MICRO g LACOSTE

WWW.MICROGLACOSTE.COM

gPhone Relative Gravity Meter

www.microglacoste.com/gPhone.htm

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Introduction

Micro-g LaCoste is proud to introduce the gPhone gravity meter (previously known as the Portable Earth Tide, or "PET" meter) as the latest member of its land gravity meters. The gPhone gravity meter is based upon the LaCoste and Romberg technology that has dominated land gravity meters since 1939. The gPhone gravity meter has a low drift so that it can be used to integrate periodic signals (like earth tides) for very long time periods (years). The gPhone also has excellent high frequency response so that they can be used to monitor higher frequency non-periodic events such as earthquakes. The gPhone can be coarse-ranged over 7000milliGals (worldwide), and has a +/-50 milliGal dynamic range during measurement.

The versatile gPhone gravity meter has a sophisticated data acquisition system synchronized by a rubidium clock that can be locked to GPS so that arrays of gPhones can be used to give a wider area picture of seismic or long period gravity changes due to subsurface density changes. The instrument can be monitored and controlled via the internet for remote operation.

The principle behind Micro-g LaCoste's gPhone is the patented L&R zero-length spring suspension system. The gPhone is based upon the G-Meter, but with significant upgrades: It has an improved thermal system - a double-oven - for more precise temperature stability. The instrument also has a true vacuum seal so that it is completely insensitive to buoyancy changes due to atmospheric changes. It employs the Aliod beam nulling system for precise digital measurement of gravity with 0.1 µGal resolution.

Features

- Aliod Beam Nulling System: Electronic feedback system for precise digital measurement with a resolution of 0.1 µGal.
- TideDaq: Software for recording gPhone output allowing for automated, unattended, remote operation. Records location, time, date, raw gravity, sensor temperature, outer oven temperature, atmospheric pressure, cross & long level values, and level corrections.
- Computer: Internet-ready x86 laptop with TideDaq preinstalled
- Transportation case
- Uninterruptible Power Supply

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gPhone Specifications

System Performance

- Resolution: 0.1 µGal
- Precision: 1 µGal
- System Noise: 6 µGal/√Hz or better
- Drift: 1.5 milliGal (or better) per month when new. With aging, drift values are usually less than 500 µGal/month
- Range: 7,000 milliGal uncalibrated (worldwide)
- Feedback range (during measurement): ±100 milliGals

System Performance

- Size: 33 x 27 x 46 cm
- Mass of sensor: 14 kg
- Power: UPS, either 115 VAC 60 Hz or 230 VAC 50 Hz

Specifications are subject to change.

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