



OPTIMATM BATTERIES

THE ULTIMATE POWER SOURCE™

The OPTIMA is a sealed, maintenance-free AGM (Absorbed Glass Mat) battery which exceeds the cranking performance of all other batteries in it's size category.

PRINCIPLE FEATURES:

Impressively high cranking characteristics in a small battery! • Higher charge acceptance during recharges! • Sealed maintenance free technology - No leaking even if case is broken! • Shock and vibration resistant! • Light weight! • Long Service Life!

PROVEN APPLICATIONS:

- Commercial and Pleasure Marine
- Diesel engines and generators
- High Performance Automotive Sound Systems
- Off-road vehicles and Pickup Trucks
- Aircraft ground support equipment
- Automobiles
- Emergency Vehicles & Vessels
- Military Assault and Personnel Vehicles
- Delivery Truck and Auto Fleets
- Farm and Industrial Equipment
- Racing Vehicles and Boats
- Vintage and Classic Vehicles



Power to perform...

Performance-minded people everywhere trust OPTIMA batteries because they know that OPTIMA keeps performing at peak power long after other batteries have failed. Find someone who is serious about performance, and chances are you will find an OPTIMA battery under their hood.



Fleet users, from hardworking aircraft ground support crews to police departments and ambulance companies, depend on OPTIMA to get the job done when lives are at risk. When livelihoods are at stake, you'll find OPTIMA hard at work on the farm and in construction equipment, as well as in all types of commercial applications.



OPTIMA batteries are even called upon when justice and liberty are on the line — OPTIMA batteries are approved by the U.S. Military and other branches of the government. OPTIMA batteries deliver power in extreme situations; but it doesn't have to be a matter of life or death to choose OPTIMA. It could be a simple matter of dependability. OPTIMA has become the power source of choice for race professionals, off-road enthusiasts, car stereo installers, and vintage/classic car collectors. Also, average drivers, who depend on their vehicle and need to get the most value, performance, and "peace

of mind" out of their family car, recognize the many benefits of utilizing the OPTIMA and they are increasingly switching over from conventional batteries.

Power you can depend on...

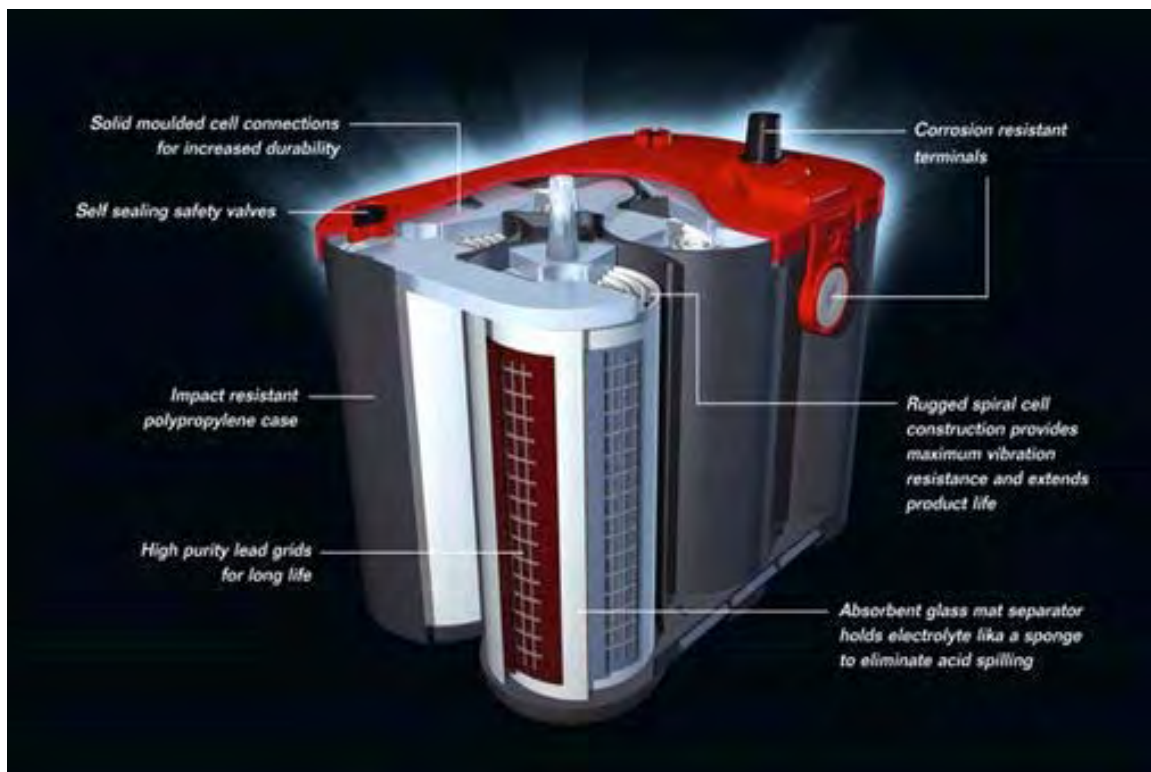
Thanks to SPIRALCELL Technology, OPTIMA's batteries deliver more power from a compact size, and will reliably deliver that power after years of use. The SPIRALCELL configuration of the plates and their close placement to each other allow for superior resistance to the biggest battery killers: vibration and shock which causes their flat plates to shed the active paste material on the plates. Once this material sheds, the battery becomes damaged, loses capacity, and no amount of



recharging or additional electrolyte can revive it. Looking at OPTIMA's SPIRALCELL Technology, the reason for OPTIMA's legendary vibration resistance becomes apparent. Tightly wound and compressed into a cylinder, the plates in an OPTIMA battery simply cannot move, break, or shed their active material.

This advanced design allows OPTIMA batteries to last considerably longer than conventional batteries. Independent Society of Automotive Engineers (SAE) tests prove that an OPTIMA battery can still perform after 12,000 cycles (starts). In those same tests, the life span of conventional batteries averaged only 4,000 cycles. Even when new, an ordinary battery can never match the performance of a comparable OPTIMA battery. Why spend the time and money buying several conventional batteries when a single OPTIMA battery will serve you faithfully and trouble-free for years?

SPIRALCELL Technology, The Secret of the Six Pack



SPIRALCELL Technology makes the OPTIMA battery the most advanced battery available. Its unique spiral-wound plate design gives OPTIMA the lowest internal resistance of any battery on the market. No other battery can provide OPTIMA's performance and true 'Zero Maintenance' operation. OPTIMA batteries are completely sealed and have specially designed, corrosion free terminals: no checking or adding water; no cleaning terminals or trays; no extra work! The SPIRALCELL design keeps OPTIMA batteries performing under the most extreme conditions.

Power

for faster starts...

If you have ever tried to start a car in cold weather, you know how difficult cold temperatures can be on a battery. Oil and other fluids are thick and sluggish, chemical reactions take place more slowly, and components are less flexible. All these factors combine to make cold weather the true test of a battery. OPTIMA's **Red Top** starting battery provides high cold cranking amps in a compact package; the design enables that high level of starting power to reach its peak faster and last longer.



Not coincidentally, tests prove that OPTIMA's SPIRALCELL Technology is also more resistant to high temperatures. Extreme heat can destroy an ordinary battery in short order, but an OPTIMA is no ordinary battery. By testing our batteries under the most extreme conditions possible, we are able to ensure that our SPIRALCELL design consistently outperforms all other batteries on the market.



Superior Deep Cycle Performance - Power to go the distance...

For applications that require a deep cycle or dual purpose starting/deep cycle

battery, OPTIMA now offers the Yellow Top. It is manufactured with the same SPIRALCELL construction and solid reliability that made our Red Top battery world famous. Optima's Yellow Top has been verified in Life Cycle testing to withstand up to 350 complete discharges! That's up to 50% more than conventional deep cycle batteries. Along with far greater power, Optima's Deep Cycle battery is maintenance free, has a longer shelf life, recharges faster, and will not spill, leak or corrode. Combine this with 750CCA and you have the best of both worlds in one unique product. If your application requires heavy cycling capability and quick recharging, you need a deep cycle battery. You need the OPTIMA Yellow Top!

Power to make waves...

For those marine applications that require the clean, reliable power of our starting and deep cycle batteries, rely on the OPTIMA Blue Top.

Specifically designed for marine use, our Blue Top line has all the features of our starting and deep cycle batteries. OPTIMA batteries last longer even when not used continuously. This means that after infrequent use or off-season storage, the Blue Top will still start your boat. Of course, the Blue Top also offers OPTIMA's famous vibration resistance and sturdy zero maintenance, quick recharge, leak-free design. If there ever were a perfect battery for marine applications, OPTIMA is it!





THE ULTIMATE POWER SOURCE™

BLUE TOP



Model Number:	Optima 34M	Optima D34M	Optima D27M	Optima D31M
AKA:	1000M 34M-1050	D900M D34M-950		
Cover Color:	BLUE	BLUE	BLUE	BLUE
Application:	Starting	Deep Cycle Dual Purpose	Deep Cycle Dual Purpose	Deep Cycle Dual Purpose
Terminals:	Top & Stud Post	Top & Stud Post	Top & Stud Post	Top & Stud Post
BCI Group:	34	34	27	31
Volts:	12	12	12	12
Amp. Hr. @ 20Hr Rate	50	55	66	75
CCA @0 Deg. F	800	750	800	900
CA @32 Deg. F	1000	870	1000	1125
Reserve Capacity @ 25 Amps	100	120	140	155
Length:	10 in	10 in	12 3/16 in	12 3/16 in
Width:	6 7/8 in	6 7/8 in	6 13/16 in	6 1/2 in
Height:	7 13/16 in	7 13/16 in	8 3/4 in	9 3/8 in
Weight:	38.4 Lbs	43.5 Lbs	53.8 Lbs	59.8 Lbs
Warranty:	24 Months	24 Months	24 Months	24 Months



YELLOW TOP



Model Number:	Optima D34	Optima D34/78	Optima D51	Optima D51R	Optima D35	Optima D75/25	Optima DS46V24R	Optima D27F	Optima D31A	Optima D31T
AKA:	750S 34-950	750U 34/78-950								
Cover Color:	YELLOW	YELLOW	YELLOW	YELLOW	YELLOW	YELLOW	YELLOW	YELLOW	YELLOW	YELLOW
Application:	Deep Cycle Dual Purpose	Deep Cycle Dual Purpose	Deep Cycle Dual Purpose	Deep Cycle Dual Purpose	Deep Cycle Dual Purpose	Deep Cycle Dual Purpose	Deep Cycle Dual Purpose	Deep Cycle Dual Purpose	Deep Cycle Dual Purpose	Deep Cycle Dual Purpose
Terminals:	Top Post	Top & Side Post	Top Post	Top Post (reversed)	Top Post	Top & Side Post	Thin Top Post	Top Post	Top Post	Stud Post
BCI Group:	34	34/78	51	51R	35	75/25	S46B24R	27F	31	31
Volts:	12	12	12	12	12	12	12	12	12	12
Amp. Hr. @ 20Hr Rate	55	55	38	38	48	48	38	66	75	75
CCA @0 Deg. F	750	750	450	450	620	620	450	830	900	900
CA @32 Deg. F	870	870	575	575	770	770	575	1030	1125	1125
Reserve Capacity @ 25 Amps	120	120	66	66	100	100	66	140	155	155
Length:	10 in	10 in	9 5/16 in	9 5/16 in	9 5/16 in	9 5/16 in	9 5/16 in	12 3/16 in	12 13/16 in	12 13/16 in
Width:	6 7/8 in	6 7/8 in	5 1/16 in	5 1/16 in	6 13/16 in	6 13/16 in	5 1/16 in	6 13/16 in	6 1/2 in	6 1/2 in
Height:	7 13/16 in	7 13/16 in	8 15/16 in	8 15/16 in	7 5/8 in	7 5/8 in	8 15/16 in	8 3/4 in	9 3/8 in	9 3/8 in
Weight:	42.9 Lbs	43.5 Lbs	26 Lbs	26 Lbs	36.4 Lbs	37.8 Lbs	26 Lbs	53.2 Lbs	59.8 Lbs	59.8 Lbs
Warranty:	36 Months	36 Months	36 Months	36 Months	36 Months	36 Months	36 Months	36 Months	24 Months	24 Months

Which Optima to Use?

We frequently receive questions from customers, service managers, and engineers regarding the correct use of OPTIMA Starting batteries vs. the OPTIMA Deep Cycling/Dual Purpose Batteries.

First of all, don't let the extensive Optima line confuse you. Optima only makes two types of batteries: Starting and Deep Cycle/Dual Purpose.

The Starting batteries are the **34 (800S)**, **34/78 (800U)**, **75/25 (75/950)**, and the **34M (1000M)**. The only difference in these batteries is the type of terminals installed on the battery and the **75/25 (75/950)** is slightly smaller. There is also the **6V (850/6)** (6 volt) starting battery.

The Deep Cycle batteries are the **D34 (750S)**, **D34/78 (750U)**, **D51** and **D34M (D900M)** again, the only difference is the type of terminals installed on the battery. The **D27M** is their new Group 27 Deep Cycle/Dual Purpose. The **D31A**, **D31T** and **D31M** are their largest batteries with the most capacity.

The OPTIMA starting batteries excel in high start output where only light surface cycling takes place. The OPTIMA Deep Cycle batteries are designed for applications that require deep, repetitive amperage drain, like trolling motors, electric wheelchairs, RV house power, and in start applications where the system load exceeds the alternator output for short durations. These are situations when a Deep Cycle OPTIMA can successfully replace a starting battery to provide longer service life and better performance.

High performance car audio and emergency vehicle application are examples of system load exceeding the alternator output. When the engine idles and the alternator output drops, the Optima can continue to support the load with high current and then recharge fast when the engine speed and alternator output increases. Each time this happens, it is a cycle, and this can occur throughout the vehicle's workday. Public safety vehicles, as well as commercial fleet delivery vehicles and vehicles with added aftermarket accessories find that the Optima Deep Cycle is the solution to overloaded systems.

In any vehicle, boat or equipment that will use the battery only for Starting, Lighting, & Ignition requirements and has a properly working alternator, Optima's Starting Batteries are the correct choice, often providing two to three times longer life than conventional batteries.

The starting **34M (1000M)** is an excellent choice for Marine starting applications and is capable of starting large diesels, however, if the same battery runs accessories on an outboard or onboard/outboard, especially when the engine is off, the Optima **D34M (D900M)** will provide deep cycle ability without sacrificing starting capacity. The Optima **D34M (D900M)** solves the starting requirements of the new OptiMax outboards and still provides house service deep cycle ability.

Remember, you can use a battery built for Deep Cycle applications in starting but you cannot use a battery built only for starting applications in Deep Cycle.

Some applications for the OPTIMA Deep Cycle Batteries:

- Starting applications in high-accessory vehicles. Vehicles with computers, performance stereo, electronic components, lights, winches, etc. will create excessive amperage drain that can damage a starting battery.
- Marine starting, where deep cycle capacity is needed. This is usual on small craft where there is only one battery per engine for starting and accessory service.
- Solar or renewable energy sites where the battery is cycled during use and the need for fast recharge during the solar day.
- UPS applications where high discharge long duration rates are needed. The Optima deep cycle batteries can provide extraordinarily high current for long duration.
- Electric vehicle applications where weight to power ratio is important.



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