Areté

LiSA

Lidar for Situational Awareness

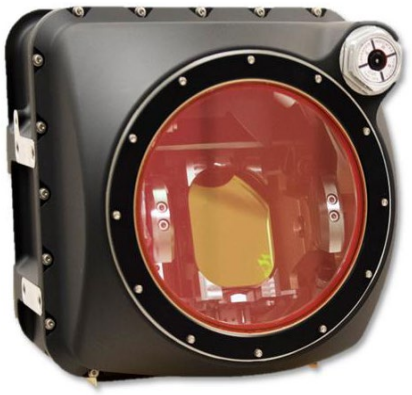
Areté's Lidar for Situational Awareness (LiSA) is a state-of-the-art sensor providing superior pilotage and tactical understanding of hazards, wires, obstacles, flight paths and landing zones in all weather conditions, especially Degraded Visual Environments (DVE). LiSA provides superior range – 2km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

LiSA enables safer high-speed, low-level flight, improving mission performance and survivability across missions, from high-threat Combat, Reconnaissance, Medical Evacuation, or Transport Missions, to Search and Rescue, Wildland Fire Operations, Emergency Rescue, and Homeland Defense Missions.

LiSA is operationally deployed - enabling thousands of safe landings and flight operations in tactically relevant situations 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.
- High-Speed Terrain Flight – provided by Real-Time, High-Fidelity 3D imaging at 2km Range.
- Sees and Remembers – creates flyable 3D World Model for multiple infiltrations/extractions.
- Increases aircrew/aircraft safety – avoiding obstacle strikes or Controlled Flights Into Terrain (CFIT).
- Low Detectable – no RF emissions, not detectable in the visible and by NIR band (NVG) sensors.
- Low Size, Weight, and Power – supports flexible aircraft configuration and integration.
- FAA Certified – DO-178C Certified.



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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 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	30 lbs	
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 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	

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