

## SIRIUS ENERGY STORAGE MODULE TECHNICAL DATA SHEET

Part Number: 465-12-B-0.9C-TM-A-G Version Date: OCTOBER 2019

<b>PERFORMANCE SPECIFICATIONS</b>	Voltage (Nominal)	12 V <sub>dc</sub>
	Maximum Charge Voltage	13.5 V <sub>dc</sub>
	Discharge Cut-Off Voltage	11 V <sub>dc</sub>
	Total Energy	465 Wh
	Maximum Charge Rate	35 A
	Maximum Discharge Rate	35 A
<b>ENVIRONMENTAL SPECIFICATIONS</b>	Cell Operating Temperature <sup>1</sup>	-30 °C to 80 °C
	Operating Humidity	Non-Condensing
<b>MECHANICAL SPECIFICATIONS</b>	Dimensions (w × d × h)	313× 183× 204 mm
	Weight	11 Kg Approx.
	Module Casing Material	Aluminum
	Terminal Type	F12
<b>SMART FEATURES</b>	Alarm	Audible alarm in the event of Over/under-Voltage, Over-Current, Over Temperature
<b>MODULE SERVICE LIFE</b>	Projected Cycle Life <sup>2,3</sup>	1 million cycles
	Projected Calendar Life <sup>4,5</sup>	45 years
	Shelf Life <sup>7</sup>	10 years
	Warehousing	Can be stored at any SOC without affecting cycle life
<b>SAFETY PERFORMANCE</b>	Safety	100A DC circuit breaker
<b>COMPLIANCE<sup>6</sup> INFORMATION</b>	EN55032:2015, EN55024:2010, EN61000-4-2:2009, EN61000 EN61000:2008+A2:2010	
<b>PRECAUTIONS</b>	Alarm	In case of alarm, immediately rectify/attend to the cause of the alarm.
	Physical Damage	In case the Module is physically damaged due to any event, do not install and energize the Module under any circumstances and contact your Reseller.
	Short Circuit	Ensure precautions to prevent short-circuit under all circumstances.
	Galvanic isolation	When connecting to external devices ensure that galvanic isolation does not exceed 1000V.
	Charge/Discharge Current	Under no circumstances must the charge/discharge current exceed 35A.
	Charging Voltage	Under no circumstances must the charging voltage exceed 13.5 V <sub>dc</sub> for more than 60 seconds.
	Charge Cycle	During charge cycle ensure never to exceed constant voltage of 13.5 V <sub>dc</sub> and constant current of 35A.
	Series Connection	<ul style="list-style-type: none"> <li>• All Modules must be at 100% SOC before connecting in series.</li> <li>• A maximum of 35 Modules can be connected in series. Please consult your Reseller when connecting the Modules in series. Under no circumstances should more than 35 Modules be connected.</li> </ul>

This technical data sheet may change without notice and at the sole discretion of Kilowatt Labs, Inc.

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	Parallel Connection	There is no limit on the number of Modules that can be connected in parallel.
	Series-Parallel Connection	Modules cannot be connected in Series-Parallel combination under any circumstance.

<sup>1</sup>The temperature range indicates the range in which the supercapacitor cells can operate. The performance of the cells may vary if they are continuously operated outside a temperature range of -10°C to 55°C, and/or at C-rates higher than the maximum charge/discharge rate specified in this spec sheet. The operating temperature range of the Module varies based on the application. If the Module is to be operated continuously outside a temperature range of -10°C to 55°C, and/or at C-rates higher than the maximum charge/discharge rate specified in the spec sheet, please consult Kilowatt Labs or its Reseller prior to deploying.

<sup>2</sup>Projected life of supercapacitor cells. Cycle life will vary if cycled more than 4 times a day.

<sup>3</sup>Additional terms and conditions, including a limited warranty, will apply at the time of purchase.

<sup>4</sup>Projected Calendar life of supercapacitor cells from the date of first operation.

<sup>5</sup>Shelf life is the life of the Module (in years) from the date it is manufactured to the time it is first operated.

<sup>6</sup>CE certification is completed for supercapacitor cells.

Product dimensions are for reference only unless otherwise identified and may change without notice.

For critical applications, please contact your Reseller.