

# Data Sheet

## DBL 12 120kW

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 and Asymmetric Materials
- Welding of Crack Sensitive Materials
- Unique Capabilities to Stabilize Keyhole
- Atmospheric Correction
- High Power Over Long Distances

### Applications

- Welding thick sections
- Remote Cutting
- Power Transmission

### Dynamic Beam Laser Features

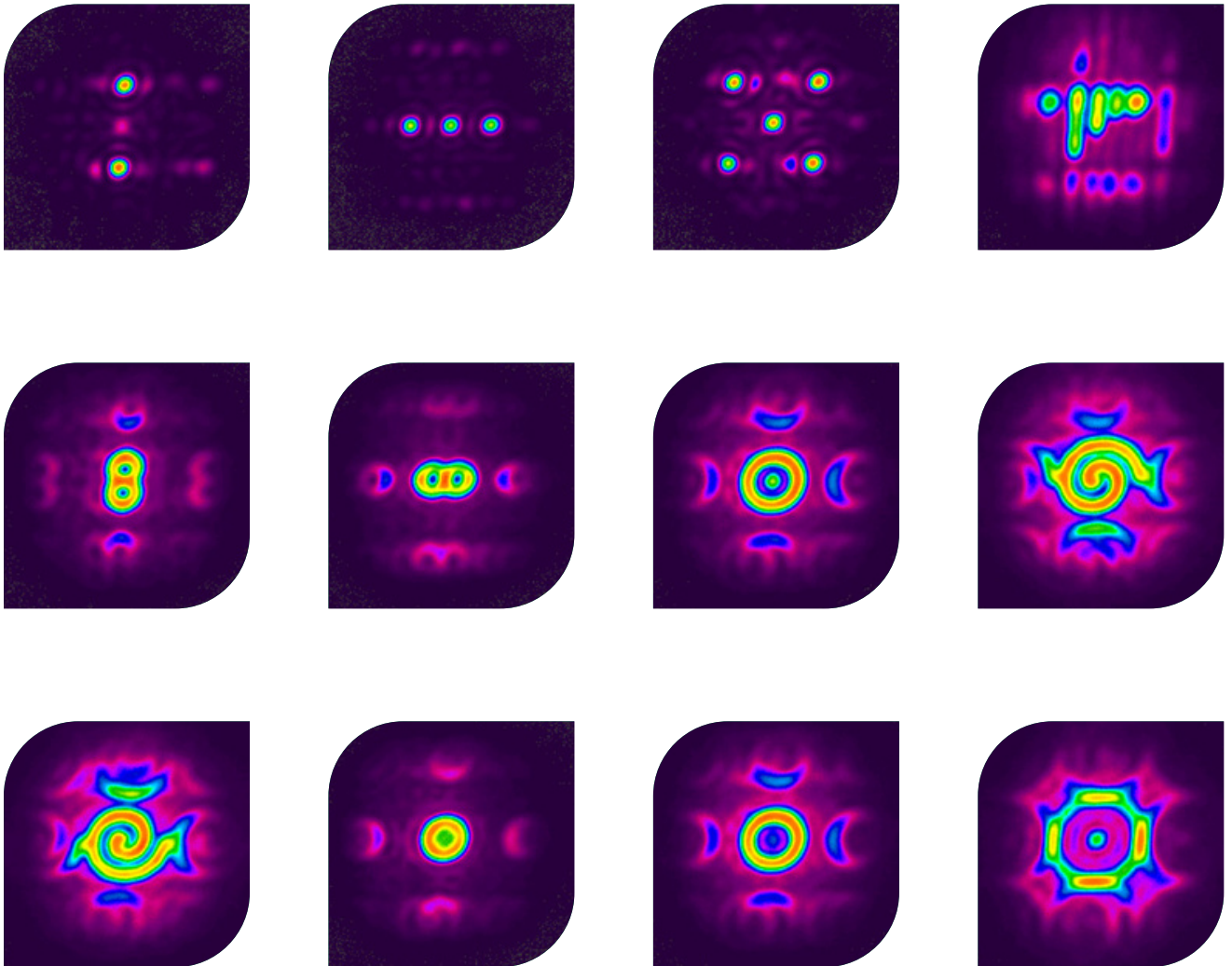
- **Beam shaping**  
Ability to design a wide range of arbitrary shapes
- **Beam wobble**  
Wide range of beam wobble from Hz to MHz
- **Shape sequence**  
Switch between beam shapes at microsecond speeds
- **Focus steering**  
Change of focal point at MHz frequencies

## 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 can control the following:

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

## Beam Shapes Examples



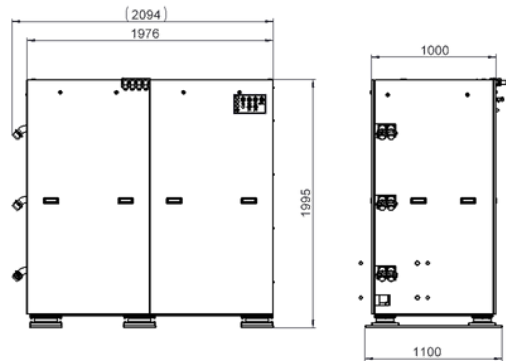
## Technical Specifications

Parameter	DBL120kW
<b>Optical characteristics</b>	
Operation Mode	CW/Modulated
Efficient power [kW]	120
Power tunability [%]	10-100
Polarization	Circular
Wavelength [nm]	1064 ± 1
<b>Optical output</b>	
Beam output	Free Space Collimated beam
Aperture diameter [mm]	Ø42
Fiber length	2
Delivery fiber length [m]	
Environmental conditions for operation	+5°C to +45°C humidity < 60% non- condensing
Environmental conditions for transportation and storage	-5°C to +45°C humidity < 60% non- condensing
<b>Cooling Requirements</b>	
Method	Tap and slightly DI-water
Cooling capacity [kW]	380
Nominal water flow rate [LPM]	1,000
Cooling water temperature range	22 ± 1
<b>Electrical characteristics</b>	
Supply voltage	45-70 VDC
Power consumption [kW] (w/o chiller)	500
Power supply	AC-DC / Battery Power Bank

# Technical Specifications

Parameter	DBL120kW
<b>Optical Cabinet</b>	
Weight [Kg]	2700
Dimensions W*D*H [m]	2.1*1*2
<b>Laser Head</b>	
Weight [Kg]	40
Dimensions W*D*H [mm]	420*540*310
<b>Safety</b>	
Class 4 Laser Device	Standard IEC60825-1:2014
Interlock system	Facility door interlock circuit X2
User interface	Laser On/Off key Switch, E-Stop Button

Optical Cabinet



Optical Head

