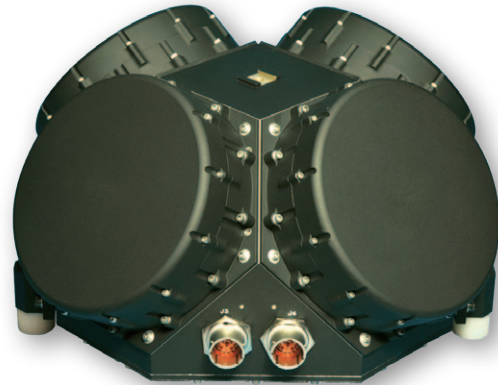
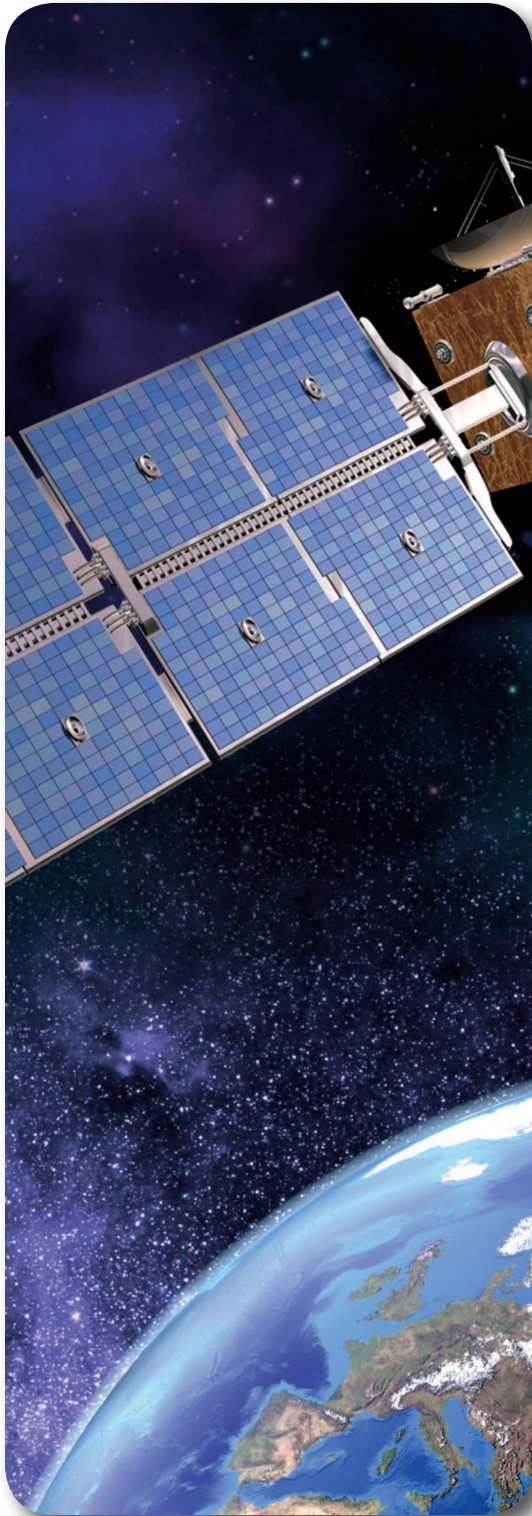


Cost-Effective, Next-Generation, Strategic-Grade Fiber Optic Gyros



CIRUS — Compact IRU for Space

L-3 Space & Navigation has been the premier supplier of mission-critical precision pointing and navigation systems since the early days of the U.S. manned space program. Leveraging over fifty years of experience and proven performance in systems deployed in space, we have designed the CIRUS Compact Inertial Reference Unit as a next-generation product of our heritage design. CIRUS achieves strategic-grade performance combined with small size and low cost.

CIRUS features four Fiber Optic Gyro (FOG) sensors in a fully redundant configuration for spacecraft attitude control, supporting DoD, NASA and commercial missions.

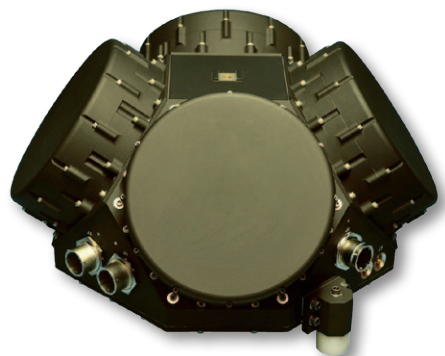
KEY FEATURES:

- Four rate sensors provide redundancy for improved mission success
- Each sensor individually power-selectable as a user option providing ultimate flexibility
- User-selectable thermal set points permit optimal operation over changing mission environments
- User-selectable command structure supports needs for enhanced visibility into system status and environment
- Dual interface (MIL-STD-1553B and RS-422) to permit flexible I/O rates
- Conductive or radiative vehicle-mount options
- Telemetry format can be customized for specific user interface
- High-reliability Class S and Class K redundant electronics
- Deliveries less than 15 months ARO

CIRUS Specifications

PERFORMANCE

Bias Stability (1σ)	0.0005 deg/hr. (0.0003 typical)
Angle Random Walk	0.00025 deg/rt-hr. (0.00022 typical)
Angle White Noise	0.000025 arc-sec./rt-Hz (0.000006 typical)
Angular Rate Range	> 30 deg/sec.
SF Stability	± 2 ppm
SF Linearity (max.)	35 ppm (20 typical)
IA Alignment	0.4 arc-sec.



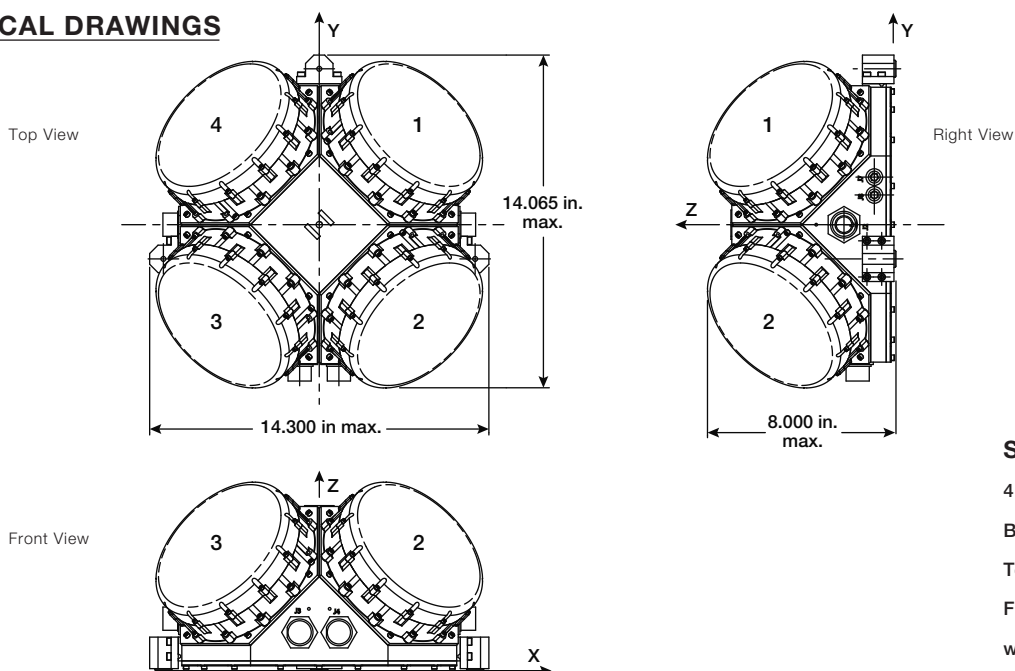
PHYSICAL CHARACTERISTICS

Weight	29.7 lbs. (13.5 kg)
Dimensions	Fits within ϕ 15.6 in. x 8.0 in. cylinder (ϕ 396.2mm x 203.2mm)
Power	28- to 70-volt input, steady state, 3 gyros operational ≤ 25 W
Reliability (30 °C)	$P_s > 0.98$ for 15-year life, continuous operation
Telemetry	RS-422, MIL-STD-1553; FPGA-based interface can be modified without hardware change to meet customer-specific requirements

ENVIRONMENT

Operational Temperature	-20°C to 60°C, with > 20°C temperature variations
Random Vibration	14.7 GRMS lateral, 20.8 GRMS normal
Pyrotechnic Shock	14 g's @ 100 Hz, 630 g's @ 1,250 Hz, 2,100 g's @ 2,500 Hz, 2,700 g's @ 10,000 Hz
Radiation	> 100 Krad total dose SEU-tolerant Latchup immune

TECHNICAL DRAWINGS



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