

# 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 to provide 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 that are driven at three fixed frequencies respectively. It converts any input state of polarization to randomly polarized states fully covering the Poincare sphere.

The device is conveniently powered by a 12V supply without the need for control signals



## Performance Specifications

Polarization Scrambler	Min	Typical	Max	Unit	
Center Operating Wavelength	800	1550	1800	nm	
Operating Wavelength Range		100		nm	
Insertion Loss <sup>[1]</sup>		0.8	1.5	dB	
Polarization Dependent Loss		0.1	0.3	dB	
Return Loss	45	50		dB	
Degree of Polarization (1000 AVG)			5	%	
			12 <sup>[2]</sup>	%	
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
- Low Power Consumption
- Bidirectional

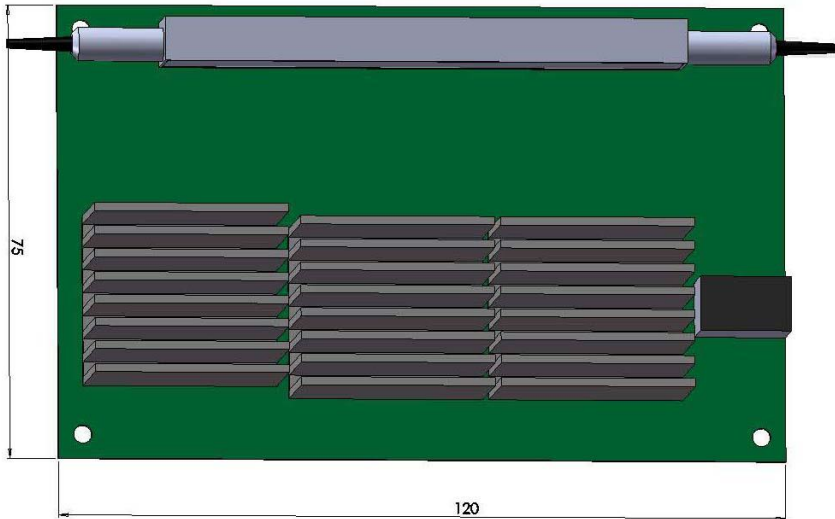
## Applications

- Polarization scrambler
- Polarization Management
- Instrumentation

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## Mechanical Dimensions (mm)

LxWxH: 120X75X20 mm



## 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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