

Weather Measurement Solutions

for PV solar installations



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It's critical for all stakeholders of solar-electrical-power-generating systems to know how efficiently a photovoltaic (PV) system is performing. Having access to accurate and cost-effective data enables bankable performance calculations and provides the basis for actionable insights.

Campbell Scientific's automated weather stations (AWS) are the backbone of critical weather-monitoring systems globally and have been providing high-quality measurement data for more than 40 years.

By providing accurate measurements with low-power requirements and proven reliability in all weather conditions, our weather stations are ideal for critical monitoring applications in PV farms and other solar installations.

In addition to measuring the standard meteorological parameters, Campbell Scientific weather stations can also measure a complete range of key solar-performance indicators and feed data directly into existing data systems whether they are onsite or based in the Cloud.

Our turnkey measurement systems comply with all relevant industry standards and provide field proven reliability with systems designed to be simple and cost-effective to install, commission, and maintain.

Typical applications include pre-construction-phase solar-resource assessment, baseline data collection, and performance monitoring.

ADVANTAGES

- Turnkey, factory acceptance test (FAT)-certified system
- Compliant with IEC 61724 guidelines and requirements
- Fully scalable and customizable towers and tripods for permanent or quick-deploy applications
- Data backup; auxiliary backup power
- Data transmission via Modbus TCP/IP, DNP3, wireless, Ethernet, cellular

TYPICAL SYSTEM PARAMETERS

A Campbell Scientific weather station can be customized to meet any site requirements. A typical system might include the following parameters:

Irradiance

- Global horizontal irradiance (GHI)
- Plane-of-array (POA) irradiance
- Diffuse horizontal irradiance (DHI)
- Direct normal irradiance (DNI)
- Albedo

Standard Measurements

- Wind speed
- Wind direction
- Air temperature
- Back-of-solar panel temperature
- Relative humidity
- Barometric pressure
- Precipitation
- Solar position
- Soiling-loss monitoring

Optional System Measurements

- Visibility
- Electric field
- Cloud height and coverage
- Surface moisture