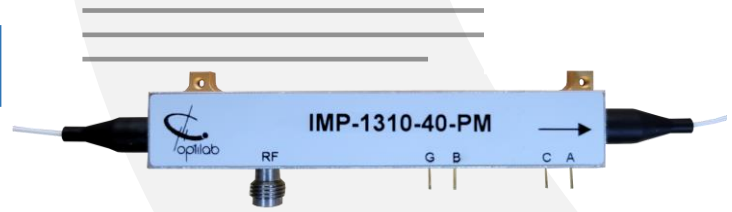




IMP-1310-40-PM



DEVICE

1310 nm, 40 GHz Intensity Modulator w/PM Output

OVERVIEW

The Optilab IMP-1310-40-PM is a Mach-Zehnder interferometer-based intensity modulator designed for O band optical wavelength. The optical waveguide is fabricated with Annealed Proton Exchange (APE) process on X-cut single crystal lithium niobate material. It features a zero-chirp design and polarized input / output with PM fiber pigtails. Applications include digital transmission up to 40 Gb/s, analog RFoF transmission to 30 GHz, optical pulse generation, mode-locked fiber laser and microwave optical link. Thanks to our proprietary APE technology, IMP-1310-40-PM can handle input power beyond 100mW and is a bias-stabilized modulator. Contact Optilab for more information.

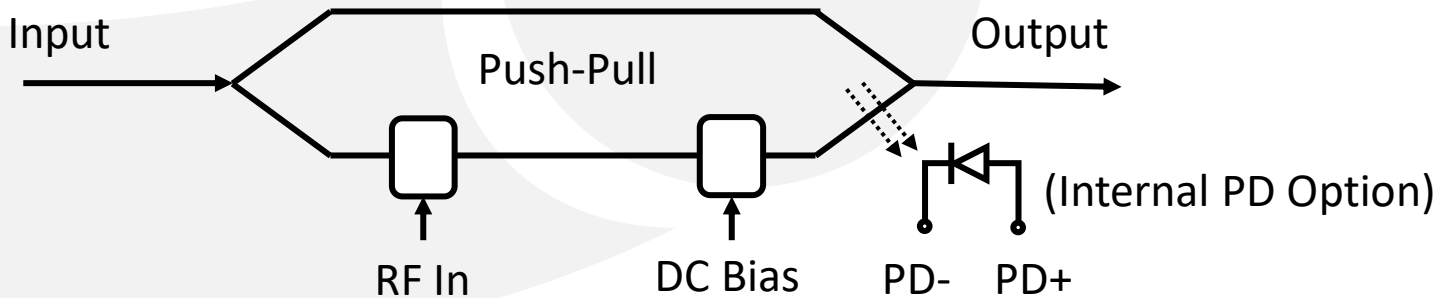
FEATURES

- PM fiber output
- High input power
- Zero chirp design
- Internal PD option
- 1270-1330nm operating wavelength
- High Extinction Ratio (HER) Available
- Temperature range of -5°C to 70°C

USE IN

- RF over fiber
- Pulse generation
- MOPA
- Analog modulation up to 40 GHz
- Active mode locked laser
- Satellite Link

FUNCTIONAL DIAGRAM





IMP-1310-40-PM

SPECIFICATIONS

GENERAL

Operating Wavelength	1270 nm to 1330 nm
Maximum Optical Input Power	≥ 100 mW
Insertion Loss	5.0 dB max., 4.2 dB typical
Static Extinction Ratio	≥ 20 dB, ≥ 30 dB for HER version
Chirp Value	± 0.1 max.
Optical Return Loss	≤ -40 dB, -50 dB typical
E to O S21 3dB Bandwidth (ref to 2GHz)	≥ 26 GHz, 30 GHz typ.
E to O S21 6dB Bandwidth (ref to 2GHz)	≥ 40 GHz
Electrical S11 Return Loss	≤ -7 dB up to 30 GHz
RF Port V_{π} @ 1GHz	≤ 5.5 V, 5.1 V typical
Bias Port V_{π} @ 1kHz	≤ 7.7 V, 7 V typical
RF Port Impedance	50 Ω
Bias Port Impedance	≥ 1 M Ω
Internal PD Responsivity	> 10 mA/W

Mechanical

Input/Output Fiber Type	Corning PM13-U40D, Panda
Fiber Length	1 m typical, 0.8 m min.
Input Connector	PM FC/APC, slow axis aligned to narrow Key
Output Connector	PM FC/APC, slow axis aligned to narrow Key
RF Port Connectors	Anritsu V female (1.85 mm)
Cabling	900 μ m loose tubing
Dimensions	87 mm x 14.5 mm x 10 mm

Absolute Maximum Ratings

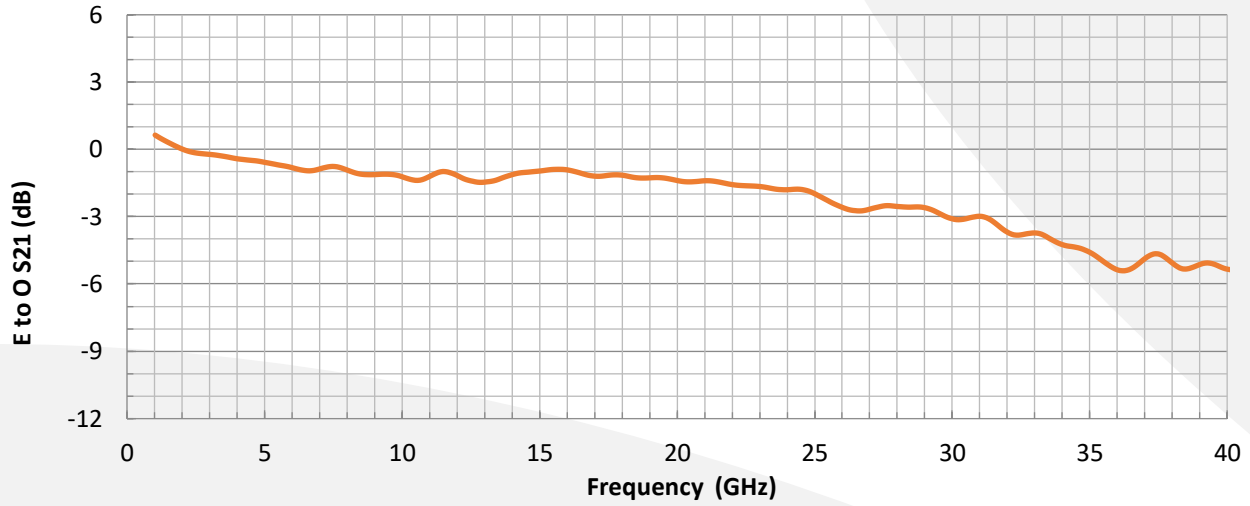
Operating Temperature	-5 $^{\circ}$ C to +70 $^{\circ}$ C
Storage Temperature	-40 $^{\circ}$ C to +85 $^{\circ}$ C
Operating Humidity	0% to 85% Relative Humidity, Non-Condensing
Maximum RF Input Power	+25 dBm
Maximum DC Bias Voltage	+/- 25 V



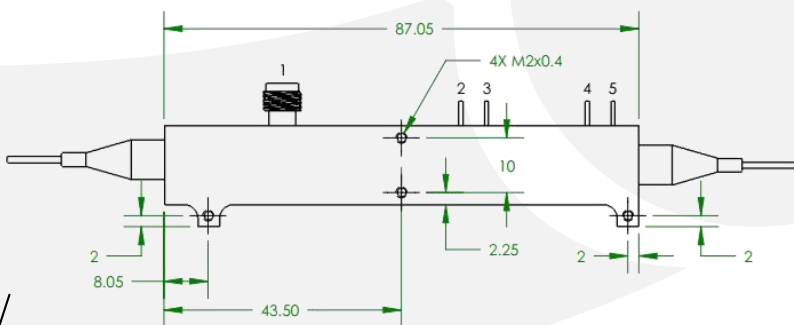
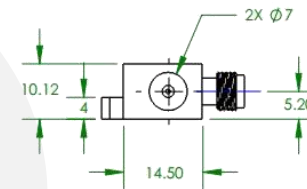
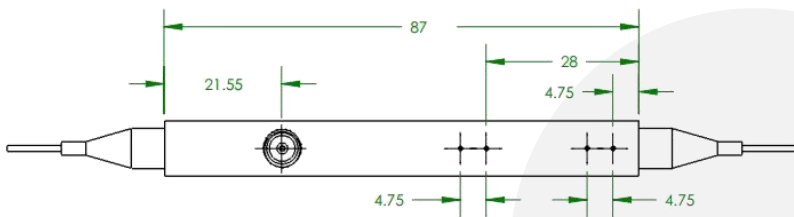
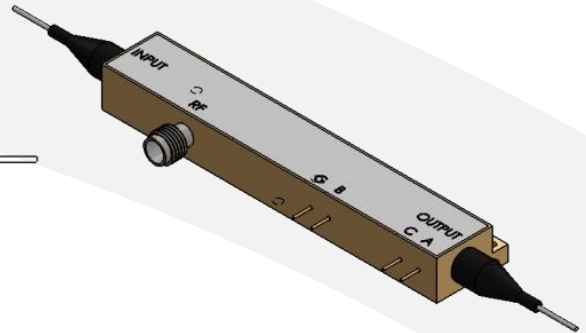
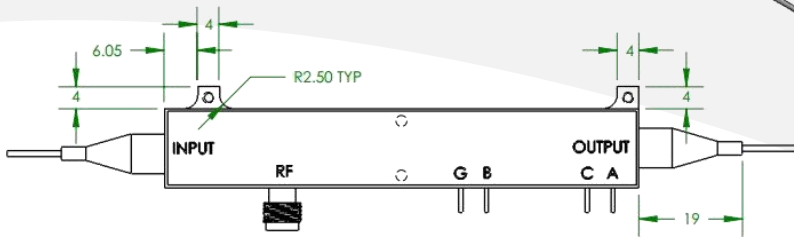


IMP-1310-40-PM

Typical S21 Response



MECHANICAL DRAWING



PIN #	Description
1	RF Input
2	Case Ground
3	DC Bias
4*	PD Cathode
5*	PD Anode

* For Internal PD Option





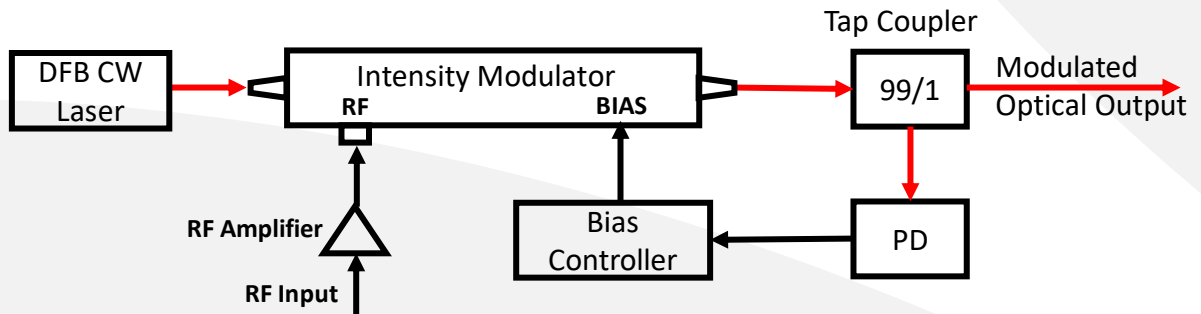
IMP-1310-40-PM

ORDERING OPTIONS

IMP-1310-40-PM-XX

- XX** PD: Integrated Internal Power Monitor PD
- HER: High Extinction Ratio, ≥ 30 dB
- LIL: Low Insertion Loss, ≤ 3.5 dB

Application Diagram



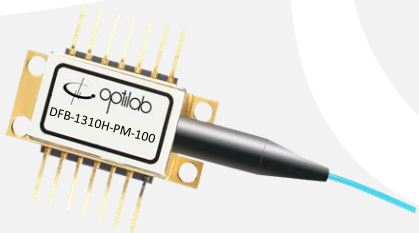
Related Product

- **BCB-4**



The Optilab BCB-4 is a compact automatic bias control board fully compatible with IMP-1310-40-PM modulator.

- **DFB Laser Source**



The Optilab DFB-1310C-PM laser is a 1310 nm CW DFB laser diode with polarization maintaining high power output. It is often used as the seed laser for IMP-1310-40-PM modulator.

