

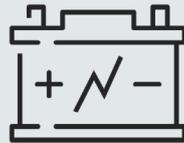
IEm Series™ Motor & Controller

POWERING THE ELECTRIC REVOLUTION

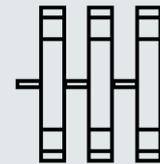
Lighter, smaller and more efficient motors for propulsion and auxiliary motor applications for electric vehicle (EV), aerospace, power sport, and marine applications.



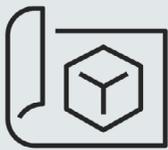
Ultra-High
Efficiency



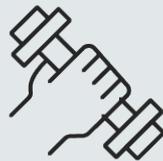
Superior Power
Density



Modular Axial
Design



Rapid
Prototyping



Durability and
Reliability



High
Speed

APPLICATIONS

PROPULSION
MOTORS



AUXILIARY
MOTORS



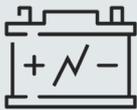
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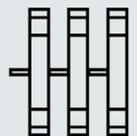
Ultra-High Efficiency

IEm air-core motors eliminate stator core losses and eddy current losses in the rotor and magnets are negligible, making IEm motors highly efficient over a wide range of load conditions. Additionally, by using permanent magnets, our motors help offer highly efficient regenerative braking, adding to the overall efficiency of the vehicle as well.



Superior Power Density

IEm motors maximize power density by combining our PCB stator, which weighs 90 percent less than an iron core, with low-volume, high-energy product magnets. We further enhance power density by using either air cooling, which allows for two to three times the current density of a conventional motor, or oil cooling, which can triple this. This highly efficient oil cooling unique to our PCB stator enables current densities up to 36,000 A/in².



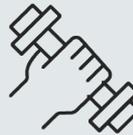
Modular Axial Design

With our modular axial design, EV engineers can build multi-stator, multi-rotor motors that are slim and lightweight. This is possible because IEm motors offer higher power and torque density than a comparable radial machine without constantly increasing operating speeds and putting more strain on the motor.



Rapid Prototyping

EV engineers need technology that makes it easy to quickly iterate on designs and alter components based on rapidly changing needs. With the modular nature of our IEm motors, EV engineers inherently have the flexibility to experiment and add stators and rotors quickly and easily to see what configuration will best suit their power and torque needs.



Durability and Reliability

Third-party reliability tests have shown our PCB stator is up to 9x more reliable than a conventional copper wire wound stator. This is because our PCB stator design eliminates the common points of failure seen in traditional motors related to the copper windings and insulation. Plus, our ability to more effectively cool the interior of the motor using oil cooling also helps extend the life of our IEm motors.



High Operating Speed

We engineered IEm specifically for high operating speeds, featuring magnet containment that is not in the way of magnetic flux, a coreless construction allowing for high-frequency operation without efficiency penalties caused by core losses, and a simple rotor construction to ensure stability at high speeds.

Infinitum Electric re-engineers critical aspects of traditional motor technology, helping customers gain a competitive advantage with differentiated products that decrease carbon footprint and improve performance, reliability, and cost.



700 Jeffrey Way
Suite 200
Round Rock, TX
78665



info@infinitumelectric.com

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