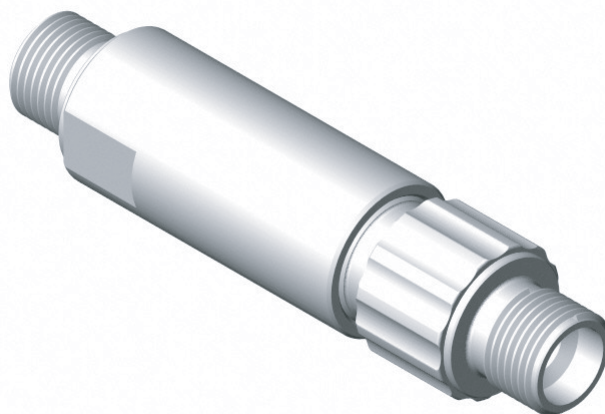


The logo for Princetel, featuring the word "Princetel" in a white, italicized, sans-serif font on a blue square background.

## **Multimode Fiber Combiner/reducer**



[www.princetel.com](http://www.princetel.com)

**Princetel, Inc.**  
**4 Princess Rd Ste 209**  
**Lawrenceville, NJ 08648**  
**609.895.9890**  
**fax 609.895.9552**  
**[info@princetel.com](mailto:info@princetel.com)**



# Multimode Fiber Combiner/reducer

The optical power output from a single laser diode emitter has been growing steadily over the years. However, the market's thirst for power grows even faster as diode lasers find their ways into more and more industrial and commercial applications. One convenient way to multiply the power output is to combine the output of several fiber coupled lasers into one multimode fiber. Princetel's FC2 and FC3 series fiber combiners (fiber reducers) accept fiber bundles in a SMA connector and shrink the beam size by a factor of 2 or 3 before coupling it into a single multimode fiber.

The condition to achieve the size reduction without significant loss penalty is that the input fiber bundle NA is relatively small, for example 0.15, and the output fiber NA is relatively large, such as 0.3-0.4. Similarly, one can also use the fiber combiner/reducer to couple two different multimode fibers. In general the following condition has to be satisfied for fiber 1 to be coupled to fiber 2

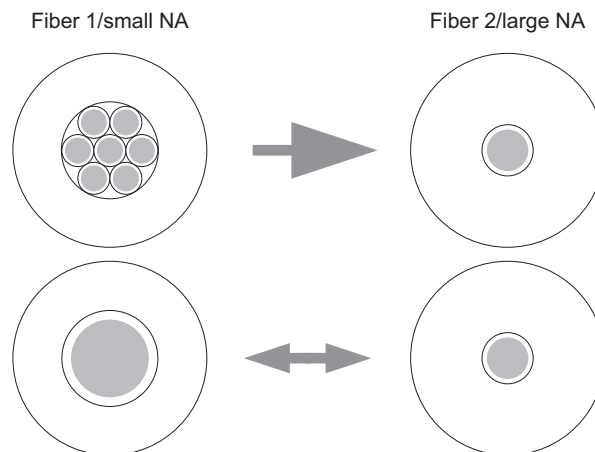
$$NA_1 \times D_1 < NA_2 \times D_2$$

where D is the fiber core or bundle diameter.

## Specifications

Model	FC2	FC3
Wavelength	635-1590 nm*	
Receptacle type	SMA	
Reduction ratio	2	3
Housing material	Stainless steel	
Operating temperature	0 to 65 C	
Storage temperature	-40 to 85 C	

\* Specify wavelength when ordering following the wavelength code next page.

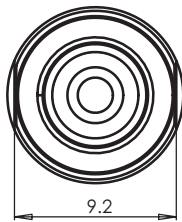


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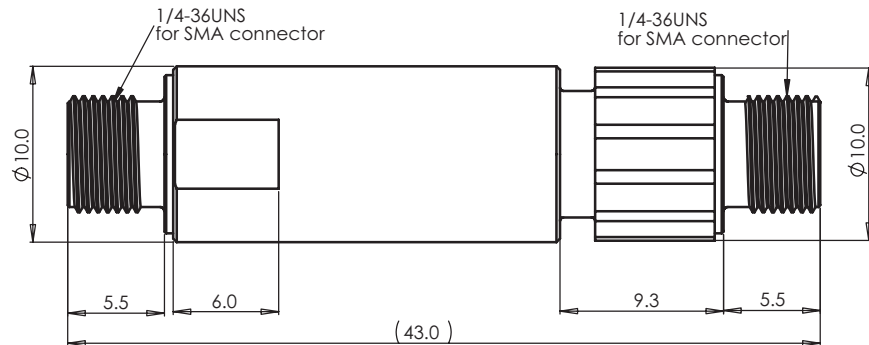
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# Multimode Fiber Combiner/reducer



Unit: mm



2=2:1  
3=3:1

Wavelength  
155=1550 nm

- Wavelength**
- 165=1625 nm
  - 162=1625 nm
  - 159=1590 nm
  - 155=1550 nm
  - 153=1530 nm
  - 148=1480 nm
  - 131=1310 nm
  - 980=980 nm
  - 850=850 nm
  - 780=780 nm
  - 670=670 nm
  - 650=650 nm
  - 635=635 nm

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