



MORE LIGHT

Integrated optical phase modulator PMxxx

Waveguide-based electro-optical light modulator

The Integrated Optical Phase Modulator PMxxx is a compact fiber-coupled waveguide-based electro-optical modulator that works based on MgO:LiNbO₃ and LiNbO₃ crystals. Providing fast electrooptical response, it allows phase modulation with frequencies as high as the Gigahertz range. Available modulators can handle wavelengths in the visible and the infrared spectral range. Devices for wavelengths between 532 nm and 1750 nm can be provided.

Standard-designed modulators use polarization maintaining single mode fibers to couple the light in and out. They may also be configured with fiber systems or connectors of different types.

Benefits

- Application in the VIS or IR spectrum
- High modulation frequencies
- Single mode fiber coupling
- Low modulation voltage

Applications

- Analog and digital modulation
- Sideband generation
- Interferometric metrology
- Optical coherence tomography

The modulators can be made for use at small wavelength bands between 532 and 1750 nm. The data of some representative devices are depicted here.

Specifications	PM635 or PM660	PM705	PM785 or PM830	PM1064
Wavelength [nm] / <i>Other wavelengths on request (532nm - 1750nm)</i>	636 or 660	705	785 or 830	1064
Spectral bandwidth [nm]	± 20		± 30	± 40
Insertion loss, typical [dB]	6		5	
Min. optical rise/fall time 10/90, typical [ps]		200		
Half wave voltage, typical [V]	4		5	6
Maximum optical input power (cw) [mW]	20		25	300

Specifications	PM1170	PM1310	PM1550	PM1750
Wavelength [nm] / <i>Other wavelengths on request (532nm - 1750nm)</i>	1170	1310	1550	1750
Spectral bandwidth [nm]			± 50	
Insertion loss, typical [dB]			4.5	
Min. optical rise/fall time 10/90, typical [ps]			200	
Half wave voltage, typical [V]	7	8	10	12
Maximum optical input power (cw) [mW]			300	

Optical connection, input	Standard: polarization maintaining singlemode fiber* Fiber connector: without, FC/PC-connector or FC/APC-connector**
Optical connection, output	Standard: polarization maintaining singlemode fiber* Optional: singlemode or multimode fiber Fiber connector: without, FC/PC-connector or FC/APC-connector**

* Standard: bow-tie-type, optional: Panda-type

** Standard: small-key-connector, optional: wide-key-connector

