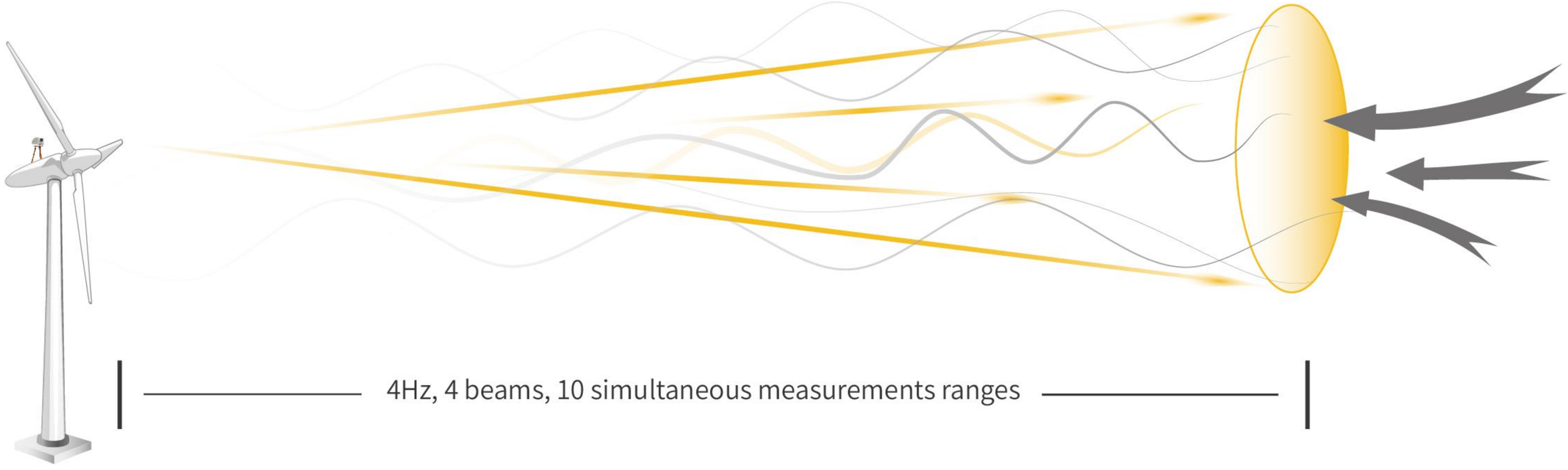
MOVELASER

Nacelle Wind Lidar Molas NL



Parameters

Range	50m ~200m(NL200) 50m ~400m(NL400) 50m ~750m(NL750)
Measurement Layer	10
Frequency	4Hz
Wind Speed Accuracy	0.1m/s
Wind Direction Accuracy	0.5°
Wind Speed Range	0m/s ~ 50m/s
Wind Direction Range	-180° ~ 180°
Beam Structure	4 beams, horizontal angle 30°, vertical angle 25° (NL200) 4 beams, horizontal angle 30°, vertical angle 10° (NL400) 4 beams, horizontal angle 30°, vertical angle 10° (NL750)

Environmental Parameters

Maximum Humidity	100% (extravehicular) / 95% (Inside the cabin)
Acceleration Range	-0.5g ~ 0.5g
Temperature Range	-40°C~60°C
Survival Temperature	-40°C~65°C (power outage) / -45°C~60°C (power ups)
Survival Wind Speed	70m/s
Working Altitude	⩽3500m

General Parameters

IP(Optical Head)	IP66
IP(Data Unit)	IP54
Lens	Anti-freeze, sand and dust, etc.
Anticorrosion Grade	ISO C5
Communication Port	Profibus DP,etc.
Weight(Optical Head)	⩽35kg
Weight(Data Unit)	⩽10kg
Maximum Pass Size	500mm * 500mm

Molas NL

Molas NL series is a nacelle wind lidar independently developed for the intelligent application scheme of wind power customers. It is a laser remote sensing wind measurement device installed on the top of the wind turbine nacelle. The lidar adopts the coherent detection system, and based on the principle of laser Doppler frequency shift, realizes the accurate measurement of 50m-200m / 400m / 750m vector wind field in front of the fan impeller.

Molas NL nacelle wind lidar system provides measurement and recording of wind field information data in front of wind turbines 50m-200m / 400m / 750m, and is connected to the main control system of wind turbines, so as to realize feedforward control, optimize load and increase power generation. It can also be applied to various automated operation scenarios such as yaw correction, power curve test, wake analysis, and intelligent field group control.

Advantage

- True front wind measurement
- Real time data transmission and local storage
- Accuracy up to 0.1m/s and 0.5°
- high sample rate
- Multiple distance layers
- large range
- Four beam three-dimensional measurement
- Intelligent configuration
- Easy to maintain
- High applicability
- High compatibility

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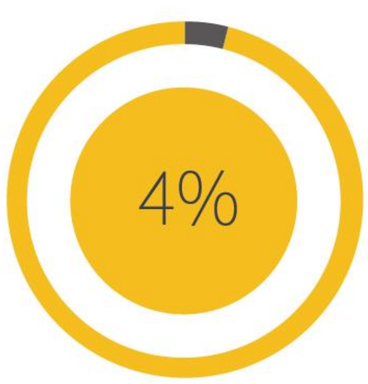
Catch More Of The Wind's Gift
—— Molas NL

Lidar-based feedforward control of wind turbines

With the application and development of Doppler wind Lidar in the field of wind energy, by accurately measuring the inflow wind speed and direction, it is possible to predict the accurate wind conditions on the wind rotor surface, correct system parameters in time,realize feedforward control to reduce unit load and improve the power generation efficiency, reduce manufacturing costs and extend the service life of wind turbine, so as to achieve the ultimate goal of reducing the cost of electricity.



Correct yaw error, increase power generation, increase annual power generation by 2%-4%

Reduce fatigue load by 5%-10%
Reduce the ultimate load by 10%-15%
Extend fan life and reduce fan costs

Comprehensive income improvement

Wind Turbine Testing

- Blade Load Analysis
- Power Curve Test
- Wake Analysis
- Yaw Correction
- Intelligent Farm Group Control

LIDAR ENABLERS