

## Three stage OTDM Multiplexer

Product Code: OMUX-3-100



### Product Description

The optical time division multiplexer (OTDM) is designed for 100Gigabit Ethernet based ultra high-speed transmission and test systems up to 111 Gbit/s, depending on the multiplexer input stage used. The multiplexer consists of three stages, where each stage can be switched on or off independently and where the first stage consists of two alternative input stages at either 13.375Gbit/s or 13.875Gbit/s. Therefore, for e.g. a 13.875Gbit/s input signal, the output delivers a 111 Gbit/s signal. In particular, if a  $2^7-1$  PRBS pattern is applied as input signal, the multiplexer ensures also a true  $2^7-1$  PRBS pattern at the output. The suppression of the spurious sub-harmonics is better than 40 dB. Either single or dual output polarization are possible. All devices reveal an excellent stability.

The OMUX can be ordered with two separate options:

**Option A, Polarizer:** If required the OMUX can be delivered with an integrated polarizer at one output. This enables easy adjustment of the polarization state at the output.

**Option B, Delayline adjustment:** To match the multiplexer exactly to the applied input data rate the time delay in each stage must be adjusted. By using the configuration option B the delay lines are motor driven to change the delay length  $L$  very precisely. Time delay range is about 100 ps, setting accuracy is better than 0.1 ps. The control of the delay line is managed by pressing push-buttons at the hand held, which shows position of each delay line. One position for each stage can be stored.

### Features

- Fiber based delay line multiplexer
- Three independent stages
- True PRBS output pattern
- Output bit-rate up to 111 Gbit/s
- Low insertion loss
- Excellent long-term stability
- Allows polarization multiplexing

### Applications

- Very high bit rate OTDM communication systems
- High-speed time domain lightwave characterization

### Absolute Maximum Ratings

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Storage temperature	$T_{stg}$	non condensing	-20		+60	°C

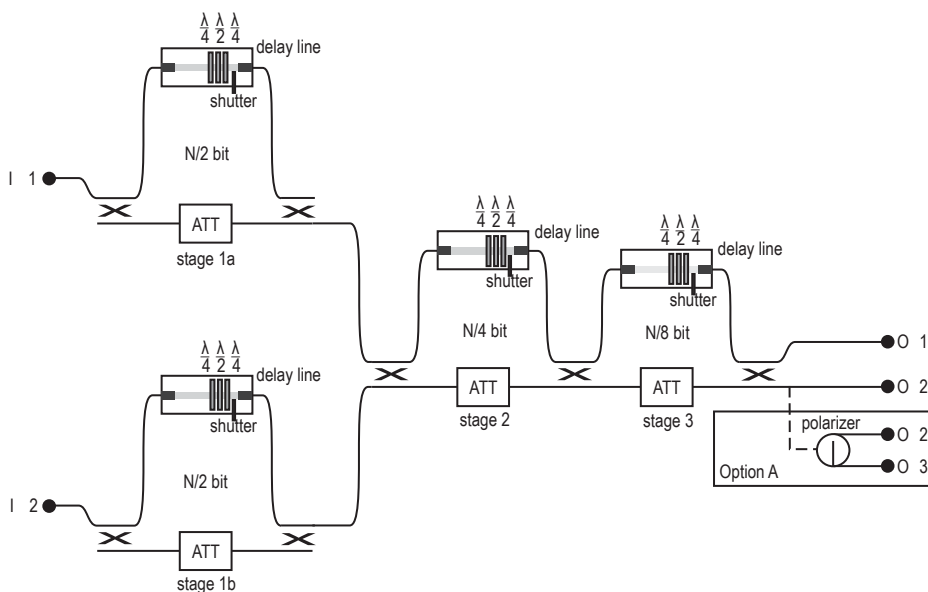
## Operation Conditions

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating ambient temperature range	$T_{amb}$		+10		+40	°C
Operating wavelength range	$\lambda$		1500		1600	nm
Input data rate			N * 13.375; N = 1,2,4 N * 13.875; N = 1,2,4			dBm
Output data rate			N * 13.375; N = 1,2,4,8 N * 13.875; N = 1,2,4,8			dBm

## Optical and Electrical Specifications

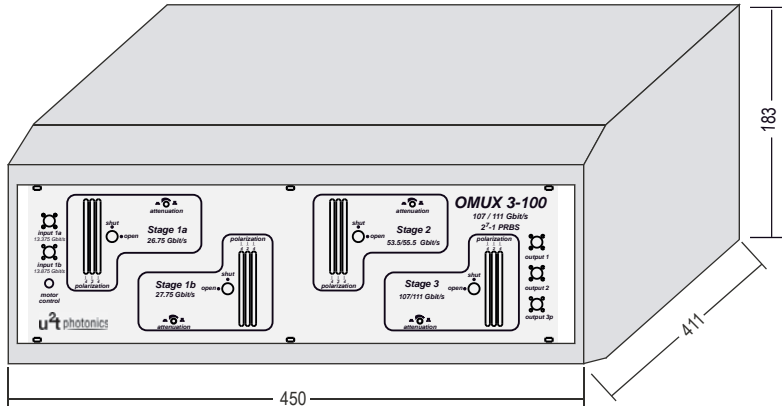
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Excess loss					>9	dB
Subharmonics suppression			40			dB <sub>el</sub>
Output polarization			single or dual			
Input data format			2 <sup>7</sup> -1 ... 2 <sup>31</sup> -1 PRBS			
Output data format			2 <sup>7</sup> -1 PRBS			
Weight				9.1		kg

## Block Diagram



ATT = attenuator

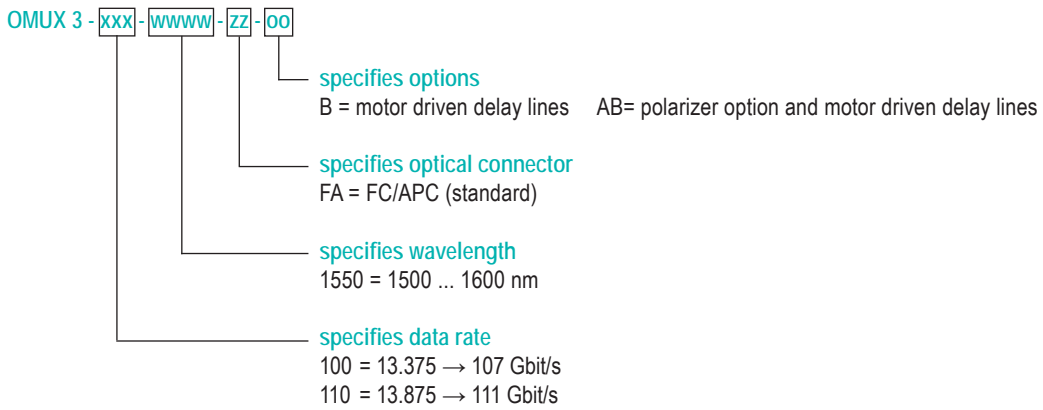
## Mechanical Dimensions



All dimensions in mm.

## Ordering Information

Please use the following table to select your required configuration of the photoreceiver.



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