

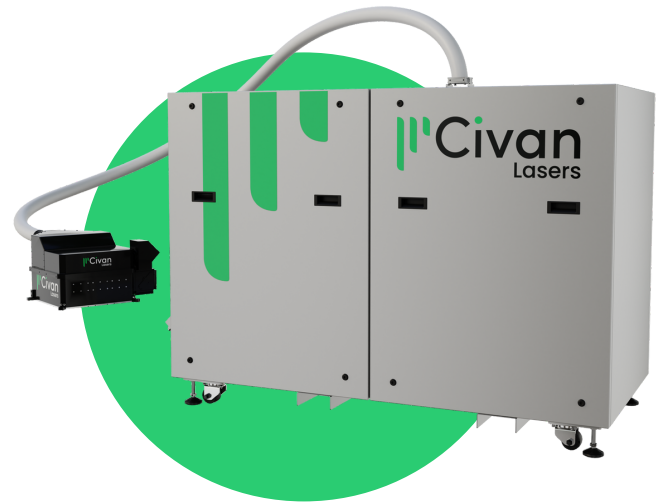


Civan Lasers Dynamic Beam Laser

The Dynamic Beam Laser (DBL) is based on Civan's Coherent Beam Combining (CBC) technology

The DBL offers a High Power Single Mode CW Dynamic Beam Laser. By combining multiple single-mode fiber lasers in an optical phased array (OPA), we achieve a true dynamic beam laser, enabling tailored control of the laser output.

Configurable parameters include beam spot size and shape, focal distance, and power modulation, all at MHz speed and without any additional optical elements or moving parts.



Capabilities

- Change beam shape orientation on the fly
- Weld dissimilar materials
- Weld asymmetric materials
- Welding of crack sensitive materials
- Unique capabilities to stabilize keyhole

Applications

- Welding
- Drilling
- Metal Additive Manufacturing
- Cutting
- Surface treatment

Dynamic Beam Laser Features

Beam shaping

Ability to design a wide range of arbitrary shapes

Shape sequence

Switch between beam shapes at microsecond speeds

Beam wobble

Wide range of beam wobble from Hz to MHz

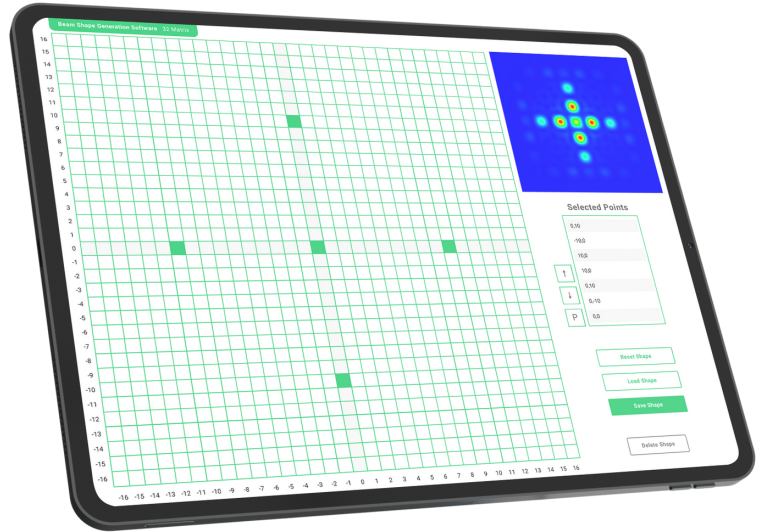
Focus steering

Change of focal point at MHz frequencies

Multiple Beam Shapes

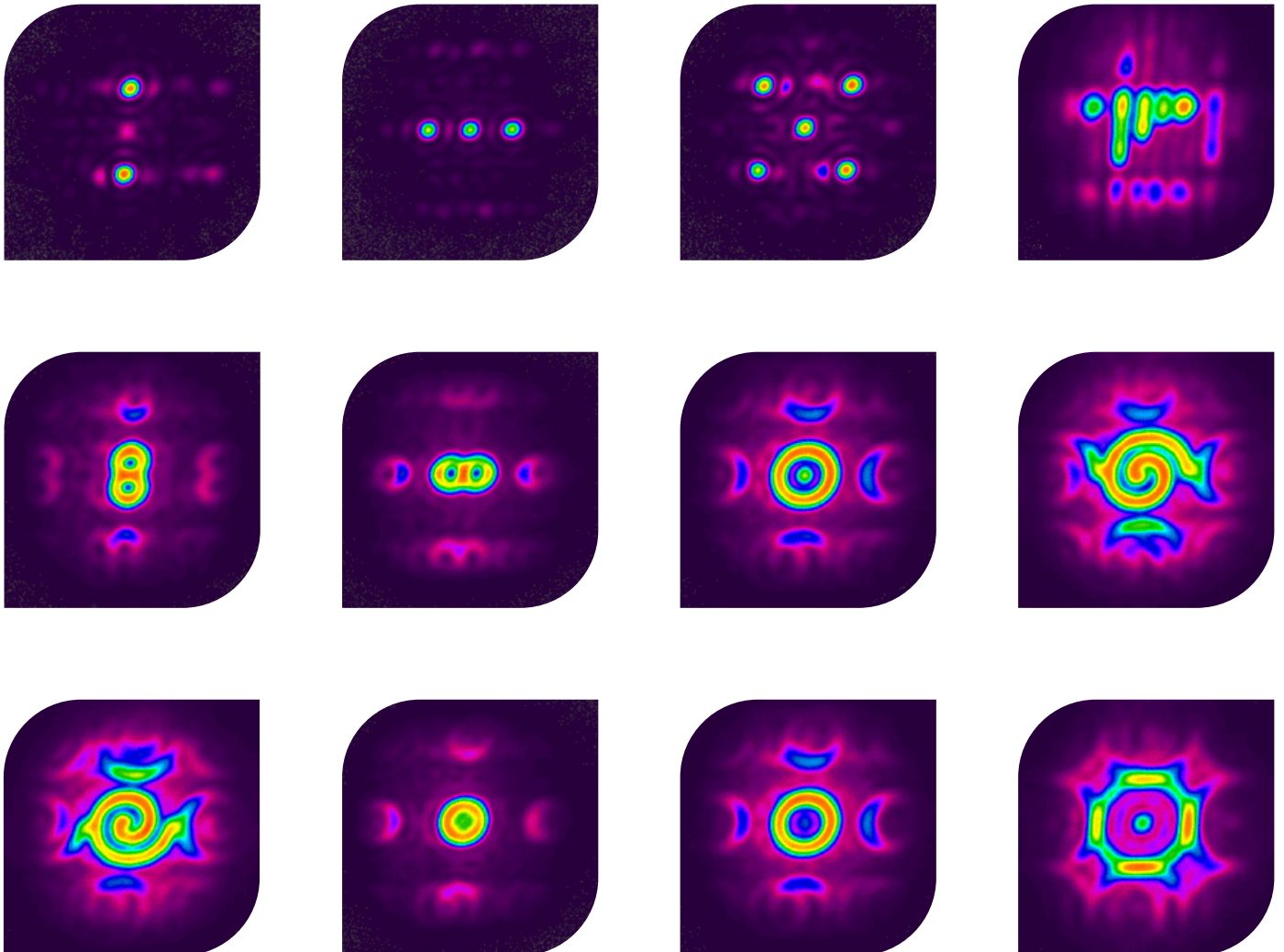
Civan's DBL arrives with shape generation software, which allows the user to generate beam shapes according to their needs. Each beam shape has the ability to control the following:

- Beam shape geometry
- Power density within the beam shape
- Beam shape order



Civan's Beam Shaping Software.

Beam Shapes Examples



Technical Specifications

Parameter	DBL 7kW	DBL 14 kW	DBL 28kW
Optical characteristics			
Operation Mode	CW/Modulated	CW/Modulated	CW/Modulated
Efficient power [kW]	7	14	28
Power tunability	10-100%	10-100%	10-100%
Polarization	Circular	Circular	Circular
Wavelength [nm]	1064 ± 1	1064 ± 1	1064 ± 1
Optical output			
Beam output	Free Space Collimated beam	Free Space Collimated beam	Free Space Collimated beam
Beam type	Circular	Circular	Circular
Fiber length	3	3	3
General characteristics			
Environmental conditions for operation	+5°C to +45°C humidity < 60% non- condensing	+5°C to +45°C humidity < 60% non- condensing	+5°C to +45°C humidity < 60% non- condensing
Environmental conditions for transportation and storage	-5°C to +45°C humidity < 60% non- condensing	-5°C to +45°C humidity < 60% non- condensing	-5°C to +45°C humidity < 60% non- condensing
Cooling			
Method	Tap and slightly DI-water		
Cooling power consumption [kW]	25	49	99
Nominal water flow rate [LPM]	130	180	330
Cooling water temperature range	21±1 °C	21±1 °C	21±1 °C

*All power levels in the range of 7 – 28kW are available for order

Technical Specifications

Parameter	DBL 7kW	DBL 14 kW	DBL 28kW
Electrical Characteristics			
Supply voltage	400VAC 50Hz/60Hz	400VAC 50Hz/60Hz	400VAC 50Hz/60Hz
Power consumption [kW] (w/o chiller)	33	65	130
Optical Cabinet			
Weight	1300 Kg	1300 Kg	1350 Kg
Dimensions W*D*H	2m *1m *1.4m	2m *1m *1.4m	2m *1m *1.4m
Electrical Cabinet			
Weight	500 Kg	500 Kg	1000 Kg
Dimensions W*D*H	0.8m *1.04m *1.6m	0.8m *1.04m *1.6m	1.1m*1.2m*2.1m
Laser Head			
Weight	50 Kg	50 Kg	50 Kg
Dimensions	0.385m*0.395m*0.31m	0.385m*0.395m*0.31m	0.385m*0.395m*0.31m

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