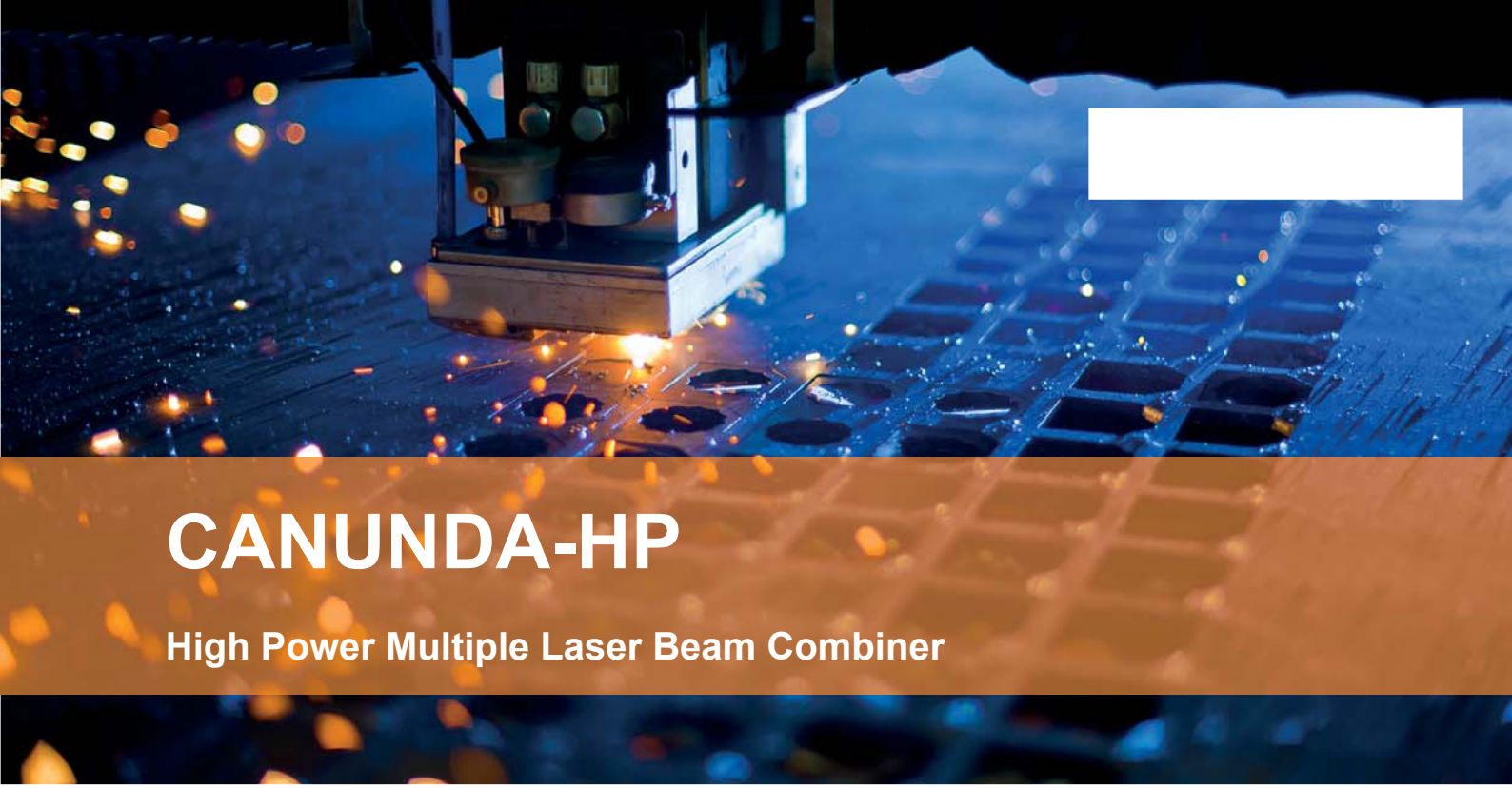


CANUNDA-HP

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

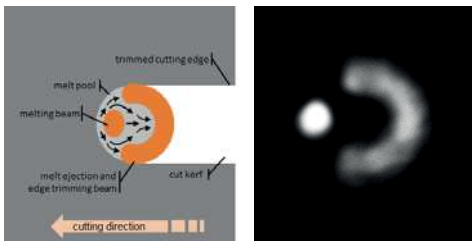
Description

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

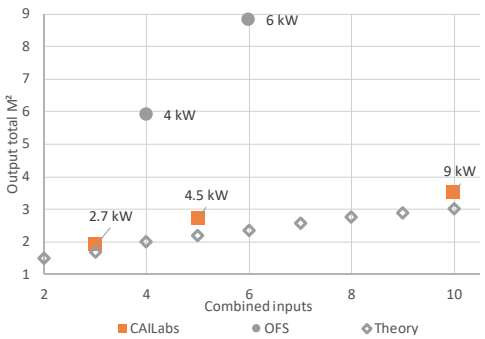
It reshapes and combines **multiple laser beams** from either **singlemode** or **multimode** lasers creating tailored and adaptable intensity patterns with an **optimal beam quality**.

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[1] ; Theory[2]

* U.S. Pat No 9.250.454 - Japanese patent n° 5990544

General specifications

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

Parameter	Min.	Typ.	Max.	Observations
General				
Operating wavelength	1060 nm	1070 nm	1080 nm	Other wavelength ranges available
Conversion efficiency	90 %	98 %		
Total transmission	90 %	95 %		
Input beams				
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
Output beam				
Type		Collimated beams		
Diameter	1.0 mm		5.0 mm	Depends on input beam type
Alignment guide (optional)				
Input		Fibered input		
Wavelength		650 nm		
Mechanical and environment				
Package dimensions		400 x 170 x 172 mm^3		
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				
System	C: core only	S: complete 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			