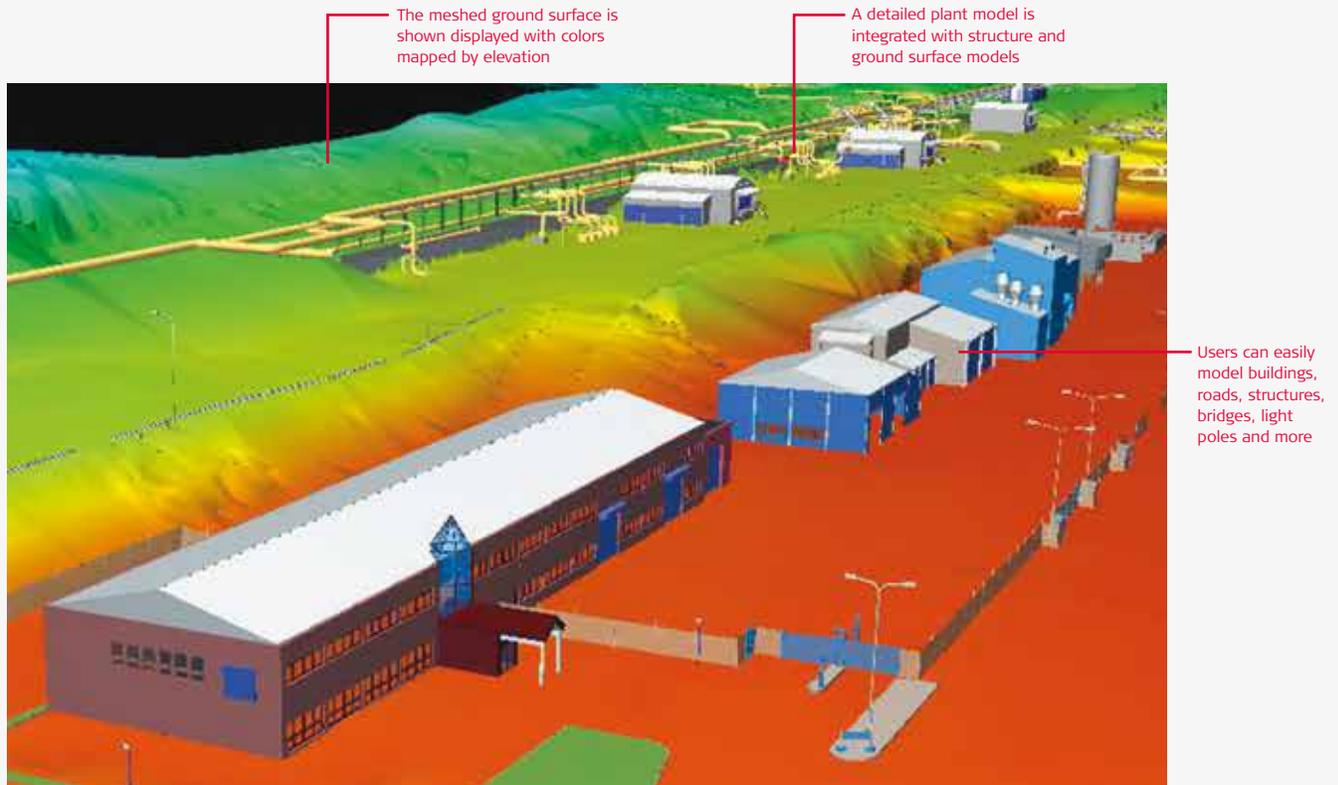


Leica Cyclone MODEL 9.1

Processing laser scans into deliverables



For civil, plant, architectural and other 2D & 3D projects.

Unmatched versatility and performance help make Leica Cyclone MODEL the industry's most popular standalone software for analyzing rich laser scan data and converting the data into deliverables.

Among its advantages, Cyclone MODEL boasts powerful visualization and point cloud navigation plus the industry's most complete tool set. These tools cover a wide range of High-Definition Surveying (HDS) applications in engineering, construction, asset management, heritage, forensics, and other areas.

Cyclone MODEL provides unmatched office productivity, automating many time-consuming tasks and even letting multiple users work on the same data sets simultaneously – thanks to Cyclone's Object/Database foundation. Finally, Cyclone MODEL reflects the data quality and accuracy advantages that users worldwide expect from Leica Geosystems.

Features and Benefits

- New! Floor Flatness/Floor Levelness tool that automatically calculates a report according to ASTM1155 standard
- 3D navigation and "fly mode" with 3D mouse support
- Direct import of Leica Pegasus project data, including device trajectories for easy TruView creation along device tracks
- Direct import of DotProduct *.dp files
- Batch import of iSTAR and Spheron panoramic images
- Texture mapping with Auto-Align panos to scans, supporting iSTAR, Spheron, and Nodal Ninja workflows
- Texture mapping with HDR Tone Map editor
- Multiple, fast, convenient visualization modes

Plant & building tools include:

- Best-fit modeling, catalog fitting, clash detection
- Auto Pipe Finder and Pipe Run Finder - automatically find and fit cylinders

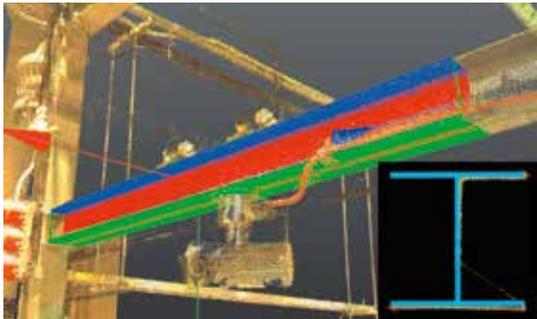
Civil & related tools include:

- Data collector emulation
- Create contours, breaklines, COGO points, cross sections
- TIN/mesh creation, volumes, areas, clearances

Leica Cyclone MODEL 9.1



The automated Pipe Run feature lets users select points on connected, straight pipe sections, and the system automatically models a best fit pipe run with elbows in seconds.



Industry first robust steel fitter that automatically places catalog steel shapes quickly and accurately.

Efficient point cloud manipulation & navigation

Leica Cyclone has many features that let users work efficiently with rich laser scan data sets. Cyclone's Level of Detail (LOD) graphics display and visualization modes allow users to "see through" walls, apply shaded rendering, or enhance edges for improved comprehension of dense point clouds. Texture mapping tools allow users to accurately "drape" photos of the scanned scene onto point clouds for an even more realistic viewing experience. Cyclone MODEL's friendly key plan and TruSpace panoramic viewing modes provide intuitive navigation and viewing options.

High-performance modeling for a wide range of applications

Accurately model a selected geometry type, such as pipes, planes, and topographic surfaces. Least-squares fitting and quality-of-fit statistics ensure reliable results, while Cyclone's advanced memory management provides high performance.

Wealth of plant & structure-specific tools

A new Model Catalog allows user to save complex models and save them to a catalog. Users can then insert these models and or share them with others. New Automatic pipe finder finds all cylinders in a point cloud or group of points clouds. Continuous pipe runs, including elbows, can be modeled automatically. Cyclone MODEL's Piping Mode even lets plant designers add intelligent piping data, including specification, line ID, insulation thickness and SKEYs. Validation of proposed design models – including clash detection – can be done within Cyclone or via export to popular plant design applications.

Rich tool set for civil, architectural and other applications

For excavation and grading, Surface Deviation tools provide accurate quantity calculations. Volume and area for cut and fill are precisely calculated. Output options include volumes, contours, and/or tables with elevation differences at a user-specified grid sample. A clearance tool even finds and reports absolute minimum vertical and horizontal clearances for overpasses, bridges, interchanges, and overhead sign structures. A Virtual Surveyor tool emulates a data collector for creating topographic maps.

Leica Geosystems HDS software family

Cyclone MODEL is part of a full software family for managing laser scan data. Check the web address below for additional information.

Leica Cyclone MODEL Specifications*		Hardware and System Requirements
Survey	Includes all functionality of Cyclone SURVEY	Minimum Specifications Processor: 2 GHz Dual Core processor or better RAM: 2 GB (4 GB for Windows 7) Hard disk: 40 GB Display: SVGA or OpenGL accelerated graphics card (with latest drivers) Supported operating systems: Windows 7 (32 or 64 bit), Windows 8 & 8.1 (64 bit), Windows 10 (64 bit) File system: NTFS Recommended Specifications Processor: 3.0 GHz Quad Core w/ Hyper-threading or higher RAM: 32 GB's or more 64 bit OS Hard disk: 500 GB SSD Drive Large project disk option: RAID 5, 6, or 10 w/ SATA or SAS drives Display: Nvidia GeForce GTX 680, Quadro K4000 or ATI Radeon 7850 or better, with 2 GB's memory or more. Operating system: Microsoft Windows 7 – 64bit File system: NTFS
Large point cloud mgt	3D limit boxes, slices, interactive visualization of massive data sets Cyclone Object Database Technology: fast efficient point cloud mgt.	
Visualization	Full 3D fly, pan, zoom, rotate; including 3D mouse support. Control color mapping using intensity, true-color, gray scale, color by elevation, one-sided (front or back), silhouette (enhanced edges). Map external photos to point cloud. Key plan and panoramic viewing.	
3D Modeling	Model Catalog, Auto Pipe Finder and Move commands. Least-squares fitting of 3D geometry. Statistical QA reports. Fit cloud to standard object tables items, AISC steel, ASME pipe, user defined tables.	
Piping tools	Embed attribute info Line-ID, Spec, SKEY. Fit flange and tie point, automated pipe run with elbows.	
Animation	Create fly-through animations of 3D point clouds and models	
Scripting	Scripting capabilities in the ModelSpace	
COE	Seamless two-way modeled object data integration with AutoCAD, Revit, and MicroStation	
Import	Project data from Leica Geosystems HDS and Pegasus scanners Image and model data: COE, BMP, TIFF, JPEG, PNG, NCTRI, SPH Control data and standard point data formats	
Export	Standard point data formats Image and model data: COE, BMP, TIFF, JPEG, PNG Store in JetStream ProjectVault**	

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* Reference the Leica Cyclone 9.1 Technical Specifications document for a complete listing of product specifications.

** Enabled if Generator is licensed and configured correctly on JetStream ProjectVault

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- when it has to be **right**

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