




# SG12000

## HERCULES SERIES

### KEY FEATURES

 Lowest weight in its class to provide outstanding power density

 Built for industrial strength

 100% tested with individual performance reports

 Active air-cooling system operates at high temperatures

 Hybrid-ready design to optimize engine size while providing battery assist



## DATASHEET

### Fly Higher. Fly Longer. Fly Smarter.

Uncrewed aerial vehicle (UAV) designers face complex trade-offs to achieve their performance requirements, including propulsion method and electrical power demands. A permanent magnet brushless starter generator forms a critical component for ensuring all the UAV propulsion and energy objectives are met.

The ePropelled USA-made and hybrid-ready Hercules starter generator (SG) series are the most robust and versatile UAV starter generators, allowing for extended flight range, reduced noise, and increased power. The slimline design boasts an active air-cooling system that allows for operating temperatures of up to 180°C.

#### ePropelled offers several customizable options for starter generators:

- Bearingless option—our unique adaptor allows bearingless mounting of the starter generator directly onto the engine
- Directly mounted on engine crankshaft with custom shaft interface ring
- Customizable active air-cooling rotor hub
- Optional K-type thermal sensor to measure winding temperature.

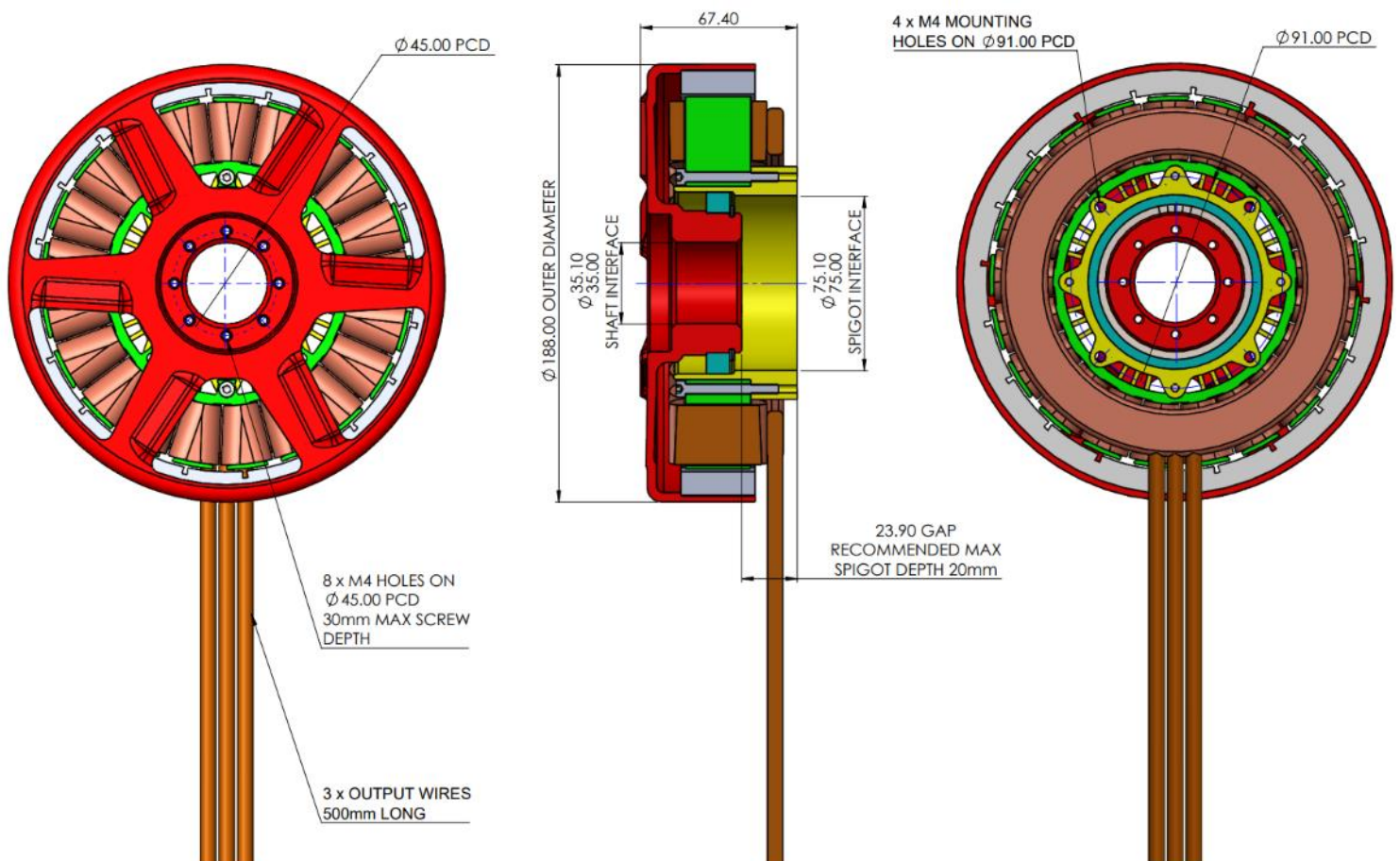
ePropelled offers a wide range of integratable electrical system components -- such as intelligent power systems, engine starters, and controllers -- engineered to work seamlessly with all Hercules starter generators.



## SG12000 TECHNICAL SPECIFICATIONS

PARAMETER	VALUES/DETAILS
Diameter	190 mm
Length	68 mm
Weight with bearing (incl. high-profile mounting bracket, winding leads and thermal sensor)	4,300 g
Weight without bearing (incl. high-profile mounting bracket, winding leads and thermal sensor)	4,200 g
Stator Winding Temperature Sensor	K-Type Thermocouple
Winding Operating Temperature	Up to 356°F (180°C)
Rotor Operating Temperature	Up to 356°F (180°C)
Generator Type	Brushless Permanent Magnet, Outer Rotor
Winding Type	3-phase
No-Load, Line-to-Line-Voltage Constant	9.5 vac/1000 RPM
KV Rating	74
Maximum Continuous Power	3% below peak power
Peak Power Duration	10 minutes
Mounting Type	Direct on crankshaft via customizable coupling ring
Peak Current	150 A

## MECHANICAL DIMENSIONS

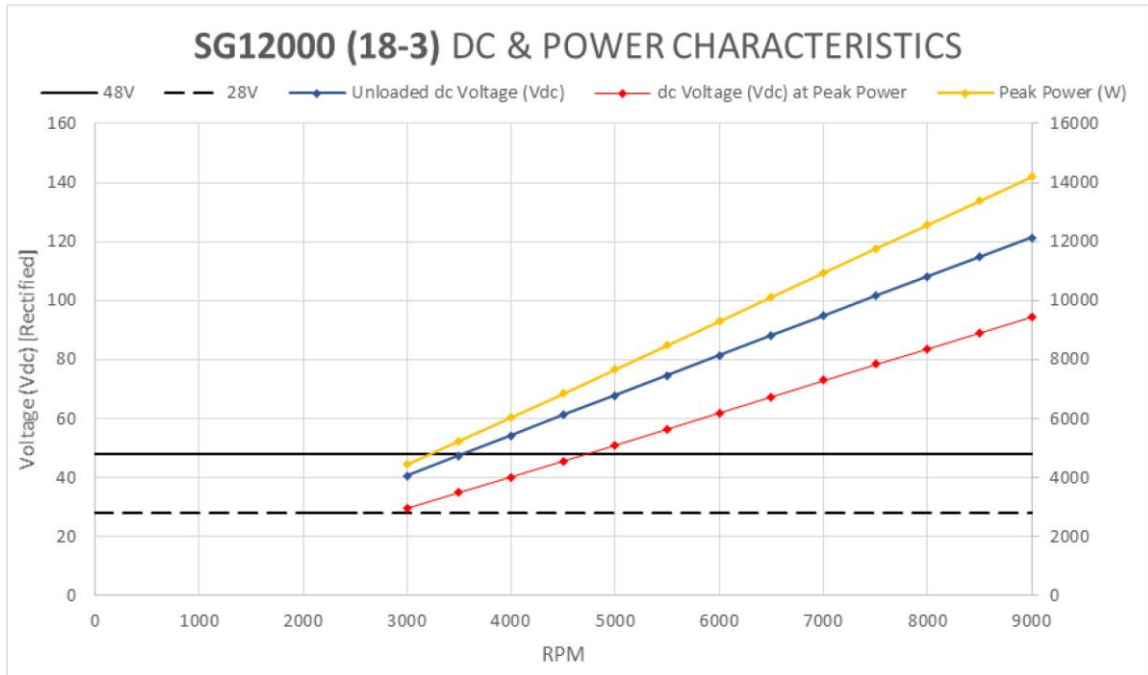
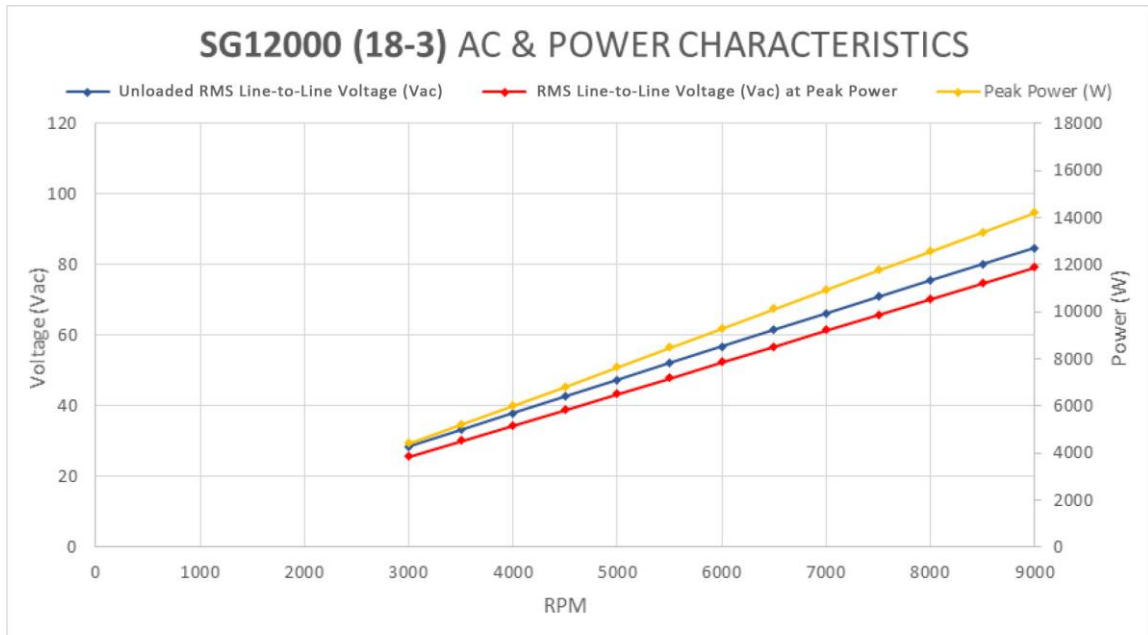


\*All dimensions are in mm

### SG12000 Power Characteristics

ePropelled starter generators require consistent (open) airflow of 2 m/s or larger across the windings to maintain the maximum continuous current and power ratings stated during runtime. The figures in this document are provided as guidelines for normal condition and device operation.

Environmental factors such as air temperature and/or humidity can affect the starter generator’s maximum performance limits. The ambient temperature during testing was 25°C. Ensure that the starter generator is used within an environment that does not exceed its safe operational temperature of 180°C for the windings, 180°C for the rotor, and 120°C for the bearing. Tests were carried out at mean sea level (altitude 0 ft) and 89% humidity.



**Note:** All specifications are subject to change without notice. For more information, including ordering products, please contact us at [info@epropelled.com](mailto:info@epropelled.com) | Phone: +1 (603) 236 7444