



DustIQ Soiling Monitoring System

For accurate measurement of PV module soiling

Reports Soiling Ratio, Transmission Loss and PV module temperature

24/7 measurement

No moving parts

Maintenance free

Easy system integration

When and where to clean

Continuous optical measurement

DustIQ uses our unique Optical Soiling Measurement (OSM) technology to measure the transmission loss of nearby PV modules due to soiling. It does not need sunlight to make measurements and updates every minute, night and day.

Maintenance free

DustIQ has no external or moving parts and, after a simple initial calibration to match the local dust characteristics, no separate maintenance is required. Just clean it at the same time as the surrounding PV modules, whether that is with robots or done manually.

Easy integration

DustIQ is made from the same materials, and has similar dimensions to, industry standard silicon PV modules. It installs easily in-between, on the side, or on the top of an

array. This provides more reliable measurements than stand-alone solutions because it faces exactly the same conditions and collects the same amount of dust and dirt as the modules around it. DustIQ has Modbus® RTU RS-485 serial communication for easy connection to plant SCADA systems.

Multiple measurement points

Soiling rates can vary across a PV plant depending on wind direction and module location. The cost-effectiveness of DustIQ encourages the installation of multiple units to provide a soiling map of a plant that can inform decisions on when, and where, to clean.

Technical Specifications

| | |
|---|---|
| Transmission Loss (TL) range | 0 to 50 % |
| Percentage of sunlight that is blocked or scattered in such a way that it does not reach the actual solar cells | |
| Soiling Ratio (SR) range | 100 to 50 % (SR = 100 - TL) |
| Transmission loss measurement accuracy | ± 0.1 of reading ± 1% (after local dust calibration) |
| Ambient working temperature | -20 to +60 °C |
| PV panel temperature sensor | -20 to +100 °C, ± 1 °C |
| Tilt X and Y | -180 to 180 degrees ± 1 degree |
| Communication | Modbus® RTU over 2-wire RS-485 |
| Daisy-chain capability | Up to 3 devices in one chain |
| Power | 12-30 VDC, 200-70 mA at 24 V, 500 mA power supply is advised |
| Power consumption | < 2.5 Watt |
| In rush current | 10 A for 50 µs |
| Glass type | Glass with anti-reflection coating as used for silicon PV modules |
| IP Class | IP65 |
| Dimensions unpacked | 990 x 160 x 35 mm |
| Weight packed with 10 m cable | 6 kg |
| Weight unpacked | DustIQ unit: 4 kg; Mounting clamps: 600 g; 10 m cable: 400 g |

Dimensions

