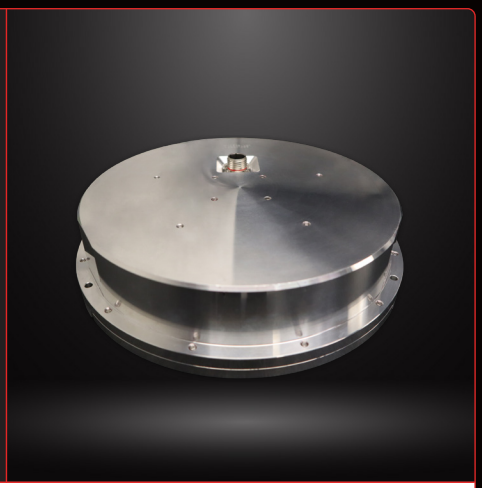
REACTION WHEEL

12.0 Nms RWA
RW4 [Rad-Hard] & RW5 [Standard]
Data Sheet



MOMENTUM	+/-12 Nms
TORQUE	+/-0.2 Nm
CONTROL MODE	Speed or torque, with built-in control CPU
MECHANICAL	257 mm diameter x 68 mm heigh; Mass: 5 kg max
SUPPLY POWER	<40W @ 12Nms steady state. Power regeneration, back to the bus platform.
SHOCK	100Hz – 34g | 1kHz – 530g | 10kHz – 530g (qual)
RELIABILITY	**Bearings**: Hybrid ceramic bearings for improved life and microvibration performance **Electronics:** LDRS tested. Hardware TMR on all flip-flops, EDAC on all RAM
BALANCE QUALITY GRADE	G 6.3
STATIC UNBALANCE	26.6 g-mm

FEATURES

- Designed for long-life and reliability
- Based on lessons learned from more than 250 wheels on-orbit heritage
- Constellation-class manufacturing capabilities for large volume deliveries
- Standard and more radiation-hardened variants
- Modular assembly designed for volume manufacturing
- Low mass and volume envelope
- CAN-FD or full/half duplex RS-485
- Fully demisable

	RW5-12.0	**RW4-12.0**
Thermal	Non-Operational: -40 to 70° C Operational: -20 to 70° C	Non-Operational: -25 to 65° C Operational: -20 to 60° C
Vibe	In-Plane: 10.38 gRMS Normal: 16.7 gRMS	In-Plane: 14.1 gRMS Normal: 20 gRMS
Supply Voltage	30 V to 50 V	24 V to 34 V
Communications	CAN-FD, bus common, galvanically isolated from primary power	Redundant RS-485, with galvanic isolation from primary
Radiation	>12 krad TID, 2.5 mm Al equivalent shielding; SEL >15 MeV-cm²/mg	>60 krad TID, >5 mm Al equivalent shielding; Heavy Ion >50 MeV-cm²/mg
PRICE	US $100,000 each	US $120,000 each

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components@rocketlabusa.com | rocketlabusa.com

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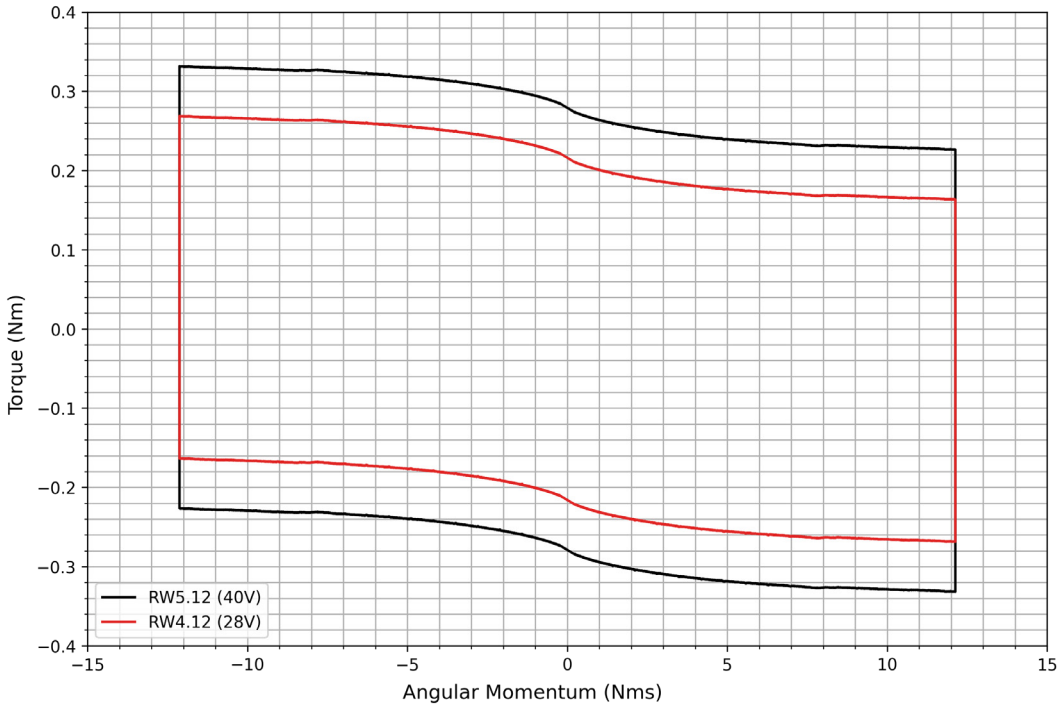
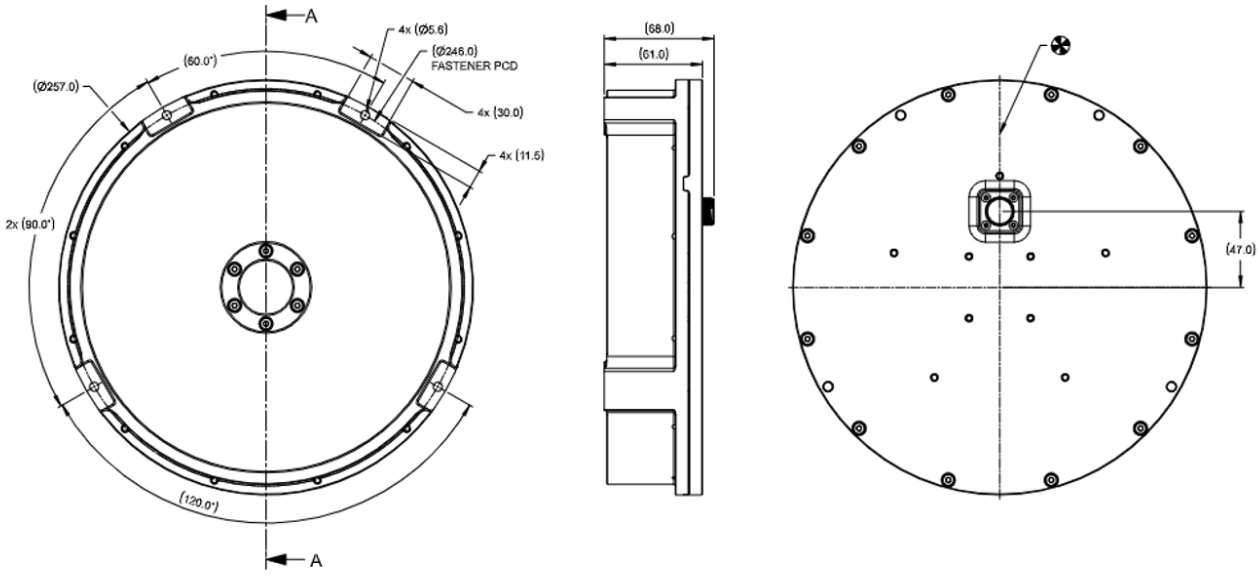

Torque (Nm)
Angular Momentum (Nms)
RW5.12 (40V)
RW4.12 (28V)
0.4
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.3
−0.4
−15
−10
−5
0
5
10
15


A
4x (Ø5.6)
(Ø246.0)
FASTENER PCD
4x (30.0)
4x (11.5)
(60.0°)
(Ø257.0)
2x (90.0°)
(120.0°)
A
(68.0)
(61.0)
(47.0)