



Long-Wavelength $\lambda \sim 2\mu\text{m}$ 10/20 Gb/s Modulators

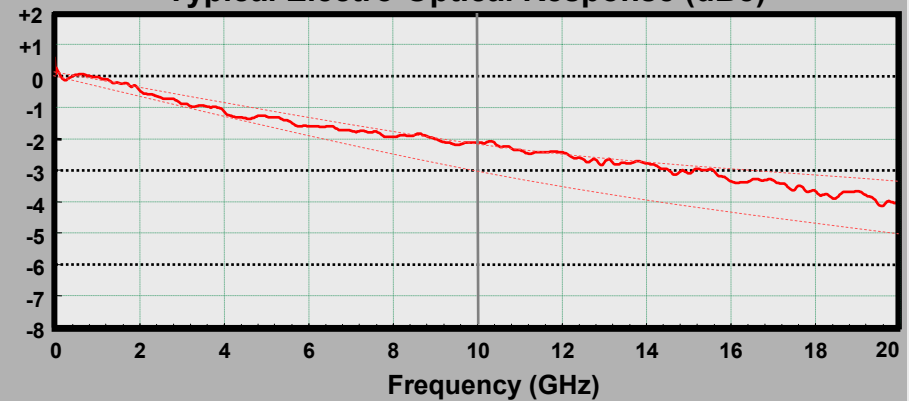


- Long wavelength operation $\lambda \sim 2000\text{nm}$
- Low-insertion-loss < 5 dB (standard); (lower loss option <4 dB, $<3\text{dB}$, ~ 2 dB-custom)
- Traveling-wave Mach-Zehnder Interferometer Modulator (with internal matched termination- 50Ω) (Option: RF Transmission-line output port for ext. term.)
- Bandwidth 10Gb/s; (20/40Gb/s available)
- Drive Voltage $<7\text{V}$ std.(@1GHz), ($<5\text{V}$ option)
- Separate RF (data) and DC Bias electrode
- Option: Integrated Polarizer
- [Phase modulator version also available](#)

10/20Gb/s LiNbO₃ ($\lambda=2\mu\text{m}$) Intensity Modulator

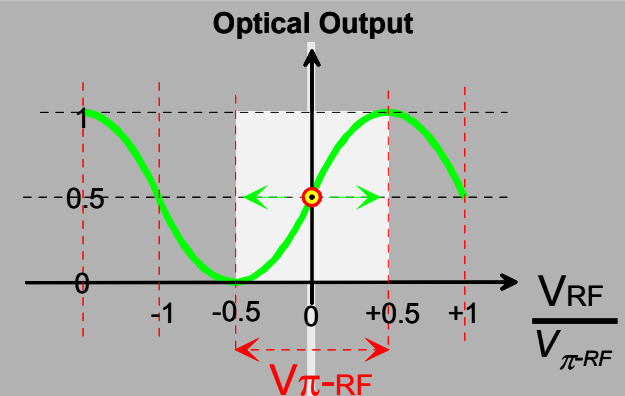
Optical Insertion Loss	< 5 dB(standard) ; $<4, <3\text{dB}$ (Option)
Bandwidth	>10 GHz(std); $>18\text{GHz}$ (Option)
RF Port: V_{π} @ 1GHz	<7 V(std.); <5 V(Option)
S ₁₁ RF Return Loss	> 10 dB (0.13-10GHz)
Optical Return Loss	> 45 dB
Optical Extinction	> 18 dB; ($>25, >35\text{dB}$ option)
DC Bias Port: V_{π}	< 15 V
RF Connector	Female 2.92mm (or K-connector)
Input Fiber	PM (Polarization Maintaining)
Output Fiber	SM or PM
Fiber Connector	FC/UPC (std.) or FC/APC (Option)
Wavelength	~ 2000 nm
Crystal cut / Material	z-cut LiNbO ₃

Typical Electro-Optical Response (dBe)



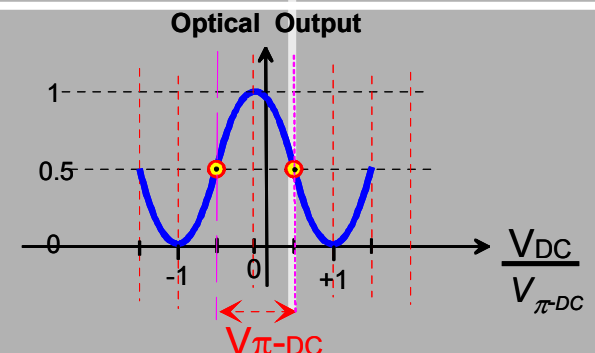
RF port:

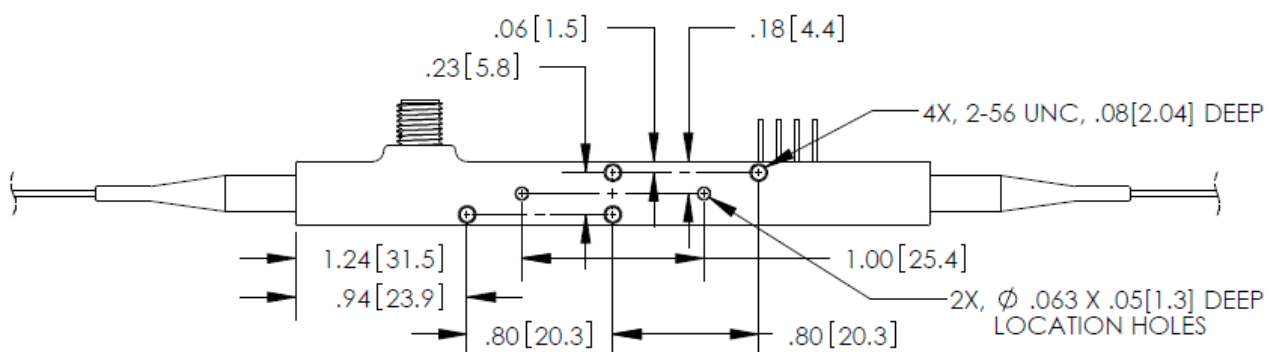
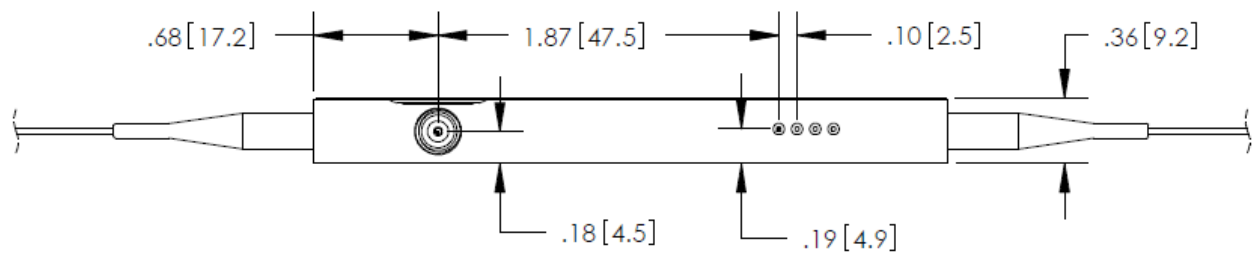
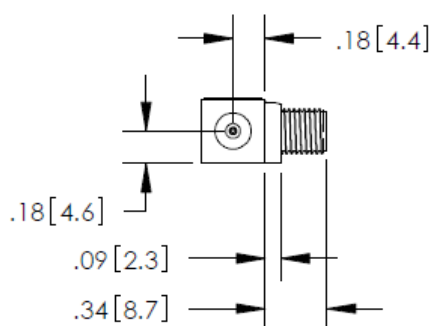
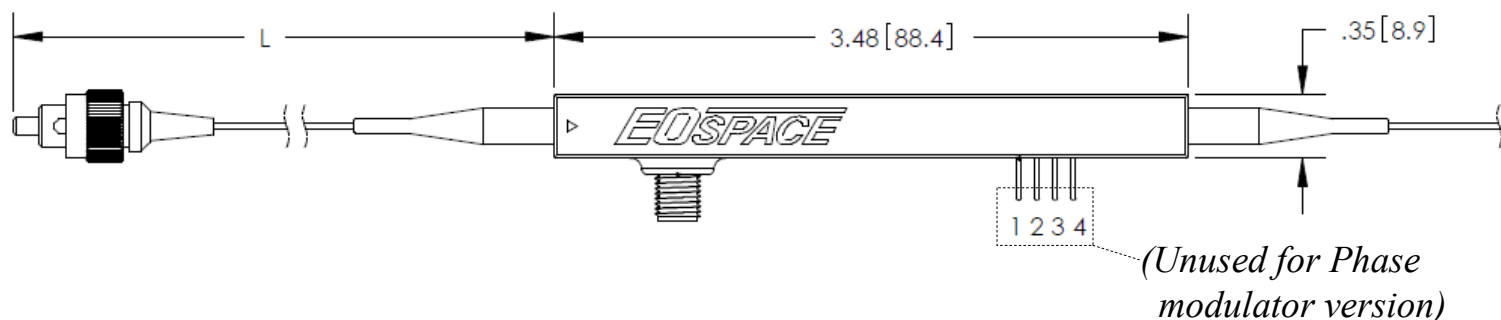
Internal 50 Ω
termination
(27dBm max.)



Separate
DC bias port:

Capacitive
electrode
($\pm 25\text{V}$ max.)





Pin	Assignment
1	Case ground
2	Bias (+,-)
3	PD Anode
4	PD Cathode

PANDA® IS A REGISTERED TRADE MARK OF FUJIKURA LTD

SPECIFICATIONS	
RF port connector	2.92 mm, Female Connector
Bias port pins	Diameter: .025 in., Length: .230 in.
Input fiber	PANDA® Polarization Maintaining
Output fiber	Corning SM or PANDA PM Fibers
Cabling	Ø 900 µm polyester loose tube
Optical connectors	FC/UPC, FC/APC, others

Customer Drawing

MODEL NUMBER:
PER SPECIFICATION

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EOSPACE 8711 148th Ave. NE Redmond, WA 98052	
TITLE: CUSTOM MODULATOR PACKAGE, 1RF + 4DC PINS	
SIZE A	DWG. NO. C1980M1.21
SCALE: 1:1	REV B
090504	SHEET 1 OF 1

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