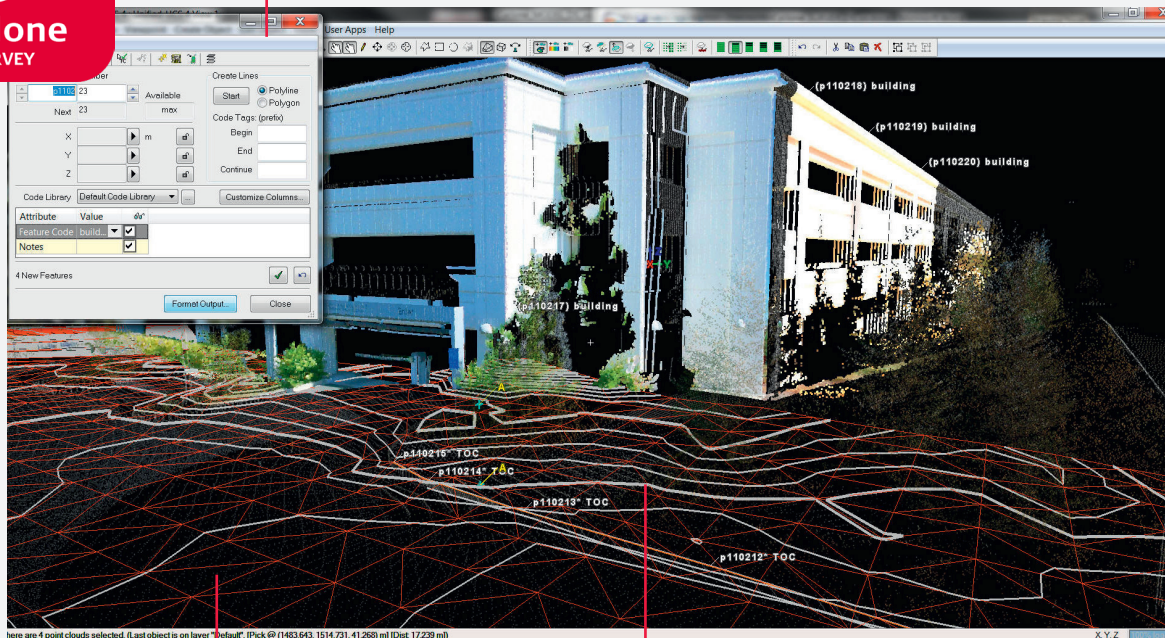


Leica Cyclone SURVEY

Processing laser scans into civil/survey deliverables



The Virtual Surveyor tool emulates traditional TPS/GPS data collection methods



Automatic TIN mesh at any grid spacing

Automatic contour lines at any desired interval

For 2D & 3D civil/survey projects

Leica Cyclone SURVEY combines high performance with a rich set of survey-specific tools for analyzing laser scan data and converting the data into deliverables.

Cyclone SURVEY provides all the survey-specific features and benefits of Cyclone MODEL in a streamlined, low-cost solution. Cyclone MODEL boasts powerful visualization and point cloud navigation plus a complete tool set for High Definition Surveying (HDS) applications in engineering, construction and asset management.

Cyclone SURVEY provides unmatched office productivity by automating many time-consuming tasks. Cyclone SURVEY reflects the data quality & accuracy advantages that users worldwide expect from Leica Geosystems.

Features and Benefits

- Floor Flatness/Floor Levelness tool that automatically calculates a report according to ASTM1155 standard
- Import REGISTER 360 Data sets seamlessly to take advantage of its unsurpassed simplicity and speed while leveraging the scale and multitude of tools available in Cyclone REGISTER
- Import project data from Leica Pegasus systems
- Direct import from DotProduct handheld scanner solutions
- iSTAR and Spheron panoramic camera support
- Breakline generation from feature coded templates
- SmartPicks and Points on Grid
- Virtual Surveyor data collector emulation
- Contours, cross-sections, profiles
- TIN/Mesh creation, including grid option
- Volumes & areas
- Clearances
- Texture mapping with Auto-Align panos to scans, supporting iSTAR, Spheron, and Nodal Ninja workflows
- Texture mapping with HDR Tone Map editor
- Full set of import/export utilities
- Fly Mode for smooth, 3D fly-through navigation, including 3D mouse support
- Create GeoTags
- Support for Leica Geosystems universal digital reality file (LGS)
- View assets from imported Leica RTC360 projects
- Ortho Image Extraction



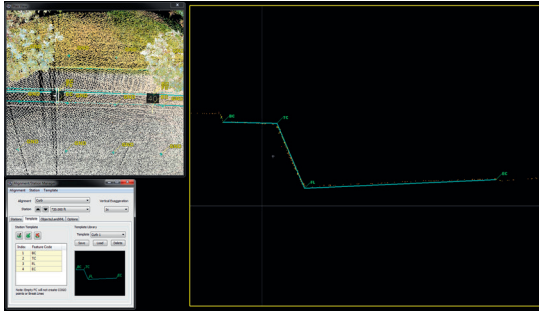
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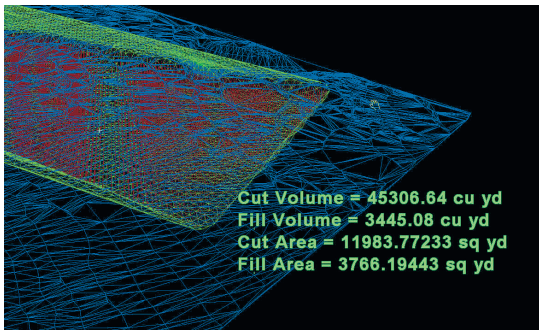
- when it has to be **right**



Leica Cyclone SURVEY



All new Alignment/Station Manager with a secondary Plan View window allows for easy creation of breakline from feature coded templates.



Ground surface TINs and other meshes are easily created and offer great value. Here is an automated report analyzing cut and fill quantities using before-and-after scan data of a ground surface.

Efficient point cloud manipulation & navigation

Leica Cyclone SURVEY has many features that let users work efficiently with rich point cloud 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 and communication 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 SURVEY's friendly key plan and TruSpace panoramic viewing modes provide intuitive navigation and viewing options.

High-performance geometric processing

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

Rich tool set for civil/survey 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 including 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. An Alignment/Station Manager has the ability to generate templates to easily create breaklines, cogo points, and cross section lines. SmartPicks and Points on Grid simplify and automate point selection and grid creation as part of standard survey workflows.

Leica Geosystems HDS software family

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

| Leica Cyclone SURVEY Specifications* | | Hardware and System Requirements |
|--------------------------------------|--|---|
| Large point cloud mgt | 3D limit boxes, slices, interactive visualization of massive data sets Cyclone Object Database Technology: fast efficient point cloud mgt. | Minimum Specifications |
| 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 photo to point cloud. Key plan and panoramic viewing. | Processor: 2.0 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 only), Windows 10 (64 bit only) File System: NTFS |
| 3D Modeling | Least-squares fitting of 3D geometry. User defined error tolerance. Statistical QA reports | Recommended Specifications |
| Animation | Create fly-through animations in 3D point clouds and models | 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 2GB's memory or more Operating system: Microsoft Windows 7 - 64bit File system: NTFS |
| COE | Seamless two-way data integration with AutoCAD and MicroStation | |
| Import | Point data formats: XYZ, PTS, PTX, LAS, E57, ZFS, DP Project data from Leica HDS and Pegasus scanners Image/Camera and model data: COE, BMP, TIFF, JPEG, PNG, NCTRI, SPH Control data from ASCII & X-Function DBX Leica Geosystems universal digital reality file (LGS) | |
| Export | Point data formats: XYZ, PTS, PTX, E57, DXF, PCI/CWF Image and model data: COE, BMP, TIFF, JPEG, PNG Publish to JetStream Enterprise** Publish to TruView Enterprise or TruView Local*** Publish to TruView Cloud Publish Leica Geosystems universal digital reality file (LGS)**** | |

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- * Reference the Leica Cyclone & CloudWorx Technical Specifications document for a complete listing of product specifications.
- ** Enabled by separate Cyclone JetStream PUBLISHER License or Cyclone PUBLISHER Pro.
- *** Enabled by separate Cyclone TruView PUBLISHER License or Cyclone PUBLISHER Pro.
- **** With Cyclone PUBLISHER Pro License.

Leica Geosystems AG
Heinrich-Wild-Strasse
9435 Heerbrugg, Switzerland
+41 71 727 31 31

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