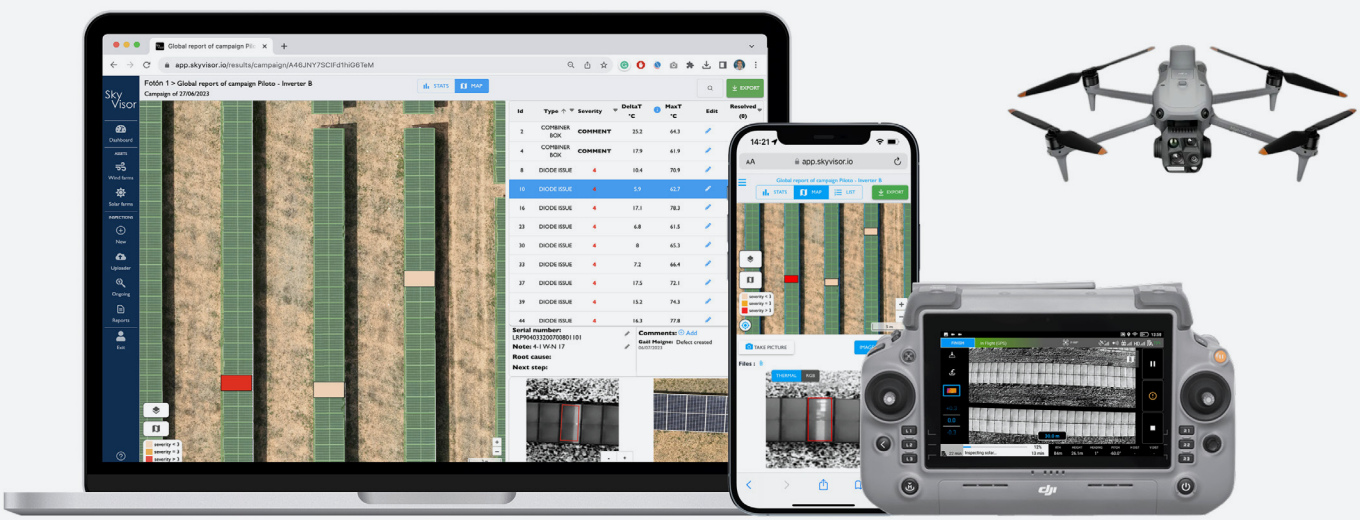


Beyond the flight: simplifying solar defect detection with AI

SkyVisor explores how drone thermography and AI are redefining how solar inspections are performed, delivering faster results, sharper insights and greater operational control. But let's be clear: this is not marketing hype. We're talking about field-proven AI powered by deep learning algorithms that deliver measurable outcomes. Safeguarding your solar investment with scalable intelligence.

Today's solar farms often reach several hundred megawatts, with some now approaching gigawatt scale. As site complexity increases, even small design or performance flaws can have outsized impacts, affecting millions of modules, and potentially costing thousands of euros over the asset's lifespan.

To meet these challenges, many operators now rely on drones for inspections. Yet gathering aerial or thermal data alone is insufficient. The rise of drone inspections has created sprawling 'data lakes', massive collections of raw images with limited practical use unless processed.

Without a structured approach, these data lakes can become chaotic, full of duplicates, undocumented workflows, and fragmented information that hinder rather than help decision making.

To unlock the full potential of drone inspections, raw thermal data must be systematically organized and analyzed. This requires robust data management pipelines and advanced AI analytics that process and interpret the information, converting complex image sets into structured, prioritized maintenance recommendations. Only then can solar operators significantly enhance performance, efficiency, and ROI from their drone inspection initiatives.

How SkyVisor turns data into action

Unlocking the value of drone inspections means transforming unprocessed thermal data into structured insights. This requires robust data pipelines and intelligent AI

analytics capable of translating imagery into prioritized, practical maintenance tasks.

SkyVisor Drone App

Capture high-resolution visual and thermal data with 100% autonomous drone flights, enabling fast, accurate inspections for all asset types, regardless of pilot experience.

SkyVisor Asset Management Platform

Manage your assets, track maintenance activities, analyze performance data, and easily generate shareable reports from a centralized platform, while AI-based defect detection enhances inspection accuracy, enabling your team to make confident, data-driven decisions.

SkyVisor Field App

Empower your teams with instantly accessible data, file and image sharing threads, and GPS panel localisation, ensuring rapid response and efficient collaboration to resolve issues onsite.

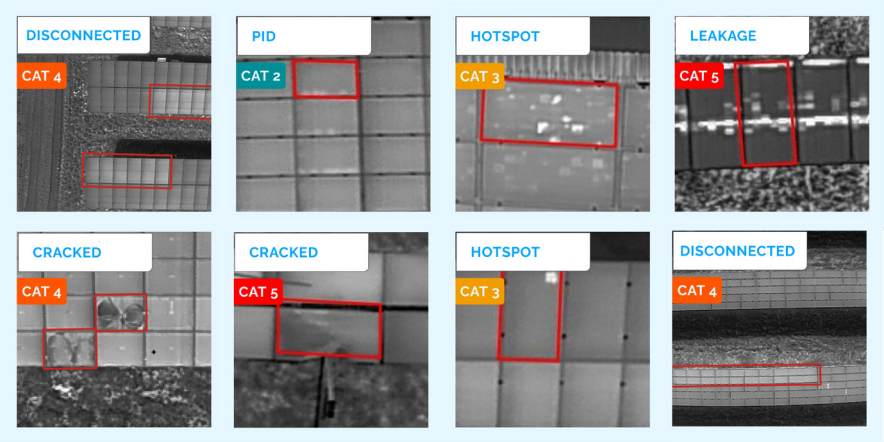
This integrated approach delivers rapid, accurate monitoring that protects performance and improves the financial return of large-scale PV sites.

AI that actually works

The term 'AI-powered' is used a lot in the solar industry, but what lies behind it can range from basic automation to truly intelligent systems. The true value of drone inspections is realized only when advanced AI analytics process and interpret the raw data, transforming it into clear, prioritized and actionable maintenance recommendations. That's why at SkyVisor, we've developed proprietary deep learning algorithms in-house, trained on millions of real-world solar panel images. Our AI doesn't just flag anomalies; it accurately identifies, classifies, and pinpoints issues with unmatched speed and reliability, delivering insights you can trust straight into your asset management workflow.

Our AI defect detection models are engineered in-house, trained on industry-specific datasets from over 16,000 inspections and more than 400,000 detected defects annually across 10 GW of assets. This proprietary approach ensures algorithms deliver highly accurate, reliable, and rapid diagnostics, identifying issues like diode failures, delaminations, and erosions in minutes, not hours.

SkyVisor Solar achieves from 98.2 to 99.8% defect detection accuracy, uncovering hidden anomalies and enabling inspections up to 10x faster than traditional methods, freeing up valuable time and resources so teams can focus on what matters most.



By owning the entire technology stack, from automated drone flights to AI-driven defect analysis and digital twin asset management, SkyVisor ensures unmatched quality control and agility, setting a new standard for what true AI should deliver in renewable asset management.

Behind the scenes: AI innovation built by SkyVisor's data scientists

SkyVisor's platform uses cutting-edge Deep Learning algorithms, built on convolutional neural networks (CNNs) and specialized models developed in-house by our data scientists, to deliver precise, actionable insights for solar asset management.

During drone inspections, high-resolution thermal images are captured and fed into an automated AI pipeline. This pipeline harnesses a suite of 10 to 12 proprietary algorithms that perform both segmentations, pinpointing the exact location and extent of module defects, and classification, identifying the specific type of issue at the image level.

These models are trained on large datasets of labeled defects, allowing them to automatically identify, classify, and localize issues in new images taken during drone inspections.

'The innovation isn't in reinventing the technology, it's in how we tailor and apply it to the unique challenges of renewable energy,' comments SkyVisor Data Scientist, Clément Jameau.

The big picture: digital twins and the full asset health lifecycle

A digital twin is a virtual, geo-referenced replica of your solar asset, mapping every row and module to its exact real-world position. This digital representation provides a powerful foundation for visualizing site health, tracking performance, and supporting data-driven operations.

While digital twins for solar sites are not new and many teams are familiar with traditional orthophotos, building a high-quality twin typically requires extensive flying, significant photo overlap, and specialized service providers. SkyVisor offers a more efficient solution: our workflow is laser-focused on solar panels, allowing us to generate detailed, actionable digital twins quickly and with fewer images. This results in a faster, more cost-effective process designed specifically for the needs of PV operators.

The ultimate goal is to empower you to fully digitalize your solar park with a custom-built digital twin, tailored specifically to your layout, with local referential down to the exact row and module. You collect the data yourself, you keep full ownership, and you control how your asset's digital record

Supported module technologies

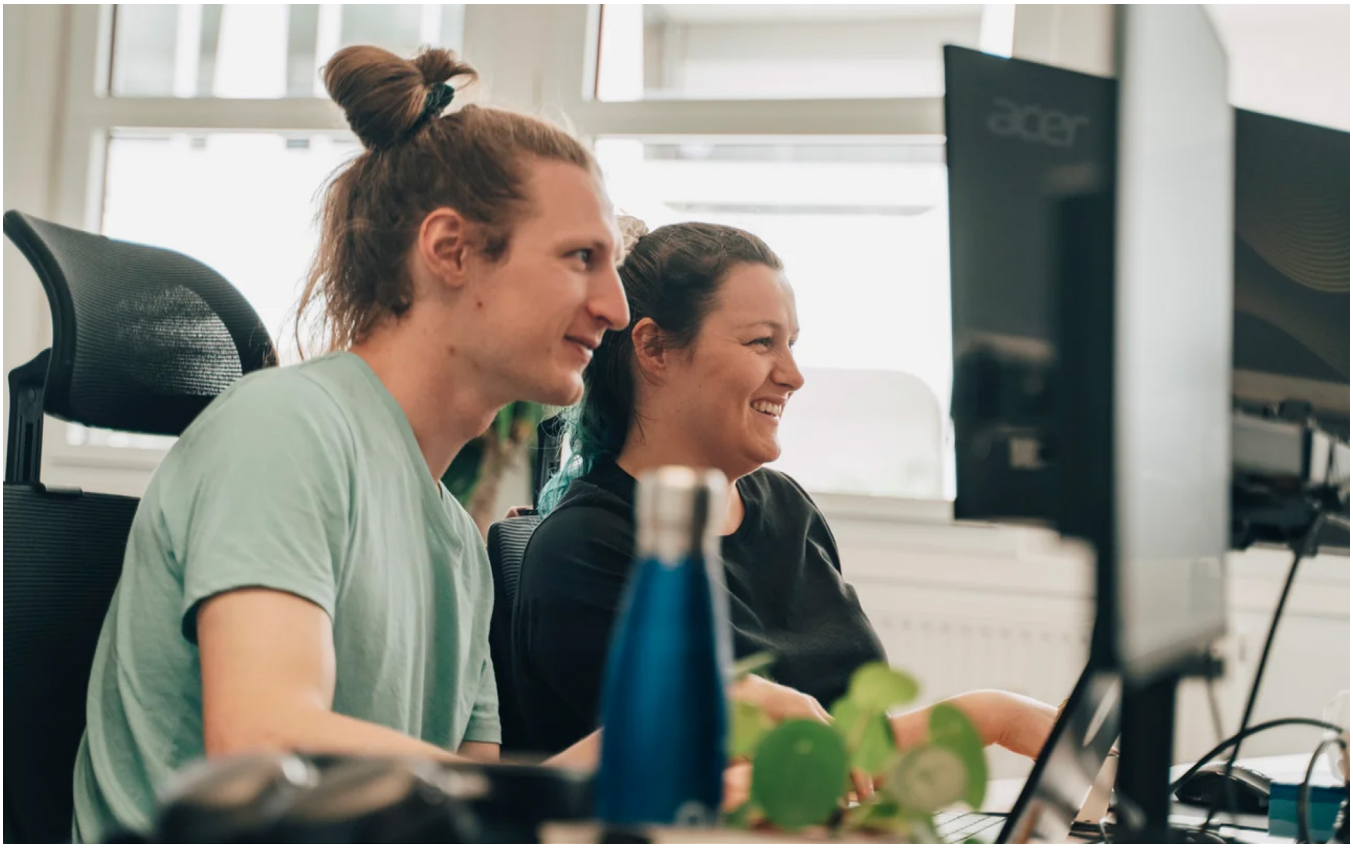
- Monocrystalline solar
- Polycrystalline Silicon (Poly-Si)
- Thin Film
- Others

Get in touch to see if we can support your technology.

Key algorithms powering SkyVisor Solar

- Panel detection on both spectrum images (RGB, IR) based on Deep Learning CNNs
- Digital Twin generation based on Image Stitching technology
- Defect detection on IR: based on deep learning CNN+ image and temperature matrix processing
- Defect detection on RGB: based on deep learning CNN

Whether you are an O&M team, an EPC contractor, or an IPP asset manager, SkyVisor's AI tools and digital twin technology put you in complete control.



evolves. This simple but powerful approach gives you a transparent, standardized platform to track the health of every module year after year.

Every detected defect, such as disconnected panels, diode failures or hotspots, is precisely mapped to its position within the digital twin. SkyVisor's platform doesn't just find problems; it explains what each defect is, why it likely appeared, and what impact it has on system performance. All this actionable insight is stored in your digital twin, creating a comprehensive, evolving health record for each asset.

Furthermore, by flying over the site every six months, or more thanks to our unlimited inspection offer, you continually update the digital twin, enabling effortless tracking of defect history, repair effectiveness, and module performance evolution. This powerful historical tracking makes advanced pattern recognition and proactive asset management possible.

Why SkyVisor?

Whether you are an O&M team, an EPC contractor, or an IPP asset manager, SkyVisor's AI tools and digital twin technology put you in complete control: you own the data, you track every module throughout its lifecycle and you make better decisions based on transparent, localized, and actionable intelligence, all driving the long-term efficiency and value of your solar investments.

Beyond the software, SkyVisor supports an in-house or hybrid inspection approach, empowering teams to internalize operations while still benefiting from expert support. We don't just deliver tools; we bring technical expertise, training, and proven best practices across solar, solar construction, and wind sectors. Use SkyVisor and you'll unlock the full potential of your assets, consistently maximizing production and ROI.

skyvisor.ai

See for yourself: live demos at industry events

RE+ , September 9th to 12th, 2025
Booth V3866, Venetian Expo Hall, Level 1
The Venetian Expo & Caesars Forum, Las Vegas, Nevada, United States

Husum Wind, September 17th to 20th, 2025
Booth 4, 4B02, Messe Husum Congress
Husum, Schleswig-Holstein, Germany