

## Narrow Linewidth Fiber Optic Depolarizers

### Product Overview

This range of depolarizers is specifically aimed at semiconductor laser linewidth applications. The Phoenix Photonics depolarizer is a fiber delay line device producing pseudo-random polarization output, with low degree of polarization (DOP), for any input state of polarization (SOP).

The depolarizer is a passive device utilizing the coherence properties of the source to randomize the SOP. For optimum performance the depolarizers are designed to match the source spectrum and the range of Phoenix depolarizers will meet the differing requirements of optical sources from broadband ASE's through to semiconductor lasers.

### Depolarizer Options

The standard depolarizer can be spliced or connected into a SM fiber system converting any arbitrary SOP to a depolarized output. These depolarizers are bi-directional.

For systems using polarization maintaining fiber that have a defined linear polarization, the polarization sensitive depolarizers offer the ideal solution. The polarization sensitive depolarizers are uni-directional.

### Technical Information

To ensure optimum performance and price, Phoenix designs its depolarizers to match the customer's source spectrum. Contact a Phoenix Sales representative with the source specification



### Features & Applications

#### FEATURES:

- Low DOP
- Low insertion loss
- Low back reflection
- Passive operation
- Rugged packaging

#### APPLICATIONS:

- Optical source polarization randomization
- Raman amplifier pump laser
- DFB lasers
- ASE, SLD and ELED sources
- Polarization measurement systems
- Optical fiber sensor systems
- Bragg grating applications

For more information please contact Phoenix sales:  
sales@phoenixphotonics.com or visit us at  
www.phoenixphotonics.com



**Input polarization sensitive version  
SPECIFICATIONS:**

	Type D	Type F
Bandwidth	1530nm – 1570nm	1530nm – 1570nm
Degree of Polarization	<5%	<5%
Insertion loss	<1.5dB (1dB Typ.)	<3dB (2dB Typ.)
Return loss	>55dB	>55dB
Source linewidth <sup>1</sup>	>1MHz	>200kHz
Operating temperature range	-5°C to 70°C	-5°C to 70°C
Transportation/storage	-40°C to 85°C	-40°C to 85°C
Input Fiber type	PM PANDA	PM PANDA
Output Fiber type	SMF28	SMF28
Pigtails	0.8m fiber standard, 900um jacket optional	
Connectors	Specify connector type	
Dimensions	85x85x15mm	85x85x15mm >1MHz 160x103x30.5mm 200kHz to 1MHz

**Arbitrary input polarization version  
SPECIFICATIONS:**

	Type C	Type E
Bandwidth	1530nm – 1570nm	1530nm – 1570nm
Degree of Polarization	<5%	<5%
Insertion loss	<2.0dB (1.5dB Typ.)	<4.5dB (4dB Typ.)
Return loss	>55dB	>55dB
Source linewidth <sup>1</sup>	>4MHz	>400kHz
Operating temperature range	-5°C to 70°C	-5°C to 70°C
Transportation/storage	-40°C to 85°C	-40°C to 85°C
Input Fiber type	SMF28	SMF28
Output Fiber type	SMF28	SMF28
Pigtails	0.8m fiber standard, 900um jacket optional	
Connectors	Specify connector type	
Dimensions	160x103x30.5mm	160x103x30.5mm

**Notes to Specifications:**

All specifications are worst case for the wavelength range selected; actual products commonly exhibit better specification.  
All depolarizers are individually tested.

1. The DOP for the depolarizer is dependent upon the source spectrum, please confirm selection with our sales representative.

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Type:	Wavelength:	Cable type:	Input Connector:	Output Connector:
C:	15 – 1530nm	0 – none	0 – none	0 – none
D:		1 – 900µm loose	1 – FC/SPC	1 – FC/SPC
E:		tube	2 – FC/APC	2 – FC/APC
F:			3 – SC/SPC	3 – SC/SPC
			4 – SC/APC	4 – SC/APC
			* Others available	* Others available

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