

Zero's 2010 Electric Motorcycles



by Danny Coe

ZERO MOTORCYCLES ARE no longer the fledgling efforts of a company that built its first bike, called the "Drift," in 2006. For 2010, the Santa Cruz-based manufacturer has four models in its line, including two attractive on-road versions, the Motard "S" and the "DS" (a dual-sport with slightly more rounded capabilities). The remaining two Zero models are the "X" and "MX," aimed strictly at off-road.

What's New

Both of Zero's road models have been engineered around a very clean aluminum twin spar chassis that tightly conceals a sealed Lithium-Ion battery, electronic speed control, brushed electric drive motor and self-contained battery charger. Also stowed on board is a charging lead wire with a standard wall plug. A new addition for this year is a separate "Z-Force" cooling fan with fresh air ducting, designed to cool the brushed permanent magnet motor and reduce overall operating temperatures. As a result, the 2010 machines produce more power and better acceleration while improved cell monitoring from the speed controller also extends battery life. New graphics round out the changes.

Powering the street Zeros is a patented non-removable Lithium Ion battery that weighs 80 lbs. For specs, it produces 4KWh (58 volts @ 70Ah) and offers the Zero rider a range of 50 miles, together with a claimed 0–60 mph acceleration of 4.0 sec and a 67-mph top speed. Once exhausted, fully recharging the battery will require approximately four hours of 110-volt down-time (however, 220-volt charging is also supported).

The Zero "S" is a fully electric motorcycle dressed in motard attire. Dimensionally it is impressively small with a total weight of 273 lbs. and a stable wheelbase of just under 57". A tallish seat height of 34" keeps the Zero "S" from feeling miniscule beneath the rider, an impression supported by the motorcycle's very narrow width between the rider's legs. Zero also offers a 2" lower Corbin seat as an option should you prefer a closer reach to the ground. A steep 22° rake and 3.26" trail figure combine to keep the "S" very nimble and responsive.

Rolling hardware is also petite. Wheel diameters on the "S" are both 16", but vary in widths and tire sizing. The front fits a 110/70, while the rear has a 140/70. Keeping component weights to a minimum, the brakes and suspension reflect the latest in bicycle

designs but are much more robust. Both front and rear suspensions offer limited adjustment. The inverted fork offers variable rebound, while the rear damper provides for rebound and spring preload changes. As for brakes, a tiny hydraulically operated twin-piston caliper clamps the small stainless rotor up front. In back, a single-piston caliper and even smaller stainless disc combine to slow the 273-lb. supermoto. The same braking components are also used on the 277-lb. Dual-Sport.

Hollywood From Another Perspective

At a Zero-sponsored meet and greet, MCN was given an opportunity to ride the electrically powered "S" around the hilly sections of West Los Angeles to test how the Zero performed. And it did so reasonably well, particularly climbing and while maneuvering through Hollywood's endless traffic. Like most of the journalists on hand, our tester had zero electric motorcycling experience, so all comparisons were based on familiar internal combustion equivalents. Around town the Zero held its own, but where it noticeably lacked in comparison

with its liquid-fueled competition was in rate of acceleration and overall braking power. Throttle response, on the other hand, is instantaneous, with a smooth and linear delivery, but we learned that performance demands must be budgeted for the best compromise of total battery life, which ultimately equals vehicle range. The "S" we test rode offered a total range of 50 miles, after which it must be recharged. The Zero conveniently carries its own wall plug charge lead onboard, simplifying the process. Especially in around town use, 50 miles could represent more than a full day of travel, so in this regard the Zero "S" was perhaps in its element. Other impressions: Electric operation is nearly silent, so the visceral feel and sounds we relish in our motorcycles don't apply. In fact, it's so quiet that anything that generates noise onboard the vehicle stands out—in the Zero's case it was the chain slapping the guard on the swingarm, a familiar but seemingly loud noise in an otherwise silent environment.

Riding an electric motorcycle is different. It is quiet, smooth and its power delivery is fluid without surging. However, these attributes could suggest either refinement or a lack of character. Truthfully, it's easier to compare the Zero "S" with today's scooters than it is with performance motorcycles of any era. The build quality, materials, welding and components are attractive and functional, but overall, the machine's weight constraints dictate that most of the hardware such as brakes, suspensions and controls, be minimalistic in materials and design. As a result, the Zero is functionally sound but lacks any excesses when it comes to performance. It wins in creativity with a beautiful frame, swingarm and as an overall package, followed by its new technologies that are bound to improve as well.

It was hard to adjust to the silence of an electric street bike and, more difficult yet, to swallow the Zero's significant asking price. We must admit, though, that silent off-road riding seems a far more appealing idea in an equally silent and green environment.

The Zero "S" is available in red or blue, both with white and black trim. It carries an MSRP of \$8995 after a 10% federal rebate. In addition, a state rebate program also exists, at least in California, which can save an additional \$1500. The Zero "DS" is identically priced and also subject to state and federal rebates, but the off-road-only "X" and "MX" models are not. The "MX" model retails for \$8295, while the lightweight "X" is \$7495. ■