Sonnenschein Lithium

GNB® INDUSTRIAL POWER
A Division of Exide Technologies

Battery Modules

Sonnenschein Lithium is a range of 12, 18 and 36 Volt Lithium battery modules. These Lithium modules offer significant cycling, charge time, weight and volume improvements over similar lead acid battery modules.

Overview

Sonnenschein Lithium modules are ideal when Advanced Energy Systems are required. Excellent float and cycle life with zero maintenance offers end-users significant cost of ownership savings and complete peace of mind, through safety inherent in Sonnenschein Lithium chemistry.

The Sonnenschein Lithium Battery Management System is also designed to offer excellent control functionality (including remote monitoring) when coupled with SonnenscheinLithium Battery Modules.

Sonnenschein Lithium monitoring and diagnostic kits are also available enabling system data recording and detailed performance status indicators.

Features

> 2800 cycles at 100% DOD and 4000+ cycles at 80% DOD*
> Exceptional voltage stability
> Standard voltage range from 12V - 700V
> Maintenance free
> Inter module balancing
> Compatible with a range of GNB Lithium chargers
> Communication of monitored data via Battery Management System (BMS)
> Rugged mechanical design
> Flame retardant plastics
> LED battery status indicator
> Carrying Straps (SL12 110HC, SL12 138HC and SL18 69HC)
> Manufactured in standard BCI sizes

Specifications		SL12 40HC	SL12 110HC	SL12 138HC	SL18 69HC	SL36 46HC
Nominal Module Voltage		12.8 V	12.8 V	12.8 V	19.2 V	38.4 V
Nominal Capacity (C/5, 23°C)		40 Ah	110 Ah	138 Ah	69 Ah	46 Ah
Weight (approximate) kg		6.5 kg	15.8 kg	19.5 kg	14.9 kg	19.6 kg
Weight (approximate) lbs		14.3 lbs	34.8 lbs	42.9 lbs	32.8 lbs	43.1 lbs
Dimension incl. Terminals LxWxH (mm)		197 x 131 x 182	260 x 172 x 225	306 x 172 x 225	269 x 148 x 245	306 x 172 x 225
Dimension incl. Terminals LxWxH (inches)		7.76 x 5.12 x 7.17	10.2 x 6.77 x 8.86	12.0 x 6.77 x 8.86	10.6 x 5.83 x 9.65	12.0 x 6.77 x 8.86
BCI Group Number		U1R	Group 24	Group 27	N/A	Group 27
Terminals, Female-Threaded		M6 x 1.0	M8 x 1.25	M8 x 1.25	M8 x 1.25	M8 x 1.25
Specific Energy		79 Wh/kg	89 Wh/kg	91 Wh/kg	89 Wh/kg	90 Wh/kg
Energy Density		110 Wh/l	139 Wh/l	148 Wh/l	136 Wh/l	149 Wh/l
Standard Discharging @ 25°C	Max. Continuous Load Current	80 A	150 A	150 A	120 A	90 A
	Peak Load Current (30 sec).	120 A	300 A	300 A	200 A	135 A
	Cut-off Voltage	10 V	10 V	10 V	15 V	30 V
Standard Charging	Max. Charge Voltage	14.6 V	14.6 V	14.6 V	21.9 V	43.8 V
	Float Voltage Recommended Current C/2	13.8 V 20A	13.8 V 55A	13.8 V 70A	20.7 V 35A	41.4 V 23A
	Charge Time C/2 **	2.5 hrs	2.5 hrs	2.5 hrs	2.5 hrs	2.5 hrs
DC internal resistance (max)		15 mΩ	6 mΩ	5 mΩ	10 mΩ	25 mΩ
Approx. equivalent Lithium Content (g)		49	128	160	121	160

* Actual cycle count depends on the application
** Faster charge is possible, this is application specific

Common specifications	
Discharge temperature Charge temperature	-10°C to 50°C 0°C to 45°C
Storage temperature	-40°C to 50°C
Operating humidity	5% to 95%, non-condensing
Water/dust resistance	IP 56
Shock and vibration	IEC62133, DIN VG96 924
Certifications	FCC Class B, CE, IEC 62133 UL1642 (cells only)
Shipping Classification	UN 3480, Class 9

Accessories

The Battery Management System maintains battery to battery balance control, direct control capability for up to four contactors, and monitoring and control of data systems.

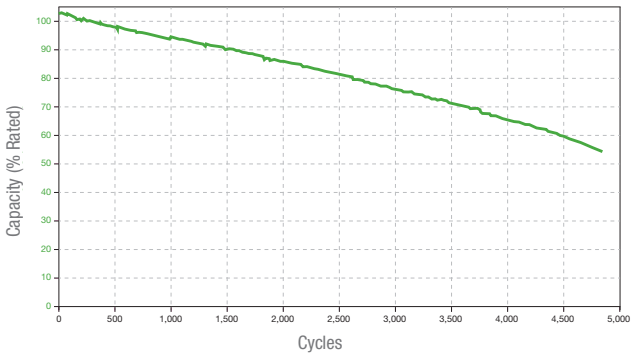
> SL-BMS-LV operates at 10V - 150V
> SL-BMS-HV operates at 100V - 450V
> SL-BMS-SHV operates at 350V - 700V

For further information:

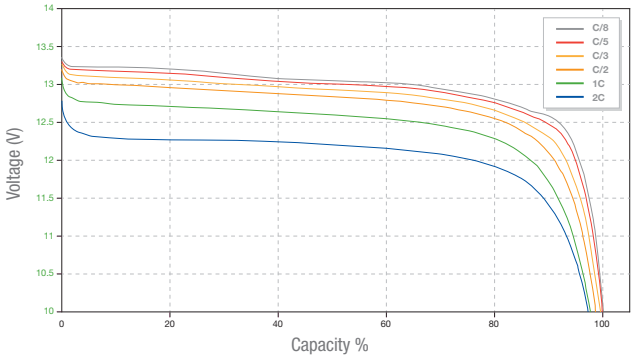
Please refer to separate datasheet on SL-BMS products or visit www.gnb.com

Sonnenschein Lithium Battery Module data information:

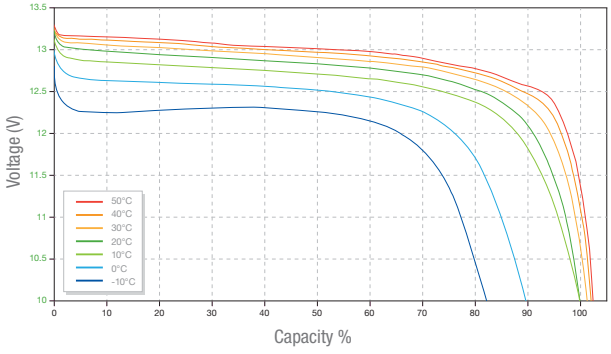
Sonnenschein Lithium Discharge Capacity Performance at 23°C
c/2 charge and discharge, 100% DOD



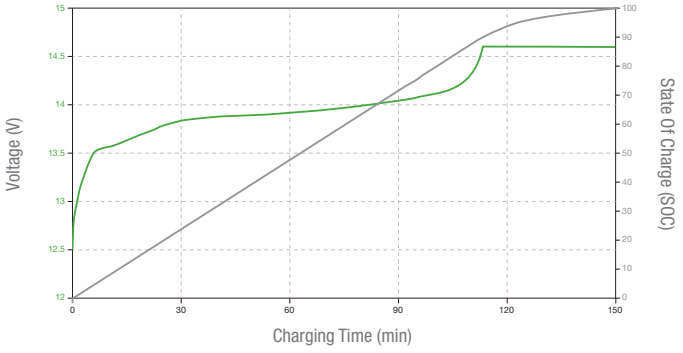
Sonnenschein Lithium Voltage Profiles at Various Rates
23°C Ambient Temperature



Sonnenschein Lithium Discharge Voltage Profiles at C/2 Discharge Rate
Various Ambient Temperatures



Typical Sonnenschein Lithium C/2 Charging Voltage and SOC Profiles
23°C Ambient Temperature



Performance may vary depending on, but not limited to cell usage and application. If cell is used outside specifications, performance will diminish. All specifications are subject to change without notice. All information provided herein is believed, but not guaranteed, to be current and accurate.