

# Automatic point cloud classification and feature extraction

## Advanced LiDAR processing

Global Mapper is a robust and inexpensive GIS application that combines a comprehensive array of spatial data processing tools with access to an unparalleled variety of data formats.

Coinciding with the rapidly expanding availability of LiDAR data, the LiDAR Module supplements the standard version of Global Mapper with a collection of powerful point cloud processing tools and superior terrain creation capability. This affordable add-on provides numerous advanced LiDAR processing tools, including automatic point cloud classification, automatic building, tree, and powerline extraction, cross-sectional viewing and editing, perpendicular profiling with custom 3D area and line extraction, dramatically faster surface generation, and much more. At a fraction of the cost of comparable applications, it is a must-have for anyone using or managing LiDAR data.

The LiDAR Module is embedded in the current release of Global Mapper and is activated in the Module/License Extension Manager. To evaluate the capabilities of the module, a free trial is available.

## MODULE HIGHLIGHTS

- LiDAR toolbar for editing and analysis
- Multiple gridding options for faster DSM or DTM generation
- Support for point cloud files containing a billion points or more
- Automatic point classification tools that distinguish building, ground, and vegetation points in unclassified layers
- Feature extraction functionality to automatically create 3D buildings, trees, and above-ground utility cables
- Cross-sectional rendering using Global Mapper's Path Profile tool for viewing and editing the point cloud in a vertical perspective
- Custom feature extraction for creating 3D line and area features using the perpendicular profiling function
- Advanced filtering options to efficiently remove non-essential points
- LiDAR scripting commands for streamlining workflow
- Point colorization from underlying imagery offering photo-realistic point cloud rendering in Global Mapper's 3D Viewer
- Support for reporting LiDAR statistics
- Support for importing and exporting the most common point cloud formats

## RESOURCES

- Free monthly webinars
- Training classes public, online, and custom
- Getting Started guide
- Academic curriculums
- Social media user groups

The standard version of Global Mapper offers some basic LiDAR processing functionality including importing, exporting, and gridding of LiDAR datasets. With the addition of the LiDAR Module, the ability to fully utilize point cloud data is significantly improved. The following table illustrates the key functional enhancements that are enabled with the LiDAR Module.

## Software Comparison



Global Mapper



LiDAR Module

	Global Mapper	LiDAR Module
Read/Write Support for LAS/LAZ files	●	●
Support for working with over one billion points [64-bit only]	●	●
Elevation Grid Creation by Triangulated Irregular Network	●	●
Elevation Grid Creation - Binning Terrain Model		●
Elevation Grid Creation - Binning Average Height Method		●
Elevation Grid Creation - Binning Surface Model Method		●
Easy Filtering for separating Point Classes		●
One-Button Point Cloud Colorization from Raster Imagery		●
One-Button Point Reclassification tools		●
Auto Ground Point Classification		●
Automatically classify Noise points from a raw LiDAR point cloud		●
Display of LiDAR Points in Path Profile (Side-View)		●
Cross-Section Point Selection/Editing tools (via Path Profile Tool)		●
Render Point Cloud by Elevation Shader	●	●
Render Point Cloud by RGB embedded in point cloud	●	●
Render Point Cloud by Intensity	●	●
Render Point Cloud by Classification	●	●
Render Point Cloud by Return Number	●	●
Render Point Cloud by Point Index	●	●
Render Point Cloud by Point Source ID	●	●
Render Point Cloud by Height Above Ground		●
Export LAS files using Height Above Ground		●
Ability to interactively change rendering method from Toolbar		●
Support for Leica PTS format		●
Ability to create custom keyboard shortcuts for reclassification		●
Search points by Height Above Ground		●
Ability to manually adjust elevations in entire point cloud		●
Scripting ability to calculate statistics for Point Cloud Data		●
Ability to transform point cloud coordinates (including rectification)		●
Ability to filter selected LiDAR points by elevation/color range		●
Ability to reproject LiDAR point clouds	●	●
Ability to crop point clouds	●	●
Automatically classify building, tree, and power line points from a raw Lidar point cloud		●
Extract building outlines from classified LiDAR point clouds		●
Extract tree points/areas from classified LiDAR point clouds		●
Extract 3D line features from classified LiDAR point clouds		●
Perpendicular point cloud profiling		●
Custom 3D Digitizing and Feature Extraction		●
Extract power lines from classified LiDAR point clouds		●
Export LiDAR points within elevation range		●
Filter points applied in gridding process		●
Create grid based on intensity rather than elevation		●
Create grid from heights above ground ID rather than elevation		●
Color LiDAR point clouds by the difference in height between the first and last return		●