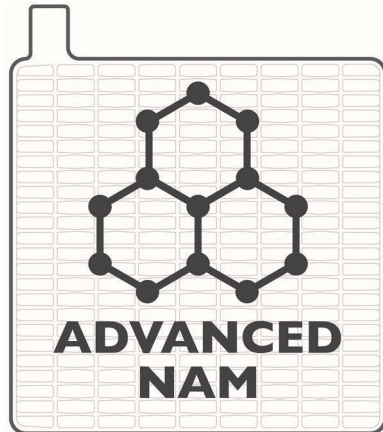




PREMIUM ENHANCED DEEP CYCLE BATTERIES

Advanced NAM additive for quicker and more efficient charging, increased capacity & improved cycle life.

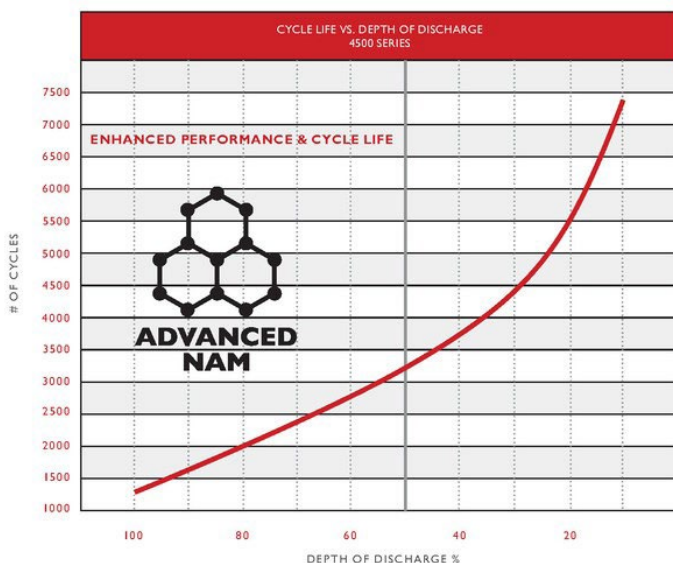


Effective May 1st, 2019, production of Rolls 4500 & 5000 Series models will include Advanced NAM carbon additive at no additional charge.

Cycle life of deep cycle lead acid batteries is affected by a variety of conditions including depth of discharge and proper charging. Renewable Energy installations, such as off-grid battery-based PV systems, often result in limited charge current and time which results in deficit cycling and reduces battery performance. With an increase in charge acceptance, Rolls 4500 & 5000 Series models with Advanced NAM will reach a full state of charge more efficiently and frequently, maintaining charge balance across the battery bank and reducing sulfation buildup and capacity loss in situations where charge times may be limited.

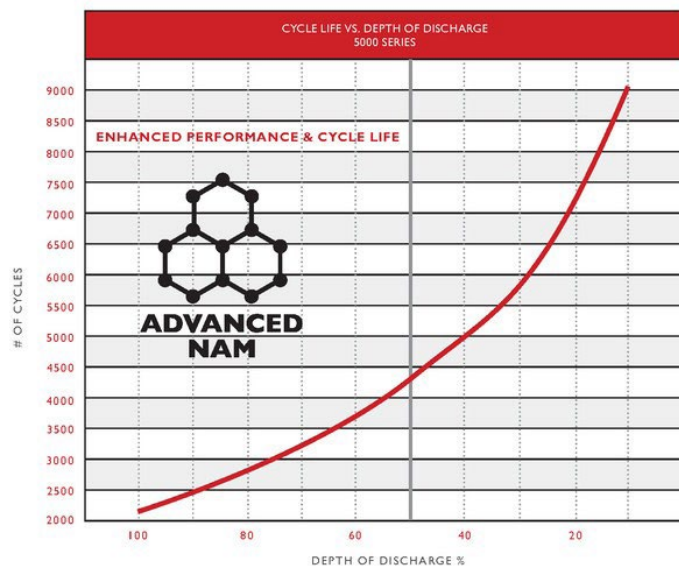
The addition of Advanced NAM carbon additive in Rolls premium heavy-duty negative plate structure increases overall charge acceptance, offering improvements of 10-15% in charge efficiency, requiring shorter charge times and improved performance in conditions of partial state of charge (PSOC) common experienced in off-grid solar applications.

Rolls 4500 Series with Advanced NAM:



- Up to 15% Quicker & More Efficient Charging
- Enhanced Partial State of Charge (PSOC) Performance
- 5%+ Additional Useable Capacity
- Improved Cycle Life

Rolls 5000 Series with Advanced NAM:



AMP HOUR CAPACITY IMPROVEMENTS:

Amp Hour capacities for Rolls Battery 4000 Series L-16 models, as well as Rolls premium 4500 & 5000 Series models, have been revised to reflect capacity improvements demonstrated in recent independent testing.

IEC Testing:

International Electrotechnical Commission's (IEC) standard 61427-1:2013 outlines performance criteria used to measure all deep cycle secondary cells and batteries used in PV (Photovoltaic) off-grid energy storage applications. Independent IEC testing has demonstrated and confirmed that Rolls Battery 4000 Series 6-volt and 2-volt L-16 models, 4500 Series 6-volt and 2-volt L-16 models, and 5000 Series 2-volt, 4-volt, 6-volt, 8-volt and 12-volt premium flooded deep cycle models meet and exceed the requirements of operation in conditions of Partial State of Charge (PSOC) as well as continuous heavy discharge & recharge.

Visit [this link](#) for information on the independent IEC 61427-1:2013 testing performed by Dalhousie University Renewable Energy Storage Laboratory (RESL).