



Electroluminescence Testing (EL) of Solar Panels Using Drones

“Don’t just inspect – illuminate. Discover the invisible, prevent the inevitable.”



When Is EL Drone Testing Useful?

Drone-based electroluminescence (EL) testing is most beneficial when you need:

Speed and Scalability

Precision with RTK GPS

Enhanced Imaging Quality

Non-Invasive & Contactless

Night Operation

Why are we doing that?

Traditional EL testing methods require manual setups, complex wiring, and time-consuming inspections, especially impractical for large-scale solar farms.

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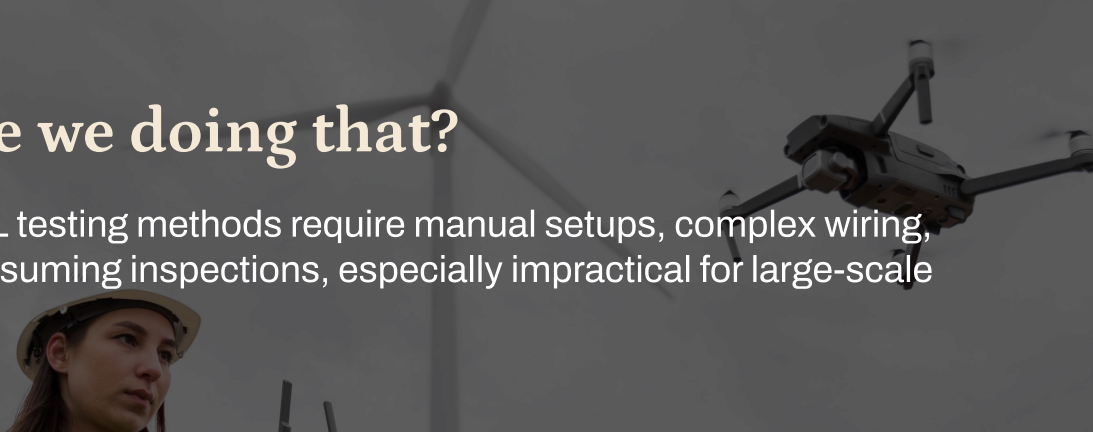
Detailed Fault Diagnosis

Warranty or Insurance Verification

Preemptive Maintenance

Performance Audits

Routine or Scheduled Inspection



Who Is It Useful For?

Utility-Scale Solar Farms	EPC & O&M Companies	Warranty & Insurance Assessors
Manufacturers & Installers	R&D and QA Teams	

Features	Drone-Based EL	Thermal Inspection	Manual Inspection
Sensitivity	★★★★	★★	★★
Speed	★★★★	★★★	★
Cost	★★★	★★★	★
Accuracy	★★★★	★★	★

Key Advantages

Rapid Inspection of hundreds of panels per hour

No need to remove or relocate panels

Pinpoint micro-cracks, dead cells and PID with high-contrast imaging

Reduced labor and cost compared to manual setups

RTK precision flight for accurate defect localization

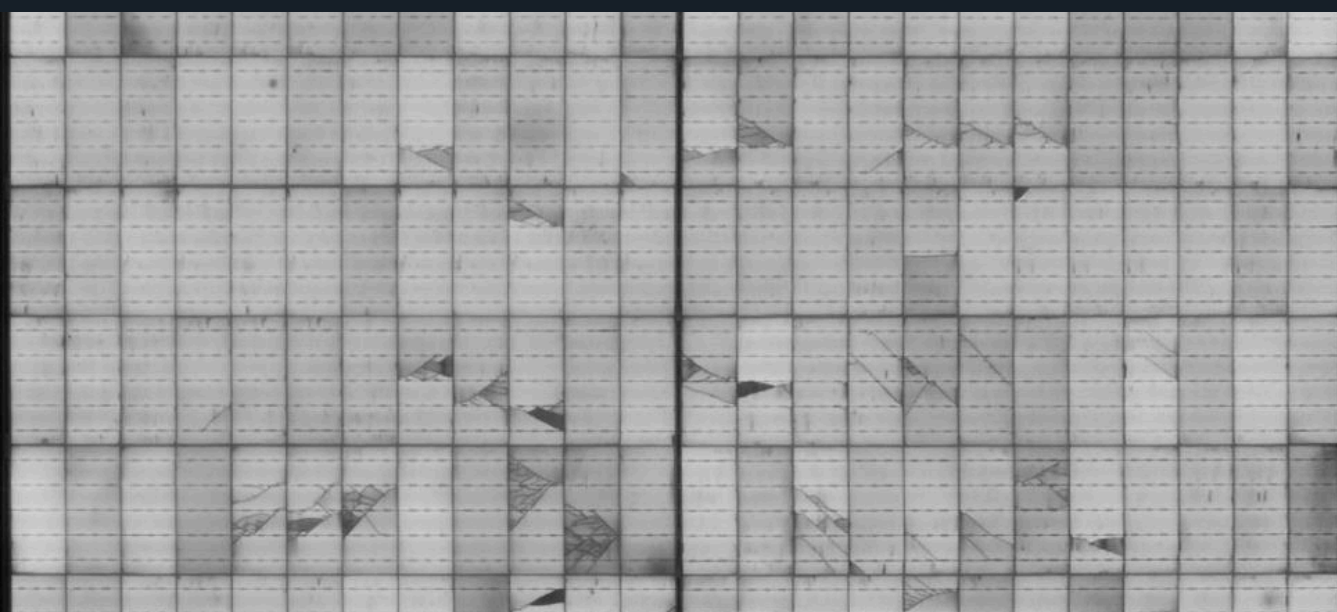
Operates day or night (in low-light conditions with panels energized)



Before:



After our analysis:



What We Detect

Micro-cracks in cells

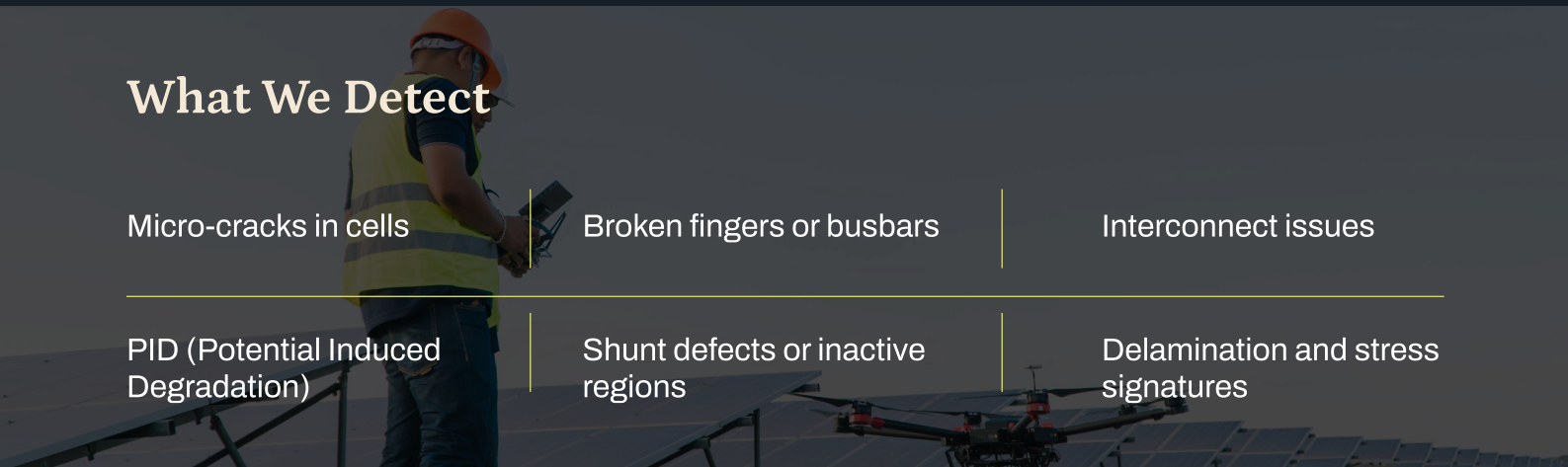
Broken fingers or busbars

Interconnect issues

PID (Potential Induced Degradation)

Shunt defects or inactive regions

Delamination and stress signatures



Deliverables

- High-resolution EL images
- Defect classification and panel tagging
- Digital report with heatmaps and fault mapping
- Recommendations for panel repair or replacement

Ideal For

- Solar Farms (Utility Scale)
- EPC Contractors and O&M, Providers
- Warranty and Insurance Claims
- Panel Manufacturers and Installers
- Research and Quality Assurance Teams

Let CabLab's aerial EL inspection team bring precision diagnostics directly to your solar farm.

