

Rodded Boretrak® and Cabled Boretrak®



Improve safety



Accurately measure the borehole data needed and effectively use the data to plan projects safely and in compliance with audit trail.

- Provides 3D data on drilling activity from ground level or underground site
- Ensures compliance with quarrying legislation
- Avoids the potential risks and costs associated with deviated or unsurveyed boreholes

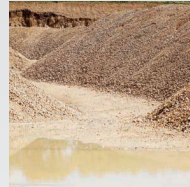
Increases work efficiency



Optimizes blasting and engineering works by easily creating detailed maps of drilling activity.

- Easy-to-use with minimal training, lessening the need for an expert surveyor
- Reduces the need for large teams with entire drilling sites able to be measured and modeled in hours
- Portable, lightweight and made to be transported, the easy-to-deploy system is designed to be used by a single operator
- Audits drilled holes and produces reports in minutes, making on-site drilling operations data-led, with no guesswork and data gaps

The Boretrak measurement system measures borehole deviation in a wide range of applications, including quarrying, mining, geotechnical, and engineering works.



Works reliably in extreme environments

The rugged, portable design, which is resistant to weather and environmental factors, make Boretrak a system for challenging projects.

- Provides a high degree of environmental protection to perform reliably and accurately in the toughest conditions
- Cabled Boretrak operates in areas of magnetic interference and in flooded holes



BREAK NEW GROUND

Carlson LMD Blast Design Package

Widely used in mines, quarries, and in various engineering and geotechnical works, the **Quarryman Pro** laser scanner, **Boretrak**, and **associated software** make up the Carlson LMD blast design package. The Boretrak system is used alongside the Carlson Quarryman Pro to provide detailed data at all stages of blast planning, thus providing quarry managers with a greater degree of control over final results.

Get accurate data on site and make better decisions

- A ruggedized PDA interfaces with dedicated PC software so users can audit drilled holes and produce reports in minutes. Results can then be issued to drillers on site if needed. On-site drilling operations are then **data-led, responsive and better integrated**.
- Map entire sites. Boretrak data can easily be georeferenced and related to your local co-ordinate system helping users to map entire sites. This means **current results can be compared with historical data** and data viewed from a range of systems – notably Carlson's Quarryman Pro – in one place. There's no guesswork and no data gaps.
- Allows uphole and downhole borehole measurement with a single tool.

Cabled Boretrak

Compact, lightweight, rugged, and highly portable, Cabled Boretrak enables users to work quickly and move across large sites, covering vast areas, without the need to transport bulky surveying equipment.

- Designed to be deployed downhole on its integrated toughened cable to depths up to 65 meters (70+ yards)
- Contains a dual axis tilt sensor and digital compass to calculate borehole deviation from the collar position at fixed intervals
- Simple, robust CDU provides speedy job configuration, calibration, survey, and download

Rodded Boretrak

The Rodded Boretrak system uses specially designed rods to deploy the probe as opposed to using a compass. This method offers accurate measurement for uphole deployments and areas that contain ferrous material, whether next to cabling or metalwork, or where there is magnetic interference.

The Rodded Boretrak system is ideal if needed to be deployed to great depths. Cabled probes limit users to the fixed cable length originally purchased. With Rodded Boretrak, additional stacks of rods can simply be added to be deployed down deeper holes.



The quick-to-deploy Boretrak is designed for use by a single operator.

Recent Rodded Boretrak improvements include:

- Bluetooth communications between the probe and ruggedized PDA, negating the need for a hot-shoe and enabling easy, on-site data download
- The ruggedized PDA provides the ability to communicate wirelessly with the probe and allows data to be sent to a PC via WiFi or Bluetooth
- The Boretrak Mobile Android app provides on-site viewing and troubleshooting, and enables users to output data directly into their own third-party packages
- Store and revisit multiple projects on one device
- Android capabilities and applications further complement the Rodded Boretrak system
- New smaller and lighter brief-case-style transit case

Increase safety and efficiency

Avoiding borehole deviation

Drilled holes are employed in a wide variety of quarrying and mining projects and need to be drilled to a specified depth, inclination, and heading. Deviation from these specifications can pose real dangers and also increase costs due to unpredictable blast results. The Carlson LMD Boretrak provides a reliable way of measuring borehole deviation by taking the actual results of drilling activity into account. When used as part of the blast design package, this ultimately saves mine and quarry owners on secondary breakage, transport, explosives, and fuel costs as well as increasing worker safety and that of others working or living near blast sites.



The Boretrak system enables faster yet safer rock face blasting.



Carlson's Cabled Boretrak system is supplied in a Peli-case that can be hand carried by a single operative.



Rodded Boretrak's rods guide and locate the probe.



The benefit of a Cabled Boretrak is speed and portability.

Work safely

- Deployed from ground level (or from underground sites), Boretrak keeps workers safe while providing 3D data on drilling activity
- Boretrak works with Quarryman to help ensure compliance with quarrying legislation, protecting local residents, employees, and property
- Measuring borehole deviation avoids the risks associated with incorrect borehole data: fly-rock caused by poorly designed blasts, or intersection with underground utilities in engineering works
- Safer, more efficient blasts also result in neater quarry faces and quarry floors, on which it is easier to operate machinery and vehicles

Work reliably and efficiently in extreme environments

- A high degree of dust- and water-proofing is engineered into both the Rodded and Cabled Boretrak variants. Resistance to wet weather, water-logged ground, submersion, temperature extremes, sand and dust mean that Boretrak performs reliably and accurately in tough conditions.
- Portable, lightweight, and easy to transport across sites and between locations, the easy-to-deploy Boretrak is designed to be used by a single operator. The Cabled Boretrak system comes in a single 'Peli' case, with a total weight of less than 11 pounds (5 kg), and a soft case to carry the tripod and ballast rod when needed. The Rodded Boretrak probe and rods can also be hand carried by a single operator.
- Makes the most efficient use of explosives, limiting the noise and vibrations from the blast and controlling the size of the rocks that result.

Boretrak Viewer PC Software



Boretrak® Viewer is the feature-packed borehole monitoring software supplied for use with Cabled Boretrak® and Rodded Boretrak® borehole deviation measurement systems. Available free of charge with all new Boretrak purchases – and compatible with previous generations of Boretrak hardware – Boretrak Viewer enables you to use the Boretrak out of the box with no need to purchase third-party software. The package offers functionality for downloading, processing, editing, and viewing Boretrak data. The processed holes can then be exported in a wide range of data formats and comprehensive printed reports can be generated. The combination of Boretrak hardware and Boretrak Viewer software provides operators with the control required to complete complex tasks.



Single-click report generation on all holes within a project speeds up project timescales.

About Carlson

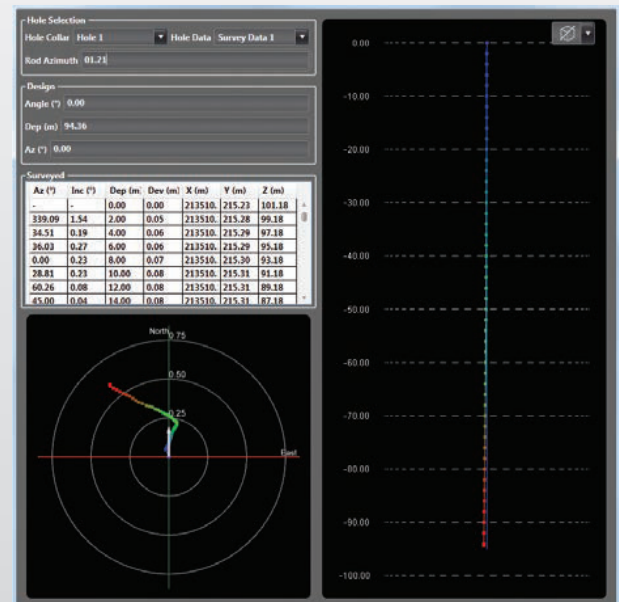
Carlson Software is a global market leader in the production of comprehensive software for Mining, Civil Engineering, Land Surveying, Machine Control, GIS, and Accident Reconstruction as well as instruments with GNSS, optical, and laser technology. Its Laser Measurement Devices (LMD) division has three decades of industry experience designing and manufacturing laser products.

Founded in 1983, Carlson Software is headquartered in Maysville, Kentucky, U.S.A. Its worldwide network of subsidiary companies and distributors is renowned for providing exceptional service and support for its customers.

Carlson LMD products include:

- Cavity Auto-Scanning Laser System (C-ALS®)
- Cabled Boretrak®
- Rodded Boretrak®
- Quarryman® Pro
- Merlin
- Industrial Laser Module (ILM)
- Void Scanner

For further information on the best Carlson application to meet your needs or for support, please contact Carlson at lasermeasurement@carlsonsw.com



It is possible to view multiple surveys per hole in order to compare results.