

CubeWheel

High reliability reaction wheel with integrated electronics

Description

CubeWheel is a high reliability reaction wheel with integrated driver electronics that comes in small, medium and large sizes. They include highly balanced flywheel discs, brushless motors, motor drivers and microcontrollers that are all magnetically shielded to minimize their influence on the magnetic control system of a satellite. All wheels include I2C, UART and CAN comms interfaces, include speed controller algorithms, as well as runaway protection to avoid accidental damage.



Ordering Information

Lead Time	3 Months
Price	
Small	4 500 USD
Medium	6 500 USD
Large	7 500 USD
Flight heritage	>10 Total years collective in-flight time

Specifications

Power Supply	3V3, V _{Battery}
Battery voltage	6.5-16V
Imbalance	< 0.003 g.cm
Environmental Test Range	
Vibration	8.03g RMS random
Thermal (Operational)	-10 – 70C
Radiation	24kRad



	Small	Medium	Large
Speed range	± 8000	± 6000	± 6000
Max torque	0.23mNm	1.0mNm	2.3mNm
Momentum storage	1.77mNms	10.82mNms	30.61mNms
peak power	< 0.65 W	< 2.3 W	< 4.5 W
Power at 2000 rpm (8V; 25C)	< 150mW	< 190mW	< 350mW
Dimensions	28 x 28 x 26.2 mm	46 x 46 x 31.5mm	57 x 57 x 31.5mm
Mass	60 g	150 g	225 g

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