

Double-Clad Fiber Coupler, 1300 nm, No Connectors



DC1300LEB

Description

Thorlabs' DC1300LEB double-clad, 2x2 fiber coupler, designed and manufactured in collaboration with strategic partner Castor Optics, combines a double-clad fiber (single mode core surrounded by a multimode inner cladding) with a standard step-index multimode fiber. Light in the single mode core of the double-clad fiber (DCF) is guided through the coupler with virtually no loss (≤ 0.5 dB). Light in the multimode inner cladding of the DCF is transferred to the output leg of the multimode fiber with $\geq 60\%$ transmission. This coupler provides a robust alternative to free-space assemblies when incorporating multiple imaging and sensing modalities. It is, for example, ideally suited to combine optical coherence tomography (OCT) with fluorescence imaging or spectroscopy, or to perform speckle-free imaging.

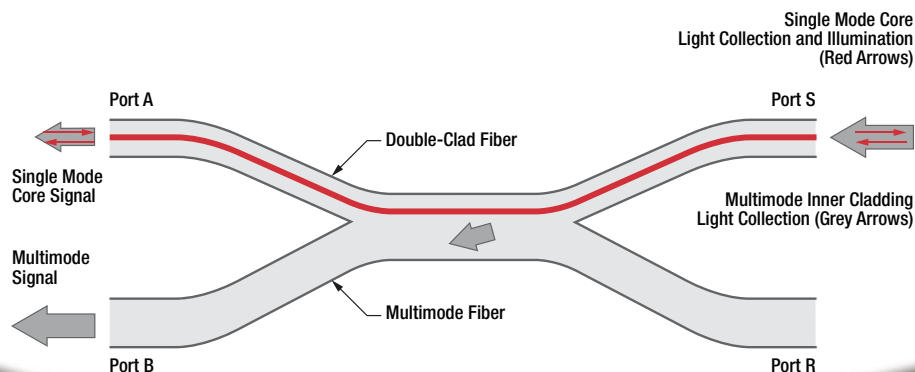
Specifications

DC1300LEB Specifications	
Wavelength Range	1250 - 1550 nm
Single Mode Core Insertion Loss ^a	≤ 0.5 dB
Multimode Inner Cladding Transfer ^b	$\geq 60\%$
Port Configuration	2x2
Fiber Lead Length and Tolerance ^c	1 m ± 0.075 m / -0.0 m
Connectors ^c	Unterminated, Scissor Cut
Package Size	$\varnothing 0.12" \times 3.15"$ ($\varnothing 3.2$ mm \times 80 mm)
Jacket	$\varnothing 900$ μ m Hytrel [®] Loose Tube
Pigtail Tensile Load	10 N
Operating Temperature Range	-40 to 85 °C
Storage Temperature Range	-40 to 85 °C

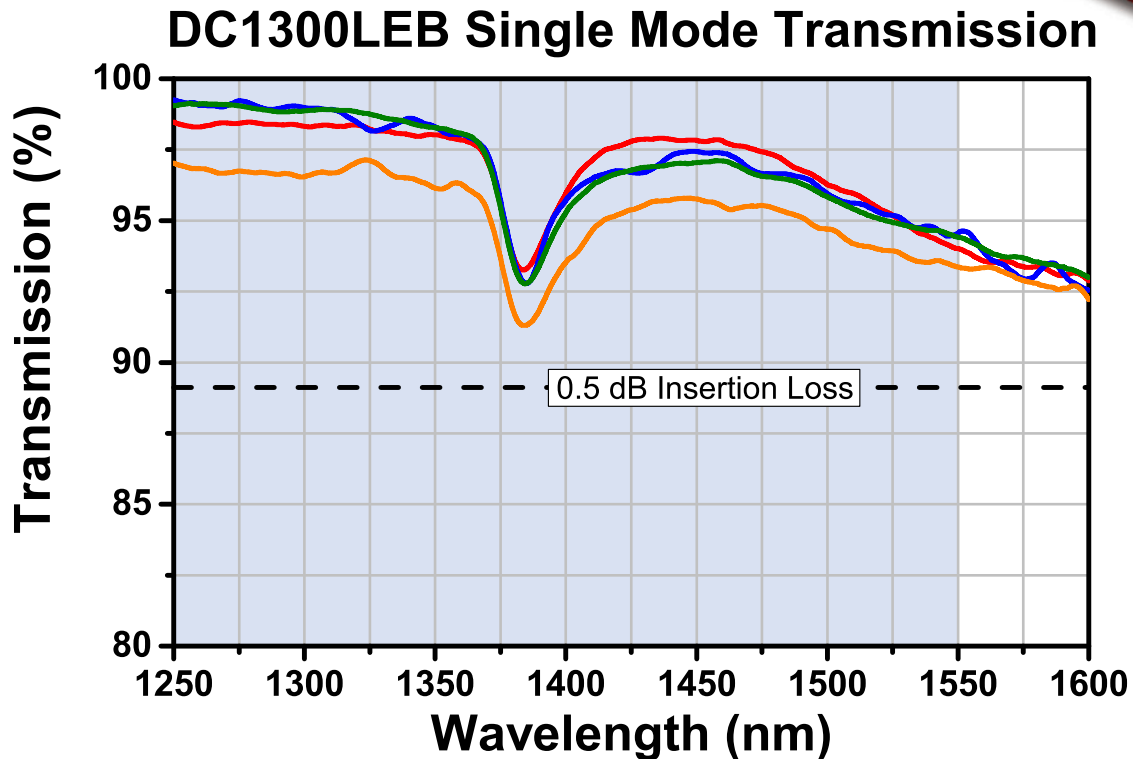


- Measured over the wavelength range from Port A to the core of Port S, as defined below. Performance from Port S to Port A will be similar.
- Measured from the inner cladding of Port S to Port B, as defined below.
- Additional lead lengths and connector options available on request. Please contact techsupport@thorlabs.com with inquiries.

Fiber Specifications		
Fiber Type	Double-Clad Fiber	Multimode Fiber
Core Diameter (Nominal)	9 μ m	200 μ m
Core NA	0.12	0.22
Cut-Off Wavelength	≤ 1250 nm	-
Inner Cladding Diameter	105 μ m	-
Inner Cladding NA	0.2	-
Outer Cladding Diameter	125 μ m	220 μ m



Typical Performance Plots



This persistence plot shows the single-mode transmission of four DC1300LEB couplers. The blue-shaded region denotes the coupler's full operating wavelength range; performance outside of this region is not guaranteed. The spectral feature centered at 1383 nm is a water absorption line. All data was measured without connectors. Multimode transmission from port S to port B (not shown) is flat and $\geq 60\%$ across the whole band.

Drawing



All Ports are Unterminated (Scissor Cut).