

G150Z Gyro Specification

PARAMETER	G150Z Gyro		
	G150Z-100-100	G150Z-175-100	G150Z-300-100
Power Requirements			
Input Voltage	+5V DC ($\pm 5\%$)		
Input Current <i>Typical (Max)</i>	20mA (25mA)		
Performance			
Standard Full Scale Ranges	$\pm 100^\circ/\text{sec}$	$\pm 175^\circ/\text{sec}$	$\pm 300^\circ/\text{sec}$
Output Noise 1σ ($^\circ/\sqrt{\text{Hour}}$)	0.04 $^\circ/\sqrt{\text{Hour}}$	0.11 $^\circ/\sqrt{\text{Hour}}$	0.13 $^\circ/\sqrt{\text{Hour}}$
Output Noise 1σ ($^\circ/\text{sec}/\sqrt{\text{Hz}}$)	0.001 $^\circ/\text{sec}/\sqrt{\text{Hz}}$	0.0025 $^\circ/\text{sec}/\sqrt{\text{Hz}}$	0.003 $^\circ/\text{sec}/\sqrt{\text{Hz}}$
Bias Factory Set 2σ	$\leq 0.05^\circ/\text{sec}$	$\leq 0.1^\circ/\text{sec}$	$\leq 0.15^\circ/\text{sec}$
Bias Variation Over Temperature 1σ	$\leq 0.1^\circ/\text{sec}$	$\leq 0.2^\circ/\text{sec}$	$\leq 0.3^\circ/\text{sec}$
Short Term Bias Stability 1σ (150 sec at constant temp.)	1.2 $^\circ/\text{hr}$	1.8 $^\circ/\text{hr}$	2 $^\circ/\text{hr}$
Long Term Bias Stability (1 Year)	$\leq 0.05^\circ/\text{sec}$	$\leq 0.1^\circ/\text{sec}$	$\leq 0.15^\circ/\text{sec}$
Full Scale Output (Nominal)	0V ± 4.75 V DC		
Scale Factor Nominal ($\pm 5\%$)	45mV/ $^\circ/\text{sec}$	27mV/ $^\circ/\text{sec}$	12mV/ $^\circ/\text{sec}$
Scale Factor Over Temperature	$\pm 0.5\%$		
Temperature Sensor	2.5V ± 0.05 V DC Nominal at 20 $^\circ\text{C}$		
Temperature Sensor Scale Factor	8.4mV/ $^\circ\text{C}$ Nominal		
G-Sensitivity 2σ	$\leq 0.01^\circ/\text{sec}/\text{g}$	$\leq 0.015^\circ/\text{sec}/\text{g}$	$\leq 0.02^\circ/\text{sec}/\text{g}$
Axis Alignment 1σ	$< 4\text{mrad}$		
Start-Up Time	< 0.25 sec		
Bandwidth (-3 dB)	200 Hz		
Non-Linearity (of Full Range)	$\leq 0.25\%$	$\leq 1\%$	$\leq 3\%$
Threshold/Resolution	$\leq 0.0005^\circ/\text{sec}$	$\leq 0.0009^\circ/\text{sec}$	$\leq 0.001^\circ/\text{sec}$
Environments			
Operating Temperature	-40 $^\circ\text{C}$ to +85 $^\circ\text{C}$		
Storage Temperature	-55 $^\circ\text{C}$ to +100 $^\circ\text{C}$		
Vibration Operating	6 gRMS (20Hz to 2KHz)		
Shock	500g, any axis 2msec 1/2 sine		
Weight	< 28 grams		



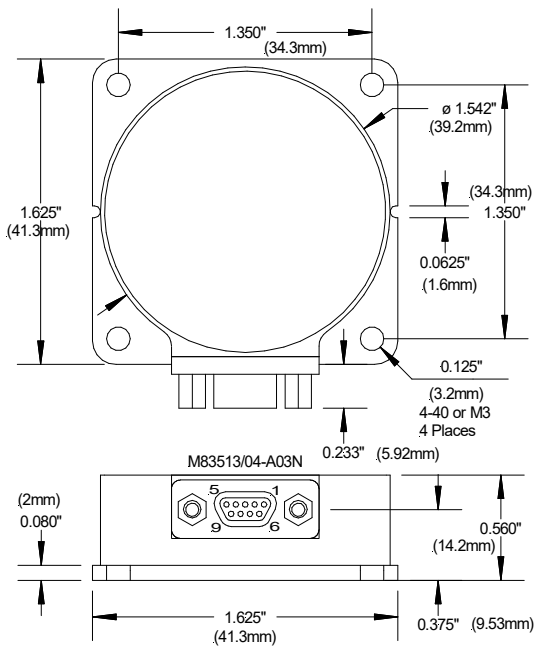
Gladiator Technologies
 Division of LKD Aerospace
 High Performance Inertial MEMS



Rev. 15Mar04
 SN: 172

G150Z Gyro

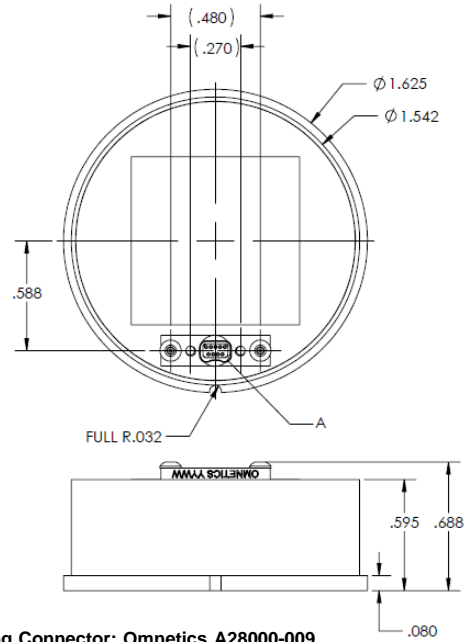
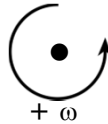
G150Z GYRO Standard Part Numbers			
Part Number	Connector		Connector
G150Z-100-100	Side	G150Z-100-110	Top
G150Z-175-100	Side	G150Z-175-110	Top
G150Z-300-100	Side	G150Z-300-110	Top



Mating Connector: M83513/01-AN

BIT Conditions	Self Test Input	BIT Output
Normal	0 or open	1
Fail (during operation)	0 or open	0
Fail (during Self Test)	1	1
Pass	1	0

Axes (Top View)
Right Hand Rule



Mating Connector: Omnetics A28000-009

Pin No.	Pin Assignment -100 & -110
1	Gyro Rate Output Voltage 0V <i>Nominal</i>
2	Gyro Temperature +2.5V @ 20°C
3	Power Ground
4	Gyro +2.5V Reference Voltage
5	+4.75V to +5.25V DC Input
6	Signal Ground
7	Self Test Input
8	BIT Output (5V logic level = pass)
9	Case

Rate output is Pin 1 with respect to Pin 6.
Temperature is Pin 2 with respect to Pin 6. BIT OK is logic "1", fail = "0". Loads: >5k Ohms and <100pf on Gyro, <500pf on Vref and Temp.



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Bias SF Over Temp

Temp C°	Bias %/s	SF mV / °/s	Temp V
58.4	-0.01	43.64	2.7759
23.6	-0.02	43.78	2.4815
-33.4	0.06	43.97	2.0277

Mis-Alignment mrad

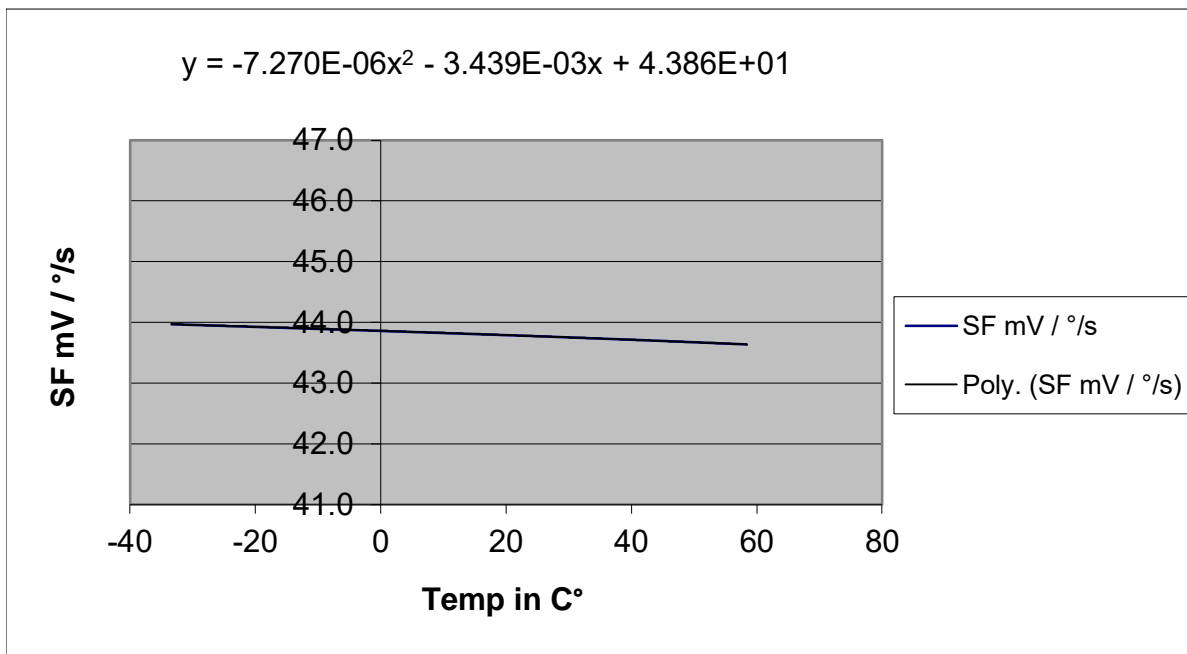
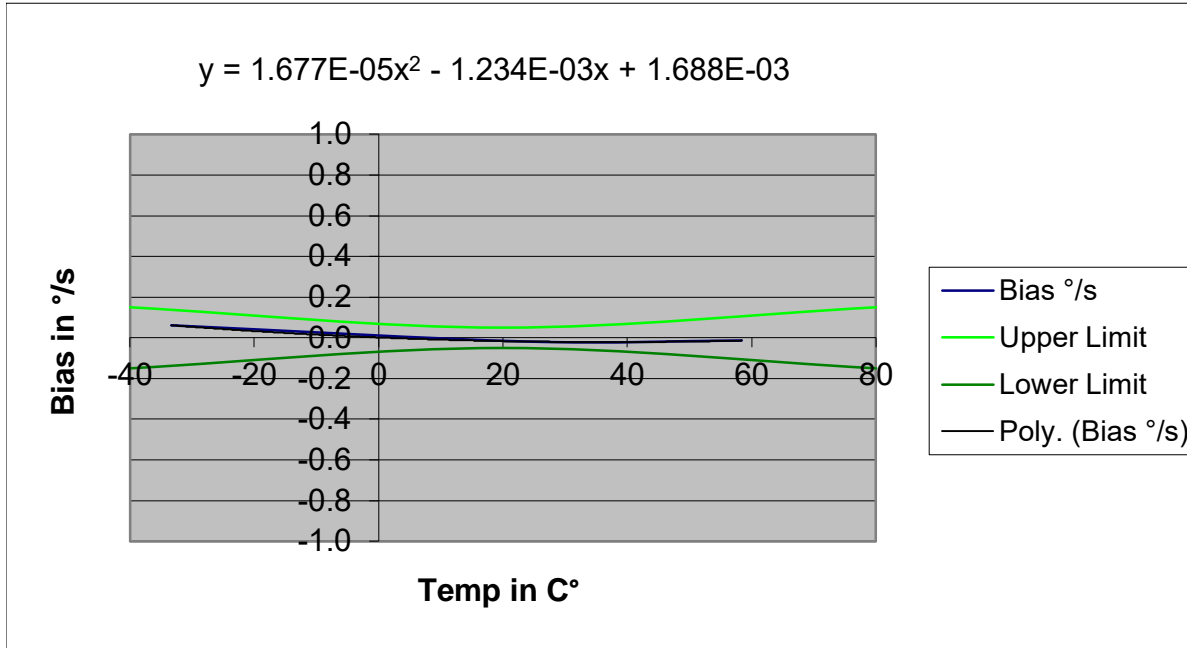
2.1	Connector
-0.3	Cross

Bias TC = -0.0008 %/s/ C°	SF TC = -83 ppm/C°	Temp SF= 8.155 mV/°C
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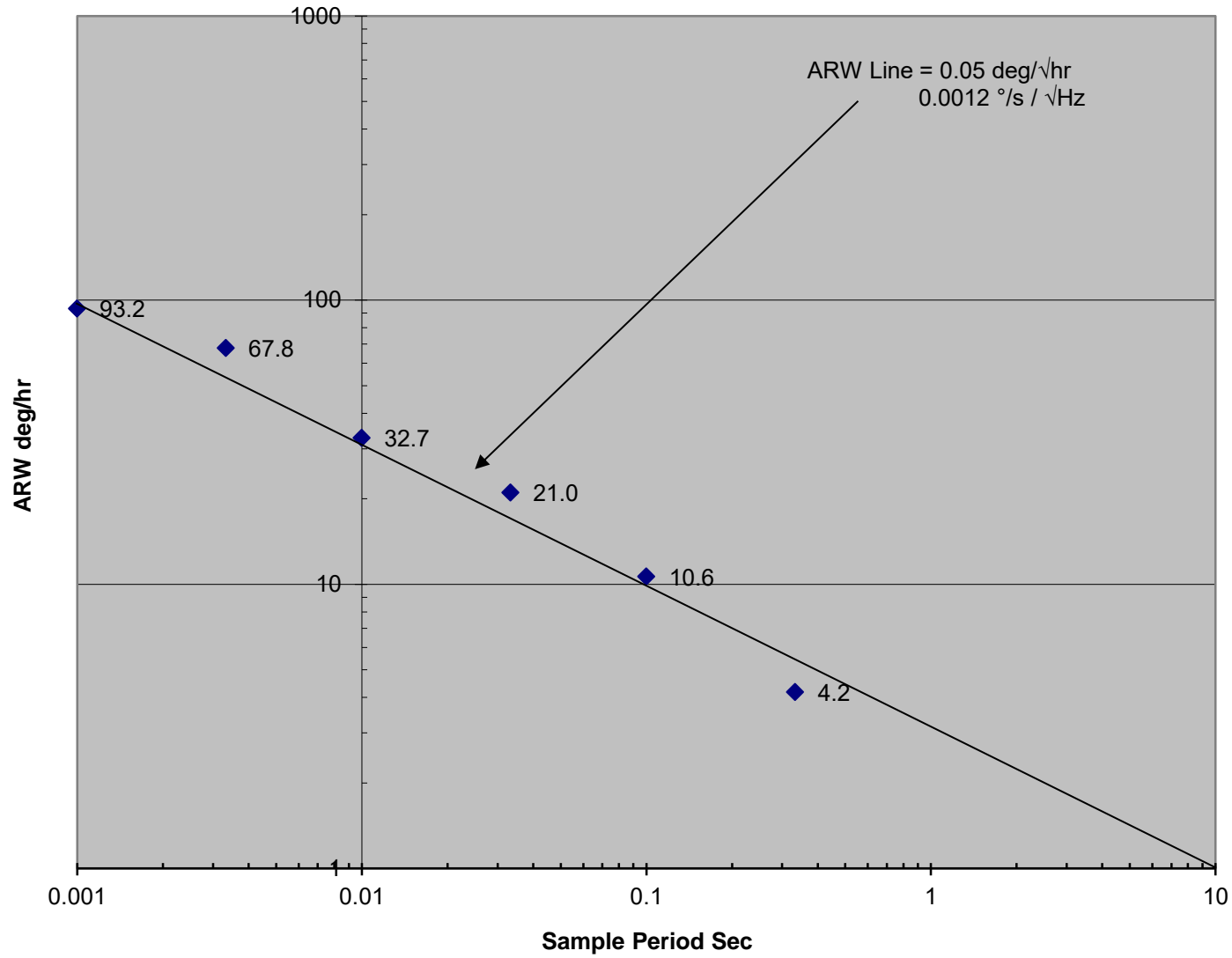
G-Sensitivity %/s / g

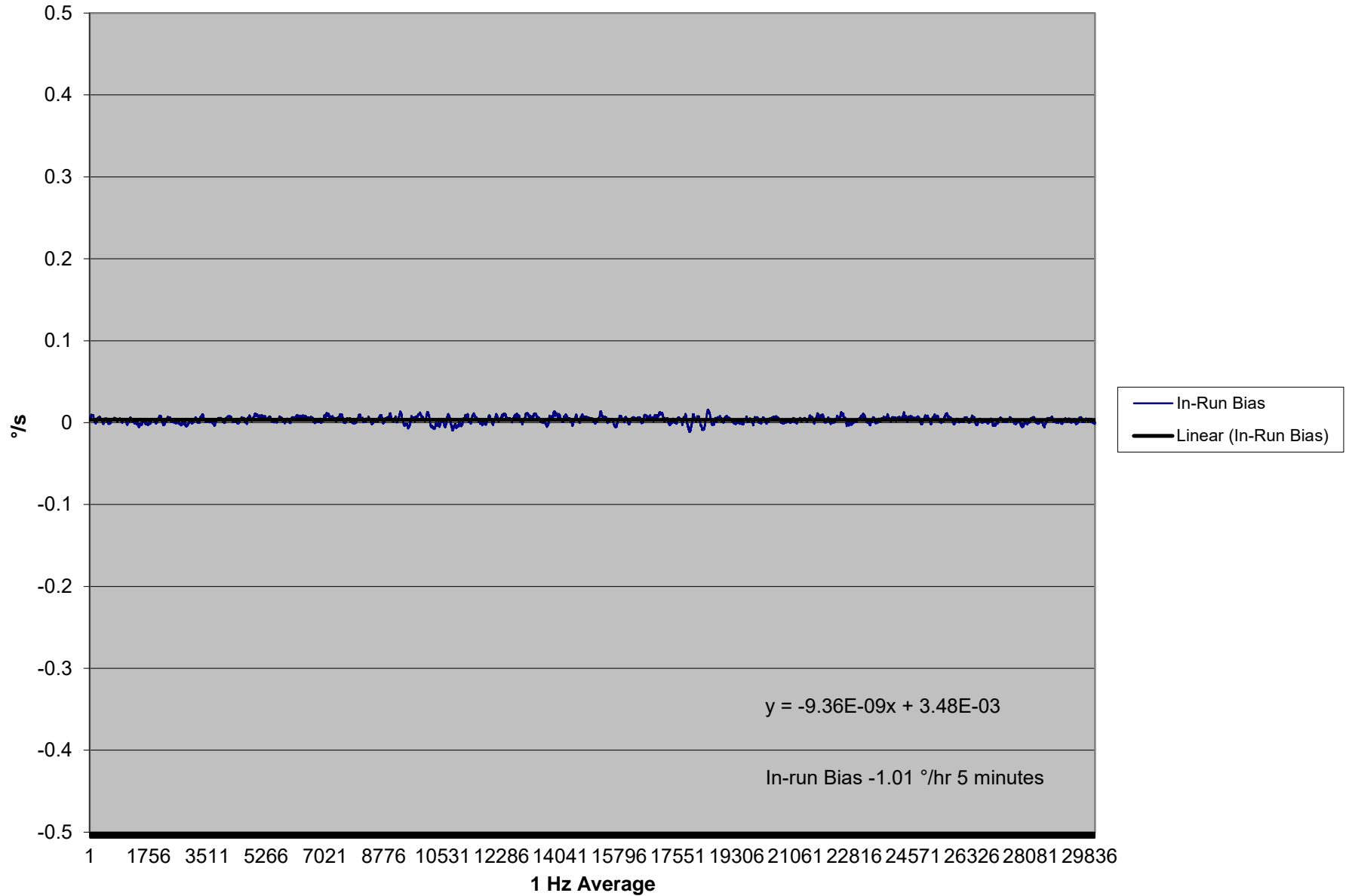
-0.001	Connector
0.004	Cross
0.006	Input
<u>0.004</u>	RSS

Temp Bias
@ 20°C= 2.4522 Volts



Z Rate Allan Variance





SN1032 Power Supply Sensitivity

