



MORE LIGHT

Integrated optical amplitude modulator AMxxx

Waveguide-based electro-optical light modulator

The Integrated Optical Amplitude Modulator AMxxx is a compact fiber-coupled waveguide-based electro-optical modulator that works based on $\text{MgO}:\text{LiNbO}_3$ 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 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	AM635 or AM660	AM705	AM785 or AM830	AM1064
Wavelength [nm] / Other wavelengths on request (532nm - 1750nm)	635 or 660	705	785 or 830	1064
Spectral bandwidth [nm]	± 20	± 20	± 30	± 40
Insertion loss, typical [dB]	6		5	
Extinction, typical	500 : 1	500 : 1	800 : 1	1000:1
Min. optical rise/fall time 10/90, typical [ps]	200			
Half wave voltage, typical [V]	2		2.5	3
Maximum optical input power (cw) [mW]	20		25	300

Specifications	AM1170	AM1310	AM1550	AM1750
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]	200			
Half wave voltage, typical [V]	3.5	4	5	6
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

