Advanced Lightning™ Sensor LS7002

Precision lightning geolocation technology that delivers more complete real-time data

A lightning detection network is only as good as the sensors it's built around. The Advanced Lightning™ Sensor LS7002 captures the most comprehensive lightning data for the most accurate and reliable real-time weather monitoring solutions. Get the most reliable information possible, especially when severe weather and lightning are a threat.

Vaisala LS7002 sensors use a combination of magnetic direction finding and time-of-arrival techniques to detect both cloud lightning pulses and cloud-to-ground lightning strokes. They provide a comprehensive view of lightning activity within a storm and capture broad data sets for making well-informed decisions.

The LS7002 is not only the most cost-effective network-based lightning detection solution, it's extremely powerful sensing capabilities mean sensors can be positioned up to 350km apart. This translates to superior detection efficiency, optimal location accuracy, and system redundancy — all from a fewer number of sensors. Be better informed with this powerful technology offering high accuracy, reliability, ease of installation, and ease of maintenance.

Key benefits

Comprehensive, actionable data

The LS7002 delivers 24/7, real-time lightning detection that includes precise classification of cloud and cloud-to-ground lightning events, as well as amplitude, polarity, and waveform data. It captures the detail you need for accurate forecasting and well-informed operational safety decisions.

Early thunderstorm identification

The LS7002 detects the low frequency (LF) electromagnetic signals generated by lightning. This provides extremely accurate geolocation of lightning as it happens at ranges up to 1,500km (900+mi).

Greater coverage with fewer sensors

Typical distance between LS7002 sensors can be up to 350km, which means your network can deliver significantly greater accuracy while requiring 70% fewer sensors. Easy, flexible installation options also help simplify set up and maintenance.

Cost-effective ownership

Fewer sensors reduce your total cost of ownership for installation, site hosting, and hardware maintenance — leading to a more sustainable solution to meeting your detection network needs.

LS7002 at a glance

Applications

- Establishing early warning systems to alert people about hazardous weather conditions and potential for lightning threat.
- Providing critical information for utility companies and telecoms for storm preparation and system reliability support.
- Generating reliable data for meteorological modeling, hazardous weather forecasting, and emergency management.
- Supporting operational safety while maximizing productivity for aviation and maritime operations.
- Prioritizing resource deployment in the first moments of incident to speed containment and limit property damage.

Key features

Comprehensive lightning detection that includes type classification, amplitude, polarity, location, and waveform features.

Exceptional data capture with up to 95% network detection efficiency for cloud-to-ground lightning and better than 50% network detection efficiency for cloud lightning.

Real-time data delivery with minimized latency and raw sensor data generation capabilities to support offline reprocessing and archiving needs.

At-sensor data buffering for data confidence and redundancy in case of communication failure between sensor and central processor.

Why Vaisala?

The industry standard in global lightning detection

For decades, meteorological agencies around the world have relied on Vaisala lightning detection technology to improve forecasts and weather services for their countries. Vaisala delivers the most accurate real-time and historical lightning data in the world with more than 90 lightning networks in 45 countries. Our technology is trusted by Armed Forces worldwide, the National Weather Service, the Federal Aviation Administration, commercial safety operations, and power utility companies across the planet.

Support to count on

Look to Vaisala for dependable support, project capabilities, and training so you can get the most from your system. With decades of experience providing the best technologies and the finest support, Vaisala's philosophy of partnership is unmatched in the industry.

Trusted weather observations for a sustainable future

VAISALA

vaisala.com/meteorology