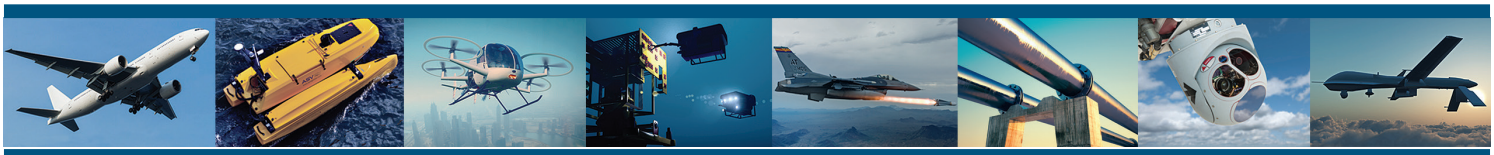
# CIRUS-A

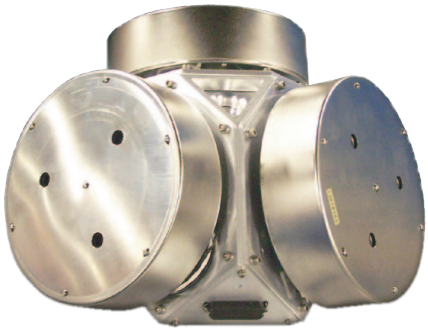
## High-Performance FOG Inertial Measurement Unit (IMU)

emcore®



DATASHEET | JULY 2022

*Transforming Navigation*



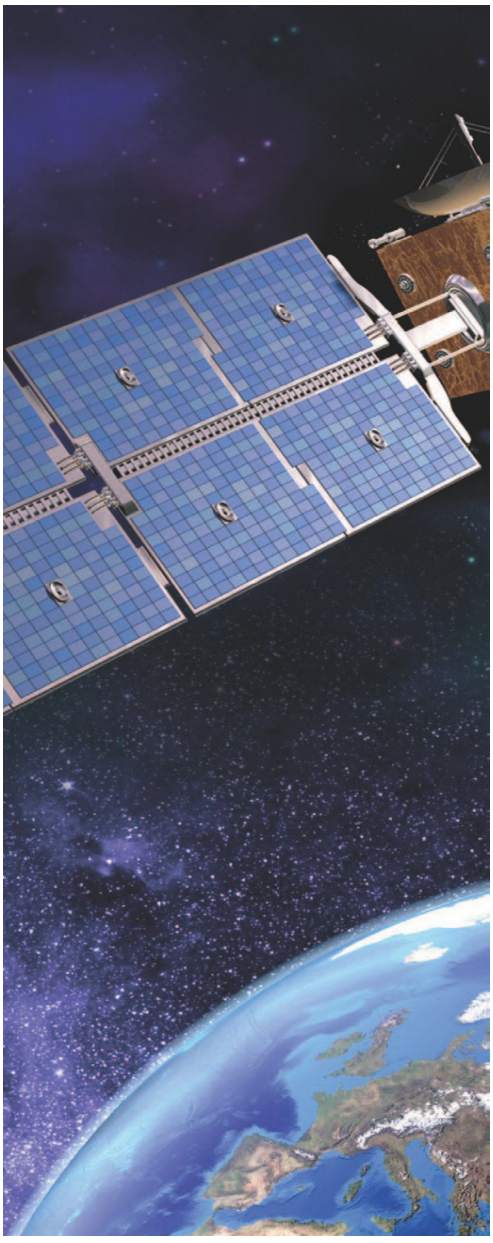
### Applications

- 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.



P +1 866.234.4976 E navigation-sales@emcore.com W emcore.com/nav

# CIRUS-A

High-Performance FOG Inertial Measurement Unit (IMU)

*Transforming Navigation*

## Specifications

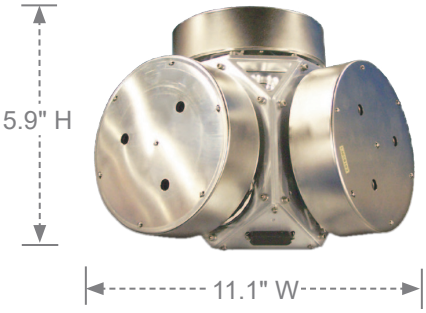
| Performance | CIRUS-A |
|---|---|
| **Gyro Performance** | |
| Bias Stability (1σ) | 0.0001 °/hr. |
| Angle Random Walk | 0.0005 °/√hr. |
| Scale Factor Stability | ± 2 ppm |
| Scale Factor Linearity | 10 ppm |
| Angular Rate Range | > 45 °/sec |
| Acceleration Range | ± 8 °/sec$^2$ |
| **Accelerometer 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<br>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

**+1 866.234.4976 | navigation-sales@emcore.com | emcore.com/nav**

### EMCORE Corporation

2015 Chestnut Street
Alhambra, CA 91803 USA
P +1 626.293.3700
F +1 626.293.3429


emcore®

ISO9001 CERTIFIED

AS 9100 REGISTERED

SYSTRON DONNER QUARTZ MEMS



MADE IN USA


Revision 07.01.2022