



**SPACE-QUALIFIED KEARFOTT INERTIAL REFERENCE UNIT (SKIRU)**

*The premier three-axis inertial reference for applications requiring high performance for attitude determination, or very low noise for jitter-free precision Line Of Sight (LOS) pointing. Several models are available with demonstrated space life exceeding 15 years.*



**SKIRU IV**

- Baseline
- High Performance
- Dual Range/Dual Output



**SKIRU IV-H**

- Radiation Hard
  - Total Dose
  - Nuclear Threat Event
  - SEU Tolerant



**SKIRU V**

- Very High Performance
- Temperature Controlled
- Performance Achieved Over 25°F Temperature Range



**SKIRU D-II**

- Redundant - Three-Axis IRU
- No-Single-Point of Failure
- NASA Standard

**APPLICATIONS**

- **JPL:**
  - GALILEO (NASA)
  - VOYAGER I & II (NASA)
- **LOCKHEED MARTIN:**
  - DSCS III
  - GRAVITY PROBE B (NASA)
  - MACS 4 & 5
  - MAGELLAN (NASA)
  - MILSTAR
  - SPACE SEXTANT
  - SPITZER [SIRTF] (NASA)
  - TERRA [EOS-AM] (NASA)
- **NASA:**
  - TRMM
  - XTE
- **TRW / NORTHROP GRUMMAN:**
  - CHANDRA [AXAF] (NASA)
  - TDRS7
  - ZODIAQUE
- **SEVERAL CLASSIFIED PROGRAMS**

- *Applications in Space Probes and Satellites*
- *Long Life Assured; Greater than 15 Years; 100% Duty Cycle*
- *Available with Class 'S' or Class 'B'+ Electronics*

## PERFORMANCE

KEARFOTT MODEL	SKIRU IV	SKIRU IV-H	SKIRU V	SKIRU D-II
GYRO TYPE	GYROFLEX MOD IIE/S (4-Pole Motor)	GYROFLEX MOD IIE/S (4-Pole Motor)	GYROFLEX MOD IIE/S (6-Pole Motor)	GYROFLEX MOD II E/S (6-Pole Motor)
Number of Gyros	2	2	2	3
Size (in)	7 x 9 x 3.75	7 x 9 x 5.6	7 x 9 x 5.9	7 x 14 x 7
Weight (lb)	9.0	12.6	11.5	28.0
Input Voltage (V dc)	22 to 34	22 to 34	22 to 34	21 to 35
Power, Max. Quiescent (W)	25 (typical 17)	25 (typical 22.5)	26 (typical 17)	26
Max, Heaters (W)	None	None	42@ -5°C	None
Low Range (°/h) - Selectable	480 (analog and digital) <sup>(2)</sup>	720 (analog and digital) <sup>(2)</sup>	1600 (analog and digital) <sup>(2)</sup>	400 (analog and digital) <sup>(2)</sup>
High Range, Full-Speed Mode (°/s) (Max)	8.0 (digital) and 1°/s for 5 V analog output	8.0 (analog and digital)	8.0 (analog and digital)	8.0 (analog and digital)
Reduced-Speed Mode (°/s)	<sup>(1)</sup>	16.0 (analog and digital)	<sup>(1)</sup>	-
Random Drift Rate (°/h)	0.009, 3 sigma (8 h)	0.009, 3 sigma (8 h)	0.002, 3 sigma (8 h), over 15°C	0.009, 3 sigma (8 h)
Angle Random Walk (°/√h)	0.0001, 3 sigma <sup>(4)</sup>	0.0001, 3 sigma <sup>(4)</sup>	0.0001, 3 sigma	0.0001, 3 sigma <sup>(4)</sup>
Rate Random Walk (°/h <sup>3/2</sup> )	0.001, 3 sigma <sup>(4)</sup>	0.001, 3 sigma <sup>(4)</sup>	0.001, 3 sigma	0.001, 3 sigma <sup>(4)</sup>
Temperature Range				
- Operating (°C)	-23 to +60	-23 to +60	-23 to +55	-23 to +60
- Functional (°C)	-34 to +71	-34 to +71	-34 to +71	-34 to +71
- Temperature Control	No	No	Yes	No
Input Axis Alignment Referenced to Mounting Surface	Zero Offset	Zero or 45° Offset	Zero Offset	Zero Offset
Total Ionization Dose (K rads) w/o Shielding	50	>200 <sup>(3)</sup>	100	50
Operating Life (yr) - (15 Year Available)	10	10	10	10

- (1) Can be added if specified  
(2) Typical value – program specific  
(3) Nuclear threat event  
(4) At constant temperature

***Please contact Kearfott Space Marketing at (973) 785-6555 or by FAX at (973) 785-5905 for further information, including other products: Inertial Measurement Units, Air Data Computers, Tightly Coupled GPS Inertial Navigation Systems, Displays and Mission Computers.***

***VISIT OUR WEBSITE: [www.kearfott.com](http://www.kearfott.com)***