

## 780nm Polarization Beam Combiner/Splitter

### Key Features

- Low Insertion Loss
- High Extinction Ratio
- Compact In-Line Package
- High Stability and Reliability



### Applications

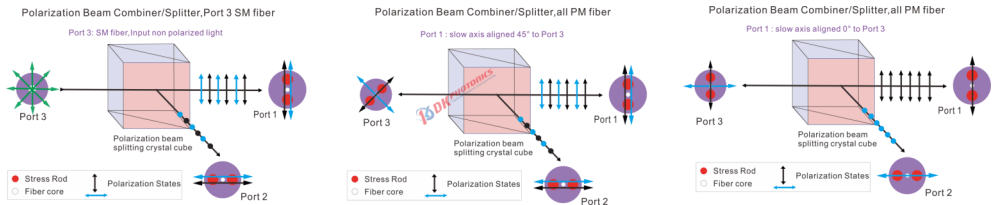
- Polarization MUX/Demux
- High power fiber laser
- Optic sensor system
- Coherent Telecommunication Systems



The Polarization Beam Combiner/Splitter can be used either as a polarization beam combiner to combine light beams from two PM input fibers into a single output fiber, or as a polarization beam splitter to split light from an input fiber into two output fibers of orthogonal polarization states.

DK Photonics offers a large selection of PBS/C. These devices can handle powers rang from 300mW to 10W or other on request, and have center operating wavelengths ranging from 480 nm to 2050nm.

If you do not see a standard Polarization Beam Combiner/Splitter that meets your needs, we welcome the opportunity to review your desired specification and quote a custom Polarization Beam Combiner/Splitter. Requests for custom fiber pigtailed, different wavelengths and handling power of operation or other specific needs will be readily addressed.



### Details Regarding Routing path:

<b>Polarization Beam Combiner:</b>	
Routing path is from port 1, 2 to 3, Here are three options of polarized state from Port 1, 2 to Port 3	
Option 1: PM to SM fiber	Port 1: 50%, Linear polarized light in, through slow axis, Port 2: 50%, Linear polarized light in, through slow axis. Port 3, 100%, Circularly polarized light Out.
Option 2: PM to PM fiber, port 1 is slow axis 0° aligned to port 3	Port 1, 2, only work through slow axis, blocked the fast, The slow axis of port 1 is aligned to the slow axis of port 3, The slow axis of port 2 is aligned to the fast axis of port 3,
Option 3: PM to PM, port 1 is slow axis 45° aligned to port 3	Port 1, 2, only work through slow axis, blocked the fast, Port 1 or 2, 100%, Linear polarized light in, through slow axis, Port 3, 25% linear polarized light out, through slow axis, 25% by the fast.
<b>Polarization Beam Splitter:</b>	
Routing path is from port 3 to 1,2, Here are three options of polarized state from Port 3 to Port 1 & 2	
Option 1: SM to PM fiber	Port 3, Circularly polarized light in, Port 1: 50%, Linear polarized light out, through slow axis, Port 2: 50%, Linear polarized light out, through slow axis.
Option 2: PM to PM, port 3 is slow axis 0° aligned to port 1	1. Port 3, Linearly polarized light in, through slow axis, Port 1: 100%, Linear polarized light out, through slow axis, Port 2: 0%. 2. Port 3, Linearly polarized light in, through fast axis, Port 1: 0%, Port 2: 100%, Linear polarized light out, through slow axis.
Option 3: PM to PM, port 3 is slow axis 45° aligned to port 1	1. Port 3, Linearly polarized light in, through slow axis, Port 1: 50%, Linear polarized light out, through slow axis, Port 2: 50%, Linear polarized light out, through slow axis. 2. Port 3, Linearly polarized light in, through fast axis, Port 1: 50%, Linear polarized light out, through slow axis, Port 2: 50%, Linear polarized light out, through slow axis.

## For more Info

### Please contact us at:

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Fax: +86-755-26746512

E-mail: [sales@dkphotonics.com](mailto:sales@dkphotonics.com)

<https://www.dkphotonics.com>

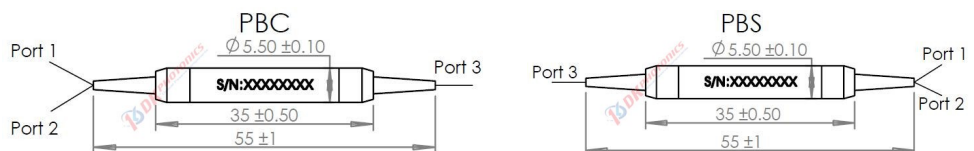
Add.:

4F, Bldg. 18, Qinghu Industrial Park,

Dahe Road, Longhua Dis.,

Shenzhen, China 518109

### Package Dimension:



\*Due to ongoing design improvements, the package size is subject to change. Please contact DK Photonics for confirmation if you have special requirements.



## 780nm Polarization Beam Combiner/Splitter

### Performance Specifications

Parameter	Unit	Value
Grade	-	P
Operating wavelength	nm	780
Operating bandwidth	nm	±20
Typical insertion loss	dB	0.70
Max. insertion loss	dB	0.90
Min. Extinction Ratio	dB	20
Return loss	dB	>50
Directivity	dB	>50
Max. Power Handling	mW	0.5, 1, 2, 3, 5, 10
Tensile Load	N	< 5
Fiber Type	Port 1&Port2	PM780
	Port 3	SM780, or PM780
Operating temperature	°C	-5 ~ +70
Storing temperature	°C	-40 ~ +85
Package dimension	mm	Ø5.5 x 35 or customer specified

1. above specifications are for device without connector. All parameters are tested at room temperature.
2. For devices with connectors, IL will be 0.3dB higher, RL will be 5dB lower and ER will be 2dB lower. The default connector key is aligned to slow axis.
3. For >5W high power applications, we will use heat sink package, contact DK Photonics for details.
4. Since the light is bidirectionally reversible, PBC can also be used as PBS.

### Order information P/N: PBC/PBS-①-②-③-④-⑤-⑥-⑦

When you inquire, please provide the correct P/N number according to our ordering information, and attach the appropriate description would be better. If need any connector, we do not recommend choosing a 250µm bare fiber pigtail.

①	②	③	④	⑤	⑥	⑦
Grade	Operating Wavelength	Power Handling(Total)	Fiber type (Port3)	Pigtails Diameter	Fiber Length	Connector
P:P	78:780nm	L:<0.5W	1:SM fiber(SM780)	25:250µm	08:0.8m	00: None
A: A	XX: Others	1:1W	2:PM fiber, slow axis 45° to port 1	90:900µm	10:1.0m	FP: FC/PC
		2:2W	3:PM fiber, slow axis aligned to port 1	XX: Others	XX: Others	FA: FC/APC
		5:5W				XX: Others

**Part Number Example:** PBC-P-78-L-1-90-10-00

**Description:** 780nm Polarization Beam Combiner, 0.5W power, P grade, SM780 fiber at port 3, with 0.9mm OD loose tube, 1.0m fiber length, and no connectors at all ports.

### Ordering Information for Custom Parts

If you need to customize other specifications, please provide detailed description for your requirement.