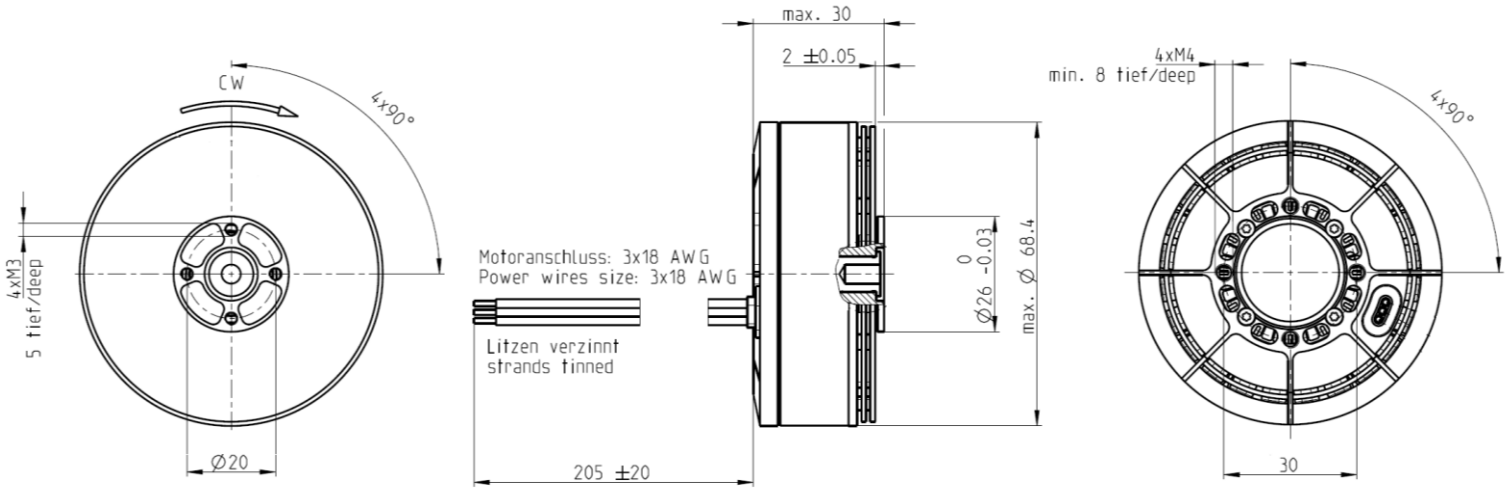


EC 69 flat UAV

designed for professional UAV applications

Ø69 mm, brushless, up to 8.4kg thrust

NEW



Part Number

Sensorless 688848 725770

Motor Data

Values at nominal voltage

	V	24	36
1 Nominal voltage	V	24	36
2 No load speed	rpm	8110	5690
3 No load current	mA	1950	709
4 Nominal speed	rpm	6680	4860
5 Nominal torque (max. continuous torque)	mNm	1270	1390
6 Nominal current (max. continuous current)	A	41.8	21.2
7 Stall torque ¹	mNm	4720	4780
8 Stall current	A	608	292
9 Max. efficiency	%	89.6	90.8
10 Max. continuous power output	W	490	620
11 Max. peak power output	W	1100	1480

Characteristics

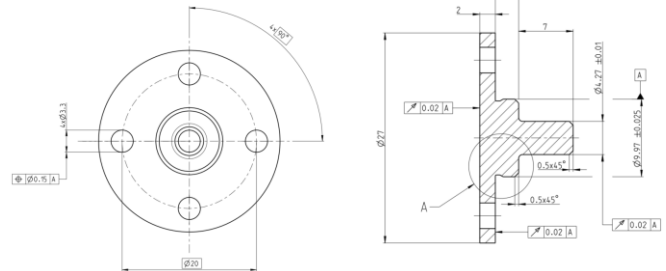
	Ω	0.0395	0.123
12 Terminal resistance phase to phase	Ω	0.0395	0.123
13 Terminal inductance phase to phase	mH	0.0174	0.0799
14 Torque constant	mNm/A	28	59.9
15 Speed constant	rpm/V	342	159
16 Speed/torque gradient	rpm/mNm	0.482	0.328
17 Mechanical time constant	ms	3.74	2.54
18 Rotor inertia	gcm ²	740	740
19 Thermal resistance housing-ambient ²	K/W	0.158	0.222
20 Thermal resistance winding-housing ²	K/W	1.01	0.781
21 Thermal time constant winding	s	7.96	10.4
22 Thermal time constant motor	s	21.3	29.9

maxon Accessories

propeller adapter: 718087



The adapter is designed for mounting the maxon recommended propellers.



Motor Specifications

Thermal data

23 Ambient temperature	-20 ... +50 °C
24 Max. winding temperature	+155 °C

Mechanical data (preloaded ball bearings)

25 Max. speed	8000 rpm
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Other specifications

26 Number of pole pairs	14
27 Number of phases	3
28 Weight of motor (incl. 210 mm cable)	269 g
29 Recommended propeller sizes	20" ... 24"

Values listed in the tables are nominal.

Connection

Pin 1	Motor winding 1
Pin 2	Motor winding 2
Pin 3	Motor winding 3

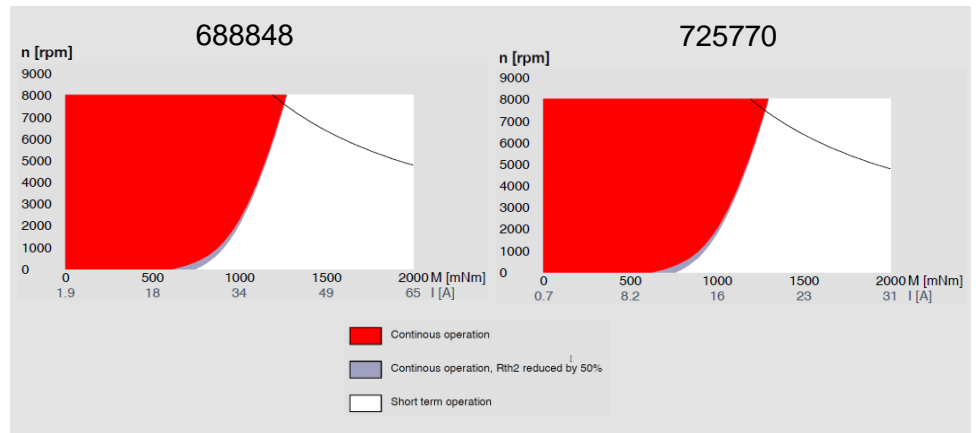
Cable

Connection winding wire direct, L = 205 mm silicone insulated

¹Calculation does not include saturation effect

²At nominal working point

Operating Range



Notes

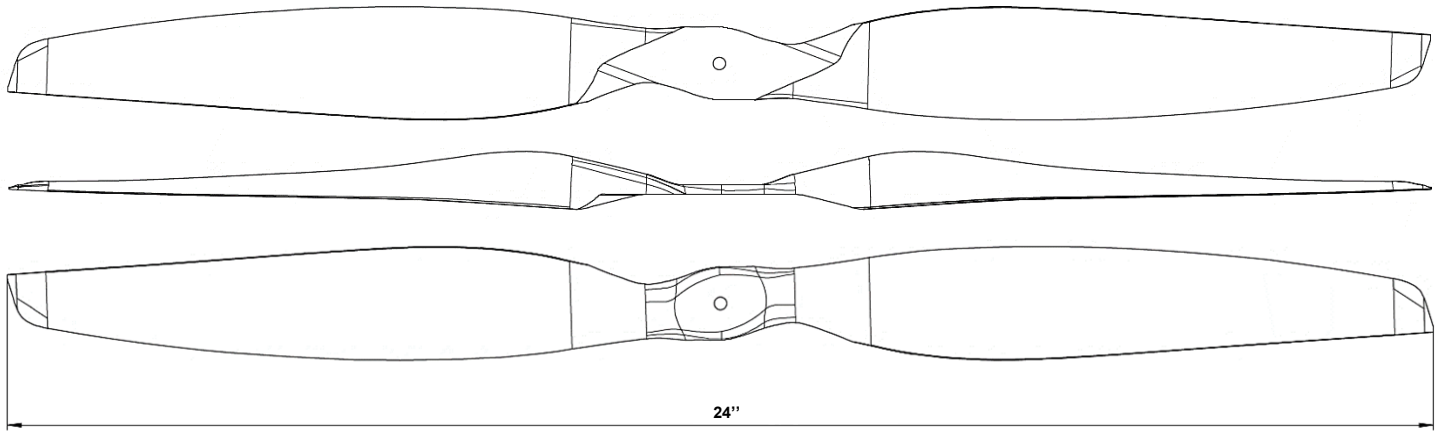
Please contact aerospace@maxongroup.com

Propeller 24x8.1

propeller recommendation



maxon recommended propeller for EC 69 flat



Propeller Specifications

- 1 Diameter 24" (609.6 mm)
- 2 Pitch 8.1" (205.7 mm)
- 3 Weight of Propeller 55 g
- 4 Max. recommended speed 7500 rpm
- 5 Material carbon fiber, glass fiber, roving, polyurethane, epoxy

Motor Propeller Combination

Propulsion System Performance Table

688848

Based on measured data from Mejzlik @ 8S (29.6V) LiPo ESC supply voltage.

Speed [rpm]	Current [A]	Torque [mNm]	Thrust [g]	el. Power [W]	Efficiency [g/W]
continuous operation					
1000	0.7	112	302	20	14.9
1400	1.5	206	621	44	14.2
1500	1.8	235	723	52	13.8
1700	2.5	298	946	73	13.0
1800	2.9	333	1066	85	12.6
2000	3.8	407	1331	113	11.7
2200	5.0	491	1626	149	10.9
2400	6.5	587	1965	194	10.2
2600	8.3	687	2323	246	9.4
2800	10.4	796	2709	308	8.8
3000	12.9	914	3128	382	8.2
3200	16.0	1046	3592	472	7.6
3400	19.7	1189	4092	579	7.1
3600	23.9	1338	4618	704	6.6
short term operation					
3800	29.0	1496	5174	852	6.1
4000	35.3	1663	5755	1034	5.6
4150	41.5	1795	6215	1215	5.1

725770

Based on measured data from Mejzlik @ 12S (44.5V) LiPo ESC supply voltage.

Speed [rpm]	Current [A]	Torque [mNm]	Thrust [g]	el. Power [W]	Efficiency [g/W]
continuous operation					
1000	0.4	115	286	17	16.4
1200	0.6	158	430	27	16.1
1400	0.9	210	604	39	15.3
1500	1.1	238	703	47	14.9
1600	1.3	269	811	56	14.4
1700	1.5	303	926	66	13.9
1800	1.7	337	1048	78	13.5
2000	2.4	414	1318	105	12.6
2200	3.1	499	1620	138	11.7
2400	4.0	592	1950	178	11.0
2600	5.1	693	2309	225	10.3
2800	6.3	802	2692	281	9.6
3000	7.8	919	3113	346	9.0
3200	9.5	1046	3563	421	8.5
3400	11.5	1182	4040	509	7.9
3600	13.7	1328	4554	610	7.5
3800	16.4	1485	5105	727	7.0
short term operation					
4000	19.5	1651	5683	863	6.6
4200	23.1	1830	6301	1023	6.2
4400	27.4	2019	6954	1210	5.7
4600	32.7	2220	7659	1445	5.3

Efficiency Propulsion System

Propulsion system efficiency is indicated by depiction of required amount of electrical power (required by motor) to achieve a certain amount of thrust.

