

MORE LIGHT

Next generation open heat sink diode laser: 300 W for hard pulse & cw conditions with passive cooling

Features

- High optical output power up to 300 W
- Hard pulse & cw mode
- Passively cooled
- Wavelength range (currently available): 9xx nm

Applications

- Direct-diode-laser applications
- Optical pumping of solid-state lasers
- Material processing
- Print applications

Next generation high-power diode laser

Up to 300 W diode laser for hard pulse and cw conditions sets new standards for optical pumping and direct-diode-laser technology.

Jenoptik's latest mounting and assembly technology for high power open heat sink diode lasers presents the new standard for ambitious customers seeking to expand applications in optical pumping or direct-diode laser technology.

The LK heat sink serves as the building block for novel low- or high-brightness applications, e.g. based on spatial and spectral beam combining techniques. The laser source is currently available in wavelengths of 9xx nanometers (upon customer request, laser sources emitting in the 760 – 1060 nm wavelength range can be qualified).

For the production of our high-power diode laser, we exclusively use the efficient and high-performance laser bars from our in-house fab.

Benefits



Reduced cost: fewer diode laser sources are required for the same level of optical output power.



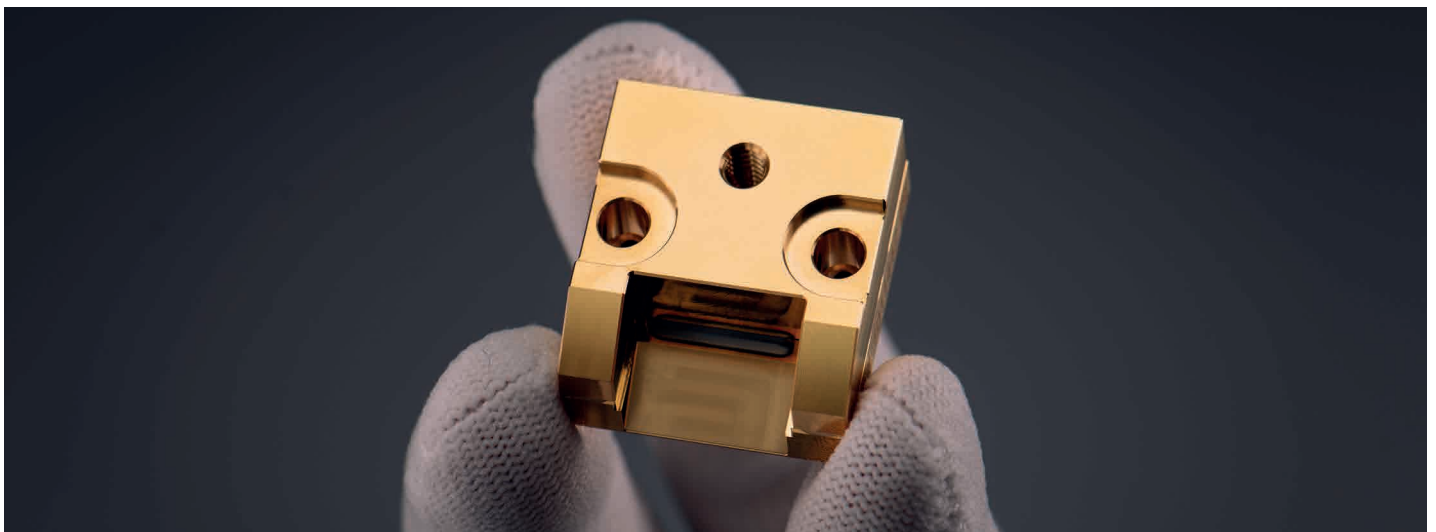
Conforming footprint (CS package): existing laser systems can be adapted with little effort given conforming footprint with industry standard (CS).



Reduced complexity: increased optical output power per diode laser source decreases the complexity and size of your laser system.



Simplified power scaling: the increased performance of the laser source allows the power of the laser system to be increased at little expense.



Features



Significant increase in performance compared to other diode lasers available on the market.



Continuous cw operation up to 300 W.



Extremely reliable, even in hard pulse conditions.



Passive cooling despite its high power and small dimensions.

Open heat sink diode laser | cw, passively cooled JOLD-xxx-CPNN-1L

Operating Conditions

Ambient Conditions	Cleanroom class ISO 5 or better non-condensing atmosphere	
Operating Mode	cw- and hard-pulse (modulation between 0 A..Imax)	
Optics	without optics, FA collimation possible (with lens max. height 1,8 mm) Collimation/version for larger lenses on request	
Baseplate Temperature	25	°C

JOLD-275-CPNN-1L (exemplary data)

Specification (Preliminary)	Min	Typ	Max	Comment	
Optical Output Power			300		W
Optical Output Power after Collimation			250		W
Drive Current for Rated Power		290	300		A
Threshold Current		30	35		A
Forward Voltage at Typical drive Current		1,5	1,75		V
Fast Axis Divergence 95%		47	51		deg
Slow Axis Divergence 95%		7	10		deg
Slope Efficiency	0,9	1			W/A
Power Conversion Efficiency	55	62			%
Polarization Extinction Ratio TE/TM	90	95			%
Center Wavelength at 25°C	973	978	983	Example, wavelength range 930 nm ... 1064 nm possible	nm
Spectral Bandwidth (FWHM)		3	5		nm
Smile		<1	1,5		µm
Absolute Maximum Ratings					
Storage Temperature	-25		75		°C
Laser Bar Forward Current			355	Limited to rated current plus 5A	A
Laser Bar Reverse Voltage			0		V

Options on request.

