Astro Model 3210 Brushless Motor

The Astro 3210 Brushless Motor is designed to deliver high power with minimum size and weight. The motor is only 3.2 inches in diameter and 2.25 inches long and weights 34 ounces. It can deliver 375 inch ounces of continuous torque and over 500 inch ounces for 1 minute. Best motor efficiency is 93% at 190 inch ounces of torque and remains above 90% up to 375 inch ounces. The motor can handle speeds up to 12,000 Rpm. Windings are available for operation from 24 volts DC to 144 Volts DC. Standard shaft diameter is 0.375 inch. Other diameters such as 8 MM, 10 MM, 12 MM and 0.500 inch are available on special order.

Motor Constants for Various Winding Options

Motor Winding	Kv rpm/volt	Kt in oz /amp	No Load Amps	Winding Resistance	Best Amps	Motor Efficiency
1 turn	1355	1.0	6.0 amps	0.002 ohms	170 amps	93%
2 turns	677	2.0	3.0 amps	0.005 ohms	85 amps	93%
3 turns	451	3.0	2.0 amps	0.011 ohms	57 amps	93%
4 turns	339	4	1.5 amps	0.020 ohms	42 amps	93%
5 turns	271	5	1.2 amps	0.030 ohms	34 amps	93%
6 turns	225	6	1.0 amps	0.045 ohms	28 amps	93%
7 turns	194	7	0.9 amps	0.060 ohms	24 amps	93%
8 turns	169	8	0.7 amps	0.080 ohms	21 amps	93%
10 turns	135	10	0.6 amps	0.120 ohms	17 amps	93%
12 turns	113	12	0.5 amps	0.190 ohms	14 amps	93%
24 turns	677	24	0.25 amps	0.380 ohms	7 amps	93%

Operation at maximum continuous torque for various winding options Motor requires a sensorless speed control that can handle both the voltage and amperage of the motor. We used the Phoenix 110HV for our testing.

Motor Winding	Operating Voltage	Continuous Amps	Shaft Torque	Motor Rpm	Shaft Power	Motor Efficiency
1 turn	6 volts	375 amps	375 in oz	7,500 rpm	2.8 Hp	90%
2 turns	12 volts	187 amps	375 in oz	7,500 rpm	2.8 Hp	90%
3 turns	18 volts	106 amps	375 in oz	7,500 rpm	2.8 hp	90%
4 turns	24 volts	94 amps	375 in oz	7,500 rpm	2.8 Hp	90%
5 turns	30 volts	75 amps	375 in oz	7,500 rpm	2.8 Hp	90%
6 turns	36 volts	63 amps	375 in oz	7,500 rpm	2.8 hp	90%
7 turns	42 volts	54 amps	375 in oz	7,500 rpm	2.8 hp	90%
8 turns	48 volts	47 amps	375 in oz	7,500 rpm	2.8 Hp	90%
10 turns	60 volts	38 amps	375 in oz	7,500 rpm	2.8 Hp	90%
12 turns	72 volts	31 amps	375 in oz	7,5000 rpm	2.8 Hp	90%
24 turns	144 volts	16 amps	375 in oz	7,500 rpm	2.8 Hp	90%

Let us build a custom motor for your. Please answer the questions below and fax us for a quote.

Astro Flight Inc. 133311 Beach Ave. Marina Del Rey, CA 90292 Fax# (310)822-6637
email: Astrobob@astroflight.com Handmade in California!

Maximum operating voltage	
Minimum operating voltage	
Maximum continuous amps	
Maximum continuous power	
Maximum continuous torque	
No Load speed in rpm	
Maximum motor diameter	
Maximum motor length	
Maximum motor weight	
Operating temperature range	
Operating duty cycle	
Is this motor for production	
What is expected annual usage	

ASTRO 3210 MOTOR