

# Vaisala Thunderstorm CG Enhanced Lightning Sensor LS7001



*CG Enhanced Lightning Sensor specializes in cloud-to-ground lightning sensing with lightning efficiency and excellent accuracy in location and lightning parameters using combined LF magnetic direction finding and time-of-arrival lightning sensing technology. LS7001 also detects survey-level (5-30%) cloud lightning and cloud-to-ground lightning at long ranges (>1500 kilometers).*

## CLOUD-TO-GROUND LIGHTNING DETECTION ACCURACY

The LS7001 is a compact, lightweight sensor with optional indoor mounting capability that detects low frequency (LF) signals using magnetic direction finding combined with time-of-arrival technology to deliver higher detection efficiency, location accuracy and redundancy than any other method for detecting cloud-to-ground lightning strokes.

The LS7001 is a cost-effective solution for customers demanding high reliability, ease of installation and ease of maintenance.

## APPLICATION FOCUS ON LIGHTNING TRACKING

The CG Enhanced Lightning Sensor LS7001 provides real-time data that is recommended for operations focused on tracking cloud-to-ground lightning threats to ground-based assets at risk:

- Aviation
- Defense
- Forestry
- Meteorology/Climatology
- Power Utilities
- Telecommunications

## LS7001 FEATURES AND BENEFITS

- Cloud-to-ground lightning detection for the most accurate lightning location and calibrated parameters
- Detects survey-level (5-30%) cloud lightning for early thunderstorm identification
- Detects cloud-to-ground lightning at long ranges (>1500 kilometers)
- Calibrated parameters for cloud-to-ground lightning: time, location, amplitude, polarity
- Minimum 90% network detection efficiency cloud-to-ground lightning
- 500 meter median location accuracy for cloud-to-ground lightning strokes
- New efficient lightweight electronics module allows for ease of installation and maintenance
- Sensor can be installed separately in remote severe weather locations
- Compatible with predecessors Vaisala IMPACT and Vaisala LPATS sensors
- Available in AC and DC versions

# Technical data

## Operational Specifications

Lightning Type	Cloud-to-ground (CG) flashes and strokes and survey-level cloud
Network Detection Efficiency	>90% for CG; 5-30% for cloud
Network Median Location Accuracy	500m CG stroke
Nominal Baseline Between Sensors	15 to 350 km
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

## Dimensions

Weight	37.4 kg
Height	2.2 meters
Width	0.4 m
Depth	0.4 m

## Mounting

Concrete ground pad	
Non-ground mounting options available	

## Power Requirements

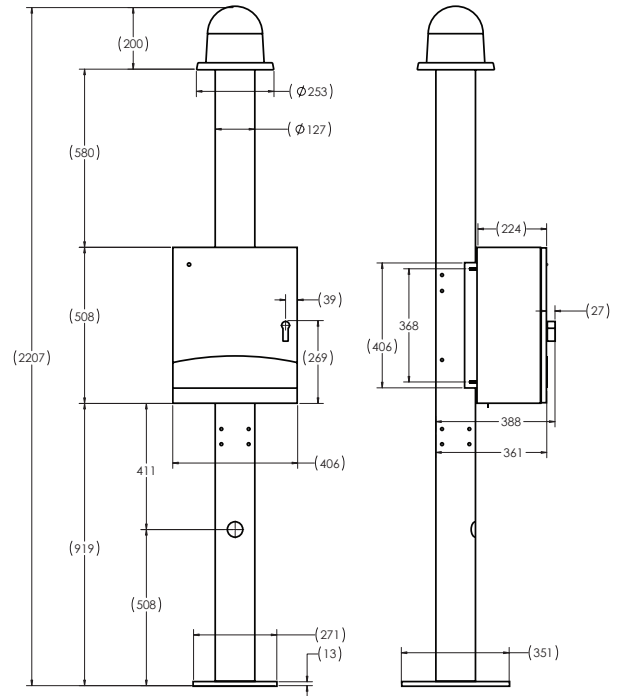
AC Power	100VAC-240 VAC, 4A max, 50-60Hz
DC Power	48VDC, 1A max

## Communication Interfaces

Asynchronous RS-232 at 9600 bps minimum	
TCP/IP	

## Environmental Conditions

Temperature	-40°C to +55°C
Relative Humidity	0 to 100% condensing
Wind Speed	0-240 km/h
Altitude	Up to 5500 meters
Hail	2.0 cm in diameter
Ice	8 cm
Rain	8 cm/h at wind speed 65 km/h



## Operational Reliability

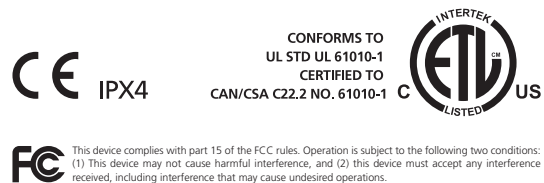
Mean time between failures (MTBF)	>30,000 hours
Mean time to repair (MTTR)	<2 hours

## 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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