

IRC Photon RTR

Words: Michael Wortel ■ Photos: Oliver Bentley

40+ MPH mini?

Internet RC (IRC) has taken an important step with their release of the Photon RTR. Although it's essentially an electric version of their original Vulcan nitro buggy, the Photon breaks new ground by sporting a brushless motor system, Li-Po pack, and charger as standard equipment. Although 1/16-scale electric isn't likely to blow up as a class, IRC has set the bar for the industry—pushing other manufacturers to include high-end gear in RTRs. And thanks to its lineage, the Photon is easily upgradeable, because there are a ton of parts available for it already. The Photon has already proven to be one of those elusive kits that captivates everyone in the office, so let's take a closer look.

You gotta roll the throttle on this car.

IRC Photon

• 1/18-SCALE MINI • 1/18-SCALE MINI • 1/18-SCALE MINI • 1/18-SCALE MINI • 1/18-SCALE MINI • 1/18-SCALE MINI •

VEHICLE FEATURES

Since it's 1/16-scale, the Photon is a somewhat larger mini than what you're used to. Its shaft-driven, 4WD powertrain propels the tub-type plastic chassis. The buggy spins on a full set of ball bearings and is supported by four oil-filled, threaded body shocks that appear more than adequate for the mini drive train. The kit also utilizes an FM radio system with a sleek receiver.

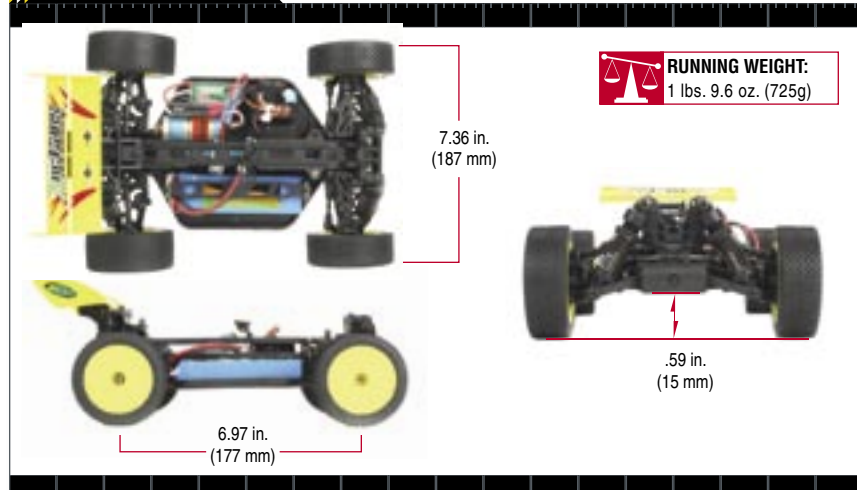


Ah, seeing a high-voltage Li-Po in an RTR almost brings a tear to my eye. And here's a high-quality one and a charger too! If you've never run a Li-Po before, the extra plug is for a cell balancer (not included). Store your pack with a partial charge, and NEVER completely drain the pack. Once your buggy starts to slow down a bit, pull it off the track.

Mamba was one of the first players in the brushless game, and their Mamba 25 ESC is nearly bulletproof. It utilizes Zero Loss connectors to the motor, but you'll want to snip off the Tamiya-style battery plugs in favor of Deans plugs. They'll do a MUCH better job handling the strong current created by the 11.1V battery pack. We're guessing that the stock setup will propel the Photon over the 40 mph mark.



DIMENSIONS



RUNNING WEIGHT:
1 lbs. 9.6 oz. (725g)

CONNECT:

MANUFACTURER: Internet RC
PHONE: 602.347.1600
WEB: www.irc-racing.com

VEHICLE INFO

VEHICLE: Photon RTR
SCALE: 1/16
TYPE: Micro 4WD Electric Buggy
PART #: IRC-16200A
STREET PRICE: \$280
PRICE AS TESTED: \$280
SETUP TIME: 2 hours
EXPERIENCE LEVEL: Intermediate



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TECHNICAL INFO

CHASSIS

LAYOUT: Plastic tub with center brace

SUSPENSION

TYPE: 4-wheel independent w/upper link
TURNBUCKLES: Steel

SHOCKS

BODIES: Threaded plastic
DAMPING (F/R): 20 wt. / 20 wt.

DRIVE TRAIN

TYPE: 4WD shaft
DIFFERENTIAL (F/R): Gear/Gear
AXLE TYPE: Steel dogbones
BEARINGS: Metal-shielded

GEARING

PINION/SPUR: 15/60
GEAR RATIOS:
PRIMARY: 4.00:1
INTERNAL: 2.40:1
FINAL: 9.60:1

ITEMS NEEDED

AAs for transmitter

MAIN COMPETITION

AE RC18B, Duratrax Vendetta, Kyosho Mini Inferno

WHO IT'S FOR

Someone looking for big speed in a small package

ACCELERATION

ACCELERATION (0-60FT): 2.91 sec. @ 34.2 mph
TOP SPEED: 39.0 mph @ 243 ft.
AVERAGE RUNTIME: 16 minutes

POWERPLANT INFO

Himax's 5300kv brushless motor far exceeds the minimum power train requirements for a mini. Brushless motors thrive at high rpms, and this motor doesn't disappoint. And the extra long rotor provides enough torque to easily flip the buggy onto its lid. Make sure, however, that the motor isn't running too hot. RC Hell Editor Aaron Shell pointed out that Himax's magnets degrade rather easily under heat. So if the anodizing on the can starts to fade a bit, gearing down a tad will ensure a longer life for the motor.

When you can flip a micro buggy off the starting line, you're talking serious power.

This thing went faster than an 1/8-scale nitro we were testing at the same time!

TESTING

This car isn't going to find its way onto the track that often. It's too small for big tracks and too fast for small tracks. But it isn't a racecar; it's a blazingly fast basher! Oliver and I scouted out the terrain around our new office location, and we found a park with baseball diamonds, bike paths and a skate park to thrash around on. There was a little of everything. Speed runs were done at the XRC proving grounds.

Acceleration and Speed • 11.1V + large-rotor brushless motor = power galore. On any surface where you get reasonable traction, the Photon will instantly pop a wheelie and flip if you punch it from a stop. Even rolling the throttle a bit, it's difficult to control the truck under acceleration. A slipper clutch would have been a nice touch. Like all brushless motors, it felt at home under high rpms and turned the Photon into a little rocket car.
Rating: 9/10

Handling • The steering isn't very responsive, mainly due to the configuration of the servo layout. It looks like an afterthought, mounted onto the bottom of the flexible center chassis brace. The servo arm also isn't at a good angle to provide torque to the bell crank. This combines to make low-speed handling feel a little sluggish. At speed, the stiff suspension is appreciated. The Photon handles well on the asphalt, and the roll bars—a nice touch—kept lines tight.
Rating: 7

Rough-Track Handling • Even with zero preload, the shocks require considerable pressure to compress. So the buggy bounces around a little too much on rough terrain. Then again, for a mini it was able to clear most obstacles, and it rocketed over loamy terrain and grass—thanks in part to the powerful brushless and Li-Po setup. Getting some softer springs and dropping the shock oil weight would loosen up the suspension and benefit handling on less-than-perfect surfaces.
Rating: 7

Jumping • The large bore shocks proved to be an asset when landing jumps. The Photon didn't bottom out over relatively small jumps, like most minis I've tested. And as long as you can harness the power, the Photon accelerates quickly and can get a decent amount of air with a limited runway.
Rating: 8

Wrenching Maintenance • The buggy doesn't included step-by-step instructions—as many RTR's still don't—and the exploded view isn't detailed and is very difficult

to follow. This can make the Photon hard to work on for a beginner. It takes an inordinate amount of screws and steps to remove the differentials or change the spur gear. The one saving grace is that the buggy is relatively simple, making it somewhat easy to work on.
Rating: 6

Wear and Tear • The plastic used on the Photon is very flexible and forgiving, which is not the best for handling but good for durability. But take warning: Anything this small and this quick will explode if you hit something going at high speeds, but the buggy held up well for a mini. Unfortunately, the gears are exposed on all sides, which is a mini buggy trend that makes me cringe every time. It's just a matter of time before you suck up a little piece of something and ruin a pain-in-the-ass-to-replace spur gear.
Rating: 8

Tuning • For an out-of-the-box mini, the Photon offers a decent amount of tuning options, highlighted by front and rear roll bars, threaded shocks, caster, camber, toe, and everything else you'd expect. The Mamba ESC has multiple profiles, which allows you to adjust the motor timing and set parameters for the ESC. It also features Li-Po voltage cutoff, which you should read about in detail in the manual.
Rating: 7

Conclusion
My impression of the Photon is this: great idea, but not the best execution. The notion of an RTR mini with name brand brushless and Li-Po equipment is groundbreaking and sets the Photon apart from other minis. But it is clear that the Photon merely resonates from IRC's nitro-powered Vulcan. It's essentially the Vulcan with all of the nitro stuff ripped out. The result is an overly cumbersome chassis that lacks a sufficient battery slot and steering servo mount. Given the steep price point and complexity for a mini, it's hard to suggest this RTR as someone's first kit, but if you know your way around an RC car a bit, the balls-out speed of the Photon is impressive enough to consider buying one. ⚙️

RTR GEAR	
	Radio: IRC 2-channel FM
	Receiver: IRC 3-channel FM
	Servo(s): IRC micro
	ESC: Mamba 25
	Motor: Himax 5300 KV
	Battery: IRC 11.1V 1300 mAh

SCORECARD	
SCALE RATINGS: 1=POOR • 10=EXCELLENT	
5	INSTRUCTIONS
7	PARTS QUALITY/FIT
8	DURABILITY
7	TUNABILITY
8	OVERALL PERFORMANCE
7	VALUE
+ HITS	
<ul style="list-style-type: none"> • Includes brand name electronics • Either insane or genius to include an 11.1 volt Li-Po • Way too fast right out of the box 	
- MISSES	
<ul style="list-style-type: none"> • We recommend a quality charger and balancer which isn't included • Exposed pinion/spur gears • Blazing speed comes at a price 	

Photons, neutrons and electrons.... I mean, Protons.

