



# CANUNDA-HP

## High Power Multiple Laser Beam Combiner

### Features

- Multiple laser input beam shaping & combining
- Tailored beam shape
- Direct adaptable beam shape
- High power handling: up to 10 kW CW
- OEM (optical core) or standalone versions (complete system)

### Applications

- Improved blanks cutting and joining
- Single-pass multiple operations (sanding, joining, quenching...)
- Improved Selective Laser Melting (AM)
- DIRCM, DEW

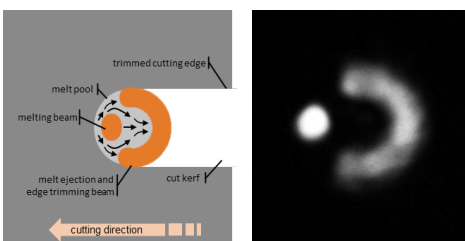
### Description

Canunda-HP is an efficient high-power beam shaper and combiner platform based on CAILabs patented light manipulation technology of Multi-Plane Light Conversion (MPLC).

It reshapes and combines multiple laser beams from either singlemode or multimode lasers creating tailored and adaptable intensity patterns with an optimal beam quality.

Canunda-HP is particularly suited to highly multimode laser beam shaping as well as singlemode laser non-coherent combining with total achievable powers of several kilowatts of optical power. Tailored and adaptable beam shapes are a key driver in high-power laser material processing quality and throughout improvement.

### Use cases



Improved cutting, beam target (left) and result (right, using MPLC)



Non-coherent laser combining solutions comparison OFS<sup>1</sup> ; Theory<sup>2</sup>

<sup>1</sup> Fiber Laser Building Blocks, TrueM2™ Beam Combiners, OFS, technical datasheet-2016

<sup>2</sup> Beam quality of multimode Laguerre-Gaussian beams, Olivier Pinel, CAILabs S.A.S., whitepaper-2016

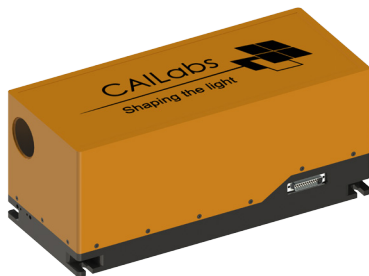
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## General specifications

All parameters given at 25 °C operating temperature and 1070 nm operating wavelength unless otherwise stated.

Parameter	Min.	Typ.	Max.	Observations
<b>General</b>				
Operating wavelength	1060 nm	1070 nm	1080 nm	Other wavelength ranges available
Conversion efficiency	90 %	98 %		
Total transmission	90 %	95 %		
<b>Input beams</b>				
Number		3	10	
Type	Collimated beams			
Diameter	0.3 mm		1.0 mm	Depends on input beam type
Arrangement	Parallel beams in line or triangle			Depends on input beam type
Wavelength	650 nm	1030 nm	4 μm	Other VIS and NIR ranges available
Operating regime	CW			
Total power			10 kW	
Spatial mode	Singlemode or multimode			Or both
<b>Output beam</b>				
Type	Collimated beams			
Diameter	1.0 mm		5.0 mm	Depends on input beam type
<b>Alignment guide (optional)</b>				
Input	Fibered input			
Wavelength		650 nm		
<b>Mechanical and environment</b>				
Package dimensions	400 x 170 x 172 mm <sup>3</sup>			
Ambient operating temperature	+10 °C	+25 °C	+40 °C	Non condensing
Storage temperature	0 °C		+60 °C	Non condensing
Relative humidity	10 %		65 %	
Cooling	Active: watercooling			
Watercooling flow		L/min		at input water temperature

## Ordering information



Platform	CANUNDA-HP				
	C: core only	S: complete system			
System					
Number of inputs	1	3	6	10	Other
Input type	SM: singlemode	MM: multimode			
Number of outputs	1	Other			
Output type	LG: Laguerre-Gauss modes (SM combining)	Custom			

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