

**SIRIUS ENERGY STORAGE MODULE  
TECHNICAL DATA SHEET**

Part Number: 60-12-2C-TM-SD-G Version Date: FEBRUARY 2020

<b>PERFORMANCE SPECIFICATIONS</b>	Voltage (Nominal)	12V
	Maximum Charge Voltage	13.5V
	Discharge Cut-Off Voltage	11V
	Total Energy	60Wh
	Maximum Charge Rate	10A
	Maximum Discharge Rate	10A
<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 x d x h)	65 mm x 150 mm x 95 mm
	Weight	1.45 kg
	Module Casing Material	Acrylic casing
	Terminal Type	F2 (Faston tab 250)
<b>MODULE SERVICE LIFE</b>	Projected Cycle Life <sup>2,3</sup>	1 million cycles
	Projected Calendar Life <sup>3,4</sup>	45 years
	Shelf Life <sup>5</sup>	10 years
	Warehousing	Can be stored at any SOC without affecting cycle life
<b>SAFETY PERFORMANCE</b>	Over voltage	Hardware protection, Module shut down
<b>COMPLIANCE<sup>6</sup> INFORMATION</b>	EN55032:2015, EN55024:2010, EN61000-4-2:2009, EN61000 EN61000:2008+A2:2010	
<b>PRECAUTIONS</b>	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 10 A.
	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 10 A.
	Series Connection	<ul style="list-style-type: none"> <li>All Modules must have same voltage level before connecting in series.</li> <li>A maximum of 16 Modules can be connected in Series.</li> </ul>
	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.

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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.