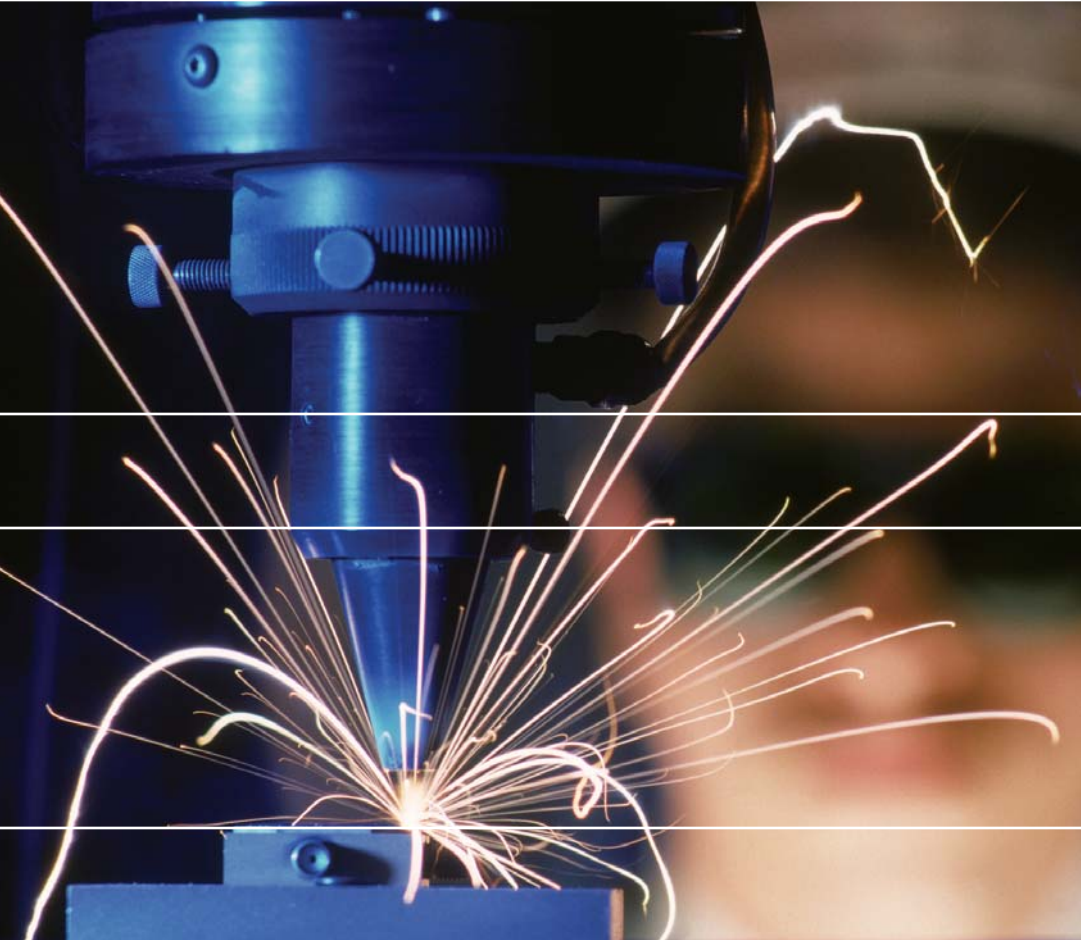




High-Power Laser Diode Solutions

Complete Portfolio – Laser Bars to Laser Systems



Superior Reliability & Performance

Complete Solutions

Coherent Inc. introduces the NEW complete line of High-Power Laser Diode Solutions. Our High-Power Laser Diode Solutions line spans from Laser Diode Bars to full turn-key High-Power Direct Diode Solutions. The superior technology is based on Coherent's proprietary Aluminum-free Active Area (AAA™) epitaxial system, which sets the industry standard for reliable operation in real-world environments. This new line of products also incorporates the NEW PulseLife™ packaging process, utilizing hard-solder, Indium-free technologies. The result is telecom reliability with Industrial-grade performance.

A complete line of standard products are available for immediate delivery. In addition, Coherent Semiconductor is eager to meet your custom or semi-custom requirements with a broad engineering and operations staff ready to meet your stringent requirements. Please let us know today how we may serve you.

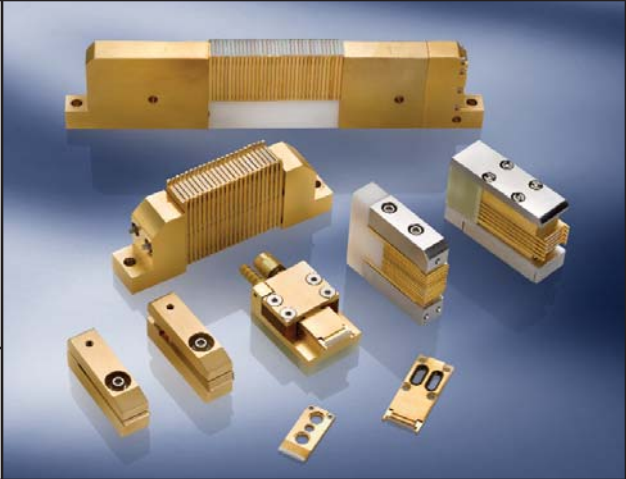
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Power Capability ¹ (W)	Product Line	Center Wavelengths ² (nm)				
		680	690	785	790	795
Packaged Single Emitters	C-Mount	0.5	0.5	Contact PLM		3
	HHL	0.5	0.5	Contact PLM		3
	NCCP	-	-	Contact PLM		7
Single Fiber Coupled	F6	0.375	0.4	Contact PLM		2.4
Unmounted Bars	UMB 30% FF/1.0 mm (CW)	-	-	Contact PLM		40
	UMB 30% FF/1.5 mm (CW)	-	-	Contact PLM		50
	UMB 50% FF (CW)	-	-	Contact PLM		60
	UMB 90% FF/0.6 mm (QCW) ³	-	-	Contact PLM		70
	UMB 90% FF/1.0 mm (QCW) ³	-	-	Contact PLM		100
Packaged Bars	CCP (CW)	-	-	Contact PLM		55
	CCP (QCW) ³	-	-	Contact PLM		100
	NCCP	-	-	Contact PLM		20
	WCP	-	-	Contact PLM		60
Line Imaging Module	LIM	-	-			
Fiber Coupled Bars	FAP 600 (FAP-B, LB, I)	-	-	Contact PLM		35
	FAP 800 (FAP-B, LB, I)	-	-	Contact PLM		40 to 50 ³
Vertical Arrays	G-Stacks (QCW) ⁴	-	-	Contact PLM		100 to 200
	MCCPs (CW) ⁴	-	-	Contact PLM		80
Horizontal Arrays	Horizontal Array (CW) ⁴	-	-	Contact PLM		40 to 60
	Horizontal Array (QCW) ⁴	-	-	Contact PLM		100
FAP Systems	FAP System	-	-	Contact PLM		30
	Scientific Duo FAP System	-	-	Contact PLM		60
	Industrial Duo FAP System	-	-	Contact PLM		-
	Quattro FAP System ⁵	-	-	Contact PLM		-

 Standard products available.

 OEM capabilities – available only to volume OEMs with PLM approval.



797	800	805	808	810	825	880	915	940	975/6	980
3	1.6 to 3 ³	3	3	3	3	3	Contact PLM	4	4	4
3	1.6 to 3 ³	3	3	3	3	3	Contact PLM	4	4	4
7	7	7	7	7	7	—————	Contact PLM	—————	—————	—————
1.5 to 2.4 ³	2.4	2.4	2.4	2.4	2.4	—————	Contact PLM	—————	—————	—————
40	40	40	40	40	40	40	—————	Contact PLM	—————	—————
50	50	50	50	50	50	50	Contact PLM	50	50	50
60	60	60	60	60	60	60	Contact PLM	60	60	60
70	70	70	70	70	70	—————	Contact PLM	—————	—————	—————
100	100	100	100	100	100	100	—————	Contact PLM	—————	—————
55	55	55	55	55	55	50	—————	50 to 75 ³	50 to 75 ³	50 to 75 ³
100	100	100	100	100	—————	—————	Contact PLM	—————	—————	—————
20	20	20	20	20	20	—————	Contact PLM	—————	—————	—————
60	60	60	60	60	60	—————	Contact PLM	—————	—————	—————
—————	Contact PLM	—————	—————	—————	60	—————	Contact PLM	—————	—————	—————
35	35	35	35	35	35	30	Contact PLM	35	35	35
50	50	50	50	50	50	50	Contact PLM	50	50	50
100 to 200	100 to 200	100 to 200	100 to 200 ³	100 to 200	—————	—————	Contact PLM	—————	—————	—————
80	80	80	60 to 80 ³	80	80	80	60 to 80 ³	80	60 to 80 ³	60 to 80 ³
40 to 60	40 to 60	40 to 60	40 to 60 ³	40 to 60	40 to 60	—————	Contact PLM	—————	—————	—————
100	100	100	100	100	100	—————	Contact PLM	—————	—————	—————
30	30	30	30	30	30	30	Contact PLM	30	30	30
60	60	60	60	60	60	60	Contact PLM	60	60	60
-	-	-	-	60	—————	—————	Contact PLM	60	-	60
-	-	-	-	120 ⁵	—————	—————	Contact PLM	120	-	120

¹ Assumes min. 10k hour reliability capability with exception of 680 and 690 nm. Higher power may be possible for 1-5k hour lifetime (e.g. medical applications). Contact PLM for 680 and 690 lifetime information.

² **Standard wavelength tolerances:**
 ±3 nm @ 785, 790, 795, 797, 800, 805, 808, 880, 915, and 975/976 nm
 ±5 nm @ 680, 690, 825, and 940 nm
 ±10 nm @ 810 and 980 nm

³ **Standard products indicating power ranges:** Low end of power range is standard product; high end of power range is OEM capability.

⁴ **Vertical Arrays and Horizontal Arrays:** Power indicated are power per bar.

⁵ **810 nm 120W Quattro System:** Max. power assumes pulsed operation, less than 50% duty cycle.

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Conductively-Cooled Packages (CCPs)

PulseLife™ conductively-cooled packaged diodes for pumping, direct-diode materials processing, medical, reprographics, and illumination applications. With PulseLife solder technology, industrial applications achieve >20k hours MTTF at up to 75W CW, even in ON-OFF hard pulsed operation mode. In QCW mode, operations at temperatures as high as 75°C are achieved. Standard configurations at 795, 808, 825, 880, 940, and 980 nm are available.



Horizontal Linear Diode Arrays

PulseLife water-cooled horizontal linear arrays deliver up to 60W/bar of pump power. Utilizing our PulseLife solder technology, they have MTTF >20k hours. The unique “macro” channel design eliminates the complicated water requirements of other water-cooled heat sinks. Standard products at 808 nm, in 2-bar or 3-bar configurations, are available.

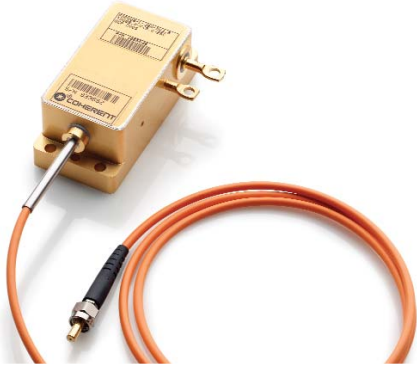


Fiber Array Packages (Detachable Fiber)

Conductively-cooled fiber-coupled diode laser bars available with fiber bundle diameters of 800, 600 and 400 μm and powers up to 50W. Standard configurations at 795, 808, 880 nm, 940 and 980 nm are available for medical, pumping solid-state lasers, defense and direct-diode applications. PulseLife FAP configurations are available for on-off applications in materials processing.

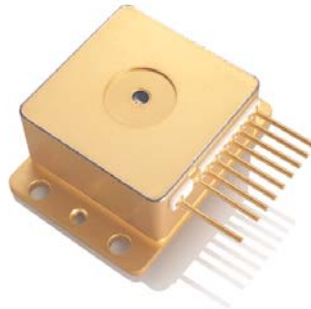
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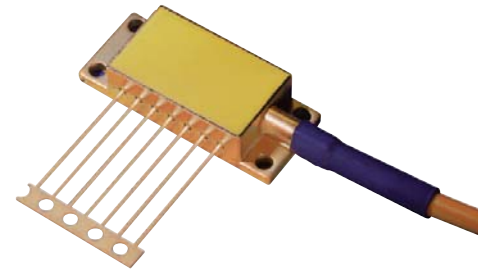
Fiber Array Packages - LB (Attached Fiber)

Long-bundle FAPs with attached fibers. Optional reduced NA (<0.11) or integrated aiming beam are also available. Custom 2-to-1 or 3-to-1 configurations are also available for unique applications. Standard configurations at 795, 808, 880 nm, 940 and 980 nm are available. PulseLife FAP-LB configurations are available for on-off applications in materials processing.



Single Emitter Packages

Single-stripe diode lasers mounted on industry-standard open heat sinks or in sealed windowed packages. Standard C-mount and HHL packages, including integrated photodiode, thermistor, and TEC, are available. Standard wavelengths at 680, 690, 797, 800, 805, 808 and 980 nm. CW power up to 7W with emitter widths of 100, 150, 200, and 500 μm available



Single Fiber Coupled Packages

Single-stripe diode lasers in an environmentally sealed package and coupled to a 100, 150, or 200 μm core fiber. Integrated photodiode, and thermistor are included. Optional TEC available. Standard wavelengths at 690 and 808 nm. CW power up to 2.4W.

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MCCP Vertical Diode Arrays

MCCP high power laser diode pump arrays can provide up to 2.7 kW CW power in a single vertical array with an industry-leading 1.6 mm bar-to-bar pitch. The water inlet and outlets are located on the bottom of the lower manifold which allows arrays to be placed adjacent to each other, with an array to array lateral pitch of just over 1.1 cm. The electrical connections are located on the back side of the arrays and can be connected electrically in series to form a high power two dimensional pump array. Each of the individual bars can be collimated in the fast axis to better than 0.25 degrees at (FWHM) and in the slow axis to 4.5 degrees.



MCCP Single-Bar and Three-Bar Arrays

The high brightness MCCP laser diode pump array can provide up to 80 Watts CW power per bar from this package with >10k hours lifetime. The water inlet and outlets are located on the bottom of the lower manifold, which allows arrays to be placed adjacent to each other with an array to array lateral pitch of just over 1.2 cm.

Each of the individual bars can be collimated with a cylindrical lens in the fast axis to better than 0.5 degrees (FWHM).

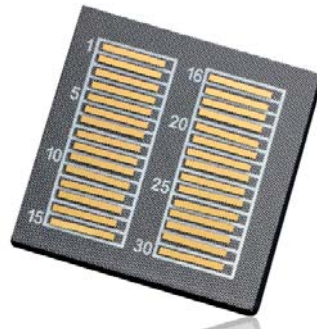
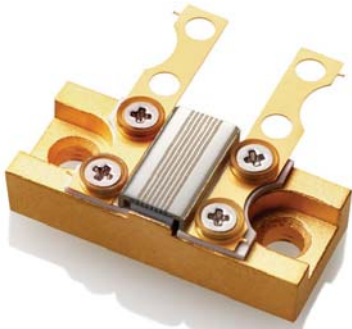


MCCP Laser Bars

The MCCP Bar provides up to 80 Watts of CW optical pump energy in a compact, water-cooled package with >10 kr hours MTF. Utilizing advanced materials technology, these bars provide high output power, enhanced efficiency, and long life in either pulsed or CW operation. Coherent's compact, high-intensity coolers stacked in a series electrical connection can provide up to 2700 watts CW optical power. Mounting tabs are provided on each of the coolers facilitating placement of optical elements as necessary to couple the array to the media being pumped.

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G-Stack Vertical Diode Arrays

PulseLife G-stacks set a higher standard of reliability for demanding commercial and defense applications. Using our new PulseLife solder technology, reliability >1E9 shots at 80W/bar QCW and 50°C are achieved. Standard bar configurations at 808 nm, from 240W to 560W, are available for pumping solid-state lasers, as well as for illumination and direct-diode applications. PulseLife G-stacks, which can be customized in power and wavelength for special OEM needs, provide users with a new class of performance and reliability.

Unmounted Laser Bars

Unmounted semiconductor diode laser bars with the proprietary Aluminum-free Active Area (AAA™) epi structure developed by Coherent. AAA epi has set the industry standard for high reliability in field applications. In addition, Coherent continues to improve on the efficiency and performance of our high-power laser bars.

Available in standard 1 cm width and various fill-factors and cavity lengths. Standard wavelengths at 808, 940, and 980 nm.

Turnkey Laser Systems

Full-featured systems consisting of F-System, FAP System, Duo FAP System, and Quattro FAP System. These include a FAP or F-Package, driving and temperature control electronics, and an armor-clad transport fiber.

CW output powers from 1W to 200W, standard wavelengths at 795, 808, 980 nm, optional aiming beam, TTL, RS-232, and analog interface options available.

Coherent as your partner.

To compete and succeed in today's fast-paced research and manufacturing environments, you need a laser partner who understands your needs. A partner who can provide a wide range of technology solutions, and the support that goes with them.

Since 1966, Coherent has been helping customers by providing complete laser-based solutions for a wide range of commercial and scientific applications.

With a heritage of innovation and an uncompromising position on quality, Coherent is the most forward-thinking and diversified manufacturer of solid-state, gas, excimer and semiconductor lasers in the industry.

For more information, visit us on the Web at www.Coherent.com. Or call 800-527-3786.



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