

- ⊗ Wavelength: 1640+/-20 nm
- ⊗ Output Power: Up to 1200mW free space / 960mW fiber coupled
- ⊗ High output power and high efficiency
- ⊗ Proven reliability
- ⊗ Custom packaging available
- ⊗ Custom wavelengths and laser designs are available.



The LDX-3120-1640 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, B-mount, COS, TO3, HHL, 9mm SMA, FCP (2 Pin), HHLFC, and custom package options.

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

Parameter	LDX-3120-1640	Units
Output Power	1,200	mW
Wavelength	1640	+/-20 nm
Spectral Width	8	nm
Operating Temperature	20	°C
Aperture Size	200	um
Operating Current	6,770	mA
Threshold Current	1340	mA
Slope Efficiency	0.25	W/A
Forward Voltage	1.2	V
Fast Axis Divergence	40	° (FWHM)
Slow Axis Divergence	7	° (FWHM)
Polarization	TE	N/A
Fiber Size HHL, BTF, FCP <sup>1</sup>	200 or 365	um
Min. Fiber Size 9mm SMA <sup>2</sup>	350	um
Expected Lifetime <sup>3</sup>	>15,000	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	Drawing
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	Drawing
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	Drawing
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**

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

**LDX-XXXX-XXX-XXX-XXX**

- LDX Optronics
- Chip Design
- Wavelength

**Package Type**

- C – C-Mount
- B – B-Mount
- Q – Q-Mount
- CO5 – 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

**Options**

- TEC – Internal TEC
- PD – Photodiode
- T – Thermistor
- L1 - FAC Lens, Best Collimation
- L2 - FAC Lens, Squared Beam
- AR – Low AR Coating

For all handling and mounting precautions, see the [LDX Catalog](#)