

ALM12V30/60 Lithium Ion Modules

A123Systems' lithium ion rechargeable ALM12V30/60 modules are based on proven ANR26650^{7M1} cells. The batteries offer very high power, long cycle and calendar life, and superior safety due to the use of patent-pending Nanophosphate™ technology. An integrated on-board cell balancing system facilitates long cell life and allows drop-in replacement for 12V7 lead acid batteries.

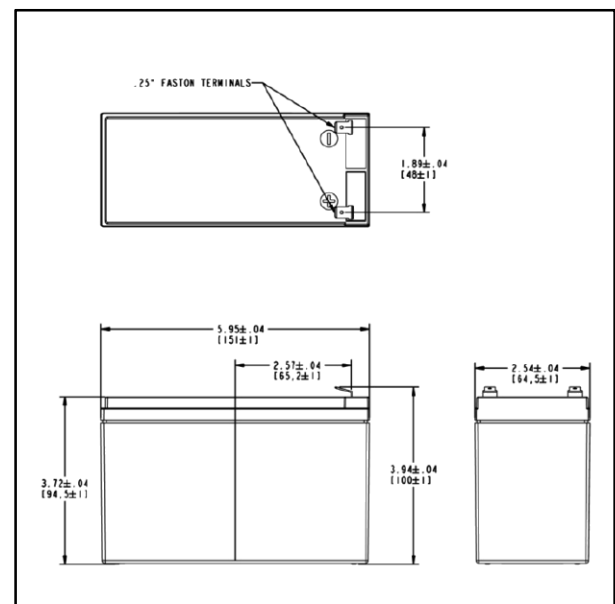
Key Features and Benefits

- Based on A123Systems' proven ANR26650^{7M1} cells
- Direct replacement for 12V7 VRLA batteries (same size/charger)
- Power: Delivers several times more power with high capacity retention
- Safety: Inherently safer than lead acid and other lithium ion batteries
- Life: Superior float/cycle/calendar life, even at elevated temps and fast discharges
- Weight: Less than ¼ the weight of lead acid batteries
- Maintenance Free: No testing, monitoring or maintenance required
- Two battery sizes available: 30Wh (4-cell), or 60Wh (8-cell, twice the power/energy)



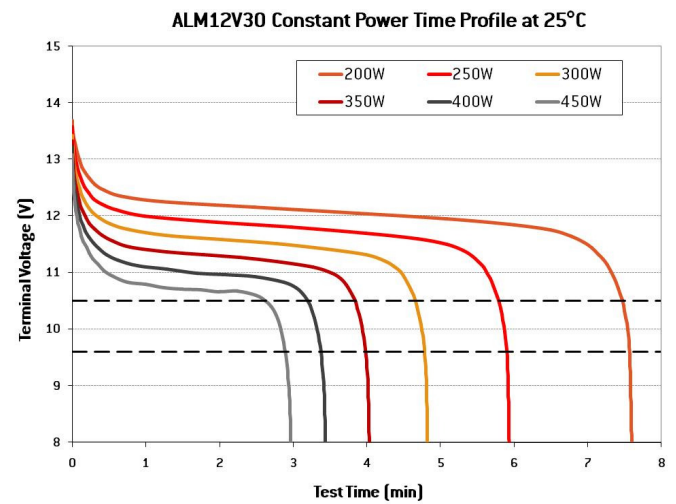
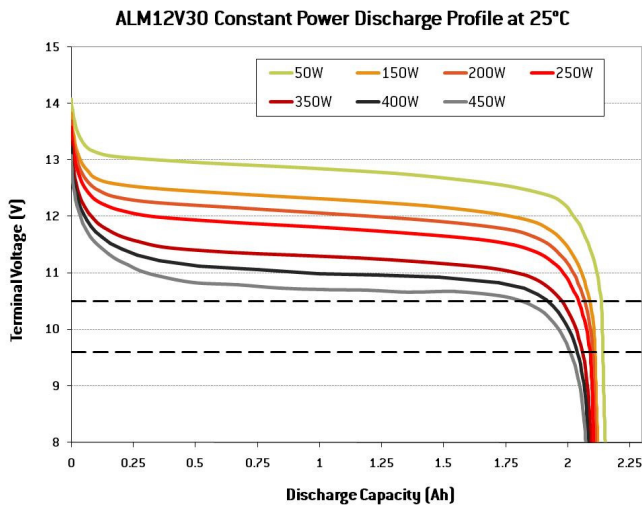
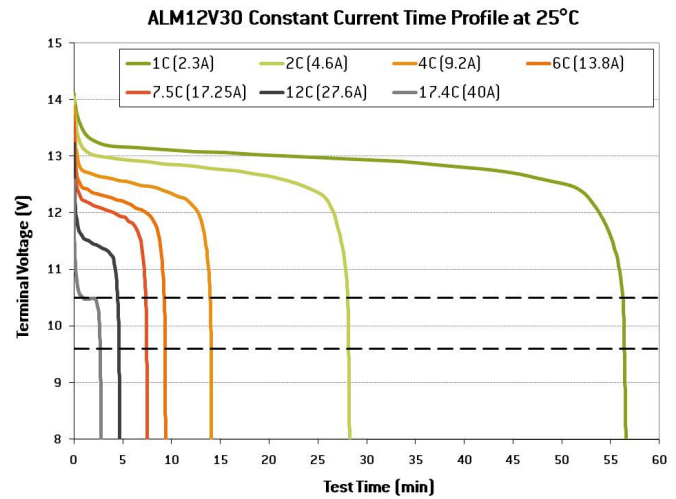
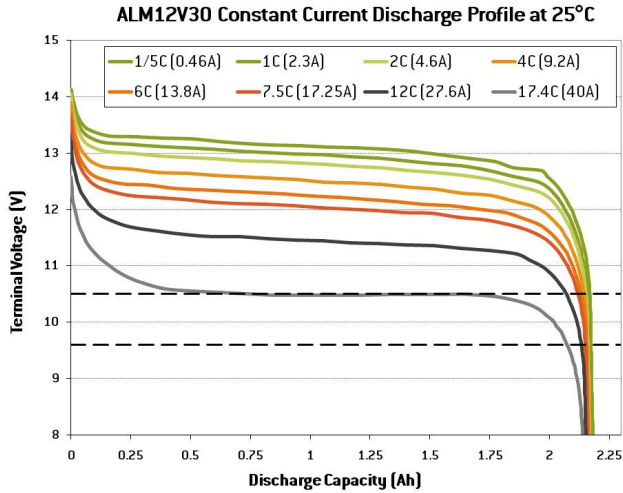
Specifications		
Product Code	ALM12V30	ALM12V60
Nominal Voltage	12V	12V
Nominal Capacity		
5 Hour Rate (10.5V)	0.44A/2.18Ah	0.88A/4.36Ah
1 Hour Rate (9.6V)	2.16A/2.16Ah	4.32A/4.32Ah
1/2 Hour Rate (9.6V)	4.30A/2.15Ah	8.60A/4.30Ah
15 Minute Rate (9.6V)	8.60A/2.15Ah	17.20A/4.30Ah
10 Minute Rate (9.6V)	12.90A/2.15Ah	25.80A/4.30Ah
8 Minute Rate (9.6V)	16.00A/2.13Ah	32.00A/4.26Ah
5 Minute Rate (9.6V)	24.90A/2.08Ah	49.60A/4.16Ah
3 Minute Rate (9.6V)	40.00A/2.00Ah	80.00A/4.00Ah
Internal Resistance	40 mOhms	20 mOhms
Max Discharge Current	40A	80A
Max Pulse Discharge Current (<5 sec)	120A	240A
Short Circuit Current	Internal Short Circuit Protection	Internal Short Circuit Protection
Self-Discharge	<2% per month	<2% per month
Operating Temp		
Discharge	-22 to 140°F (-30 to 60°C)	-22 to 140°F (-30 to 60°C)
Charge	-22 to 140°F (-30 to 60°C)	-22 to 140°F (-30 to 60°C)
Storage	-58 to 140°F (-50 to 60°C)	-58 to 140°F (-50 to 60°C)
Float Charging	13.6V to 14.0V	13.6V to 14.0V
Routine Charging	13.6V - 15.0V 100 mA max initial charge	13.6V - 15.0V 100 mA max initial charge

Physical Dimensions		
	ALM12V30	ALM12V60
Length	5.99in/152.0mm	5.99in/152.0mm
Width	2.58in/65.5mm	2.58in/65.5mm
Height (exc. Terms)	3.76in/95.5mm	3.76in/95.5mm
Height (incl. Terms)	3.98in/101.0mm	3.98in/101.0mm
Weight	1.25lb (0.54kg)	1.875lb (0.85kg)
Terminal	Amp FASTON 250	Amp FASTON 250
Case Material	ABS	ABS



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Constant Current Discharge Chart (Amperes, 25°C)								
Module	End Voltage/Time	3 Min	5 Min	8 Min	10 Min	15 Min	30 Min	60 Min
ALM12V30	9.6V	40.0	24.9	16.0	12.9	8.6	4.3	2.2
ALM12V30	10.5V	24.0	24.7	15.8	12.8	8.5	4.3	2.2
ALM12V60	9.6V	80.0	49.8	32.0	25.8	17.2	8.6	4.3
ALM12V60	10.5V	48.0	49.4	31.6	25.6	17.0	8.6	4.3

Constant Power Discharge Chart (Watts, 25°C)								
Module	End Voltage/Time	3 Min	5 Min	8 Min	10 Min	15 Min	30 Min	60 Min
ALM12V30	9.6V	450	280	180	148	101	52	26
ALM12V30	10.5V	425	270	175	145	100	51	26
ALM12V60	9.6V	900	560	360	296	202	104	52
ALM12V60	10.5V	850	540	350	290	200	102	52