Leica Cyclone 3DR
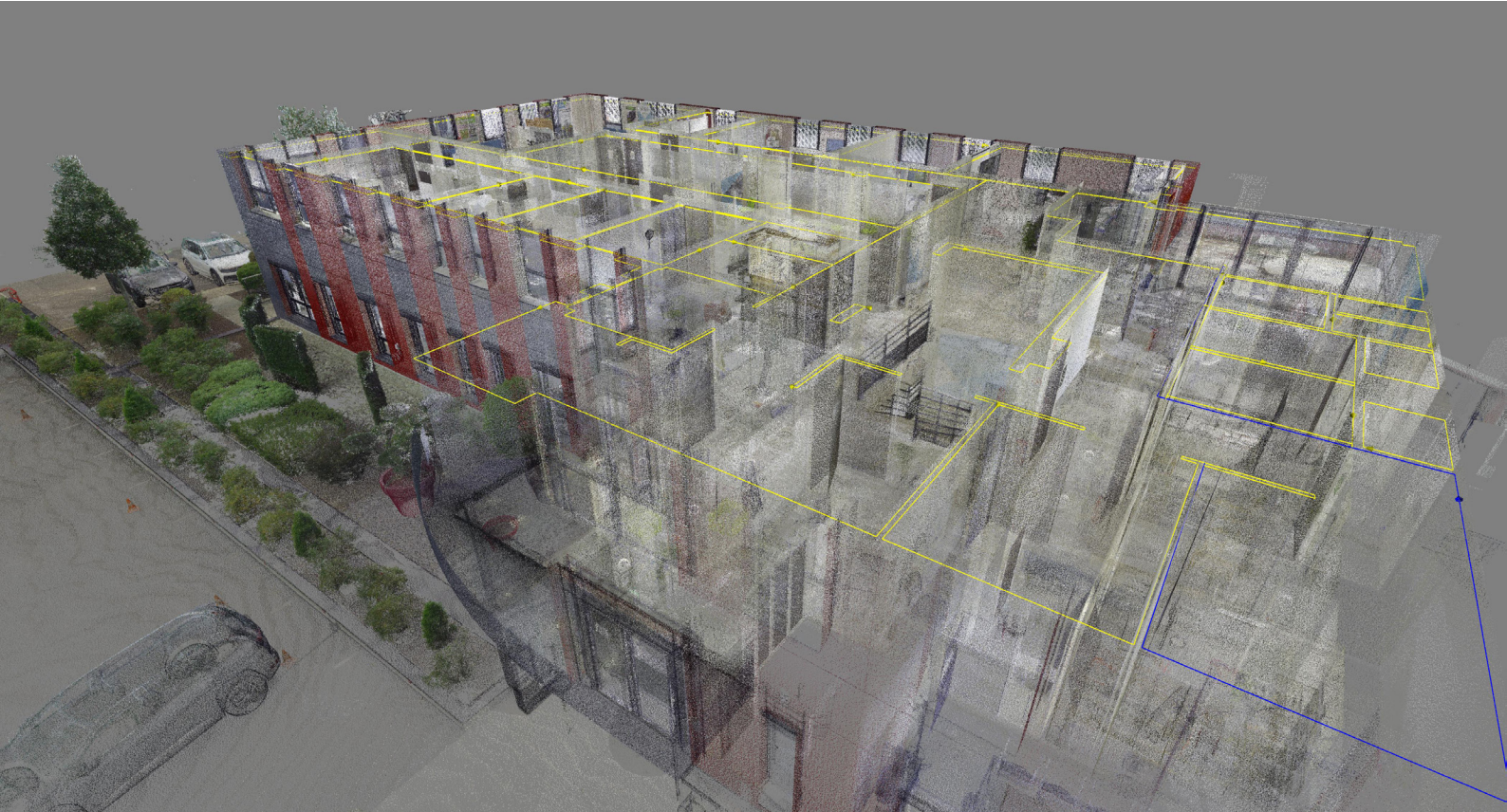## Technical Specifications

Valid as of July 2022

leica-geosystems.com

- when it has to be **right**

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Leica Cyclone 3DR Technical Specifications

FEATURE	STANDARD (BASE)	SURVEY (OPTION)	AEC (OPTION)	TANK (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 classified LAS and LAZ formats	♦				♦
CLOUDWORX					
Connect to Cyclone IMP, LGS and JetStream server	♦				♦
Create UCS and align views	♦				♦
Create and manage limit boxes, limit slices and limit planes	♦				♦
COORDINATE SYSTEMS					
Local coordinate systems	♦				♦
Translation, rotation, free move	♦				♦
Best align N points	♦				♦
Best fit	♦				♦
SURFACE MODELLING					
Scan to Mesh	♦				♦
3D meshing	♦				♦
Spherical meshing	♦				♦
2D meshing	♦				♦
Mesh refining: smoothing, 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	♦				♦
DSM and DTM creation		♦			♦
Building extraction		♦	♦		♦
CONTROL/INSPECTION/ANALYSIS					
Angle, distance, surface	♦				♦
Cubature/volume	♦				♦
Geometric shape extraction	♦				♦

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CONTROL/INSPECTION/ANALYSIS					
3D inspection	♦				♦
2D inspection	♦				♦
BIM inspection			♦		♦
Reporting (CSV, PDF and 3DPDF)	♦				♦
Stockpile measurement		♦			♦
Progress Monitoring			♦		♦
Stockpile measurement		♦			♦
Cross-sections for tunnels and roads (creation, inspection, volumes, unroll)		♦	♦		♦
Surface analysis (levelness, flatness, slope)		♦	♦		♦
Clash analysis / Export BCF clashes			♦		♦
Inspection notes / Export BCF issues			♦		♦
POLYLINES/SECTION/EXTRACT					
Sections (planar, radial, etc.)	♦				♦
Smoothing	♦				♦
Decimation	♦				♦
Chaining	♦				♦
Neutral axis extraction	♦				♦
Breakline extraction (single)	♦				♦
Planar contour extraction	♦				♦
Contour lines		♦			♦
Breakline extraction (multiple)		♦			♦
Polyline edition (stretch, edit, resample, replace...)	♦				♦
Scan to Plan			♦		♦
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 ortho-images		♦			♦
Texture from clouds	♦				♦
Camera calibration		♦			♦
Creation of texture atlas		♦			♦
Ortho-image (including georeferencing information as Word file)		♦			♦
Texture edition (adjust, explode, remove)		♦			♦
Texture from material		♦			♦
Smart Texture		♦			♦
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)			♦		♦

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FEATURE	STANDARD (BASE)	SURVEY (OPTION)	AEC (OPTION)	TANK (OPTION)	PRO (EDITION)
REVERSE ENGINEERING					
Reverse engineering workflow (creation and edition of networks, CAD surface generation based on networks, manage overlapped surface)			♦		♦
IGES/STEP export (geometrical shapes and existing CAD model)	♦				♦
TANK MONITORING MODULE					
3D inspection				♦	
Roundness and verticality				♦	
Settlements				♦	
Export and reporting				♦	
USER INTERFACE					
Orthographic and perspective view	♦				♦
Multiview	♦				♦
Tree explorer	♦				♦
AutoSaves	♦				♦
Limit box, limit planed and limit slices	♦				♦
Grid	♦				♦
Shortcuts	♦				♦
Send to/Send from AutoCAD	♦				♦
Send to/Send from Hexagon MinePlan	♦				♦
Localisation	♦				♦
Cyclone camera	♦				♦
Unit management	♦				♦
Capture view	♦				♦
TOUCH MODE WORKFLOWS					
BIM Inspection including connection to Cyclone FIELD 360 and Cyclone FIELDWORX			♦		♦
AUTOMATION					
Scripting	♦				♦
POINT CLOUD IMPORT FORMATS					
Leica Geosystems (*.pts, *.ptx) and LGS (*.lgs)	♦				♦
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)	♦				♦

Leica Cyclone 3DR Technical Specifications

FEATURE	STANDARD (BASE)	SURVEY (OPTION)	AEC (OPTION)	TANK (OPTION)	PRO (EDITION)
POINT CLOUD IMPORT FORMATS					
POLYWORKS (*.psl)	♦				♦
E57 (*.E57)	♦				♦
LandXML files (*.xml)	♦				♦
DOT Products (*.dpl)	♦				♦
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)	♦				♦
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			♦		♦
PROJECT FILES - IMPORT					
RESHAPER (*.rsh)	♦				♦
DXF	♦				♦
XML	♦				♦
Cyclone MSView and JetStream database through the CloudWorx plugin	♦				♦
POINT CLOUD EXPORT FORMATS					
ASCII FILES (*.asc, *.csv...)	♦				♦
Binary files (*.nsd)	♦				♦
Leica Geosystems (*.pts, *.ptx)	♦				♦
E57 (*.e57)	♦				♦
IGES (*.igs)	♦				♦
LAS (*.las)	♦				♦
LAZ (*.laz)	♦				♦
AutoDesk DXF (*.dxf)	♦				♦

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FEATURE	STANDARD (BASE)	SURVEY (OPTION)	AEC (OPTION)	TANK (OPTION)	PRO (EDITION)
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	♦				♦
CAD MODEL EXPORT FORMATS					
IGES (geometrical shapes and existing CAD model)	♦				♦
STEP (geometrical shapes and existing CAD model)	♦				♦
Image export format	♦				♦
Ortho-image including georeferencing information as World file	♦				♦
PROJECT FILES - EXPORT					
RESHAPER (*.rsh)	♦				♦
DXF	♦				♦
PDF 3D	♦				♦
SKETCHFAB	♦				♦
Animation - Video	♦				♦
BCF report (BIM)			♦		♦

PUBLISHING FEATURES	PUBLISHER	PUBLISHER PRO
Publish to LGS (point clouds and clipping objects)	♦	♦

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Recommended Specifications

Processor	2 GHz Dual Quad Core i7 processor or better
RAM	Minimum 16 GB or more for 64 bit OS
Hard Disk	1 GB free disk space
Graphic Card	NVidia – Quadro or GeForce 1GB (with OpenGL support, versions 4.3 or higher)
Operating System	Microsoft Windows® 7 – 8 – 10 (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 RAM: 32 GB Hard disk: 10 GB free disk space CUDA® 11.2 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 Tank Edition	Cyclone 3DR Standard Cyclone 3DR Tank Option
Cyclone 3DR Pro Edition	Cyclone 3DR Standard Cyclone 3DR Survey Option Cyclone 3DR AEC Option

Customer Care Package (CCP) Information

Cyclone 2021	1 November 2021
Cyclone REGISTER 360 2021	1 November 2021

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