MOVELASER

MOLAS NL

Nacelle-based Wind Lidar

4Hz, 4 beams, 10 simultaneous measurements ranges

50-400M
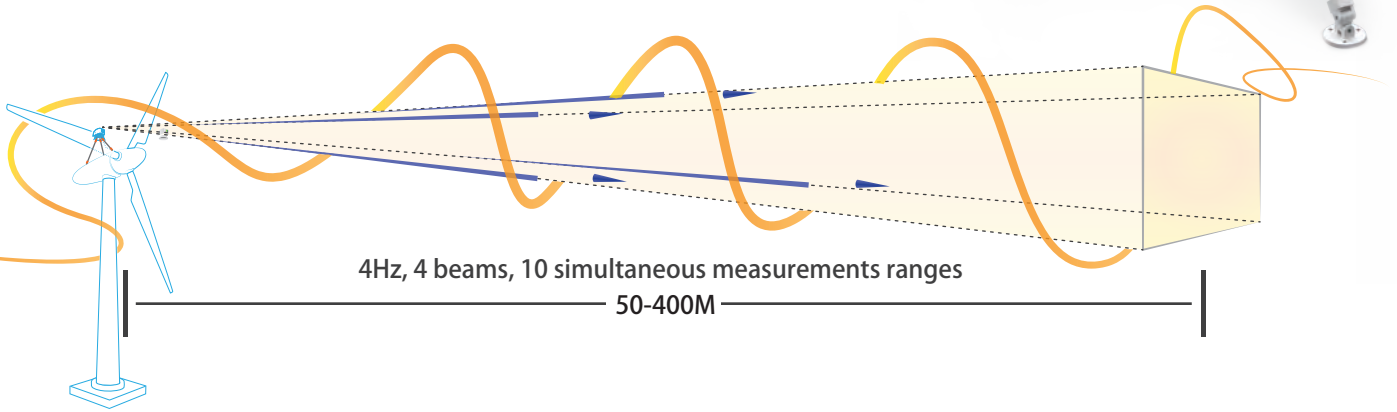
Performance

Item	Parameter
Range	50m ~ 400m
Distance Level	10
Beams	4
Speed Range	0m/s ~ 50m/s
Speed Accuracy	0.1m/s
Direction Range	-90° ~ 90°
Direction Accuracy	0.5°
Sampling Rate	4Hz
Maximum Humidity	100% (Optical Head)
	95% (Data Unit)
Acceleration	-0.5g ~ 0.5g
Operation Temperature	-40℃~60℃
Survival Temperature	-40℃~65℃ (Power Off)
	-45℃~60℃ (Power On)
Survival Wind Speed	70m/s
Operation Altitude	≤3500m
IP (Optical Head)	IP66
IP (Data Unit)	IP65
Lens	Anti-Freeze /Anti-Dust
Corrosion Resistence	ISO C5
Communication	Profibus DP, etc.
Weight (Optical Head)	≤35kg
Weight (Data Unit)	≤10kg
Maximum Passing Size	500mm * 500mm
Lifetime	> 5Years

Applications

Yaw Correction

- Correct the yaw error
- Increase AEP by about 2% to 4%

Lidar Assisted Control

- Improve power generation performance
- Reduce load by about 10%
- Reduce cost by 5% to 10%

Blade Load Analysis

- Extend wind turbine life

Power Curve Test

- Remote sensing measurement at 2.5D in front of rotor
- Improve accuracy of power curve test

Economy Profit

Take a 2.5 MW WTG for example,equivalent to full hours is up to 2000, the nacelle-based wind lidar can:

Increase AEP by 3% , increase revenue by €8,500/year.

Reduce load by 10% to 15% , and increase the equivalent income by €30,000/year.

Combined with the wind farm situation, design a more suitable wind turbine to improve the overall efficiency of the wind farm.

In summary, the nacelle-based lidar can significantly increase the revenue of wind turbine manufacturers and owners, one wind turbine can increase the owner's profit by more than €750,000, and equivalent revenue increased by about 13%.