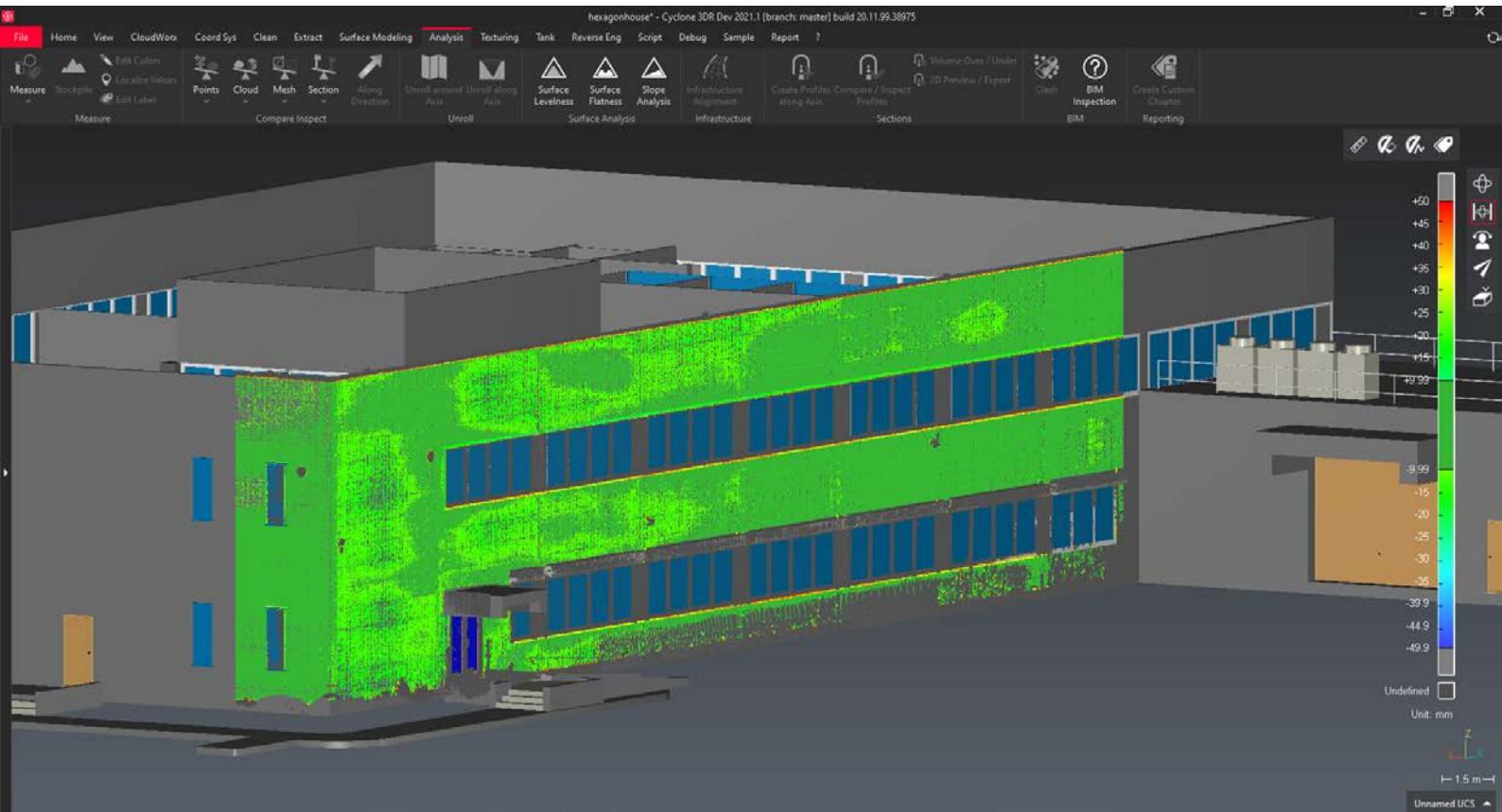


# Leica Cyclone 3DR Technical Specifications



Valid as of April 2021

leica-geosystems.com



- when it has to be **right**

**Leica**  
Geosystems



# Leica Cyclone 3DR Technical Specifications

| FEATURE  | STANDARD (BASE) | SURVEY (OPTION) | AEC (OPTION) | TANK (OPTION) | PRO (EDITION) |
|--|-----------------|-----------------|--------------|---------------|---------------|
| <b>POINT CLOUD PROCESSING</b>  |                 |                 |              |               |               |
| 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  |                 | ◆               | ◆            |               | ◆             |
| <b>CLOUDWORX</b>   |                 |                 |              |               |               |
| Connect to Cyclone IMP, LGS and JetStream server   | ◆               |                 |              |               | ◆             |
| Create UCS and align views   | ◆               |                 |              |               | ◆             |
| Create and manage limit boxes, limit slices and limit planes   | ◆               |                 |              |               | ◆             |
| <b>COORDINATE SYSTEMS</b>  |                 |                 |              |               |               |
| Local coordinate systems   | ◆               |                 |              |               | ◆             |
| Translation, rotation, free move   | ◆               |                 |              |               | ◆             |
| Best align N points  | ◆               |                 |              |               | ◆             |
| Best fit   | ◆               |                 |              |               | ◆             |
| <b>SURFACE MODELLING</b>   |                 |                 |              |               |               |
| 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)   | ◆               |                 |              |               | ◆             |
| Spikes detection   | ◆               |                 |              |               | ◆             |
| Write on mesh  | ◆               |                 |              |               | ◆             |
| DSM and DTM creation   |                 | ◆               |              |               | ◆             |
| Building extraction  |                 | ◆               | ◆            |               | ◆             |
| <b>CONTROL/INSPECTION/ANALYSIS</b>   |                 |                 |              |               |               |
| Angle, distance, surface   | ◆               |                 |              |               | ◆             |
| Cubature/volume  | ◆               |                 |              |               | ◆             |
| Geometric shape extraction   | ◆               |                 |              |               | ◆             |
| 3D inspection  | ◆               |                 |              |               | ◆             |
| 2D inspection  | ◆               |                 |              |               | ◆             |
| BIM inspection   |                 |                 | ◆            |               | ◆             |
| Reporting (CSV, PDF and 3DPDF)   | ◆               |                 |              |               | ◆             |
| Stockpile measurement  |                 | ◆               |              |               | ◆             |

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|---------|-----------------|-----------------|--------------|---------------|---------------|
|---------|-----------------|-----------------|--------------|---------------|---------------|

| CONTROL/INSPECTION/ANALYSIS  |  |   |   |  |   |
|--|--|---|---|--|---|
| Cross-sections for tunnels and roads (creation, inspection, volumes, unroll) |  | ◆ | ◆ |  | ◆ |
| Surface analysis (levelness, flatness, slope)                                |  | ◆ | ◆ |  | ◆ |
| Clash analysis   |  |   | ◆ |  | ◆ |

| 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                              |   | ◆ |  |  | ◆ |
| Camera calibration  |   | ◆ |  |  | ◆ |
| Take colours from cloud   | ◆ |   |  |  | ◆ |
| Creation of texture atlas   |   | ◆ |  |  | ◆ |
| Ortho-image (including georeferencing information as Word file)           |   | ◆ |  |  | ◆ |
| Texture edition (adjust, explode, remove)                                 |   | ◆ |  |  | ◆ |
| Texture from material   |   | ◆ |  |  | ◆ |

| REVERSE ENGINEERING  |   |  |   |  |   |
|--|---|--|---|--|---|
| IGES, STEP and DXF import  | ◆ |  |   |  | ◆ |
| REVIT, IFC and DWG import  |   |  | ◆ |  | ◆ |
| CAD Surface creation   |   |  | ◆ |  | ◆ |
| Local or overall surface improvements  |   |  | ◆ |  | ◆ |
| 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)   | ◆ |  |   |  | ◆ |
| Support of measuring arm with RDS  |   |  | ◆ |  | ◆ |

| TANK MONITORING MODULE    |  |  |  |   |  |
|---------------------------|--|--|--|---|--|
| 3D inspection             |  |  |  | ◆ |  |
| Roundness and verticality |  |  |  | ◆ |  |
| Settlements               |  |  |  | ◆ |  |
| Export and reporting      |  |  |  | ◆ |  |

# Leica Cyclone 3DR Technical Specifications

| FEATURE   | STANDARD (BASE) | SURVEY (OPTION) | AEC (OPTION) | TANK (OPTION) | PRO (EDITION) |
|---|-----------------|-----------------|--------------|---------------|---------------|
| <b>USER INTERFACE</b>                           |                 |                 |              |               |               |
| 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                                 | ◆               |                 |              |               | ◆             |
| <b>TOUCH MODE WORKFLOWS</b>                     |                 |                 |              |               |               |
| BIM Inspection                                  |                 |                 | ◆            |               | ◆             |
| <b>AUTOMATION</b>                               |                 |                 |              |               |               |
| Scripting                                       | ◆               |                 |              |               | ◆             |
| <b>POINT CLOUD IMPORT FORMATS</b>               |                 |                 |              |               |               |
| 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)                            | ◆               |                 |              |               | ◆             |
| POLYWORKS (*.psl)                               | ◆               |                 |              |               | ◆             |
| E57 (*.E57 files)                               | ◆               |                 |              |               | ◆             |
| LandXML files (*.xml)                           | ◆               |                 |              |               | ◆             |
| DOT Products (*.dpl)                            | ◆               |                 |              |               | ◆             |
| RDBX  | ◆               |                 |              |               | ◆             |
| <b>MESH IMPORT FORMATS</b>                      |                 |                 |              |               |               |
| STL format (*.stl)                              | ◆               |                 |              |               | ◆             |
| Binary PBI format (*.pbi)                       | ◆               |                 |              |               | ◆             |
| DXF 3Dface format (*.dxf)                       | ◆               |                 |              |               | ◆             |
| ASCII POLY format (*.poly)                      | ◆               |                 |              |               | ◆             |
| OBJ format (*.obj)                              | ◆               |                 |              |               | ◆             |
| ASCII Leica format (*.msh)                      | ◆               |                 |              |               | ◆             |
| VRML files (*.wrl / *.vrml / *.iv)              | ◆               |                 |              |               | ◆             |

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| FEATURE  | STANDARD (BASE) | SURVEY (OPTION) | AEC (OPTION) | TANK (OPTION) | PRO (EDITION) |
|--|-----------------|-----------------|--------------|---------------|---------------|
| <b>MESH IMPORT FORMATS</b>   |                 |                 |              |               |               |
| OFF files (*.off)  | ◆               |                 |              |               | ◆             |
| PLY (*.ply)  | ◆               |                 |              |               | ◆             |
| <b>CONTOUR/SECTION IMPORT FORMATS</b>                              |                 |                 |              |               |               |
| IGES format  | ◆               |                 |              |               | ◆             |
| DXF polyline format  | ◆               |                 |              |               | ◆             |
| Binary MLI format (*.mli)  | ◆               |                 |              |               | ◆             |
| <b>CAD MODEL IMPORT FORMATS</b>                                    |                 |                 |              |               |               |
| IGES   | ◆               |                 |              |               | ◆             |
| STEP   | ◆               |                 |              |               | ◆             |
| DWG  |                 |                 | ◆            |               | ◆             |
| <b>BIM MODEL IMPORT FORMATS</b>                                    |                 |                 |              |               |               |
| IFC  |                 |                 | ◆            |               | ◆             |
| RVT  |                 |                 | ◆            |               | ◆             |
| <b>PROJECT FILES - IMPORT</b>                                      |                 |                 |              |               |               |
| RESHAPER (*.rsh)   | ◆               |                 |              |               | ◆             |
| DXF  | ◆               |                 |              |               | ◆             |
| XML  | ◆               |                 |              |               | ◆             |
| Cyclone MSView and JetStream database through the CloudWorx plugin | ◆               |                 |              |               | ◆             |
| <b>POINT CLOUD EXPORT FORMATS</b>                                  |                 |                 |              |               |               |
| ASCII FILES (*.asc, *.csv...)                                      | ◆               |                 |              |               | ◆             |
| Binary files (*.nsd)   | ◆               |                 |              |               | ◆             |
| Leica Geosystems (*.pts, *.ptx)                                    | ◆               |                 |              |               | ◆             |
| E57 (*.e57)  | ◆               |                 |              |               | ◆             |
| IGES (*.igs)   | ◆               |                 |              |               | ◆             |
| LAS (*.las)  | ◆               |                 |              |               | ◆             |
| LAZ (*.laz)  | ◆               |                 |              |               | ◆             |
| AutoDesk DXF (*.dxf)   | ◆               |                 |              |               | ◆             |
| <b>MESH EXPORT FORMATS</b>   |                 |                 |              |               |               |
| 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)   | ◆               |                 |              |               | ◆             |
| VRML 2 (*.wrl / *.vml / *.iv)                                      | ◆               |                 |              |               | ◆             |
| PLY (*.ply)  | ◆               |                 |              |               | ◆             |
| LandXML (*.xml)  | ◆               |                 |              |               | ◆             |
| OBJ format (*.obj)   | ◆               |                 |              |               | ◆             |

| FEATURE | STANDARD (BASE) | SURVEY (OPTION) | AEC (OPTION) | TANK (OPTION) | PRO (EDITION) |
|---------|-----------------|-----------------|--------------|---------------|---------------|
|---------|-----------------|-----------------|--------------|---------------|---------------|

| 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      | ◆ |  |  |  | ◆ |

## 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                             |

## Edition Components

|                            |   |
|----------------------------|---|
| Cyclone 3DR Survey Edition | Cyclone 3DR Standard<br>Cyclone 3DR Survey Option                           |
| Cyclone 3DR AEC Edition    | Cyclone 3DR Standard<br>Cyclone 3DR AEC Option                              |
| Cyclone 3DR Tank Edition   | Cyclone 3DR Standard<br>Cyclone 3DR Tank Option                             |
| Cyclone 3DR Pro Edition    | Cyclone 3DR Standard<br>Cyclone 3DR Survey Option<br>Cyclone 3DR AEC Option |

## Customer Care Package (CCP) Information

|                           |                  |
|---------------------------|------------------|
| Cyclone 2021              | January 25, 2021 |
| Cyclone REGISTER 360 2021 | January 25, 2021 |

Revolutionising the world of measurement and survey for nearly 200 years, Leica Geosystems, part of Hexagon, creates complete solutions for professionals across the planet. Known for premium products and innovative solution development, professionals in a diverse mix of industries, such as aerospace and defence, safety and security, construction, and manufacturing, trust Leica Geosystems for all their geospatial needs. With precise and accurate instruments, sophisticated software, and trusted services, Leica Geosystems delivers value every day to those shaping the future of our world.

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications. Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

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