VeraSol* Product Certificate

*Previously Lighting Global Quality Assurance

Spark Start

Expiration Date: March 31, 2024[1]
Verify here: https://data.verasol.org/products/sek/rs-ss

This document verifies that the Spark Start was tested according to the following test methods and conformed with the following standards:

Test methods:	IEC TS 62257-9-5:2018[2] and IEC TS 62257-9-8:2020[3]
Quality standards:	IEC TS 62257-9-8:2020[3]

Testing Details

Product Name:	Spark Start
Model Number:	--
Company Name:	Spark
Country of Origin:	China
Company Contact:	Shagun Jain, shagun@sparkenergy.io
Original QTM Sample Size:	n=4
Renewal Test Conducted:	n/a
Sample Procurement Method:	Random warehouse sampling
Testing Laboratory:	Shenzhen Academy of Metrology and Quality Inspection, Shenzhen, Guangdong, China

Documentation

Specifications sheet with verified test results and original version of this verification:
https://data.verasol.org/products/sek/rs-ss

Ari Reeves
Senior Manager, CLASP

[1] VeraSol requires re-testing every two years or upon major product revisions, and in special cases reserves the right to grant an extension on results validity.
[2] https://verasol.org/solutions/test-methods
[3] https://verasol.org/solutions/quality-standards

Type Approval
Spark Start

Verify here: https://data.verasol.org/products/sek/rs-ss

Category	Quality Standard	Verdict
Truth In Advertising (IEC TS 62257-9-8: 5.2.1, 5.2.2, 5.2.5, and 5.2.6)	All reported information is accurate and all advertised features function as advertised. Numeric ratings deviate no more than 15% from actual performance (note that it is acceptable for actual performance to exceed advertised performance).	Pass
Information and Performance Reporting Requirements (IEC TS 62257-9-8: 5.2.3)	Manufacturer name and uniquely identifiable name of product or model number are presented on the packaging or user agreement	Pass
	Required component specifications are displayed on the packaging or user manual, PV module label includes required specifications and capacity and voltage are marked on the battery	Pass
	PV power must be reported on the product packaging and at least one solar run time profile is reported on the packaging or in the user manual	Pass
PAYG Requirements (IEC TS 62257-9-8: 5.2.4)	Adequate instructions are included in the user manual and manufacturer has declared operational details of the system	Pass
Port Functionality and Truth in Advertising (IEC TS 62257-9-8: 5.3)	Ports are accurately advertised and meet voltage requirements	Pass
Lumen Maintenance (IEC TS 62257-9-8: 5.4)	Average relative light output ≥ 90% of initial light output at 2,000 hours with only one sample allowed to fall below 85% OR All 4 samples maintain ≥ 95% of initial light output at 1,000 hours	Pass
AC/DC Charger Safety (IEC TS 62257-9-8: 5.5.1)	Any included AC/DC chargers carries a recognized consumer electronics safety certification	n/a
Hazardous Substances Ban (IEC TS 62257-9-8: 5.5.2)	No battery contains cadmium or mercury at levels greater than trace amounts	Pass
Circuit and Overload Protection (IEC TS 62257-9-8: 5.5.3)	Products include a current limiting mechanism to prevent irreversible damage to the system. Included appliances are not required to meet this standard unless they have ports that are intended to provide power.	Pass
Wiring and Connector Safety (IEC TS 62257-9-8: 5.5.4)	Wires, cables and connectors are appropriately sized for the expected current and voltage.	Pass
PV Module Safety (IEC TS 62257-9-8: 5.5.5)	PV module wiring size is sufficient and all connections and joints are robust, module shows no significant visual defects, and markings are legible, and no safety hazards were observed. Meets requirements of a partial shading or hot-spot endurance test.	Pass

Type Approval
Spark Start

Verify here: https://data.verasol.org/products/sek/rs-ss

Category	Quality Standard	Verdict
Requirements for Systems with Large PV Modules or Arrays (IEC TS 62257-9-8: 5.5.6)	Products with a total maximum solar PV power greater than 240 W, open-circuit voltage greater than 35 V, or short-circuit current greater than 8 A meet the requirements of IEC 61730 and IEC 62109 or UL 1741	n/a
Battery Protection and Safety (IEC TS 62257-9-8: 5.6.1, 5.6.2, and 5.6.3)	Protected by an appropriate charge controller that prolongs battery life and protects the safety of the user. All 4 samples meet the charge control requirements. Lithium batteries carry adequate safety documentation and have overcharge protection for individual cells or sets of parallel-connected cells. Batteries of included appliances must also meet this standard.	Pass
Battery Durability (IEC TS 62257-9-8: 5.6.4)	The average capacity loss of 4 samples does not exceed 25% and only one sample may have a capacity loss greater than 35% following the battery durability storage test as defined in IEC TS 62257-9-5 Annex BB	Pass
Physical Ingress Protection (IEC TS 62257-9-8: 5.7.2.2)	IP2X for all products, IP3X (or 2X + circuit protection) for PV modules, IP5X for fixed outdoor products	Pass
Water Protection (IEC TS 62257-9-8: 5.7.2.3)	Degree of protection required is based on product type: Fixed separate (indoor): No protection required Portable separate: Occasional exposure to rain Portable integrated: Frequent exposure to rain Fixed integrated (outdoor): Permanent outdoor exposure PV modules: Outdoor rooftop installation	Pass
Drop Test Durability (IEC TS 62257-9-8: 5.7.3)	Fixed separate (indoor): No requirement All other products: All samples are functional after drop test; none result in dangerous failures.	Pass
Workmanship Quality (IEC TS 62257-9-8: 5.7.4)	The system and any included appliances are rated “Good” or Fair” for workmanship quality as defined in Annex F of IEC TS 62257-9-5. At most, one sample may fail to function when initially evaluated.	Pass
Switch, Connector, and Strain Relief Durability (IEC TS 62257-9-8: 5.7.5 and 5.7.6)	All samples and included appliances are functional after Switch, Connector, Gooseneck and Strain Relief tests; none result in dangerous failures	Pass
Outdoor Cable Durability (IEC TS 62257-9-8: 5.7.7)	Any outdoor cables must be outdoor-rated and UV resistant.	Pass
PV Overvoltage Protec-tion (IEC TS 62257-9-8: 5.7.8)	If the battery is disconnected or isolated, the system must not be damaged and the load terminals shall maintain a voltage that is safe for their intended uses.	Pass
Miswiring Protection (IEC TS 62257-9-8: 5.7.9)	If the battery is disconnected or isolated, the system must not be damaged and the load terminals shall maintain a voltage that is safe for their intended uses.	Pass

Type Approval
Spark Start

Verify here: https://data.verasol.org/products/sek/rs-ss

Category	Quality Standard	Verdict
Non-Plug-and-Play Connections (IEC TS 62257-9-8: 5.7.10)	Systems with non-plug-and-play connections meet additional safety requirements and provide adequate tools, materials, and instructions.	n/a
Warranty (IEC TS 62257-9-8: 5.8.1)	Accurately specified and consumer-facing; minimum coverage of at least two years for the system and one year for included appliances.	Pass
Date of Manufacture (IEC TS 62257-9-8: 5.8.2)	Reported with precision to at least the month and year on the product or the packaging	Pass
User Manual (IEC TS 62257-9-8: 5.8.3)	User manual must present instructions for installation, use, and troubleshooting of the system. Installation instructions must include appropriate placement and installation of the PV module. Basic electrical safety and system maintenance must also be covered.	Pass
Component Replacement Methods (IEC TS 62257-9-8: 5.8.4)	Consumer information must provide at least one of the following options: 1) statement that components can be replaced and provide any specifications necessary, OR 2) directions as to how the consumer can get components, including the battery, replaced at service centers, OR 3) a clear consumer-facing statement that the batteries and other components are not replaceable. A clear statement regarding the battery replacement must be included on the consumer-facing packaging or user agreement.	Pass

Test Methods & Quality Standards
Products are tested according to the test methods described in IEC TS 62257-9-5:2018 and meet the requirements of IEC TS 62257-9-8:2020.

Additional details on the requirements listed above are available here:
https://verasol.org/solutions/quality-standards

Type Approval
Spark Start

Verify here: https://data.verasol.org/products/sek/rs-ss

About VeraSol
An evolution of Lighting Global Quality Assurance, VeraSol supports high-performing, durable off-grid products that expand access to modern energy services. VeraSol builds upon the strong foundation for quality assurance laid by the World Bank Group and expands its services to encompass off-grid appliances, productive use equipment, and component-based solar home systems. VeraSol is managed by CLASP in collaboration with the Schatz Energy Research Center at Humboldt State University. Foundational support is provided by the World Bank Group's Lighting Global program, UKaid, IKEA Foundation, and others. Please visit VeraSol.org for more information.

Disclaimer
To the extent permitted by law, CLASP makes no (and expressly disclaims all) warranties, express, implied or statutory, with respect to the product(s) certified under this agreement, including without limitation any implied warranty of merchantability, fitness for a particular purpose, noninfringement, or arising from course of performance, dealing, usage or trade. Additionally, CLASP disclaims that the product will perform in certain ways and that it meets any national standards. Without limiting the generality of the foregoing, CLASP makes no claim, representation, or warranty of any kind as to the utility of the products for customer's intended uses.

Contact
info@verasol.org