

# High Speed Polarization Scrambler (preliminary)

## Product Description

The polarization scrambler is based on fast speed electro-optical materials functioning as phase retardation with three plates oriented at 0, 45 and 90 degree. The electro-optical materials are modulated at high speed. Unlike conventional polarization scrambler, it is uniquely non-mechanical. It converts any input state of polarization to randomly polarized states fully covering the Poincare sphere. The polarization scrambler is designed to meet the most demanding operation requirements of ultra-high reliability, fast response, compact size to provide an ultimate solution for polarization randomization.

## Features

- No Moving Parts
- High Reliability
- Solid-State High Speed
- Compact Size
- Low Power Consumption

## Performance Specifications

Polarization Scrambler		Min	Typical	Max	Unit
Center Operating Wavelength		800	1550	1600	nm
Operating Wavelength Range			100		nm
Insertion Loss <sup>1</sup>			0.6	1.0	dB
Polarization Dependent Loss				0.38	dB
Return Loss		45	50		dB
Scrambling Frequency	First Plate		5		MHz
	Second Plate		2		MHz
	Third Plate		0.1		MHz
Intrinsic Birefringence			NO		
Cover All Polarizations			Yes		
Operating Optical Power				500	mW
Operating Temperature			-5* ~ 70		°C
Storage Temperature			-40 ~ 85		°C
Package Dimensions			70X130X15		mm

1. Excluding connectors.

## Applications

- Polarization scrambler
- Polarization Management
- Instrumentation

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## Mechanical Dimensions (mm)



## Electrical Driving Requirements

Parameter	Minimum	Typical	Maximum	Unit
Power Supply		12		V
Power Consumption		1		W

## Ordering Information

<b>NOPS-</b>	<b>1 2</b>	<input type="checkbox"/>	<b>1</b>	<b>1</b>	<b>1</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Type	Wavelength	State	Package	Fiber Type	Fiber Length	Connector	
		1310 = 3 1550 = 5 Special = 0			SMF-28 =1 Special=0	Bare fiber =1 900um loose 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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