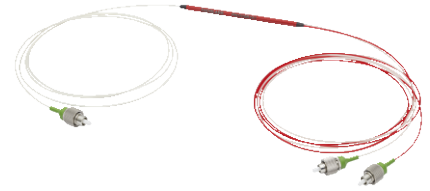


Polarization-Maintaining Fiber Coupler, 1550 nm, 50:50 Ratio

PN1550R5A1

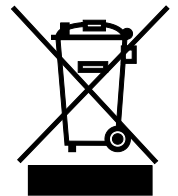


Description

Thorlabs' PN1550R5A1 Single Mode Polarization-Maintaining (PM) fiber optic coupler is designed for a center wavelength of 1550 nm. It features an extinction ratio of ≥ 20 dB for signal and tap ports as well as low excess loss within the specified bandwidth. The connectors are aligned to the slow axis of the fiber. These couplers are commonly used in optical sensors, optical amplifiers, and fiber gyroscopes.

Specifications

PN1550R5A1	
Coupling Ratio ^a	50:50
Coupling Ratio Tolerance	$\pm 1.5\%$
Center Wavelength	1550 nm
Bandwidth ^a	± 15 nm
Extinction Ratio ^b	≥ 20.0 dB / ≥ 20.0 dB
Excess Loss ^a	< 0.3 dB (Typ.)
Insertion Loss ^a	≤ 3.5 dB / ≤ 3.5 dB
Optical Return Loss (ORL) / Directivity ^a	≥ 60 dB
Max Power Level ^c	1 W (With Connectors or Bare Fiber) 5 W (Spliced)
Fiber Type ^{d,e}	Panda
Fiber ^{d,e}	Equivalent to PM 15-U25D
Port Configuration	1x2
Fiber Lead Length and Tolerance	0.8 m $+0.075$ m / -0.0 m
Connectors	2.0 mm Narrow Key FC/APC
Package Size	$\varnothing 0.12$ " x 2.56" ($\varnothing 3.2$ mm x 65.0 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



- Values are specified with a slow axis launch at room temperature without connectors and measured at the center wavelength through the white input port as indicated below.
- Specified with a slow axis launch at room temperature with connectors and measured at the center wavelength through the white input port as indicated below.
- Specifies the total maximum power allowed through the component. Coupler performance and reliability under high-power conditions must be determined within the user's setup. See Usage Tips for safety and handling information.
- Other fiber types may be available upon request. Please contact techsupport@thorlabs.com with inquiries.
- The fiber used in this coupler is compatible with patch cables using Thorlabs' PM1550-XP fiber.



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Usage Tips

- 1) Before connecting a component to a system, make sure the light source is turned off. Inspect both the input and output fiber ends; debris or contamination on the end face can lead to fiber damage when operated at high powers.
- 2) After connecting the component, the system should be tested and aligned using a light source at low power. The system power can be ramped up slowly to the desired output power while periodically verifying all components are properly aligned and that coupling efficiency is not changing with respect to optical launch power.
- 3) Optical connectors can be removed and the device can be spliced into a setup for operation at higher optical powers. Fiber ends should always be cleaned and cleaved prior to splicing.