



# OZ Optics

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## POLARIZATION MAINTAINING AND SINGLEMODE PLANAR LIGHTWAVE CIRCUIT (PLC) SPLITTERS

### Applications

- FTTX Applications
- LAN, WAN and Metro Networks
- CATV Networks
- Passive Optical Networks (PON)

### Key Features

- Singlemode and Polarization Maintaining (PM fiber versions)
- High Density Split Ratios
- Broad bandwidth
- Low Polarization Dependent Loss (PDL)
- Uniform Splitting Ratios
- Telcordia Qualified

Planar Lightwave Circuit (PLC) Splitters combine a silica glass waveguide process together with precision aligned fiber V-groove arrays to provide a reliable, low cost way to split light from one fiber into many fibers within a very small form factor package. PLC splitters feature low insertion loss, low PDL, high return loss and excellent uniformity over a wide wavelength range, from 1260nm to 1620nm and work in temperature from -40°C to +85°C. These products meet or exceed Telcordia GR-1209-CORE and GR-1221-CORE reliability requirements, and are RoHS compliant. Standard configurations include 1x4, 1x8, 1x16, 1x32 and 1x64 configurations, as well as custom 2xN configurations. OZ Optics has leveraged its expertise in polarization maintaining components to offer polarization maintaining PLC splitters, with superior polarization performance for your application.

OZ Optics has the capability to connectorize the fibers of PLC splitters with all standard connectors such as FC, SC, ST, LC etc. and finishes (Super PC, Ultra PC, Angled PC [APC] etc.). As a component integrator, OZ Optics can construct additional components directly onto the splitter fibers. Examples include tunable filters, variable attenuators, or collimators. By building these devices directly onto the coupler fibers, OZ Optics saves the customer the added cost and insertion loss of intermediate connectors and adapters, or the time and cost of fusion splicing. Directly built devices are also the best way to maintain the highest possible Polarization Extinction Ratios.

In general OZ Optics uses polarization maintaining fibers based on the PANDA fiber structure when building polarization maintaining components and patchcords. However OZ Optics can construct devices using other PM fiber structures. We do carry some alternative fiber types in stock, so please contact our sales department for availability. If necessary, we are willing to use customer supplied fibers to build devices.



1x8 Polarization Maintaining PLC Splitter

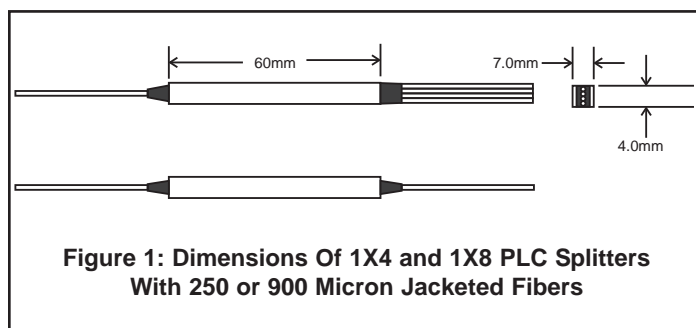


Figure 1: Dimensions Of 1X4 and 1X8 PLC Splitters With 250 or 900 Micron Jacketed Fibers

## STANDARD SPECIFICATIONS<sup>1</sup>

Parameter	Unit of Measure	Port Configuration			
		1X4	1X8	1X16	1X32
Operating Wavelength <sup>2</sup>	nm	1260 - 1620			
Fiber Type		SMF-28e for singlemode, PANDA for Polarization Maintaining			
Excess Loss <sup>3,4</sup>	dB	<1.25	< 1.80	< 2.00	< 2.40
Uniformity	dB	<0.5	<0.8	<1.2	< 1.5
Polarization Dependent Loss	dB	0.2	0.2	0.2	0.2
Polarization Extinction Ratio (PM Version) <sup>3</sup>	dB	>15	>15	>15	>15 <sup>4</sup>
Return Loss <sup>4</sup>	dB	>50			
Directivity	dB	>50			
Operating Temperature	°C	-40 to +85			
Storage Temperature	°C	-60 to +85			
Package Size (L x W X H)	mm	60.0 X 7.0 X 4.0	60.0 X 7.0 X 4.0	60.0 X 12.0 X 4.0	80.0 X 20.0 X 6.0

<sup>1</sup> For 1310, 1480 and 1550 nm devices

<sup>2</sup> Other wavelengths Available upon request.

<sup>3</sup> Not including connectors.

<sup>4</sup> Not including connector losses.

## Standard Parts

Part Number	Description
PLCS-14-8/125-P-1550-25-50-X-1-1	Planar Lightwave Circuit (PLC) based 1x4 splitter for 1550nm with 25% equal split ratio across all outputs, with 1.0 meter long, 0.9mm OD loose tube cabled 8/125 PANDA PM fiber pigtails, with no connectors on the ends
PLCS-18-8/125-P-1550-12.5-50-X-1-1	Planar Lightwave Circuit (PLC) based 1x8 splitter for 1550nm with 12.5% equal split ratio across all outputs, with 1.0 meter long, 0.9mm OD loose tube cabled 8/125 PANDA PM fiber pigtails, with no connectors on the ends
PLCS-14-9/125-S-1250/1650-25-50-X-1-1	Planar Lightwave Circuit (PLC) based 1x4 splitter for 1250 to 1550nm with 25% equal split ratio across all outputs, with 1.0 meter long, 0.9mm OD loose tube cabled 9/125 singlemode fiber pigtails, with no connectors on the ends
PLCS-18-9/125-S-1250/1650-12.5-50-X-0.25-1	Planar Lightwave Circuit (PLC) based 1x8 splitter for 1250 to 1550nm with 12.5% equal split ratio across all outputs, with 1.0 meter long, 0.25mm OD ribbonized 9/125 singlemode fiber pigtails, with no connectors on the ends
PLCS-116-9/125-S-1250/1650-6.25-50-X-0.25-1	Planar Lightwave Circuit (PLC) based 1x16 splitter for 1250 to 1550nm with 6.25% equal split ratio across all outputs, with 1.0 meter long, 0.25mm OD ribbonized 9/125 singlemode fiber pigtails, with no connectors on the ends
PLCS-132-9/125-S-1250/1650-3.1-50-X-0.25-1	Planar Lightwave Circuit (PLC) based 1x32 spliller for 1250 to 1550nm with 3.1% equal split ratio across all outputs, with 1.0 meter long 0.25mm OD ribbonized 9/125 singlemode fiber pigtails, with no connectors on the ends

## Ordering Information For Custom Parts

OZ Optics welcomes the opportunity to provide custom designed and manufactured components to its valued customers. As with most manufacturers, customized products do take additional effort so please expect some differences in pricing compared to our standard parts. In particular, we may need additional detailed specifications or a drawing from the customer and extra time to prepare a comprehensive quotation. Lead times may also be longer for delivery. In most cases non-recurring engineering (NRE) or setup charges, lot charges and/or a minimum order quantity may be necessary. These points will be carefully explained in your quotation so your decision will be as well-informed as possible. Please contact OZ immediately if any part of your quote needs explanation. We strongly recommend you purchase our standard parts.

## Questionnaire For Custom Parts

1. What is your center wavelength and operating bandwidth?
2. What is the desired port configuration (i.e., 1x4, 1x32)?
3. What split ratio is required? Are other ratios acceptable for initial trial?
4. What, if any, connectors are required for each port?
5. What fiber length is required?
6. What fiber jacketing do you need?
7. Are there package size restrictions?
8. Do you need additional components mounted to the input or output fiber ends?
9. What are your extinction ratio requirements on the through and tap ports?

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## Description

Planar Lightwave Circuit (PLC) Splitter **PLCS-MN-a/b-f-W-S/R-RL-XY-JD-L**

**MN** = Number of input and output ports  
1 and 2 are standard for input  
2, 4, 8, 16, 32, and 64 are standard for output

**a/b** = Fiber core/cladding diameters  
8/125 for Polarization Maintaining fiber  
9/125 for Singlemode Fiber

**f** = Fiber Type  
P for Polarization Maintaining Fiber  
S for Singlemode Fiber

**W** = Wavelength in nm  
1550nm standard for PM fibers  
1250/1650 standard for singlemode fibers

**S/R** = Split Ratio in %  
50%, 25%, 12.5%, 6.25% and 3.1% are standard

**RL** = Return Loss in dB  
50dB is standard.

**L** = Fiber length in meters on all ports (standard is 1 meter)

**JD** = Jacket Diameter in mm  
0.25 for 250 micron acrylate  
1 for 900um loose tubing

**XY** = Input and Output Connectors  
(X is input, Y are outputs)  
If connectors on all ends are the same specify only one connector. Otherwise specify each connector.

X = No connector  
3S = Super NTT-FC/PC  
3U = Ultra NTT-FC/PC  
3A = Angled NTT-FC/PC  
SC = SC  
SCA = Angled SC  
LC = LC/PC  
LCA = Angled LC

See table 6 of the OZ Standard Tables data sheet for other connectors.

## Ordering Example For Custom Parts

A customer wants a 1x16 polarization maintaining PLC splitter for 1550nm. The input port is to be terminated with an angled FC/APC connector while all outputs are to be terminated with LC/APC connectors. . He wants 0.5 meter long leads on all ports. 250 micron jacketing is suitable for his application.

Part Number	Description
PLCS-116-8/125-P-1550-6.25-50-3A,LCA-0.25-0.5	Planar Lightwave Circuit (PLC) based 1x16 splitter for 1550nm with 6.25% equal split ratio across all outputs, with 0.5 meter long, 0.25mm OD acrylate coated 8/125 PANDA PM fiber pigtailed, with an Angled FC/APC connectors on the input, Angled LC/APC on all outputs.