

## LCI-100C

### INERTIAL MEASUREMENT UNIT



Northrop Grumman LITEF has 60 years of experience in Inertial Systems Technology and was the first company in the world to introduce Fiber Optic Gyroscopes (FOG) in commercial aviation systems in the 1990s.

The LCI-100C consists of three Fiber Optic Gyros (FOG), one B-290 accelerometer triad and a processor module. This sensor assembly has been matured in navigation systems.

With the LCI-100C LITEF provides an Inertial Measurement Unit which is not subject to German export restrictions (status quo).

#### FEATURES

- Data output fully compensated for temperature and misalignment
- HDLC digital interface, asynchronous UART
- Extensive Built-In-Test features
- Low life cycle costs

#### TYPICAL APPLICATIONS

- Platform and antenna stabilization
- Navigation systems
- Photogrammetry
- Geodesy
- Aerial survey

## TECHNICAL DATA LCI-100C

### INERTIAL MEASUREMENT UNIT

RATE SENSOR PARAMETERS	
Measurement Range	± 495 °/s
Bias	
- Repeatability (1 σ) (Turn-on to Turn-on)	≤ 0.1 °/h
- Instability (Allan Variance, const. Temperature)	≤ 0.05 °/h
- Stability over Temperature Range (1 σ)	≤ 0.15 °/h
- Stability (1 σ) (1 month) <sup>1)</sup>	≥ 0.5 °/h
Scale Factor	
- Repeatability (1 σ) (Turn-on to Turn-on)	≤ 100 ppm
- Error over Temperature Range (1 σ)	≤ 300 ppm
- Non-linearity (1 σ)	≤ 100 ppm
Angle Random Walk (max) (Allan Variance)	> 0.0035 °/√h ≤ 0.012 °/√h
ACCELEROMETER PARAMETERS	
Measurement Range	± 10 g
Bias	
- Repeatability (1 σ) <sup>1)</sup>	≥ 1250 µg
- Instability (Allan Variance, const. Temperature)	≤ 100 µg
- Stability over Temperature Range (1 σ)	≤ 300 µg
- Stability (1 σ) (1 year) <sup>1)</sup>	≥ 130 µg
Scale Factor	
- Repeatability (1 σ) (Turn-on to Turn-on)	≤ 100 ppm
- Error over Temperature Range (1 σ)	≤ 300 ppm
- Non-linearity (1 σ)	≤ 100 ppm
- Stability (1 σ) (1 year) <sup>1)</sup>	≥ 130 ppm
Velocity Random Walk (max) (Allan Variance)	≤ 100 µg/√h
SYSTEM PARAMETERS	
Mass	≤ 2.5 kg / ≤ 5.5 lb
Dimensions (excluding mounting flanges and connector)	≤ 100 x 130 x 160 mm <sup>3</sup> ≤ 3.9 x 5.1 x 6.3 inch <sup>3</sup>
Volume	≤ 2.6 liters / ≤ 159 inch <sup>3</sup>
Supply Voltage	18.0 VDC ≤ 28 VDC nominal ≤ 32.0 VDC
Power Consumption	max 18 Watt, ≤ 10 W typical
Interface	serial interface with RS-422 levels, either synchronous with HDLC protocol + SYNC-Pulse or asynchronous (UART) + SYNC-Pulse
Data Update Rate	50 Hz ... 1024 Hz
Built-In-Test	Power Up BIT, Continuous BIT
System Bandwidth (3 dB)	≥ 400 Hz
Input Axis Misalignment (max)	≤ 0.5 mrad
Temperature range	
- operating	- 40 °C ... + 71 °C
- specified Performance	- 20 °C ... + 71 °C
Random Vibration (DO-160F Cat. SC)	
- operating	4.1 grms, 10 Hz ... 2000 Hz
- specified Performance	2.0 grms, 10 Hz ... 2000 Hz
Shock	6.0 g; 20 ms halfsine (operational)

<sup>1)</sup> adapted to export regulations

FOR MORE INFORMATION,  
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