

IM-1550-20-PM-1x2



DEVICE

1550 nm, 20 GHz Dual Output Intensity Modulator w/PM Output

OVERVIEW

The Optilab IM-1550-20-PM-1x2 is a Mach-Zehnder interferometer (MZI) based intensity modulator with differential optical output. Designed for optical C band wavelength, this modulator utilizes Ti in-diffusion process to fabricate optical waveguide and directional coupler on an X-cut single crystal lithium niobate material. The integrated directional coupler with voltage-controlled coupling allows precise splitting ratio to create differential output with very low common mode. The input and output ports are pigtailed with PM fibers. Applications include digital transmission up to 25 Gb/s, analog RFoF transmission to 20 GHz, optical pulse generation, mode-locked fiber laser and microwave optical link. Contact Optilab for more information.

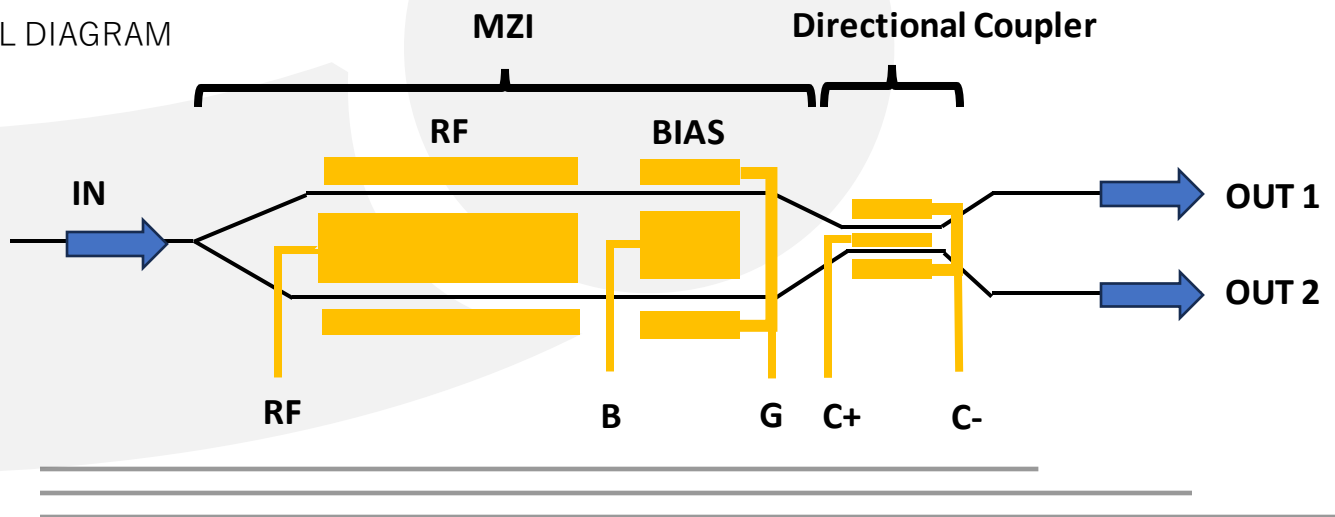
FEATURES

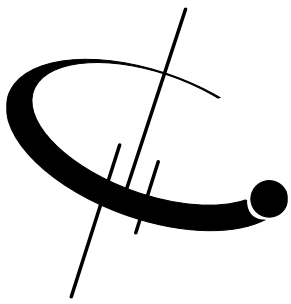
- Differential Optical Output
- PM Fiber Input & Output
- Zero Chirp Design
- 20 GHz Operation Bandwidth
- High Input Optical Power Handling
- Integrated Directional Coupler

USE IN

- RF over fiber
- Pulse generation
- MOPA
- Analog modulation up to 20 GHz
- Active mode locked laser
- Satellite Link

FUNCTIONAL DIAGRAM





IM-1550-20-PM-1x2

SPECIFICATIONS

GENERAL

Operating Wavelength	1530 to 1570
Maximum Optical Input Power	100 mW max
Insertion Loss	5.0 dB max., 4.5 dB typical
Static Extinction Ratio	≥ 18 dB
Chirp Value	± 0.1 max.
Optical Return Loss	≤ -40 dB, -50 dB typical
E to O S21 3dB Bandwidth (ref to 2GHz)	≥ 16 GHz No sharp dip up to 20 GHz
Electrical S11 Return Loss	≤ -7 dB up to 20 GHz
RF Port V _π @ 1GHz	≤ 7.5 V, 6.8 V typical
Bias Port V _π @ 1kHz	≤ 11 V, 9.8 V typical
Coupler Switch Voltage	≤ 15 V, 12 V typical
RF Port Impedance	50 Ω
Bias Port Impedance	≥ 1 MΩ

Mechanical

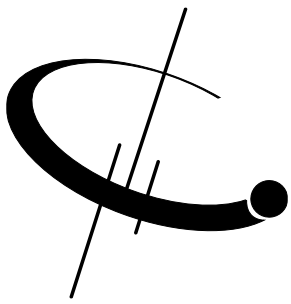
Input/Output Fiber Type	Corning PM5-U400, Panda
Fiber Length	1 m typical, 0.8 m min.
Input Connector	PM FC/APC, slow axis aligned to narrow Key
Output Connector	PM FC/APC, slow axis aligned to narrow Key
RF Port Connectors	2.92 mm female
Cabling	900 um loose tubing
Dimensions	87 mm x 14.5 mm x 10 mm

Absolute Maximum Ratings

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

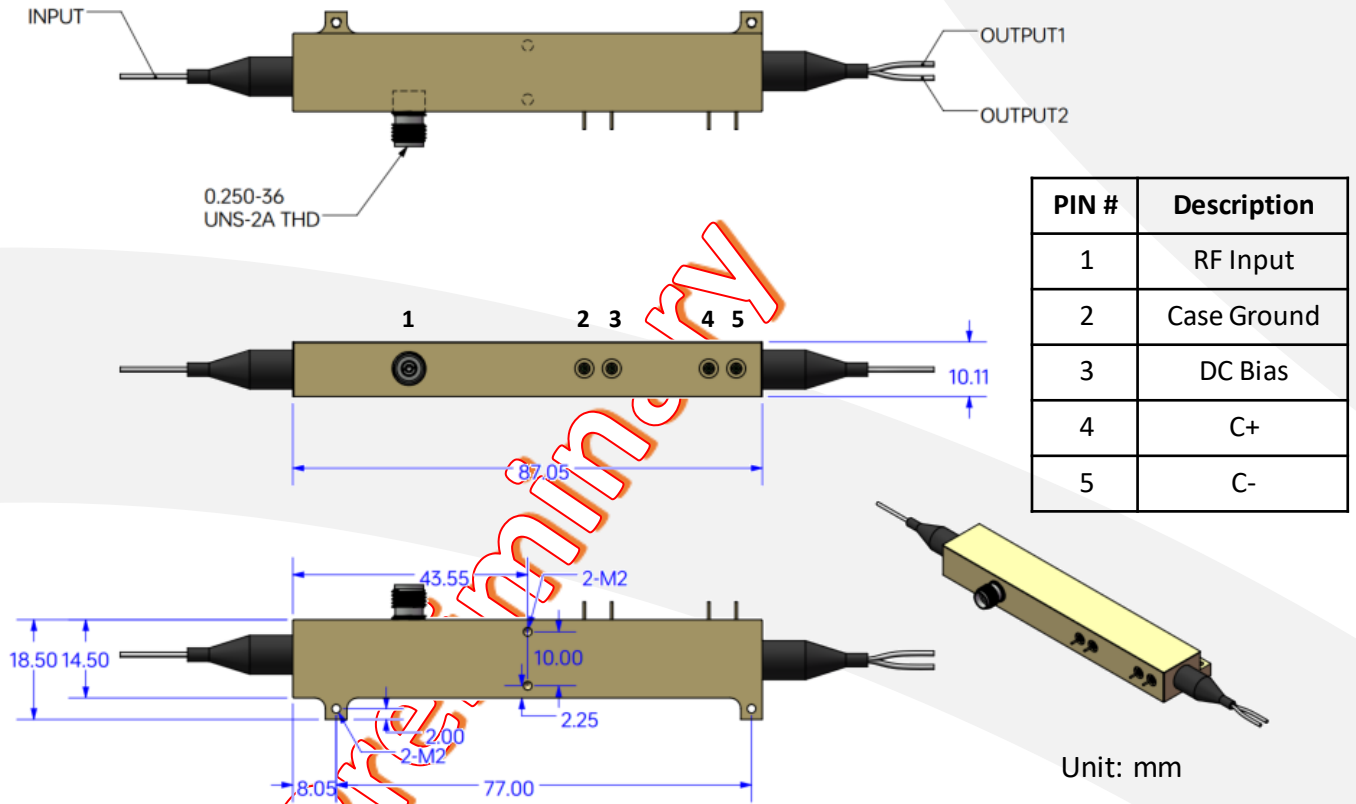
Preliminary





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MECHANICAL DRAWING



Application Diagram

