

Ultra-High Speed Polarization Scrambler

(5MHz, 2MHz and 300KHz)
(patent pending)

Product Description

The polarization scrambler is a non-mechanical device having industrial leading performance of high speed and low optical loss, providing an ultimate solution for polarization randomization. The polarization scrambler is based on fast speed electro-optical materials functioning as phase retarder with three plates oriented at 0, 45 and 0 degrees and driven at three fixed frequencies, respectively. It converts any input state of polarization to randomly polarized states at high speed fully covering the Poincare sphere. The device needs no input control nor adjustments, just plugin the companied 12V supply.



Performance Specifications

Polarization Scrambler	Min	Typical	Max	Unit	
Center Operating Wavelength	800	1550	1800	nm	
Operating Wavelength Range		100		nm	
Insertion Loss ^[1]		0.8	1.5	dB	
Return Loss	45	50		dB	
Degree of Polarization (1000 AVG)			5	%	
			12 ^[2]	%	
Version Based on Maximum Modulation Frequency	(1)	200	2000	5000	KHz
	(2)	100	1000	2000	KHz
	(3)	40	100	300	KHz
Power Supply		12 V /1A			
Power Consumption		4		W	
Operating Optical Power			500	mW	
Operating Temperature		-5 ~ 70		°C	
Storage Temperature		-40 ~ 85		°C	

[1] Excluding connectors.

[2] 5 MHz Version

Features

- No Moving Parts
- High Reliability
- High Speed
- Compact Size
- Bidirectional

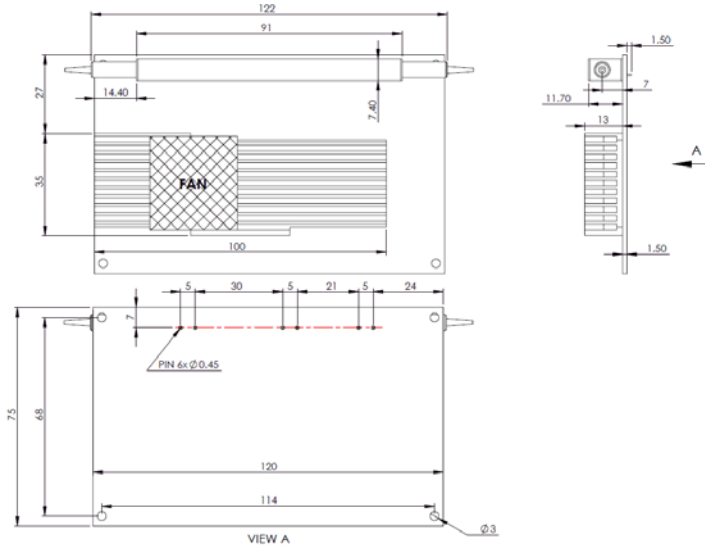
Applications

- Polarization scrambler
- Polarization Management
- Instrumentation

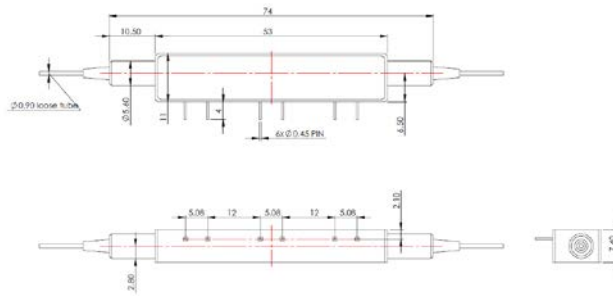
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Mechanical Dimensions (mm)

5MHz & 2MHz: LxWxH: 120X75X20 mm



300KHz: PCB dimensions TBD



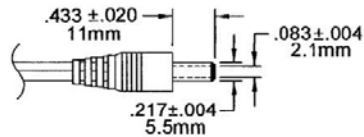
Ordering Information

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	Type	Wavelength	Maximum Frequency	Package	Fiber Type		Fiber Length	Connector
		1060 nm = 1 1310 nm = 3 1550 nm = 5 Special = 0	5MHz = 1 2MHz = 2 300KHz = 3	W/ driver = 1 W/O driver = 2	SMF-28 = 1 HI1060 = 2 Special = 0	Bare fiber = 1 900um tube=3 Special = 0	0.25m = 1 0.5m = 2 1.0 m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC = 7 Special = 0

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Power Connector

12V with a positive center (+)



Operation Instruction

1. Connect the two fibers (non-directional)
2. Plugin the accompanied 12VDC power supply. Do not use other power supply.
3. Works.
4. It has been tested prior shipping, using HP optical power meter and Polarimeter
5. Avoid static charge that damages the electronics by not trouncing the board with hand, not shorting it with conducting surfaces.
6. This is an OEM device for professional use. If having issue, please ask an expert with experience in polarization fiber.