

ATTITUDE CONTROL SYSTEMS



PRODUCT DESCRIPTION

Blue Canyon has nearly 100 XACT and FleXcore products on-orbit, supporting numerous successful customer missions. Get a reliable, high-performance design compatible with a wide range of satellite configurations, all from the most accurate stellar-based attitude solutions. A powerful processing core, coupled with low-noise reaction wheel assemblies and star trackers, enable a new generation of peak-performance, cost-efficient miniaturized spacecraft.

Made in the U.S. and applicable for DOD applications.

DESIGN

A powerful processing core coupled with our reaction wheel assemblies enable a new generation of peak-performance, cost-efficient, miniaturized spacecraft. Our standard ACS solution includes our exceptional star tracker product line along with reaction wheels, torque rods, and coarse sun sensors. Configurations allow for a standard three-wheel system with the addition of a fourth wheel for improved performance and redundancy. The addition of our torque rods and coarse sun sensors further provides a robust and effective ACS system.

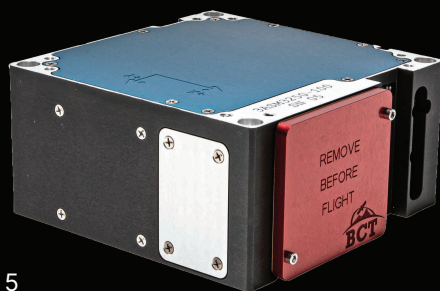
KEY ADVANTAGES

- Precise attitude knowledge and control
- Complete ACS in a micro-package
- Low jitter, micro reaction wheel design
- User-friendly software supports simulation, integration and customization

BASELINE DELIVERABLES

- User Manual
- Interface Control Documentation
- Command & Telemetry Handbook
- Functional, Performance and Environmental Test Results
- Certificate of Conformance (Flight Units Only)
- Mission Configuration ICD Addendum

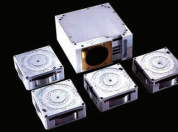
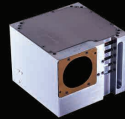
XACT SYSTEM DIMENSIONS



XACT-15
10 x 10 x 5 cm
(0.5U)



XACT-50
10 x 10 x 7.54 cm
(0.75U)



PERFORMANCE

	XACT-15	XACT-50	XACT-100	FLEXCORE
MOMENTUM STORAGE	15 mNm/s per axis	50 mNm/s per axis	Up to 4x 100 mNm/s	Up to 4x RWp500: 500 mNm/s RW1: 1 Nm/s RW4: 4 Nm/s RW8: 8 Nm/s
MAX TORQUE	0.005 Nm	0.006 Nm	0.006 Nm	RWp500: 0.025 Nm RW1: 0.06 Nm RW4: 0.25 Nm RW8: 0.25 Nm
SLEW RATE	Up to 10 deg/sec (4 kg, 3U CubeSat)	Up to 10 deg/sec (14 kg, 6U CubeSat)	Up to 10 deg/sec (25 kg, 12U CubeSat)	Application Dependent
TYPICAL POINTING ACCURACY (1-sigma)		±10 arcsec for 2 axes; ±25 arcsec for 3rd axis		±7 arcsec for 3 axes, 2 Trackers
SLEWING CROSS-BORESIGHT ERROR (@ 1 deg/sec) (1-sigma)		Gen 2: 15 arcsec		Gen 2 star tracker: 15 arcsec Gen 3 star tracker: 8 arcsec
SLEWING AROUND-BORESIGHT ERROR (@ 1 deg/sec) (1-sigma)		Gen 2: 200 arcsec		Gen 2 star tracker: 200 arcsec Gen 3 star tracker: 50 arcsec

MECHANICAL INTERFACE

DIMENSIONS	10 x 10 x 5 cm (0.5U)	10 x 10 x 7.54 cm (0.75U)	10 x 10 x 5 cm (0.5U)	< 12.1 x 11.4 x 4.9 cm
MASS	.89 kg	1.23 kg	0.52 kg + 1 kg (wheels)	Configuration Dependent

ELECTRICAL INTERFACE

SUPPLY VOLTAGE		12 V		28 V
INTERFACE		RS-422		

ENVIRONMENTAL CONDITIONS

OPERATING TEMPERATURE	-20°C to +60°C
SURVIVAL TEMPERATURE	-30°C to +70°C
RADIATION HARDNESS (Si)	> Krad
VIBRATION QUALIFICATION	GEVS Qualification Profile
DESIGN LIFE	>10 years (LEO), > 5 years (GEO)

Note: This data is for information only and subject to change. Please contact Blue Canyon Technologies for current design data.



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