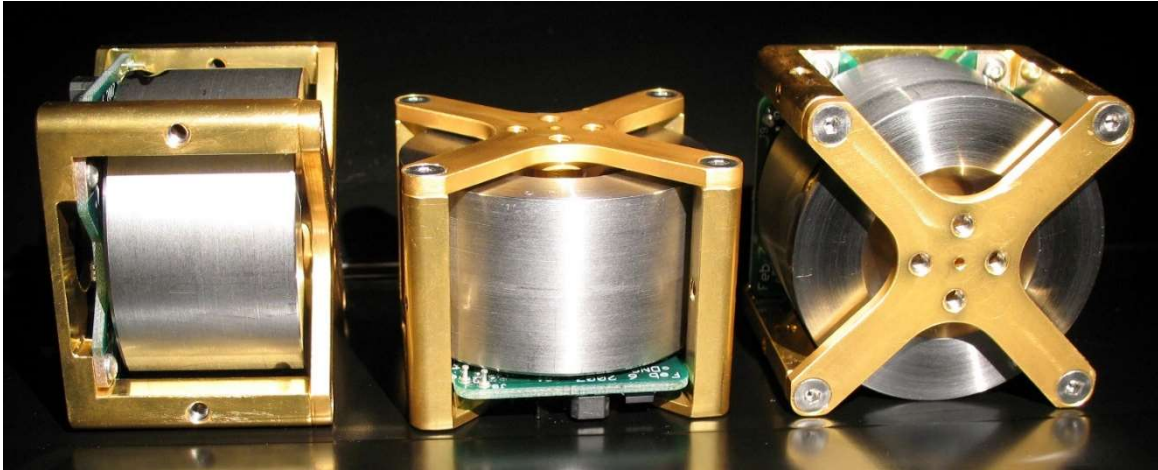
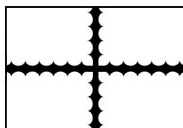


# Nanosatellite Reaction Wheels (RW-0.03)



<b>Momentum</b>	Nominal: 0.03 Nms Peak: 0.04 Nms (at 5 V supply)
<b>Torque</b>	$\pm 2$ mNm at 0.02 Nms $\pm 0.5$ mNm at 0.04 Nms (at 5 V supply)
<b>Control Mode</b>	Speed or torque with built-in control CPU
<b>Command / Telemetry</b>	UART or I <sup>2</sup> C/SMBus
<b>Mechanical</b>	Dimensions: 50 mm x 50 mm x 40 mm Mass: 185 g
<b>Supply Voltage</b>	Nominal: 3.4 V to 6.0 V    Maximum: 8 V
<b>Supply Power (in vacuum)</b>	1.8 W @ 0.02 Nms, +2 mNm 0.3 W @ 0.04 Nms, steady state 0.1 W @ 0.01 Nms, steady state
<b>Environment</b>	Thermal: $-40^{\circ}\text{C}$ to $+70^{\circ}\text{C}$ (operating) Vibration: $>12$ g <sub>RMS</sub> Radiation: $>20$ krad dose
<b>Reliability</b>	Diamond coated hybrid ball bearings Redundant motor windings Radiation lot-screened parts (optional)
<b>Heritage</b>	55 Units total on-orbit, on 20 satellites First launch April 28, 2008, design essentially unchanged Demonstrated 12 arc-sec RMS pointing on 7 kg satellite
<b>Price</b>	US\$25,000 each, +US\$2,000 for radiation lot-screened parts



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