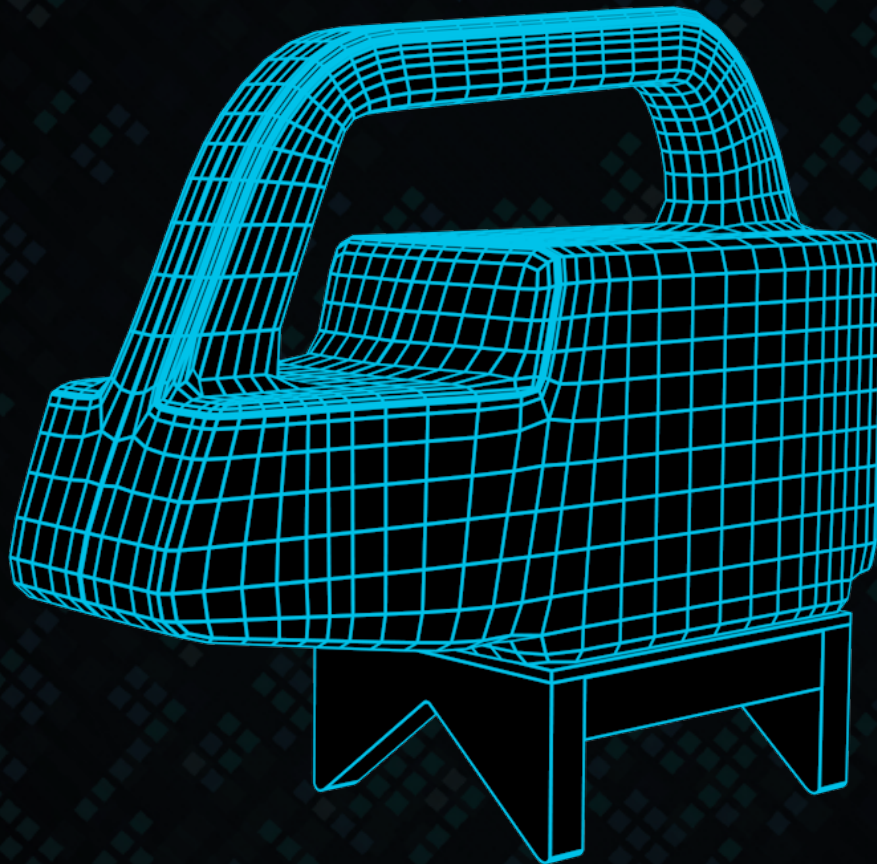


**ABSOLUTE**  
PRECISION



## LIPAD-100

PORTABLE ALIGNMENT  
DEVICE

***NORTHROP GRUMMAN***

### FAST

LiPAD-100 provides instant measurement results in real time. It enables permanent data acquisition of dynamic survey applications during motion. Machines in operation can be monitored instantly without the need of measurement stops. After only five 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 power connection make sure you never run out of power in the field.

### ECONOMICAL

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 which normally take days are made in hours by only one person. The universal design can also be combined with other measurement devices. Recorded data can be integrated into an existing network, and you can even use your own Android handheld device to control it.

### RELIABLE

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

### DESCRIPTION

With the new LiPAD-100 system, we introduce an innovative and economical concept of a portable system 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 mobile 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 six hours. No inclination limitation in combination with an adaptive alignment baseplate provides almost unlimited freedom to measure any thinkable orientation. It even enables flexible combinations with optical systems, GPS and network integration.

### TYPICAL APPLICATIONS

- Machine alignment and monitoring
- Parallel alignment of complex setups
- Condition monitoring of special constructions (bridges, dams, etc.)
- Cable car / elevator / conveyor monitoring
- Underground / non-GPS environment survey



### 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
- Rechargeable and exchangeable batteries
- Robust against harsh environmental conditions (Rain, shock, temperature)
- Non-sensitive to magnetic interference
- No inclination range limitation
- Data output fully compensated over temperature
- German technology

### TECHNICAL DATA

#### Gyro Compassing Accuracy:

True Heading(RMS)*	$\leq 0.35^\circ \times \secant(\text{latitude})$	] for at least 4 hours operating time after alignment (setup time)
Pitch & Roll (RMS)*	$\leq 0.025^\circ$	
Setup Time	5 minutes stationary	

#### Repeatability:

Heading ( $1\sigma$ )*	$\leq 0.15^\circ$	] for at least 4 hours operating time after alignment (setup time)
Pitch & Roll ( $1\sigma$ )*	$\leq 0.025^\circ$	

Size 305 x 158 x 205 (mm)

120 x 62 x 81 (inch)

Weight 4.12 kg / 9 lbs

Battery Runtime Min. 6 hours

Environmental Waterproof (IP 65)

Shockproof (20g/20ms)

Operating Temperature  $-20^\circ\text{C} \dots +60^\circ\text{C}$

LiPAD-100 is a compact, easy to handle gyro compassing device which delivers accurate north direction, roll and pitch angle simultaneously 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 conditions. Precise and reliable alignment tasks have never been easier to perform economically.

