All-Fiber Variable Waveplate

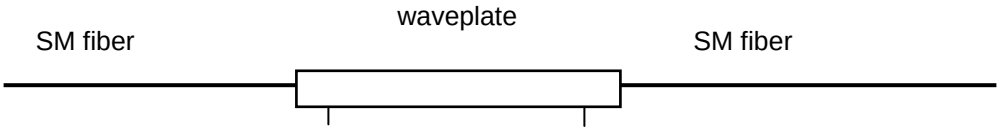
FEATURES:
- All-fiber
- Simple current control
- Full cycle of Poincare sphere
- Low insertion loss
- High return loss

APPLICATIONS:
- Polarization control
- State of polarization scanning
- Component testing
- Sensor systems
- Optical fiber polarimetry

Phoenix Photonics variable waveplate is a compact, simple to operate, all-fiber device for wideband operation. Applying a current to the pins gives a controlled modification of the linear birefringence within the device. The input State of polarization can be changed through a full cycle of the Poincare sphere. Two options are available giving flexibility for different applications.

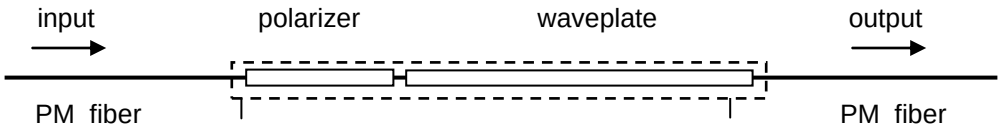
Option 1 Single mode (SM) fiber input and output:

This version provides a complete cycle of the Poincare sphere to be achieved the range of polarization states generated in the output fiber is dependent on the input SOP.



Option 2 Polarization maintaining (PM) fiber input and output:

This option includes an integrated fiber polarizer in front of the waveplate aligned to the slow axis of the input fiber. The role of the polarizer is to 'clean' the linear input state. The output is a PM fiber, in this case the output polarization state will give a full cycle of the great circle on the Poincare sphere. The output from the fiber can be varied through right and left circular and two orthogonal linear states.



SPECIFICATION:	Units	Option 1	Option 2
Wavelength range[1]	nm	1300 - 1610	
Insertion Loss[2]	dB	<0.3	<1
PMD	ps	<0.05	-
Return Loss	dB	>70	
Maximum current	mA	70	
Maximum Voltage	V	10	
Operating Temperature Range	^{0}C	-5 to 70	
Storage Temperature	^{0}C	-40 to +85	
Fiber type		SMF28	PANDA
Input & Output Fiber Lengths	mm	1000	

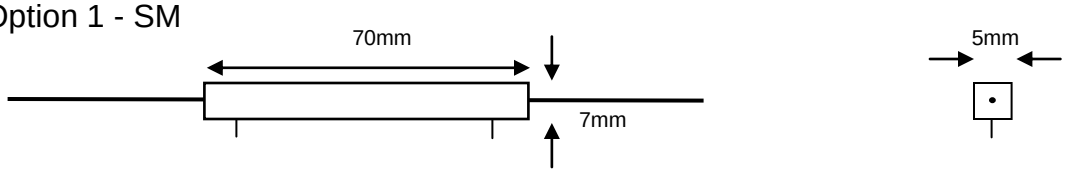
Notes:

1. Devices will operate over full wavelength range, higher current is required at longer wavelengths to achieve switching.
2. Insertion loss for option 2 assumes on-axis alignment of the input polarization. Losses do not include connectors.

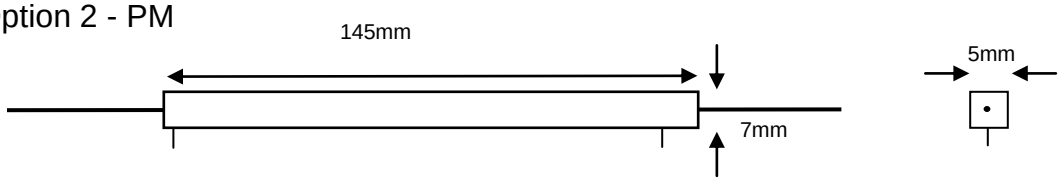
PACKAGING STYLE:

All dimensions are approximate and may vary slightly

Option 1 - SM



Option 2 - PM



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