



Launchpoint Technologies 6” Dual Halbach Air-core Motor
Rated 7 HP continuous output at 8400 rpm, 95% efficient

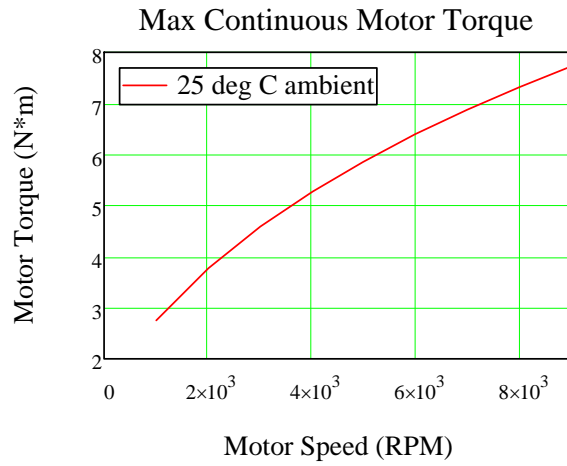
Parameter ¹	Units	Value
Max rated bus voltage	Vdc	120
Continuous Torque (Stall)	N-m	2
Continuous Torque @ Max rated speed	N-m	8
Continuous Current (Stall)	A _{rms}	8.5
Continuous Current @ Max rated speed ²	A _{rms}	51
Max Rated Speed	rpm	8400
Torque Constant	N-m/A _{rms}	.17
Back EMF Constant (line-line, wye)	V _{pk} /k _{rpm}	14.6
Resistance (line-line, Wye terminated) ³	Ohm	.176
Inductance (line-line, Wye terminated)	uH	3.8
Inertia	kg-cm ²	
Weight	kg	.72
Static Friction	N-m	.036
Drag torque at max rated speed	N-m	.095
Thermal Time Constant (stall/max rated speed)	seconds	523 / 6.2
Thermal Resistance (stall/max rated speed)	Deg C/W	14.6 / .18
Pole Pairs		25

¹ All parameters assume sinusoidal motor currents

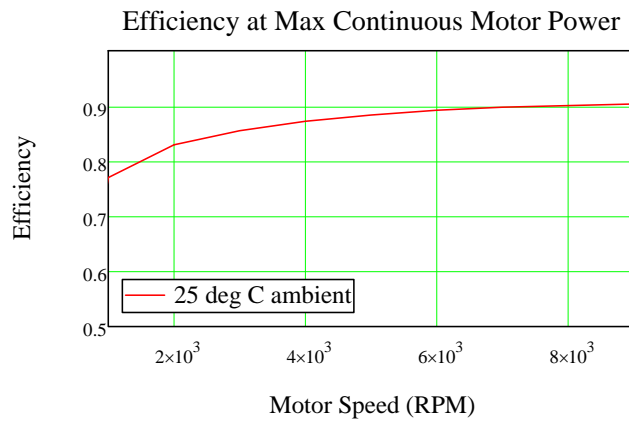
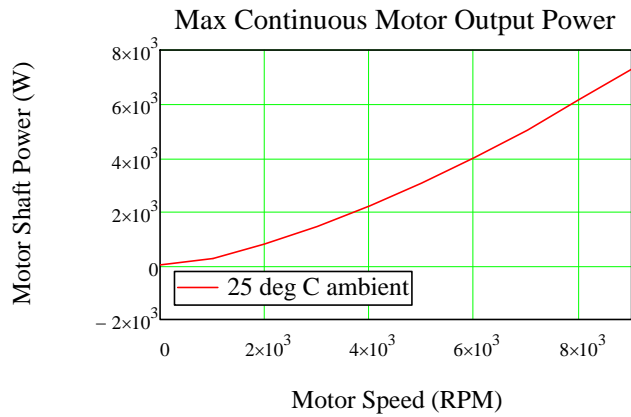
² Coil at 150 C, 25 deg C ambient air

³ Coil at 25 C

Predicted performance:



The Launchpoint Technologies Dual Halbach motor is air cooled with an integrated fan. Thus the allowable torque and current in the stator go up as the motor spins faster and has more available cooling. More torque would be available at low speeds if external cooling were added.



Measured Motor Loss Data

Experimental Data:

