



Custom Wind Solution

A Global Partner for Wind Inspections & Advanced Analytics



Fast, Reliable, and Global.

Deep Wind Industry Experience

A team of industry veterans, engineers and highly trained pilots creating advanced inspection software and service solutions for Wind customers.

Streamline Communications: Integrated approach reduces customer-side interfaces, eliminating redundancy and costs.

Turnkey Operations: Manages scheduling, weather monitoring, airspace authorizations, site access, inspections, and provides agile technical support.

End-to-End Asset Management & Analytics: Streamlines inspection and analysis, ensures high-quality repeatable results, and integrates with existing backend systems.

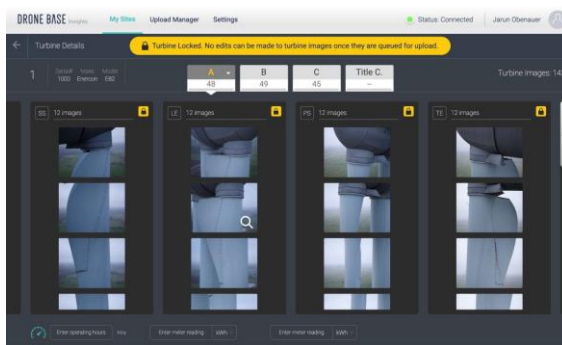


Workflow Software Components



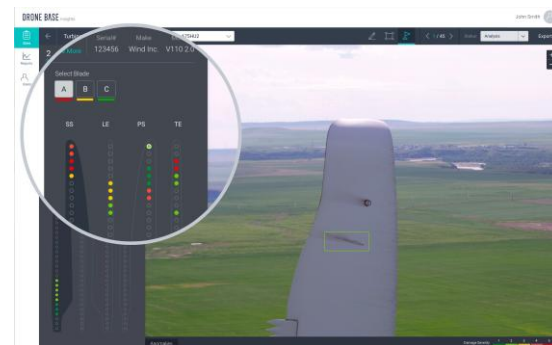
Capture

Automated flight ensures fast, high quality deliverables and repeatable inspections



Upload

Simple data upload streamlines the process ensuring speedy analysis.



Analyse

Inspect with confidence from anywhere in the world.
Software tools purpose built for the wind industry

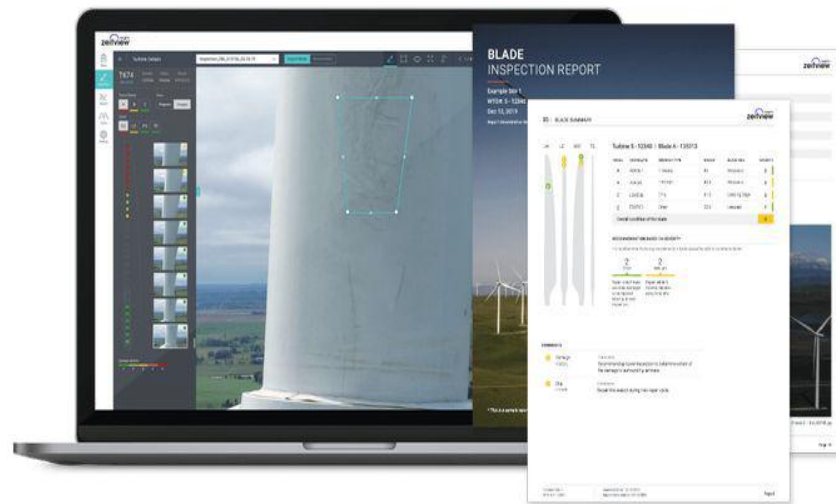


Custom Wind Solution Insights

Custom Wind Solution Insights

Enhance operational efficiency, reduce risk and improve asset performance with inspection solutions built to improve management and maintenance.

- AI-powered analytics for precise anomaly detection and classification.
- Compare historical data to track damage and plan repairs.
- Digitize and automate processes to reduce risk and boost efficiency.
- Generate customizable reports for easy sharing and collaboration.
- Integrate seamlessly with existing systems.



Automated Blade Inspections

Streamline blade inspections, reducing time and complexity while ensuring consistent, high-quality data collection.

- Single inspection flight per turbine
- Automated 15 - 23 min, 3-blade inspection
- Agnostic blade flight paths
- Repeatable data capture for change detection
- Hardware agnostic capability



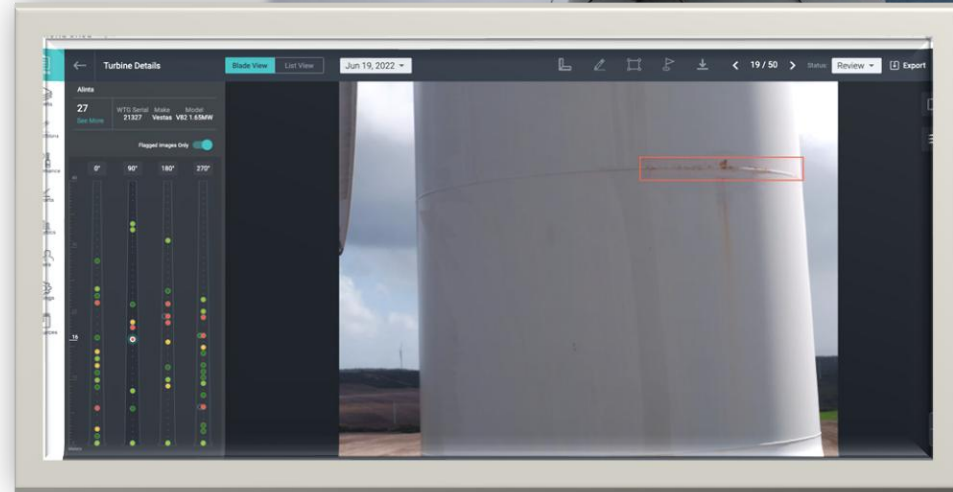
Generate flight plans instantly in the field with advanced automated flight application



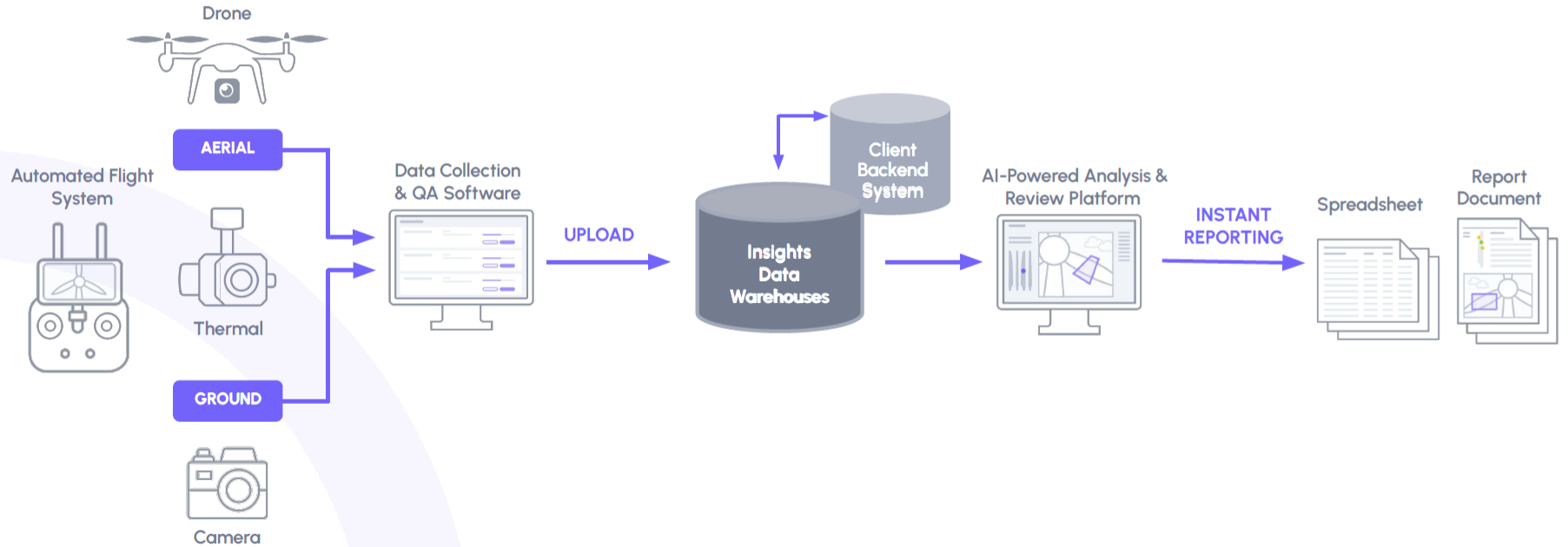
Tower Inspections

Simplify tower inspections ensuring detailed and high-resolution visibility into condition to reduce risk and improve longevity.

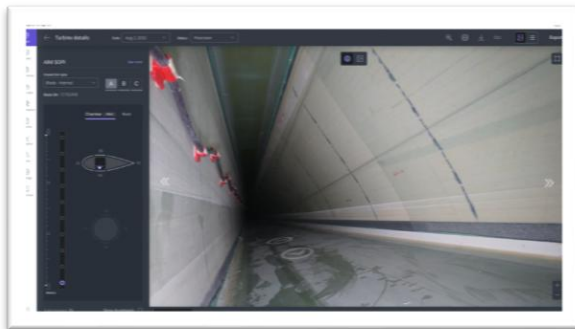
- Tower inspections during blade inspections or as a separate task.
- Complete 360-degree data collection and tower coverage.
- Data processing, analysis, reporting, and documentation in the Wind Insights platform.
- Easily integrate with existing systems.



Integrated Workflow for Wind Inspections

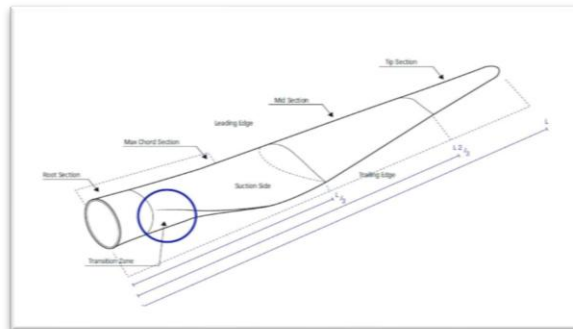


Recent Platform Enhancements



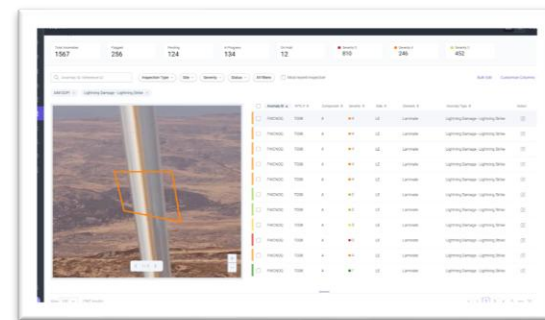
Internal Blade Inspection & 360° Visualization

- Customer Internal UI for various blade types
- 360° Image Viewer and
- Caged Drone and Crawler Support
- Support easy mission creation of other inspection types



Digital Twin

- Improved image location accuracy
- Improved anomaly location accuracy
- Improved anomaly size estimation



Internal Blade Inspections

Safer, Smarter Operations: Our autonomous systems replace manual confined space entry, enhance worker safety, and drive faster, more scalable inspections globally.

Crawlers and Caged Drones — No Guesswork: Capture full-span internal imagery and high-risk root/mid-span views with precision, speed, and minimal turbine disruption — reducing technician exposure and confined space risks.

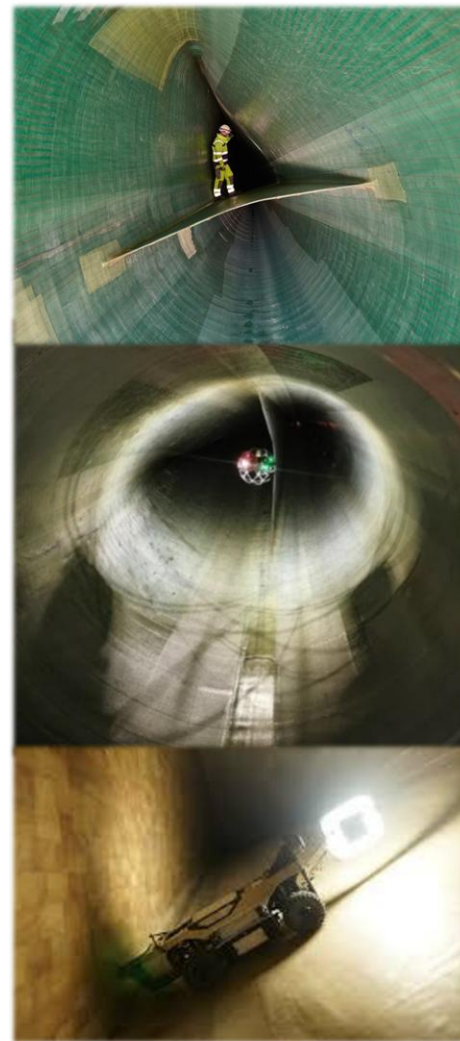
See What Others Miss: Detect internal cracks, resin voids, bond line failures, and early-stage damage that traditional external-only inspections overlook — before they evolve into costly structural failures.

Insights Platform: Full Picture, Zero Blind Spots: Internal and external damages are auto-linked, visualized side-by-side, and mapped over time — no more hunting across folders or relying on partial reports.

From Raw Data to Real Decisions: Immediate defect classification and repair planning built into Insights, accelerating time from inspection to engineering review to action.

Consistency at Scale: Standardized global data capture feeds directly into Insights, enabling fleet-wide analytics, and smarter resource allocation — not just one-off snapshots.

One Platform, One Source of Truth: No more stitching together PDFs, videos, and partial findings.



External and internal comparative views

Sites

Assets

Inspections

New Order

Reports

Analytics

Users

Settings

Comparison View

Blade B | Side SS/LE | Root 36.9m | Jan 13, 2025

Sync

Blade B | Side PS | Root 36.9m | Feb 27, 2025

EBMS47 | Severity 4

Finding Type

Lightning Damage

Element

Laminate

Blade Side

Pressure Side

Size

cm x cm

Distance (root)

36.1m

Distance (LE)

0cm

3YZ2EB | Severity 4

Finding Type

Lightning Damage

Element

Laminate

Blade Side

Pressure Side

Size

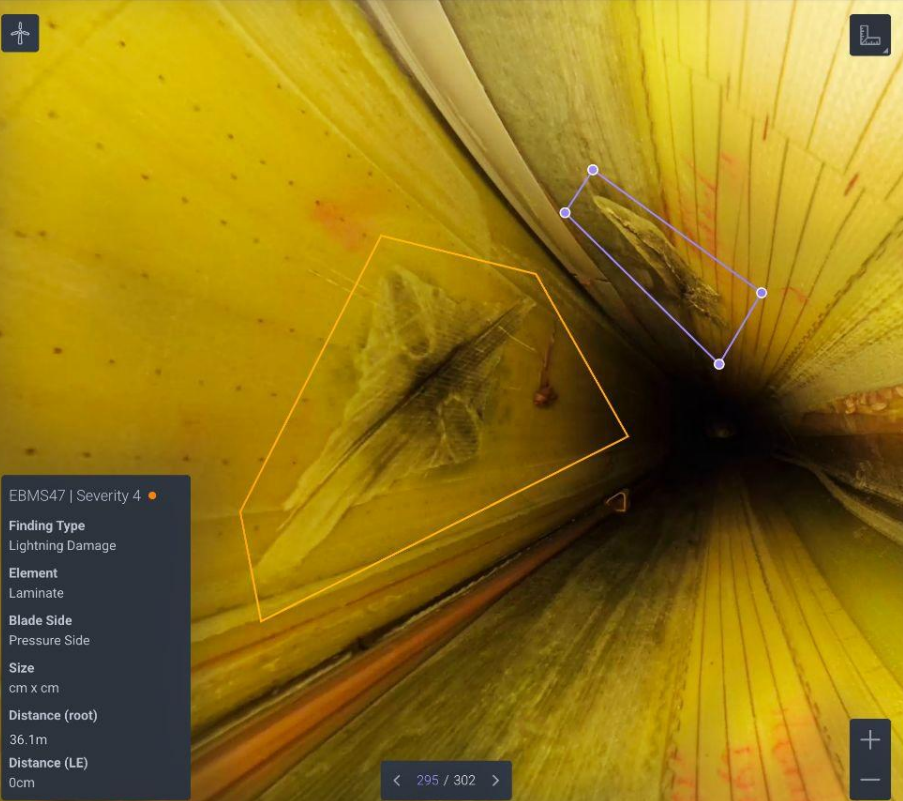
28.2cm x 28.2cm

Distance (root)

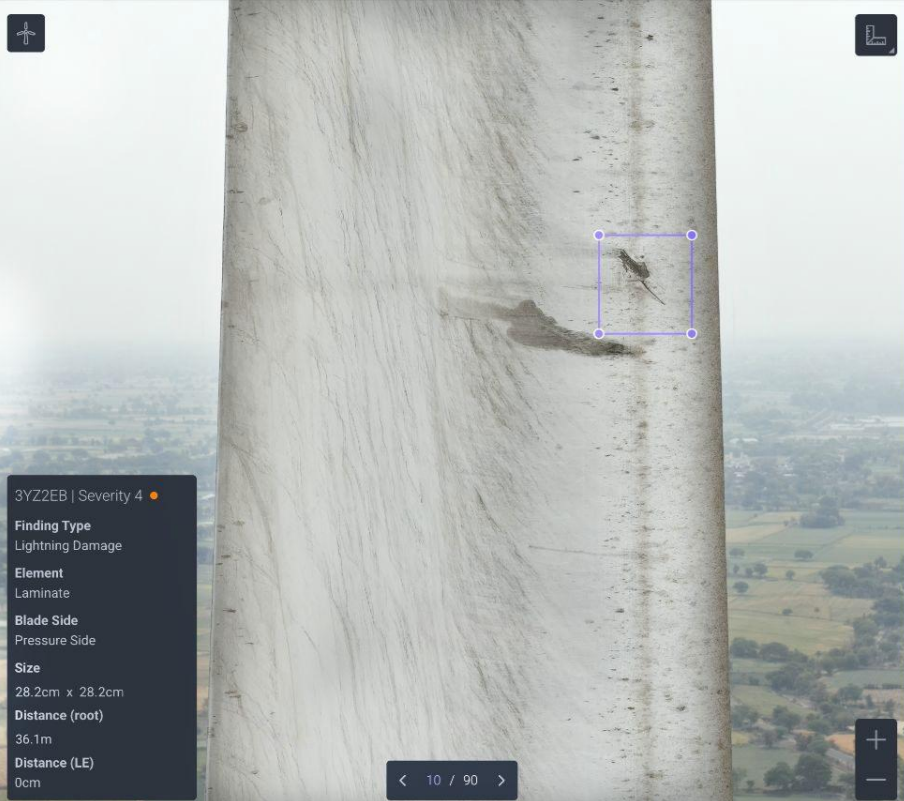
36.1m

Distance (LE)

0cm



295 / 302



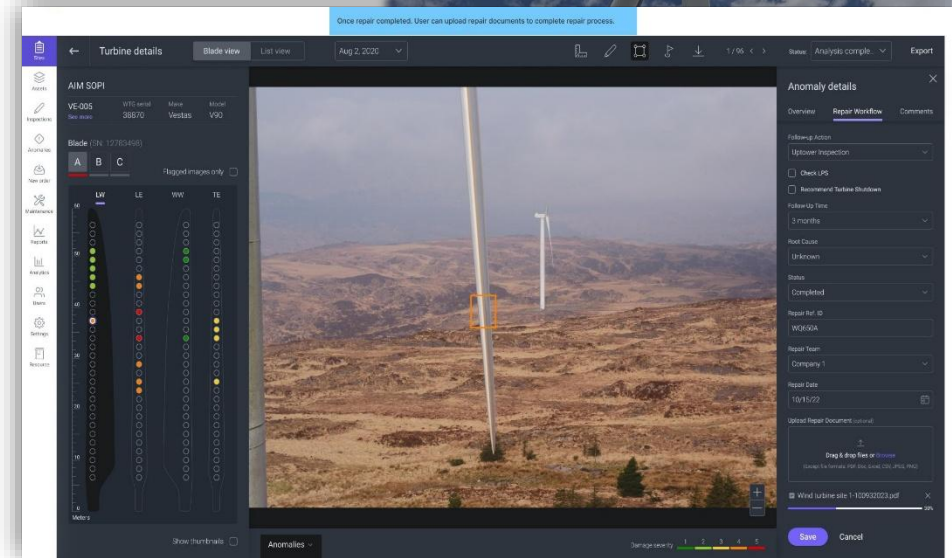
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Easily Track Repair Status

Follow and track the progress of repairs and upload supporting documents ensuring a single source of truth for ongoing O&M.



- Create a comprehensive system of record
- Field app enables technicians to update anomaly status before and after repairs.
- Centralized platform for inspection, repair, and upgrade data.
- Customized for specific OEM, asset owner, and service provider requirements.
- Easily review, approve/reject repairs, and generate reports.



Lightning Protection System Testing

Benefits

Enhance safety and efficiency with our advanced LPS (Lightning Protection System) inspections for wind turbines, providing faster, safer, and more accurate assessments.

- Reduce LPS inspection time by up to 80% compared to traditional methods.
- On average 30 minutes per turbine, up to 10-12 turbines per day
- Utilize 4-wire measurement for increased accuracy, eliminating the need for resistance correction.



Inspection Method Duration

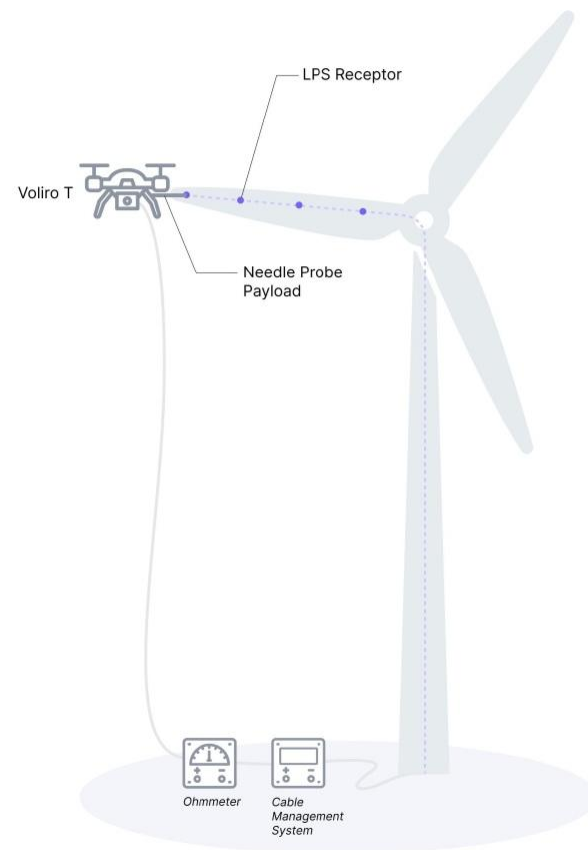
Inspection Duration - Full Turbine Including setup

With wind Speed - 7m/s or less			
Number of receptors per blade	2 receptors	4 receptors	6 receptors
Time for single stop inspection (1 flight/ 3 blades)	35 mins	45 mins	55 mins

Cases of the Inspection time may increases

- Spark gap in the hub: 20 mins / turbine for the technician to climb up/ down and install the cable
- Can't pitch individual blades: One-stop LPS inspection not available, 3 stop inspection required (this could increase the inspection time during low winds)
- Wind speeds above 7m/s (10m/s is the maximum): 25% more time per turbine

* Max flight ceiling 250m AGL (limit of the cable)



How it Works

Our solution uses a 4 wire measurement for increased measurement accuracy.

- A fixed 0.20 amp current is applied to the circuit with a max voltage of 24 V. The measurement range is 0 to 1000 Ohms
- Full circuit resistance measurement from each receptor/metal tip on the blade to a grounded point at the bottom of the tower or blade root, if needed.
- Thin metal needles push against the receptors with ~5 lbs / 2 kg of force to ensure a robust measurement.



Example Dataset

Measurement Summary

Electrical resistance measurements from a grounding point at the bottom of the tower to each LPS receptor on the blade, as specified in the table. Receptor pair 1 is the one closest to the root of the blade (the hub), pair 6 is the one closest to the tip.

Rotor blade	A		B		C	
Side of the rotor blade	Pressure side	Suction side	Pressure side	Suction side	Pressure side	Suction side
Receptor pair 1	0.117	0.082	0.600	0.835	0.120	0.110
Receptor pair 1	0.122	0.104	0.798	0.562	0.127	0.207
Receptor pair 1	0.111	0.074	0.771	0.457	0.128	0.113
Receptor pair 1	0.099	0.087	0.786	0.717	0.139	0.104
Receptor pair 1	0.115	0.079	0.804	0.731	0.133	0.157
Receptor pair 1	0.120	0.083	0.571	0.888	0.126	0.067
Receptor pair 1	0.099	0.080	0.600	0.626	0.117	0.102

All Measurements are in Ω . NC stands for No Connection.

LPS Report

LPS Inspection

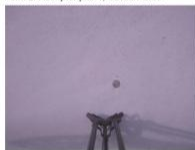
LPS receptor images

Blade A

Point 1: Receptor pair 1, Pressure Side



Point 2: Receptor pair 1, Suction Side



LPS Inspection

Measurement Results

Summary

14 electrical resistance measurements were taken on the 12 receptors and both sides of the metal tip of each blade of the wind turbine.

Main Findings & Recommendations

To ensure that there were no measurement errors, readings with more than $> 1\Omega$ were retained to rule out that there wasn't a proper contact between the donor tip and the receptor metal tip. The resistance measurements on all receptors are $< 1.0\Omega$.

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Receptor pair 3	0.111	0.074	0.771	0.457	0.128	0.113
Receptor pair 4	0.099	0.087	0.786	0.717	0.139	0.104
Receptor pair 5	0.115	0.079	0.804	0.731	0.133	0.157
Receptor pair 6	0.120	0.083	0.571	0.888	0.126	0.067
Metal blade tip	0.099	0.080	0.600	0.626	0.117	0.102

All Measurements are in Ω . NC stands for No Connection.

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LET'S WORK TOGETHER TO EXTEND THE LIFE OF YOUR BLADES!



Custom Wind
Solution Plc.



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