

HIGH RELIABILITY 980/1550 nm PM WDM

Fused Fiber PMWDM for use in Undersea and Space applications.

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 fused PM WDM, combines multiple wavelengths of light in PM fiber whilst maintaining polarization.

In common with all PM components, it is necessary to launch into either the slow or the fast axis to maintain polarization. For the G&H PM WDM, specifications are based on slow axis launch, although fast axis versions are also available if requested.

Components are supplied in regular (bare fiber) or custom housings, depending on the installation environment.



Key Features

- Established HI REL supplier
- Low loss
- High PER
- High power handling
- PM PANDA fiber on all ports
- Slow axis operation as standard
- Fast axis operation available on request
- Manufactured using HI REL methodology (wear-out modelling not available for this version)

Applications

- Undersea equipment
- Terminal equipment
- Space
- Defense and avionic
- Erbium doped fiber amplifiers (EDFAs)
- Fiber lasers
- Instrumentation

Compliance

- Customer Specific

Optical Specifications

Wavelength		CH1 Insertion Loss ¹ (dB)	CH2 Insertion Loss ¹ (dB)	CH1 PER	CH2 PER
CH1	CH2	Max (Typ)	Max (Typ)		
970-980 ²	C-Band (1530-1560nm)	0.3 ² (0.2)	0.5 (0.2)	>17 dB ²	>20 dB

- 1 All specifications are for operation on slow axis at center wavelength (975 and 1545nm), room temperature, SOL (start of life) and no guard banding.
- 2 CH1 wavelength range is below the 2nd order mode cut-off for the fiber used to manufacture this product type. Performance specified for single-mode incident on this path.
- 3 Custom specifications available on request.

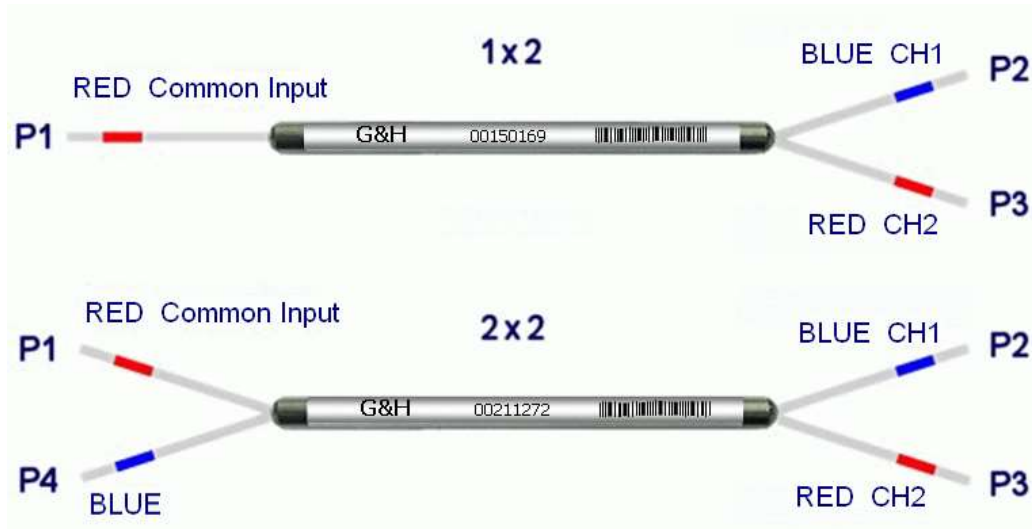
Parameter	Specification
Return loss/directivity ¹	55 dB
Pigtail tensile load	5 N
Optical power handling ²	4 W
Operating/storage temperature range	-5 – +75°C/-40 – +85°C
Fiber type	PM PANDA fiber

- 1 Return loss is the ratio of power launched to power reflected for port P1. Directivity for the 2x2 component is the ratio of power launched to P1 to the power reflected to P4. Guaranteed by design.
- 2 For operation at powers of greater than 4 W the component housing and fiber must be adequately heat-sunk (for additional information contact G&H sales). Components intended for high power operation are only available in the 2x2 configuration. Component performance and reliability under high power must be determined within the customer system.
- 3 Fiber and taper proof tested during build to confirm strength.

Housing Option

Housing Code	Description	Max Dimensions (mm)	Pigtail
3	Regular	3.0 (∅) x 85 (L max)	Primary-coated fiber

Configuration



Order code

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

Sample: FPW-5C32H2310 (fused fiber WDM, 970-980 nm pump, C-Band signal, regular housing, 2x2, HI REL grade, PM 14XXC-A, 1 m pigtail, no connector).

Order code				①	②	③	④	⑤	⑥	⑦	⑧	⑨
F	P	W	-	5	C	3		H	2			0
①	Pump wavelength			970-980nm								
	Code			5								
②	Signal wavelength			C-Band								
	Code			C								
③	Housing			Regular								
	Code			3								
④	Port configuration			1x2				2x2				
	Code			1				2				
⑤	Grade			HI-REL								
	Code			H								
⑦	Fiber type			Nufern PM 14XXC-A								
	Code			3								
⑧	Pigtail length ¹			0.5 m	1 m	2 m	3 m	4 m				
	Code			0	1	2	3	4				
⑨	Connector			None								
	Code			0								

¹ Minimum pigtail length. Further pigtail lengths available on request.

Other products which may be of interest

- Fiber-Q®
- High power multimode combiners
- Combiners with all types of signal feedthrough fiber
- Ultra-low ratio tap couplers
- WDMs for combining signals with red pointer lasers
- OCT wideband couplers

For further information

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