



SIFAM FIBRE OPTICS HIGH POWER COMPONENT RANGE

1. All Multimode Fibre Power Combiners

The following table is a full overview of the fibres in which SIFAM TFB Multimode Power Combiners can be fabricated. For fibres other than those in the table, contact the SIFAM sales team for technical response to your enquiry.

MM Input port count	Input fibre Description			Output fibre Description		
	Physical Dimension		Numerical Aperture	Physical Dimension		Numerical Aperture
	Core	Clad		Core	Clad	
3 or 4	105	125	0.15	200	220	0.22
				NA	125	
	105	125	0.22	200	220	0.22
				NA	125	
	200	220	0.22	200	220	0.46
				400	440	
			NA	400	0.46	
7	105	125	0.15	200	220	0.22
				NA	125	
	105	125	0.22	NA	220	0.46
				NA	125	
	200	220	0.22	NA	400	0.46
				NA	400	
19	105	125	0.15	NA	200	0.46
	105	125		NA	400	
	105	125	0.22	NA	400	0.46
				NA	400	

2. Multimode Power Combiner with Signal Feed through

The following table is an overview of the multimode fibres which can be incorporated with a signal feed through fibre. The physical dimension of the output fibre is referring to the diameter of the secondary cladding which guides the multimode light.

MM Input port count	Input fibre Description			Output fibre Description	
	Physical Dimension		Numerical Aperture	Physical Dimension	
	Core	Clad		Clad	Numerical Aperture
1	105	125	0.22	125	0.46
6	105	125	0.15	125	0.46
				200	
				400	0.46
	105	125	0.22	125	0.46
		200		0.46	
			400	0.46	
18	200	220	0.22	200	0.46
				400	

Incorporated into this design is the signal feed through fibre. The following chart depicts the fibres, NA and physical geometry with which these combiners have been fabricated and shown to be manufacturable with production yields. Fibres outside of this boundary can be discussed on a case by case basis. It is assumed the customer has knowledge on the availability of specific fibres and that SIFAM can either source or be provided with fibres that have cores on both input and output side with well matched MFDs, such that the interface can be made efficiently between the two cores. This applies to both 1um and 1.5um products.

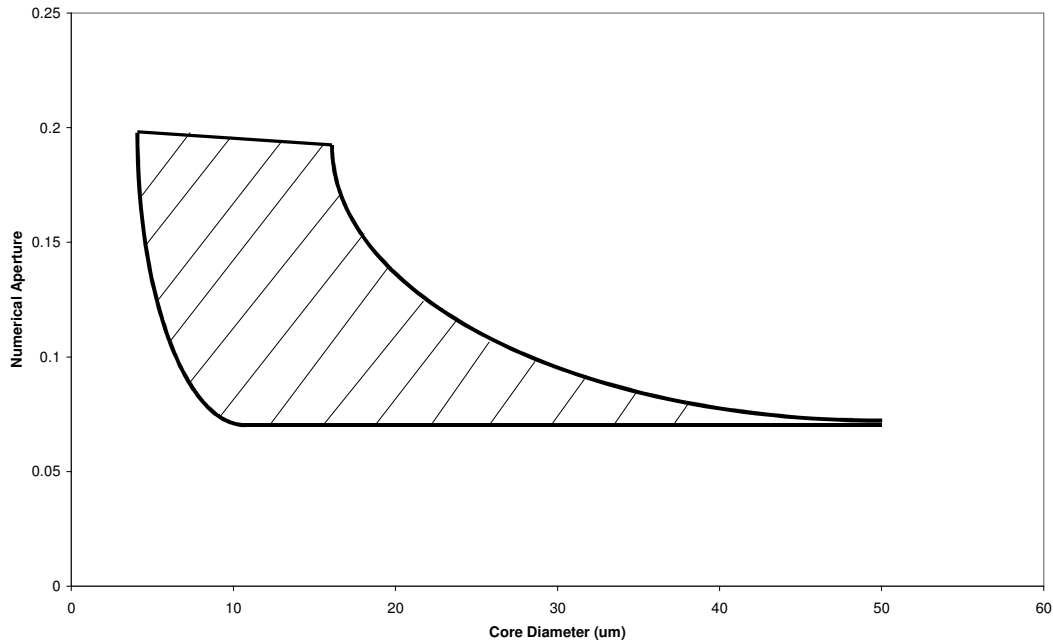


Fig 1 Single mode feed through core geometry

3. Multimode Power Combiner with Signal Feed through – Polarization Maintaining

The core of the PM feed through fibre can follow the same geometry characteristics as that in Fig 1 for the single mode product – this has been shown by proof of principle of various fibres within these boundaries. Specific fibres will be reviewed by the engineering team at SIFAM.

4. Ultra Low Ratio Tap Couplers (ULRT)

SIFAM ULRT product can be manufactured in the same fibres as shown in Fig1, included as a subset is the catalogue product in industry standard SM fibres (eg Hi1060). This product has also been manufactured in both PM and DCF versions of these fibres.

APPLICATIONS NOTE: High Power Usage

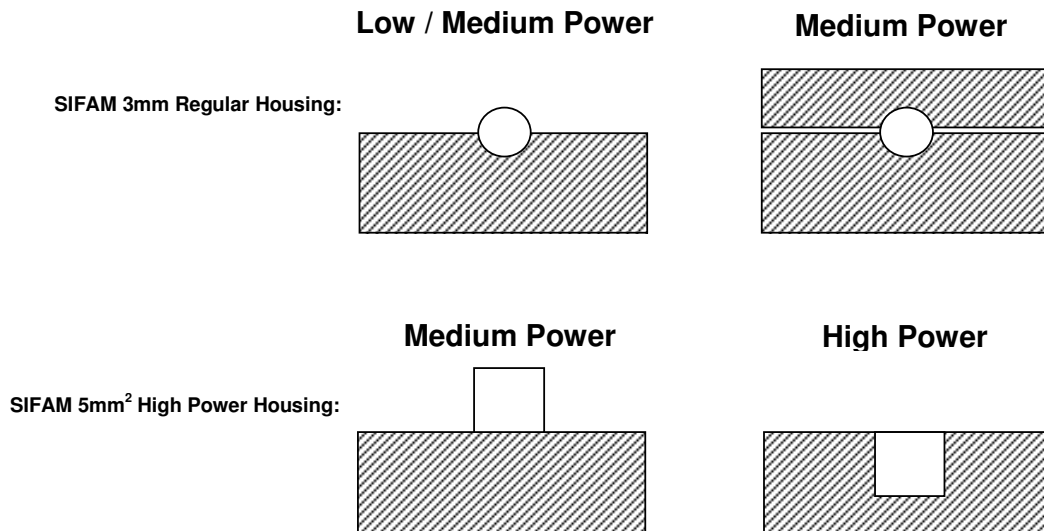
As with any component used directly in a high power transmission path, it is recommended that adequate heat-sinking or active cooling (30°C or less as a guide) is provided for both housing options.

SIFAM's Regular 3mm cylindrical housing will perform well for powers of up to ~2W per input or ~15W total input power depending on specific mode-fill conditions, CW/Pulsed operation and cooling efficiency of the application.

For higher powers the 'High Power Housing' option is recommended since it's internal design ensures maximum heat transfer to the external flat surfaces which have been optimised for good thermal contact with heatsink / cooling surfaces.

Although SIFAM's High Power Components have been proven by successfully completing a rigorous qualification program no device is totally infallible and therefore SIFAM Fibre Optics Ltd cannot accept responsibility for any changes in device performance or effects it may have had on its application due exposure to extreme high powers i.e. transmission of >>70W total input power, depending on specific mode-fill conditions, CW/Pulsed operation and cooling efficiency of the application.

Recommended Heatsink Configurations



If you require any further information including more detailed technical and qualification data about these, or any other SIFAM Fibre Optics components, please contact the SIFAM Fibre Optics Sales Team.