Gooch & Housego
ENABLING PHOTONIC TECHNOLOGIES

HI REL POLARIZATION BEAM COMBINER

Fused Fiber PM Combiner

DATASHEET

High Reliability (HI REL) Components are deployed in environments such as undersea and space, where the costs of component replacement are prohibitive.

Gooch & Housego is established as a supplier of these components to major undersea equipment manufacturers.

G&H's HI REL capability is built upon the foundation of a long established manufacturing history of very reliable terrestrial components. Full facilities are available to perform customer-specific HI REL qualification programs, which can consist of accelerated ageing and Weibull analysis.

Manufacturing is carried out on specially-developed workstations. Advanced fiber management, in-process screening and customer-specific validation tests are implemented, to further enhance component reliability.

The G&H HI REL polarization beam combiner (PBC) enables the efficient combination of two orthogonally polarized sources of light into a common output fiber.

In optical amplifiers this provides a doubling of pump power whilst ensuring pump redundancy should a pump failure occur.

Applications include high power optical amplifiers and undersea systems. All ports consist of polarization maintaining fiber.

Key Features

- Established HI REL supplier
- High performance
- Full qualification facilities available
- Advanced in-process testing
- Low loss fused components
- Design standard 0.1FITs (failure in one billion field hours)
- High power handling

Applications

- Undersea equipment
- Terminal equipment
- Space
- Defense and Avionic
- Erbium doped fiber amplifiers (EDFAs)
- Raman amplifiers
- Coherent optical communications

Compliance

- Customer Specific

Optical Specifications[5]

Parameter	Specification	
Operating wavelengths[1,2]	975nm	
Insertion loss (fast axis)[3]		
Grade H	Max	0.70 dB
Insertion loss (slow axis)[3]		
Grade H	Max	0.55 dB
Return loss/directivity[4]	Min	50 dB
TDL (fast axis)[4]	Max(Typ)	0.20 dB (0.10 dB)
TDL (slow axis)[4]	Max(Typ)	0.10 dB (0.05 dB)
Pigtail tensile load	Max	5 N
Optical power handling[5,6]	Max	4 W
Fiber type		All ports PM fiber
Pigtail		Primary coated fiber
Operating temperature range		-5 – 45°C
Storage temperature range		-40 – 85°C

1 The optical specification is typically met 972 – 978 nm

2 Other wavelengths are available. Please contact the G&H sales office.

3 Insertion loss at center wavelength (not including TDL or connector losses).

4 Limits guaranteed by design.

5 Where operation powers >4 W are required the component housing and fiber must be adequately heat-sunk (contact G&H sales to discuss high power options).

6 Component performance and reliability under high power must be determined within the customer system.

Housing Options[1]

Housing Code	Description	Dimensions (mm)	Pigtail
3	Regular	3.0 (∅) x 71 (L)	Primary-coated fiber

1 For alternative housing options please contact G&H sales

Configuration

Order code

Order codes are comprised of a standard device prefix (e.g. PBC) followed by code letters or numbers which correspond to available options.

Sample: PBC-5H3275G10 (PBC, HI REL grade, regular housing, 2x2, channel center = 975nm, 980nm PM fiber 250 ☐m buffer, 1m pigtail, no connector)

Order code				①	②	③	④	⑤	⑥	⑦	⑧	⑨
F	F	P	-									

①	**Passband**	9XX		
	Code	5		
②	**Device Type**	PBC HI REL		
	Code	H		
③	**Housing**	Regular ø3x71 mm		
	Code	3		
④	**Port configuration**[3]	2x2 Terminated	2x2	
	Code	1	2	
⑤ ⑥	**Last two digits of center wavelength**[1]	975 nm		
	Code	75		
⑦	**Fiber Type**	980 nm PM fiber 250 µm buffer		
	Code	G		
⑧	**Pigtail length**[2]	0.5 m	1 m	2 m
	Code	0	1	2
⑨	**Connector**	None		
	Code	0		

1 For other center wavelengths please contact the G&H sales office.

2 Minimum pigtail length. Other pigtail lengths are available on request.

3 Where 3-port operation is required the 4th port (P3) terminated externally using coreless fiber and recoated splice.

Ordering Information:

XSoptix

800 Village Walk #316
Guilford, CT 06437
Ph: 203-401-8093

Email orders to: sales@xsoptix.com
Fax orders to: 800-878-7282

For further information

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