

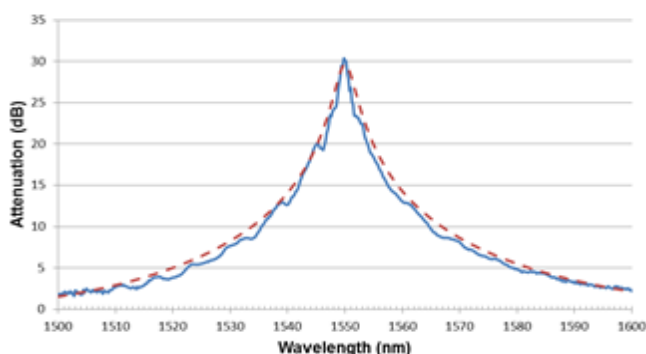
## In-fiber LP<sub>01</sub>-LP<sub>11</sub> Mode Coupler

### Long Period Grating (LPG) Mode Converter

#### Product Overview

The Phoenix Photonics in-fiber LP<sub>01</sub>-LP<sub>11</sub> mode coupler is for use with dual mode optical fiber. The mode coupling is achieved by a Long Period Grating (LPG). The principle of operation is to create a periodic mode coupling in the fiber at the beat length between the two modes. Phoenix creates the coupling using the electric arc technique. The grating created in the fiber will couple power between the LP<sub>01</sub> mode and the LP<sub>11</sub> mode when the period is matched to the beat length between the modes at the central operational wavelength.

Available at center wavelengths in C&L band, the center wavelength, output mode isolation and bandwidth is defined by the grating period and number of coupling points. The converter can be used to convert LP<sub>01</sub> to LP<sub>11</sub> or conversely to couple LP<sub>11</sub> to LP<sub>01</sub> and can be used in both mode multiplexers and demultiplexers. Higher order mode converters for 4-mode fibers are available on request.



Typical wavelength response of LP<sub>01</sub> transmission for an LPG. Solid curve shows experimental results and dashed curve theoretical curve with the same number of coupling points and coupling coefficient.



#### Features & Applications

##### FEATURES:

- Fixed coupling between LP<sub>01</sub> and LP<sub>11</sub>
- Compact design
- Custom fiber design
- High mode isolation
- Low loss

##### EXAMPLE APPLICATIONS

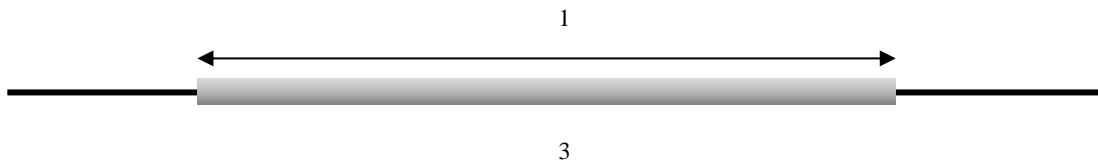
- LP<sub>01</sub> to LP<sub>11</sub> mode conversion and LP<sub>11</sub> to LP<sub>01</sub> conversion
- Mode division multiplexing/demultiplexing
- Dual mode fiber component test
- Dual mode fiber sensors

For more information please contact Phoenix sales:  
[sales@phoenixphotonics.com](mailto:sales@phoenixphotonics.com) or visit us at  
[www.phoenixphotonics.com](http://www.phoenixphotonics.com)

SPECIFICATION	Units	
Center wavelength range	nm	1520 - 1620
Bandwidth (3dB)	nm	5nm to 30nm (depending on number of coupling points)
Insertion Loss <sup>1</sup>	dB	<0.5
Isolation (output mode to input mode)	dB	>-20
Return Loss <sup>1</sup>	dB	>60
Operating Temperature Range	°C	0 to 50
Storage Temperature	°C	-40 to +85

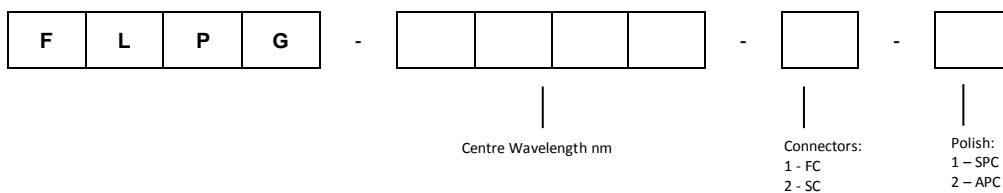
### Dimensions:

All dimensions are approximate and may vary slightly.



### Ordering Information

Mode Coupler:



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[www.phoenixphotonics.com](http://www.phoenixphotonics.com)