

RENEWABLE ENERGY

Soiling Assessment Systems



Soiling Assessment Systems

In arid regions, photovoltaic (PV) solar installations can lose 1% efficiency per day due to dust and other contaminants. Through effective and accurate soiling-assessment measurements, a plant owner can optimize maintenance schedules around actual cleaning need. Inefficient maintenance activities have a significant impact on the return on investment from a PV installation.

Campbell Scientific's PV soiling assessment systems measure the impact of dust and contaminants across the entire PV panel to get a true soiling index. Many other systems take spot measurements and assume homogeneity across the entire panel, which can mislead and cause inefficient decision-making.

Campbell Scientific's PV soiling assessment systems are suitable for all solar installations, including large rooftop industrial solar installations and utility-scale PV farms. A soiling assessment system allows plant owners to maximize power output and return on investment by enabling data-driven, strategic decision-making.

ADVANTAGES

- Stand-alone measurement peripheral/system
- Turnkey system
- Scalable with irradiance and weather sensors
- Soiling loss indices calculated using industry-standard methodologies
- Raw data backup for additional post-processing
- Real-time data
- Modbus, DNP3, PakBus, data encryption, and Internet protocols supported
- All soiling solutions are approved methods for soiling measurement as defined by the IEC 61724

PV MODULE SOILING AND SOILING-LOSS INDEX

- Soiling rate
- Short-circuit current
- Open-circuit voltage
- Calculated effective irradiance
- Calculated daily average soiling-loss index

OPTIONAL MEASUREMENTS

- Irradiance
- Back-of-module temperature
- Air temperature
- Relative humidity
- Precipitation
- Wind speed
- Surface wetness
- Solar position (calculated value)