



## FINAL INSPECTION REPORT

### Description: Double-Clad Fiber Coupler, 1300/1550 nm, Bidirectionnal

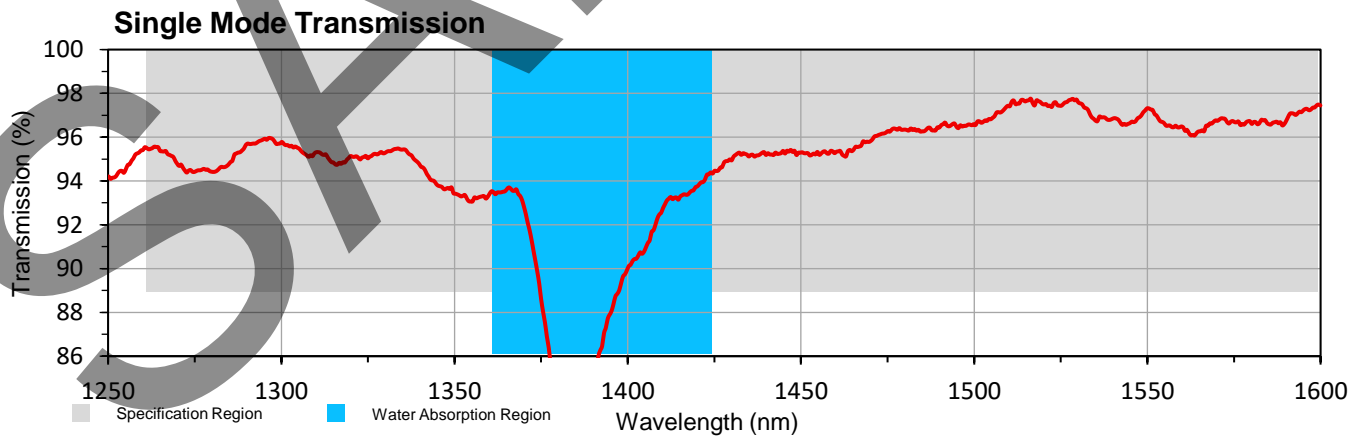
Item #: DC1300LQ2FA  
 SN: T139351

Operating Wavelength Range: 1260 - 1600 nm  
 Maximum Single Mode Core Insertion Loss: 0.5 dB  
 Minimum Multimode Inner Cladding Transfer: 75/55 %  
 Fiber Type: SMF-28 (Port A)  
 DCF13 (Port S)  
 FG105LCA (Ports B and R)

Coupler Test Data <sup>a</sup>		
Input-Output Path	Port S to Port B (MM Inner Cladding)	Port B to Port S (MM Inner Cladding)
Wavelength <sup>b</sup>	800-1700 nm	
Transfer <sup>c</sup>	81.3 %	60.8 %
Input-Output Path	Port A to Port S (Single Mode Core)	
Wavelength	1300 nm <sup>d</sup>	1550 nm <sup>d</sup>
Insertion Loss <sup>e</sup>	-0.19 dB	-0.12 dB
Transmission <sup>f</sup>	95.7 %	97.3 %

- a. All values are measured at room temperature without connectors. See Verification Test Setup for details.
- b. Specified using the SLS201L source and InGaAs detector for light transfer from Port S inner cladding to Port B core or from Port B core to Port S inner cladding. Performance variation may occur over wavelength.
- c. Multimode Transfer is defined as the ratio of the output power from Port B over the input power at Port S, as indicated in the coupler drawing above.
- d. The guaranteed operating range of the device is from 1260 to 1600 nm. It is shown by the gray shaded area on the accompanying graph.
- e. Insertion Loss (dB) is the ratio of the input power at Port A to the output power from the core of Port S as a function of wavelength.
- f. Calculated from Insertion Loss data above

### Coupler Test Data



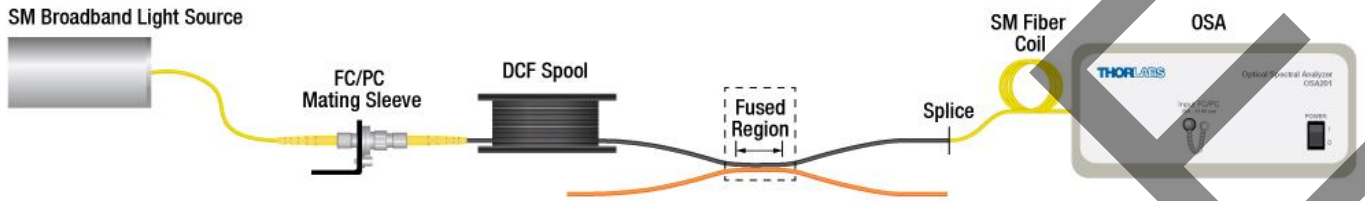
The out-of-band performance can vary from device to device.

Verified by: JX

Date: 12-07-23

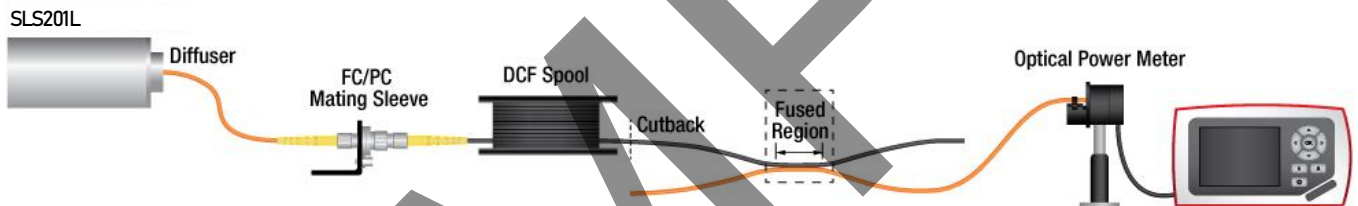
## Verification Test Setup

### (1) Single Mode Insertion Loss/Transmission Measurement



The single mode input of the coupler is connected to a Broadband Light Source (BBS) through an SMF-28 fiber and a spool of double-clad fiber (DCF). The single mode coupler output is spliced to a coiled SMF-28 patchcord (to insure cladding modes are stripped) that leads to an Optical Spectral Analyzer (OSA). A spectrum is recorded before and after the coupler manufacturing process. The difference between the two spectra can be defined as either Insertion Loss (dB) or Transmission (%).

### (2) Multimode Transfer



The multimode input of the coupler is connected to a diffused SLS201L source through a 105/125  $\mu\text{m}$  multimode fiber and a spool of DCF. Doing so ensures that the inner cladding modes are filled. The FG105LCA fiber output of the coupler is connected to an InGaAs photodiode optical power meter. A first optical power is recorded. The coupler is then removed from the measurement setup and the DCF spool is connected directly to the same power meter. A second optical power is recorded. The Multimode Inner Cladding Transfer is defined as the ratio of the first to second power measurements (%).