PBC/PBS

Fiber Optic Polarization Beam Combiners/Splitters (PBC/PBS)

PRODUCT DATASHEET

G&H fiber optic polarization beam combiners/polarization beam splitters (PBC/PBS) offer low optical loss and high reliability and high polarization extinction ratio (PER) across a wide range of wavelengths.

G&H's fiber optic (PBC/PBS) can be used to combine two polarized light signals to one output fiber or split the orthogonal polarization components of an input signal between two output fibers.

Typical configurations include 2 polarization-maintaining (PM) fiber inputs with single-mode or PM fiber for output.

Operating wavelengths include 488, 532, 640, 780, 820, 850, 880, 980, 1064, 1310, 1480, 1550 and 2000 nm. Wavelength bandpass ranges from ±10 to ±40 nm. Connector options include FC and FC/APC.

Key Features

- Low optical loss
- High reliability
- High (PER)

Applications

- EDFA
- Raman amplifier
- Optical communications
- Optical fiber sensors

PRODUCT CODE: PBCS

Optical Specifications

Polarization Beam Combiner/Splitter (488, 532, 640 and 2000 nm)

Parameter				
Operating wavelength	488 nm	532 nm	640 nm	2000 nm
Bandpass	±10 nm	±10 nm	±10 nm	±40 nm
Insertion loss	≤1.2 dB	≤1.2 dB	≤1.2 dB	≤0.8 dB
Extinction ratio (PBS)	≥17 dB	≥17 dB	≥17 dB	≥20 dB
Cross talk	≥50 dB	≥50 dB	≥50 dB	≥50 dB
Return loss	≥50 dB	≥50 dB	≥50 dB	≥50 dB
Power handling	100 mW			300 mW
Fiber type	Port 1 and 2: PM Panda fiber, Port 3: PM panda fiber or SM fiber			
Input maximum power handling	≤300 mW			
Operating temperature	-5 – +70°C			
Storage temperature	-40 – +85°C			
Dimensions	Ø5.5x35 mm, Ø3x25 mm			

Polarization Beam Combiner/Splitter (780 - 980 nm)

Parameter			
Center wavelength	780 nm	820/850/880 nm	980 nm
Operating wavelength	±20 nm	±20 nm	±20 nm
Insertion loss	≤1.5 dB	≤1.2 dB	≤1 dB
Extinction ratio (PBS)	≥22 dB		
Return loss	≥50 dB		
Directivity	≥50 dB		
Input maximum power handling	≤300 mW		
Fiber type	Port 1 and 2: PM Panda fiber, Port 3: PM Panda fiber or SM fiber		
Operating temperature	-5 – +70°C		
Storage temperature	-40 – +85°C		
Dimensions	Ø5.5x35 mm, Ø3x25 mm		

Polarization Beam Combiner/Splitter (1064 - 1550 nm)

Parameter		
Center wavelength	1064 nm	1310, 1480 or 1550 nm
Operating wavelength	±20 nm	±40 nm
Insertion loss	≤0.8 dB	≤0.6 dB
Extinction ratio (PBS)	≥22 dB	
Return loss	≥50 dB	
Directivity	≥50 dB	
Input maximum power handling	≤300 mW	≤500 mW
Fiber type	Port 1 and 2: PM Panda fiber, Port 3: PM panda fiber or SM fiber	
Operating temperature	-5 – +70°C	
Storage temperature	-40 – +85°C	
Dimensions	Ø5.5x35 mm, Ø3x25 mm	

1 For PBS with working axis type 0, Insertion loss is for un-polarized light input, and IL is 3 dB higher.
2 For PBS with working axis type 2, insertion loss is for polarized light input, and 3 dB higher.
3 For each connector added. IL is 0.3 dB (1310 – 2000 nm) or 0.5dB (980 – 1060 nm) or 0.8 dB (780 – 850 nm), or 1.5 dB(488 – 640 nm) higher, RL is 5 dB lower and ER is 2 dB (980 nm or above) or 3 dB (488 – 850 nm) lower.
4 The default connector key is aligned to slow axis.

Order code

	①		②		③	④		⑤				⑥	⑦	⑧
PBCS	-		-		-			-		X	-			

①	**Type code**	Splitter (port configuration 1x2)	Combiner (port configuration 2x1)
	Code	S	C

②	**Working axis type**	Port 3 SM fiber	Port 3 PM fiber and slow axis is aligned to port 1	Port 3 is PM fiber and slow axis is aligned 45° to port 1
	Code	0	1	2

③④	**Wavelength**	488 nm	533 nm	640 nm	780 nm	820 nm	840 nm	880 nm
	Code	48	53	64	78	82	84	88

③④	**Wavelength continued**	980 nm	1060 nm	1310 nm	1480 nm	1550 nm	2000 nm
	Code	98	06	31	48	55	00

⑤	**Package style**	Bare fiber, mini-size package Ø3.x25 mm	Bare fiber, standard package Ø5.5x35 mm	900 µm jacket, standard package Ø5.5x35 mm
	Code	1	A	B

⑥⑦	**Lead length**	1 m	1.5 m	etc
	Code	10	15	etc

⑧	**Connector Style**	None	FC	FC/APC
	Code	0	3	6

Specifications are based on non-connectorized products. For connectorized specifications, please contact sales for details. Custom optical and mechanical configurations are available upon request.

For further information
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