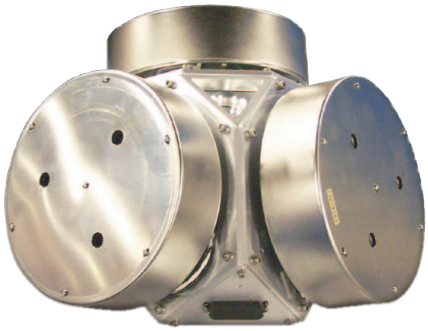
CIRUS-A

High-Performance FOG Inertial Measurement Unit (IMU)

emcore®

DATASHEET | JANUARY 2024

A New Era in Navigation



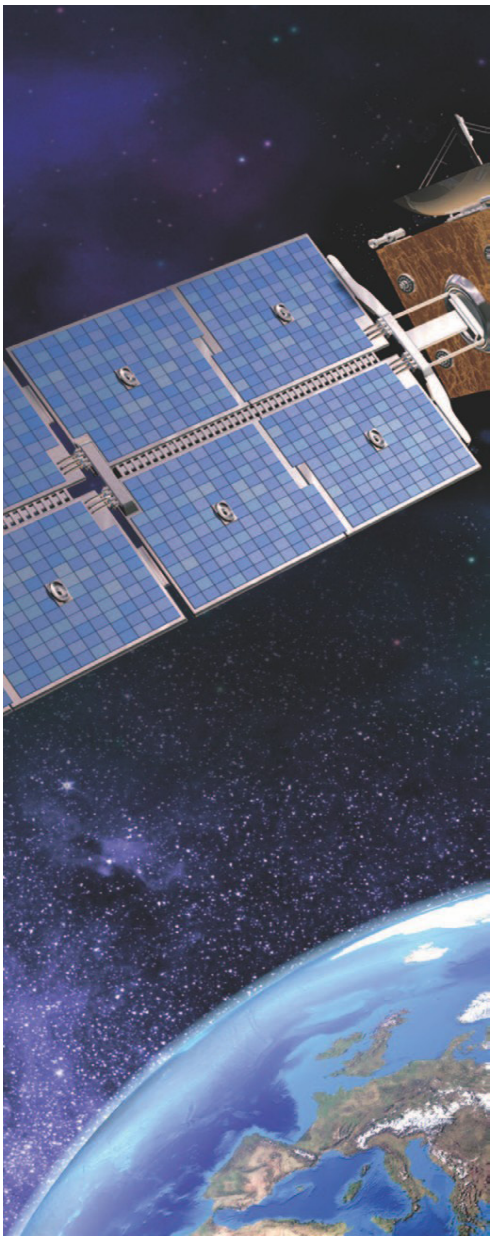
Applications

- Platform Stabilization
- Pointing Applications
- Missile Guidance Systems
- Vehicle/Platform Navigation
- Northfinder Applications

Strategic-Grade Fiber Optic Gyro (FOG) IMU

EMCORE's CIRUS-A is a high-performance Fiber Optic Gyro (FOG) Inertial Measurement Unit (IMU) that delivers state-of-the-art, strategic-grade performance for inertial navigation, guidance, pointing and stabilization for missile, space, sensor, ground, air, and marine applications. It leverages a long legacy of over 60 years of design, development, and production of inertial components and navigation systems for Space and Defense applications.

The CIRUS-A high-performance FOG IMU design simplifies the optical circuit design, reducing the number of components while providing a significant performance improvement over standard military environments. We have produced and delivered many FOG-based products with strategic-grade performance for a variety of applications.



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Specifications

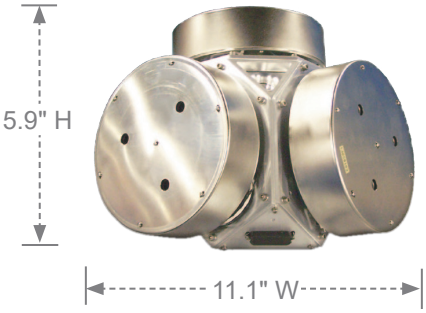
Performance	CIRUS-A
Gyro Performance	
Bias Stability (1σ)	0.0001 °/hr.
Angle Random Walk	0.0005 °/√hr.
Scale Factor Stability	± 2 ppm
Scale Factor Linearity	10 ppm
Angular Rate Range	> 45 °/sec
Acceleration Range	± 8 °/sec^2
Accelerometer Performance	
Range	60 g
Bias	160 µg
Scale Factor Stability	300 ppm
System Performance	
Bandwidth	> 500 Hz
Operating Life	10 yrs. (1,400 hr. operational/yr.)
Characteristics	
Interface	Custom Serial Interface
Physical	
Weight	18 lb., 8.165 kg
Dimensions	11.9 in. L x 11.1 in. W x 5.9 in. H 30.23 cm L x 28.2 cm W x 15 cm H
Power	10 W @ 28 VDC
Environmental	
Temperature Range	
Operational	-40 °C to 40 °C
Non-Operational	-40 °C to 40 °C
Random Vibration	0.1 grm
Humidity	95% @ 40 °C for 6 hr.

Notes

PUBLIC RELEASE. Cleared by DoD Office of Prepublication and Security Review for public release.

The CIRUS-A IMU's performance enhances all EO/IR platforms ability to identify and defeat threats from the air and on the ground.

Dimensions/Scale



For More Information

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AS 9100 REGISTERED

MADE IN USA

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