

# LIEKKI™ (6+1)x1 multimode pump and signal combiners

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.

## Applications

- Cladding pumped fiber amplifiers
- Cladding pumped fiber lasers

## Features and benefits

- All fiber, highly reliable
- Preserves modal content

## Specifications

		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
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

### Notice

nLIGHT continually improves its products to provide its customers with outstanding quality and reliability. nLIGHT may make changes to specifications and product descriptions at any time, without notice. In addition, nLIGHT offers a limited warranty to ensure customer satisfaction. For complete details, please contact your nLIGHT sales representative.