

High Power Fiber Optic Patch Cable/Connector

SM, up to 15W



DATASHEET

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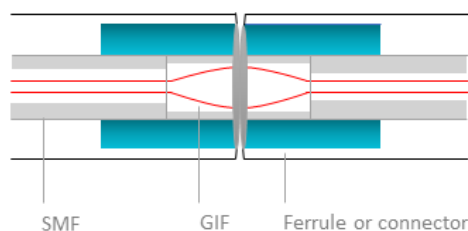
Features

- High Power Handling
- Low Insertion Loss
- High Stability
- Reliability
- Low Cost

Applications

- Telecommunications
- Defense
- Medical and Biotech
- Instrumentation

The High Power Fiber Optic Connector (HPFC) has a beam-expanded fiber end inside a conventional butt coupling connector, as illustrated below. The MFD is expanded to 15 μm for 5W and 35 μm for 10 and 15W. We further offer an UltraL™ option that achieves 0.01dB coupling via fiber core matching that overcomes eccentricity. The HPFC connector must be used to mate with each other. It has a higher loss to mate with conventional connectors and does not meet the high power handling specification. Polarization maintaining fiber version and cabling option are available. The device is ideal for high-power optical transmission systems and medical and biotech high-power delivery applications. We have an automatic volume production facility in-house.



Note: The high-power connector only works in pairs, mating between two connectors having the same part number.

Specifications

Parameter		Minimum	Typical	Maximum	Unit
Operating Wavelength		400		2000	nm
Insertion Loss*		0.01		0.35	dB
Polarization Dependent Loss			<0.02	0.15	dB
Temperature Sensitivity			0.002	0.004	dB/°C
Return Loss	SM 0°	50			dB
	SM 8°	70			
	MM	40			
Optical Power Handling**			5	15	W
Beam Diameter		15		35	μm
Operating Temperature		-40		85	°C
Connector Styles		SC, ST, FC, PC, APC, LC			

Notes:

* Insertion loss depends on fiber and MFD. @1310/1550nm

** Continuous operation. @1310/1550nm

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Ordering Information

Prefix	Model	Wavelength	Power ^[1]	Configuration ^[2]	Fiber Length	Fiber Type	Cable Type	Key	Connector ^[3]
HPFC-	SM = 1	480 = 4	5W = 5	One Connector= 1	1m = 1	RGB400 = 4	Bare fiber = 1	Regular = 1	FC/PC = 2
	MM = 2	630 = 6	10W = 2	Two Connectors= 2	1.5m = A	PM480 = 3	900um loose = 2	Narrow = 2	FC/APC = 3
	PM = 3	780 = 7	15W = 7	Special = 0	2m = 2	PM630 = 6	Special = 0		SC/PC = 4
		850 = 8	Special=0		2.5m = B	HI 780 = 7			SC/APC = 5
		980 = 9			3m = 3	PM980 = 9			ST/PC = 6
		1060 = 1			Special = 0	HI1060 = 1			LC/PC = 7
		1310 = 3				SMF28 = 2			LC/APC = A
		1400 = 2				50/125 = A			LC/UPC = U
		1550 = 5				62.5/125 = B			Special = 0
		Special= 0				Special = 0			

[1]. @1310/1550nm

[2]. Two connectors is a patch cable

[3]. For MM fibers no need to have APC angle polishing

Red color – for special order

Application Notes

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness

Fibers with smaller core diameters (<5 μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.