



**KNOW WITH
CONFIDENCE.**



JUPITER **OLS**

OPTICAL LIGHTNING
SURVEILLANCE



SCIENTIFIC
LIGHTNING
SOLUTIONS, LLC

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.

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 μ m
Enclosure	
ANSI/IEC 60529	IP67, protected against dust and 1m immersion, resists coastal and industrial environments



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 Transient Monitoring System

Jupiter TMS provides continuous unattended monitoring, accurate measurement, and automated reporting for transient signals that may compromise sensitive and high-value assets.

Lightning Protection Design

SLS uses its Standards+ tools, including SLS' proprietary 3D simulation and Monte Carlo risk calculation, to design lightning protection systems for critical assets from commercial facilities to military and space launch complexes.

Lightning Risk Assessment

SLS performs expert risk evaluations for assets ranging from small commercial facilities to critical military and aerospace infrastructure.

Inspection & Testing

Our team of experts know how lightning protection systems should be designed. We put this knowledge to work ensuring that your assets are optimally protected from the effects of lightning.