Coaxial Fiber Coupled Laser

Single mode, up to 50mW

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The FPLD series fiber-coupled laser diodes support single-mode or multi-mode fiber coupling, with efficient coupling performance. It adopts copper packaging for excellent heat dissipation, small size, high stability, and long working life. It belongs to an open unit design, which is convenient for secondary integration. This type of product has been validated in the market for many years. Customized services are available.

Due to their high sensitivity to electrostatic discharge, warranty coverage applies only to fully metal covered modules the benchtops, which include proper protection. Other versions of the lasers and photodetectors are not covered by any warranty. Please use them with great caution.

Features

- High Coupling Efficiency
- Long Lifespan
- Coaxial Package
- SM/MM/PM multi options

Applications

- Medical Laser Treatment
- Biotechnology
- Life Science Research
- Fluorescence Excitation
- Illumination or laser glare

RoHS COMPLIANT

Specifications

Parameter	Min	Typical	Max	Unit
Threshold Current	-	35	70	mA
Operating Current		150	170	mA
Operating Voltage		2.5		V
Optical Output Power	5	30	50	mW
Center Wavelength@25℃	385		1550	nm
Wavelength v/s temperature coefficient	0.06		0.1	nm/°C
Spectral Width	-	-	2	nm
Reverse Voltage	-	-	2.0	V
Fiber Core	2	3	9	μm
Fiber Type	Single Mode Fiber			
Package Style	Coaxial			
Fiber Connector	FC/SC/SMA905			
Recommend Operating Temperature	25			°C
Operating Case Temperature [1]	-10	-	60	°C
Storage Temperature	-40	-	85	°C
Lead Soldering Temperature	-	-	260(10s)	°C
Relative Humidity (noncondensing)	-	-	85	%

[1]. Because laser operational lifespan is directly tied to junction temperature, we offer two thermal management options: a copper block for passive heat dissipation ($79) or active external TEC cooling integrated directly into our laser driver. We recommend operating the laser below 30°C.

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link]:

Rev 09/29/26

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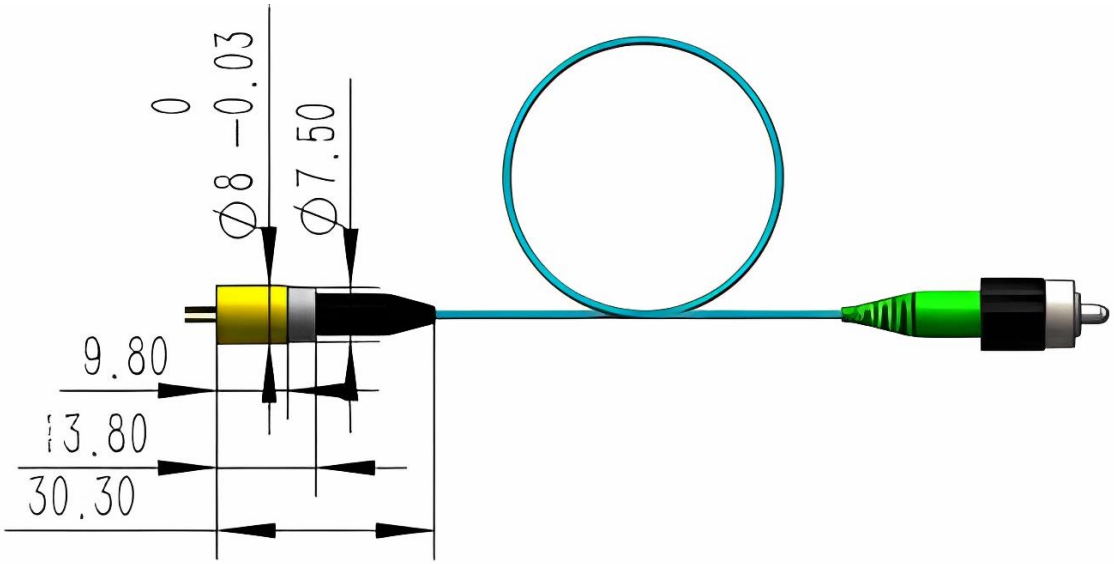
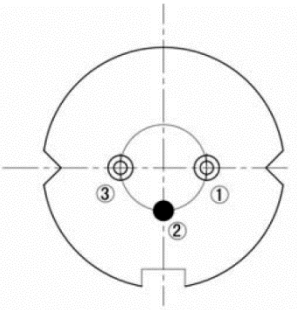
Mechanical Dimension (mm)

Coaxial Package View:



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

PIN Assignment



Bottom View

PIN	Function
1	LD (+)
2	GND
3	LD (-)

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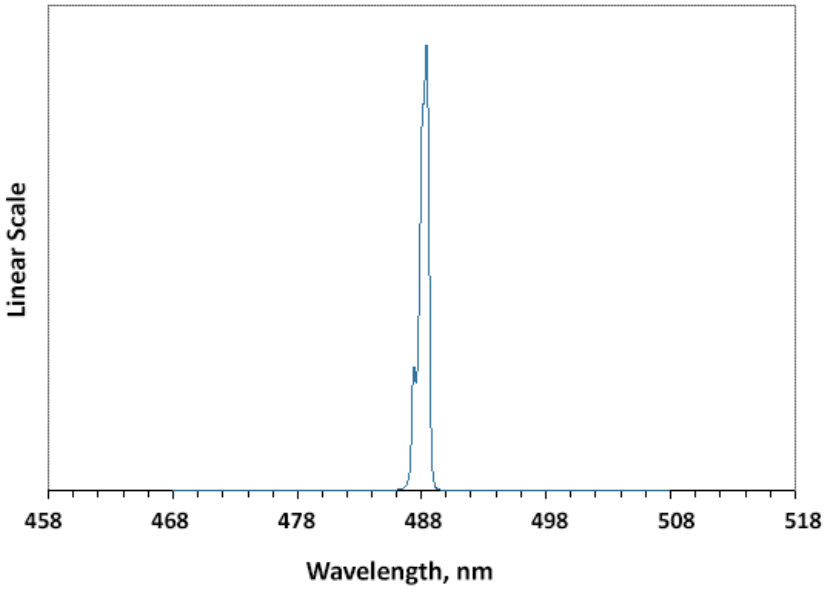
Typical Spectrum



Ordering Information (Part Number)

	□□□□	□□	□	□	□	□	□
Prefix	**Wavelength** [1]	**Power**	**Package**	**Fiber Type**	**Fiber Buffer**	**Fiber Length**	**Connector** [4]
FPLD-	385nm = 0385 • • • 1550nm = 1550	5mW = 05 10mW = 10 30mW = 30 35mW = 35 50mW = 50 3mW = 03 Special = 00	Coaxial = C Vacuum [3] = S	Single Mode[2] = 1 PM = 2 Special = 0	0.9mm Tube = 3 Special = 0	0.5m = 2 0.25m = 1 1.0 m = 3 1.5 m = 5 Special = 0	Non =1 FC/APC = 3 FC/PC = 2 SC/PC = 4 SC/APC = 5 LC/PC = 7 LC/UPC = U Special = 0

Note:

[1] Please refer to the supported wavelength list to find the correct wavelength

Supported Wavelength List (nm)

385	405	435	450	465	488
505	515	520	525	532	593
638	650	660	780	808	830
850	915	940	980	1064	1270
1310	1550				

[2] Fibers are different for different wavelength, contact us for details if necessary.

[3] Vacuum and Space applicable

[4]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

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Laser Source Operation Instructions

1. Plug in the power cord.
2. Turn on the power.
3. Rotate the front panel intensity control knob counterclockwise to the minimum setting.
4. Press the emission button on the front panel (if equipped).
5. Turn the intensity control knob clockwise to adjust the output power. The maximum output is limited by design; operating below the maximum will extend the laser's lifetime.
6. Adjust the temperature control knob as needed. Turning it clockwise sets the lowest temperature. For standard versions, the reading is relative rather than absolute. The maximum setting is limited to protect the internal TEC; operating below the maximum will help extend the diode's lifetime.

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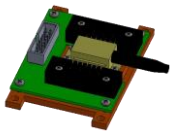
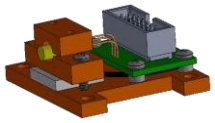
Benchtop Matching Laser Diode Drivers

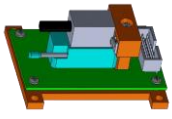
Agiltron cost-effective LDCB series benchtop control kit is designed for easy laser diode mounting and precise control. It incorporates a high-precision, low-noise auto-feedback drive electronics to ensure constant output power or a constant driving current and an integrated temperature control unit maintains optimal operating conditions. The system provides up to 1A driving current and up to 2A TEC cooling current. Each system features a front fiber output connector. The user interface includes an intuitive LCD display for independent control of output power and temperature via two front rotating knobs. The LDCB also includes a universal power supply compatible with 100 to 240 VAC. The LDCB has a built-in isolator option to prevent reflection-induced laser emissions instability. The LDCB is designed as a laser diode and TEC controller kit for customer to install laser diode. It has three types of pluggable laser mounts of butterfly, DIL, and TOCAN. The TOCAN mount contains an external TEC that maintains a constant temperature for wavelength stability.

Module Matching Laser Diode Drivers

Agiltron cost-effective LDCD series module control kit is designed for easy laser diode mounting and precise control. It incorporates a high-precision, low-noise auto-feedback drive electronics to ensure constant output power or a constant driving current and an integrated temperature control unit maintains optimal operating conditions. The system provides up to 1A driving current and up to 2A TEC cooling current. It has three types of pluggable laser mounts of butterfly, DIL, and TOCAN. The TOCAN mount contains an external TEC that maintains a constant temperature for wavelength stability. It comes with cables to connect between the mounting module to the driving module, making integration convenient.







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Caution Electrostatic Sensitivity

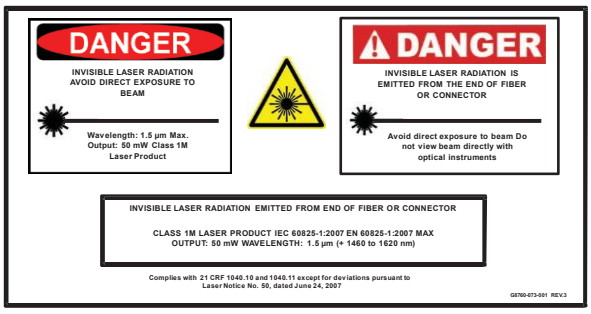
- Never touch laser diode and the module using hands
- Always use protections when handle a laser diode
- Recommend mounting the laser diode using an ionic gun and ESD finger cots

Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 µm.

Maximum power = 30 mW.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
*IEC is a registered trademark of the International Electrotechnical Commission.

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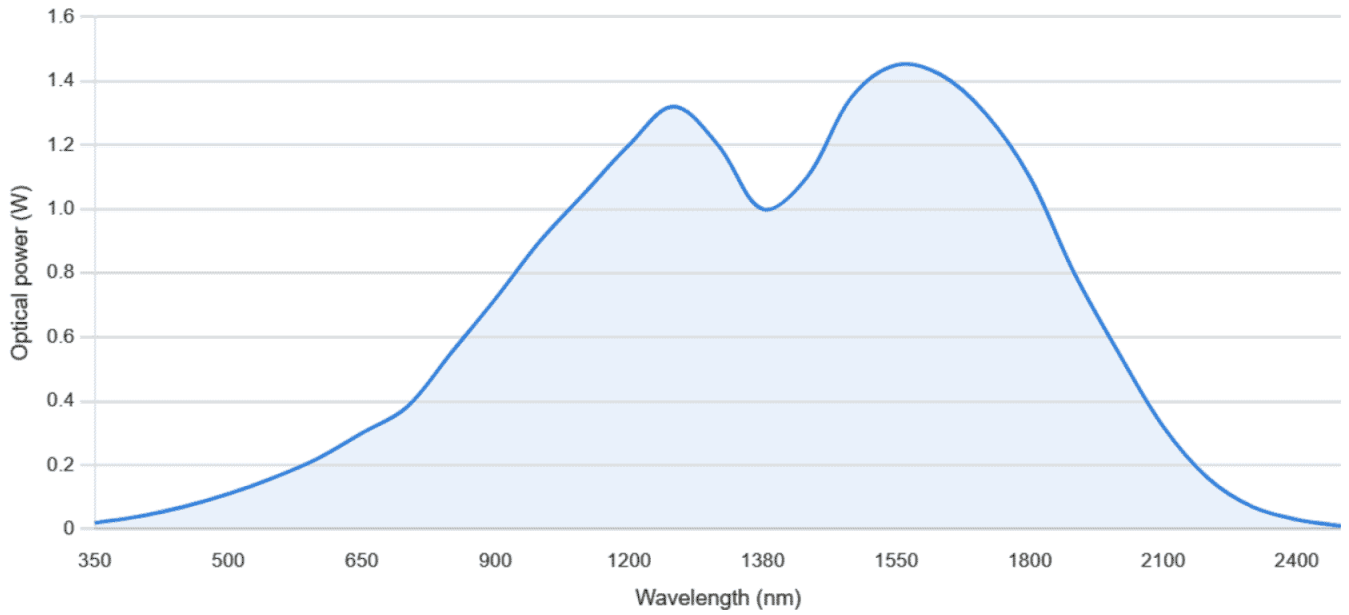
Regular Single Mode / Polarization Maintaining Fiber Optical Power Handing vs Wavelength



Single mode fiber optical power is limited by nonlinear effects in addition to absorption that increase loss and generate heat. The curve shows the approximate safe CW power envelope for standard single-mode fiber. Actual limits depend on fiber design, core size, length, and laser characteristics. Specialty fibers can significantly increase the power limit.

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