



EnergyCell™ Nano-Carbon Series

Partial State of Charge (PSoC) Energy Storage Technology



Front Terminal



Top Terminal

- Safe, maintenance-free convenience
- Maximize overall cycle life by up to 44% versus traditional VRLA deep cycle batteries
- 95% round trip efficiency
- 2 year full replacement warranty in PSoC applications
- Optimized for use with OutBack's IBR, OBE, OBE-FT and IBE enclosure and racking solutions
- For energy arbitrage/self-consumption applications

With limited sun hours for proper recharging of standard deep cycle batteries, the need for a PSoC technology is greatly needed. This advanced technology will allow for extended life of a battery in self-consumption applications.

Nano-Carbon offers all the safety and convenience of a VRLA battery with the cycling benefits of advanced energy storage. Maintaining the capacity of the Nano-Carbon battery in a 30-80% state of charge can maximize your overall cycle life by up to 44% versus a traditional VRLA deep cycle battery.

The Nano-Carbon is an enhanced and optimized negative active material formulation which makes it more than just a carbon additive. The high surface area carbon is a specially formulated additive for improving the negative active material in lead-acid batteries. Carbon increases conductivity and adds additional capacitance to the battery. Nano-Carbon improves charge efficiency and allows PSoC operation with improved deep discharge recovery.



IBE-1 and IBR-3 Enclosures with EnergyCell Nano-Carbon Batteries

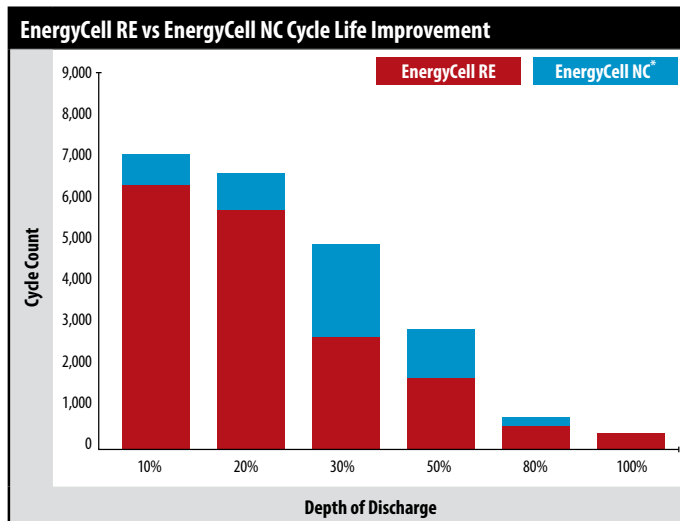
EnergyCell Nano-Carbon Specifications

08/2015

Models:	Top Terminal	Front Terminal	
	EnergyCell 106NC	EnergyCell 170NC	EnergyCell 200NC
Cells per Unit	6	6	6
Voltage per Unit	12VDC	12VDC	12VDC
Operating Temperature Range (w/ Temperature Compensation)	Discharge: -40 to 71°C (-40 to 160°F) Charge: -23 to 60°C (-10 to 140°F)	Discharge: -40 to 71°C (-40 to 160°F) Charge: -23 to 60°C (-10 to 140°F)	Discharge: -40 to 71°C (-40 to 160°F) Charge: -23 to 60°C (-10 to 140°F)
Optimal Operating Temperature Range	23 to 27°C (74 to 80°F)	23 to 27°C (74 to 80°F)	23 to 27°C (74 to 80°F)
Recommended Maximum Charging Current Limit per String	30ADC	46ADC	53ADC
Float Charging Voltage	13.62VDC unit average at 25°C (77°F)	13.62VDC / unit average at 25°C (77°F)	13.62VDC / unit average at 25°C (77°F)
Equalization and Cycle Service Charging Limits	14.4VDC unit average at 25°C (77°F)	14.4VDC / unit average at 25°C (77°F)	14.4VDC / unit average at 25°C (77°F)
Self Discharge	Battery can be stored up to 6 months at 25°C (77°F) before a freshening charge is required. Batteries stored at temperatures greater than 25°C (77°F) will require recharge sooner than batteries stored at lower temperatures.		
Temperature Compensation Factor (Charging)	5mV per °C per cell (2V)	5mV per °C per cell (2V)	5mV per °C per cell (2V)
Terminal	Threaded copper alloy insert terminal to accept ¼"-20 UNC bolt	Threaded copper alloy insert terminal to accept ¼"-20 UNC bolt	Threaded copper alloy insert terminal to accept ¼"-20 UNC bolt
Terminal Hardware Initial Torque	110in-lbs (12.4Nm)	110in-lbs (12.4Nm)	110in-lbs (12.4Nm)
Weight (lb/kg)	69 / 31	115 / 52	131 / 60
Dimensions H x D x W (in/cm)*	8.52 x 13.42 x 6.80 / 216.4 x 340.9 x 172.7	11.14 x 22.01 x 4.95 / 28.3 x 55.9 x 12.6	12.60 x 22.01 x 4.95 / 32.0 x 55.09 x 12.6

* Batteries to be installed with 0.5 in (12.7 mm) spacing minimum and free air ventilation.

Discharge in Hours:	12V Ampere Hour Capacity to 1.75 Volts Per Cell at 77°F (25°C)										
	1	2	3	4	5	8	12	20	24	48	100
EnergyCell 106NC	49.2	61.5	70	76	80.6	89	94.2	100	101	102.6	106
EnergyCell 170NC	89.1	103.5	114.2	120.6	125.9	137	145.3	153.8	157	163.6	170
EnergyCell 200NC	103	120	132	139.6	145.5	158.4	168	178	181.4	189.6	200



* Assumes partial state of charge (PSoC) operation at 50-80%.



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