20 m, 25 m / s at 100 m |                 |
| Radial (tracking mode)                                  | 5 m / s                            |                 |
| <b>Searching</b>  |                                    |                 |
| 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 <sup>7</sup> (GRZ4, GRZ122)     | 300 m (1000 ft)                           |
| Mini prism (GMP101)                            | 100 m (330 ft)                            |
| Shortest distance                              | 1.5 m                                     |
| <b>Searching</b>                               |   |
| Typical search time                            | 5 - 10 s                                  |
| Definable search windows / Default search area | Yes / Hz: 360° (400 gon), V: 36° (40 gon) |

<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> To Round Prism GPR1

<sup>5</sup> Object in shade, sky overcast, Kodak Grey Card

(90% reflective)

<sup>6</sup> Distance >500 m 4 mm + 2 ppm

<sup>7</sup> Target perfectly aligned to the instrument



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