

Optical Sensing Solutions for Wind Turbines



Applications

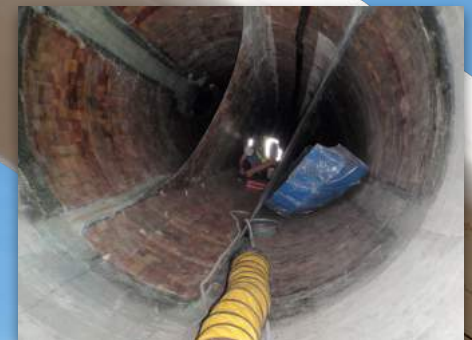
- Test and measurement
- Condition and structural monitoring
- Feedback to active pitch control

Features

- Immune to EMI, lightning and electrostatic discharges
- Fast installation on new and retrofit blades and structures
- Flexible sensor configurations
- Simultaneous static and dynamic measurements
- Self-calibrated instrumentation

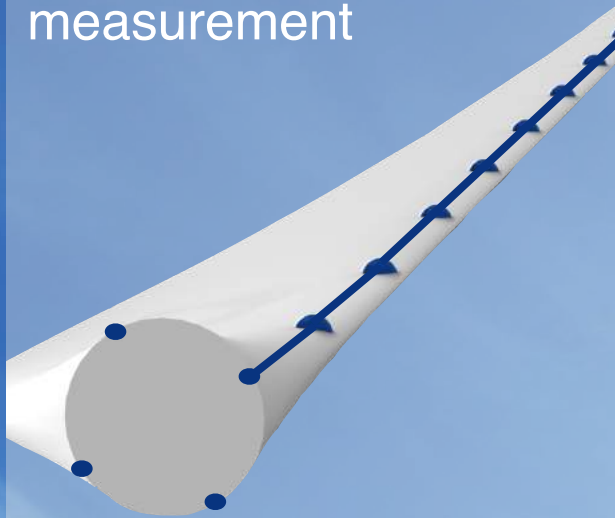
Company Highlights

- Market leader for over 25 years
- Field-proven reliability with 1000s of optical systems in service
- World-class engineering expertise in composite monitoring





Test and measurement



- Flap and edge-wise deflection
- Bending strain and moment
- Shape
- Vibration and acceleration
- Load induced and thermal strain
- Embedded sensors
- Surface mounted, interior or exterior surfaces
- Simple cabling
- Static and dynamic measurements
- EMI and lightning immune

Condition and structural monitoring

- **Blade** dynamic load, icing, impact, damage and delamination
- **Tower** bending, fatigue and vibration
- **Bearing, gearbox and generator** temperature and vibration
- Single, rugged instrument for strain, temperature and vibration
- Capacity for 100s of sensors
- EMI and lightning immune
- Fatigue life > 100 million cycles



Feedback to active pitch control



- Dynamic measurement at 1kHz for active control
- Four to 100 sensors per blade
- Mounted near the root, inside the blade
- Low latency data communication
- Flexible sensor spacing and count
- Fast installation - new or retrofits
- Simple, rugged cabling