

Point Cloud Creation, Classification, and Feature Extraction

Advanced Point Cloud Processing

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

The optional LiDAR Module supplements the standard version of the software with a collection of powerful point cloud processing tools, including photogrammetric point cloud creation, automatic reclassification, and feature extraction.



Points representing powerlines can be automatically reclassified

The LiDAR Module is embedded in the current release of Global Mapper and is activated in the Module/License Extension Manager. A free trial is available for evaluation.

RESOURCES

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

LIDAR MODULE HIGHLIGHTS

Pixels-to-Points™ Tool

Photogrammetric point cloud generation from overlapping images

Automatic Ground Point Classification

Identification and reclassification of ground points for accurate DTM creation

Non-Ground Point Classification

Automatic detection and reclassification of buildings, trees, and power lines

Vector Feature Extraction

Creation of 3D vector features from building, tree, and power line points

Custom Feature Extraction

Creation of 3D line and area features using the perpendicular profiling function

Cross-Sectional Rendering

Path Profile tool for viewing and editing the point cloud in a vertical perspective

Point Cloud Filtering

Options for removal non-essential points including noise point filtering

DEM Creation and Hydro-flattening

Advanced gridding for DTM or DSM generation including hydro-flattening of streams or water bodies

Point Cloud Display

Multiple options for point rendering including by classification, by return intensity, and by color derived from an underlying image layer



Software Comparison



Global Mapper



LiDAR Module

	Global Mapper	LiDAR Module
Pixels-to-Points for creating a 3D point cloud from overlapping imagery		●
Read/Write support for LAS/LAZ files	●	●
Support for Leica PTS format		●
Support for working with over one billion points [64-bit only]	●	●
Option to render point cloud by elevation shader	●	●
Option to render point cloud by RGB values embedded in point cloud	●	●
Option to render point cloud by intensity	●	●
Option to render point cloud by classification	●	●
Option to render point cloud by return number	●	●
Option to render point cloud by point index	●	●
Option to render point cloud by point source ID	●	●
Option to render point cloud by the difference in height between the first and last return	●	●
Option to render point cloud by calculated NDVI or NDWI value (requires NIR attribute)	●	●
Option to render point cloud by height above ground		●
Option to render point cloud by point density		●
Ability to interactively change rendering method from Toolbar		●
One-button point cloud colorization from raster imagery		●
Ability to calculate statistics for point cloud data using a script		●
Ability to reproject LiDAR point clouds	●	●
Ability to transform point cloud coordinates (including rectification)		●
Ability to crop point clouds	●	●
Ability to manually edit or delete points	●	●
Easy filtering for separating point classes		●
Ability to filter selected LiDAR points by elevation/color range		●
Ability to manually adjust elevations in entire point cloud		●
LiDAR QC to vertically correct LIDAR elevations from ground control points		●
Ability to display and edit LiDAR points in Path Profile (cross-sectional view)		●
One-button point reclassification tools		●
Automatic ground point classification		●
Automatic identification of noise points		●
Automatic reclassification of building, tree, and power line points		●
Ability to create custom keyboard shortcuts for reclassification		●
Building, tree, and powerline extraction from classified LiDAR points		●
Custom 3D digitizing and feature extraction using perpendicular path profile views		●
Elevation grid creation using Triangulated Irregular Network (TIN) method	●	●
Elevation grid creation using local minimum elevation (DTM)		●
Elevation grid creation using local maximum elevation (DSM)		●
Elevation grid creation using local average elevation		●
Option to filter points applied in gridding process		●
Ability to create grid from heights above ground rather than elevation		●
Ability to create grid based on intensity rather than elevation		●
Ability to create grid from color values to create an image layer		●
Option to export LiDAR points within elevation range		●
Option to export LAS files using height above ground instead of elevation		●