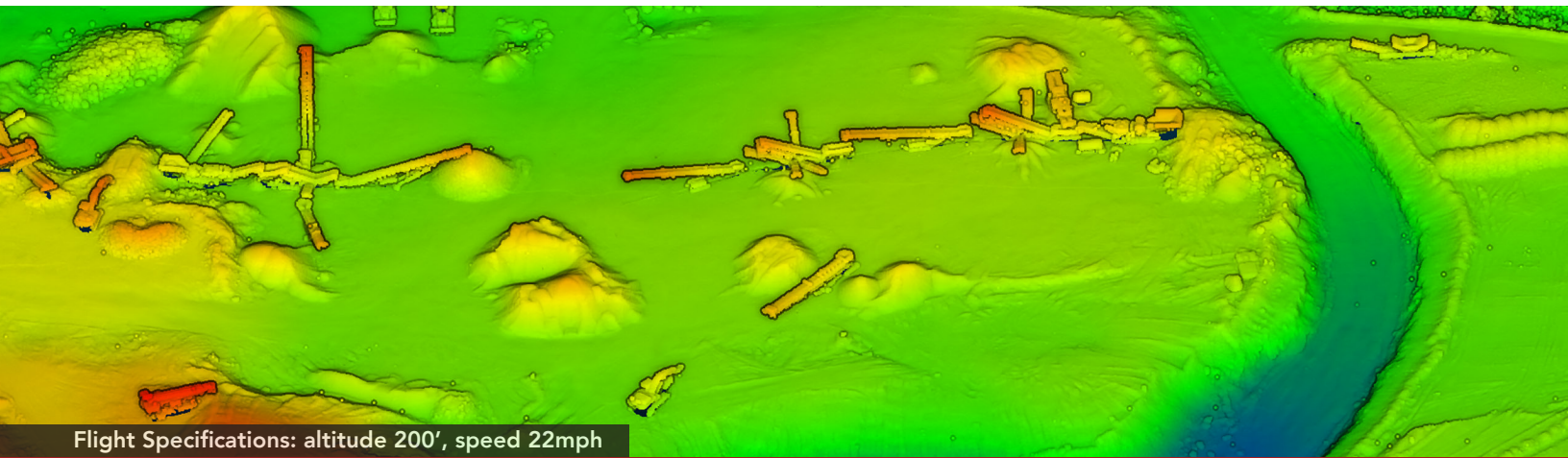


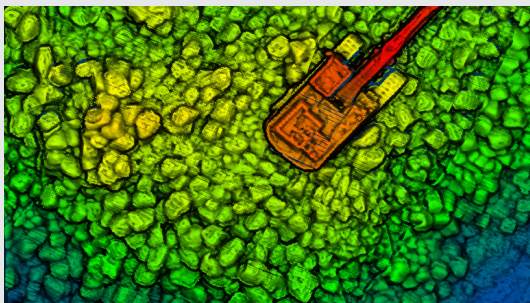
# APPLICATION MINING



High Resolution Images

Superior Range

High Point Density



*High-Resolution Point Cloud*

Flight Specifications: altitude 100', speed 13mph

The RedTail LiDAR System – incorporating LiDAR technology licensed from the U.S. Army Research Laboratory – is designed to provide high-resolution imaging from multicopters, hybrid, and fixed-wing UAVs.

**Mining operations**, typically located in remote areas, present significant challenges when it comes to site surveying and activity monitoring. Rough terrain and limited road access make traditional methods of surveying difficult, inefficient, and inaccurate.

**Drone LiDAR is quickly becoming the tool of choice to quickly and accurately meet your surveying and monitoring needs.** Designed specifically for small unmanned aerial vehicles, the RedTail LiDAR System combines the agility and operability of a drone with a superior point cloud generation tool. Together, they create high resolution, highly accurate, 3D maps of your mine site with no interference to operations or mining activities.

**The power of LiDAR imaging** is the creation of point clouds that can be rotated, zoomed, and used for accurate distance and volume measurement. Data collected from mining sites can be used to: 1) map the mining area, 2) design and construct the mine plant and infrastructure, 3) determine ore body, pit and void volumes, 4) determine pit, bench, pre-strip and spoil surface volumes, 5) determine stock pile volumes for inventory, and 6) monitor changes to the environment after mining.

**The RedTail LiDAR System is the optimal solution** for mining operations planning, mapping, and monitoring. With a pulse repetition rate of up to 400,000 pulses per second, even ground-point distribution, superior ranging capability, and optimized scan angles, the RedTail LiDAR System simplifies your mining operation needs while mitigating logistical challenges and dangers.

# About the RedTail LiDAR System

The RedTail LiDAR System was designed to meet the market demand for high-quality, high-resolution point clouds from unmanned aerial vehicles. The microelectromechanical (MEMS) mirror-based technology was developed at the Army Research Laboratory (ARL) with the goal of generating accurate, high resolution point clouds over areas of interest on a single drone flight. At RedTail LiDAR Systems, our mission is to provide the optimal tool to rapidly and efficiently create superior point clouds for a broad range of commercial, academic and government customers.



## The RedTail LiDAR System – Scanning the way it was meant to be.™

### HIGH RESOLUTION

The RedTail LiDAR System's small beam divergence angle yields high-resolution point clouds.

### EASE OF USE

The RedTail LiDAR System has been designed by a team of professionals that understands how important it is to provide a system that is easy to use and simple to integrate onto UAV platforms.

### RANGE

The RedTail LiDAR System was designed with range being a critical performance attribute. Our system operates effectively against 15% reflective targets at a height of 250 feet, and 400 feet against 80% reflective targets, thereby ensuring mapping flights can be performed in a wide variety of operating environments (e.g., tall trees, buildings).

### SCAN PATTERN

The RedTail LiDAR System transmits all laser pulses to the ground to optimize point cloud density. LiDAR points are evenly spaced to provide superior mapping capability.

### LINE SCAN FREQUENCY AND PULSE REPETITION RATE (PRR)

The RedTail LiDAR System has a line scan frequency of 400 scans per second and a PRR of up to 400,000 pulses per second. This rapid side to side scan pattern, coupled with the high PRR, allows operators to fly faster and cover more area.

### SCAN ANGLE AND SCAN TYPE

The RedTail LiDAR System was designed with an optimum scan angle of 30 degrees which enhances accuracy and data quality. In addition to side-to-side scanning, the RedTail LiDAR System can operate in a 30 x 30-degree raster scan mode which lets you focus precisely on areas of interest.

Learn more at [redtaillidar.com](http://redtaillidar.com)

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