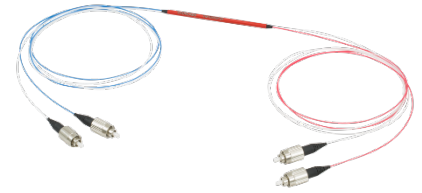


## Multimode Fiber Optic Coupler 400 - 2200 nm, 75:25 Ratio

TM105R3F2B

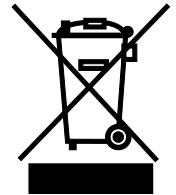


### Description

Thorlabs' TM105R3F2B multimode coupler uses  $\varnothing 105 \mu\text{m}$  core, 0.22 NA multimode fiber and has a 400 - 2200 nm wavelength range. It has a very flat wavelength response and low excess loss over the specified operating range.

### Specifications

TM105R3F2B Specifications	
Wavelength Range	400 - 2200 nm
Coupling Ratio <sup>a</sup>	75:25
Coupling Ratio Tolerance <sup>a</sup>	$\pm 3.0\%$
Excess Loss <sup>a</sup>	$< 0.5 \text{ dB (Typ.)}$
Insertion Loss <sup>a</sup>	$\leq 2.0 \text{ dB} / \leq 7.2 \text{ dB}$
Optical Return Loss (ORL) / Directivity <sup>a</sup>	$\geq 60 \text{ dB}$
Max Power Level <sup>b</sup>	5 W (with Connectors or Bare Fiber) 10 W (Spliced)
Port Configuration	2x2
Fiber Lead Length and Tolerance	0.8 m $+0.075 \text{ m} / -0.0 \text{ m}$
Connectors	2.0 mm Narrow Key FC/PC
Package Size	$\varnothing 0.12" \times 2.76" (\varnothing 3.2 \text{ mm} \times 70.0 \text{ mm})$
Jacket	$\varnothing 900 \mu\text{m}$ Hytrel <sup>®</sup> Loose Tube
Pigtail Tensile Load	10 N
Operating Temperature Range	-40 to 85 °C
Storage Temperature Range	-40 to 85 °C



- Specified at 650 nm and room temperature without connectors through the white input port as indicated below. The coupler can be used across its wavelength range, but performance may vary.
- 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.

Fiber Specifications <sup>a</sup>	
Core Diameter	105 $\mu\text{m}$
Cladding Diameter	125 $\mu\text{m}$
NA	0.22
Hydroxyl Content	Low OH
Core Material	Pure Silica
Cladding Material	Fluorine-Doped Silica

- The fiber used in this coupler is compatible with patch cables using Thorlabs' FG105LCA fiber. Other fiber types may be available upon request. Please contact [techsupport@thorlabs.com](mailto:techsupport@thorlabs.com) with inquiries.



February 22, 2022

TTN151828-S01, Rev B

## *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.