

Vaisala Wind Profiler LAP[®]-16000



Vaisala LAP[®]-16000 with RASS in Germany.

Benefits

- Continuous wind data up to 16 km
- Continuous virtual temperature data up to 5 km
- Unattended operation
- Minimal periodic maintenance
- New vertical profile every 3-60 minutes

Troposphere Wind Profiler for your needs

The Vaisala Wind Profiler LAP[®]-16000 provides continuous and real-time vertical profiles of horizontal wind speed and direction and vertical wind velocity up to 16 km above ground level (agl). When an optional Radio Acoustic Sounding System (RASS) is added to the Vaisala LAP[®]-16000, it will provide virtual temperature profiles up to 5 km agl. These altitudes are maximum values and will change dramatically depending on atmospheric conditions, profiler configuration, installation site and surrounding environment. The Vaisala LAP[®]-16000 operates fully unattended and provides continuous data with high vertical and temporal resolution.

Software that suits your application

The flexible Vaisala LAP-XM[®] software allows site-specific optimization of system performance, including variable temporal and range resolution, in support of various applications. The operator can choose signal processing parameters, quality control features, and data formats.

The optional Vaisala Graph-XM[™] graphical display software provides a wide variety of data visualization schemes including time-height cross sections of wind barbs (vectors), and virtual temperature profiles. The Windows-based data system can archive up to one-year's worth of wind and temperature data in database and text format. Averaged time series, spectra, and moments data can also be archived.

Vaisala offers new technologies and greater value. You will get the latest in wind and temperature radar profiler solutions for meteorological and environmental applications. The Vaisala LAP[®] wind profilers, which operate under Windows[®] XP and feature versatile Digital signal processing, were jointly developed under a Cooperative Research and Development Agreement (CRADA) with the U.S. National Oceanic and Atmospheric Administration (NOAA) and Sonoma Technologies Inc (STI). Current users of Vaisala LAP[®] systems include NOAA, NCAR, NASA, DOD, DOE, air quality districts, universities, utilities, and private industry.

Applications

- Aviation operations
- Climate change research
- Missile, rocket, and artillery support
- Optical turbulence measurements
- Synoptic and mesoscale analysis and forecasting
- Weather modification

Technical Data

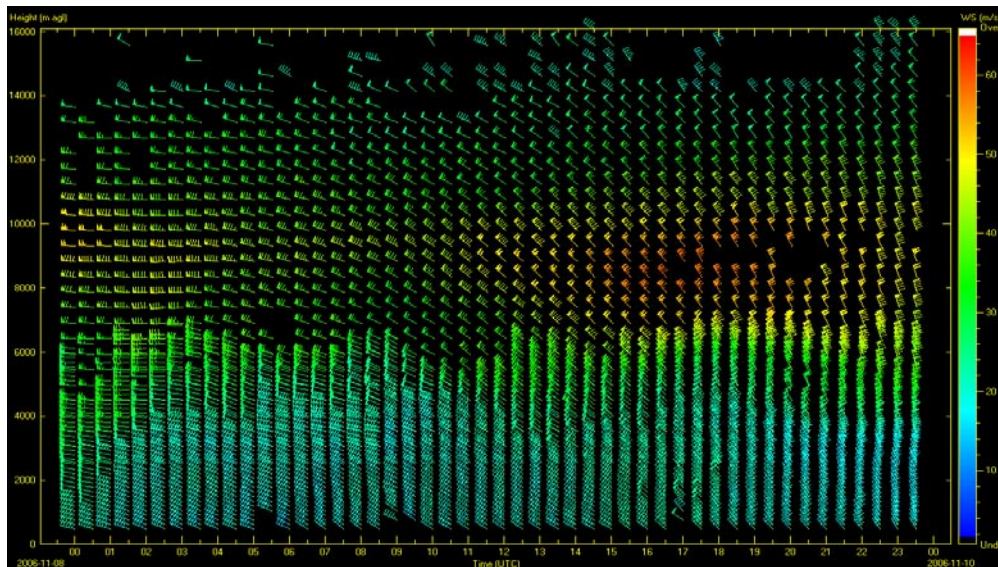
Specifications

Operating frequency	Nominally 449 or 482 MHz
Minimum wind data height ¹	400 m
Maximum wind data height ²	Up to 16 km, typically varies between 12 – 16 km
Vertical range resolution	Factory configurable 250 – 1000 m
Wind speed accuracy	<1 m/s
Wind direction accuracy	<10 °
Averaging time	3-60 minutes
RF power output	16 kW peak 0.1 - 2.4 kW average
Occupied bandwidth	Less than 3 MHz @ 1.667 ms pulse duration (ITU 99%)
Antenna	
Type	Electrically steerable coaxial collinear array
Gain	36 dB @ 482 MHz
Beamwidth	3 °
Aperture	180 m ²
Power requirements	230/380 VAC 50 Hz; 3-phase at 100 A

Options

Hardware Monitor	System monitoring and status reporting
Vaisala Graph-XM™	Graphical display software
Moments display software	Graphical moments data display software
RASS	
Minimum data height ¹	400 m
Maximum data height ²	Up to 5 km, typically varies between 2.5 – 5 km
Vertical range resolution	Factory configurable 250 -1000 m
Temperature accuracy	1 °C
Averaging time	3-60 minutes
Aperture	1.8 m ² x 4 sources
Audio Frequency	~1 kHz
	Bragg matched to transmitter frequency
GPS timing receiver	For accurate timekeeping
Hub computer	For remote access and monitoring
Services	Site survey, FAT, SAT, training, installation, extended warranty, service contract

- ¹ Dependent on clutter environment and available radio frequency emission bandwidth.
- ² Dependent on atmospheric scattering conditions, profiler configuration, installation site and surrounding environment.



Data Sample for the Vaisala LAP®-16000.