



## **KN-4080 LAND/SEA NAVIGATION INS/GPS Family**

The KN-4080 family of Land / Sea Navigation Systems are qualified for land and sea operation inertial navigators that are based on Kearfott's Monolithic Ring Laser Gyros (MRLG)

The Land / Sea INS/GPS modular architecture allows for various onboard aiding devices such as External GPS (PLGR, DAGR or NMEA Receivers), Doppler Velocity Log, Speed Log, Screwspeed and position inputs.

Typical applications include the navigation of amphibious vehicles, patrol boats and Surface Unmanned Vehicles (SUVs). Also the pointing and stabilization of Radar and Comms antennas and Weapon systems.

The navigation computations allow for GPS aided moving alignment and for continuous improved heading accuracy.

### **KN-4080 Land / Sea Navigation System Main Features and Capabilities:**

- Integrated GPS C/A or SAASM P/(Y) code options
- C/A Code DGPS Ready (requires DGPS receiver)
- Aiding Inputs:
  - Odometer (Qty 2)
  - External GPS Option (PLGR, DAGR or NMEA)
  - Doppler Velocity Log (DVL)
  - Speed Log (EM LOG)
  - Position Inputs
- Navigation Outputs:
  - Position (Hybrid INS/GPS)
  - Altitude (Hybrid INS/GPS)
  - Ground Speed
  - True Heading
  - Grid Options (MGRS, UTM, Geodetic)
- Vehicle Stabilization Control Outputs:
  - Angular rates ( $\Delta\theta$ )
  - Linear Accelerations ( $\Delta v$ )
  - Roll and Pitch
- Communication Interfaces:
  - Multiple RS-422 Channels
  - Multiple RS-232 Channels
  - MIL-STD 1553 (Option)

# KN-4080 LAND/SEA System Characteristics

ALIGNMENT / NAVIGATION OPERATIONAL MODES	KN-4081 (T16 MRLG)	KN-4082 (T18 MRLG)	KN-4083 (T24 MRLG)
<b>Land Alignment (15 min Stationary) Odometer Aiding</b>			
Position (Horizontal)	<1.0% distance traveled	<0.35% distance traveled	<0.25% distance traveled
Altitude	<0.125% distance traveled	<0.1% distance traveled	<0.067% distance traveled
Heading (15 min )	10 mils rms	1.7 mils rms	0.67 mils rms
Roll / Pitch	0.5 mils rms	0.5 mils rms	0.5 mils rms
<b>Land Alignment (Moving) GPS Aiding</b>			
Position (Horizontal)	10 meters CEP	10 meters CEP	10 meters CEP
Altitude	10 meters PE	10 meters PE	10 meters PE
Heading (15 min )	5 mils rms	1.5 mils rms	1 mils rms
Roll / Pitch	0.5 mils rms	0.5 mils rms	0.5 mils rms
<b>At Sea Alignment (Moving) Vehicle Speed Aiding</b>			
Position (Horizontal)	0.5 nmi/h CEPR	0.2 nmi/h CEPR	0.1 nmi/h CEPR
Altitude	NA	NA	NA
Heading (15 min )	5.0 mils	1.5 mils	1.0 mils
Roll / Pitch	0.5 mils rms	0.5 mils rms	0.5 mils rms

## OPERATING RANGES

Acceleration	30 g/s all axes
Attitude (all axes)	Unlimited
Roll, Pitch and Azimuth Rate	>300°/second
Roll, Pitch and Azimuth Accelerations	>10,000°/second <sup>2</sup>
Outputs, Digital	RS-422, RS-232
Cooling	Free convection
Environmental Requirements	Per MIL-D-70789 (AR)
Altitude	-1,000 to +11,336 meters
Temperature	-40°C to +55°C

## PHYSICAL CHARACTERISTICS

Dimensions	7 x 7 x 11 inches (17.8 x 17.8 x 28 cm)
Weight: (KN-4081)	15.6 lbs. (7.1 Kg)
Weight: (KN-4082, KN-4083)	18.7 lbs (8.5 Kg)
Power, running	30 Watts (from 28 V dc)
Maintenance	2 level BIT No special equipment required
Calibration Interval	None

Note : The KN-4080 family has been granted the NAVSTAR Global Positioning System Joint Program Office Security Approval

*This datasheet is for reference only, Specifications are subject to change*

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