

Technical Specs	
Input Voltage Range:	2S-4S LiPo
Kv:	2280
Max. RPM:	100,000
Size:	Length: 49.5mm Diameter: 36mm
Weight (w/wires):	197 g / 6.9oz
Shaft Size:	Length: 15mm Diameter: 1/8" (3.17mm)
Mounting Hole Specifications:	M3 @ 25mm
Cooling Fan:	Optional - Coming Soon
Connectors:	4mm male Castle Bullet Connectors
Items Needed for Operation:	Compatible Electronic Speed Control (ESC)
Application Guidelines:	Ideal for 1:10 scale rock crawlers, trail rigs, touring cars, stadium trucks and buggies on 2S-4S with appropriate gearing.
Recommended ESC(s):	Mamba Max Pro, Mamba X , Mamba Micro X
Max. Recommended Vehicle Weight:	
Tech Notes:	Running modes: SMARTSENSE™, Sensored, Sensorless with Castle sensored capable ESCs. Water Resistant Design: The sensor board is coated with silicone conformal coating to protect the sensors from moisture. The sensor connections are not water resistant; water can cause signal loss which could result in loss of sensored capabilities. Castle recommended applying dielectric grease to the outside of the sensor wire connections after installation of the wire. Routine maintenance is recommended after running in wet conditions. Please refer to this document for running and maintaining motors in wet environments.



SENSORED 1406-1900KV FOUR-POLE BRUSHLESS MOTOR *OUT OF STOCK*

Product #: 060-0068-00

You asked. We listened.



For more than a decade Castle has been providing award winning brushless sensorless motors to R/C enthusiasts worldwide. In response to overwhelming requests by our customers, we have brought technological advancements together that will deliver unprecedented performance in our new **SENSORED** motor Line. Our latest additions are the 1406 series in a "SLATE" color, in 1900KV, 2280KV, 2850KV and 3800KV. These motors are ROCK READY and we have the startup on low RPMs under control. Castle now has you covered if you are looking for ultimate control out on the trails or on your Ultra 4 track days.





WHY SENSORED?

Drivers in all applications demand clean starts when coming off the line. Crawler fans require high-precision low speed control and torque for climbing, racers need precision and predictability, and dragsters don't have a millisecond to spare. To achieve all of these performance demands and more, we have integrated rotor position sensor technology with our improved high power and high efficiency motor design. Through the use of our sensors, the position of the rotor is always known by the ESC. This eliminates the possibility of encountering cogging or inconsistency during startup. Users will experience **PRECISE**

throttle control and **BUTTERY SMOOTH** starts plus the **RAW POWER** and **LONGER RUN TIMES** that our highly efficient motors produce.

WHAT MAKES AN EXCEPTIONAL MOTOR?

When tasked with designing a sensored motor our engineers started with the question,

“What makes a motor great?”

- Efficiency
 - You can push it harder (gear it up)
 - You can run it longer (with the same battery)
 - It stays cool under extreme loads
- Reliability
 - Ability to withstand the harsh demands of any RC application
 - Long-life, high-quality components
 - Proven manufacturing techniques

EFFICIENCY IS KEY

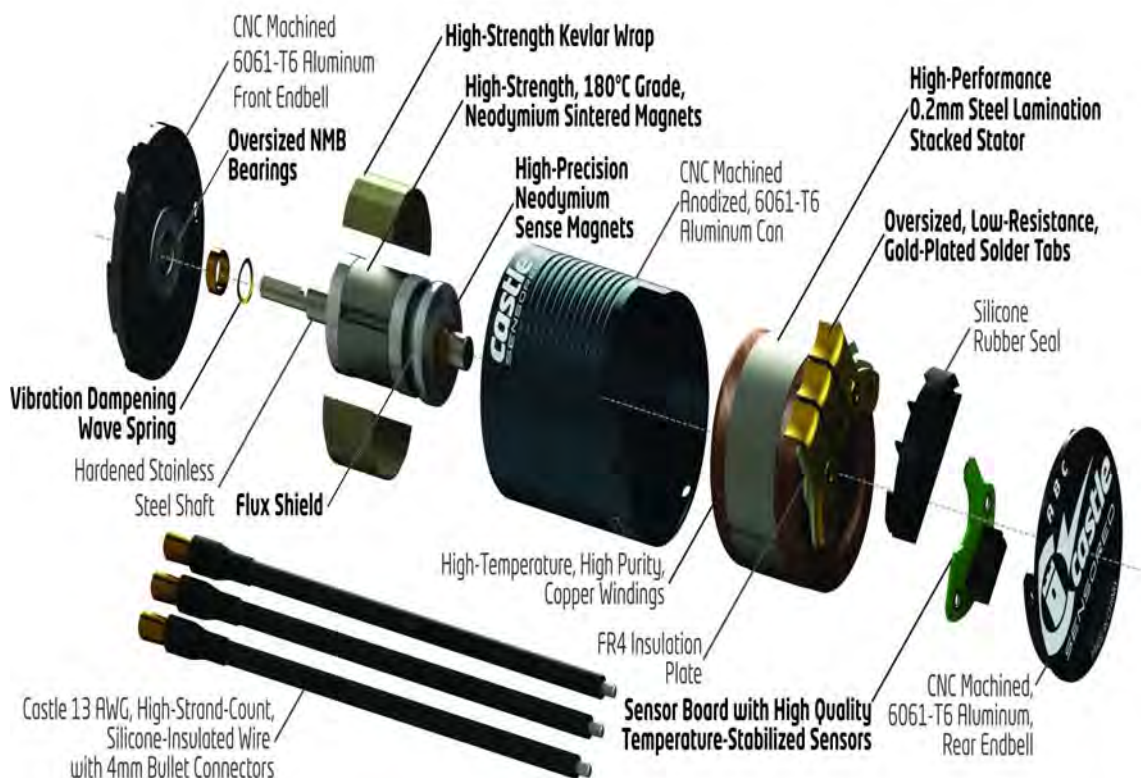
The higher the efficiency of a motor the more power it can produce without overheating, which allows you to safely run higher gear ratios. The higher the efficiency of a motor, the less power it takes to produce the same output power, which allows you to run longer on a single charge. The higher the efficiency of the motor, the less energy it turns into heat; keeping it cool under extreme loads. Efficiency equals performance.

RELIABILITY CAN'T BE IGNORED

Without a robust and reliable design, efficiency will only go so far. RC enthusiasts love pushing their equipment to the edge. The Castle engineers know this and spared no expense when developing a design that could hold up to the harsh conditions that the RC community will throw at it. Oversized NMB bearings and vibration dampening system ensure the longest bearing life possible. High-strength, high-temperature grade neodymium sintered magnets combined with a high-strength Kevlar wrap ensures the integrity of the rotor is not compromised during harsh running conditions. Our proprietary winding techniques allow us to produce a stator assembly that is the lowest possible resistance, resulting in a cooler running motor. A cooler motor has a longer lifetime. Construction of our motor required careful component selection; each verified through internal testing to ensure the **highest efficiency** possible. In the end, the result is a motor with unmatched quality, performance, and reliability. We wouldn't put our name on anything less.

THE DESIGN: KEEPING IT COOL

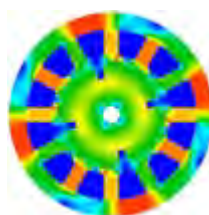




- Our **IMPROVED 4-POLE 12-SLOT** design boasts exceptional **EFFICIENCY** and produces **LESS HEAT**.
- **QUIETSENSE™** technology shields the sensors from magnetic field noise generated from the motor coils and keeps your motor and ESC in sync at all times. Use of a Flux Shield™ in conjunction with secondary Sense Magnets delivers even **HIGHER PRECISION** and **MORE EFFICIENT** startups.
- Our **OPTIMIZED** design eliminates the need for mechanical timing adjustments. Our sensor alignment method delivers uniform timing and torque in both directions, automatically.
- **REBUILDABLE** design allows users to replace front end bell/bearing assembly or rotor/shaft assembly.
- ROAR standard sensor port and labeled connections.
- Updated modern and sleek design; looks as cool as it performs.

**QUIET
SENSE™**

Immense care is taken by our US design team during every step of the development process. While using the highest quality components is important, design is equally important. Our experienced, in-house engineering team, located in Olathe, Kansas, has spent countless hours simulating and developing the most efficient design. Development includes magnetic simulations, custom winding techniques, and rigorous, real-world testing of the final product.



Pictured above is the Castle 1406 sensored motor magnetic flux simulation. Simulations are an important part of the design process

During a 5-minute constant power dyno test the results were clear. When producing 200W of power, our competitors' motors increased in temperature over 20% more than the Castle 1406 Sensored motor. When producing 300W of power, it wasn't even close, their temperature climbed at over twice the rate of the Castle motor and then overheated in around two minutes while the Castle motor powered through and completed the test.

[Click here for graph](#)

** Competitors' motors is average of several 7.5T 2-pole motors typically used in mod-style racing.*

You will reap the benefits of longer run times on one battery and a cooler running motor that can be pushed harder.

We take OVERPOWERING seriously.

INTEGRATED SOPHISTICATION

Castle engineers always add a little something extra in their designs that takes your performance to the next level. We have not skimped here. Many customers have utilized our industry leading software functionality that [Castle Link](#)* offers. When paired with a Castle Creations sensor supported ESC, like the [MAMBA MICRO X](#), [MAMBA MAX PRO](#), [MAMBA X](#) or [MAMBA MONSTER X](#), you can unlock advanced tuning capabilities that [Castle Link](#) provides specifically for **sensored motors**.

SMARTSENSE™ uses the motors sensors to start the motor to provide smooth starts, excellent torque, and low-speed drivability. Once the motor is turning, it seamlessly transitions to Castle's **ULTRA- EFFICIENT** sensorless mode. When running, a motor must transition between different load points and a different timing advance is required for optimal efficiency at all load points. Using mechanical timing adjustments alone, you can only target one driving condition, such as higher start power or higher top end speed. This sacrifices performance and efficiency during the other driving phases. Electronic timing in **SMARTSENSE™** will advance timing automatically for peak performance during all driving conditions. This allows users to combine the best of both worlds in an unrivaled **HYBRID** between smooth sensored startups and high-efficiency sensorless drive.



With a Castle sensored ESC and sensored motor you will have the **ULTIMATE POWER PLANT** for your vehicle. Users will experience **PRECISE** throttle control, **BUTTERY SMOOTH** starts, **PEAK PERFORMANCE** and **EFFICIENCY** throughout the full throttle range. You will feel the **POWER** and **LONGER RUN TIMES** that a **WORLD-CLASS** motor produces.

It's not magic... it's **SMARTSENSE™**.