KNOW WITH CONFIDENCE.

JUPITER OLS

OPTICAL LIGHTNING SURVEILLANCE

SCIENTIFIC LIGHTNING SOLUTIONS, LLC

SLS

www.sls-us.com

JUPITER OLS
OPTICAL LIGHTNING SURVEILLANCE

Jupiter OLS creates a new standard in precision lightning surveillance. Jupiter OLS is the world's first site-specific lightning location system that detects 100% of lightning return strokes and pinpoints the locations of lightning strokes with unprecedented accuracy.

Scientists and engineers at Scientific Lightning Solutions (SLS) developed Jupiter OLS through decades of research into lightning physics, high-speed data acquisition systems, and state-of-the-art sensing equipment. The performance and value of the Jupiter OLS system have been proven and validated during extended deployment and testing at NASA's Kennedy Space Center, where the systems monitor critical NASA payloads and facilities.

Can your operations and assets withstand a lightning discharge?

Jupiter OLS provides specific, timely, and precise intelligence so you can respond promptly and appropriately when lightning interacts with your facility.

Existing commercial lightning location systems only identify the general strike locations of lightning flashes, fail to detect more than 10% of individual return strokes, often misreport strike locations by several kilometers, and frequently ignore lightning discharges with multiple attachment points, a phenomenon that occurs in about half of cloud-to-ground lightning flashes.

Jupiter OLS tells you precisely when and where a lightning discharge occurs.

Jupiter OLS reduces lightning-related downtime and defects by clearly showing which facilities and assets should be promptly examined for damage.

Accurate and timely information for your **critical assets**

- **Aviation and Aerospace**
  Avoid closures, unnecessary launch delays, and simplify inspections after storms occur.
- **Insurance and Warranty Claims**
  Substantiate claims and deter fraud.
- **Military and Security**
  Timely intelligence for mission critical assets.
- **Energy**
  Monitor the functionality of lightning-vulnerable nuclear, solar, wind, oil, and gas production, storage and distribution systems.
- **Communication, Data, and Operation Centers**
  When downtime is simply not acceptable, depend on Jupiter OLS.

JUPITER OLS IS LIGHTNING FAST

The heart of Jupiter OLS is a unique, high-speed image acquisition and processing system designed to quickly and accurately capture the optical radiation of lightning. The system automatically photographs and records critical data about the lightning strike and immediately sends actionable alerts. Jupiter OLS monitors all lightning interaction with your assets and facilities 24/7 with zero system downtime.

High Speed Camera

Jupiter OLS utilizes ruggedized, low-power, zero dead-time digital high-speed cameras to provide high-resolution imagery of lightning. The small form-factor cameras are deployed in small, environmentally controlled housings.

Solar Powered

The Jupiter OLS system can be powered exclusively via an integrated photovoltaic array, requiring no external power input or other supporting communication infrastructure. Power is conditioned to be immune to the electromagnetic effects of very close lightning, making Jupiter OLS a robust lightning monitoring system.

Typical ground-based, solar-powered Jupiter OLS installation

State-of-the-Art Electronics and Software

Lightning images are automatically acquired, processed, time-tagged with microsecond accuracy, and quickly delivered to the user via secure email and web interfaces. Jupiter OLS is designed using the most advanced aerospace-grade components to provide years of maintenance-free operation with zero system down time. The robust performance of the Jupiter OLS system has been fully tested and qualified at Kennedy Space Center, including prolonged exposure to extreme heat, humidity, and harsh corrosive and electromagnetic environments.

Note: Jupiter OLS is a monitoring and surveillance system. It does not provide warning of potential lightning strikes nor protection against lightning strikes. For assistance in these areas, contact Scientific Lightning Solutions.

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COVERAGE AND CONFIGURATION

Each Jupiter OLS installation is configured specifically for the site and monitored assets. Smaller sites can be monitored with a single camera, and two or more cameras may be required to provide multi-angle image captures and/or precision surveillance of larger sites.

CUSTOMIZABLE FEATURES INCLUDE:

- **Number, position, and mounting of Jupiter OLS units.**
- **Camera framing rates and lensing.**
- **Communication, alarm, and reporting protocols.**
- **Power input**

TECHNICAL SPECIFICATIONS

General	
Power	Solar, AC
Communication	Cell, WIFI, or LAN
Infrastructure Required	None
Photographs	
Resolution	1280 x 1024 px
Frame Rate	100 - 1800 fps
Bit Depth	12 bit color or monochrome
Pixel Size	5.6 µm
Enclosure	
ANSI/IEC 60529	IP67, protected against dust and 1m immersion, resists coastal and industrial environments

SLS

We are lightning experts.

The SLS team has decades of lightning monitoring, protection, and testing experience. We apply state-of-the-art lightning research to engineering solutions. Our products and services are proven and validated with real lightning testing. Additional services include:

Jupiter PLS

A full-featured, sensor based lightning monitoring system for large land areas. Jupiter PLS can be integrated with Jupiter OLS or operated independently.

Triggered Lightning Testing

SLS operates the only commercial triggered lightning facility where full-scale components, equipment, and integrated systems are tested with real lightning.

Engineering Design, Risk Assessment, and Forensic Investigation

SLS has the expertise to handle lightning risk analysis, inspection and design of protection and grounding systems for non-traditional structures, hazardous materials, critical assets, and personnel.

Custom Electronics and Sensor Design

SLS has the design, testing, and fabrication experience to meet complex and unique electronic system requirements.

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