

KN-4070

**MONOLITHIC RING LASER GYRO (MRLG)
INERTIAL NAVIGATION SYSTEM (INS)**

Kearfott's state-of-the-art KN-4070 system offers a low-cost navigation solution to a wide variety of aircraft, Unmanned Air Vehicle (UAV), missile and tactical weapon applications. The KN-4070, which features Kearfott's Monolithic Ring Laser Gyro (MRLG), is designed to operate in conjunction with an embedded P(Y) or C/A code GPS receiver for enhanced navigation performance and faster satellite acquisition. The KN-4070 provides navigation and autopilot functions in digital formats including MIL-STD-1553B, RS-422 and RS-232. The processing heart of the KN-4070 is a 32 bit high-speed microprocessor.

The KN-4070 shares much of its production base with other Kearfott high volume tactical programs, thus assuring the price benefits of high volume production. Competitive pricing, combined with the support and experience of Kearfott's 40 years of leadership in the guidance industry, will assure the user of a reliable INS/GPS for airborne applications.



SYSTEM SPECIFICATIONS

SIZE	9.1" (L) x 5.4" (W) x 6.0" (H)
WEIGHT	<5 kg
POWER	28 V dc (35 W) per MIL-STD-704-A
OUTPUTS	MIL-STD-1553B, RS-422, RS-232
COOLING	Free Convection
ENVIRONMENTAL REQUIREMENTS	
Altitude	-1,500 ft to +50,000 ft
Temperature	-45°C to +71°C
Vibration (Random)	3.9 g rms
Shock	20 g, 11 ms Saw Tooth, 24 g, 40 ms Vertical Axis
GPS RECEIVER	L1/L2 Operating Frequencies P (Y), C/A Code; Antispoof/Enhanced Antijam
MAINTENANCE	No recalibration required

PERFORMANCE SUMMARY		
GPS/INS PERFORMANCE		
	Continuous GPS Aiding	With GPS Outage
	DGPS	
Navigation Position; CEP	10 (m)	3.5 (nmi)/hr
Heading Accuracy	2 mr rms	1 mr/hr
Pitch/Roll Accuracy (mrad)	0.3 mr rms	1.5 mr/hr
Velocity (m/s)		1 m/s/hr
IMU PERFORMANCE*		
	MRLG	Accelerometer
Random Walk	0.07 ($^{\circ}/\sqrt{h}$)	0.05 (m/sec/ \sqrt{h})
Bias Repeatability	0.65 ($^{\circ}/h$)	0.4 (mg)
Scale Factor Accuracy	25 (ppm)	250 (ppm)
Axis Alignment	0.097 (mrad)	0.097 (mrad)
Bias Stability	0.166 ($^{\circ}/h$, 300 sec)	53 (μg , 240 sec)

* Can be offered as stand-alone configuration

***Inertial Sensor
Assembly***



OPERATING RANGES	
Acceleration	35 g all axes
Attitude (All Axes)	Unlimited
Roll, Pitch, Azimuth Rate	1,000 $^{\circ}/s$
Roll, Pitch, Azimuth Accel	10,000 $^{\circ}/s^2$

Please contact Kearfott Marketing at (973) 785-6555 or FAX at (973) 785-5905 or E-Mail: marketing@kearfott.com for further information, including other air products: Sensor Packages, Gyroscopes, Inertial Measurement Units, Air Data Computers, Displays, CDU's, Flight Control Systems, Display Processors and Mission Computers.

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