Areté

# LiSA

# Lidar for Situational Awareness

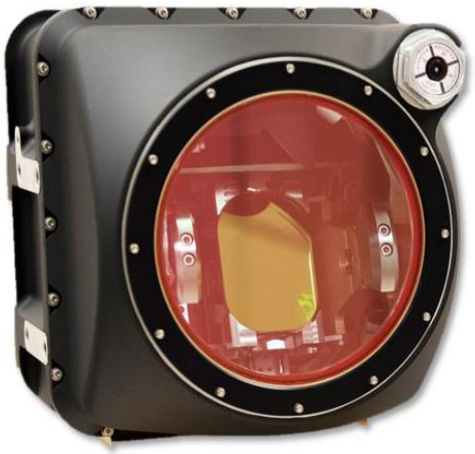

Areté's Lidar for Situational Awareness (LiSA) is a state-of-the-art sensor providing superior pilotage and safety, improving understanding of hazards, wires, obstacles, flight paths and landings in all weather conditions, especially Degraded Visual Environments (DVE). LiSA provides superior range – 2km – and real time 3D spatial awareness of the operational environment and flight guidance at all phases of flight.

LiSA enables safer flight and survivability across flight profiles, from Medical Evacuation, to Search and Rescue, Wildland Fire Operations, Emergency Rescue, and other Civil operations.

LiSA is currently in service with over 20,000 flight hours executed with no sensor failures - enabling thousands of safe landings and flight operations at nighttime, in brownouts, whiteouts, snow, sand, smoke, smog, clouds, fog, rain, and flat light.

## Key Features

- **Superior Pilotage** – in all phases of flight, in all conditions.
- **Safe Low Level Terrain Flight** – provided by Real-Time, High-Fidelity 3D imaging at 2km Range.
- **Increases aircrew/aircraft safety** – avoiding obstacle strikes or Controlled Flights Into Terrain (CFIT).
- **Low Size, Weight, and Power** – supports flexible aircraft configuration and integration.
- **FAA Certified** – DO-178C Certified.



Areté

Areté | 9301 Corbin Ave. Northridge, CA 91324 | arete.com
POC | Jason Seely, (303) 651-6756 x164 | jseely@arete.com
Business POC | Jay Rouse, (571) 255-4035 | jrouse@arete.com

# LiSA – Lidar for Situational Awareness

| Areté LiSA Lidar Operational Parameters | | |
|---|---|---|
| Wavelength | 1.54 µm | Eyesafe |
| Pulse Rep Rate | Variable | 50-250 kHz |
| Angular Resolution | 0.02° (0.38 mrad) full angle | IFOV |
| Range | 0 to 2000 m | R=30% at 2000 m |
| Range Precision | < 3" | SNR dependent |
| Field of Regard | 45°AZ / 60°EL | Elevation stage |
| Frame | 45°AZ / 10°EL | Tunable scan pattern |
| Frame Rate | 500 vertical (EL) lines/sec<br>Nominal 4 Hz AZ scan rate | Tunable scan rate |
| **Lidar Processing** | | |
| Lidar Processing | Full waveform capture and processing | Real-time FPGA |
| Number of Detects/Waveform | Up to 3 points per pulse | Hard target detections with advanced dust rejection |
| Output | Streaming pointclouds | Sensor relative |
| **Physical / Environmental** | | |
| Size | 10" x 9.5" x 12" | <1000 $in^3$ |
| Weight | 31.5 lbs (14.3 kg) | |
| Power | 250W nominal (400W Max) | 400 W when window heater ON |
| Temperature Range | -40° to 70° C | |
| Vibration | 4.92 g RMS functional vibration testing<br>4.54 g RMS CH-47 D external stores | MIL-STD-810G 514.6+ Compliant |
| Shock | 107g peak | MIL-STD-810G 513.6 Compliant |
| Humidity | 95% relative humidity +60°C for 6 hours followed by 95% RH +30°C | MIL-STD-810G 507.5 Compliant |
| Certifiable | DO-178/254, DAL C | |

Areté

Areté | 9301 Corbin Ave. Northridge, CA 91324 | arete.com
POC | Jason Seely, (303) 651-6756 x164 | jseely@arete.com
Business POC | Jay Rouse, (571) 255-4035 | jrouse@arete.com