



**Available now!**

# WIND MEASUREMENT

## with WindCollector<sub>2</sub> SODAR

**Available for your measuring campaign - long or short term, wet or dry lease.**

**Improve your wind data asset and project value, contact us today!**

With the ever increasing height of windturbines the ability to measure high is increasingly important for wind power planning. WindCollector<sub>2</sub> SODAR (sound detection and ranging) is a ground-based wind profiler for measurement of the vertical profile of the three-dimensional wind vectors up

to 500 m above ground, with 5 m increments. No other measuring provides the same information of the site wind profile including wind shear and turbulence.

The operation is based on the reflection of acoustic pulses at temperature inhomogeneities in the air with subsequent doppler analysis. SODAR can supple-

ment or replace mast measurement at a fraction of the operational costs.

Due to its compact mobile configuration, the WindCollector<sub>2</sub> can be easily transported and moved around the area for comprehensive picture of the wind conditions at a project site with complex terrain.

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## with WindCollector<sub>2</sub> SODAR

Wind-Collector<sub>2</sub> is a self powered unit. Low power consumption and power independence facilitates operation in remote areas. The operation software is configurable and provides quality control features, statistical analysis tools, remote access support and self-test functions.

Data output includes:

- Wind speed and direction
- Standard deviations of wind components
- Turbulence intensity
- Wind shear
- Standard deviation of wind directions (sigma phi, sigma theta) and stability class
- Structure parameter of temperature CT2
- Turbulent kinetic energy
- Eddy dissipation rate
- Mixing height estimation
- Data quality (S/N ratio)
- Data confidence
- Wind roses
- Frequency distribution of wind speeds for power curve calculations

The software provides real-time data output during measurement and permits the user to reprocess any previously recorded data using different filters and data processing settings. Measured data-files can be used in WindPro or other external software for analysis.

## Specification

### SODAR system specification

Number of antenna elements

Frequency range

Multi frequency

Multi-beam operation

Beam angles

Vertical resolution

Minimum measuring height

Maximum measuring height

Number of range gates

Averaging time

Accuracy of horizontal wind speed

Accuracy of vertical wind speed

Accuracy of wind direction

Measurement range of horizontal wind speed

Measurement range of vertical wind speed

Operating temperature

Heating

64 piezo-electric elements

2525...4850 Hz

10 adjustable frequencies per sequence

9 beams

0°, ± 19°, ± 24° (Narrow Tilt Angles can be selected)

5 m

10 m

500 m

100

1...60 min

0.1 to 0.3 m/s

0.03 to 0.1 m/s

< 1.5° at wind speeds > 2 m/s

0 to 50 m/s

-10 to 10 m/s

-35 to +55°C

100 W heating under the antenna array plate

### Mobile Power system specification

Diesel tank

Diesel Generator Running time - Summer

Diesel Generator Running time - Winter

Diesel consumption

Oil capacity

Engine speed

Cooling system

Lubricating system

Genset intermittent power

Genset Continuous power

Genset Alternator type

Genset Alternator output rating

Heating

200 liters

Approx 2...4 h per 72 hour period with solar panel support

Approx 2...4 h per 24 hour period with all heating systems on

Approx 0.8 liters per hour

2.9 liters including radiator and piping

2500...3500 rpm

Oil cooled by means of dedicated trochoid pump on the engine and radiator

Forced lubrication with dedicated trochoid pump (different from cooling)

3.8 kW 230V 50Hz at 3400 rpm

3 kW 230V 50Hz at 3000 rpm

Permanent Magnet, integrated in flywheel

5 kW (oversized)

Fuel pre-heating system, thermostatically controlled

Teqniq Wind Oy

Vaasa, Finland

+358 40 1858 155

info@teqniq.fi

www.teqniq.fi

**TEQNIQ**