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THORLABS

M9-915-0200 - March 08, 2018

Item # M9-915-0200 was discontinued on March 08, 2018. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

LASER DIODES: Ø3.8 MM, Ø5.6 MM, Ø9 MM, AND Ø9.5 MM TO CANS

- **Ø3.8 mm, Ø5.6 mm, Ø9 mm, and Ø9.5 mm Laser Diodes**
- **Center Wavelengths Ranging from 375 to 1650 nm**
- **Output Powers from 5 mW to 2 W**

Application Idea
Our Laser Diode Driver Kits Include an LD Controller, TEC Controller, LD/TEC Mount, and Accessories

Ø3.8 mm

Ø9 mm

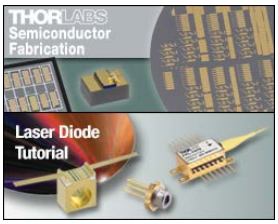
Ø9 mm
(High Heat Load)

Ø9.5 mm
(DPSS Laser)

Ø5.6 mm

OVERVIEW

Features



- Fabry-Perot (FP), Distributed Feedback (DFB), Volume Holographic Grating (VHG), and Diode-Pumped Solid-State (DPSS) Laser Diodes
- Output Powers from 5 mW to 2 W
- Center Wavelengths Available from 375 nm to 1650 nm
- Easily Choose a Compatible Mount Using Our LD Pin Codes
- Compatible with Thorlabs' Laser Diode and TEC Controllers

TO-packaged laser diodes are available in standard Ø3.8 mm, Ø5.6 mm, or Ø9 mm TO cans, as well as Ø9.5 mm cans. We have categorized the pin configurations into standard A, B, C, D, E, F, G, and H pin codes (see the diagram below). This pin code allows the user to easily determine compatible mounts.

Some of our diodes that are offered in header packages can be converted to a sealed TO can package by request, as indicated in the tables below. Please contact Tech Support for details.

Notes on Center Wavelength
While the center wavelength is listed for each diode, this is only a typical number. The center wavelength of a particular diode varies from production run to production run. Thus, the diode you receive may not operate at the typical center wavelength. Diodes can be temperature tuned, which

Laser Diode Selection Guide[a]
Shop by Package / Type
TO Can (Ø3.8, Ø5.6, Ø9, and Ø9.5 mm)
TO Can Pigtail (SM)
TO Can Pigtail (PM)
TO Can Pigtail (MM)
FP Butterfly Package
FBG-Stabilized Butterfly Package
Chip on Submount
MIR Fabry-Perot Two-Tab C-Mount
One-Tab C-Mount
Single-Frequency Lasers
DFB TO Can Pigtail (SM)
VHG-Stabilized TO Can or Pigtail (SM)
ECL Butterfly Package
DBR Butterfly Package
MIR DFB Two-Tab C-Mount
MIR DFB D-Mount
MIR DFB High Heat Load
Shop By Wavelength

will alter the lasing wavelength. A number of items below are listed as Wavelength Tested, which means that the dominant wavelength of each unit has been measured and recorded. For many of these items, after clicking "Choose Item" below, a list will appear that contains the dominant wavelength, output power, and operating current of each in-stock unit. Clicking on the red Docs Icon next to the serial number provides access to a PDF with serial-number-specific L-I-V and spectral characteristics. Customers may also contact Tech Support to select one of these diodes based on the tested wavelength if serial-number-specific information is not available below.

Click to Enlarge
Ø9 mm TO-Can Laser Diode Secured in Post-Mounted LM9F Holder

- Our complete selection of laser diodes is available on the *LD Selection Guide* tab above.

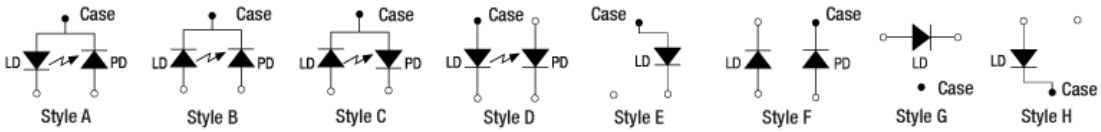
Webpage Features	
	Clicking this icon opens a window that contains specifications and mechanical drawings.
	Clicking this icon allows you to download our standard support documentation.
Choose Item	Clicking the words "Choose Item" opens a drop-down list containing all of the in-stock lasers around the desired center wavelength. The red icon next to the serial number then allows you to download L-I-V and spectral measurements for that serial-numbered device.

Spatial Mode and Linewidth

We offer laser diodes with different output characteristics (power, wavelength, beam size, shape, etc.). Most lasers offered here are single spatial mode (single mode, or SM) and a few are designed for higher-power, multi-spatial-mode (multimode, or MM) operation. Our wavelength stabilized VHG laser diodes, sold below, have excellent single mode performance. Some single mode laser diodes can be operated with limited single-longitudinal-mode characteristics. For better side mode suppression ratio (SMSR) performance, other devices such as DFB lasers, DBR lasers, or external cavity lasers should be considered. Please see our Laser Diode Tutorial for more information on these topics and laser diodes in general.

Laser diodes are sensitive to electrostatic shock. Please take the proper precautions when handling the device (see our electrostatic shock accessories). These lasers are also sensitive to optical feedback, which can cause significant fluctuations in the output power of the laser diode depending on the application. See our optical isolators for potential solutions to this problem. Members of our Tech Support staff are available to help you select a laser diode and to discuss possible operation issues.

Pin Codes



Laser Diode pin codes indicate which mounts and diodes are compaitble. The drawings do not represent exact wiring diagrams.

For warranty information and the Thorlabs Life Support and Military Use Policy for laser diodes, please refer to the *LD Operation* tab.

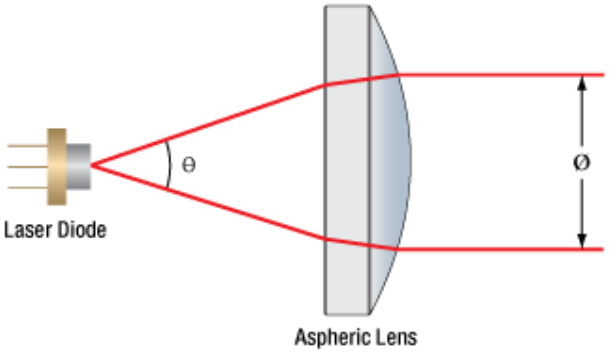
COLLIMATION TUTORIAL

Choosing a Collimation Lens for Your Laser Diode

Since the output of a laser diode is highly divergent, collimating optics are necessary. Since aspheric lenses do not introduce spherical aberration, they are commonly chosen when the collimated laser beam is to be between one and five millimeters. A simple example will illustrate the key specifications to consider when choosing the correct lens for a given application.

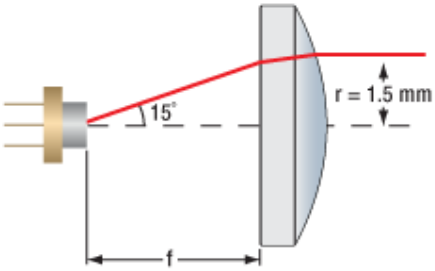
Example:
Laser Diode to be Used: L780P010
Desired Collimated Beam Diameter: Ø3 mm (Major Axis)

The specifications for the L780P010 laser diode indicate that the typical parallel and perpendicular FWHM beam divergences are 10° and 30°, respectively. Therefore, as the light diverges, an elliptical beam will result. To collect as much light as possible during the collimation process, consider the larger of these two divergence angles in any calculations (i.e., in this case use 30°). If you wish to convert your elliptical beam in to a round one, we suggest using an Anamorphic Prism Pair, which magnifies one axis of your beam.



Ø = Beam Diameter Θ = Divergence Angle

From the information above, the focal length of the lens can be determined, using the thin lens approximation:



$$f = \frac{1.5\text{ mm}}{\tan 15^\circ} = 5.6\text{ mm}$$

With this information known, it is now time to choose the appropriate collimating lens. Thorlabs offers a large selection of aspheric lenses to choose from. For this application the ideal lens is a -B AR-coated molded glass aspheric lens with focal length near 5.6 mm. The C171TMD-B (mounted) or 354171-B (unmounted) aspheric lenses have a focal length of 6.20 mm, which will result in a collimated beam diameter (major axis) of 3.3 mm. Next, check to see if the numerical aperture (NA) of the diode is smaller than the NA of the lens:

$$0.30 = NA_{Lens} > NA_{Diode} \approx \sin(15^\circ) = 0.26$$

Up to this point, we have been using the FWHM beam diameter to characterize the beam. However, a better practice is to use the $1/e^2$ beam diameter. For a Gaussian beam profile, the $1/e^2$ diameter is almost equal to 1.7X the FWHM diameter. The $1/e^2$ beam diameter therefore captures more of the laser diode's output light (for greater power delivery) and minimizes far-field diffraction (by clipping less of the incident light).

A good rule of thumb is to pick a lens with an NA twice of the NA of the laser diode. For example, either the A390-B or the A390TM-B could be used as these lenses each have an NA of 0.53, which is more than twice the approximate NA of our laser diode (0.26). Note that these lenses each have a focal length of 4.6 mm, resulting in an approximate major beam diameter of 2.5 mm.

LD OPERATION

Laser Diode and Laser Diode Pigtail Warranty

When operated within their specifications, laser diodes have extremely long lifetimes. Most failures occur from mishandling or operating the lasers beyond their maximum ratings. Laser Diodes are among the most static-sensitive devices currently made. Proper ESD Protection should be worn whenever handling a laser diode. Due to their extreme electrostatic sensitivity, laser diodes cannot be returned after their sealed package has been open. Laser diodes in their original sealed package can be returned for a full refund or credit.

Handling and Storage Precautions

Due to their extreme susceptibility to damage from electrostatic discharge (ESD), care should be taken whenever handling and operating laser diodes:

- Wrist Straps: Use grounded anti-static wrist straps whenever handling diodes.
- Anti-Static Mats: Always work on grounded anti-static mats.

- Laser Diode Storage: When not in use, short the leads of the laser together to protect against ESD damage.

Operating and Safety Precautions

Use an Appropriate Driver:
Laser diodes require precise control of operating current and voltage to avoid overdriving the laser diode. In addition, the laser driver should provide protection against power supply transients. Select a laser driver appropriate for your application. Do not use a voltage supply with a current limiting resistor since it does not provide sufficient regulation to protect the laser.

Power Meters:
When setting up and calibrating a laser diode with its driver, use a NIST-traceable power meter to precisely measure the laser output. It is usually safest to measure the laser output directly before placing the laser in an optical system. If this is not possible, be sure to take all optical losses (transmissive, aperture stopping, etc.) into consideration when determining the total output of the laser.

Reflections:
Flat surfaces in the optical system in front of a laser diode can cause some of the laser energy to reflect back onto the laser's monitor photodiode giving an erroneously high photodiode current. If optical components are moved within the system and energy is no longer reflected onto the monitor photodiode, a constant power feedback loop will sense the drop in photodiode current and try to compensate by increasing the laser drive current and possibly overdriving the laser. Back reflections can also cause other malfunctions or damage to laser diodes. To avoid this, be sure that all surfaces are angled 5-10°, and when necessary, use optical isolators to attenuate direct feedback into the laser.

Heat Sinks:
Laser diode lifetime is inversely proportional to operating temperature. Always mount the laser in a suitable heat sink to remove excess heat from the laser package.

Voltage and Current Overdrive:
Be careful not to exceed the maximum voltage and drive current listed on the specification sheet with each laser diode, even momentarily. Also, reverse voltages as little as 3 V can damage a laser diode.

ESD Sensitive Device:
Currently operating lasers are susceptible to ESD damage. This is particularly aggravated by using long interface cables between the laser diode and its driver due to the inductance that the cable presents. Avoid exposing the laser or its mounting apparatus to ESDs at all times.

ON/OFF and Power Supply Coupled Transients:
Due to their fast response times, laser diodes can be easily damaged by transients less than 1 µs. High current devices such as soldering irons, vacuum pumps, and fluorescent lamps can cause large momentary transients. Thus, always use surge-protected outlets.

If you have any questions regarding laser diodes, please call your local Thorlabs Technical Support office for assistance.

Life Support and Military Use Application Policy

Thorlabs' products are not authorized for use as critical components in life support devices or systems or in any military applications without the express written approval of the president of Thorlabs:

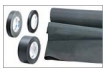
1. Life support devices or systems are devices or systems intended for either surgical implantation into the body or to sustain life and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system or to affect its safety or effectiveness.
3. Thorlabs' laser diodes are not intended nor warranted for usage in Military Applications.

LASER SAFETY

Laser Safety and Classification

Safe practices and proper usage of safety equipment should be taken into consideration when operating lasers. The eye is susceptible to injury, even from very low levels of laser light. Thorlabs offers a range of laser safety accessories that can be used to reduce the risk of accidents or injuries. Laser emission in the visible and near infrared spectral ranges has the greatest potential for retinal injury, as the cornea and lens are transparent to those wavelengths, and the lens can focus the laser energy onto the retina.

Safe Practices and Light Safety Accessories



- Thorlabs recommends the use of safety eyewear whenever working with laser beams with non-negligible powers (i.e., > Class 1) since metallic tools such as screwdrivers can accidentally redirect a beam.
- Laser goggles designed for specific wavelengths should be clearly available near laser setups to protect the wearer from unintentional laser reflections.
- Goggles are marked with the wavelength range over which protection is afforded and the minimum optical density within that range.
- Laser Safety Curtains and Blackout Materials can prevent direct or reflected light from leaving the experimental setup area.
- Thorlabs' Enclosure Systems can be used to contain optical setups to isolate or minimize laser hazards.
- A fiber-pigtailed laser should always be turned off before connecting it to or disconnecting it from another fiber, especially when the laser is at power levels above 10 mW.
- All beams should be terminated at the edge of the table, and laboratory doors should be closed whenever a laser is in use.
- Do not place laser beams at eye level.
- Carry out experiments on an optical table such that all laser beams travel horizontally.
- Remove unnecessary reflective items such as reflective jewelry (e.g., rings, watches, etc.) while working near the beam path.
- Be aware that lenses and other optical devices may reflect a portion of the incident beam from the front or rear surface.
- Operate a laser at the minimum power necessary for any operation.
- If possible, reduce the output power of a laser during alignment procedures.
- Use beam shutters and filters to reduce the beam power.
- Post appropriate warning signs or labels near laser setups or rooms.
- Use a laser sign with a lightbox if operating Class 3R or 4 lasers (i.e., lasers requiring the use of a safety interlock).
- Do not use Laser Viewing Cards in place of a proper Beam Trap.

Laser Classification

Lasers are categorized into different classes according to their ability to cause eye and other damage. The International Electrotechnical Commission (IEC) is a global organization that prepares and publishes international standards for all electrical, electronic, and related technologies. The IEC document 60825-1 outlines the safety of laser products. A description of each class of laser is given below:

Class	Description	Warning Label
1	This class of laser is safe under all conditions of normal use, including use with optical instruments for intrabeam viewing. Lasers in this class do not emit radiation at levels that may cause injury during normal operation, and therefore the maximum permissible exposure (MPE) cannot be exceeded. Class 1 lasers can also include enclosed, high-power lasers where exposure to the radiation is not possible without opening or shutting down the laser.	
1M	Class 1M lasers are safe except when used in conjunction with optical components such as telescopes and microscopes. Lasers belonging to this class emit large-diameter or divergent beams, and the MPE cannot normally be exceeded unless focusing or imaging optics are used to narrow the beam. However, if the beam is refocused, the hazard may be increased and the class may be changed accordingly.	
2	Class 2 lasers, which are limited to 1 mW of visible continuous-wave radiation, are safe because the blink reflex will limit the exposure in the eye to 0.25 seconds. This category only applies to visible radiation (400 - 700 nm).	
2M	Because of the blink reflex, this class of laser is classified as safe as long as the beam is not viewed through optical instruments. This laser class also applies to larger-diameter or diverging laser beams.	
3R	Lasers in this class are considered safe as long as they are handled with restricted beam viewing. The MPE can be exceeded with this class of laser, however, this presents a low risk level to injury. Visible, continuous-wave lasers are limited to 5 mW of output power in this class.	

3B	Class 3B lasers are hazardous to the eye if exposed directly. However, diffuse reflections are not harmful. Safe handling of devices in this class includes wearing protective eyewear where direct viewing of the laser beam may occur. In addition, laser safety signs lightboxes should be used with lasers that require a safety interlock so that the laser cannot be used without the safety light turning on. Class-3B lasers must be equipped with a key switch and a safety interlock.	
4	This class of laser may cause damage to the skin, and also to the eye, even from the viewing of diffuse reflections. These hazards may also apply to indirect or non-specular reflections of the beam, even from apparently matte surfaces. Great care must be taken when handling these lasers. They also represent a fire risk, because they may ignite combustible material. Class 4 lasers must be equipped with a key switch and a safety interlock.	
All class 2 lasers (and higher) must display, in addition to the corresponding sign above, this triangular warning sign		

375 - 405 nm TO Can Laser Diodes

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
L375P70MLD[c]		375	70	110 mA / 140 mA	Ø5.6 mm	F	Yes	-	No	Single Mode
L404P400M		404	400	370 mA / 410 mA	Ø5.6 mm	G	No	S7060R	No	Multimode
L405P20		405	20	38 mA / 55 mA	Ø5.6 mm	B	Yes	S7060R	No	Single Mode
DL5146-101S		405	40	70 mA / 100 mA	Ø5.6 mm	B	Yes	S7060R	No	Single Mode
L405P150		405	150	138 mA / 170 mA	Ø3.8 mm	G	No	S038S	No	Single Mode
L405G1		405	1000	900 mA / 1200 mA	Ø9 mm	G	No	S8060	No	Multimode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Laser diodes with a built-in monitor photodiode can operate at constant power.
- c. A temperature-controlled mount such as our LDM56 laser diode mount is recommended for general use. Although this diode has a style F pin code, it can be used with the LDM56(/M) mount when the mount has been configured for style G pin configurations. Note that constant power operation will not be available in this configuration. For more information, please contact Tech Support.

Part Number	Description	Price	Availability
L375P70MLD	**375 nm, 70 mW, Ø5.6 mm, F Pin Code, Laser Diode**	**$4,484.94**	**Today**
L404P400M	**404 nm, 400 mW, Ø5.6 mm Package, G Pin Code, MM Laser Diode**	**$646.68 Volume Pricing Available**	**Today**
L405P20	**405 nm, 20 mW, Ø5.6 mm, B Pin Code, Laser Diode**	**$49.98 Volume Pricing Available**	**Today**
DL5146-101S	**405 nm, 40 mW, Ø5.6 mm, B Pin Code Laser Diode**	**$82.37 Volume Pricing Available**	**Today**
L405P150	**405 nm, 150 mW, Ø3.8 mm, G Pin Code, Laser Diode**	**$91.80 Volume Pricing Available**	**Today**
L405G1	**NEW! 405 nm, 1000 mW, Ø9 mm Package, G Pin Code, MM Laser Diode**	**$670.00**	**Today**

450 - 520 nm TO Can Laser Diodes

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
PL450B		450	80	100 mA / 145 mA	Ø3.8 mm	G	No	S038S	No	Single Mode
L450P1600MM		450	1600	1200 mA / 1500 mA	Ø5.6 mm	G	No	S7060R	No	Multimode
L462P1400MM		462	1400	1350 mA / 1550 mA	Ø9 mm	G	No	S8060	No	Multimode
L473P100		473	100	120 mA / 150 mA	Ø5.6 mm	F+[c]	Yes	-	No	Single Mode
L488P60		488	60	75 mA / 110 mA	Ø5.6 mm	B	Yes	S7060R	No	Single Mode

PL520		520	50	150 mA / 160 mA	Ø3.8 mm	G	No	S038S	No	Single Mode
L520P50		520	50	150 mA / 160 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Laser diodes with a built-in monitor photodiode can operate at constant power.
- c. This laser diode has a built in Zener diode to help protect against damage from small levels of electrostatic discharge and reverse potential on the laser diode.

Part Number	Description	Price	Availability
PL450B	**450 nm, 80 mW, Ø3.8 mm, G Pin Code, Laser Diode**	**$70.89 Volume Pricing Available**	**Today**
L450P1600MM	**450 nm, 1600 mW, Ø5.6 mm, G Pin Code, MM, Laser Diode**	**$81.35**	**Today**
L462P1400MM	**462 nm, 1400 mW, Ø9.0 mm, G Pin Code, MM, Laser Diode**	**$179.52**	**Today**
L473P100	**473 nm, 100 mW, Ø5.6 mm, F+ Pin Code, Laser Diode**	**$2,604.00**	**Today**
L488P60	**488 nm, 60 mW, Ø5.6 mm, B Pin Code, Laser Diode**	**$2,399.04**	**Today**
PL520	**520 nm, 50 mW, Ø3.8 mm, G Pin Code Laser Diode**	**$77.01 Volume Pricing Available**	**Today**
L520P50	**520 nm, 50 mW, Ø5.6 mm, A Pin Code, Laser Diode**	**$65.79 Volume Pricing Available**	**Today**

532 nm TO Can DPSS Lasers

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode	Compatible Socket	Wavelength Tested	Spatial Mode
DJ532-10[b]		532	10	220 mA / 250 mA	Ø9.5 mm (Non-Standard)[c]	A	Yes[d]	-	No	Single Mode
DJ532-40[b]		532	40	330 mA / 400 mA	Ø9.5 mm (Non-Standard)[c]	E	No	-	No	Single Mode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Click here for more information on our 532 nm Diode Pumped Solid State Lasers.
- c. These lasers have the same pin spacing as our Ø5.6 mm laser diodes. They are compatible with the LDM56 Laser Diode Mount using the LDM56DJ DPSS Laser Mounting Flange.
- d. The monitor photodiode of the DJ532-10 measures the power of the pump source, not the 532 nm output. Therefore, we recommend operating these diodes in constant current mode.

Part Number	Description	Price	Availability
DJ532-10	**532 nm, 10 mW, A Pin Code, DPSS Laser**	**$150.96**	**Today**
DJ532-40	**532 nm, 40 mW, E Pin Code, DPSS Laser**	**$182.58**	**Today**

633 - 635 nm TO Can Laser Diodes

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
HL63163DG		633	100	170 mA / 230 mA	Ø5.6 mm	G	No	S7060R	No	Single Mode
L635P5		635	5	30 mA / 45 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
HL6312G		635	5	55 mA / 85 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode
HL6320G		635	10	70 mA / 95 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode
HL6322G		635	15	85 mA / 100 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.

b. Laser diodes with a built-in monitor photodiode can operate at constant power.

Part Number	Description	Price	Availability
HL63163DG	633 nm, 100 mW, Ø5.6 mm, G Pin Code, Laser Diode	$289.68 Volume Pricing Available	Today
L635P5	635 nm, 5 mW, Ø5.6 mm, A Pin Code, Laser Diode	$23.77 Volume Pricing Available	Today
HL6312G	635 nm, 5 mW, Ø9 mm, A Pin Code, Laser Diode	$21.42 Volume Pricing Available	Today
HL6320G	635 nm, 10 mW, Ø9 mm, A Pin Code, Laser Diode	$40.55 Volume Pricing Available	Today
HL6322G	635 nm, 15 mW, Ø9 mm, A Pin Code, Laser Diode	$67.83 Volume Pricing Available	Today

637 - 639 nm TO Can Laser Diodes

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
L637P5		637	5	20 mA / 25 mA	Ø5.6 mm	C	Yes	S7060R	No	Single Mode
HL63142DG		637	100	140 mA / 180 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
HL63133DG		637	170	250 mA / 320 mA	Ø5.6 mm	G	No	S7060R	No	Single Mode
HL6388MG		637	250	340 mA / 430 mA	Ø5.6 mm	H	No	S7060R	No	Multimode
L638P040		638	40	92 mA / 115 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
L638P150		638	150	230 mA / 300 mA	Ø3.8 mm	G	No	S038S	No	Single Mode
L638P200		638	200	280 mA / 330 mA	Ø5.6 mm	G	No	S7060R	No	Single Mode
L638P700M		638	700	820 mA / 1000 mA	Ø5.6 mm	G	No	S7060R	No	Multimode
HL6358MG		639	10	40 mA / 50 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
HL6323MG		639	30	95 mA / 130 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Laser diodes with a built-in monitor photodiode can operate at constant power.

Part Number	Description	Price	Availability
L637P5	Customer Inspired!637 nm, 5 mW, Ø5.6 mm, C Pin Code, Laser Diode	$13.46 Volume Pricing Available	Today
HL63142DG	637 nm, 100 mW, Ø5.6 mm, A Pin Code, Laser Diode	$276.42 Volume Pricing Available	Today
HL63133DG	637 nm, 170 mW, Ø5.6 mm, G Pin Code, Laser Diode	$163.20 Volume Pricing Available	Today
HL6388MG	637 nm, 250 mW, Ø5.6 mm, H Pin Code, MM, Laser Diode	$56.61 Volume Pricing Available	Today
L638P040	638 nm, 40 mW, Ø5.6 mm, A Pin Code, Laser Diode	$96.90 Volume Pricing Available	Today
L638P150	638 nm, 150 mW, Ø3.8 mm, G Pin Code, Laser Diode	$47.00	Today
L638P200	638 nm, 200 mW, Ø5.6 mm, G Pin Code, Laser Diode	$132.00	Today
L638P700M	638 nm, 700 mW, Ø5.6 mm, G Pin Code, MM, Laser Diode	$61.97 Volume Pricing Available	Today
HL6358MG	639 nm, 10 mW, Ø5.6 mm, A Pin Code, Laser Diode	$15.40 Volume Pricing Available	Today
HL6323MG	639 nm, 30 mW, Ø5.6 mm, A Pin Code, Laser Diode	$129.54	Today

		Volume Pricing Available	

640 nm - 660 nm TO Can Laser Diodes

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
HL6362MG		640	40	90 mA / 110 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
HL6364DG		642	60	125 mA / 155 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
HL6366DG		642	80	155 mA / 175 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
HL6385DG		642	150	280 mA / 350 mA	Ø5.6 mm	H	No	S7060R	No	Single Mode
L650P007		650	7	28 mA / 35 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
HL6501MG		658	30	65 mA / 95 mA	Ø5.6 mm	C	Yes	S7060R	No	Single Mode
L658P040		658	40	75 mA / 110 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
HL6544FM		660	50	115 mA / 135 mA	Ø5.6 mm	G	No	S7060R	No	Single Mode
HL6545MG		660	120	170 mA / 210 mA	Ø5.6 mm	H	No	S7060R	No	Single Mode
L660P120		660	120	175 mA / 210 mA	Ø5.6 mm	C	Yes	S7060R	No	Single Mode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Laser diodes with a built-in monitor photodiode can operate at constant power.

Part Number	Description	Price	Availability
HL6362MG	640 nm, 40 mW, Ø5.6 mm, A Pin Code, Laser Diode	$117.30 Volume Pricing Available	Today
HL6364DG	642 nm, 60 mW, Ø5.6 mm, A Pin Code, Laser Diode	$155.04 Volume Pricing Available	Today
HL6366DG	642 nm, 80 mW, Ø5.6 mm, A Pin Code, Laser Diode	$196.86 Volume Pricing Available	Today
HL6385DG	642 nm, 150 mW, Ø5.6 mm, H Pin Code, Laser Diode	$306.00 Volume Pricing Available	Today
L650P007	650 nm, 7 mW, Ø5.6 mm, A Pin Code, Laser Diode	$12.95 Volume Pricing Available	Today
HL6501MG	658 nm, 30 mW, Ø5.6 mm, C Pin Code, Laser Diode	$24.58 Volume Pricing Available	Today
L658P040	658 nm, 40 mW, Ø5.6 mm, A Pin Code, Laser Diode	$27.29 Volume Pricing Available	Today
HL6544FM	660 nm, 50 mW, Ø5.6 mm, G Pin Code, Laser Diode	$33.41 Volume Pricing Available	Today
HL6545MG	660 nm, 120 mW, Ø5.6 mm, H Pin Code, Laser Diode	$43.86 Volume Pricing Available	Today
L660P120	660 nm, 120 mW, Ø5.6 mm, C Pin Code, Laser Diode	$100.22 Volume Pricing Available	Today

670 nm - 730 nm TO Can Laser Diodes

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
HL6748MG		670	10	30 mA / 45 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
HL6714G		670	10	55 mA / 90 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode
HL6756MG		670	15	35 mA / 45 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode

SLD1332V		670	500	800 mA / 1200 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Multimode
HL6750MG		685	50	75 mA / 120 mA	Ø5.6 mm	C	Yes	S7060R	No	Single Mode
HL6738MG		690	30	90 mA / 115 mA	Ø5.6 mm	C	Yes	S7060R	No	Single Mode
HL7001MG		705	40	75 mA / 100 mA	Ø5.6 mm	C	Yes	S7060R	No	Single Mode
HL7302MG		730	40	75 mA / 100 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Laser diodes with a built-in monitor photodiode can operate at constant power.

Part Number	Description	Price	Availability
HL6748MG	**670 nm, 10 mW, Ø5.6 mm, A Pin Code, Laser Diode**	**$26.78 Volume Pricing Available**	**Today**
HL6714G	**670 nm, 10 mW, Ø9 mm, A Pin Code, Laser Diode**	**$50.75 Volume Pricing Available**	**Today**
HL6756MG	**670 nm, 15 mW, Ø5.6 mm, A Pin Code, Laser Diode**	**$60.69 Volume Pricing Available**	**Today**
SLD1332V	**670 nm, 500 mW, Ø9 mm, A Pin Code, MM, Laser Diode**	**$716.04 Volume Pricing Available**	**Today**
HL6750MG	**685 nm, 50 mW, Ø5.6 mm, C Pin Code, Laser Diode**	**$80.07 Volume Pricing Available**	**Today**
HL6738MG	**690 nm, 30 mW, Ø5.6 mm, C Pin Code, Laser Diode**	**$48.45 Volume Pricing Available**	**Today**
HL7001MG	**Customer Inspired!705 nm, 40 mW, Ø5.6 mm, C Pin Code, Laser Diode**	**$361.08 Volume Pricing Available**	**Today**
HL7302MG	**730 nm, 40 mW, Ø5.6 mm, A Pin Code, Diode**	**$361.08 Volume Pricing Available**	**Today**

780 nm - 785 nm TO Can Laser Diodes

Note: The rows shaded green below denote single-frequency laser diodes.

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
L780P010		780	10	24 mA / 40 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
L785P5		785	5	28 mA / 40 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
L785P25		785	25	45 mA / 60 mA	Ø5.6 mm	B	Yes	S7060R	No	Single Mode
L785P090		785	90	120 mA / 160 mA	Ø5.6 mm	C	Yes	S7060R	No	Single Mode
LD785-SEV300[c,f]		785	300	500 mA (Max)[d]	Ø9 mm[e]	E	No	S8060 or S8060-4	Yes	Single Frequency[f]
LD785-SH300		785	300	400 mA / 450 mA	Ø9 mm	H	No	S8060 or S8060-4	Yes	Single Mode
LD785-SE400		785	400	550 mA / 600 mA	Ø9 mm	E	No	S8060 or S8060-4	Yes	Single Mode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Laser diodes with a built-in monitor photodiode can operate at constant power.
- c. In order to achieve the specified performance, we recommend using the LDM90 Laser Diode Mount and, when collimated, an NIR Optical Isolator; single frequency performance when collimated is only guaranteed with >35 dB isolation of back reflections. This volume holographic grating (VHG) laser diode is also available in an SM pigtail package with internal isolator.
- d. The power can be tuned across the operating current range, given in the serial-number-specific documentation, while maintaining wavelength-stabilized, single-frequency performance within a stabilized temperature range.
- e. The Ø9 mm package for the LD785-SEV300 is 4.30 mm (0.17") thick, which is more than the standard Ø9 mm package thickness of 1.50 mm (0.06"). The diode will still be compatible with all Ø9 mm laser diode mounts; please see the *Drawing* tab in the blue info icon ( ) above for full package specifications. Mounting this diode in the LDM90(/M) requires two 2-56 screws, included with this diode.
- f. Single-Frequency Laser (Single Longitudinal Mode)

Part Number	Description	Price	Availability
L780P010	780 nm, 10 mW, Ø5.6 mm, A Pin Code, Laser Diode	$23.56 Volume Pricing Available	Today
L785P5	785 nm, 5 mW, Ø5.6 mm, A Pin Code, Laser Diode	$11.12 Volume Pricing Available	Today
L785P25	785 nm, 25 mW, Ø5.6 mm, B Pin Code, Laser Diode	$37.23 Volume Pricing Available	Today
L785P090	785 nm, 90 mW, Ø5.6 mm, C Pin Code, Laser Diode	$43.35	Today
LD785-SEV300	Customer Inspired!785 nm, 300 mW, Ø9 mm TO Can, E Pin Code, VHG Wavelength-Stabilized Single-Frequency Laser Diode	$1,408.62	Lead Time
LD785-SH300	785 nm, 300 mW, Ø9 mm, H Pin Code, Laser Diode	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 787.7 nm, P = 300.0 mW (I = 368 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.3 nm, P = 300.0 mW (I = 380 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.2 nm, P = 300.0 mW (I = 384 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 787.6 nm, P = 300.0 mW (I = 372 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 787.8 nm, P = 300.0 mW (I = 382 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.7 nm, P = 300.0 mW (I = 383 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.1 nm, P = 300.0 mW (I = 373 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 787.8 nm, P = 300.0 mW (I = 380 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 787.5 nm, P = 300.0 mW (I = 369 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.5 nm, P = 300.0 mW (I = 371 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.2 nm, P = 300.0 mW (I = 366 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.1 nm, P = 300.0 mW (I = 376 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 787.8 nm, P = 300.0 mW (I = 367 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-		$286.62	

SH300	CWL = 788.3 nm, P = 300.0 mW (I = 366 mA), 25 °C	Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.9 nm, P = 300.0 mW (I = 381 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.3 nm, P = 300.0 mW (I = 367 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.3 nm, P = 300.0 mW (I = 369 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 789.2 nm, P = 300.0 mW (I = 370 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.7 nm, P = 300.0 mW (I = 370 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.2 nm, P = 300.0 mW (I = 371 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.1 nm, P = 300.0 mW (I = 365 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.3 nm, P = 300.0 mW (I = 373 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.7 nm, P = 300.0 mW (I = 369 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 787.9 nm, P = 300.0 mW (I = 369 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.4 nm, P = 300.0 mW (I = 373 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.8 nm, P = 300.0 mW (I = 377 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.9 nm, P = 300.0 mW (I = 366 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 789.4 nm, P = 300.0 mW (I = 379 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 788.9 nm, P = 300.0 mW (I = 373 mA), 25 °C	$286.62 Volume Pricing Available	3-5 Days
LD785-SH300	CWL = 789.5 nm, P = 300.0 mW (I = 422 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.6 nm, P = 300.0 mW (I = 371 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.2 nm, P = 300.0 mW (I = 373 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.2 nm, P = 300.0 mW (I = 370 mA), 25 °C	$286.62 Volume Pricing	Today

		Available	
LD785-SH300	CWL = 787.9 nm, P = 300.0 mW (I = 372 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 787.9 nm, P = 300.0 mW (I = 375 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.3 nm, P = 300.0 mW (I = 373 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.0 nm, P = 300.0 mW (I = 379 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.6 nm, P = 300.0 mW (I = 376 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.4 nm, P = 300.0 mW (I = 372 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.1 nm, P = 300.0 mW (I = 369 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.6 nm, P = 300.0 mW (I = 374 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 787.3 nm, P = 300.0 mW (I = 375 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.3 nm, P = 300.0 mW (I = 368 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.2 nm, P = 300.0 mW (I = 372 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 787.9 nm, P = 300.0 mW (I = 377 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 786.4 nm, P = 300.0 mW (I = 379 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.2 nm, P = 300.0 mW (I = 370 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 787.6 nm, P = 300.0 mW (I = 379 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.8 nm, P = 300.0 mW (I = 376 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.3 nm, P = 300.0 mW (I = 383 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SH300	CWL = 788.7 nm, P = 300.0 mW (I = 373 mA), 25 °C	$286.62 Volume Pricing Available	Today
LD785-SE400	785 nm, 400 mW, Ø9 mm, E Pin Code, Laser Diode	$364.14 Volume Pricing Available	Today

LD785-SE400	CWL = 784.2 nm, P = 400.0 mW (I = 525 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 789.7 nm, P = 400.0 mW (I = 546 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 787.8 nm, P = 400.0 mW (I = 507 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 785.2 nm, P = 400.0 mW (I = 518 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 787.8 nm, P = 400.0 mW (I = 512 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 786.8 nm, P = 400.0 mW (I = 518 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 784.8 nm, P = 400.0 mW (I = 519 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 788.3 nm, P = 400.0 mW (I = 479 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 789.2 nm, P = 400.0 mW (I = 485 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 788.4 nm, P = 400.0 mW (I = 495 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 787.4 nm, P = 400.0 mW (I = 477 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 788.2 nm, P = 400.0 mW (I = 494 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 789.4 nm, P = 400.0 mW (I = 455 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 787.9 nm, P = 400.0 mW (I = 487 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 786.8 nm, P = 400.0 mW (I = 524 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 786.5 nm, P = 400.0 mW (I = 479 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 788.3 nm, P = 400.0 mW (I = 508 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 787.6 nm, P = 400.0 mW (I = 496 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 788.1 nm, P = 400.0 mW (I = 506 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-		$364.14	

SE400	CWL = 787.9 nm, P = 400.0 mW (I = 496 mA), 25 °C	Volume Pricing Available	Today
LD785-SE400	CWL = 785.3 nm, P = 400.0 mW (I = 492 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 788.0 nm, P = 400.0 mW (I = 498 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400	CWL = 787.1 nm, P = 400.0 mW (I = 491 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD785-SE400		$364.14 Volume Pricing Available	Today
LD785-SE400		$364.14 Volume Pricing Available	Today
LD785-SE400		$364.14 Volume Pricing Available	Today
LD785-SE400		$364.14 Volume Pricing Available	Today
LD785-SE400		$364.14 Volume Pricing Available	3-5 Days

805 nm - 808 nm TO Can Laser Diodes

Note: The rows shaded green below denote single-frequency laser diodes.

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
ML620G40		805	500	650 mA / 850 mA	Ø5.6 mm	G	No	S7060R	No	Multimode
L808P010		808	10	50 mA / 70 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
L808P030		808	30	65 mA / 95 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
M9-808-0150		808	150	180 mA / 220 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode
L808P200		808	200	260 mA / 300 mA	Ø5.6 mm	A	Yes	S7060R	No	Multimode
LD808-SEV500[c,d]		808	500	800 mA (Max)[e]	Ø9 mm[f]	E	No	S8060 or S8060-4	Yes	Single Frequency[d]
LD808-SE500		808	500	750 mA / 800 mA	Ø9 mm[f]	E	No	S8060 or S8060-4	Yes	Single Mode
L808P500MM		808	500	650 mA / 700 mA	Ø5.6 mm	A	Yes	S7060R	No	Multimode
L808P1000MM		808	1000	1100 mA / 1500 mA	Ø9 mm	E	No	S7060R	No	Multimode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Laser diodes with a built-in monitor photodiode can operate at constant power.
- c. In order to achieve the specified performance, we recommend using the LDM90 Laser Diode Mount and, when collimated, an NIR Optical Isolator; single frequency performance when collimated is only guaranteed with >35 dB isolation of back reflections.
- d. Single-Frequency Laser (Single Longitudinal Mode)
- e. The power can be tuned across the operating current range, given in the serial-number-specific documentation, while maintaining wavelength-stabilized, single-frequency performance within a stabilized temperature range.
- f. The Ø9 mm package for this diode is 4.30 mm (0.17") thick, which is more than the standard Ø9 mm package thickness of 1.50 mm (0.06"). The diode will still be compatible with all Ø9 mm laser diode mounts; please see the *Drawing* tab in the blue info icon ( ) above for full package specifications. Mounting this diode in the LDM90(/M) requires two 2-56 screws, included with this diode.

Part Number	Description	Price	Availability

ML620G40	805 nm, 500 mW, Ø5.6 mm, G Pin Code, MM, Laser Diode	$385.56 Volume Pricing Available	Today
L808P010	808 nm, 10 mW, Ø5.6 mm, A Pin Code, Laser Diode	$20.81 Volume Pricing Available	Today
L808P030	808 nm, 30 mW, Ø5.6 mm, A Pin Code, Laser Diode	$79.31 Volume Pricing Available	Today
M9-808-0150	808 nm, 150 mW, Ø9 mm, A Pin Code, Laser Diode	$461.04 Volume Pricing Available	Today
L808P200	808 nm, 200 mW, Ø5.6 mm, A Pin Code, MM, Laser Diode	$65.28 Volume Pricing Available	Today
LD808-SEV500	808 nm, 500 mW, Ø9 mm TO Can, E Pin Code, VHG Wavelength-Stabilized Single-Frequency Laser Diode	$1,512.66 Volume Pricing Available	Today
LD808-SEV500	CWL = 808.4 nm, P = 506.1 mW (I = 750 mA),25 °C	$1,512.66 Volume Pricing Available	Today
LD808-SE500	808 nm, 500 mW, Ø9 mm, E Pin Code, Laser Diode	$624.24	Today
LD808-SE500	CWL = 807.7 nm, P = 450.0 mW (I = 671 mA), 25 °C	$624.24	Today
LD808-SE500	CWL = 808.5 nm, P = 450.0 mW (I = 694 mA), 25 °C	$624.24	Today
LD808-SE500	CWL = 809.0 nm, P = 450.0 mW (I = 679 mA), 25 °C	$624.24	Today
LD808-SE500	CWL = 808.6 nm, P = 450.0 mW (I = 678 mA), 25 °C	$624.24	3-5 Days
L808P500MM	808 nm, 500 mW, Ø5.6 mm, A Pin Code, MM, Laser Diode	$38.51	Today
L808P1000MM	808 nm, 1000 mW, Ø9 mm, E Pin Code, MM, Laser Diode	$75.99	Today

820 nm - 880 nm TO Can Laser Diodes

Note: The rows shaded green below denote single-frequency laser diodes.

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
L820P100		820	100	145 mA / 210 mA	Ø5.6 mm	C	Yes	S7060R	No	Single Mode
L820P200		820	200	250 mA / 340 mA	Ø5.6 mm	C	Yes	S7060R	No	Single Mode
HL8338MG		830	50	75 mA / 100 mA	Ø5.6 mm	C	Yes	S7060R	No	Single Mode
LD830-SE650		830	650	900 mA / 1050 mA	Ø9 mm[c]	E	No	S8060 or S8060-4	Yes	Single Mode
LD830-MA1W		830	1000	1330 mA / 1700 mA	Ø9 mm	A	Yes	S8060 or S8060-4	Yes[d]	Multimode
LD830-ME2W		830	2000	3 A (Max)	Ø9 mm[c]	E	No	S8060 or S8060-4	Yes	Multimode
L840P200		840	200	255 mA / 340 mA	Ø5.6 mm	C	Yes	S7060R	No	Single Mode
L850P010		850	10	50 mA / 70 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
L850P030		850	30	65 mA / 95 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
L850P200		850	200	255 mA / 340 mA	Ø5.6 mm	C	Yes	S7060R	No	Single Mode
L852P50		852	50	75 mA / 100 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
L852P100		852	100	120 mA / 170 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode
L852P150		852	150	170 mA / 220 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode
LD852-SE600		852	600	950 mA / 1050 mA	Ø9 mm[c]	E	No	S8060 or S8060-4	Yes	Single Mode
LD852-SEV600[e,f]		852	600	1050 mA (Max)[g]	Ø9 mm[c]	E	No	S8060 or S8060-4	Yes	Single Frequency[f]
L880P010		880	10	30 mA / 40 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Laser diodes with a built-in monitor photodiode can operate at constant power.
- c. The Ø9 mm package for this diode is 4.30 mm (0.17") thick, which is more than the standard Ø9 mm package thickness of 1.50 mm (0.06"). The diode will still be compatible with all Ø9 mm laser diode mounts; please see the *Drawing* tab in the blue info icon ( ) above for full package specifications. Mounting this diode in the LDM90(/M) requires two 2-56 screws, included with this diode.
- d. For the center wavelengths currently available or to place an order for a specific available wavelength, please contact Technical Support.
- e. In order to achieve the specified performance, we recommend using the LDM90 Laser Diode Mount and, when collimated, an NIR Optical Isolator; single frequency performance when collimated is only guaranteed with >35 dB isolation of back reflections.
- f. Single-Frequency Laser (Single Longitudinal Mode)
- g. The power can be tuned across the operating current range, given in the serial-number-specific documentation, while maintaining wavelength-stabilized, single-frequency performance within a stabilized temperature range.

Part Number	Description	Price	Availability
L820P100	820 nm, 100 mW, Ø5.6 mm, C Pin Code, Laser Diode	$42.84	Today
L820P200	820 nm, 200 mW, Ø5.6 mm, C Pin Code, Laser Diode	$85.43	Today
HL8338MG	830 nm, 50 mW, Ø5.6 mm, C Pin Code, Laser Diode	$56.61 Volume Pricing Available	Today
LD830-SE650	830 nm, 650 mW, Ø9 mm, E Pin Code, Laser Diode	$364.14 Volume Pricing Available	Today
LD830-SE650	CWL = 835.6 nm, P = 650.0 mW (I = 899 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD830-SE650	CWL = 836.1 nm, P = 650.0 mW (I = 892 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD830-SE650	CWL = 836.4 nm, P = 650.0 mW (I = 898 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD830-SE650	CWL = 835.8 nm, P = 650.0 mW (I = 897 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD830-SE650	CWL = 836.7 nm, P = 650.0 mW (I = 890 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD830-SE650	CWL = 835.1 nm, P = 650.0 mW (I = 906 mA), 25 °C	$364.14 Volume Pricing Available	Today
LD830-MA1W	830 nm, 1 W, Ø9 mm, A Pin Code, MM, Laser Diode	$260.10	Today
LD830-ME2W	830 nm, 2 W, Ø9 mm, E Pin Code, MM, Laser Diode	$520.20	Today
LD830-ME2W	CWL = 832.6 nm, P = 2000.0 mW (I = 2485 mA), 25 °C	$520.20	Today
LD830-ME2W	CWL = 833.2 nm, P = 2000.0 mW (I = 2518 mA), 25 °C	$520.20	3-5 Days
LD830-ME2W	CWL = 832.9 nm, P = 2000.0 mW (I = 2486 mA), 25 °C	$520.20	3-5 Days
L840P200	840 nm, 200 mW, Ø5.6 mm, C Pin Code, Laser Diode	$46.50	Today
L850P010	850 nm, 10 mW, Ø5.6 mm, A Pin Code, Laser Diode	$23.56 Volume Pricing Available	Today
L850P030	850 nm, 30 mW, Ø5.6 mm, A Pin Code, Laser Diode	$88.49 Volume Pricing Available	Today
L850P200	850 nm, 200 mW, Ø5.6 mm, C Pin Code, Laser Diode	$57.30	Today
L852P50	852 nm, 50 mW, Ø5.6 mm, A Pin Code, Laser Diode	$147.90 Volume Pricing Available	Today
		$195.84	

L852P100	852 nm, 100 mW, Ø9 mm, A Pin Code, Laser Diode	Volume Pricing Available	Today
L852P150	852 nm, 150 mW, Ø9 mm, A Pin Code, Laser Diode	$288.66 Volume Pricing Available	Today
LD852-SE600	852 nm, 600 mW, Ø9 mm, E Pin Code, Laser Diode	$624.24 Volume Pricing Available	Lead Time
LD852-SEV600	852 nm, 600 mW, Ø9 mm TO Can, E Pin Code, VHG Wavelength-Stabilized Single-Frequency Laser Diode	$1,512.66 Volume Pricing Available	Today
LD852-SEV600	CWL = 852.1 nm, P = 616.6 mW (I = 975 mA),25 °C	$1,512.66 Volume Pricing Available	Today
L880P010	880 nm, 10 mW, Ø5.6 mm, A Pin Code, Laser Diode	$49.98 Volume Pricing Available	Today

904 nm - 940 nm TO Can Laser Diodes

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
L904P010		904	10	50 mA / 70 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
M9-915-0200		915	200	260 mA / 300 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode
M9-915-0300		915	300	370 mA / 420 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode
M9-940-0200		940	200	270 mA / 320 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Laser diodes with a built-in monitor photodiode can operate at constant power.

The M9-915-0200 will be retired without replacement when stock is depleted. If you require this part for line production, please contact our OEM Team.

Part Number	Description	Price	Availability
L904P010	904 nm, 10 mW, Ø5.6 mm, A Pin Code, Laser Diode	$26.01 Volume Pricing Available	Today
M9-915-0200	915 nm, 200 mW, Ø9 mm, A Pin Code, Laser Diode	$726.24 Volume Pricing Available	Lead Time
M9-915-0300	915 nm, 300 mW, Ø9 mm, A Pin Code, Laser Diode	$1,102.62 Volume Pricing Available	Today
M9-940-0200	940 nm, 200 mW, Ø9 mm, A Pin Code, Laser Diode	$590.58 Volume Pricing Available	Today

975 nm - 980 nm TO Can Laser Diodes

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
L980P010		980	10	25 mA / 40 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
L980P030		980	30	100 mA / 150 mA	Ø5.6 mm	A	Yes	S7060R	No	Single Mode
L980P100A		980	100	150 mA / 190 mA	Ø5.6 mm	A	Yes	S7060R	No	Multimode

L980P200		980	200	300 mA / 400 mA	Ø5.6 mm	A	Yes	S7060R	No	Multimode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Laser diodes with a built-in monitor photodiode can operate at constant power.

Part Number	Description	Price	Availability
L980P010	**980 nm, 10 mW, Ø5.6 mm, A Pin Code, Laser Diode**	**$27.29 Volume Pricing Available**	**Today**
L980P030	**980 nm, 30 mW, Ø5.6 mm, A Pin Code, Laser Diode**	**$67.58 Volume Pricing Available**	**Today**
L980P100A	**980 nm, 100 mW, Ø5.6 mm, A Pin Code, MM, Laser Diode**	**$107.10 Volume Pricing Available**	**Today**
L980P200	**980 nm, 200 mW, Ø5.6 mm, A Pin Code, Laser Diode**	**$135.66 Volume Pricing Available**	**Today**

1060 nm - 1064 nm TO Can Laser Diodes

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
L1060P200J		1060	200	280 mA / 320 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode
M9-A64-0200		1064	200	280 mA / 350 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode
M9-A64-0300		1064	300	390 mA / 480 mA	Ø9 mm	A	Yes	S8060 or S8060-4	No	Single Mode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Laser diodes with a built-in monitor photodiode can operate at constant power.

Part Number	Description	Price	Availability
L1060P200J	**1060 nm, 200 mW, Ø9 mm, A Pin Code, Laser Diode**	**$696.66 Volume Pricing Available**	**Today**
M9-A64-0200	**1064 nm, 200 mW, Ø9 mm, A Pin Code, Laser Diode**	**$426.36 Volume Pricing Available**	**Today**
M9-A64-0300	**1064 nm, 300 mW, Ø9 mm, A Pin Code, Laser Diode**	**$620.16 Volume Pricing Available**	**Today**

1310 nm - 1650 nm TO Can Laser Diodes

Note: The rows shaded green below denote single-frequency laser diodes.

Item #	Info	Wavelength (nm)	Power (mW)[a]	Typical/Max Drive Current[a]	Package	Pin Code	Monitor Photodiode[b]	Compatible Socket	Wavelength Tested	Spatial Mode
L1310P5DFB[c]		1310	5	20 mA / 40 mA	Ø5.6 mm	D	Yes	-	Yes	Single Frequency[c]
ML725B8F		1310	5	20 mA / 35 mA	Ø5.6 mm	D	Yes	-	Yes[d]	Single Mode
FPL1053T[e]		1310	300 (Pulsed)	750 mA / 1000 mA	Ø5.6 mm	E	No	S7060R	No	Single Mode
L1550P5DFB[c]		1550	5	20 mA / 40 mA	Ø5.6 mm	D	Yes	-	Yes	Single Frequency[c]
ML925B45F		1550	5	30 mA / 50 mA	Ø5.6 mm	D	Yes	-	No	Single Mode
FPL1055T[e]		1550	300 (Pulsed)	750 mA / 1000 mA	Ø5.6 mm	E	No	S7060R	No	Single Mode
FPL1054T[e]		1625	250 (Pulsed)	750 mA / 1000 mA	Ø5.6 mm	E	No	S7060R	No	Single Mode
FPL1059T[e]		1650	225 (Pulsed)	750 mA / 1000 mA	Ø5.6 mm	E	No	S7060R	No	Single Mode

- a. Do not exceed the maximum optical power or maximum drive current, whichever occurs first.
- b. Laser diodes with a built-in monitor photodiode can operate at constant power.
- c. Single-Frequency Laser (Single Longitudinal Mode)
- d. For the center wavelengths currently available or to place an order for a specific available wavelength, please contact Technical Support.
- e. This diode is available from stock in an open header package. It can be converted to a sealed TO can package by customer request. Please contact Tech Support for details.

Part Number	Description	Price	Availability
L1310P5DFB	1310 nm, 5 mW, Ø5.6 mm, D Pin Code, DFB Laser Diode with Aspheric Lens Cap	$79.31 Volume Pricing Available	Today
ML725B8F	1310 nm, 5 mW, Ø5.6 mm, D Pin Code, Laser Diode	$49.47 Volume Pricing Available	Today
FPL1053T	1310 nm, 300 mW Pulsed, Ø5.6 mm, E Pin Code	$364.14	Today
L1550P5DFB	1550 nm, 5 mW, Ø5.6 mm, D Pin Code, DFB Laser Diode with Aspheric Lens Cap	$79.31 Volume Pricing Available	Today
ML925B45F	1550 nm, 5 mW, Ø5.6 mm, D Pin Code, Laser Diode	$49.47 Volume Pricing Available	Today
FPL1055T	1550 nm, 300 mW Pulsed, Ø5.6 mm, E Pin Code	$364.14	Today
FPL1054T	1625 nm, 250 mW Pulsed, Ø5.6 mm, E Pin Code	$400.86	Today
FPL1059T	1650 nm, 225 mW Pulsed, Ø5.6 mm, E Pin Code	$437.58	Today

M9-915-0200 - 915 nm, 200 mW, Ø9 mm, A Pin Code, Laser Diode

Specifications | Drawings

Optical Electrical Characteristics (T_{CASE} = 25 °C, P = 200 mW)

Characteristic	MIN	TYP	MAX	UNIT
Center Wavelength	910	915	920	nm
Spectral Bandwidth (FWHM)	-	0.5	2	nm
Optical Output Power (CW)	-	200	-	mW
Operating Voltage	-	1.9	2.2	V
Beam Divergence (FWHM) - Parallel	-	8	10	deg.
Beam Divergence (FWHM) - Perpendicular	-	28	30	deg.
Operating Current	-	260	300	mA
Threshold Current	-	30	50	mA
Slope Efficiency	0.8	0.9	-	mW/mA

Absolute Maximum Ratings[a]

Characteristic		
Operation Case Temperature	-20 to 50	°C
Storage Temperature	-40 to 80	°C
Lead Soldering Temperature	250	µm

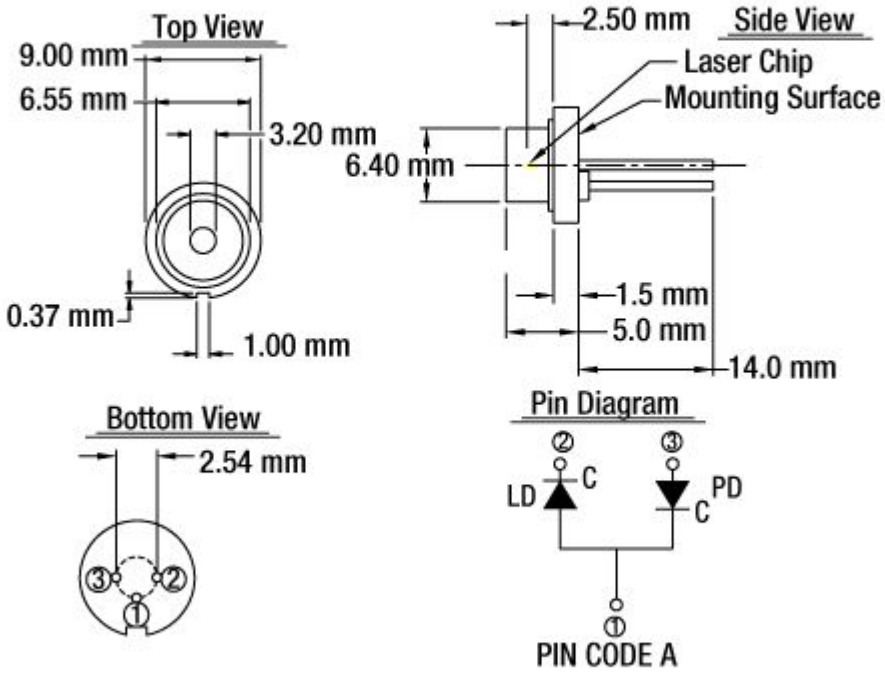
a. Absolute Maximum Rating specifications should never be exceeded. Operating beyond these conditions can seriously damage the laser. For more information, please see the Laser Diode Tutorial.

General Specifications

Characteristic	Value
Monitor Photodiode	Yes[a]
Package	Ø9 mm
Pin Code	A
Compatible Socket	S8060 or S8060-4
Spatial Mode	Single Mode
Wavelength Tested	No

a. Laser diodes witha built-in monitor photodiode can operate at constant power.

Specifications | Drawings



M9-915-0200 - 915 nm, 200 mW, Ø9 mm, A Pin Code, Laser Diode