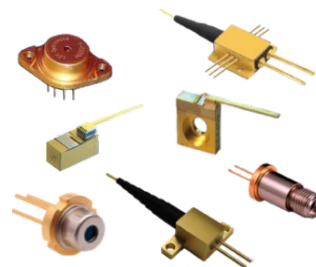


- ⊗ Wavelength: 680+/-3 nm
- ⊗ Output Power: Up to 1200mW free space / 960mW fiber coupled
- ⊗ High output power and high efficiency
- ⊗ Proven reliability
- ⊗ Custom packaging available
- ⊗ Custom wavelengths and laser designs are available.



The LDX-3115-680 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 25° on a C-mount)**

| Parameter                             | LDX-3115-680 | Units                    |
|---------------------------------------|--------------|--------------------------|
| Output Power                          | 1,200        | mW                       |
| Wavelength                            | 680          | +/-3 nm                  |
| Spectral Width                        | 1.5          | nm                       |
| Operating Temperature                 | 25           | °C                       |
| Aperture Size                         | 150          | um                       |
| Operating Current                     | 1,600        | mA                       |
| Threshold Current                     | 600          | mA                       |
| Slope Efficiency                      | 1.20         | W/A                      |
| Forward Voltage                       | 2.2          | V                        |
| Fast Axis Divergence                  | 38           | ° (FWHM)                 |
| Slow Axis Divergence                  | 7            | ° (FWHM)                 |
| Polarization                          | TE           | N/A                      |
| Fiber Size HHL, BTF, FCP <sup>1</sup> | 200          | um                       |
| Min. Fiber Size 9mm SMA <sup>2</sup>  | 300          | 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.

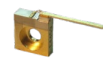
LDX follows a policy of continuous product improvement.

**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           | Drawing                                                                             |
|------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|
| C-Mount Package  |  | Small footprint with screw mounting<br>Material – Copper (OFHC)<br>Fast-axis lensing       | Fast-axis lensing |  |
| B-Mount Package  |  | Very small footprint<br>Requires soldering to heatsink<br>Material – Copper Tungsten (CuW) | Fast-axis lensing |  |
| Chip-on-Submount |  | Very small footprint<br>Requires soldering to heatsink<br>Material – BeO                   | Fast-axis lensing |  |

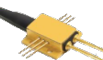
### Free Space Package - Hermetically Sealed Windowed Packages

| Package      |                                                                                   | Features                                                                                 | Options                                            | Drawing                                                                             |
|--------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------|
| 9mm Package  |  | Industry-standard package<br>Header material – Copper                                    | Photodiode, Isolated package,<br>Fast-axis lensing |  |
| TO-3 Package |  | Mounting to heatsink with screws<br>Header material – Copper                             | TEC, Thermistor, Photodiode,<br>Fast-axis lensing  |  |
| HHL Package  |  | Internal peltier cooler (TEC), thermistor,<br>and photodiode<br>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<br>SMA connector for detachable fiber<br>Header material – Copper                                  | Photodiode, Isolated package |  |
| 8-Pin BFC Package  |  | Built-in internal TEC and Photodiode<br>Fiber pigtail with SMA connector<br>Header material – Copper                         | Thermistor                   |  |
| 2-Pin FCP Package  |  | Fiber pigtail with SMA connector<br>Header material – Copper                                                                 | none                         |  |
| HHL-FC Package     |  | Fiber pigtail with SMA connector<br>Internal peltier cooler (TEC), thermistor,<br>and photodiode<br>Header material – Copper | none                         |  |

### Part Numbering System

| LDX-XXXX-XXX-XXX-XXX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Part Number          | Description                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>LDX Optronics</div> <div>Chip Design</div> <div>Wavelength</div> <div> <b>Package Type</b><br/>           C – C-Mount<br/>           B – B-Mount<br/>           Q – Q-Mount<br/>           COS – Chip on Submount<br/>           9 – 9mm Package<br/>           TO3 – TO-3 Package<br/>           HHL – HHL Package<br/>           9-SMA – 9mm SMA Package<br/>           HHL-FC – HHL Package<br/>           BFC – 8 pin High Heat Load<br/>           FCP – 2-pin Package<br/>           CHIP – Unmounted Chip<br/>           BAR – Unmounted Bar         </div> <div> <b>Options</b><br/>           TEC – Internal TEC<br/>           PD – Photodiode<br/>           T – Thermistor<br/>           L1 – FAC Lens, Best Collimation<br/>           L2 – FAC Lens, Squared Beam<br/>           AR – Low AR Coating         </div> |  | 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                                                                                 |