

LIEKKI™ (6+1)x1 pump and signal combiners are used to combine the power from six multimode laser diodes and couple it with a signal feed. The combined power can be used for high power fiber amplifier and laser applications in industrial, military, medical and communications. These devices offer efficient power transfer with a maximum conservation of brightness.

LIEKKI™ combiners are available in a variety of pump and signal fiber geometries. Their fiber design provides reliable delivery of high power levels. LIEKKI™ combiners are optically matched with LIEKKI™ ytterbium active fibers

## Features

- All fiber, highly reliable
- Preserves modal content

## Applications

- Cladding pumped fiber amplifiers
- Cladding pumped fiber lasers

## Typical Device Performance

Package		LIEKKI™ Combiner- 6/125DC	LIEKKI™ Combiner- 10/125DC	LIEKKI™ Combiner- 20/125DC	LIEKKI™ Combiner- 20/400DC
<b>Pump Input Mechanical</b>					
Pigtail Length	m	> 0.5	> 0.5	> 0.5	> 0.5
Core Size	µm	105	105	105	200
Cladding Size	µm	125	125	125	220
Core NA		0.15 <sup>1</sup>	0.15 <sup>1</sup>	0.15 <sup>1</sup>	0.22
<b>Signal Input Mechanical</b>					
Core Size	µm	5.5 ± 0.5	10 ± 1	20 ± 2	20 ± 2
Core NA		0.15 ± 0.01	0.07 ± 0.01	0.07 ± 0.01	0.07 ± 0.01
Cladding Size	µm	125 ± 2	125 ± 2	125 ± 2	400 ± 8
<b>Combined Output Mechanical</b>					
Core Size	µm	5.5 ± 0.5	10 ± 1	20 ± 2	20 ± 2
Core NA		0.15 ± 0.01	0.07 ± 0.01	0.07 ± 0.01	0.07 ± 0.01
Cladding Size	µm	125 ± 2	125 ± 2	125 ± 2	400 ± 8
Cladding NA		0.46	0.46	0.46	0.46
Pigtail Length	m	> 0.5	> 0.5	> 0.5	> 0.5
<b>Optical</b>					
Signal Wavelength Range	nm	1000 - 1100	1000 - 1100	1000 - 1100	1000 - 1100
Pump Wavelength Range	nm	900 - 1000	900 - 1000	900 - 1000	900 - 1000

## Proven Performance

Pump Transmission	%	> 90	> 90	> 90	> 90
Max Input Power per Input Fiber	W	8	8	8	100
Signal Transmission	%	> 80	> 80	> 80	> 80
Return Loss	dB	> 40	> 40	> 40	> 40
Directivity	dB	> 40	> 40	> 40	> 40
<b>Other</b>					
Operating Temperature	°C	+0 to +30	+0 to +30	+0 to +30	+0 to +30
Storage Temperature	°C	-5 to +70	-5 to +70	-5 to +70	-5 to +70
Package Dimensions	mm	50 x 5 x 5	50 x 5 x 5	50 x 5 x 5	60 x 12 x 6.5

<sup>1</sup> 0.22 available with > 80% pump transmission