3D Laser Scanner

Fast, Portable, Accurate

Long range laser scanner
Modular design configured to suit your survey needs
I-Site 8820 laser scanner

Long range laser scanning and integrated high resolution panoramic digital imaging are combined with user-friendly tools in a customisable survey solution.

Standout features of the I-Site 8820 laser scanner include a longer range, and significantly improved acquisition speed and range accuracy over the previous I-Site 8810 model.

The modular design of the I-Site 8820 laser scanner allows configuration to match site survey requirements.

A high resolution panoramic digital camera is integrated for geotechnical and geological mapping. An in-built survey grade telescope allows for traditional backsight workflow. I-Site 8820 laser scanners can be ordered without the camera and telescope if they are not essential to site survey requirements.

The I-Site 8820 laser scanner can quickly survey pits and stockpiles. Data is transferred to Maptek I-Site Studio software, where accurate, auditable surface models and volumes can be generated in minutes.

Intuitive controls allow the I-Site 8820 laser scanner to be set up and operated easily. The wirelessly connected tablet PC allows users to define scan parameters, resolution and scan rate, as well as set up and name files using standard survey conventions.

Multiple scans can be queued for maximum efficiency, which is a real advantage for geotechnical applications.

The seamless data processing capability of I-Site Studio software ensures that the I-Site 8820 system will become the first choice for all long range scanning applications.

Integrated technology

The I-Site 8820 laser scanner has all the sensor technologies necessary for survey tasks. These are integrated into a single ruggedised package, designed for the harsh mining environment.

High resolution panoramic digital camera, long range precision laser rangefinder, motorised alignment telescope and laser pointer all cover the same wide field of view.

A survey grade telescope is used for backsighting. Once set, the position is automatically registered and remembered in the system. A ‘return to backsight’ button orients the scanner to the correct starting position when a scan is completed.

Control coordinates can be stored and combined with tilt compensation data to enable all scan data to be located in the site coordinate system during scan acquisition.

Workflow benefits

In-built compass GPS enables quick reference positioning for fast scan registration. Only two known control points are required to set the scanner up - one at the scanner location and the other anywhere that is visible through the telescope.

Control on each degree of freedom is independent, reducing the likelihood of errors and providing total confidence that data is recorded properly in the field.

This approach, unique to Maptek I-Site products, provides a superior method of acquiring survey grade scan data. The streamlined setup and scan preparation, and improved scanning speed with the I-Site 8820 laser scanner makes the entire survey process faster. The outcome is less time spent in the field and safer operations.

Confidence in the reliability of the data is enhanced by the versatility of a system which can be applied to sites with little need for survey control infrastructure.
Design the laser scanner you need
I-Site 8820 modular options

Geotech All Survey
Integrated digital camera, telescope, compass, GPS, on-board controls, USB storage
The Geotech All Survey I-Site 8820 laser scanner is fully featured and equipped to handle every survey task. The integrated digital camera allows the scanner to be used for geotechnical applications and change detection using the Maptek Sentry system.

Geotech Modern Survey
Integrated digital camera, compass, GPS, on-board controls, USB storage
The Geotech Modern Survey I-Site 8820 laser scanner is ideal for users who want the integrated digital camera for geotechnical applications without the telescope for backsighting.

Traditional Survey
Telescope, compass, GPS, on-board controls, USB storage
The Traditional Survey I-Site 8820 laser scanner is ideal for users who want to use a traditional survey workflow. The telescope is integrated for easy backsighting.

Point Cloud Capture
Compass, GPS, on-board controls, USB storage
The Point Cloud Capture I-Site 8820 laser scanner is designed for users who conduct general topographic survey and point cloud capture.

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Ergonomic design

Portability and ease of use are hallmarks of Maptek survey hardware. The I-Site 8820 laser scanner has all the controls built in and is so light it can be carried single-handed.

Operating the I-Site 8820 is simple. Motorised controls for adjusting the telescope and focus enable easier and more accurate backsighting.

The I-Site 8820 laser scanner comes with a ruggedised tablet PC for scanner control. Scans are selected with the touch of a pen on the tablet; minimal data entry is required. Multiple scans can be set up and queued for maximum survey efficiency.

All data is recorded onto the controller, where it is immediately available for preview and evaluation in the field. Users do not need to return to the office to check that blind spots have been covered.

On-board controls also allow 360 degree scans to be saved directly to the scanner USB port.

Data management

Once scans have been acquired, point cloud data must be converted into useful information. Pit models, material volumes and other information can be extracted for decision making across an operation.

Maptek I-Site Studio software provides the tools to filter, process and analyse survey data with speed and accuracy, making the I-Site 8820 system the ultimate survey solution.

Data is simply transferred from the scanner controller to a PC via a USB memory stick.

Transforming a point cloud into a useful 3D model in minutes proves the efficiency surveyors need to increase productivity. Data processing and analysis options in I-Site Studio guide and streamline the survey workflow for mining applications.

Accurate and reliable information is exported in multiple formats for easy assimilation into other mine modelling software and reports.

Registering multiple scans is easy with I-Site Studio. Surface, point and global registration tools eliminate hours of manual work.

Once scans are registered, surfaces can be generated with one click. Reference data can be imported and compared, and a datum established.

It is a simple step to generate up to date pit models and accurate positions of toes and crests, or calculate material volumes from stockpiles or blasts.

Geological and geotechnical engineers can use the tools in the geotechnical module to extract dip and strike and generate rose diagrams and stereonets.

Performance

The performance of the I-Site 8820 laser scanner is outstanding. It allows users to reliably capture data at long range while preserving data clarity, accuracy and detail.

End-of-month surveys, toe and crest extraction, updating mine models, calculating stockpile volumes and highwall mapping are handled with ease.
Flexible site survey

Mobile laser scanning improves efficiency of survey tasks and reporting of results.

I-Site Drive

I-Site Drive allows the continuous acquisition of laser scan data using an I-Site 8820 laser scanner mounted on a moving vehicle. Operations can quickly measure stockpiles for reporting and comparing daily or weekly volumes.

The Inertial Navigation System in the I-Site Drive vehicle mount allows the laser scanner to acquire data continuously and automatically assigns real world coordinates to the data, ready for processing. Smart registration and visualisation tools reduce the time to output survey deliverables.

Captured data can be viewed on the tablet PC in real time to easily identify missing scenes for re-survey.

I-Site Vehicle System

The I-Site 8820 laser scanner can also be mounted and transported on common site vehicles. The I-Site Vehicle System makes more efficient use of time and resources. Faster setup and greater coverage over undulating ground combine to increase survey productivity and safety.
Track and monitor surface changes

Maptek Sentry deploys the I-Site 8820 laser scanner for monitoring and reporting on movements that have the potential to interrupt mining activity.

Developed in association with the mining industry, Sentry is a solution for acquiring and analysing surface change data.

An overview laser scan provides a starting point for establishing multiple zones within an area of interest. The user determines the frequency of scans using Sentry software which is installed on a rugged laptop.

Movement outside set tolerances prompts automatic notification when connected to a network. Scans can also be monitored in real time.

Sentry data is stored in a reduced format to allow for quick analysis and processing. Displacement, velocity and inverse velocity can be used to trigger notifications.

Data can be viewed in 3D to highlight surface changes. Time lapse videos and other outputs are easily generated. The raw laser scan data can also be exported to I-Site Studio to calculate volumes, generate surface models and conduct geotechnical analysis.

Maptek Sentry

- Deploy survey hardware for monitoring
- Track slope movement and stability
- Data stored in a reduced format for quick analysis and processing
- Original laser scan data usable for other survey applications

Real time design conformance

Maptek PerfectDig creates a robust feedback loop around one of the critical processes in a mine. Accurate measurements come directly from an I-Site 8000 series laser scanner.

PerfectDig enables access to accurate, clear and timely information on excavation progress, which supports real time decision making.

Significant operational savings come from efficient use of excavation equipment. Checking progress means less rehandle or overdig. Designed wall stability and floor characteristics are more easily maintained.

An intuitive interface allows users to easily acquire laser scans at the given location and perspective to compare with designs. Users can specify and dynamically adjust tolerances to more accurately track conformance to design. A digital history is automatically captured, allowing stakeholders to review activities and establish the reason for misconformance.

PerfectDig delivers results during the excavation phase, making a positive impact on productivity. There is no need to wait on field surveys and reports for design conformance data to be made available to production crews.

Maptek PerfectDig

- Excavation conformance to design in near real time
- Automated scan registration and photo correction
- Customisable and easy to use interface
- Results displayed on handheld devices and over networks
Industry Leading Global Solutions

Maptek is the leading global provider of innovative software, hardware and services for the mining industry. More than 1800 customers in 75 countries rely on Maptek. Maptek mining technology can be applied throughout the entire mining life cycle. Our solutions help reduce operating costs and improve performance, productivity and profitability. Maptek provides expert consulting, training and support services to ensure you get the most from your investment in our products.