

## Vaisala Total Lightning Processor™, TLP100™ and TLP200™ Series on Linux®



location accuracy projections. Each of these features assists in more efficient network operations and stabilized performance.

The TLP™ adds Vaisala's latest patented location algorithm, terrain and propagation correction services which significantly improve the network median location accuracy to 250 meters or better. When TLP™ is combined with Vaisala's newest sensor technology; the location accuracy can be improved even further, approaching 150 meters.

### User-Friendly, Web-based Operation

The TLP™ is available now on a Linux® operating system for added flexibility and lower ownership costs. The TLP™ introduces a web-based interface for improved monitoring tools and applications to best meet Meteorology and Weather Critical market needs.

The TLP100™ Series processes data from Vaisala low frequency (LF) types of sensors which yield lightning location solutions for greater than 90% of Cloud-to-Ground (CG) and 30% of Cloud lightning flashes.

The TLP200™ Series processes both LF and very high frequency (VHF) signals yielding Total Lightning; greater than 90% of both CG and Cloud lightning flashes.

### Extensive Improvements in Lightning Location Processing

The revolutionary technology of Vaisala's Total Lightning Processor™ allows for an expandable processor that meets various market needs. TLP™ includes licenses for system and sensor performance monitoring, network performance mapping and dynamic detection efficiency and

### Features / Benefits

- Continuously monitors remote sensor performance and communication status:
  - Allows sensor owners to validate that the sensor is operational and functioning to specification(s).
- Includes Vaisala's patented location algorithm with propagation correction service:
  - Yields improved location accuracy to 250 meters or better
- User-Friendly, web-based interface with graphical tools for sensorqa and networkqa data:
  - Saves valuable time and effort by operators to analyze sensor and network performance resulting in improved overall network performance.
- Dynamically monitors network location accuracy (LA) and detection efficiency (DE):
  - Gives accurate picture of network performance at any given time.
- Includes Zabbix monitoring tools:
  - Allows for customized ping services to notify operators of unfavorable network operating conditions resulting in improved overall network performance.
- Improved archive management tools:
  - Allows for configurable file size \*.iso image bins that can be burned to CDs/DVDs.

# Technical data

## Fully supported sensors

TLP100™ Series	Vaisala LS7000, LS7001
TLP200™ Series	Vaisala LS8000

## Compatible but unsupported sensors

TLP100™ Series	Vaisala LPATS-III, LPATS-IV, IMPACT, IMPACT-ES, IMPACT-ESP
TLP200™ Series	Vaisala SAFIR 2000, SAFIR 3000-3, LDAR II

## Capacity up to 512 sensors

Up to 512 for LF only, 256 for LF + VHF data

## Supported communication interface

TCP/IP  
Asynchronous RS-232 (optional)

## Supported web browser interface

Mozilla Firefox 3.0 (recommended), 2.0 (supported)  
Internet Explorer 7

## Certified hardware

DELL™ POWEREDGE™ T300, Desktop Server\*  
DELL™ POWEREDGE™ R300, Rack Mount Server\*

## Certified hardware requirements

4GB of RAM  
Dual Core x86\_64 compatible CPU  
2 (1)TB SATA II disk, RAID 1  
2 x NIC ports (100/1000 Mbps)  
4 USB 2.0 ports  
1280x1024 certified video adapter and monitor  
DVD+RW Burner  
Graphics card with hardware accelerated drivers compatible with RHEL 5.3 (512MB RAM, PCI Express Interface). ATI Radeon HD 4350 GPU (recommended)  
Red Hat Enterprise Linux® (RHEL) 5.3, 64 bit edition  
RHEL 5.3 compatible modem

## Environmental specifications\*

The hardware must be in a climate-controlled environment.  
The environmental specifications are equal to the HW specifications by default. The following specifications are subject to change without notice based on hardware availability.\*

Operating Temperature	10 °C to 35 °C (50 °F to 95 °F)
Storage Temperature	-40 °C to 65 °C (-40 °F to 149 °F)
Operating Relative Humidity	20 % to 80 % non-condensing (non-condensing twmax=29C)
Storage Relative Humidity	5 % to 95 % non-condensing (twmax=38C)
Operating Altitude	-16 to 3,048 m (-50 ft to 10,000 ft)
Storage Altitude	-16 m to 10,600 m (-50 ft to 35,000 ft)



## Lightning detection parameters

CLOUD DISCHARGES and CLOUD-TO-GROUND STROKES  
Date and Time to 100 nanosecond resolution  
Latitude and Altitude  
Number of sensors used in location solution  
Position confidence ellipse (chi-square)  
Degrees of freedom when optimizing the solution  
Semi-major axis of the 50 % positional confidence ellipse (km)  
Semi-minor axis of the 50 % positional confidence ellipse (km)  
Eccentricity of the positional confidence ellipse  
Estimated Rise Time (microseconds)  
Estimated Peak-to-Zero Time (microseconds)  
Estimated Maximum Rate-of-Rise (kA/microsecond)

CLOUD TO GROUND STROKES (only)  
Flash multiplicity (number of return strokes)  
Polarity  
Estimated Peak Current (kA)

## Graphical Tools

Sensor and network graphs  
Time Deviation, 95th percentile  
Angle Deviation, 95th percentile  
Delay

## Performance Mapping Tools

Sensor Map	Avg. Positive Signal
Lightning Counts	Avg. Negative Signal
% Positive	Avg. Error Ellipse SMA
% Optimized	Avg. CHI Square Value
% Cloud	Avg. Sensor Count
Lightning Density	



For more information, visit [www.vaisala.com](http://www.vaisala.com) or contact us at [sales@vaisala.com](mailto:sales@vaisala.com)

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