

S676-350U-01

190 to 750 Watt Alternator [75+W per 1000 RPM]

Featuring:

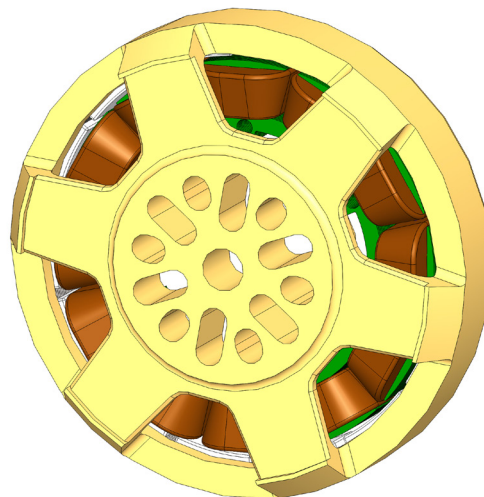
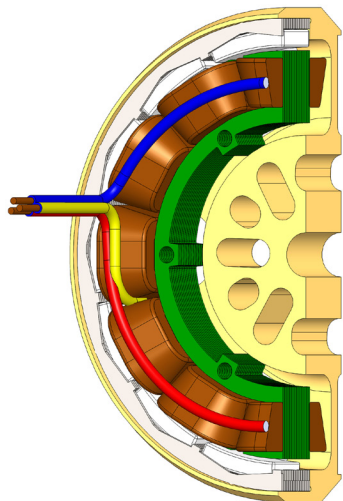
- Second generation design for improved power density and thermal performance
- 3 Phase brushless construction
- Designed for direct drive on engine crankshaft
- Stator is rigidly mounted to engine crank case, eliminating all bearings
- High temperature NdFeB magnets
- Humidity and moisture-resistant construction rated to IP 63

Sullivan
UNMANNED VEHICLE

S676-350U-01

190 to 750 Watt Alternator

Specifications



Model number:	S676-350U-01
Alternator diameter:	89mm
Alternator thickness:	27mm
Alternator weight:	360g
Engines:	Most engines 20cc to 85cc
Rated power at 2500 RPM:	190W
Rated power at 7500 RPM:	750W
Standard wind type:	Three phase
No-load voltage constant:	11.0 VAC/1000 RPM (rms voltage, line to line)
Thermal: (Rotor)	Continuous Operation* 85°C Absolute Maximum* 120°C *Higher temperature available but maximum power will be reduced
Thermal: (Stator)	Continuous Operation 120°C Absolute Maximum 200°C
Options:	Special winding Modified shell machining

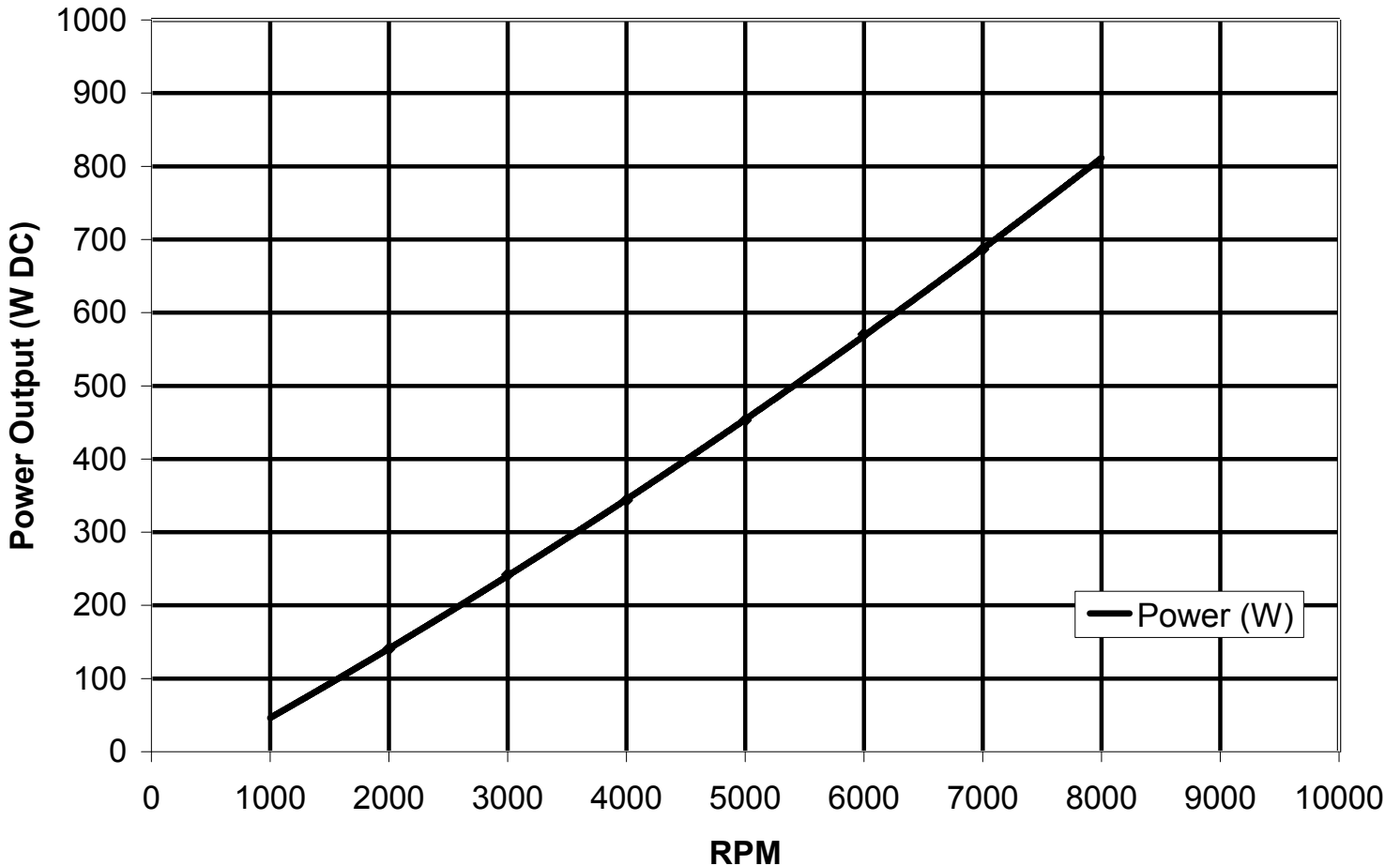
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Performance

S676-350U-01, Rated Power vs RPM
(120°C Max Stator Temperature)



Sullivan UV

8950 Yellow Brick Rd

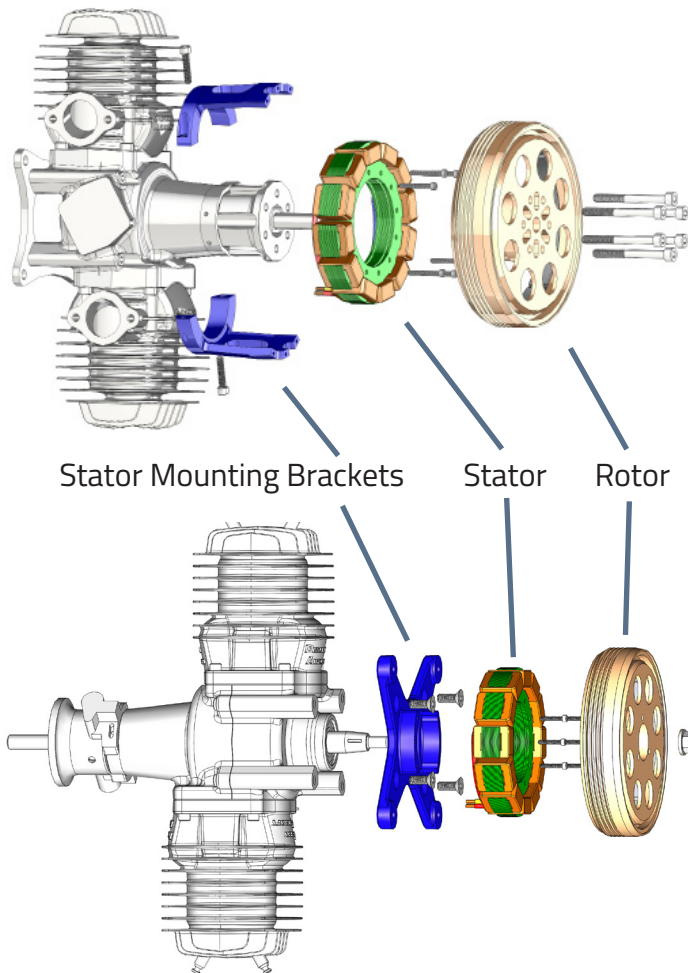
Baltimore, MD 21237

Phone: 410-732-3500 Fax: 410-327-7443

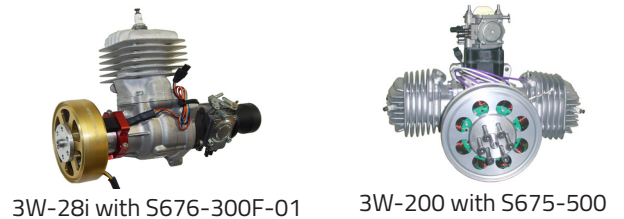
W: www.SullivanUV.com E: sales@sullivanuv.com

Sullivan UV is a Baltimore, Maryland-based manufacturer of custom crafted starters, alternators and control hardware.

Mounting



Typical Front Mount



Typical Rear Mount



Sullivan Pancake Alternators are typically designed to be directly driven by the engine crankshaft. They consist of three main parts, Rotor, Stator, and the Stator Support Bracket. The Rotor and Stator are common for most installations, while the Stator Support Brackets are specific to each engine and alternator combination.

The **Rotor** is affixed directly to the crankshaft and is supported by the crankshaft bearings. Placement can be on the front shaft between the Propeller Hub and Propeller, or on the rear shaft when available. Other installation configurations can also be accommodated.

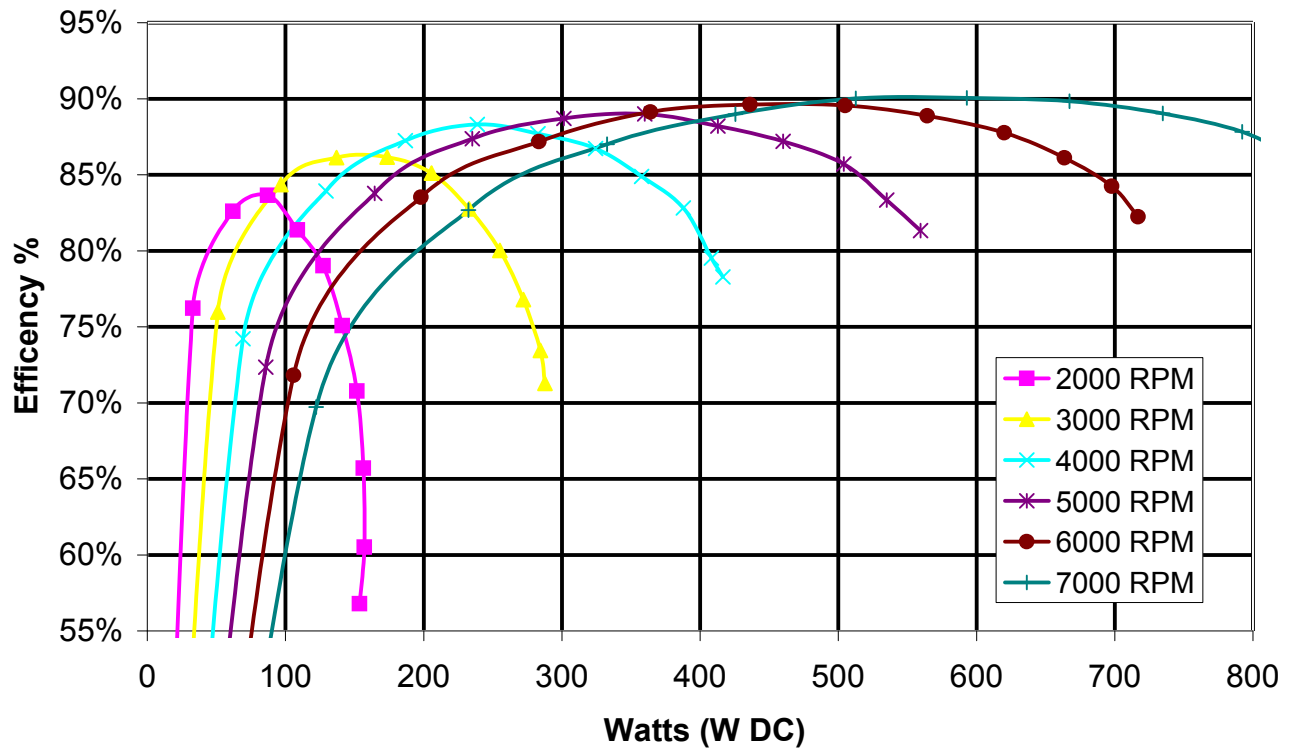
The **Stator** is mounted to the engine crankcase via the Stator Mounting Bracket. The Stator is held rigidly in place concentric to the Rotor, with the windings and magnets aligned axially. An optional thin section bearing can be included that provides the proper alignment between the Rotor and Stator if needed.

The **Stator Mounting Brackets** are typically CNC machined from Billet Aluminum. They attach to the engine by either clamping to existing features or bolting directly to the crankcase. In some cases it is necessary to drill and tap the crankcase to create mounting points. The Stator is then bolted to the Mounting Bracket to complete the installation. Installation guides can be downloaded at www.SullivanUV.com

For advanced systems, stator mounting features can be incorporated into the crankcase design which eliminate the need for the bearing and brackets. This approach saves considerable weight and cost but requires control over the engine manufacturing process. If this option is available please contact Sullivan Sales and Engineering, Sales@SullivanUV.com, to discuss the details.

Efficiency

**S676-350U-01
Efficiency vs Power**



Engine load calculations

$$\text{Engine load} = \text{Output power} / \text{Regulator Efficiency} / \text{Alternator Efficiency}$$

Example: A 225W electrical load at 90% regulator efficiency and 80% alternator efficiency requires $225 / 0.90 / 0.80 = 312.5\text{W}$ of engine power. At 746W/HP, this is 0.419 HP.

$$\text{Ft-Lbs of Torque} = \text{Horsepower} * 5252 / \text{RPM}$$

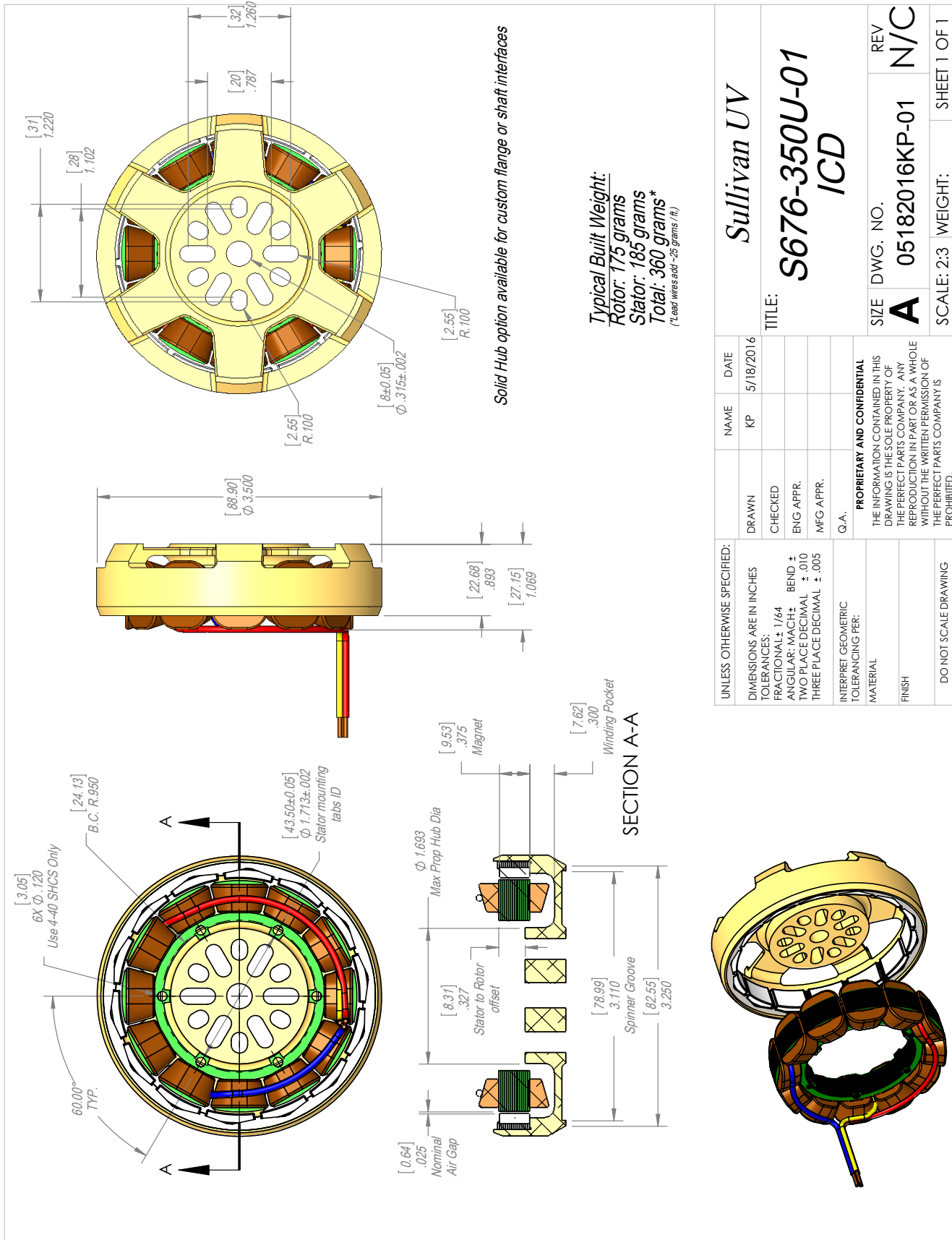
At 3800 RPM, a 225W load with a 90% efficient regulator and 80% efficient alternator, the torque load would be $0.419\text{HP} * 5252 / 3800 = 0.579 \text{ Ft-Lbs}$.

$$1 \text{ Ft-Lb} = 1.356 \text{ N-M}$$

0.579 Ft-Lbs of torque is 0.785 N-M.

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UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES		KP	5/18/2016
TOLERANCES:			
FRACTIONAL: ± 1/64			
ANGULAR: MACH ±			
TWO PLACE DECIMAL ± .010			
THREE PLACE DECIMAL ± .005			
INTERPRET GEOMETRIC TOLERANCING PER:			
MATERIAL:			
FINISH:			
DO NOT SCALE DRAWING			
		TITLE: S676-350U-01 ICD SIZE DWG. NO. A 05182016KP-01 SCALE: 2:3 WEIGHT: SHEET 1 OF 1	

