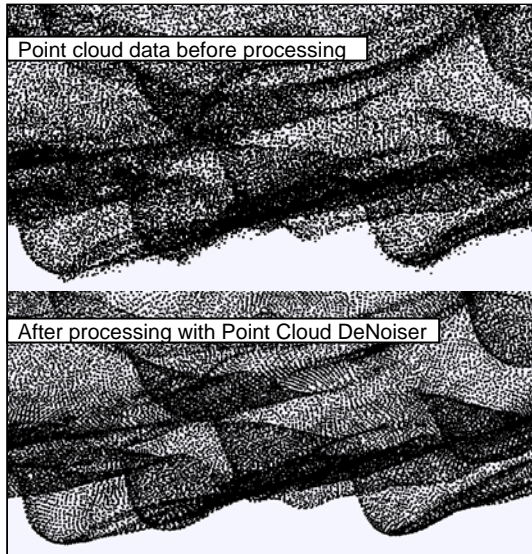


Point Cloud DeNoiser™ (3D)

www.laserdesign.com

The Leader in 3D Laser Scanning Since 1987



Laser Design Point Cloud DeNoiser™ (3D)

- Automated 3D scan data clean up
- Easy-to-use and learn Windows interface
- Reduces or eliminates the need to spray shiny parts
- Automated outlier removal without threshold input
- High-precision noise correction functions
- Supports ASCII and Binary point cloud formats
- 3D scan data smoothing optional settings to improve data from poor accuracy scanners

Point Cloud DeNoiser™ (3D) Software is a revolutionary step forward in the process of editing the massive point cloud files generated by all types of scanning technologies (asc & pcn). It automates the process of removing outlier coordinates very quickly, preserving the integrity of the data, and reducing valuable engineering time.

The Point Cloud DeNoiser is the most effective noise reduction product on the market for high density scanning technologies. The amount of time spent cleaning up scan data to eliminate excessive or minute noise in scan files can be more than half of the time spent on the entire data processing project. The Point Cloud DeNoiser Software automates the entire clean-up process for scan data from any source with compatible output formats.

Point Cloud DeNoiser Software greatly reduces the need to spray surface treatments, powders, paints, or finishes on parts with shiny surfaces because it effortlessly eliminates the noisy data after the scanning process. Messy part preparation can be a thing of the past using this powerful tool. Many more applications for scanning parts are thus viable because there is no part contamination: for example medical, electronics components / circuit boards, clean room parts, machined metal surfaces, polished parts and many high finish, reflective materials that previously could not be scanned without surface sprays. Point Cloud DeNoiser Software's new filtering technology cuts down on the deformation caused by sprays. Some extremely reflective finishes such as chrome, polished surfaces, and transparent or translucent materials may still need a light treatment.

While measurement noise can be an inevitable by-product of current laser triangulation scanning technology, white light scanning, photogrammetry (especially when lighting conditions are not perfect), moiré fringe based scanning, confocal laser scanning, laser radar, long-range architectural laser scanning (terrestrial laser scanning), time-of-flight laser, and many other non-contact high density scanning 3D technologies, Laser Design's Point Cloud DeNoiser effectively lessens these artifacts. Noise removal is crucial for industries that use scanning technologies for their reverse engineering, quality inspection, and object recognition applications such as automotive, aerospace, electronics, telecommunications, medical device, consumer appliance, and tooling manufacturing.

Point Cloud DeNoiser automatically removes both long-range noise, i.e., outliers, and short-range noise. The software identifies and deletes discrete and clustered outliers without moving any of the input data points. Point Cloud DeNoiser's algorithm also excels at removing structured point data usually associated with reflections.

Laser Design's Point Cloud DeNoiser outperforms the imbedded data processing features in all of the market leaders in 3D digitized data processing software for reverse engineering, inspection, and analysis applications. In comparison tests, the competing software completely failed to automatically denoise many measured data models while the Point Cloud DeNoiser provided impressive outlier removal results without user interaction. The competing software often requires manual point selection and deletion to denoise a point cloud, which is a tedious, time consuming task. Point Cloud DeNoiser has been shown to be up to ten times faster in removing noisy data than manual methods to obtain comparable results. Laser Design's software handles both planar and arbitrarily curved surfaces with equal efficacy.

Laser Design Point Cloud DeNoiser™ (3D) Features

Outlier Removal Functions

- Discrete outliers removal
- Removal of isolated and non-isolated outlier clusters
- Automatic removal of outliers located at concave sharp corners and near holes or channels without user interaction
- Automatic removal of outliers near convex or concave smooth curved surfaces without user interaction
- No need for a threshold input

Local Noise Correction Functions

- High-precision local noise correction
- Sharp feature preserving

PC Requirements

- Windows XP Pro SP2 (32-bit) / Windows XP Pro (64-bit) recommended
- 2 - 4 GB RAM recommended
- Pentium® 4 2GHz or better / Dual core 2GHz CPU's recommended

Supported Formats

Data Input

- .asc: ASCII (generic) point cloud
- .pcn: Binary (normal) point cloud

Data Output

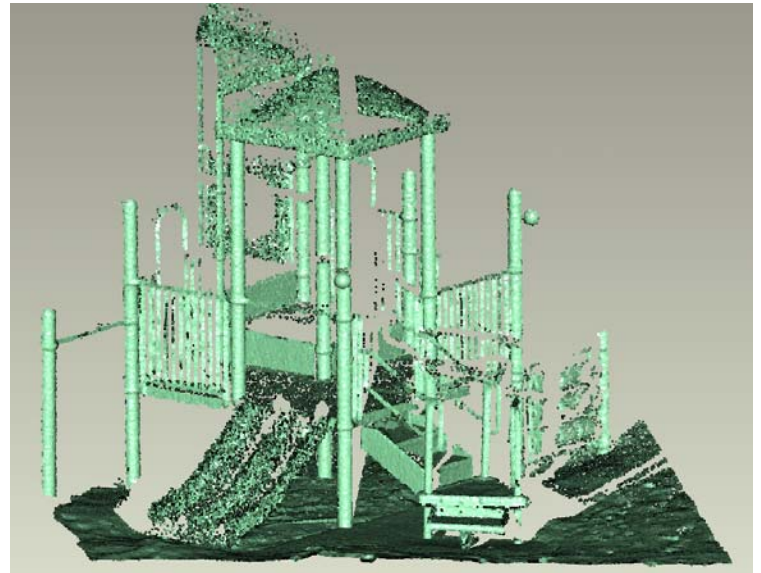
- .asc: ASCII (generic) point cloud
- Other binary formats available soon

User Friendly Interface

- Script file support
- Log file output
- Error file output
- Basic graphical user interface



Original Data from large format scanner of playground:
840,427 points



DeNoiser processed data with "aggressive" setting:
711,202 points, 70 seconds processing time