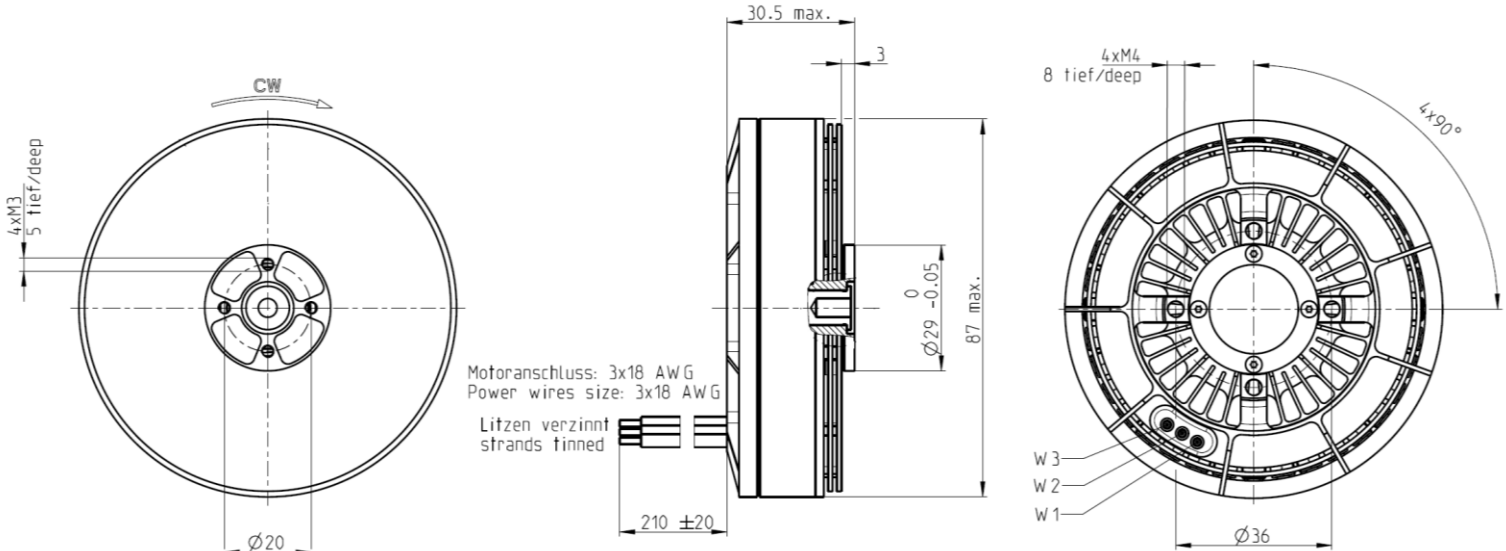


EC 87 flat UAV

designed for professional UAV applications

Ø87 mm, brushless, up to 9kg thrust

NEW



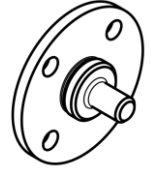
Part Number

Sensorless 668415

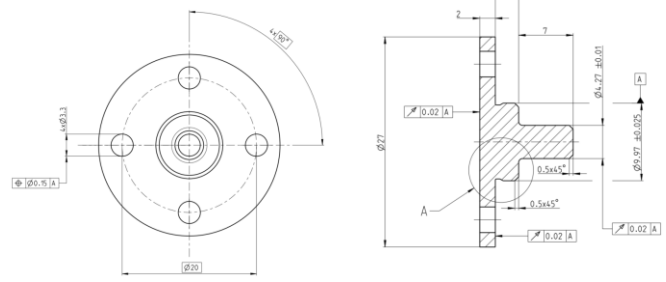
Motor Data		
Values at nominal voltage		
1 Nominal voltage	V	24
2 No load speed	rpm	3420
3 No load current	mA	862
4 Nominal speed	rpm	2640
5 Nominal torque (max. continuous torque)	mNm	1760
6 Nominal current (max. continuous current)	A	23.6
7 Stall torque ¹	mNm	17900
8 Stall current	A	269
9 Max. efficiency	%	89.2
10 Max. continuous power output	W	620
11 Max. peak power output	W	1460
Characteristics		
12 Terminal resistance phase to phase	Ω	0.0891
13 Terminal inductance phase to phase	mH	0.048
14 Torque constant	mNm/A	66.4
15 Speed constant	rpm/V	144
16 Speed/torque gradient	rpm/mNm	0.193
17 Mechanical time constant	ms	3.52
18 Rotor inertia	gcm ²	1740
19 Thermal resistance housing-ambient ²	K/W	0.479
20 Thermal resistance winding-housing ²	K/W	0.557
21 Thermal time constant winding	s	5.41
22 Thermal time constant motor	s	74.1

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	6500 rpm	
Other specifications		
26 Number of pole pairs	21	
27 Number of phases	3	
28 Weight of motor (incl. 210 mm cable)	309.5 g	
29 Recommended propeller sizes	26" ... 30"	

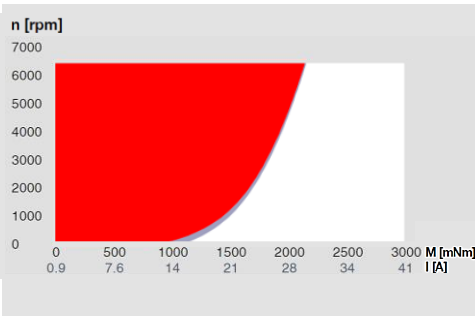
Values listed in the tables are nominal.

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

Cable
 Connection winding wire direct, L = 210 mm
 silicone insulated

¹Calculation does not include saturation effect
²At nominal working point

Operating Range



Continuous operation
 In observation of listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient. = Thermal limit.

Continuous operation
 Thermal resistance Rth2 reduced by 50%.

Short term operation
 The motor may be briefly overloaded (recurring).

Notes

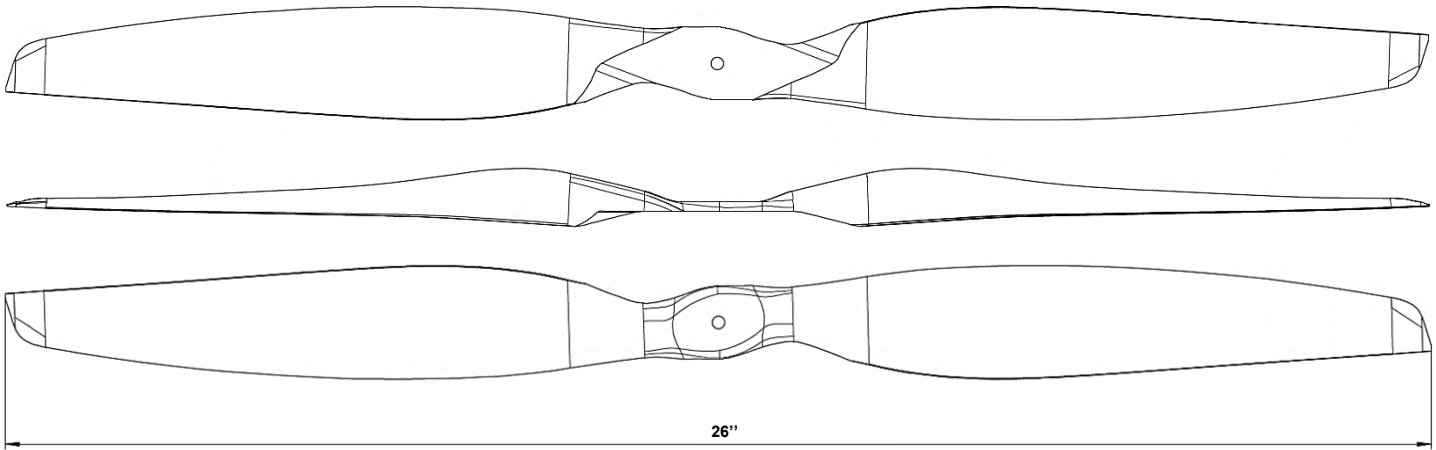
Please contact aerospace@maxongroup.com

Propeller 26x8.7

propeller recommendation



maxon recommended propeller



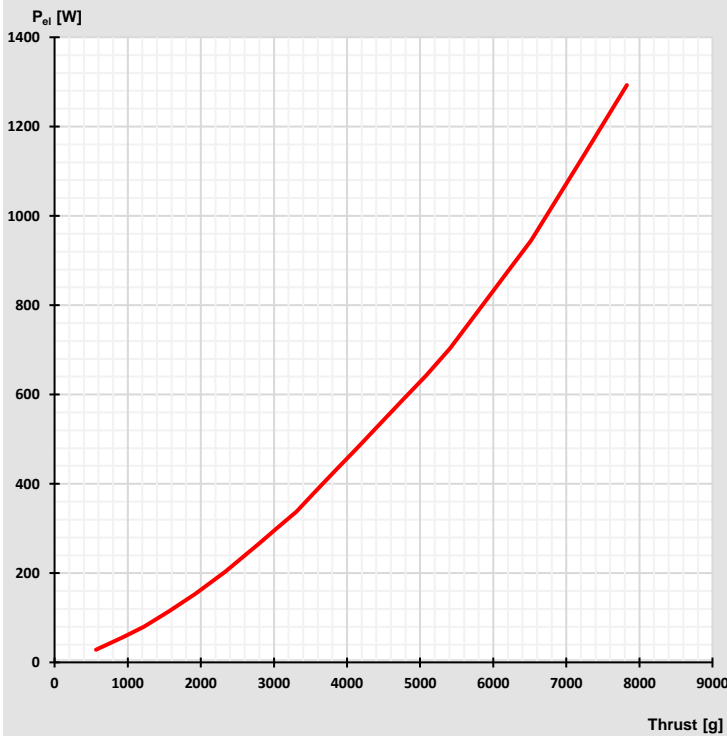
Propeller Specifications

1 Diameter	26" (660.4 mm)
2 Pitch	8.7" (223.0 mm)
3 Weight of Propeller	66 g
4 Max. speed	6900 rpm
5 Material	carbon fiber, glass fiber, roving, polyurethane, epoxy

Motor Propeller Combination

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.



Propulsion System Performance Table

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					
1100	0.6	185	564	29	19.6
1400	1.3	299	932	56	16.6
1600	1.8	387	1224	80	15.3
1800	2.6	491	1566	115	13.7
2000	3.5	601	1928	154	12.5
2200	4.6	722	2329	202	11.5
2400	6.0	866	2800	266	10.5
2500	6.8	944	3053	302	10.1
2600	7.6	1021	3305	338	9.8
2700	8.7	1107	3584	385	9.3
2800	9.7	1192	3863	433	8.9
2900	10.8	1278	4142	481	8.6
3000	12.0	1369	4444	533	8.3
3100	13.2	1463	4761	587	8.1
3200	14.5	1557	5078	642	7.9
3300	15.8	1657	5408	703	7.7
3400	17.7	1772	5778	784	7.4
3500	19.5	1887	6148	864	7.1
short term operation					
3600	21.3	2002	6517	945	6.9
3700	23.5	2118	6892	1043	6.6
3800	25.8	2233	7268	1143	6.4
3950	29.2	2406	7830	1293	6.1

Notes

Please contact aerospace@maxongroup.com