



FEATURES

- High Bandwidth (> 10 GHz)
- X-cut for high stability
- Low drive voltage
- Low insertion loss

APPLICATIONS

- Pulse generation / picking
- Carrier suppression
- Quantum optics

OPTIONS

- 20 GHz version
- 1060 nm band versions
- Hermetic sealing

RELATED EQUIPMENTS

- RF amplifiers
- MBC-DG Automatic Bias Controllers
- NIR-MPX800 phase modulators

The NIR-MX800-LN-10 is an intensity modulator especially designed for operation in the 800 nm wavelength band.

Like all Photline Technologies Near InfraRed (NIR) modulators, the NIR-MX800 series use a proton exchanged based waveguide process that confers them an unparalleled stability and a high photo-refractive threshold.

Performance Highlights

Parameter	Min	Typ	Max	Unit
Operating wavelength	780	-	850	nm
Insertion loss	-	3.5	-	dB
Optical input power	-	-	13	dBm
Electro-optical bandwidth	-	12	-	GHz
V_{π} RF @50 kHz	-	3.5	-	V
Electrical return loss	-	12	-	dB

Specifications given at 25 °C, 850 nm

Electrical Characteristics

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Electro-optic bandwidth	S_{21}	RF electrodes, from 2 GHz	10	12	-	GHz
Ripple S21	ΔS_{21}	RF electrodes, $f < 10$ GHz	-	0.5	1	dB
Electrical return loss	ES_{11}	RF electrodes	-	-12	-10	dB
V_{π} RF @50 kHz	$V_{\pi RF_{50\text{ kHz}}}$	RF electrodes	-	3.5	4.5	V
V_{π} DC electrodes	$V_{\pi DC}$	DC electrodes	-	3.5	4.5	V
RF input impedance	Z_{in-RF}	-	-	40	-	Ω
DC input impedance	Z_{in-DC}	-	-	1	-	M Ω

Optical Characteristics

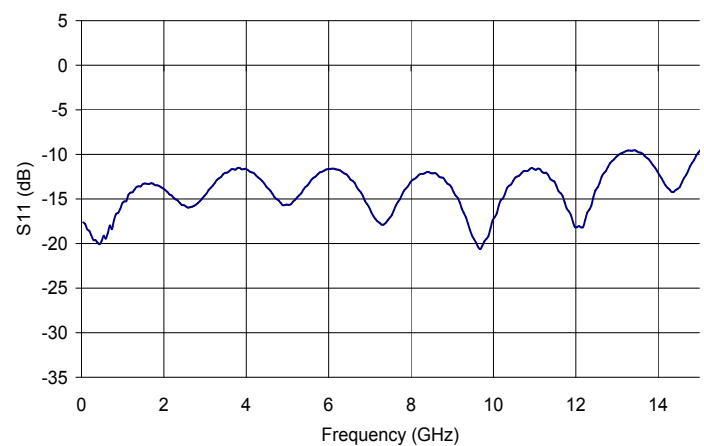
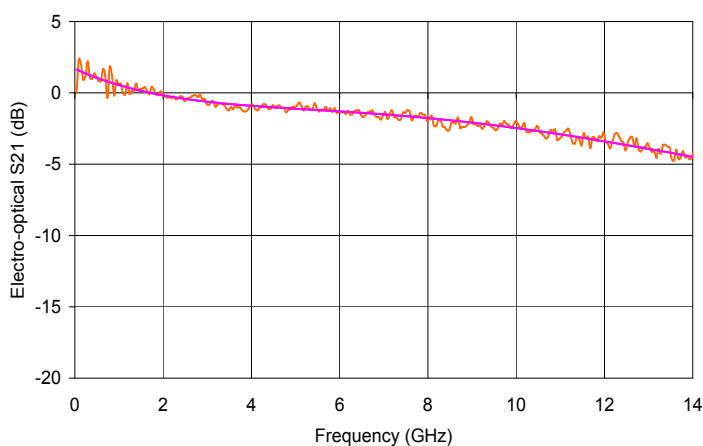
All specifications given at 25 °C, 850 nm, unless different specified

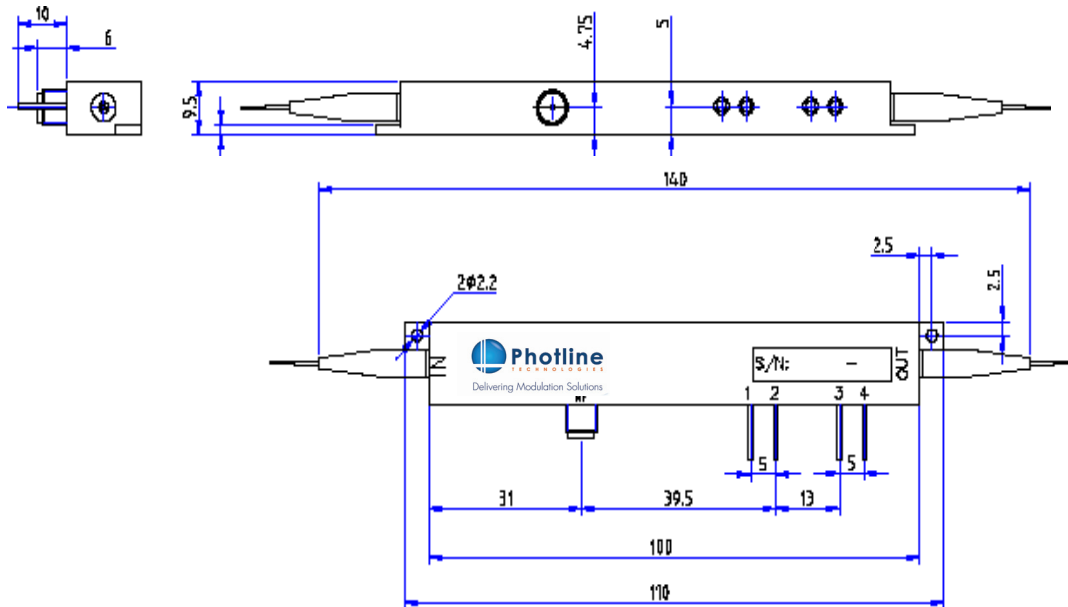
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Crystal	-	-	Lithium Niobate X-Cut Y-Prop			
Operating wavelength	λ	-	780	800	850	nm
Insertion loss	IL	Without connectors	-	4.5	5.5	dB
DC extinction ratio	ER	Measured with narrow source linewidth < 200 MHz	20	22	-	dB
Optical return loss	ORL	-	-40	-45	-	dB
Chirp	α	-	-0.1	0	0.1	-

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
RF input power	EP_{in}	-	28	dBm
Bias voltage	V_{bias}	-20	+20	V
Optical input power	OP_{in}	-	13	dBm

S21 & S11 Parameter Curves at RF input port



Mechanical Diagram and pinout All measurements in mm


Port	Function	Note
IN	Optical input port	Polarization maintaining fiber, Corning PM 98-U25A, Length 1.5 meter. Buffer diameter 900 μ m
OUT	Optical output port	Polarization maintaining fiber, Corning PM 98-U25A, Length 1.5 meter. Buffer diameter 900 μ m
RF	RF input port	Wiltron female K
1	Ground	Pin feed through diameter 1.0 mm
2	DC	Pin feed through diameter 1.0 mm
3	Photodiode cathode	Pin feed through diameter 1.0 mm
4	Photodiode anode	Pin feed through diameter 1.0 mm

Ordering information

NIR-MX800-LN-10-Y-Z-AB-CD

BW = Bandwidth : 10 10 GHz

Y = Input fiber : P Polarisation maintaining S Standard single mode

Z = Input fiber : P Polarisation maintaining S Standard single mode

AB = Output connector : 00 bare fiber FA FC/APC FC FC/SPC

CD = Output connector : 00 bare fiber FA FC/APC FC FC/SPC

Note : optical connectors are Seikoh-Giken with narrow key or equivalent