



# 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.



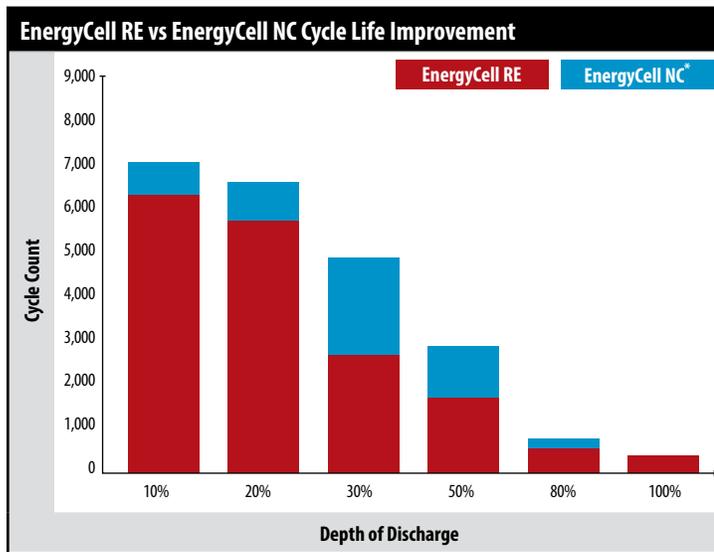
**IBE-1 and IBR-3 Enclosures with EnergyCell Nano-Carbon Batteries**

Models:	Top Terminal	Front Terminal	
	EnergyCell 106NC	EnergyCell 170NC	EnergyCell 200NC
<b>Cells per Unit</b>	6	6	6
<b>Voltage per Unit</b>	12VDC	12VDC	12VDC
<b>Operating Temperature Range (w/ Temperature Compensation)</b>	<b>Discharge:</b> -40 to 71°C (-40 to 160°F) <b>Charge:</b> -23 to 60°C (-10 to 140°F)	<b>Discharge:</b> -40 to 71°C (-40 to 160°F) <b>Charge:</b> -23 to 60°C (-10 to 140°F)	<b>Discharge:</b> -40 to 71°C (-40 to 160°F) <b>Charge:</b> -23 to 60°C (-10 to 140°F)
<b>Optimal Operating Temperature Range</b>	23 to 27°C (74 to 80°F)	23 to 27°C (74 to 80°F)	23 to 27°C (74 to 80°F)
<b>Recommended Maximum Charging Current Limit per String</b>	30ADC	46ADC	53ADC
<b>Float Charging Voltage</b>	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)
<b>Equalization and Cycle Service Charging Limits</b>	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)
<b>Self Discharge</b>	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.		
<b>Temperature Compensation Factor (Charging)</b>	5mV per °C per cell (2V)	5mV per °C per cell (2V)	5mV per °C per cell (2V)
<b>Terminal</b>	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
<b>Terminal Hardware Initial Torque</b>	110in-lbs (12.4Nm)	110in-lbs (12.4Nm)	110in-lbs (12.4Nm)
<b>Weight (lb/kg)</b>	69 / 31	115 / 52	131 / 60
<b>Dimensions H x D x W (in/cm)*</b>	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.

### 12V Ampere Hour Capacity to 1.75 Volts Per Cell at 77°F (25°C)

Discharge in Hours:	1	2	3	4	5	8	12	20	24	48	100
<b>EnergyCell 106NC</b>	49.2	61.5	70	76	80.6	89	94.2	100	101	102.6	106
<b>EnergyCell 170NC</b>	89.1	103.5	114.2	120.6	125.9	137	145.3	153.8	157	163.6	170
<b>EnergyCell 200NC</b>	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%.

#### Worldwide Corporate Offices

