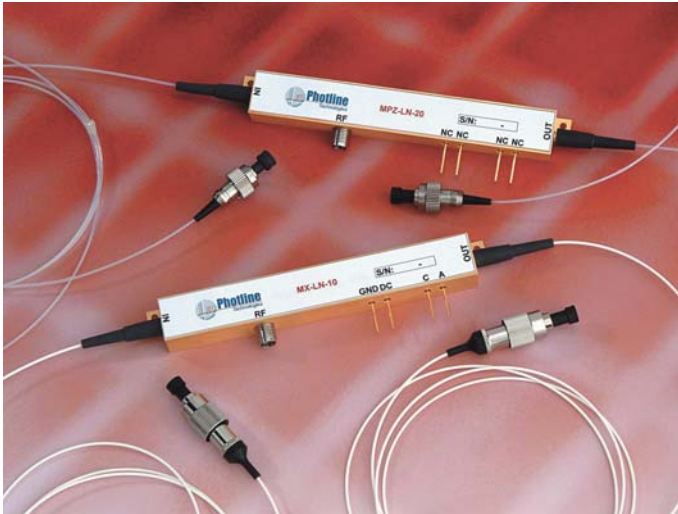




**Photline**  
Technologies

## MPZ-LN/MPX-LN Lithium Niobate Low frequencies to 40 GHz Phase Modulators



### Description

The MPZ-LN and MPX-LN series make up the most comprehensive range of electro-optic phase modulators available on the market.

MPZ-LN series offer a unique combination of low driving voltage and high modulation bandwidth from 10 GHz to above 20 GHz.

When a broad operating temperature range is required, the MPX-LN series offers the unparalleled stability of x-cut devices combined with low control voltage.

Designed using state-of-the-art and proven lithium niobate technology, MPZ-LN and MPX-LN phase modulators are easy to operate and integrate. They offer excellent performance for a wide choice of applications.

### Features

- High stability
- Extended electro-optic bandwidth up to 40 GHz
- Broad wavelength range : works in C & L bands

### Applications

- Chirping
- Interferometric sensing equipment
- Spectrum broadening and frequency shifting
- Quantum key distribution
- High data rate optical telecommunications

### Options

- Choice of input and output fibers
- 1300 nm, 1000 nm and 800 nm band versions
- Single guided polarization version
- CMD model with integrated RF driver

### Related Equipments

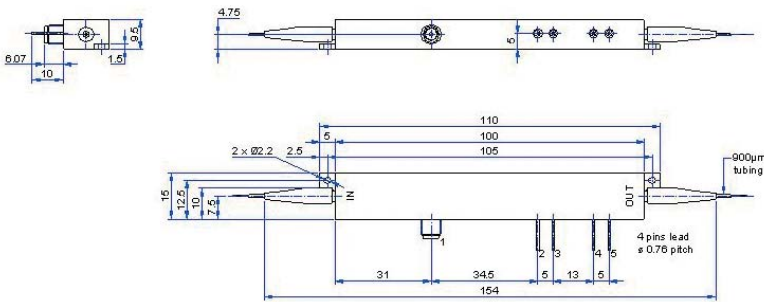
- Optimized external RF drivers : DR-GA series



Electrical		Min	Typ	Max
MPX-LN-05 electro-optic bandwidth $S_{21}$ @-3 dB	GHz	4	5	
MPX-LN-05 $V_{\pi}$ @ 50kHz *	V		7	8
MPX-LN-05 $V_{\pi}$ @ 05 GHz *	V		10	11
electrical return loss $S_{11}$ 0- cut-off bandwidth	dB		-12	-10
ripple	dB		0.5	1
input resistance RF connector	$\Omega$		40	
MPX-LN-0.1 electro optic bandwidth $S_{21}$ @-3 dB	GHz	0.1	0.5	
MPX-LN-0.1 $V_{\pi}$ @ 50kHz *	V		3.5	4
input resistance	$\Omega$		10 000	
Optical				
Crystal	Lithium Niobate x-cut, y-propagating			
Waveguide process	Titanium diffusion			
Insertion loss (z axis)	dB		3.5	4
Polarization dependant loss	dB		1	1.5
Optical return loss	dB	-45	-50	
Environmental				
Operating temperature	0°C to +70°C			
Storage temperature	-40°C to +85°C			
Other specifications : refer to MPZ specifications				

\* $V_{\pi}$ (halfwave voltage) refers to the z axis polarization

## footprint



dimensions in mm

1 RF INPUT  
 2 NOT CONNECTED  
 3 NOT CONNECTED  
 4 NOT CONNECTED  
 5 NOT CONNECTED



# MPZ-LN/MPX-LN Lithium Niobate Low frequencies to 40 GHz Phase Modulators

## Ordering Information

MPX-LN-BW-Y-Z-AB-CD or MPZ-LN-BW-Y-Z-AB-CD

**BW** : 0.1 for 100 MHz, 05 for 05 GHz, 10 for 10 GHz, 20 for 20 GHz  
**Y** : input fiber : **P** polarisation maintaining; **S** standard single mode  
**Z** : output fiber : **P** polarisation maintaining; **S** standard single mode  
**AB** : input connector : **00** no connector; **FA** : FC/APC; **FC** : FC/SPC  
**CD** : output connector : **00** no connector; **FA** : FC/APC; **FC** : FC/SPC  
**Note** : optical connectors are Seikoh-Giken with narrow key or equivalent

## About Us

Photline Technologies is a provider of lithium niobate based modulation solutions. The primary market served by the company are : optical telecommunications - defense and aerospace - sensing and measurement equipments - research community.

Photline's complete family of components enable systems and modules manufacturers to increase their competitiveness by offering cost-effective and high performance modulation solutions.

## Also available from Photline

Products	Series	
Intensity modulators	MX-LN MXPE-LN MXAN-LN NIR-MX-LN	10, 20 and 40 Gb/s very high extinction ratio modulators analog modulators 1000 nm region specific
QPSK modulators	QPSK-LN	40 Gb/s and 20 Gb/s QPSK modulators
Compact modulators with integrated driver	CMD-LN	10, 20 and 40 Gb/s 10 and 20 GHz analog
Phase modulators	NIR-MPX-LN	for 800 nm and 1000 nm
Modulator bias controller	MBC	MBC-1000 : benchtop instrument MBC-card :OEM board
RF drivers for modulators	DR-GA	10, 20 and 40 Gb/s, 20 GHz analog
Transmitters	ModBox's	Integrated benchtop transmitters and modulation units

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