JENOPTIK

MORE LIGHT

Integrated optical amplitude modulator I bias version

Waveguide-based electro-optical light modulator

The Integrated Optical Amplitude Modulator AMxxxb is a compact fiber-coupled waveguide-based electro-optical modulator that works based on MgO:$LiNbO_3$ and $LiNbO_3$ crystals. Providing fast electrooptical response, it allows amplitude modulation with frequencies as high as the Gigahertz range. Available modulators can handle wavelengths in the visible and the infrared spectral range. Devices for wavelength 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. The modulator can be used with the „Pulse Selector IOM“ as pulse picker.

Benefits

- Application in the VIS or IR spectrum
- High modulation frequencies
- Single mode fiber-coupling
- Separate RF and bias input
- High extinction ratio
- Low switching voltage

Applications

- Analog and digital modulation
- Short laser pulse generation
- Pulse generation in oscillator amplifier systems
- Pulse picking
- Metrology

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	AM635b or AM660b	AM705b	AM785b or AM830b	AM1064b
Wavelength [nm] / *Other wavelengths on request (532nm - 1750nm)*	635 or 660	705	785 or 830	1064
Spectral bandwidth [nm]	± 20		± 30	± 40
Insertion loss, typical [dB]	6		5	
Extinction, typical	500 : 1		800 : 1	1000 : 1
Min. optical rise/fall time 10/90, typical [ps]	500			
Half wave voltage (RF / bias) [V]	2 / 2		2.5 / 2.5	3 / 3
Maximum frequency bias input [khz]	1			
Maximum optical input power (cw) [mW]	20		25	300

Specifications	AM1170b	AM1310b	AM1550b	AM1750b
Wavelength [nm] / *Other wavelengths on request (532nm - 1750nm)*	1170	1310	1550	1750
Spectral bandwidth [nm]	± 50			
Insertion loss, typical [dB]	4,5			
Extinction, typical	1000 : 1			
Min. optical rise/fall time 10/90, typical [ps]	500			
Half wave voltage (RF / bias) [V]	3.5 / 3.5	4 / 4	5 / 5	6 / 6
Maximum frequency bias input [khz]	1			
Maximum optical input power (cw) [mW]	20		25	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

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