DUAL-CLAD COUPLER

Fused Dual-Clad Fiber (FDCF) Couplers and Optical Splitters

PRODUCT DATASHEET

The G&H dual-clad couplers offer a high coupling efficiency for multi-mode (MM) fiber over a broad wavelength range with a low wavelength dependent loss.

After years of experience from partnerships and supporting the OCT and bio-imaging communities with customized components and modules, G&H has releasing its commercial line of fused dual-clad fiber couplers.

Light launched in the single-mode core of the input single-mode (SM) fiber or dual-clad (DC) fiber will transmit 100% through the FDCF coupler directly to the inner core of the output DC fiber while light launched in the inner cladding of the DC fiber will couple to the MM fiber with at least 50% coupling efficiency depending on the core size of the MM fiber as a bigger MM fiber (i.e. 250 µm core) results in a higher coupling transmission percentage (70% or higher) to the MM fiber.

As different DC fibers have different operating wavelength ranges thus proper choice of SM fiber is very important for building a high performance FDCF coupler.

Key Features

- Broad wavelength range
- 100% transmission for SM fiber input
- High coupling efficiency to multi-mode fiber
- Low wavelength dependent loss

Applications

- Instrumentation
- OCT systems
- Gyroscopes
- Test and measurement
- Sensors

PRODUCT CODE: 18

The typical 2x2 FDCF couplers have dual-clad (DC) fiber in two opposite leads, and MM fiber in the other two arms (Fig .1). The DC input fiber can be optionally replaced with a matching SM fiber and the MM output fiber can be terminated to form a 2x1 FDCF coupler (Fig.2).

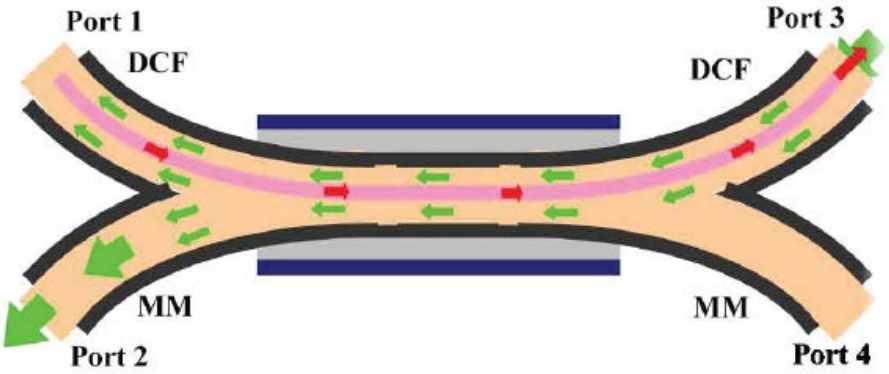

Fig.1 Schematic of 2X2 FDCF Coupler

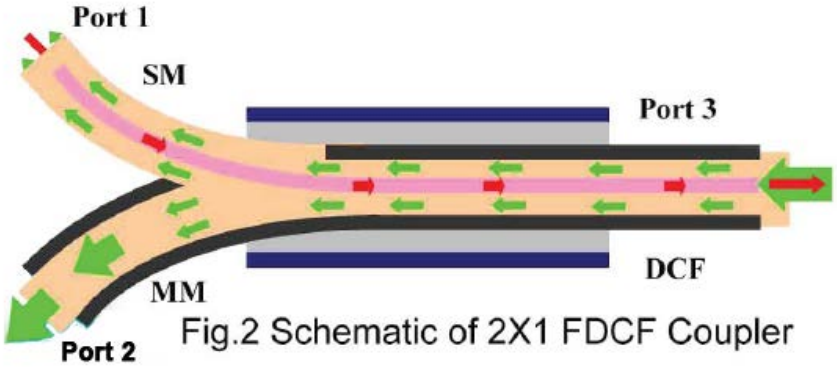

Fig.2 Schematic of 2X1 FDCF Coupler

Optical Specifications

Fused Dual-Clad Fiber (FDCF) Optic Couplers and Optical Splitters. 1250 nm to 1700 nm

Preliminary Specification		
Operating wavelength	1250 nm to 1700 nm	
Double-clad fiber	Nufern SM-9/105/125 µm	
Multi-mode fiber	Nufern 105/125 µm	Nufern 250 µm
Single mode fiber (if applied)	SMF-28	
Single mode insertion loss port 1→ port 3 (core)	≤0.5 dB	≤0.5 dB
Single mode insertion loss port 1→ port 2 (core)	≤3.7 dB	≤2.5 dB
Package	Ø2.9x50.8 mm	
Operating/storage temperature	-40 to +85°C	

Order code

①	②	③	④	⑤		⑥	⑦		⑧	⑨	⑩	⑪	⑫
1	8	-						-				-					

①	**Input fiber**	SM		DCF	
	Code	1		2	
②③	**DC Fiber**	Nufern SM-9/105/125 µm 0.12/0.2NA			
	Code	12			
④⑤	**MM fiber**	Nufern 105/125 µm 0.22NA	Nufern 125 µm 0.46NA	Nufern 250 µm 0.46NA	
	Code	02	04	07	
⑥⑦	**SM fiber**	No Sm fiber input (DCF)		Corning SMF-28	
	Code	00		32	
⑧	**Port configuration**	1x2		2x2	
	Code	1		2	
⑨⑩	**Package**[1]	12	21	25	32
	Code	12	21	25	32
⑪	**Connector type**	None	ST	FC	SC	SMA
	Code	0	2	3	4	8
⑫	**Lead length example**	0.5 m	1 m	1.5 m	2 m
	Code	1	2	3	4

1 Additional packaging details can be found here.

Specifications are based on non-connectorized products. For connectorized specifications, please contact sales for details. Custom optical and mechanical configurations are available upon request.

For further information

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