LiPAD®-100

Portable Alignment Device

Fast

LiPAD®-100 provides instant measurement results in real time. It enables permanent data monitoring of dynamic survey applications during motion. Machines in operation can be monitored instantly without the need of measurement stops. After only 5 minutes alignment time, the device is ready for use. No inclination limitation and independent functionality allow the operator to directly measure any orientation without additional survey setups. Exchangeable batteries and external battery charger make sure you never run out of power in the field.

Efficient

LiPAD®-100 significantly enhances the efficiency of measurements. No special skills or additional alignment equipment is required to make it ready for operation. It eliminates the need of expensive survey service providers, and saves time drastically. Series of measurements that normally take days using a tachymeter, are made in a few hours by one person only. Measurement data can easily be exported for quality control purpose, and you can even use your own Android handheld device to operate it.

Reliable

Calibration over temperature, shock stability and rain/dust protected housing make the device a solid companion in field. The airborne technology with extensive built-in tests guarantees data the operator can rely on. Particularly arrays of measurements, which are error sensitive, will not be an issue anymore: Since all data is recorded independent from previous survey point measurements, less measurement errors are accumulate. This is especially of great advantage in ragged environments or environments where no GPS signal is available.

Description

With the new LiPAD®-100 system, Northrop Grumman LITEF GmbH introduces an innovative and economical concept of a portable gyro compass for precise survey and alignment tasks.

LiPAD®-100 is based on reliable airborne technology with high performance fiber optic gyroscopes and MEMS-based accelerometer sensors. After a short alignment phase, the simple-to-operate LiPAD®-100 supplies roll, pitch and azimuth heading angles. The measurement values and system status are displayed in real time on a handheld device with a user-friendly Android-based software App.

LiPAD®-100 has exchangeable and rechargeable batteries to allow an independent operation time of more than 6 hours. No inclination limitation in combination with an adaptive alignment baseplate provides almost unlimited freedom to measure any thinkable orientation.

Typical Applications

- Machine alignment and monitoring
- Geological survey
- Condition monitoring of complex buildings (bridges, dams, etc.)
- Adjustment of antennas
- Underground or tunnelling tasks without GPS availability
- Parallel and angular alignment of multiple objects
- Tasks in small space condition
- Magnetic distractive environments

Main Features

- Compact, ergonomic design
- Provides roll, pitch and heading in real time
- Gyro compassing functionality
- Data display and device control with supplied Android App
- Bluetooth wireless operation
- Data output fully compensated over temperature
- Data import/export
- Rechargeable and exchangeable batteries
- Universal baseplate adaptable for mounts and fixtures
- Robust against harsh environmental conditions (shock, temperature)
- Non-sensitive to magnetic interference
- Including charging device and transportation case
- Reliable German aerospace technology

Technical Data LiPAD®-100

Parameter	Value
Heading Accuracy* (1σ) Alignment Time ≥ 5 min. Pitch & Roll Accuracy (1σ)	 ≤ 0.35 deg secant latitude ≤ 0.05 deg
Setup Time	< 5 minutes
Drift: Heading (1σ) Pitch & Roll (1σ)	 ≤ 0.1°/h ≤ 0.1°/h
Size (HxWxD)	215 x 325 x 143 mm 8.5 x 12.5 x 5.6 inches
Weight (including battery)	4.6 kg / 10.2 lb
Battery Runtime	Min. 6 hours
Environmental	Water, sand and dust proof rating IP 64 Shockproof 20g/20ms
Operating Temperature	-20°C … +60°C

*Secant latitude = 1/cosine latitude

LiPAD®-100 is a compact, easy to handle gyro compassing device which delivers accurate north direction, roll and pitch angle in a short time. It can be used conveniently by any operator without time consuming survey setup. The battery driven system operates safely independent of environmental impact. Precise and reliable alignment tasks have never been easier to perform economically.

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July 2020