

Efficient, Recorded Inspection of Solar Panels

This application note describes how to inspect the condition of solar panels using portable glossmeters.

Gloss measurement of solar panels can be used to non-intrusively check the condition of the solar panels, to help with performance measurement and optimization, as well as to check the amount of dirt before/after cleaning.

Challenge

The performance of solar panels depends heavily on their cleanliness. One way of checking the cleanliness is by measuring the gloss of the surface. Solar panels are usually in difficult-to-access locations e.g. rooftops, floating on reservoirs.

It is therefore important that any instruments used on solar panels are ultra-portable and lightweight. Also, there are often thousands of solar panels in disparate locations that need to be inspected.

Data from the different solar panels must be stored securely but in a way that is accessible from different sites.

Solution

The [Zehntner ZG8000](#) portable glossmeter is a perfect solution for inspecting the gloss of the surface of solar panels. It can be used by itself or connected to a mobile app (on handphone/tablet).

With each measurement, the app automatically stores meta data to deliver traceable results. The instrument ID and the calibration status is recorded as well as the location of the measurement. Additional information such as photographs and audio notes can also be stored alongside the gloss measurement data.

Results

This data is stored on the app and automatically transmitted to the secure web storage where it is accessible anywhere, anytime. This delivers reliable measurement results and facilitates the maintenance of thousands of solar panels.

Data analysis and reporting is possible from a single location, with inspectors collecting data over a large area. PDF reports can be automatically generated and the raw data can be exported for entry into proprietary maintenance management systems.

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