



# HERON<sup>®</sup> LITE

HERON LITE is a handheld 3D mapping system composed of a laser sensor for fast 3D mapping activities, gathering real-time 3D LiDAR data including distances and calibrated reflectivity measurements. Particularly appreciated in stockpile volumetric computation, underground mines and when RGB information is not required. HERON LITE is provided with a complete software package to manage the entire data processing workflow.



— HERON family —

## INDOOR/OUTDOOR

Wearable or handheld mobile laser scanner. Versatile and suitable for any environment.

*Your unmatched SLAM-based solution!*

## AUTOMATIC

Turn on the system and start surveying. Just walk and leave the scanner working for you.

*Enjoy a professional system easy-to-use!*

## COMPLETE DATA

3D point clouds and 5k pano images to gather both geometry and color information at once.

*The scanner you can no longer give up!*

## ALL-IN-ONE

Full post-processing software included. Third-party compatibility provided.

*A forefront technology at your fingertips!*

## USABILITY

- Easy use of control points.
- Loop closure and initialization procedure not required.
- Hand-held design.
- Capture head dockable also to a light rugged backpack or vehicles like cars, bikes, quads...
- Rugged touch screen Control Unit that also provides:
  - Annotations.
  - Real-time view of the point cloud generation and the acquired panoramic images.
  - Hands-free configuration.

## DATA PROCESSING

- Accurate 3D models.
- Point cloud rendering with multiple color layers.
- Direct export of 3D data to ReCap Pro.
- Easy data export to third-party software (e.g. 3DM Feature Extraction, EdgeWise, Micromine, Scene, Verity) and cloud platforms (e.g. 3DM Cloud, 3DUserNet, Cintoo Cloud, Scene Webshare) through the .e57 format.
- Advanced point cloud rendering which emphasizes features and details.
- 3D models navigation tools.



## APPLICATIONS

- Indoors
- Stockpiles
- Single Floor Acquisition
- Cadastral Survey
- BIM Models
- Multi-sensor Projects
- Underground Mines
- Tunnels
- Digital Twin
- Geospatial
- Forensic
- Outdoors (with geometry)
- Urban Areas
- Fast and sharable Plan Views
- Forests

## INCLUDED SOFTWARE

What you need to create and navigate 3D models and share results



### HERON Desktop®

Post-processing SLAM software

To manage HERON raw data and automatically get accurate 3D point cloud models using a patented SLAM algorithm; split and merge survey trajectories and filter moving objects. Advanced mode to customize SLAM parameters. Use of GNSS coordinates for geolocalization.



### Reconstructor®

Advanced 3D point cloud analysis software

Complete post-processing workflow for data from HERON or tripod/handheld/mobile sensors and UAV 3D point clouds. Powerful automatic target-less scans registration. Data export in several standard formats. Full compatibility with several third-party software and cloud platforms. Point cloud editing, color camera calibration, mesh and DTM generation, volume/cut&fill volume calculations, cross-sections and profiles extraction.



### GoBlueprint®

Free tool for 2.5D maps

A user-friendly viewer of X-ray 2.5D scaled images (obtained with Reconstructor), designed to quickly share models with final clients letting them easily measure distances, areas, volumes. It runs on any Windows-based tablet or pc.



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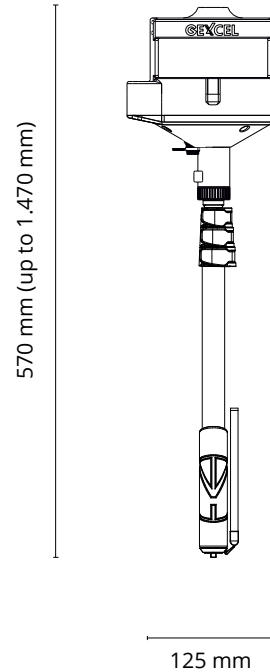
## Product Specifications

### MAIN FEATURES

Suitable environment	indoor/outdoor
Handheld	yes
Wearable with a backpack	yes (optional add-on)
Mountable on various mobile platforms (car, trolley, bike, quad, boat)	yes
No limits SLAM post-processing software included (HERON Desktop)	yes
Point cloud advanced processing software included (Reconstructor)	yes
Free software for x-ray map visualization and measuring (GoBlueprint)	yes
Output data	.e57, .las, .ply, export to ReCap
Points per second	300.000
Local accuracy	~ 3 cm
Max survey resolution	~ 2 cm
Global accuracy	~ 5 cm in short close rings <sup>(1)</sup>
Control points	yes (optional add-on)
Global accuracy with control points	~ 3 cm
Loop closure	not mandatory
Working in every light conditions	yes
Initialization and calibration procedures	not required
Single operator	yes
Sensor working hours (in continuous acquisition)	~ 8 h
Real-time 3D point cloud visualization	yes
Operating temperature	-10° ; +45°
Storage temperature	-40° ; +60°
Rugged transport case	yes

### CAPTURE HEAD

Lidar sensor brand and type	Velodyne Puck LITE
No. of sensors	1
Laser safety classification	class 1
Laser wave length	903 nm
Laser max range	100 m
FOV	360° x 360° <sup>(2)</sup>
IMU	yes
Weight	940 g
Dimension	125 x 144 x 160 mm



### HANDHELD POLE

Weight (pole + cables)	965 g
Dimension	from 40 to 130 cm

### SYSTEM BATTERY

Model	Lithium Ion 12V 4Ah
Weight	410 g
Dimension	22 x 176 x 78 mm
Belt with battery holder	yes

### RUGGED TOUCHSCREEN CONTROL UNIT

Processor	Intel® Core™ i7
Weight	1200 g
Dimension	277 x 195 x 24 mm
Storage and Memory	256 GB
Protection index	IP65
Shoulder harness	282 g
Display	10.1" IPS TFT LCD WUXGA
Capacitive	Multi-touch screen
Sunlight readable technology	1000 nits LumiBond®
Power	Li-ion smart battery
Battery working hours	~ 1 h 30 m

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### OPTIONAL TOOLKITS

Centering tip (12 g)	Telescopic pole with cables (from 56 cm to 180 cm   1000 g)
Head protection ring (34 g)	Telescopic pole with cables (from 115 cm to 625 cm   1880 g)
Ring LED Light (4000 lumen   36 W   700 g)	Rugged backpack (500 x 370 x 190 mm   4280 g)
High capacity battery for Control Unit (3 hours)	Rugged backpack <i>Plus</i> (540 x 400 x 220 mm   5000 g   wired)
Car mount	

### SOFTWARE EQUIPMENT

<b>Reconstructor</b>	included
<b>Reconstructor HERON add-on</b>	included
3D navigation of point clouds and images	yes
Automatic scans registration	yes
Direct data import	.laz, .e57, .fls, .zfs, .rxp, .3dd, .x3s, .x3m, .clr, .cl3, .dp, .ixf, .nctri, .txt, .las, .ptx, .pts, .ptg, .asc, .ply, .csv, DEM Ascii
Point cloud filtering, managing and classifying	yes
Import .ifc BIM format	yes
Import terrestrial laser scanner data	yes
Import point clouds from UAV	yes
Import mobile mapping data	yes
CAD/Mesh models	.ifc, .obj, .dxf, .stl, .txt, .wrl, .vrml, .ply, .mvx, .dae
Export to ReCap Pro	yes
Cross sections and profiles (.dxf)	yes
Orthophotos & x-ray orthophotos (direct export to AutoCAD)	yes
Volumes and areas computation	yes
Mesh creation and manipulation	yes
Verification tool	yes

<b>HERON Desktop</b>	included
Drift effect reducing (global optimization)	yes
3D local maps patented algorithm	yes
Large coordinates for geolocalization	yes
Split/merge trajectories and point clouds	yes
Automatic post-processing mode	yes
Noise cleaning (attenuation)	yes
Moving objects removing	yes

<b>GoBlueprint</b>	free software
Volume calculation based on x-ray maps	yes
Take measures on x-ray maps directly (linear, angular, area)	yes
For any Windows-based PC and tablet (to bring your maps on-site too)	yes
Deliverables easy to manage and share	yes

<b>HERON Constraints add-on</b>	optional
<b>Reconstructor MINING add-on</b>	optional
<b>Reconstructor COLOR add-on</b>	optional
<b>Reconstructor 3D Viewer</b>	free tool
<b>ClearEdge3D EdgeWise</b>	optional
<b>ClearEdge3D Verity &amp; Rithm</b>	optional
<b>3DUserNetVISION</b> (discount rates available)	optional
<b>Cintoo Cloud</b>	optional

(1) The global accuracy depends on the effectiveness of the SLAM registration algorithm, which can be influenced by the geometry of the surveyed environment. Long trajectories in absence of loop closures and cross paths, as narrow tunnels or narrow stairs, can downgrade the global accuracy to 20-50 cm. The patented and unique algorithms present in HERON Desktop and the use of control points or control scans as constraints can dramatically improve the quality of the sensor accuracy up to 2cm. The Gexcel support team is always ready to provide you with more detailed information on this topic.

(2) FOV guaranteed by walking with the system (nominal sensor FOV - horiz. 360° | vert. +15 ; -15°).

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