

# PM RGB Laser Combiner

(2, 3, or more wavelengths in visible)



DATASHEET

BUY NOW

The LCPM Series PM fiber RGB combiners are based on Agiltron's fused biconical taper technology and compact packaging structure. They enable any two, three or more primary colors in the visible wavelength region to be combined. Configurations are available for full RGB colors of red/green/blue. It features good uniformity, low excess loss and very low polarization sensitivity.

Couplers are highly efficient in splitting light with little loss, about 0.2dB per joint, but incur significant losses when combining lights; for example, a 50/50 coupler produces a 50% loss to each beam when combined. For beam-combining applications, search Combiner.

## Features

- Low Loss
- High Stability
- High Reliability

## Applications

- Display
- Biomedical Imaging
- Full-color Digital Hologram

## Specifications

Parameter	Min	Typical	Max	Unit
Center Wavelengths ( $\lambda_c$ )	640/520/488 or specify			nm
Insertion Loss <sup>[1]</sup> , R, G, B inputs to output @ $\lambda_c$		1.0	1.5	dB
Thermal Stability		< 0.005		dB/°C
Polarization Extinction Ratio <sup>[2]</sup>		> 12		dB
Directivity		> 50		dB
Return Loss <sup>[3]</sup>		> 50		dB
Power Handling		100		mW
Fiber	PM 460-HP			
Operating Temperature	0		65	°C
Storage Temperature	-40		85	°C

### Notes:

[1]. Without connector. Each connector adds 0.3dB and 0.5dB for short wavelength

[2]. Without connector. Each connector adds 2dB

[3]. Without connector. Each connector adds 5dB

\* With connectors, IL+1.5dB, RL-5dB and optical power handling reduces to 50mW.

**Note:** The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [\[click this link\]](#):



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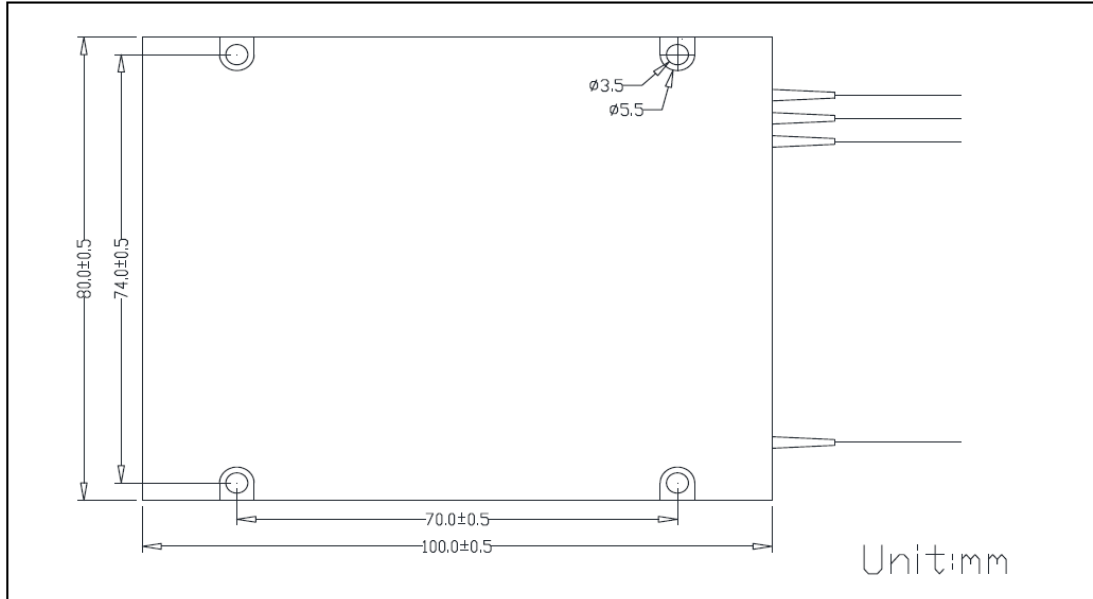
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### Mechanical Dimensions (mm)



\*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

### Ordering Information

Prefix	Type	Color 1	Color 2	Color 3	Package Type	Fiber Type	Fiber Cover	Fiber Length	Connector
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>LCPM-</b>	Two colors = 2 Three colors = 3 Four colors = 4 Special = 0	Red = 1 Green = 2 Blue = 3	Red = 1 Green = 2 Blue = 3	Red = 1 Green = 2 Blue = 3	Standard = 1 Special = 0	PM 460-HP = 1 Special = 0	Bare fiber = 1 900um tube = 3 Special = 0	0.5m = 1 1.0m = 2 1.5 m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 LC/APC = A LC/UPC = U Special = 0

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## Application Notes

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### Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

### Fiber Cleanliness

Fibers with smaller core diameters (<5  $\mu\text{m}$ ) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

### Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the handling by expanding the core side at the fiber ends.