

Northstar Photonics

IOCA Phase Modulator



The Integrated Optical Circuit Assembly (IOCA) Phase Modulator is a custom module designed by Gener8, manufactured by Northstar Photonics, for multiple customers for interferometric fiber optic gyroscope (IFOG) applications. The best-in-class performance of the IOCA has met the requirements for both tactical and navigation grade applications. The proprietary lithium niobate technology has demonstrated lifetime in vacuum of more than 60 years.

Parameter	IOCA Modulator
Package Dimensions 1)	1.079 in x 0.663 in x 0.190 in
Electrical Interface	Omnetics 5-pin Nano-connector
Fiber Pigtail Length 2)	> 2.5 m
Optical Fiber MFD 2)	7.0 ± 1.0 μm
Optical Fiber Coating/Cladding 2)	165 ± 5 μm / 80 ± 2 μm
Insertion Loss	> - 3.0 dB
Split Ratio (controlled environment)	48/52
Split Ratio (-55C to +85C)	45/55
Chip Polarization Extinction	< -65 dB
Residual Intensity Modulation	< 0.002
Fiber Polarization Cross Coupling	< -30 dB
Optical Return Loss	< -52 dB
Half-wave Voltage ($V\pi$)	$V\pi \leq 10.0$ V
Frequency Response	> 95% from 0.02 Hz to 100 MHz
Frequency Response Lifetime	> 550,000 hours at $< 10^{-3}$ torr and 50 C

- 1) Does not include fiber pigtails
- 2) Custom fiber configurations available upon request