

BENEFITS OF MARS® QC MODULE

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The MARS® QC Module (available in MARS® Explorer QC and MARS® Production) makes your internal QC procedures simpler and can be easily tailored to meet your needs. The output of the automated QC process includes detailed and summary QC reports that help our clients identify and mitigate data quality issues.

The QC module:

- Automates quality control analysis for all files of a lidar point cloud data set with no file sampling
- Generates a QC report that provides raster analysis images, tabular data, and histograms for review
- Supports multi-thread data processing to improve QC analysis performance
- Allows customizable QC analysis through selection of tests/parameters to match project requirements
- Automatically documents QC analysis parameters to ensure consistency
- Supports analysis of multi-channel lidar sensor data

The module offers 14 options for advanced reporting capabilities:

- USGS tools to check compliance with the following:
  - LAS v1.4 data to the USGS Lidar Base Specification 2025 rev. A, 2024 rev. A, 2023 rev. A, 2022 rev. A, 2021 rev. A, 2020 rev. A, Version 2.1, Version 1.3, or Version 1.2 (up to 24 automated tests each)
  - LAS v1.0 - LAS v1.3 data to the older USGS NGP Lidar Base Specification Version 1.0 (up to 30 automated tests)
- Lidar data checks tool for verifying the expected data attributes, coverage, point density, and relative accuracy of a lidar point cloud dataset
- Lidar calibration checks tool for verifying correct lidar collection system function by testing the relative accuracy and channel alignment (when applicable) of a lidar point cloud dataset
- Voronoi Density Reporting tool to provide unbiased lidar point cloud dataset density testing
- Raster QC tool to test the contents and integrity of specific raster types

Lidar
Calibration Checks

The lidar Calibration Checks portion of the QC module verifies proper lidar collection systems function using tests of the accuracy of a lidar point could dataset.

See Information Sheet >

See a Sample Report >

Lidar
Data Checks

The lidar data checks section provides an automated method for verifying the expected data attributes, coverage, point density, and relative accuracy of a lidar point cloud dataset.

See Information Sheet >

See a Sample Report >

USGS Lidar Base Specification
2025 rev. A

The MARS® QC Module tests compliance of lidar data deliverables to the latest National Geospatial Program Lidar Base Specification (2025 rev. A, and as later revised) as published by the United States Geological Survey (USGS).

See USGS LiDAR Base Specification (Version 2025 rev. A) >

See Information Sheet >

See a Sample Detailed Report >

See a Sample Summary Report >

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