## NRG SOILING PERFORMANCE KIT

The NRG Soiling Performance Kit is a robust solution designed to accurately and reliably measure the impact of soiling on PV module performance, enabling solar energy professionals to assess and manage soiling losses effectively in the most demanding conditions. This comprehensive solution includes the NRG Soiling Measurement Kit with either a Crystalline or Thin Film Pulsed Soiling Module (PSM1) and NRG R2 Pyranometer, allowing users to effectively monitor overall performance through a rich dataset. Key outputs include short-circuit current, open circuit voltage, back-of-module temperature, effective irradiance, soiling ratio, and daily soiling-loss index, ensuring precise performance analysis and optimization.

## **Key Benefits:**

- Complies with IEC 61724-1:2021 and methodology, ensuring high performance
- Flexible configurations accommodate post-construction mounting and modern PV panels as well as compatibility with electrical ratings of modern thin film and crystalline panels
- Class A Pyranometer provides reference irradiance input
- · Daily soiling ratio and soiling loss monitoring
- Robust data storage capabilities and standardized Modbus map
- Additional inputs available for supplementary measurements
- Integrates seamlessly with NRG Flare Systems





Specifications	System Applications	Solar Resource Monitoring Soiling Loss Measurement Soiling Performance Measurement, with soiling ratio values derived from measured PV module short circuit current (Isc) and back-of-module temperature data	
	Compliance	IEC 61724-1:2021	
	Data Outputs	Short-circuit current Back-of-module (BOM) temperature Effective irradiance Soiling ratio Daily soiling loss index	
	Instrument Types	LOGR   Solar: High utility data logger, real-time sensor interface NRG R2-D Pyranometer: Thermopile solar radiation sensor, ISO 9060:2018 Class A (Secondary Standard) Soiling Measurement Kit (SMK) Crystalline and Thin Film	
	Data Storage	90 days at 1 second intervals, or 365 days at 1-minute intervals	
	Data Storage Interval	1 second and 1 minute intervals available	
	Averaging Interval	1 minute (IEC 61724-1 compliant)	
	Communications	Real-time data delivery via Modbus registers (TCP via Ethernet or RTU via RS-485) Scheduled delivery of historical data via FTP On-demand transfer of historical data via internal web server to FTP	
Inputs	Input Voltage	110 to 240 VAC	
	Nominal Current	0.2 Amps	
	Max Current	1.2 A @ 115 VAC	
Outputs	Effective Irradiance Range	0 to 1500 W/m2	
	Daily Soiling Ratio Range	0 to 1, daily average	
PV Modules	Maximum Voltage	450 VDC	
	Maximum Current	Crystalline: 30 Amps Thin Film: 5 Amps	
Environment	Operating Temperature	-40 °C to 65 °C (-40 °F to 149 °F)	
	Operating Realative Humidity	0 to 100% (non-condensing)	
Materials	Enclosure	IP68	
	Enclosure Dimensions	Height - 17.43" Width - 15.43" Depth - 7.34"	
	Warranty	Two-year warranty	

Measurement	Accuracy	Range
Short-circuit Current (Isc) (c-Si)	1%	0 to 30 Amps
Short-circuit Current (Isc) (TF)	1%	0 to 5 Amps
Open Circuit Voltage	1%	0 to 450 VDC
Back-of-Module Temperature	± 0.2 °C	-55 °C to 150 °C
Irradiance	< 2 s	-200 to 4000 W/m^2

For more information: NRG Sales +1 802.482.2255 sales@nrgsystems.com nrgsystems.com ISO 9001: 2015 Certified ISO 14001:2015 Self-Certified

