Polarization Beam Combiner/Splitter

(550 to 2200nm, optical power up to 20W)

DATASHEET

BUY NOW

Agiltron's PB Series Polarization Beam Combiner/Splitter is used to combine two polarized light signals or split one light signal into two polarized outputs with their polarization states orthogonal to each other. Employing Agiltron's proven advanced micro-optic design, it features low insertion loss, epoxy-free optical path, high extinction ratio, compact package, high power, high reliability, and high stability. These quality components have excellent characteristics, making them an ideal choice for application in fiber amplifier systems, pump lasers, and optical fiber sensors.

Couplers are highly efficient in splitting light with little loss, about 0.2dB per joint, but incur significant losses when combining lights; for example, a 50/50 coupler produces a 50% loss to each beam when combined. For beam-combining applications, search Combiner.

Features

- Low Insertion Loss
- Epoxy –Free Optical Path
- High Extinction Ratio
- Compact Package
- High Reliability & Stability
- Cost Effective

Specifications

Parameter	Min	Typical	Max	Unit
Wavelength [1]	780		2300	nm
Insertion Loss [2] 1900 – 2300nm		0.8	1.2	dB
Insertion Loss [2] 1700 – 1900nm		0.7	1.1	
Insertion Loss [2] 1260 – 1650nm		0.6	1	
Insertion Loss [2] 960 – 1100nm		1	1.2	
Insertion Loss [2] 780 – 950nm		1.2	1.5	
Extinction Ratio [2]	20	22	30	dB
Return Loss	45	50	60	dB
Wavelength Dependent Loss			0.15	dB
Optical Power Handling [3]		0.3	5	W
Directivity (2→3 or 3→2)	50			dB
Operating Temperature	-10		50	°C
Storage Temperature	-40		80	°C

Notes:

[1]. Operation bandwidth is ± 40nm approximately at 1550nm.

[2]. Measured without connectors. Each connector adds about 0.25dB loss

[3]. Defined at 1310nm/1550nm. For the shorter wavelength, the handling power may be reduced.

Applications

- Optical Fiber Amplifier
- Fiber Optic Sensor
- Instrumentation

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link]:

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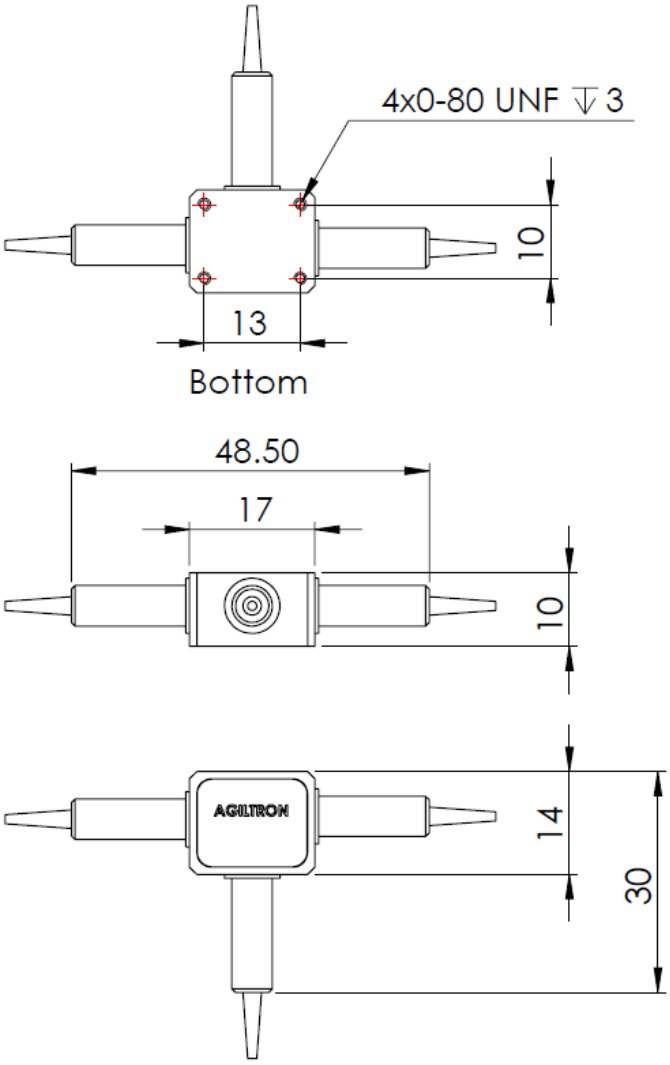
Mechanical Dimensions Standard (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

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Ordering Information

	☐	☐	☐	☐	☐	☐	☐	☐	☐
Prefix	**Power**	**Wavelength**	**RE**	**Port 1 Fiber Type**	**Ports 2 Fiber Type**	**Ports 3** Fiber Type	**Fiber Cover**	**Fiber Length**	**Connector**
PBCS-	Regular=1 1W=A 2W=B 5W=C 8W=D 10W=E 15W=F 20W=G Special=0	1060=1 1310=3 1480=4 1550=5 780=7 850=8 980=9 650=6 Special=0	20dB=1 26dB=2 30dB=3 Special=0	SMF-28 =1 PM1500 =2 PM1900 =5 PM980 =6 PM850=7 PM400=8 HI 1060=9 Special=0	SMF-28 =1 PM1500 =2 PM1900 =5 PM980 =6 PM850=7 PM400=8 HI 1060=9 Special=0	SMF-28 =1 PM1500 =2 PM1900 =5 PM980 =6 PM850=7 PM400=8 HI 1060=9 Special=0	Bare fiber=1 900um tube=3 Special=0	0.25m=1 0.5m=2 1.0 m=3 Special=0	None=1 FC/PC=2 FC/APC=3 SC/PC=4 SC/APC=5 ST/PC=6 LC/PC = 7 LC/APC = A LC/UPC = U Special=0

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness

Fibers with smaller core diameters (<5 μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.