

- ⊗ Wavelength: 650+/-3 nm
- ⊗ Output Power: Up to 350mW free space / 280mW fiber coupled
- ⊗ High output power and high efficiency
- ⊗ Proven reliability
- ⊗ Custom packaging available
- ⊗ Custom wavelengths and laser designs are available.



The LDX-2305-650 is a high-power laser diode chip. Designed for low divergence and high brightness, and offers proven reliability. This chip is used in a wide range of applications in the medical, industrial, research, and military markets.

These lasers are available in the following free space and fiber-coupled packages:

C-mount, C1-mount (Med) , COS, 9mm, 9mm Isolated, 9mm Special, TO3, TO3+TEC  
<4W. HHL. 9mm SMA. BFC+TEC

### Device Specifications (Specified values are at rated power at 20° on a C-mount)

Parameter	LDX-2305-650	Units
Output Power	350	mW
Wavelength	650	+/-3 nm
Spectral Width	1.5	nm
Operating Temperature	20	°C
Aperture Size	50	um
Operating Current	600	mA
Threshold Current	250	mA
Slope Efficiency	1.15	W/A
Forward Voltage	2.3	V
Fast Axis Divergence	40	° (FWHM)
Slow Axis Divergence	7	° (FWHM)
Polarization	TE	N/A
Fiber Size HHL, BTF, FCP <sup>1</sup>	105	um
Min. Fiber Size 9mm SMA <sup>2</sup>	200	um
Expected Lifetime <sup>3</sup>	>5,000	Hours (EOL) <sup>4</sup>

Unless otherwise indicated, all values are nominal.

1. Other fiber diameters are available upon requested.
2. If minimum fiber size is used, a high power SMA connector is required.
3. Lifetime is greatly affected by Package type, Operating temperature, Thermal resistance, Operation (CW vs Off/On), and Packaging stress
4. End of Life (EOL) is defined as when the operating current must be increased by >20% to maintain the Beginning of Life (BOL) optical output power.

LDX follows a policy of continuous product improvement.

**Specifications are subject to change without notice.**

These components do not comply with the Federal Regulations (21 CFR Subchapter 1) as administered by the Center for Devices and Radiological health. Purchaser acknowledges that his/her products must comply with these regulations before they can be sold to a customer



Free Space Package - Exposed Emitter			
Package		Features	Options
C-Mount Package		Small footprint with screw mounting Material – Copper (OFHC) Fast-axis lensing	Fast-axis lensing
B-Mount Package		Very small footprint Requires soldering to heatsink Material – Copper Tungsten (CuW)	Fast-axis lensing
Chip-on-Submount		Very small footprint Requires soldering to heatsink Material – BeO	Fast-axis lensing

Free Space Package - Hermetically Sealed Windowed Packages			
Package		Features	Options
9mm Package		Industry-standard package Header material – Copper	Photodiode, Isolated package, Fast-axis lensing
TO-3 Package		Mounting to heatsink with screws Header material – Copper	TEC, Thermistor, Photodiode, Fast-axis lensing
HHL Package		Internal peltier cooler (TEC), thermistor, and photodiode Header material – Copper	Fast-axis lensing

FAC Lensing Options:		
Best Collimation	L1	Less than 1° divergence in the fast axis direction.
Squared Beam FAC	L2	Matches the fast-axis to the slow-axis divergence.

Fiber Coupled Packages - Hermetically Sealed - >80% Coupling Efficiency			
Package		Features	Options
9mm SMA FC Package		Industry-standard package SMA connector for detachable fiber Header material – Copper	Photodiode, Isolated package
8-Pin BFC Package		Built-in internal TEC and Photodiode Fiber pigtail with SMA connector Header material – Copper	Thermistor
2-Pin FCP Package		Fiber pigtail with SMA connector Header material – Copper	none
HHL-FC Package		Fiber pigtail with SMA connector Internal peltier cooler (TEC), thermistor, and photodiode Header material – Copper	none

Part Numbering System											
<p>LDX-XXXX-XXX-XXX-XXX</p> <p>LDX Optronics</p> <p>Chip Design</p> <p>Wavelength</p> <p>Package Type</p> <p>C – C-Mount B – B-Mount Q – Q-Mount COS – Chip on Submount 9 – 9mm Package TO3 – TO-3 Package HHL – HHL Package 9-SMA – 9mm SMA Package HHL-FC – HHL Package BFC – 8 pin High Heat Load FCP – 2-pin Package CHIP – Unmounted Chip BAR – Unmounted Bar</p> <p>Options</p> <p>TEC – Internal TEC PD – Photodiode T – Thermistor L1 – FAC Lens, Best Collimation L2 – FAC Lens, Squared Beam AR – Low AR Coating</p>	<table border="1"> <thead> <tr> <th>Part Number</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>LDX-3115-680-9</td> <td>Semiconductor Laser Diode, 680±3 nm, 1200mW, 150um emitter, 9mm Package</td> </tr> <tr> <td>LDX-2405-690-BFC-105</td> <td>Semiconductor Laser Diode, 690±3 nm, 400mW, 50um emitter, Pigtailed Fiber Coupled 8-pin BFC Package w/ &gt;80% Output Power from Fiber, Includes 105um, 0.22NA, 1m long fiber pigtail with SMA connector</td> </tr> <tr> <td>LDX-2410-645-B-L1</td> <td>Semiconductor Laser Diode, 645±5 nm, 400mW, 100um emitter, B-mount w/ FAC Lensing, Best Collimation</td> </tr> <tr> <td>LDX-2710-660-HHL-L2</td> <td>Semiconductor Laser Diode, 660±3 nm, 750mW, 100um emitter, HHL Package w/ TEC, PD, Thermistor, FAC Lens, Squared Beam</td> </tr> </tbody> </table>	Part Number	Description	LDX-3115-680-9	Semiconductor Laser Diode, 680±3 nm, 1200mW, 150um emitter, 9mm Package	LDX-2405-690-BFC-105	Semiconductor Laser Diode, 690±3 nm, 400mW, 50um emitter, Pigtailed Fiber Coupled 8-pin BFC Package w/ >80% Output Power from Fiber, Includes 105um, 0.22NA, 1m long fiber pigtail with SMA connector	LDX-2410-645-B-L1	Semiconductor Laser Diode, 645±5 nm, 400mW, 100um emitter, B-mount w/ FAC Lensing, Best Collimation	LDX-2710-660-HHL-L2	Semiconductor Laser Diode, 660±3 nm, 750mW, 100um emitter, HHL Package w/ TEC, PD, Thermistor, FAC Lens, Squared Beam
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For all handling and mounting precautions, see the [LDX Catalog](#)