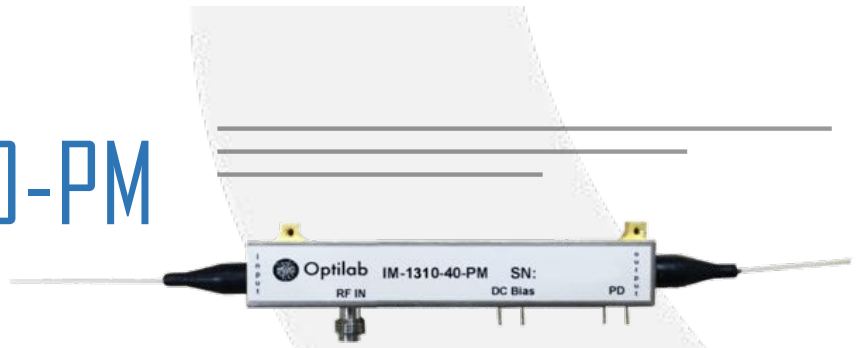




IM-1310-40-PM



DEVICE

1310 nm, 40 GHz Analog Modulator w/ PM Output

OVERVIEW

The Optilab IM-1310-40-PM Intensity Modulator is designed for analog modulation of up to 40 GHz for microwave links, antenna remoting, and RF over Fiber. It is a high linearity, low driving voltage lithium niobate mach zehnder interferometer (MZI) design. It is a hands-on bias-stabilized lithium modulator that proves to be extremely stable for long periods of time, and features excellent stability in a biased circuit, operating from 1525 nm to 1610 nm. It has an excellent operating temperature tolerance ranging from -30 °C to +60 °C, and its low insertion loss provides for its maximum transmission power. The IM-1310-40-PM uses a Polarization Maintaining (PM) input and output fiber, and features separate RF and bias ports. Contact Optilab for more information.

FEATURES

- S_{21} 3 dB bandwidth > 30 GHz
- Excellent stability in biased circuit
- Low Drive Voltage of 4.5 volt
- 1525 nm to 1610 nm range wavelength
- Zero chirp design
- Built in photodiode
- Integrated polarizer
- Customizable options:
 - High Extinction Ratio (>30 dB)
 - Temperature Qualified (-55 °C to +75 °C)

APPLICATIONS

- 40 GHz RFoF over Fiber
- Antenna Remoting
- High Frequency Fiber Optic Links
- Delay Lines Telemetry Systems
- Instrumentation
- Microwave Link
- Active mode laser

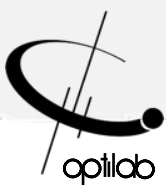
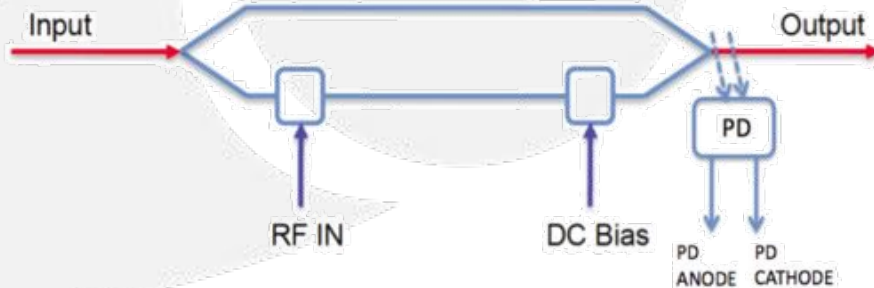
OPTIONS

IM-1310-40-PM-XX-y

XX: HE: High Extinction Ratio
TQ: Temperature Qualified

Connector Type
Y: a, FC/APC
u, FC/UPC

FUNCTION DIAGRAM





IM-1310-40-PM

SPECIFICATIONS

Input Optical Power	100 mW max. available
Operating Wavelength	1525 to 1610 nm
Chirp Value	$< \pm 0.2$ (zero chirp design)
Insertion Loss	≤ 6.0 dB
Extinction Ratio	≥ 25 dB ≥ 30 dB (HE Version)
Optical Return Loss	≤ -45 dB
S ₂₁ Bandwidth (RF Port)	> 30 GHz
S ₁₁ Return Loss (RF Port)	≤ -10 dB @ 20 GHz
V π (RF Port)	6.4 V typ. @ 10 GHz, 8.3 V typ. @ 30 GHz
RF Input Power	27 dBm max.
Impedance (RF Port)	50 Ω typ.
S ₂₁ Bandwidth (Bias Port)	500 MHz typ.
V π (Bias Port)	≤ 5 V @ 1 KHz
Impedance (Bias Port)	> 1 M Ω
PD Responsivity	10 mA/W typ.

GENERAL

ANALOG LINK PERFORMANCE

IIP3 @ 7 GHz	29 dBm typ.
1 dB Compression Point @ 10 GHz	15.5 dBm typ.

MECHANICAL

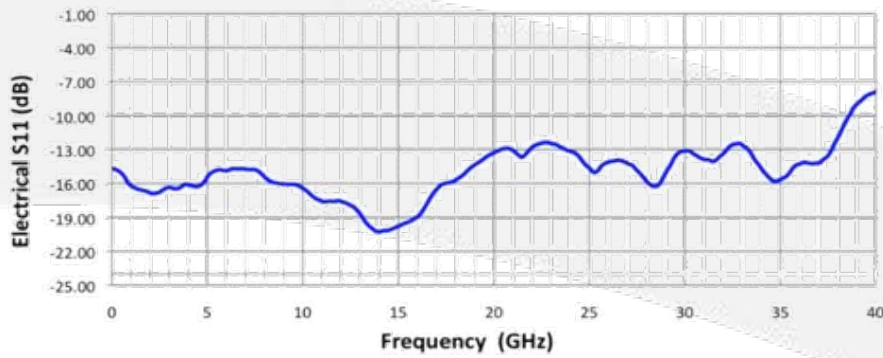
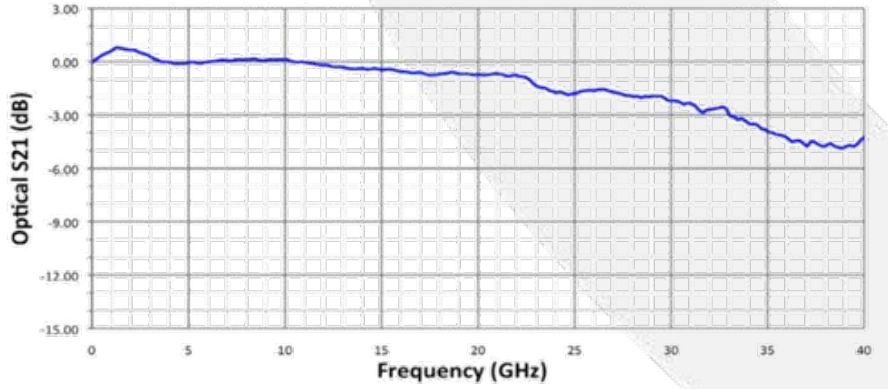
Operating Temperature (Standard)	-30°C to +60°C
Operating Temperature (TQ Version)	-55°C to +75°C
Storage Temperature	-60°C to +90°C
Operating Humidity	0% to 90% Relative Humidity
Input/Output Fiber Type	PANDA - PM 1550
Input/Output Connector	PM FC/APC or PM FC/UPC
Material	LiNbO ₃
Crystal Orientation	X cut, y-propagating
Waveguide Process	Ti-indiffused
Bias Port Connector	2 PINS
TAP PD Connector	2 PINS
RF Port Connectors	V Connector
Cabling	900 μ m tubing
Dimensions (including boots)	5.00" x 0.60" x 0.40"



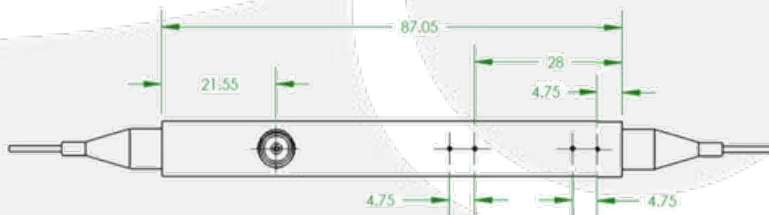
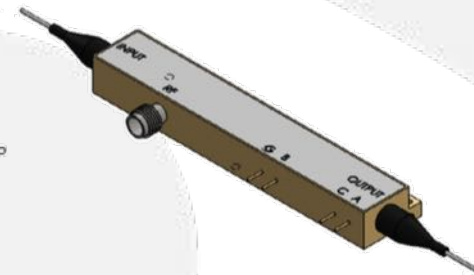
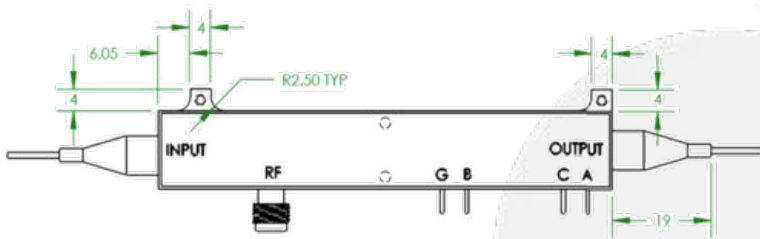


IM-1310-40-PM

TYPICAL S21 AND S11 BANDWIDTH



MECHANICAL DRAWING



* Dimension unit: mm

Pin #	Description
G	GND
B	DC BIAS
A	PD ANODE
C	PD CATHODE

