

# Fiber optic gyro Selection Guide

A fibre optic gyroscope (FOG) senses changes in orientation, thus performing the function of a mechanical gyroscope. However FOGPhotonics's fiber optic gyros based on the interference of light which has passed through a coil of optical fibre which be as long as 1.5 km.

FOGPhotonics's high-performance commercial fiber optic gyro sensors and IMUs are ideal for optical stabilization, pointing, UAV applications. We develop different Modls for different applications, the models as the list below just parts of our FOG series.

## Product Features

ITAR FREE

Digital full closed-loop technology

Compact and lightweight

All solid state No moving parts

High precious and wide dynamic range

## Applications

- Navigation
- Missile and Torpedoe guidance
- Flight controls
- UUV/UAV/ Target Drones guidance and control
- Gyro compassing / target acquisition systems
- Camera/mapping
- AHRS
- Motion compensation
- EO/FUR/Radar stabilization
- Line-of-sight tracking / Precision pointing
- Smart munitions
- Gimbal control

## Technical Specification

Series Number	FOG600H	FOG600S	FOG1500	FOG800S	FOG3X600M
IMAG					
Performance	Fiber Optic Gyros	Fiber Optic Gyros	Fiber Optic Gyros	Fiber Optic Gyros	Fiber Optic Gyros
Technology	FOG	FOG	FOG	FOG	FOG

Input Rate (maximum)	±500°/sec	±600°/sec	±1500°/sec	±800°/sec	±600°/sec
<b>Bias stability (25°C)</b>	≤0.008°/hr, 1σ (max), ≤0.005°/hr, 1σ (typical)	≤0.02°/hr, 1σ (max), ≤0.01°/hr, 1σ (typical)	≤0.1°/hr, 1σ	≤0.05°/hr, 1σ	≤0.01°/hr, 1σ
<b>Bias vs. Temp (≤ 1 °C/min)</b>	≤0.1°/hr, 1σ	≤0.3°/hr, 1σ	≤1°/hr, 1σ	≤0.5°/hr, 1σ	≤0.1°/hr, 1σ
<b>Scale Factor Non-Linearity (max rate, 25°C)</b>	≤20 ppm, 1σ	≤10 ppm, 1σ	≤50 ppm, 1σ	≤50 ppm, 1σ	≤5 ppm, 1σ
<b>Scale Factor vs. Temp. (≤ 1 °C/min)</b>	≤10 ppm, 1σ	≤10 ppm, 1σ	≤50 ppm, 1σ	≤50 ppm, 1σ	<5 ppm, 1σ
<b>Angle Random Walk (25°C)</b>	≤0.0005°/√hr (≤0.7°/hr/√Hz)	≤0.001°/√hr (≤0.8°/hr/√Hz)	≤0.07°/√hr	≤0.007°/√hr	≤0.01°/√hr
<b>Bandwidth (-3dB)</b>	≥100 Hz	≥100 Hz	≥100 Hz	≥100 Hz	≥100 Hz
<b>Electrical/Mechanical</b>	<b>Electrical/Mechanical</b>	<b>Electrical/Mechanical</b>	<b>Electrical/Mechanical</b>	<b>Electrical/Mechanical</b>	<b>Electrical/Mechanical</b>
<b>Initialization Time (valid data)</b>	≤1 secs	≤2.5 secs	≤3secs	≤5 secs	≤5 secs
<b>Data Interface</b>	RS422 Or OEM	RS422 Or OEM	RS422 Or OEM	RS422 Or OEM	RS422 Or OEM
<b>Baud Rate</b>	Typ 460.8kbps (User selectable 9.6 Kbps to 921.6 Kbps)	Typ 460.8kbps (User selectable 9.6 Kbps to 921.6 Kbps)	Typ 460.8kbps (User selectable 9.6 Kbps to 921.6 Kbps)	Typ 460.8kbps (User selectable 9.6 Kbps to 921.6 Kbps)	Typ 460.8kbps (User selectable 9.6 Kbps to 921.6 Kbps)
<b>Data Rate</b>	User Selectable 1 to 1000 Hz	User Selectable 1 to 1000 Hz	User Selectable 1 to 1000 Hz	User Selectable 1 to 1000 Hz	User Selectable 1 to 1000 Hz
<b>Dimensions (max)</b>	120 mm Dia. x 38mm H (4.7" x 1.5")	98mm Dia x 35 mm (3.85" x 1.35")	68.5 mm L x68.5mm W x 32 mm H (2.7" x 2.7" x 1.3")	98 mm L x98 mm W x 34 mm H (3.85" x 3.85" x 1.3")	98mmDia x 25 mm H (3.85" x 1.0")

<b>Weight, max</b>	<b>1 Axis:</b> 0.90 kg (1.1 lbs.) <b>2 Axis:</b> 1.24 kg (1.2 lbs.) <b>3 Axis:</b> 1.50 kg (1.3 lbs.)	550g	270g	490g	2.5 kg
<b>Power Consumption, max (typical)</b>	<b>Single-axis:</b> 5 W (max), 3W (typical) <b>Dual-axis:</b> 6 W (max), 3.5W (typical) <b>Three-axis:</b> 7 W (max), 4 W (typical)	<b>5W</b>	3 W (max) 1.25 W (typical)	3 W (max) 1.25 W (typical)	3 W (max) 1.25 W (typical)
<b>Input Voltage</b>	±5 VDC	±5 VDC	±5 VDC	±5 VDC	±5 VDC
<b>Environmental</b>	<b>Environmental</b>	<b>Environmental</b>	<b>Environmental</b>	<b>Environmental</b>	<b>Environmental</b>
<b>Temperature: Operating</b>	-40°C to +71°C (-40°F to +163°F)	-40°C to +71°C (-40°F to +163°F)	-50°C to +80°C (-50°F to +172°F)	-40°C to +75°C (-40°F to +167°F)	-40°C to +71°C (-40°F to +163°F)
<b>Shock: Operating</b>	20 g, 11 msec, sawtooth	20 g, 11 msec, sawtooth	40 g, 10 msec, half-sine	40 g, 10 msec, half-sine	50 g, 10 msec, half-sine
<b>Vibration: Operating</b>	4.2g rms, 20-2000 Hz	4.2g rms, 20-2000 Hz	16 g rms, 20-2000 Hz	6.3 g rms, 20-2000 Hz	6.63 g rms, 20-2000 Hz
<b>Performance</b>	<b>Physical</b>	<b>Physical</b>	<b>Physical</b>	<b>Physical</b>	<b>Physical</b>
<b>Number of Axes</b>	1, 2 or 3 axes	1 or 2 axes	1, 2 or 3 axes	1, 2 or 3 axes	3 axes