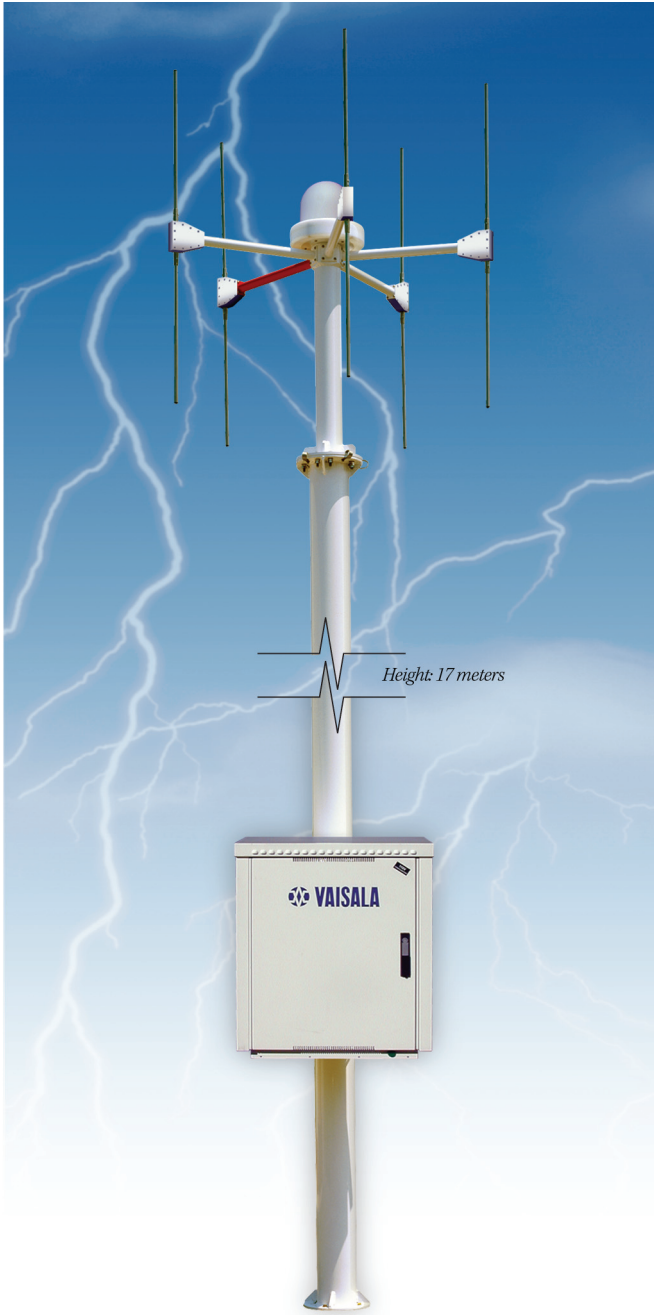


# Vaisala Thunderstorm Total Lightning Sensor LS8000



*Total Lightning Sensor LS8000 combines VHF interferometry with LF magnetic direction finding and time-of-arrival technologies for the highest level of total lightning detection capabilities with calibrated lightning parameters.*

## TOTAL CLOUD AND CLOUD-TO-GROUND LIGHTNING DETECTION

The LS8000 is one of two principal sensor configurations offered in the Vaisala Thunderstorm Information System. This sensor configuration integrates the two most effective lightning detection technologies:

- Very high frequency (VHF) interferometry
- Low frequency (LF) combined magnetic direction finding and time-of-arrival

VHF interferometry technology provides extremely high performance in detection of cloud lightning. LF combined magnetic direction finding and time-of-arrival technology offers the highest detection efficiency and most accurate location for cloud-to-ground lightning strokes.

## APPLICATION FOCUS FOR NOWCASTING

The Total Lightning Sensor LS8000 is recommended for operations with responsibility for nowcasting, severe storm warning, and identification of hazardous convective weather:

- Meteorology/Nowcasting
- Defense
- Launch facilities
- Air traffic management
- Hydrology
- Airports

## LS8000 FEATURES AND BENEFITS

- Total lightning detection for earlier and more accurate identification of hazardous thunderstorm phases
- Calibrated parameters for cloud-to-ground lightning: time, location, amplitude, polarity
- Minimum 90% network detection efficiency for cloud and cloud-to-ground lightning
- 500 meter median location accuracy for cloud-to-ground lightning strokes
- Can be integrated with Vaisala's SAFIR, IMPACT, LPATS and LS7000 sensors with a CP8000 central processor.

# Technical data

## Operational Specifications

|                                  |   |
|----------------------------------|---|
| Lightning Type                   | Total cloud discharges and cloud-to-ground (CG) flashes and strokes |
| Network Detection Efficiency     | >90% for cloud and CG   |
| Network Median Location Accuracy | 1000m cloud discharge; 500m CG stroke                               |
| Nominal Baseline Between Sensors | 20 to 180 km  |
| VHF Band                         | 110-118 MHz   |
| LF Band                          | 1kHz-350kHz   |
| Performance Monitoring           | Complete manual and automatic system calibration and self-test      |
| Remote Configuration             | Operational parameters are remotely configurable                    |

## Synchronization

|          |                        |
|----------|------------------------|
| Source   | GPS receiver           |
| Accuracy | 100 nanoseconds to UTC |

## Mounting

|   |
|---|
| Concrete ground pads for mast and guy wires |
| Non-ground mounting options available       |

## Power Requirements

|          |  |
|----------|--|
| AC Power | 120VAC, ±10%, 4A, 50-60Hz<br>230VAC, ±10%, 2A, 50-60Hz |
|----------|--|

## Communication Interfaces

|                     |                      |
|---------------------|----------------------|
| Asynchronous RS-232 | @ 19,200 bps minimum |
| TCP/IP              |                      |

## Dimensions

|        |           |
|--------|-----------|
| Height | 17 meters |
|--------|-----------|

## Environmental Conditions

|                   |                              |
|-------------------|------------------------------|
| Temperature       | -40°C to +55°C               |
| Relative Humidity | 0 to 100% condensing         |
| Wind Speed        | 0-200 km/h                   |
| Altitude          | Up to 5500 meters            |
| Hail              | 1.0 cm in diameter           |
| Rain              | 8 cm/h at wind speed 65 km/h |

## Operational Reliability

|                                   |               |
|-----------------------------------|---------------|
| Mean time between failures (MTBF) | >30,000 hours |
| Mean time to repair (MTTR)        | <2 hours      |

## Support Services

Training, technical support, and spare parts are available for maintaining optimal network and sensor performance. Contact your Vaisala Sales Representative for service agreement information.

## Standard Warranty

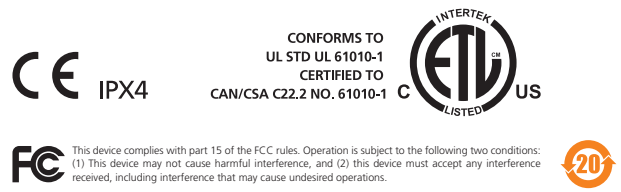
Vaisala warrants all products manufactured by Vaisala to be free from defects in workmanship or material for one year from the date of delivery. Contact your Vaisala Sales Representative for specific product service warranty details.



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