



## IMU25™ MEMS INERTIAL MEASUREMENT UNIT (IMU)

# COMPACT, LIGHTWEIGHT FOG PERFORMANCE

### The latest tactical grade, modular, non-licensable micro electro-mechanical system (MEMS) inertial measurement unit (IMU)

The Collins IMU25™ MEMS IMU is a best-in-class inertial measurement unit providing six degrees of freedom and precise, three-axis outputs of angular rate, acceleration and temperature. The modular architecture of the IMU25 design readily enables the incorporation

of specific customer requirements for a tailored approach to each application.

IMU25 has been designed specifically to meet the demand from high-end commercial and industrial market applications for a high-performance non-licensable IMU.

Collins Aerospace is a world leader in inertial technology, leveraging our pedigree to provide integrated and calibrated solutions using our in-house, state-of-the-art test facility.

We have a long and respected heritage in the design and development of inertial sensors and today we specialize in MEMS products.

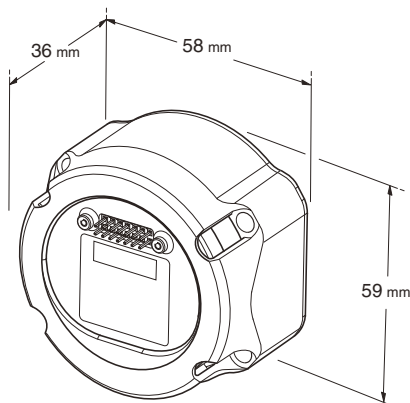


### KEY FEATURES

- FOG performance 6-DOF MEMS inertial measurement unit
- Bias instability and random walk angular –  $\leq 0.6^\circ/\text{hr}$ ,  $0.05^\circ/\sqrt{\text{hr}}$  linear  
–  $< 0.5\text{mg}$ ,  $< 0.6\text{m/s}/\sqrt{\text{hr}}$
- Non-ITAR
- Non-licensable
- Compact and lightweight – 58.0 x 59.0 x 36.0 H (mm), 200 g
- Internal power conditioning to accept 4.75 V to 5.25 V input strike voltage
- RS422 interfaces
- $-40^\circ\text{C}$  to  $75^\circ\text{C}$  operating temperature range
- RoHS compliant
- In-house manufacture from MEMS fabrication to IMU calibration



**IMU25**



**KEY CHARACTERISTICS**

Parameter	Specification
<b>Gyroscope properties</b>	
Dynamic range	<±498°/s
Scale factor over temp (±498°/s) (1σ)	±330 ppm
SF non-linearity (±498°/s) (1σ)	±250 ppm
Bias instability (1σ)	≤0.6°/hr
Random walk	0.05°/√hr
Bias over temp (1σ)	10°/hr
Noise (rms to 85Hz)	±0.15°/sec
<b>Accelerometer properties</b>	
Dynamic range	±30 g
Scale factor over temp (±1g) (1σ)	±1400 ppm
SF non-linearity (±10g) (1σ)	±2533.3 ppm
Bias instability (1σ)	<0.50 mg
Random walk	<0.6m/s/√hr
Bias over temp (1σ)	±3.3 mg
Noise (rms to 85Hz)	<6.0 mg
<b>Cross axis sensitivity</b>	
Over temperature	±0.24%
<b>IMU properties</b>	
Operating temperature	-40 to 75° C
Start-up-time (full performance)	<400 ms
Power	nom 3.75 W
Supply voltage	4.75 V - 5.25 V
Mass	200 g
<b>Interfaces</b>	
Multiple interfaces available. Contact factory for further information.	

**ALTERNATIVE PRODUCTS**



**IMU15™**

**PERFORMANCE**

**Compact six degrees of freedom IMU**

- Small form factor
- Under 1 cubic inch volume



**IMU20™**

**PERFORMANCE**

**Medium performance**

- Medium performance gyro
- Meeting demand from industrial and commercial markets

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