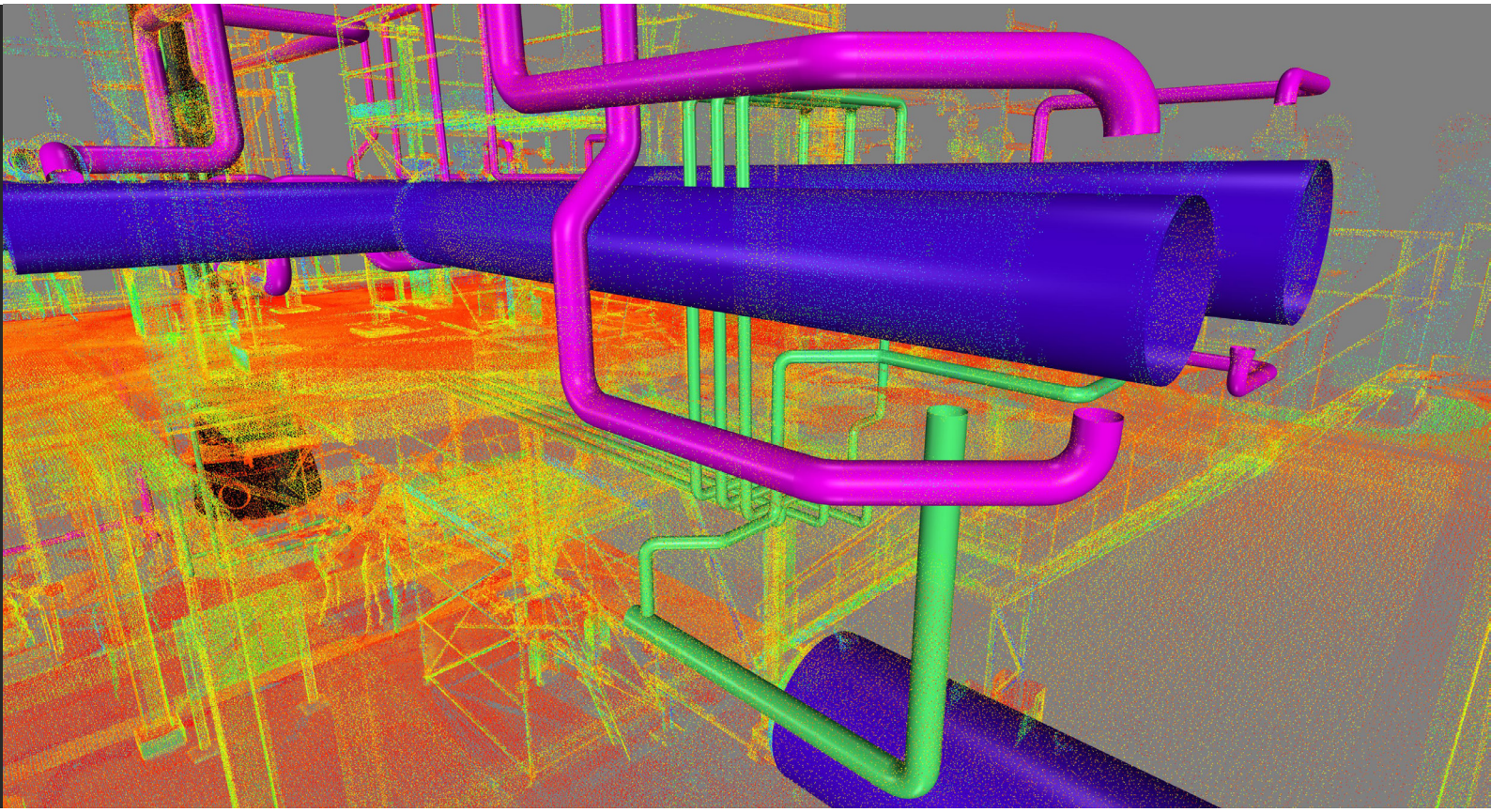
Leica Cyclone 3DR
Technical Specifications



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FEATURE	STANDARD (BASE)	SURVEY (OPTION)	AEC (OPTION)	PLANT (OPTION)	PRO (EDITION)
POINT CLOUD PROCESSING					
Noise detection	♦				♦
Clean/Separate clouds by fence	♦				♦
Separate with object	♦				♦
Reduce	♦				♦
Density homogenisation	♦				♦
Segmentation (by distance, scan station and colour)	♦				♦
Target extraction		♦	♦		♦
Detect moving objects	♦				♦
Ground extractor filter		♦			♦
Walls and floors filter		♦	♦	♦	♦
Tunnel filter		♦	♦		♦
Automatic Classification / Manual Classification		♦	♦	♦	♦
Explode by class / Class representation / Support of classification with LAS-LAZ, LGSx and e57	♦				♦
Points on grid (ground, lowest, highest)	♦				♦
CLOUDWORX					
Connect to Cyclone IMP, LGSx and Cyclone ENTERPRISE server	♦				♦
Create UCS and align views	♦				♦
Create and manage limit boxes, limit slices and limit planes	♦				♦
Reality Cloud Studio, powered by HxDR					
Connect to Reality Cloud Studio	♦				♦
COORDINATE SYSTEMS					
Local coordinate systems	♦				♦
Translation, rotation, free move	♦				♦
Best align N points	♦				♦
Best fit	♦				♦
BIM Alignment			♦	♦	♦
SURFACE MODELLING					
Scan to Mesh	♦				♦
3D meshing	♦				♦
Spherical meshing	♦				♦
2D meshing	♦				♦
Mesh refining: smoothing (including locally with brush), decimation, hole filling sharp, edges and borders reconstruction, junctions, cut mesh, inspection steps, subdivide	♦				♦
Mesh extrusion	♦				♦
Mesh convex hull	♦				♦
Meshing under constraints (with polylines)	♦				♦
Mesh segmentation	♦				♦
Spikes detection	♦				♦
Write on mesh	♦				♦

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FEATURE	STANDARD (BASE)	SURVEY (OPTION)	AEC (OPTION)	PLANT (OPTION)	PRO (EDITION)
SURFACE MODELLING (CONT.)					
DSM and DTM creation		♦			♦
Building extraction		♦	♦		♦
Clean / Separate Mesh (selection zone, size...)	♦				♦
Mesh Extraction from BIM models	♦				♦
Subdivide Mesh	♦				♦
CONTROL/INSPECTION/ANALYSIS					
Angle, distance, geometry	♦				♦
Cubature/volume	♦				♦
Geometric shape extraction	♦				♦
3D inspection	♦				♦
2D inspection	♦				♦
BIM inspection			♦	♦	♦
Reporting (CSV, PDF and 3DPDF)	♦				♦
Stockpile Measurement		♦			♦
Progress Monitoring / Export BCF			♦		♦
Profile Extraction and Analysis for tunnels and roads (creation, inspection, volumes, unroll)		♦	♦		♦
Surface Analysis (levelness, flatness, slope) / Gridded Inspection		♦	♦		♦
Clash Analysis / Export BCF clashes			♦	♦	♦
Inspection Notes and Visual Notes/ Export BCF			♦	♦	♦
POLYLINES/SECTION/EXTRACT					
Sections (planar, radial, etc.)	♦				♦
Smoothing	♦				♦
Decimation	♦				♦
Chaining	♦				♦
Neutral axis extraction	♦				♦
Breakline extraction (single)	♦				♦
Planar contour extraction	♦				♦
Contour lines		♦			♦
Virtual Surveyor		♦			♦
Breakline extraction (multiple)		♦			♦
Polyline edition (stretch, edit, resample, replace...)	♦				♦
Scan-to-Plan			♦		♦
Scan-to-Pipe				♦	♦
IMAGE/TEXTURE MANAGEMENT					
Conversion between inspected or coloured mesh to textured mesh		♦			♦
Automatic and manual mapping of pin hole, cube faces and spherical images		♦			♦
Automatic and manual mapping of orthoimages		♦			♦
Texture from clouds	♦				♦
Camera calibration		♦			♦
Creation of texture atlas		♦			♦

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IMAGE/TEXTURE MANAGEMENT (CONT.)					
Texture edition (adjust, explode, remove)		♦			♦
Texture from material		♦			♦
Smart Texture		♦			♦
Orthoimage (including georeferencing information as word file)		♦			♦
Edition of image masks		♦			♦
REVERSE ENGINEERING					
IGES, STEP and DXF import	♦				♦
REVIT, IFC, and DWG import			♦	♦	♦
CAD Surface creation			♦		♦
Local or overall surface improvements			♦		♦
Support of measuring arm with RDS			♦		♦
IFC Export (meshes)			♦	♦	♦
Reverse engineering workflow (creation and edition of networks, CAD surface generation based on networks, manage overlapped surface, export in IGES/STEP)			♦		♦
IGES/STEP export (geometrical shapes and existing CAD model)	♦				♦
USER INTERFACE					
Orthographic and perspective view	♦				♦
Multiview with synchronisation	♦				♦
Tree explorer	♦				♦
AutoSaves	♦				♦
Clipping box and plane	♦				♦
Grid	♦				♦
Shortcuts	♦				♦
Send to/Send from AutoCAD	♦				♦
Send to/Send from Hexagon MinePlan	♦				♦
Send to/Send from Hexagon BricsCAD	♦				♦
Import from Cyclone FIELD 360	♦				♦
Localisation	♦				♦
Cyclone camera	♦				♦
Navigation through TLS and MMS scanner setups	♦				♦
Scan trajectory import / export in LGSx (Dynamic scanners)	♦				♦
Basic Point selection tools (selection, vertex, nearest, middle, intersection, XYZ)	♦				♦
Advanced Point selection tools (target, highest, lowest)		♦	♦		♦
Survey Point selection tools (ground, white line)		♦			♦
Objects display management	♦				♦
Capture view	♦				♦
Stereo Rendering	♦				♦

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FEATURE	STANDARD (BASE)	SURVEY (OPTION)	AEC (OPTION)	PLANT (OPTION)	PRO (EDITION)
TOUCH MODE WORKFLOWS					
BIM Inspection including connection to Cyclone FIELD 360			♦		♦
AUTOMATION					
Scripting	♦				♦
ANIMATION					
Animation - Video	♦				♦
RDS CONNECTION					
Online data capture and visualisation	♦				♦
TANK MONITORING MODULE					
3D inspection				♦	♦
Roundness and verticality				♦	♦
Settlements				♦	♦
Export and reporting				♦	♦
POINT CLOUD IMPORT FORMATS					
Leica Geosystems (*.pts, *.ptx) and LGSx (*.lgsx)	♦				♦
Leica Nova MS50/60 (*.sdb, *.xml)	♦				♦
ShapeGrabber (*.3pi)	♦				♦
3DReshaper binary file (*.nsd)	♦				♦
AutoDesk DXF (*.dxf)	♦				♦
STL (*.stl)	♦				♦
Polyworks (*.psl)	♦				♦
Leica T-Scan + Steinbichler (*.ac)	♦				♦
LiDAR data (*.las; *.laz)	♦				♦
Other ASCII (*.*)	♦				♦
Zoller and Fröhlich (*.zfs - *.zfc)	♦				♦
PLY points without triangles (*.ply)	♦				♦
ESRI ASCII (raster format *.asc)	♦				♦
FARO (*.fls - *.fws)	♦				♦
POLYWORKS (*.psl)	♦				♦
E57 (*.E57)	♦				♦
LandXML files (*.xml)	♦				♦
RDBX	♦				♦
MESH IMPORT FORMATS					
STL format (*.stl)	♦				♦
Binary PBI format (*.pbi)	♦				♦
DXF 3Dface format (*.dxf)	♦				♦
ASCII POLY format (*.poly)	♦				♦
OBJ format (*.obj)	♦				♦
ASCII Leica format (*.msh)	♦				♦
OFF files (*.off)	♦				♦
PLY (*.ply)	♦				♦
GLB files (*.glb, *.glft)	♦				♦

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CONTOUR/SECTION IMPORT FORMATS					
IGES format	♦				♦
DXF polyline format	♦				♦
Binary MLI format (*.mli)	♦				♦
CAD MODEL IMPORT FORMATS					
IGES	♦				♦
STEP	♦				♦
DWG			♦	♦	♦
BIM MODEL IMPORT FORMATS					
IFC			♦	♦	♦
RVT			♦	♦	♦
POINT CLOUD EXPORT FORMATS					
ASCII FILES (*.asc, *.csv)	♦				♦
Binary files (*.nsd)	♦				♦
Leica Geosystems (*.pts, *.ptx) and LGSx (*.lgsx)	♦				♦
E57 (*.e57) including images	♦				♦
IGES (*.igs)	♦				♦
LAS (*.las)	♦				♦
LAZ (*.laz)	♦				♦
AutoDesk DXF (*.dxf)	♦				♦
LGSx (point cloud, UCS, limit box, trajectory)	♦				♦
MESH EXPORT FORMATS					
ASCII and binary STL format (*.stl)	♦				♦
Binary PBI format (*.pbi)	♦				♦
DXf 3Dface format (*.dxf)	♦				♦
ASCII POLY format (*.poly)	♦				♦
Vertices only (*.asc)	♦				♦
DXF polyline (*.dxf)	♦				♦
STEP file (*.stp)	♦				♦
ASCII Leica format (*.msh)	♦				♦
PLY (*.ply)	♦				♦
LandXML (*.xml)	♦				♦
OBJ format (*.obj)	♦				♦
GLB files (*.glb)	♦				♦
FBX files (*.fbx)	♦				♦
CONTOUR/SECTION EXPORT FORMATS					
IGES format	♦				♦
DXF polyline format	♦				♦
Binary MLI format (*.mli)	♦				♦
ASCII formats	♦				♦

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CAD/BIM MODEL EXPORT FORMATS					
IGES (geometrical shapes and existing CAD model)	♦				♦
STEP (geometrical shapes and existing CAD model)	♦				♦
Image export format	♦				♦
Orthoimage including georeferencing information as World file	♦				♦
IFC Piping models				♦	♦
PROJECT FILES - EXPORT					
RESHAPER (*.rsh)	♦				♦
DXF	♦				♦
PDF 3D	♦				♦
SKETCHFAB	♦				♦
PUBLISHING FEATURES					
Publish Point Cloud to LGS	♦				♦

Recommended Specifications

Processor	2 GHz Dual Quad Core i7 processor or better
RAM	Minimum 16 GB or more for 64 bit OS
Hard Disk	3 GB free disk space
Graphic Card	Nvidia – Quadro or GeForce 1 GB (with OpenGL support, versions 4.3 or higher)
Operating System	Microsoft Windows® 10 (Build 1809) – 11 (64 bits supported)
Tablet Device for Touch Mode	Microsoft Surface PRO Core i7 1.5 GHz – 16GB RAM
Minimum requirements for Automatic Classification	Graphic card: Nvidia with GPU capabilities Minimum GPU Memory: 4 GB Compute capability: 5.0 or higher RAM: 32 GB Hard disk: 10 GB free disk space CUDA® 11.8 Toolkit from Nvidia

Edition Components

Cyclone 3DR Survey Edition	Cyclone 3DR Standard Cyclone 3DR Survey Option
Cyclone 3DR AEC Edition	Cyclone 3DR Standard Cyclone 3DR AEC Option
Cyclone 3DR Plant Edition	Cyclone 3DR Standard Cyclone 3DR Plant Option
Cyclone 3DR Pro Edition	Cyclone 3DR Standard Cyclone 3DR Survey Option Cyclone 3DR AEC Option Cyclone 3DR Plant Option

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