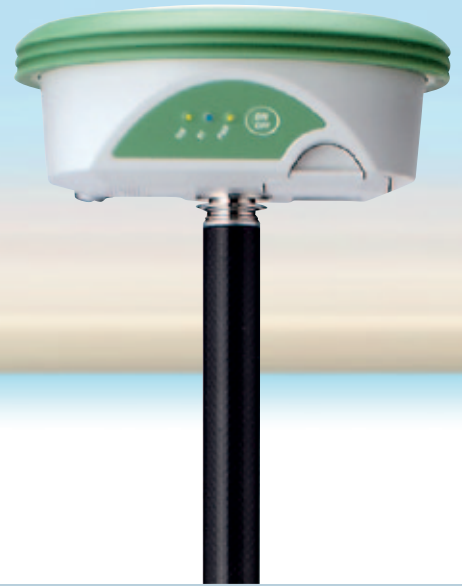


# Leica Viva GNSS GS12 receiver Datasheet



## Proven GNSS Technology

Built on years of knowledge and experience, the Leica GS12 delivers the hallmarks of Leica GNSS – reliability and accuracy.

- SmartCheck – RTK data-processing to guarantee correct results
- SmartTrack – advanced four constellation tracking of all GNSS satellites today and tomorrow
- SmartRTK – delivers consistent results in all networks



## Light Weight and full functionality

The Leica GS12 delivers ultimate ergonomics through extreme light weight.

- Weight of only 1kg for ergonomic handling with ideal balance
- Full GNSS compatibility: GPS, GLONASS, Galileo and Compass
- Fully scalable sensor allows you to buy only what you need today and upgrade with additional functionality as you need it



## Rugged

The Leica GS12 is built for the most demanding environments.



- IP67 protection against dust and immersion to 1m
- Withstands 2m pole topple over test
- Built for extreme temperatures of -40° C to +65° C
- Complete cable free operation

- when it has to be **right**

**Leica**  
Geosystems

# Technical Specifications



<b>GNSS Technology</b> 	<b>Advanced measurement engine</b>	
	Leica patented SmartTrack+ technology	<ul style="list-style-type: none"> <li>• Jamming resistant measurements</li> <li>• High precision pulse aperture multipath correlator</li> <li>• Excellent low elevation tracking technology</li> <li>• Very low noise GNSS carrier phase measurements with &lt; 0.5 mm precision</li> <li>• Minimum acquisition time</li> </ul>
	No. of channels	120 channels
	Reacquisition time	< 1 sec
	<b>GNSS Measurements</b>	
Satellite signals tracking	GPS: L1, L2, L2C, L5 (C/A, P, C Code) GLONASS: L1, L2 (C/A, P narrow Code); Galileo (Test): GIOVE-A, GIOVE -B; Galileo: E1, E5a, E5b, Alt-BOC; Compass; SBAS: WAAS, EGNOS, GAGAN, MSAS	
<b>Measurement Performance</b> 	<b>Accuracy<sup>1</sup></b>	
	DGPS/RTCM	Typically 25 cm (rms)
	RTK Rapid static (phase) Static mode after initialization	Horizontal: 5 mm + 0.5 ppm (rms) Vertical: 10 mm + 0.5 ppm (rms)
	RTK Kinematic (phase) Moving mode after initialization	Horizontal: 10 mm + 1 ppm (rms) Vertical: 20 mm + 1 ppm (rms)
	Post Processing (phase) Static with long observations	Horizontal: 3 mm + 0.1 ppm (rms) Vertical: 3.5 mm + 0.4 ppm (rms)
	Post Processing (phase) Rapid static mode	Horizontal: 5 mm + 0.5 ppm (rms) Vertical: 10 mm + 0.5 ppm (rms)
	<b>On-The-Fly initialization</b>	
	Reliability <sup>1</sup>	Better than 99,99% using Leica SmartCheck+ technology
	Time for initialization	Typically 8 sec <sup>2</sup>
	RTK baseline range	up to 50 km
	<b>User Interface</b>	
	Keys	On / Off key
Led Status indicator	Satellite tracking, <i>Bluetooth</i> <sup>®</sup> communication and battery power	
Communication ports	<ul style="list-style-type: none"> <li>• Combined USB / Power port with 8-pin Lemo plug</li> <li>• Integrated <i>Bluetooth</i><sup>®</sup> port</li> <li>• 5-pin clip on contacts for Leica SmartStation setup</li> </ul>	
<b>Communication protocols</b>		
Real-Time data formats for data transmission and reception	Leica proprietary formats (Leica, Leica 4G) CMR, CMR+	
Real-Time data formats according RTCM standard for data transmission and reception	RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1	
<b>Physical</b>		
Weight	1.05 kg including battery	
Dimension (diameter x height)	186 mm x 89 mm	
<b>Environmental specifications</b>		
Temperature, operating	-40° C to +65° C (-40° F to +149° F) <sup>3</sup>	
Temperature, storage	-40° C to +80° C (-40° F to +176° F) <sup>3</sup>	
Humidity	100% <sup>4</sup>	
Sealed against water, sand and dust	IP67: protected against blowing rain and dust, temporary submersion into water (max. depth 1 m)	
Vibration	Withstands vibrations in compliance with ISO9022-36-08	
Drops	Withstands 1 m drop onto hard surface	
Topple over	Withstands topple over from a 2 m survey pole onto hard surface	
Functional shock	No loss of lock to satellite signals when used on a pole setup and submitted to pole bumps up to 150 mm	
<b>Power management</b>		
Supply voltage	Nominal 12 V DC, Range 10.5 – 28 V DC	
Internal Power supply	Removable & rechargeable Li-Ion battery, GEB211 2.2 Ah / 7.4 V or GEB212 2.6 Ah / 7.4 V	
Operation time	Up to 7 hours using GEB212 battery <sup>5</sup>	

<sup>1</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 required are dependent upon various factors including number of satellites, geometry, ionospheric conditions, multipath etc. GPS and GLONASS can increase performance and accuracy by up to 30% relative to GPS only.

<sup>2</sup> May vary due to atmospheric conditions, multipath, obstructions, signal geometry and number of tracked signals.

<sup>3</sup> Compliance with ISO9022-10-08, ISO9022-11-special and MIL-STD-810F Method 502.4-II, MIL-STD-810F Method 501.4-II

<sup>4</sup> Compliance with ISO9022-13-06, ISO9022-12-04 and MIL-STD-810F Method 507.4-I

<sup>5</sup> May vary with temperature and battery age.