

High Power NxM Fiber Optical Coupler/Splitter

(SM, PM, 1xN, 10W, 20W, 30W)



DATASHEET

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Features

- Low Loss
- High Reliability

Applications

- Gain Control
- Power Equalizer

Agiltron's fiber couplers are used to split or combine light with minimal optical loss from one to multiple fibers. These components are manufactured using the fused biconical taper process on fully software controlled automatic fabrication stations. The process consists of placing two or more fibers adjacent to each other, then fusing and stretching them to create a central coupling region. These couplers are packaged in a thermal expansion matching silica substrate, providing exceptional mechanical and environmental stability.

Our high power series of fiber optical couplers are tested over 10W CW. With additional heat sink packaging, we offer coupler up to 40W CW. Various configurations of NxM in SM, PM, and MM are available in a metal box by cascading 2x2. We further offer beam expanded high power fiber optical connectors.

Couplers are highly efficient in splitting light with little loss, about 0.2dB per joint, but incur significant losses when combining lights; for example, a 50/50 coupler produces a 50% loss to each beam when combined. For beam-combining applications, search Combiner.

Specifications

Parameter	Typical				Unit
Wavelength	433,589,633,780, 830,980,1064		1310,1480,1550,1950, 2000,2050,2100		nm
Bandwidth	±15				nm
Excess Loss	Grade P	Grade A	Grade P	Grade A	
	≤0.8	≤1.0	≤0.5	≤0.6	dB
Split Ratio Tolerance	± 7	± 8	± 5	± 5	%
Polarization E/R	≥17	≥15	≥18	≥16	dB
Splitting Ratio	Grade P		Grade A		
	Throught	Coupling	Throught	Coupling	
5:90:5	± 2.5	± 1.5	± 3.0	± 1.8	dB
10:80:10	± 2.8	± 1.6	± 3.2	± 2.0	dB
15:70:15	± 3.0	± 1.8	± 3.5	± 2.4	dB
20:60:20	± 3.3	± 2.0	± 3.7	± 2.5	dB
25:50:25	± 3.5	± 2.4	± 4.0	± 3.0	dB
30:40:30	± 4.0	± 3.0	± 5.0	± 4.0	dB
33:33:33	± 6.0	± 6.0	± 8.0	± 8.0	
35:30:35	± 4.0	± 5.0	± 5.0	± 6.0	
40:20:40	± 3.0	± 6.0	± 6.0	± 7.0	dB
Operating Temperature	-40~85				°C
Storage Temperature	-40~85				°C
Package Dimension *	250um: (D)3.0x(L)54				mm
	900um: (D)4.0x(L)70				
	2/3mm Cable: (L)90x(W)16x(H)9				

* Other package options available on request

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

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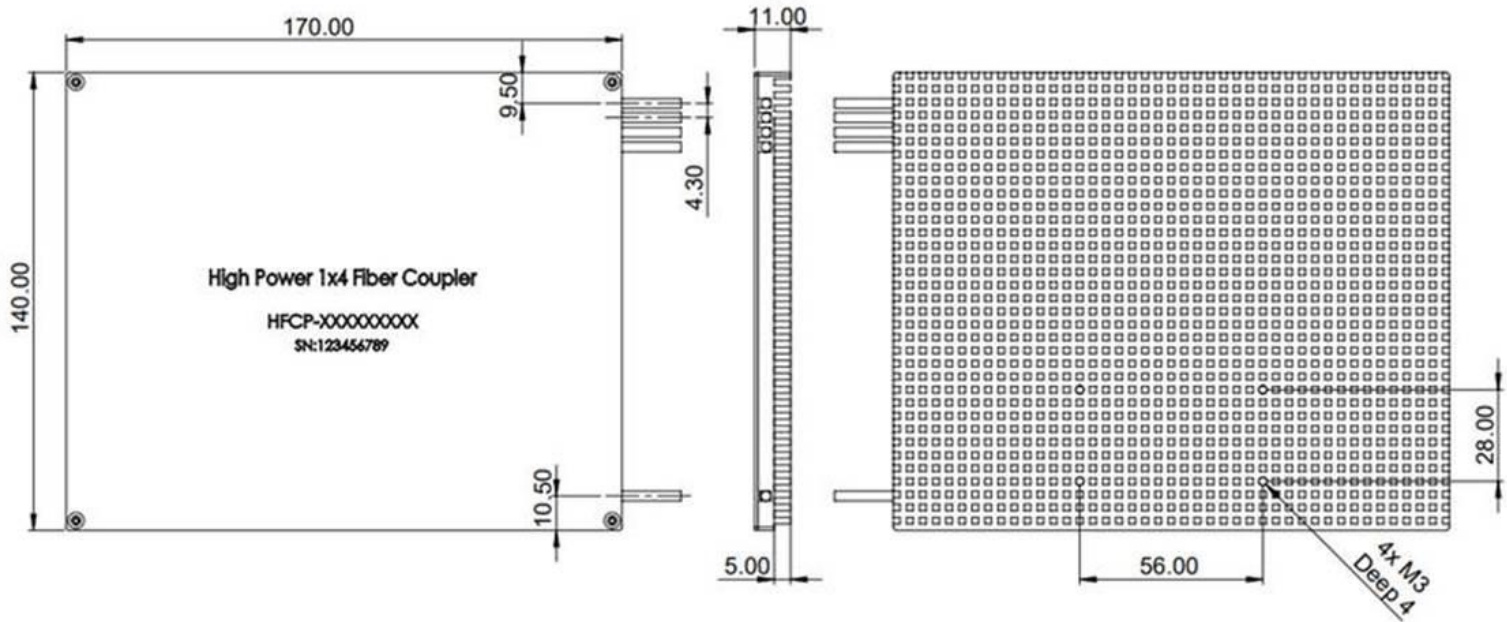
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Mechanical Dimensions (mm)

1x4 Dimension



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Optical Path Diagram

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Ordering Information (Part Number)

Prefix	Wavelength	Power	Configuration (NxM)	Split Ratio*	Fiber Type	Fiber Cover	Connector ^[1]
HFCP-	433nm=04	10W =1	2x2 =22	01/99 = 1	SM28 = 1	250µm = 1	None = 1
	589nm=05	20W =2	1x4 =14	02/98 = 2	60 µm = 2	2mm = 2	FC/PC = 2
	633nm=06	30W =3	NxM= NM	05/95 = 3	50 µm = 3	3mm = 3	FC/APC = 3
	780nm=07	40W =4	Special=0	10/90 = 4	Panda = 4	900µm = 4	Special = 0
	830nm=08			20/80 = 5	Special = 0	Special = 0	
	980nm=09			30/70 = 6			
	1064nm=10			40/60 = 7			
	1310nm=13			50/50 = 8			
	1480nm=14			Special = 0			
	1550nm=15						
	1950nm=19						
	2000nm=20						
	2050nm=25						
	2100nm=21						
	Special=00						

[1]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

* Customer can order special configuration with a diagram in the PO

Note:

Standard fiber optical connectors can only handle optical power of about 0.5W and will slowly burn over 1W. Agiltron produces high-power connectors with optical power handling of up to 15W, but they must work in pairs. *For details, click the link below.*

<https://agiltron.com/product/high-power-fiber-optic-connector/>