G&H’s TFB series Power Combiners provide a high efficiency means of combining light from several multimode sources into one fibre.

G&H proprietary manufacturing techniques allow the precise fusion of input fibres around a central PM (polarisation maintaining) signal feedthrough fibre and a PM dual clad output fibre providing high coupling efficiency over a wide pump wavelength range.

Available in a standard (6+1)x1 configuration, the combiner can be fabricated from a range of industry standard fibres for ease of splicing to commercially available laser diodes and fibre applications.

Custom variants using non-standard fibres are available on request. Please contact the sales team for further information.

Key Features:
- 1.5μm & 1.0μm PM Signal fibres available
- All fibre construction
- High power design
- High Coupling Efficiency
- PM Axis maintained
- Custom configurations available

Applications:
- Cladding pumped fibre lasers
- Cladding pumped fibre amplifiers
- Telecoms
- Medical
- Industrial
- Defence
Optical Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Input Fibre NA</td>
<td>0.15</td>
<td>0.22</td>
</tr>
<tr>
<td>Pump Input Wavelength</td>
<td>900 to 1000</td>
<td>nm</td>
</tr>
<tr>
<td>Signal Input Wavelength</td>
<td>1550 or 1064</td>
<td>nm</td>
</tr>
<tr>
<td>Pump (MM) Transmission Efficiency</td>
<td>≥ 90 (Typ &gt; 95)</td>
<td>%</td>
</tr>
<tr>
<td>Signal Transmission Efficiency</td>
<td>≥ 90</td>
<td>%</td>
</tr>
<tr>
<td>Signal PER (Polarisation Extinction Ratio)</td>
<td>&gt;20</td>
<td>dB</td>
</tr>
<tr>
<td>Return Loss/Directivity</td>
<td>&gt;40</td>
<td>dB</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0 to +75</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 to +85</td>
<td>°C</td>
</tr>
</tbody>
</table>

1. All specifications are for operation at room temperature.
2. MM Transmission efficiencies based on typical system mode fill conditions and 0.5m pigtails. Reported at 975nm as standard.
3. Signal (feedthrough) transmission efficiency reported at centre wavelength; specification typical for centre wavelength ±15nm (minimum).

Ordering Code Information

Example: TFB-P50611B30 (6+1x1 Tapered Fibre Bundle with PM 1550nm Signal feedthrough, six 105/125um 0.15NA pump inputs, 1550nm core DCF Output in regular housing with 0.5m pigtails).

1. Signal wavelengths of 1064nm or 1550nm assume the use of Nufern PM-980-HP and PM-1550-HP (or equivalent) signal feedthrough fibres respectively.
2. Typical mode field diameters are based on ~7.5um for 1064nm and ~10.5um for 1550nm. Fibres are passive.
4. Minimum pigtail lengths.