SIDE-COUPLED MULTI-MODE POWER COMBINER WITH PM SIGNAL FEEDTHROUGH FOR 2 µm OPERATION

Fused Fiber TFB

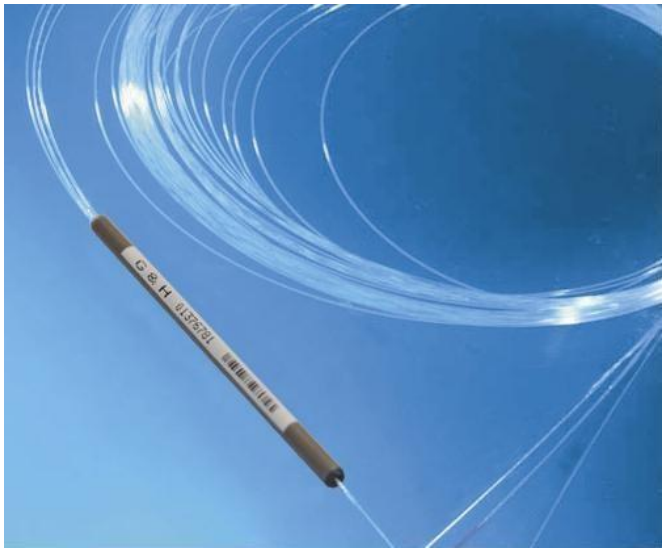
G&H's side-coupled TFB series power combiners has been expanded to include the 2 µm operating window.

G&H proprietary manufacturing techniques allow the precise fusion of multi-mode pump fibers to a PM (polarization maintaining) signal feedthrough fiber and a PM dual clad output fiber providing high coupling efficiency over a wide pump wavelength range.

Available in a standard (1+1)x1 and (2+1)x1 configuration, the combiner can be fabricated from a range of industry standard fibers for ease of splicing to commercially available laser diodes, signal and gain fibers

Custom options cover large mode area (LMA), large diameter (LDF) and active signal feed-through fibers and are available on request.

Please contact the sales team for further information.



Key Features

- 1.9 µm-2.1 µm signal feed-through available
- All fiber construction
- High power design
- High coupling efficiency
- Custom configurations available

Applications

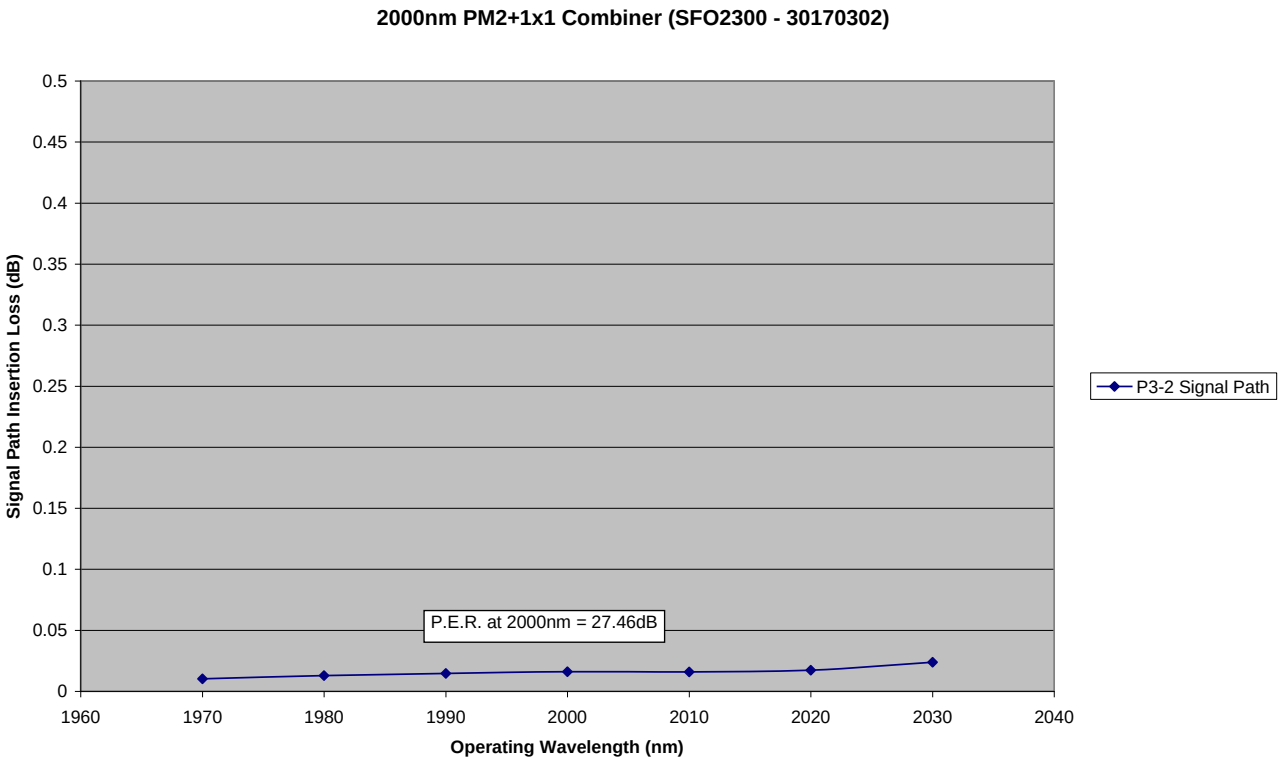
- Cladding pumped fiber lasers
- Cladding pumped fiber amplifiers
- Telecoms
- IR Imaging
- Biomedical
- Industrial
- Defense
- IR Countermeasures

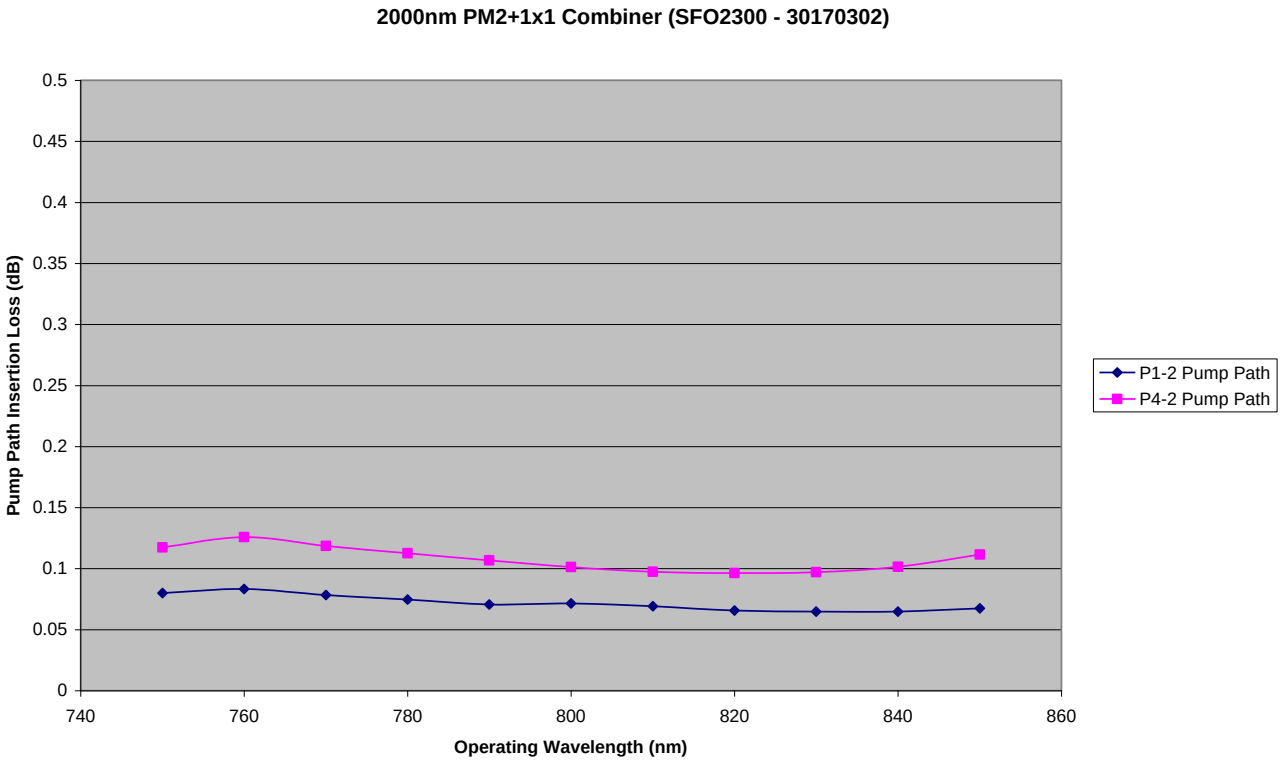
Optical Specifications[1]

Parameter	Specification	
Feedthrough option	10/130 µm 0.15/0.45 NA	PM1950+10/130 µm
Pump input fiber NA	0.15 or 0.22	0.15 or 0.22
Pump input wavelength	750-850 nm	750-850 nm
Signal input wavelength	1900-2100 nm	1900-2100 nm
Pump (MM) transmission efficiency[2]	≥90% (typ. >95%)	≥90% (typ. >95%)
Signal transmission efficiency[3]	≥93% (typ. >97%)	≥90%
Signal PER (polarization extinction ratio)	≥17 dB	≥17 dB
Return loss	≥40 dB	≥40 dB
Operating temperature	-5– +75°C	-5– +75°C
Storage temperature	-40– +85°C	-40– +85°C

1 All specifications are for operation at room temperature.
2 MM transmission efficiencies based on typical system mode fill conditions and 0.5 m pigtails. Reported at 790 nm as standard.
3 Signal (feed-through) transmission efficiency reported at center wavelength

Typical Optical Performance





Order code

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

Sample: TFB-PY5212A71 (2+1x1 PM tapered fiber bundle, 1950 nm signal, two 105/125 µm 0.22 NA pump inputs, 10/130 µm 0.15/0.45 NA signal feed-through in level 1 high power, 1 m pigtails).

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

②③	Signal wave length[1]	1900 nm	1950 nm	2000 nm	2050 nm
	Code	Y0	Y5	Z0	Z5

④	Configuration (No. of pump inputs)	1 pump input	2 pump inputs
	Code	1	2

⑤	Pump input fiber	105/125 µm
	Code	1

⑥	Pump input fiber NA	0.15	0.22
	Code	1	2

⑦	Signal feed through fiber[2]	10/130 µm 0.15/0.45 NA	PM1950+10/130 µm
	Code	A	B

⑧	Housing[3]	Regular ø3 x 65 mm (max)	Level 1 high power 5 mm^2 x 65 mm (max)	Level 2 high power 5 mm^2 x 65 mm (max)
	Code	3	7	8

⑨	Pigtail length[4]	**0.5 m**	**1 m**	**2 m**
	Code	0	1	2

1 Single-mode feed-through DCF, other DCF including LMA available on request.
2 Other fiber types available, please contact the sales team for further information. Fibers are passive.
3 Maximum housing lengths. Note: Adequate heat-sinking is required for high power operation. High power multi-mode combiner applications note (PEC 0134) on website or consult sales dept.
4 Minimum pigtail lengths.