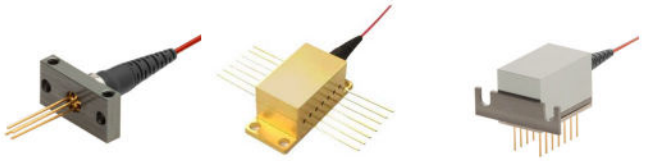
LD4B
www.LD4B.com



Technical support, sales and service in North America by:

LASER LAB SOURCE
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LaserDiodeSource.com | LaserLabSource.com | LaserDiodeControl.com

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LD4B
Laser Diodes for Business

LD4B-520-FP-50

OVERVIEW

Laser diode coupled to an optical fiber and packaged into a hermetic case.

MAIN FEATURES

- Wavelength: 520 nm
- Cavity type: Fabry-Perot
- Optical power in CW mode in single-mode fiber: 50 mW
- Package types: coaxial, coaxial with bracket, 14 pins DIL, 14 pins BTF
- Built-in monitor photodiode

ORDERING INFORMATION

LD4B-520-FP-50-X-X-X-X-X-X

Case type

COAX: compact coaxial (low duty cycle pulse mode only)
COAXB: compact coaxial with a bracket
TH: compact coaxial with a bracket compatible to Thorlabs mount
DIL: common 14-pins DIL for active thermal stabilization (TEC and thermistor)
DILRAD: 14-pins DIL for active thermal stabilization (TEC and thermistor) with wall radiator
BTF: 14-pins BTF type 1 (Pump) for active thermal stabilization (TEC and thermistor)

Pinout code

21: see more details on page 5

Fiber type

SM03.5: SM, Coherent 460-HP, furcation tubing ∅0.9 mm
SMP03.5: PM, Coherent PM460-HP, furcation tubing ∅0.9 mm
MM5: MM, 50/125, OM3, furcation tubing ∅0.9 mm
MM6: MM, 62.5/125, OM1, furcation tubing ∅0.9 mm
Other type on request

Connector type

FU: FC/UPC (SM03.5, SMP03.5)
FA: FC/APC (SM03.5, SMP03.5)
N: no connector (scissors cut)
Other type: on request

Test measurements

CW: CW mode (electro-optical parameters at T=25+/-5 C and spectrum)

Fiber length

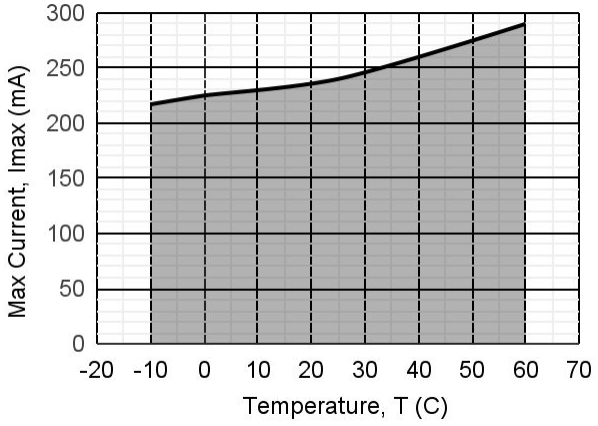
0.5: 500+/-50 mm
1.0: 1000+/-100 mm
Other length on request

LD4B-520-FP-50

ABSOLUTE MAXIMUM RATINGS

Parameter		Value	Unit	Conditions
Laser diode forward current*	Imax	250	mA	CW, T = 25°C
Laser diode reverse voltage	V_{RL}	2	V	
Photodiode reverse voltage	V_{RP}	30	V	
Operating temperature**	T_{OP}	-10 - +60	°C	Coaxial package
Operating temperature**	T_{OP}	-40 - +60	°C	DIL, BTF (Tst = 25°C)
Storage temperature	T_{stg}	-20 - +60	°C	
Soldering temperature	T_{sold}	260	°C	Max. 5 seconds

*Maximal laser diode forward current depends on the operating temperature. Please, refer to the figure below.



**Operating temperature is defined by the case temperature. It is recommended to ensure sufficient heat dissipation so that the module's maximum operating temperature is not exceeded.

Operating temperature for the DIL, DILRAD and BTF 14-pins case T with TEC is defined for internal temperature stabilization at Tst = 25°C that corresponds to thermistor resistance Rt = 10 kOhm.

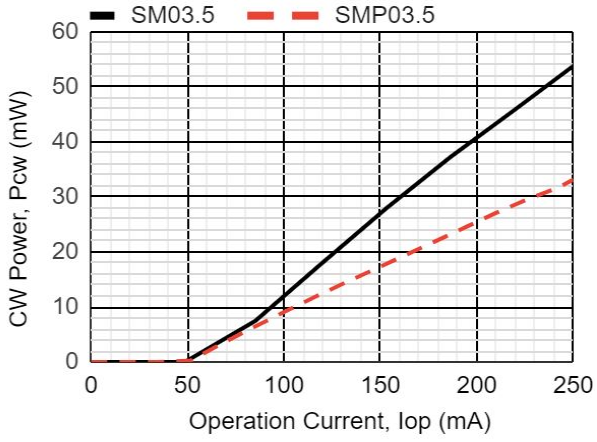
LD4B
Laser Diodes for Business

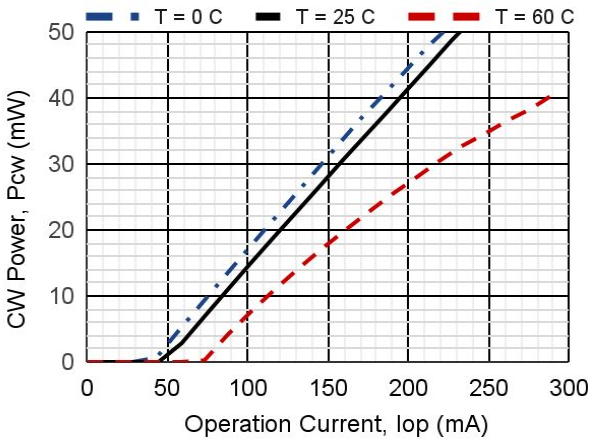
LD4B-520-FP-50

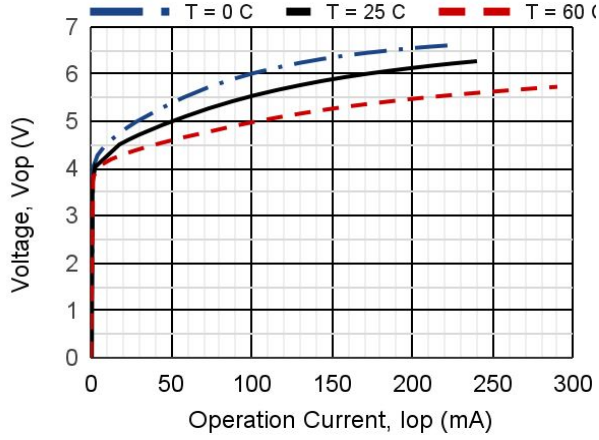
ELECTRICAL-OPTICAL CHARACTERISTICS (T = 25 °C)

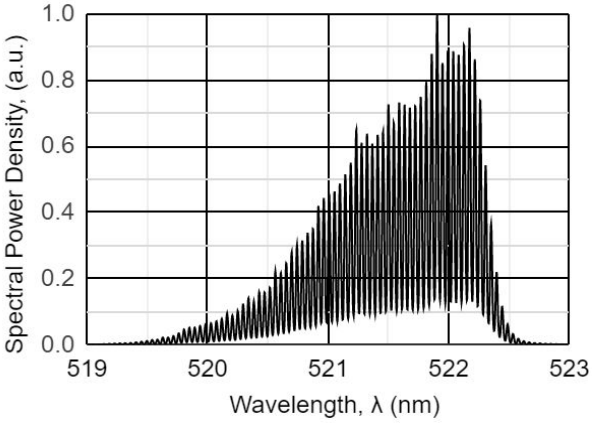
Parameter		MIN	TYP	MAX	Unit	Conditions
Optical power (CW)	P_{cw}	50	55		mW	CW, I_{op} = 250 mA, SM03.5
		30	35			CW, I_{op} = 250 mA, SMP03.5
Mean wavelength	λ	515	520	530	nm	CW, I_{op} = 250 mA
Spectral width	Δλ		1	3	nm	CW, I_{op} = 250 mA
Wavelength-temperature coefficient	dλ/dT		0.03		nm/°C	CW, I_{op} = 250 mA
Threshold current	I_{th}		70	100	mA	
Slope efficiency	S_e	0.25	0.28		mW/mA	CW, SM03.5
Operating voltage	V_{op}		6.5	7.5	V	CW, I_{op} = 250mA
Polarization extinction ratio	PER	17			dB	CW, SMP03.5

LD4B-520-FP-50



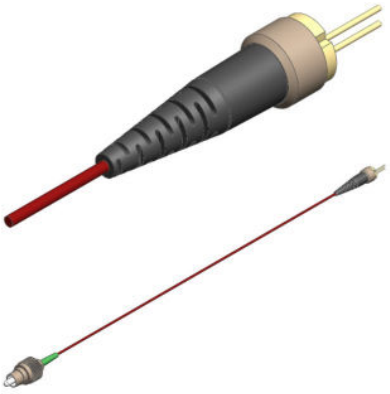






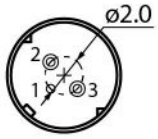
LD4B
Laser Diodes for Business

LD4B-520-FP-50

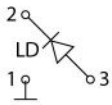


COAX

BACK VIEW



PINOUT
#21



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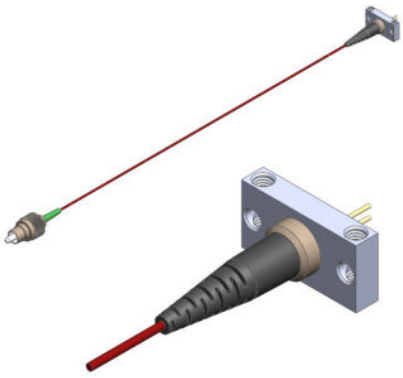
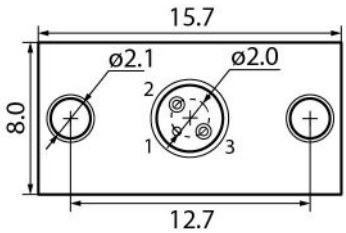


COAXB

BACK VIEW



PINOUT
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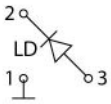

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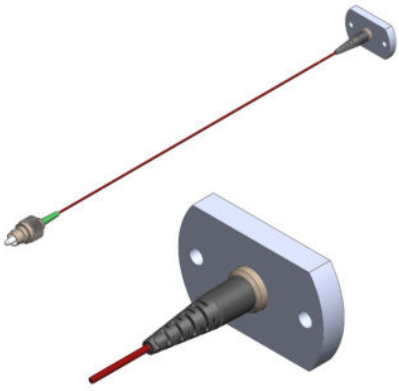
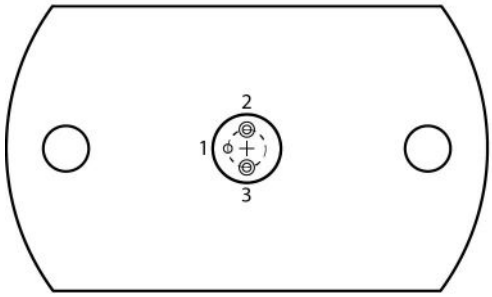
Drawing | 3D model | Application Notes

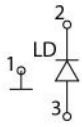


PACKAGE TH

BACK VIEW



PINOUT
#21
Thorlabs Pin Code G



Compatible to Thorlabs LDM9LP mount

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Drawing | 3D model | Application Notes

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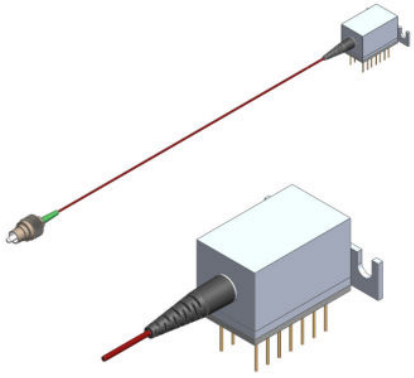
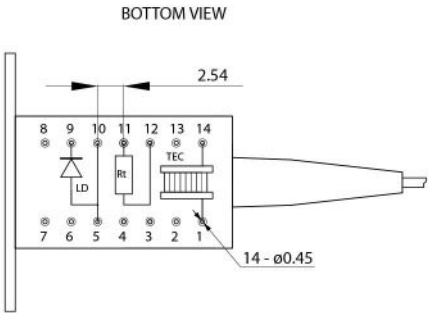
DIL





PINOUT #4, #18, #21, #31

1.TEC Anode
2.-
3.-
4.-
5.LD Anode
6.-
7.-
8.-
9.LD Cathode
10.LD Anode
11.Thermistor
12.Thermistor
13.-
14.TEC Cathode

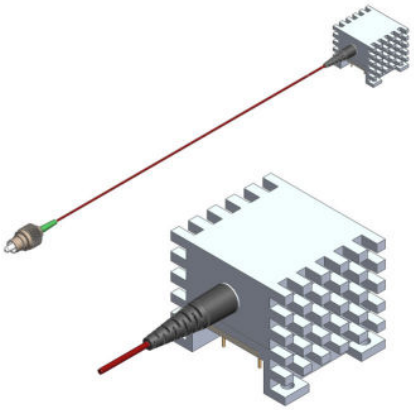
TEC HP: I_{max}=1.4A, U_{max}=3.9 V, Q_{max}=3.3 W,
AC R = 2.0 Ohm, ΔT_{max} = 69 K

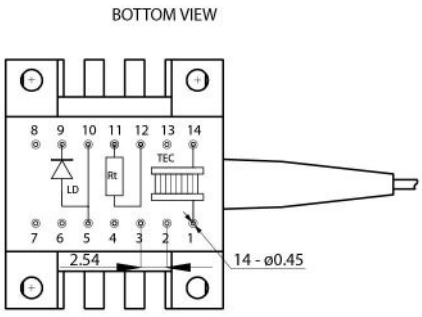
Thermistor:
Rt=10*EXP(3600*{1/T[K]-1/298}) kOhm

Download more information

Drawing | 3D model | Application Notes

DILRAD





PINOUT #4, #18, #21, #31

1.TEC Anode
2.-
3.-
4.-
5.LD Anode
6.-
7.-
8.-
9.LD Cathode
10.LD Anode
11.Thermistor
12.Thermistor
13.-
14.TEC Cathode

TEC HP: I_{max}=1.4A, U_{max}=3.9 V, Q_{max}=3.3 W,
AC R = 2.0 Ohm, ΔT_{max} = 69 K

Thermistor:
Rt=10*EXP(3600*{1/T[K]-1/298}) kOhm

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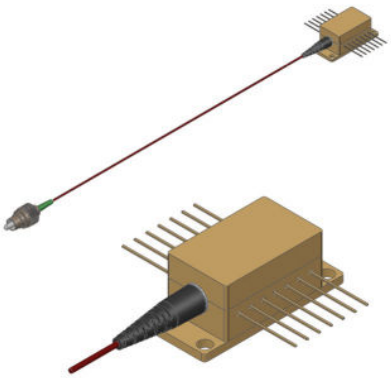
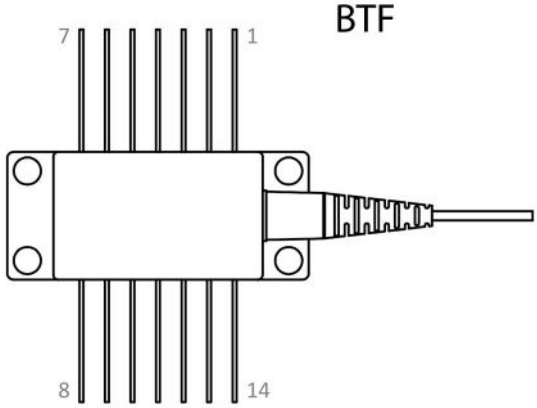
Drawing | 3D model | Application Notes

BTF





1. TEC+
2. Thermistor
3. NC
4. NC
5. Thermistor
6. NC
7. NC
8. NC
9. NC
10 LD/SLD Anode
11. LD/SLD Cathode
12. NC
13. Case Ground
14. TEC -

TEC HP: I_{max}=1.4A, U_{max}=3.9 V, Q_{max}=3.3 W,
AC R = 2.0 Ohm, ΔT_{max} = 69 K

Thermistor:
Rt=10*EXP(3600*{1/T[K]-1/298}) kOhm

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Drawing | 3D model | Application Notes

Characteristics, data, materials and structures specified in this datasheet are subject to change without notice. Please refer to the latest specification before use of the products.

Safety and handling cautions

1. Avoid smashing and burning of the module. Avoid storing and using the module in conditions where water, organic solvents or aggressive acids or bases may contact the module or where there is a possibility of exposure to corrosive gases, explosive gases, dust, salinity or other harsh conditions. The module should be disposed as special industrial waste.
2. Exceeding absolute maximum ratings even for a short time can cause permanent damage of the module.
3. The module is sensitive to and can be broken by ESD (static electricity).

Conflict Minerals Policy Statement

LD4B achieves business objectives and customer needs with social responsibility. We do not support or contribute to the violence and human rights violations associated with the mining of conflict minerals coming from Conflict Regions according to US "Dodd-Frank Act". When possible, our suppliers' conflict mineral statements are reviewed. We do not directly purchase Conflict Minerals from any source and do not knowingly procure any parts and products containing Conflict Minerals from Conflict Regions.

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Restriction of Hazardous Substances (RoHS) directive (Directive 2011/65/EC amended with Directive (EU) 2015/863) is the directive aimed at reducing the harmful environmental impact of waste electrical equipment by restricting the use of known dangerous substances. Based on information received from our supply sources, LD4B hereby states that the banned substances listed in the RoHS directive are not found in the parts and materials used above the threshold level listed other than exceptions approved by the European Commission.

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