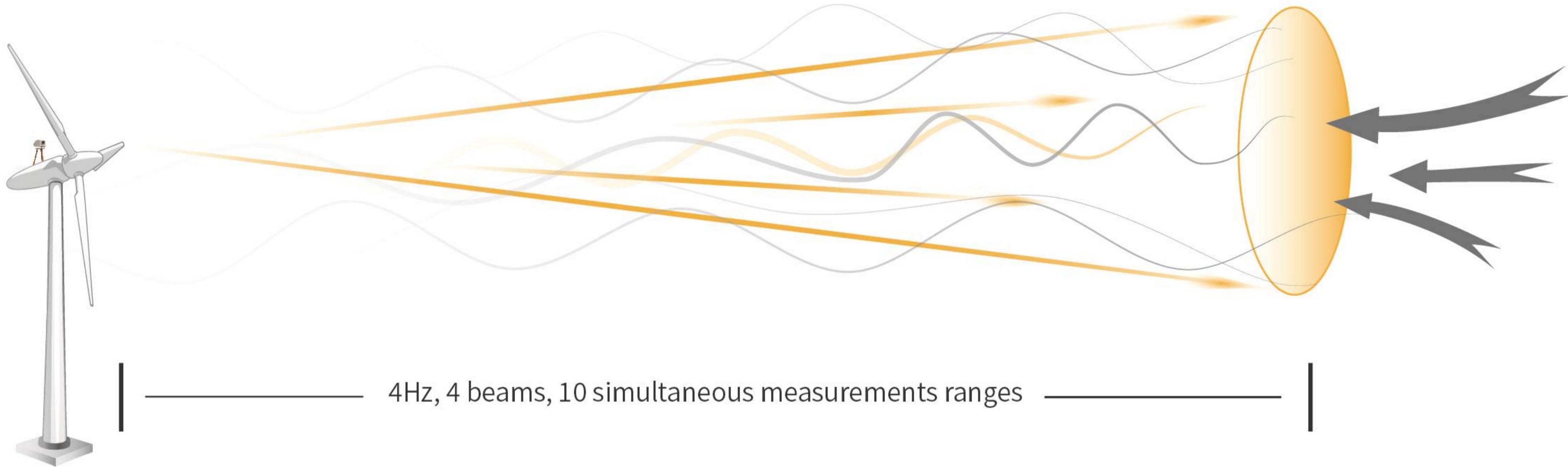


Nacelle Wind Lidar

Molas NL



Parameters

Range	50m ~200m(NL200) 50m ~400m(NL400) 70m ~750m(NL750)
Measurement Layer	10
Frequency	4Hz
Wind Speed Accuracy	0.1m/s
Wind Direction Accuracy	±0.5°
Wind Speed Range	-20m/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)

The Molas NL series provides LiDAR-assisted control(LAC) for wind turbines, effectively reducing the Levelized Cost of Energy (LCOE) and delivering multiple added benefits for wind power applications. By offering comprehensive characterization of the incoming wind field, the system enables predictive control optimization—accurately forecasting wind conditions hundreds of meters ahead of the rotor plane. This allows developers and operators to respond proactively to changing wind conditions, mitigate blade loads, improve power generation efficiency, and reduce lifecycle costs.

The Molas NL series is fully compatible with most turbine models and has been deployed worldwide in over 15,000 units. After years of field validation, it has been widely recognized for its seamless integration into OEM turbine systems.

The system operates reliably under a wide range of environmental conditions and supports a suite of high-precision, LiDAR-based functions, including: Yaw misalignment correction, Power curve verification, Wake flow analysis, Intelligent wind farm group control

In addition, the Molas NL series leverages holistic wind field data to enable more efficient and accurate LiDAR-assisted control strategies, contributing to the continuous advancement of intelligent wind power systems.

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~ 65°C (power ups)
Survival Wind Speed	70m/s
Working Altitude	≤3500m

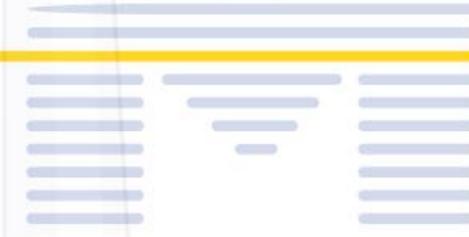
General Parameters

IP(Optical Head)	IP66
IP(Data Unit)	IP54/65
Lens	Anti-freeze, sand and dust, etc.
Anticorrosion Grade	ISO C5-M
Communication Port	Profibus DP/Modbus TCP / Modbus RTU/CANOPEN/Profinet
Weight(Optical Head)	17.5kg
Weight(Data Unit)	3.6kg
Maximum Pass Size	OH: 431*290*309 mm (width* depth* height) PU: 339*98*256 mm (width* depth* height)



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
- Power curve verification



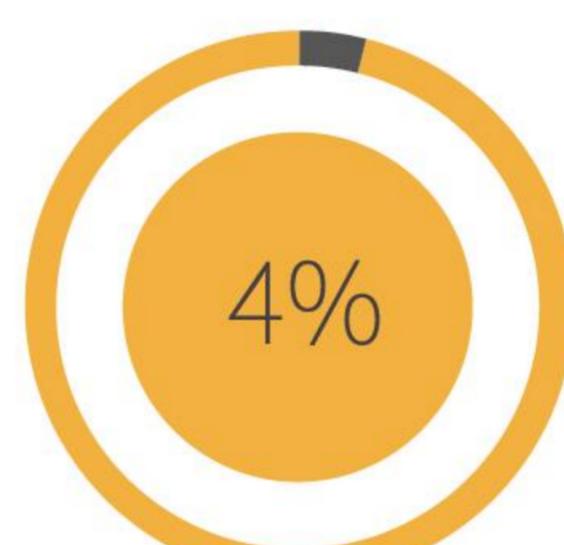
Catch More Of The Wind's Gift

— 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.



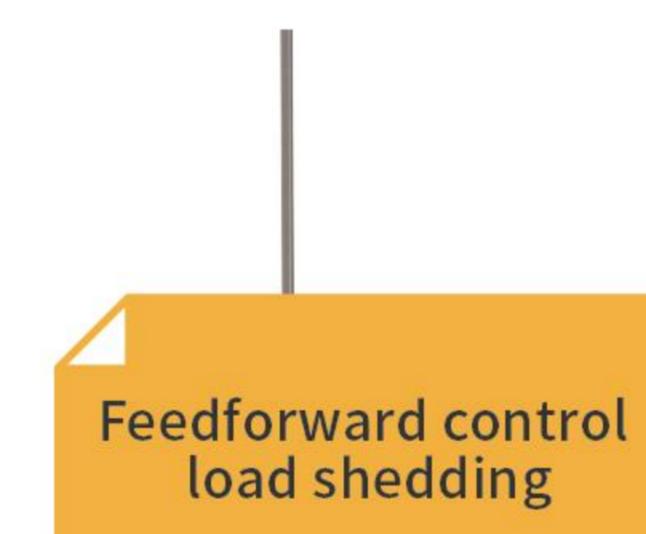
Correct yaw error, increase power generation, increase annual power generation by 2-4%



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



Comprehensive income improvement



Tower weight reduction

Blade lengthening

Generator expansion

Use in the upwind area

Fan life extension

Cost reduction

Improve power generation



Wind Turbine Testing

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