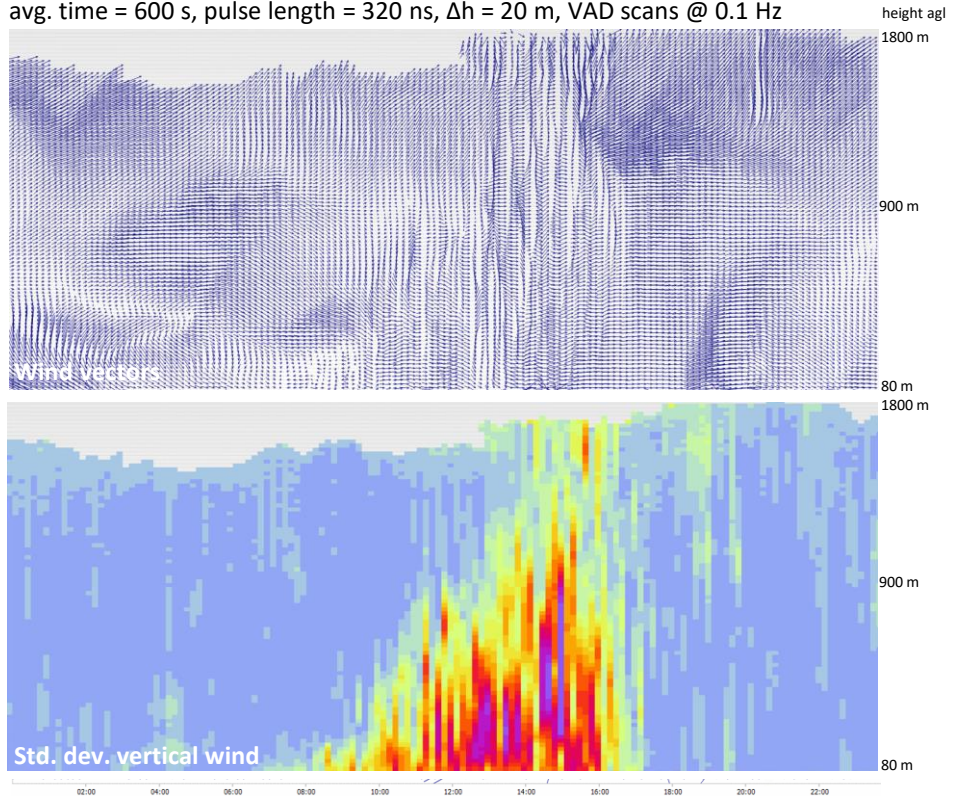


Lidar Wind Profiler

Wind Ranger BL

24.03.2022, D-A-CH Conference Leipzig,

avg. time = 600 s, pulse length = 320 ns, $\Delta h = 20$ m, VAD scans @ 0.1 Hz



- Pulsed Doppler Lidar for vertical profiling of aerosols, wind and turbulence
- Continuous monitoring within the planetary boundary layer
- Max. height range 2500 m
- Adjustable pulse lengths, lowest measuring range down to 60 m
- VAD scanning @ 10 ° zenith angle, adjustable scan speed
- Wide operational temperature range - 30 ... + 45 °C
- Built-in quality control
- Automatic system monitoring
- Extreme small form factor
- Easy and fast transportation and installation
- Web-interface for easy control and real time data visualization



Lidar Wind Profiler **Wind Ranger BL**

Laser wavelength	1545 nm, laser class 1M (eye-safe)
Range of measuring heights *	Wind Ranger BL: 60 ... 2500 m
Max. number of measuring heights	adjustable
Height resolution	adjustable, typically 20 ... 50 m
Range of wind speed	0 ... 60 m/s
Range of wind direction	0 ... 360 °
Range of std. dev. of vertical wind	0.02 ... 3 m/s
Accuracy of wind speed*	0.2 m/s or 2 % at wind speeds > 10 m/s
Accuracy of wind direction*	3 ° at wind speeds > 5 m/s
Accuracy of std. dev. of vertical wind*	0.1 m/s or 5 %
Averaging time wind profiles	adjustable, typically 1 .. 30 minutes
Data output and control	Ethernet, Web GUI
Built-in memory	32 GB
Position	GPS
Options	Recording of 2-axis inclination sensor
Ambient conditions (standard)	- 30°C ...+ 45 °C, 5 ... 100 %
Power consumption lidar	24 VDC, 100 W lidar / extra 140 W for heating/cooling
Weight	approx. 50 kg
Enclosure dimensions (H x W x D)	620 mm x 530 mm x 340 mm
(incl. 4 height adjustable supports)	(840 mm x 540 mm x 580 mm)

* Observed height availability and uncertainty in measurements depend on parameter settings and atmospheric conditions.

The Metek **Wind Ranger BL** is a powerful pulsed lidar for measurements within the PBL to derive vertical profiles of aerosol distribution, 3D wind vectors and turbulence from continuous VAD scans. The narrow cone angle of only 10° allows the setup at virtually any site even with smallest open vertical view sector. The software allows an online data validation and computation of 3D wind profiles. The pulse length can be adjusted within 160 ns ... 640 ns for short range measurements starting as low as 60 m agl and alternatively for long range measurements up to the top of the PBL. For short pulse lengths even measurements lower than 60 m can be achieved.

Typical applications of the Wind Ranger BL include:

- Meteorological systems & networks
- Research stations
- Urban & Industrial Sites
- Marine and offshore platforms
- Airports
- Climatology research at remote sites
- Air quality studies
- Monitoring of land/sea breeze and katabatic winds
- Cold outflows
- Low-level jet identification
- Wind shear detection

