



# Trimble 3D Laser Scanning

# Speed, Precision and Versatility

## Complete Solutions for Every Challenge



### CAPTURE AND DELIVER PRECISE DATA. FASTER.

For scanning professionals, speed and precision are critical. Whether you're producing topographic surveys or scan data of as-built conditions, performing comprehensive data analysis, or creating a complete renovation model based on the as-built, you need to deliver accurate results quickly. Trimble understands the challenges you face and has the solutions you can trust to meet these challenges.

At the heart of Trimble's 3D laser scanning portfolio are three exceptional instruments. The Trimble® TX6 and Trimble TX8 3D laser scanners capture high quality scans at maximum speed with superior accuracy and range. And the Trimble SX10 is the world's most advanced scanning total station—the first to truly combine high-speed 3D scanning, enhanced Trimble VISION™ imaging and highly accurate total station measurement in a single device.

Trimble's advanced software enables you to quickly process and integrate all of the geospatial data for any project. Each scanning solution enables you to quickly capture, analyze, model and produce precise deliverables, project after project.

The 3D scanning solutions combine the performance and durability of Trimble hardware with the power and usability of our advanced software to deliver:

- ▶ Unmatched productivity in the field and office
- ▶ High quality, low noise data to reduce processing time
- ▶ Automatic registration you can trust
- ▶ Easy, streamlined user workflows
- ▶ Reliability in demanding environments
- ▶ Versatility to support a wide range of applications
- ▶ Powerful software to produce dynamic deliverables for any project



“Having tested a number of solutions, my demanding challenges of 300–400 scans per-week on average are best solved with the Trimble TX8 and Trimble RealWorks®.”

*Nicolas Bernard, CEO, MonacoTopo*



### Designed for your most challenging projects

Trimble is focused on making the day-to-day job of survey and scanning professionals faster, easier and more productive. All of our features, functions and software components are designed to boost efficiency in the field and in the office without compromising performance and accuracy. Ensure success on a wide array of projects, including:

- ▶ **Surveys:** topographic, corridor, volumetric
- ▶ **Civil infrastructure:** roads/highways, bridges, dams, tunnels, utilities
- ▶ **Building as-built:** construction/renovation
- ▶ **Urban environments:** streets, buildings, parks
- ▶ **Industrial environments:** plants, offshore platforms, ships, factories

# Scanning Total Station



## THE ULTIMATE ALL IN ONE SYSTEM

The Trimble SX10 scanning total station is simply the most innovative surveying, engineering, and scanning total station on the market. With it, you direct your survey with live video images on the controller to create a wide variety of deliverables.

The SX10 collects any combination of high-density 3D scan data, enhanced Trimble VISION imaging, and high-accuracy total station data. Get exactly the information you need, when you need it, and save time and money in the process.

### It changes the way you work

Trimble VISION gives users a new, higher level of performance; including the ability to capture full dome panoramas in as little as three minutes.

With Trimble's advanced Lightning 3DM, the SX10 captures highly precise total station measurements and true high-speed 3D scans to provide the highest level of measurement performance ever in a single instrument.

### Enhance surveys with superior 3D scanning

The Trimble SX10 has fully integrated 3D scanning capabilities. Trimble's Lightning technology allows the SX10 to measure dense 3D scan data at high speeds while maintaining high precision over the full measurement range. You can choose your level of scan density based on your project. The registration is automatic when using survey workflow. Whether you're capturing full dome scans from your station setup or simply augmenting your survey data with scans of specific areas of interest, all of the information you gather will drop right into your survey coordinate system.



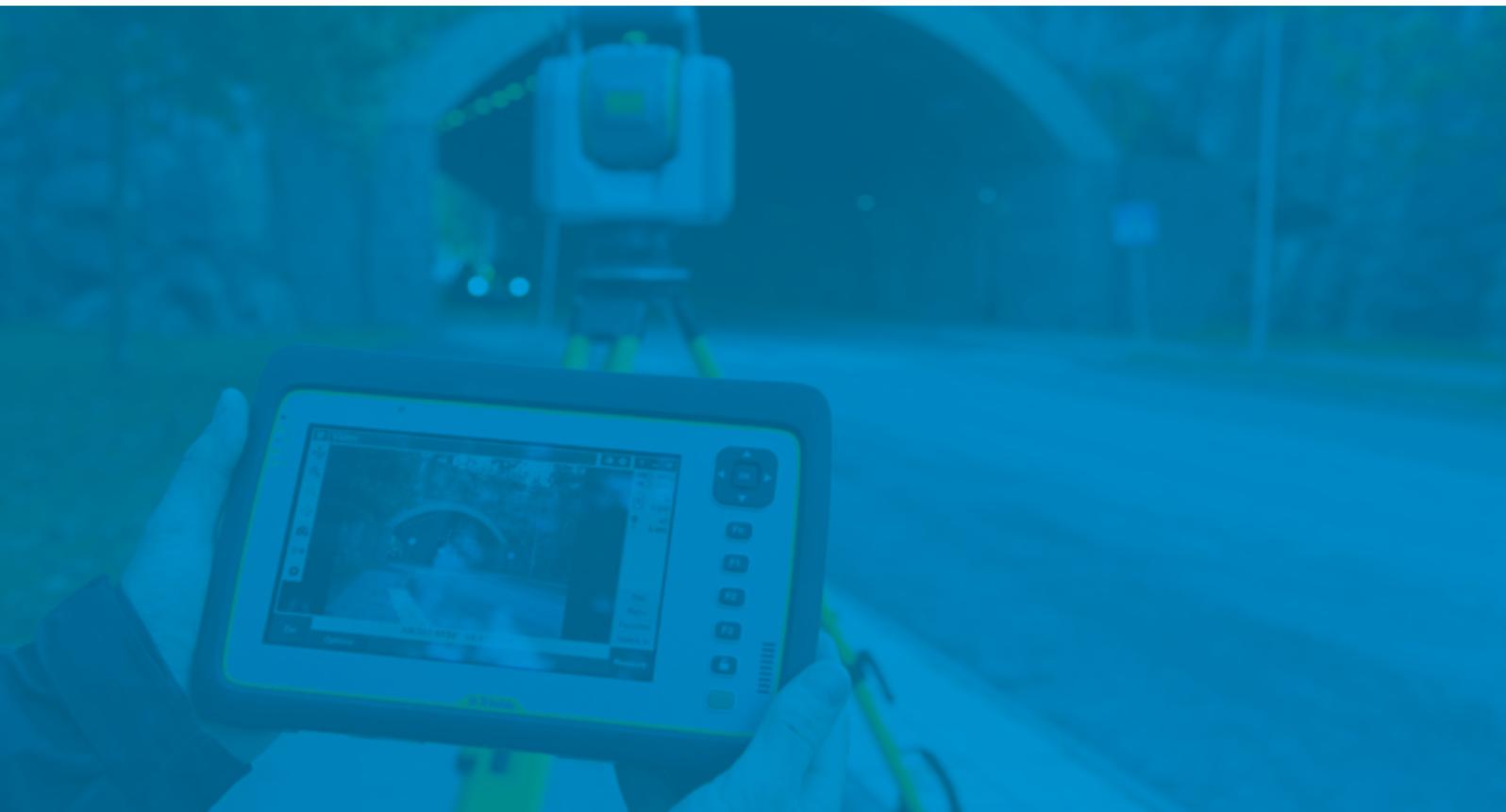
### Trimble SX10 Top Applications

- ▶ Topographic Survey/General Survey
- ▶ Roadway/Corridor Survey
- ▶ Volumetric Survey
- ▶ Infrastructure As-Built
- ▶ Building As-Built
- ▶ Utility Design Survey

### Trimble SX10 Key Features:

- ▶ Features Trimble's Lightning 3DM, which enables both high-accuracy total station measurements and high-speed scanning capability
- ▶ Delivers scanning speeds of up to 26,600 Hz at ranges up to 600 m and the smallest spot size in the industry—a mere 14 mm at 100 m
- ▶ Includes Trimble VISION technology for fast and easy capture of high resolution site imagery
- ▶ Provides a horizontal 360° x vertical 300° field of view for full dome scanning and imaging
- ▶ Completely integrated with familiar workflows of Trimble Access™ and Trimble Business Center software

# Trimble Access and Trimble Business Center Software



## SOFTWARE TO STREAMLINE YOUR WORKFLOWS

Combined with Trimble Access field software, the SX10 total station efficiently and reliably collects the most complete datasets from the field. Trimble Access keeps things simple by allowing you to combine optical, scanning, GNSS data and images all in one job.

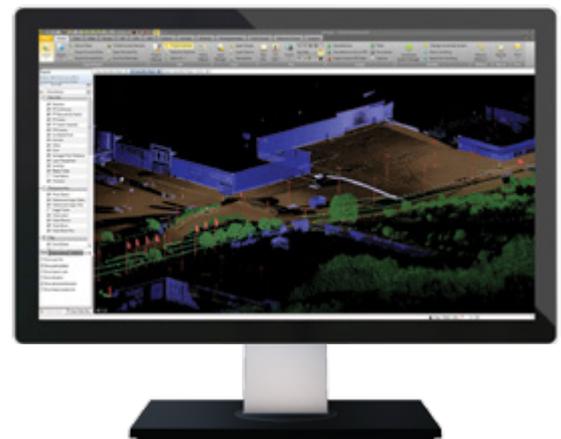
- ▶ Measure the desired level of detail
- ▶ Integrated survey workflows
- ▶ Efficient data management within any geodetic coordinate system library





Back in the office, Trimble Business Center software lets you fully integrate Trimble SX10 data into your projects using the familiar workflows of the market leading survey office software. Enhanced point cloud management, automated extraction and interoperability to leading CAD and GIS packages, ensures that you can satisfy even your toughest client demands.

- ▶ Earthwork, volumetric and corridor workflows
- ▶ Point cloud tools for visualization, registration, clean up, and automated classification
- ▶ Topo and surface modeling with precise volume calculation and contour creation
- ▶ Survey CAD environment for end-to-end deliverables
- ▶ Quickly measure any forgotten or complex field information





# Trimble TX8 3D Laser Scanner



## THE NEW STANDARD FOR HIGH END PERFORMANCE

The Trimble TX8 3D laser scanner takes ultra-high-speed scanning to a new level. Its speed, range, and precision make it the scanner of choice for high-quality results in civil survey, industrial measurement, engineering, construction and other applications.

### Unmatched productivity and versatility

The Trimble TX8 measures one million points per second while capturing high precision data over its full scan range. The TX8 maintains less than 2 mm precision over a 120 m range without reducing speed and can be upgraded to extend the range to an impressive 340 m. It takes just 2–3 minutes for typical high density 360° x 317° scans and its integrated camera can capture full field of view HDR images in less than two minutes.

The TX8 offers the best value on the market for high end performance and versatility to address large scanning projects.

### TX8 Applications

- ▶ Surveying
- ▶ Industrial facilities
- ▶ Civil infrastructure
- ▶ Mines and quarries
- ▶ Deformation monitoring
- ▶ Quality control
- ▶ Urban environments
- ▶ Building as-built
- ▶ Building MEP, BIM, VDC
- ▶ Tank calibration/inspection
- ▶ Preservation and restoration
- ▶ Public safety and forensics



# Trimble TX6 3D Laser Scanner



## EFFECTIVE HIGH SPEED SCANNING

A powerful blend of speed, range and precision make the Trimble TX6 3D laser scanner the most productive scanner in its class. This entry level scanner delivers the high quality results you need for building MEP, BIM, engineering, construction and other applications.

### Best market value for fundamental performance

The Trimble TX6 3D laser scanner measures 500,000 points per second while capturing high precision data over its full scan range. The TX6 maintains less than 2 mm precision over a 120 m range without reducing speed and is available with a standard range of 80 m and extended range of 120 m. It takes just 3–5 minutes for typical high density 360° x 317° scans and its integrated camera can capture full field of view HDR images in less than two minutes.

The Trimble TX6 uses the same patented Lightning technology as the TX8 to provide exceptional scan quality and offers the best value on the market with essential performance for small to mid-size projects.

### TX6 Applications

- ▶ Building as-built
- ▶ Building Information Modeling (BIM)
- ▶ Building Mechanical/Electrical/Plumbing (MEP)
- ▶ Virtual Design Construction (VDC)
- ▶ Industrial facilities
- ▶ Preservation and restoration
- ▶ Public safety and forensics
- ▶ Quality control



# TX6 and TX8 3D Laser Scanners



## Easy to use for quick adoption

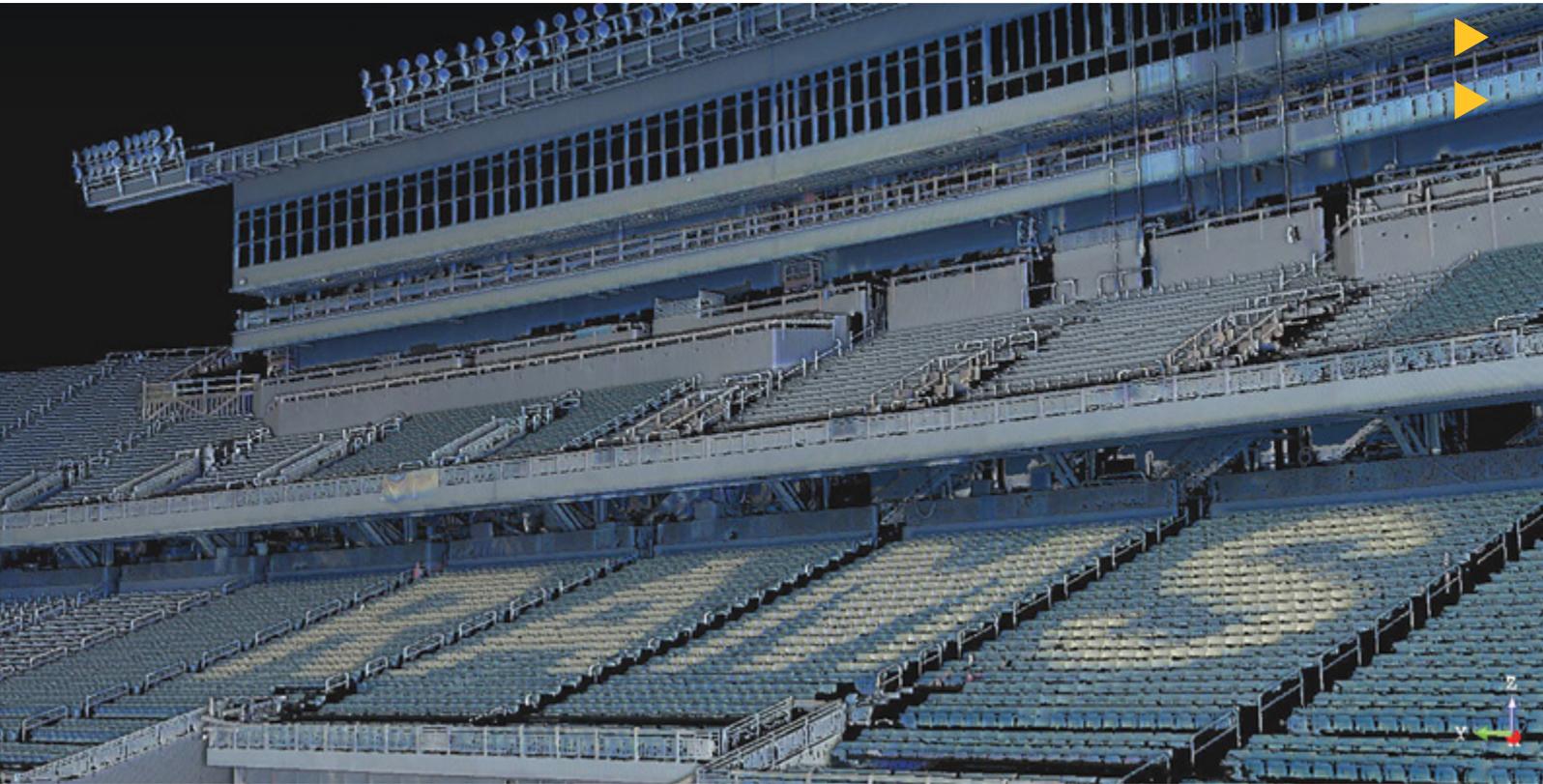
The intuitive and easy to learn user interface enables you to scan with confidence with little to no training. The color touchscreen display and one-button scanning make data capture quick and efficient. Scan options can easily be set to support any project requirement and there are no complex parameters to complicate operation. The scanners also have an integrated WLAN for remote operation from Trimble tablets or any Windows, Apple or Android mobile device.

## Built for demanding environments

A durable design ensures performance you can rely on in demanding environments. The IP54 dust and water Ingress protection rating and protected mirror enable operation in harsh conditions. The scanner is less susceptible to variations in surface types, atmospheric conditions and bright sunlight to maximize data capture from each station. And the eye-safe Class 1 non-visible laser makes it safe to use in busy public places.

## Streamlined office workflows

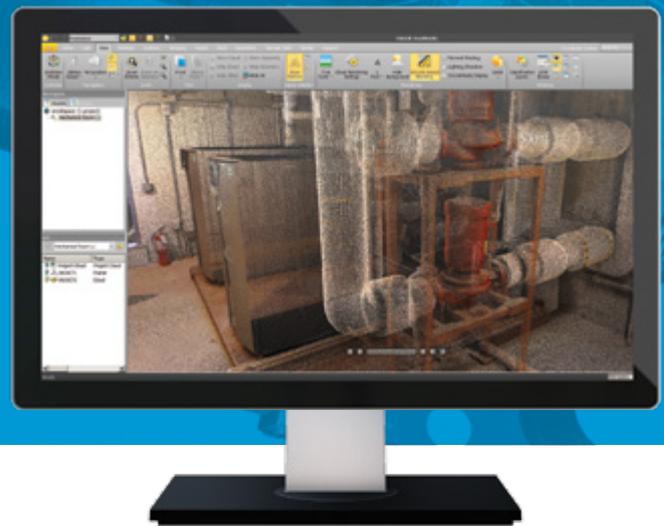
Clean, low-noise data reduces processing time and loads directly into Trimble RealWorks for automatic registration and scan colorization. RealWorks provides the necessary tools for comprehensive analysis of complex 3D datasets and Trimble Scan Explorer enables easy project collaboration via Internet Explorer. Produce powerful deliverables, export to popular CAD programs or pair RealWorks with Trimble EdgeWise™ and SketchUp® software for the most effective point cloud modeling solutions in the industry.



### Trimble TX6 and TX8 Key Features:

- ▶ Increase field productivity with fast high density scans
- ▶ Maintain high precision over the full scan range at maximum speed
- ▶ Clean, low noise data reduces processing time
- ▶ Reliable performance in demanding environments
- ▶ Fastest image capture for automatic scan colorization
- ▶ Intuitive and easy to use touchscreen interface
- ▶ Integrated WLAN for remote operation from any mobile device
- ▶ Survey grade dual axis compensator
- ▶ Data integration with Trimble RealWorks software

# Trimble RealWorks Software



## THE POWER TO TRANSFORM 3D SCAN DATA

Trimble RealWorks is state-of-the-art office software for registering, visualizing, exploring and manipulating as-built or scene point cloud data collected with virtually any laser scanner. Efficiently manage, process, and analyze large data sets with confidence and transform them into compelling 2D and 3D deliverables. RealWorks is easy to use as the interface guides you through each tool step by step to ensure you reach your objectives.

### Automatic registration you can trust

Automatically register projects with or without targets and be certain of registration accuracy. Automatic registration can extract spheres and flat black and white targets for target-based registration or use feature-based registration to automatically register target-less scans. Generate registration reports to check the accuracy and use the target analyzer tool to quickly edit targets if needed.

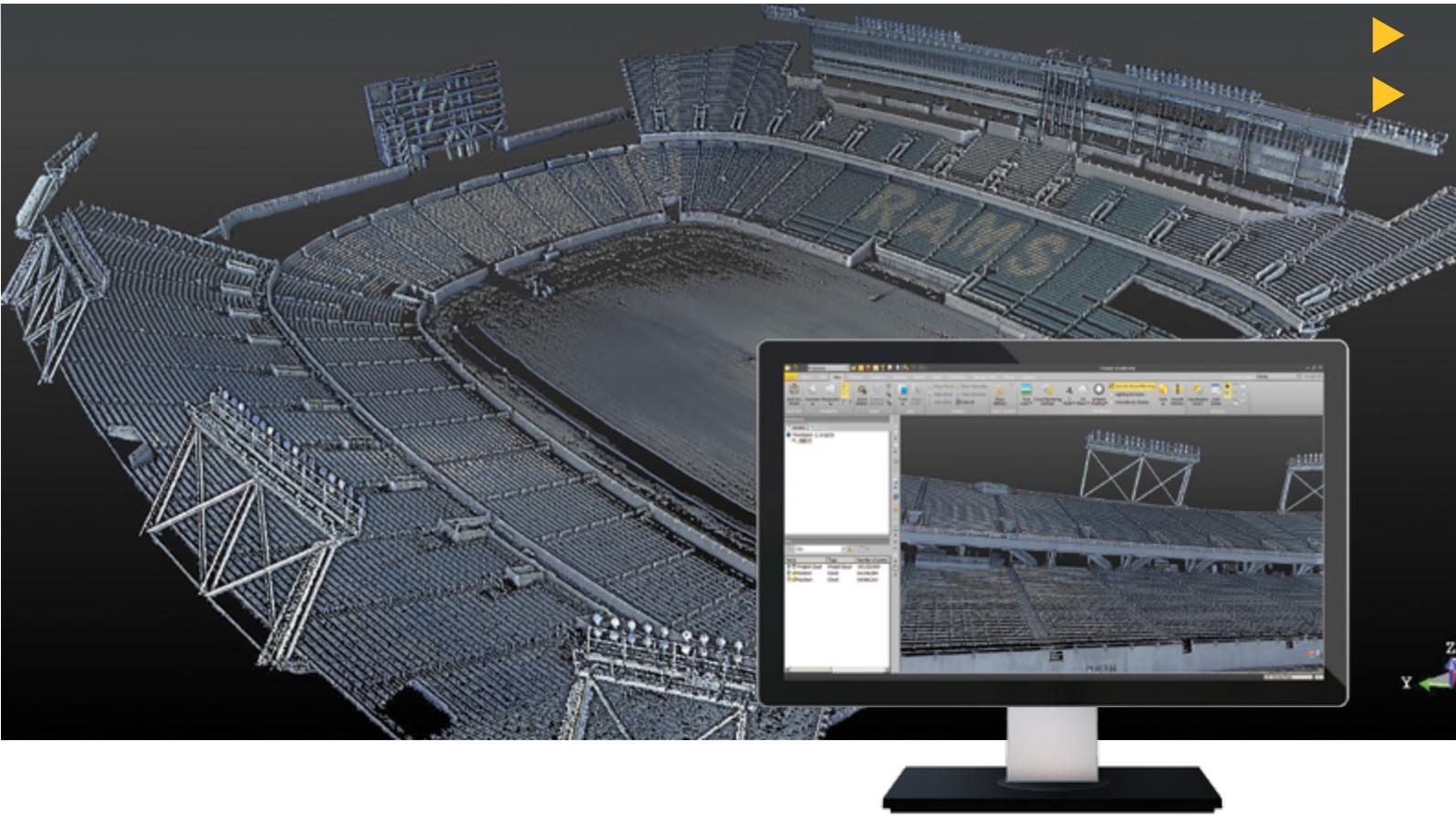
### Effectively create and deliver

Quickly create intermediate or final 2D and 3D deliverables such as cross sections, meshes, contours, volumes, line

work and ortho-photos. The Modeling module allows you to create partial or full models quickly using simple CAD compliant geometries to model diverse shapes to represent the as-built environment. Create 3D forms and geometries for rendering, computation and other finite element analysis.

### Advanced inspection and analysis

The advanced inspection tools in Trimble RealWorks are ideal for monitoring applications such as civil engineering (roads and bridges), mines and for storage tank inspections and calibrations. Compare as-built data pre-event to post-event or compare with design models and generate inspections to visualize and detect any variations. Obtain 2D and 3D graphic visualizations of gaps and deformations for easy analysis. You can import profiles and geometric primitives from a CAD design file or export graphic files in .dxf or .dgn format. You can also print inspection results using the RealWorks integrated print-out interface to share and deliver the detailed and insightful information your clients need.

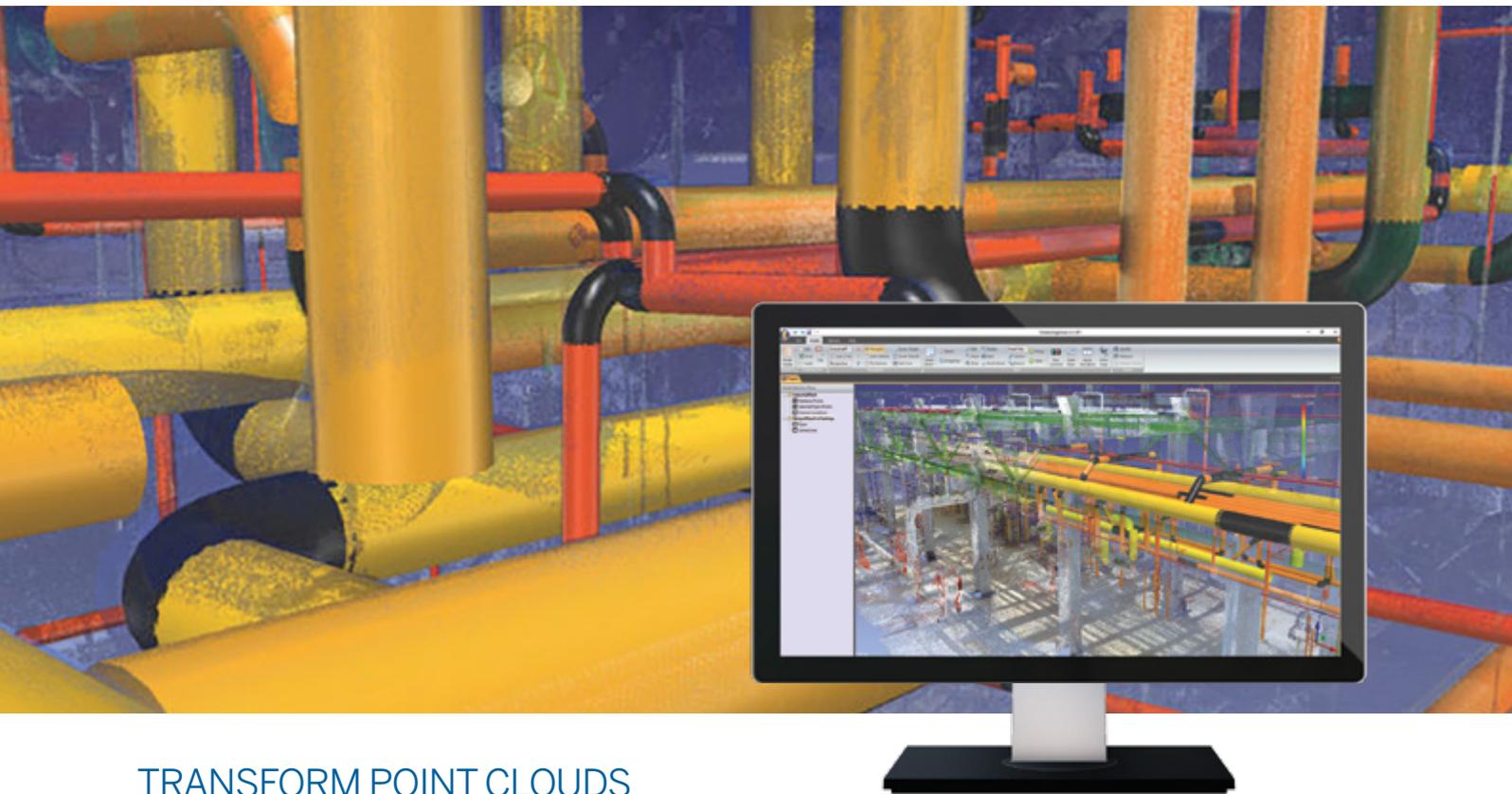


## Key Features of Trimble RealWorks

- ▶ Register scans easily with the industry's best automatic registration
- ▶ Effectively manage and visualize large data sets in Trimble RealWorks and Trimble Scan Explorer
- ▶ Utilize a wide range of inspection tools to analyze and compare point clouds and models
- ▶ Produce profiles, sections, contours, meshes, volumes, ortho-photos, line work and models
- ▶ Classification tool to automatically group common point cloud elements
- ▶ Export data for use in popular CAD software
- ▶ Publisher to freely share projects via Internet Explorer® and Trimble Scan Explorer
- ▶ Storage Tank tool for tank calibration, inspection and containment



# Trimble EdgeWise Software



## TRANSFORM POINT CLOUDS INTO ACTIONABLE MODELS

Your job demands highly automated, intelligent solutions to quickly process and extract information from 3D scan data. Trimble EdgeWise software meets that need. It's the perfect complement to Trimble's 3D laser scanners and Trimble RealWorks software, providing efficient, end-to-end workflows to produce accurate BIM-ready models. Trimble EdgeWise will automatically detect structural elements from the point cloud and precisely model using the dimensions and geometries from its vast library of common elements.

### Fast and flexible

Trimble EdgeWise has automated routines to quickly extract and model piping, duct, conduit, structural beams, concrete, walls, windows, doors and other elements so you can export them to your CAD platform of choice. Whether you're providing as-built information or modeling current conditions for a renovation project, EdgeWise can produce the information you need to make decisions on a broad range of projects including buildings, structures and processing facilities.

### Accurate and intelligent

Trimble EdgeWise has built-in quality assurance tools that enable you to check the accuracy of every extracted element. If you have a poorly fitted object, you can quickly resize it and adjust it to the points, so your model is true to the point cloud. Advanced modeling methodology makes it easy to extract and precisely position every object of interest, as well as details such as valves, dimensional transitions, and custom fabricated ductwork.

### Key Features of Trimble EdgeWise

- ▶ Automated feature extraction quickly identifies pipes, conduit, structural steel, ducts, structural concrete, walls, windows, and doors in 3D laser scanning point clouds
- ▶ Rapid modeling uses libraries to ensure industry-standard dimensions
- ▶ Intelligent model export eliminates the need to remodel and redefine attributes



# Accessories



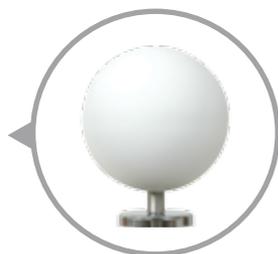
## ACCESSORIES TO SUPPORT YOUR WORKFLOWS

Trimble has long offered a range of scanning accessories to help you meet the demands of virtually any project.

The lightweight Gitzo tripod is ideal for pure scanning workflows with your TX instrument. Move easily from station to station with the scanner connected and use the rubber or spiked feet for stability on any surface. It simplifies work in the field and provides the flexibility to support most applications.

Use the Trimax tripod to support survey workflows that require setting up over known points. When it's necessary to raise or lower the scanner into inaccessible areas, we have the Trimax Elevator tripod, which can be extended up to 8.6 ft. (2.62 m).

Trimble also offers 100 mm and 230 mm sphere kits for applications requiring targets for registration. Our height adapters and prisms enable you to easily survey the spheres with a total station to support survey workflows. We also provide mini tripods, and magnetic and suction mounts for spheres.





## Customer Service You Can Count on

Trimble offers the world-class customer service, support and training our users know and trust. Our service centers provide everything you need to optimize equipment performance, from preventative maintenance to full calibration, cleaning and repair. We'll do whatever it takes to minimize downtime and keep you running at maximum efficiency.

Trimble support offers an online Knowledge Center for quick access to product information, technical tips, workflow descriptions, videos, and more. When you need specific hardware or software support on a project, we have the experts that can help. Trimble has a vast network of trained Distribution Partners to provide local support and we offer Preferred Support contracts to give you direct access to highly experienced Trimble support engineers.

## A History of Transforming the Way the World Works

For more than 35 years, Trimble's positioning-centric products have been transforming the way people, businesses and governments work.

The Trimble portfolio now includes more than 1,100 patents. And we continue to support our organic product development with strategic acquisitions to bring the latest positioning technologies to a broader market.

Trimble employees, coupled with a highly capable network of dealers and distribution partners, serve and support customers in 150 countries. Though best known for GPS technology, Trimble integrates GPS, laser, optical and inertial technologies with application software, wireless communications, and other services to provide complete, integrated solutions for our customers. These integrated solutions allow our customers to collect, manage and analyze complex information quickly and efficiently, making them more productive and more profitable.

For more information on our scanning portfolio please visit: [trimble.com/3Dscanning](http://trimble.com/3Dscanning)

Contact your local Trimble Authorised Distribution Partner for more information

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