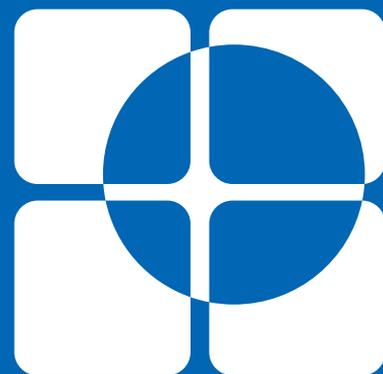
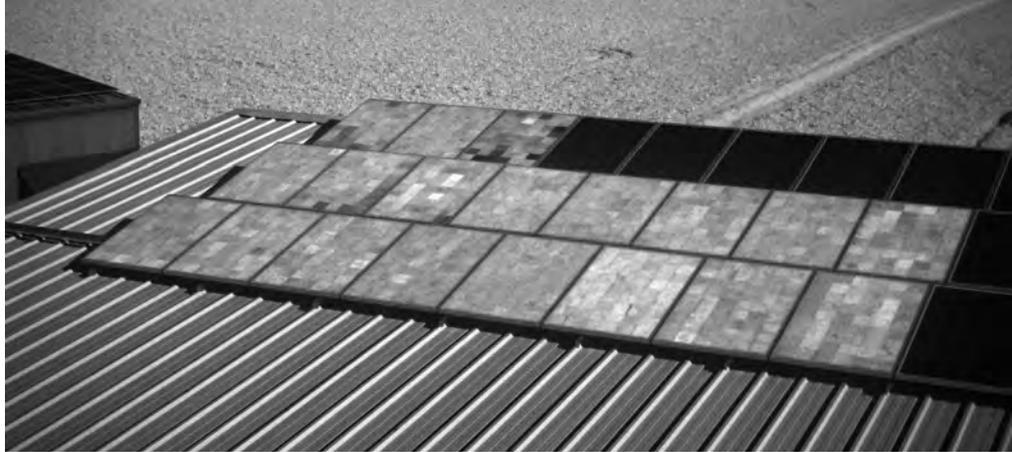
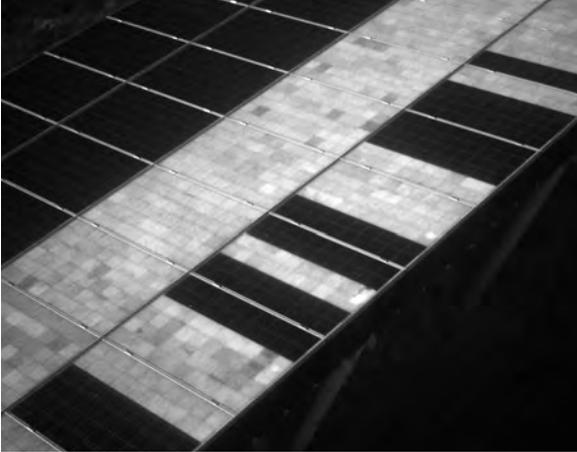


Aerial photovoltaik inspection

more than infrared





Outdoor Electroluminescence Inspection

comprehensive - detailed - clear

Solar Panels produce electricity during the day, but in complete darkness if connected to a power supply, they emit radiation in the near-infrared light spectrum not visible by the naked eye.

High resolution Electroluminescence (EL) images look similar to X-ray images. Active cells appear bright to grey while inactive or damaged cells appear dark to black. The grey scale seen in the images allows the cause and the amount of damage to be directly determined onsite.

Therefore specific samples can be selected for further laboratory tests.

With this image based qualitative measurement, damages caused by mechanical stresses, like transportation, installation, hail, overload from snow or defective by-pass diodes from overvoltage can be quickly detected. Moreover deterioration, broken cell, interconnections, cracked cells and malfunctioning panels and strings can also be recognized.

Currently, for the clear and early detection of PID (Potential Induced Degradation) affected solar systems, the On-roof or rather Aerial EL test is the most cost efficient method on the market.

Furthermore, with this testing method, recovered PID systems and false string maps can be verified, also enabling the reproduction of system documentation.



Aerial Electroluminescence Inspection

quick - interruption free - cost efficient



Since 2014, the Fladung Solartechnik GmbH Company, based in Aachen, Germany has developed and conducts different Electroluminescence (EL) tests for cost efficient inspections of large solar parks. As Operations and Maintenance specialists, we carry out complete solar system inspections on existing plants without dismantling panels. Large solar plants and commercial systems are measured using UAV (Unmanned Aerial Vehicle) drones with EL camera and an automated string energizing device, which enable high quality, quick string level inspections. Also, in the portfolio of inspections that we offer, are included thermographic or infrared measurements that can be completed in daylight from UAV drones.

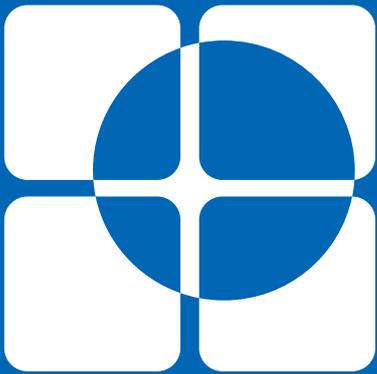


The portfolio of testing equipment includes remote controlled mounted stands, 15 m telescoping masts as well as shoulder mounted camera mounts. The measurements can be carried out to both panel and cell level, independent to the installation method or size, e.g. pitched-roofs, flat roofs, facades, and solar parks.

The combination of different automated tripod/crane/UAV systems enables inspections to be carried out regardless of radiation, wind, rain, solar plant layout, location, inner city or in UAV prohibited areas.

Still in development, is an image-analysis-software that will greatly reduce the costs and time for the failure detection and evaluation of inactive and damaged cells.





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