

MULTIMODE POWER COMBINER WITH PM SIGNAL FEEDTHROUGH

PM 6+1x1 TFB

The Gooch & Housego tapered fiber bundle (TFB) series power combiners provide a high efficiency means of combining light from several multimode sources into one fiber.

G&H proprietary manufacturing techniques allow the precise fusion of input fibers around a central 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 6+1x1 configuration, the combiner can be fabricated from a range of industry standard fibers for ease of splicing to commercially available laser diodes and fiber applications.

Custom variants using non-standard fibers are available on request.

Please contact the sales team for further information.



Key Features

- 1.5 μm & 1.0 μm PM signal fibers available
- All fiber construction
- High power design
- High coupling efficiency
- PM Axis maintained
- Custom configurations available

Applications

- Cladding pumped fiber lasers
- Cladding pumped fiber amplifiers
- Telecoms
- Medical
- Industrial
- Defense

Optical Specifications¹

Parameter	Specification	
Pump input fiber NA	0.15	0.22
Pump input wavelength	900 to 1000 nm	
Signal input wavelength	1550 or 1064 nm	
Pump (MM) transmission efficiency ²	≥90% (Typ >95%)	≥90%
Signal transmission efficiency ³	≥80% (Typ >85%)	
Signal PER (polarization extinction ratio)	>20 dB	
Return loss/directivity	>40 dB	
Operating temperature	0 - +75°C	
Storage temperature	-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 975 nm as standard.

³ Signal (feedthrough) transmission efficiency reported at center wavelength; specification typical for center wavelength ±15 nm (minimum).

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-P50611B30 (PM 6+1x1 tapered fiber bundle, 1550 nm signal feedthrough, six 105/125 μm 0.15 NA pump inputs, 1550 nm core DCF output, regular housing, 0.5 m pigtails).

Order code				①	②	③	④	⑤	⑥	⑦	⑧	⑨
T	F	B	-	P			6	1				
② ③	Signal wave length ¹			1064 nm				1550 nm				
	Code			64				50				
④	Configuration (No. of pump inputs)			6 pump inputs								
	Code			6								
⑤	Pump input fiber			105/125 μm								
	Code			1								
⑥	Pump input fiber NA			0.15				0.22				
	Code			1				2				
⑦	DCF output fiber ²			1060 nm core. 130 μm /0.45 NA				1550 nm core. 130 μm /0.45 NA				
	Code			A				B				
⑧	Housing ³			Regular \varnothing 3 x 55 mm			Level 1 high power 5 mm ² x 60 mm ³		Level 2 high power 5 mm ² x 60mm ³			
	Code			3			7		8			
⑨	Pigtail length ⁴			0.5 m			1 m		2 m			
	Code			0			1		2			

1 Signal wavelengths of 1064 nm or 1550 nm assume the use of Nufern PM-980-HP and PM-1550-HP (or equivalent) signal feedthrough fibers respectively.

2 Typical mode field diameters are based on \sim 7.5 μm for 1064 nm and \sim 10.5 μm for 1550 nm. Fibers are passive.

3 Maximum housing lengths. Note- Adequate heat-sinking is required for high power operation. High power multimode combiner application notes (PEC 0134) on website or consult sales office.

4 Minimum pigtail lengths.

Ordering Information:



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Email orders to: sales@xsoptix.com
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For further information

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