Long Coherence CW Diode Laser System
LDLC Series

Data Sheet

Overview

The LDLC series is a line of CW diode lasers with long coherence length >1m. The LDLC series is available in a wide range of visible wavelengths and can deliver up to 60 mW output power. The laser features long coherent length, stable wavelength, ultra-compact design, long operating lifetime, easy operation and FDA-compliant system with driver. The laser is widely used in holography, interference, fluorescence, photoetching, flow cytometry, DNA sequencing, Raman spectroscopy, laser radar, precision measurement, and many other applications.

Features

- Wide portfolio of 19 wavelengths
- CW operating mode
- Optical output power 5mW to 120mW
- Long coherent length >1m
- Ultra-compact design
- FDA compliant

Applications

- Holography
- Interference
- Fluorescence
- Photoetching
- Flow cytometry
- DNA sequencing
- Raman spectroscopy
- Laser radar
- Precision measurement

375-488 nm Specifications

Parameter	LDLC375	LDLC400	LDLC405	LDLC410	LDLC488
Wavelength	375±0.5 nm	400±1 nm	405±1 nm	410±1 nm	488±0.5 nm
Output power	>10 mW, >20 mW	>30 mW, >50 mW	>30 mW, >50 mW	>30 mW, >50 mW	>20 mW, >30 mW, >50 mW, >60 mW
Transverse mode	Near TEM_{00}				
Operating mode	CW				
Power stability (rms, over 4 hours)	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%
Coherent length	>1 m	>1 m	>1 m	>1 m	>1 m
Beam diameter at aperture ($1/e^2$)	~2.0 mm	~1.3 mm	~1.3 mm	~1.3 mm	~2.0 mm
Beam divergence, full angle	<1.0 mrad	<1.5 mrad	<1.5 mrad	<1.5 mrad	~1.5 mrad
M^2 factor	<1.5	<1.5	<1.5	<1.5	<1.5
Polarization ratio	>10:1, Horizontal ±5 degree	>50:1, Horizontal ±5 degree	>50:1, Horizontal ±5 degree	>50:1, Horizontal ±5 degree	>50:1, Horizontal ±5 degree
Warm-up time	<5 min				
Operating temperature	20-30°C				
Expected lifetime	10,000 hours				
Warranty period	10 months				

Remarks:

- Specifications of the CW laser is based on the laser performance at full power output after the specified warmup period. The stability of output power may change when output power is adjusted at a different power level.
- Specifications are subject to change without notice.

514.5-637 nm Specifications

Parameter	LDLC514	LDLC520	LDLC633	LDLC635	LDLC637
Wavelength	514.5±0.5 nm	520±5 nm	633±0.5 nm	635±5 nm	637±5 nm
Output power	>10 mW, >20 mW	>5 mW, >10 mW	>30 mW, >50 mW	>10 mW, >30 mW	>20 mW, >30 mW, >50 mW, >80 mW
Transverse mode	Near TEM_{00}				
Operating mode	CW				
Power stability (rms, over 4 hours)	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%
Coherent length	>1 m	>1 m	>1 m	>1 m	>1 m
Beam diameter at aperture ($1/e^2$)	~2.5 mm	~1.5 mm	~2.0 mm	~2.0 mm	~2.0 mm
Beam divergence, full angle	<1.5 mrad	<1.5 mrad	<1.5 mrad	<1.5 mrad	<1.5 mrad
M^2 factor	<1.5	<1.5	<1.5	<1.5	<1.5
Polarization ratio	>50:1, Horizontal ±5 degree	>50:1, Horizontal ±5 degree	>50:1, Horizontal ±5 degree	>50:1, Horizontal ±5 degree	>50:1, Horizontal ±5 degree
Warm-up time	<5 min				
Operating temperature	20-30°C				
Expected lifetime	10,000 hours				
Warranty period	10 months				

Remarks:

- Specifications of the CW laser is based on the laser performance at full power output after the specified warmup period. The stability of output power may change when output power is adjusted at a different power level.
- Specifications are subject to change without notice.

640-730 nm Specifications

Parameter	LDLC640	LDLC642	LDLC660	LDLC705	LDLC730
Wavelength	640±5 nm	642±5 nm	660±0.5 nm	705±0.5 nm	730±3 nm
Output power	>10 mW, >30 mW	>10 mW, >30 mW	>20 mW, >50 mW, >80 mW, >120 mW	>5 mW, >10 mW	>5 mW, >10 mW
Transverse mode	Near TEM_{00}				
Operating mode	CW				
Power stability (rms, over 4 hours)	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%
Coherent length	>1 m	>1 m	>1 m	>1 m	>1 m
Beam diameter at aperture ($1/e^2$)	~2.0 mm	~2.0 mm	~2.0 mm	~3.0 mm	~2.0 mm
Beam divergence, full angle	<1.5 mrad	<1.5 mrad	<1.5 mrad	<1.0 mrad	<1.5 mrad
M^2 factor	<1.5	<1.5	<1.5	<1.5	<1.5
Polarization ratio	>50:1, Horizontal ±5 degree	>50:1, Horizontal ±5 degree	>50:1, Horizontal ±5 degree	>10:1, Horizontal ±5 degree	>10:1, Horizontal ±5 degree
Warm-up time	<5 min				
Operating temperature	20-30°C				
Expected lifetime	10,000 hours				
Warranty period	10 months				

Remarks:

- Specifications of the CW laser is based on the laser performance at full power output after the specified warmup period. The stability of output power may change when output power is adjusted at a different power level.
- Specifications are subject to change without notice.

785-852 nm Specifications

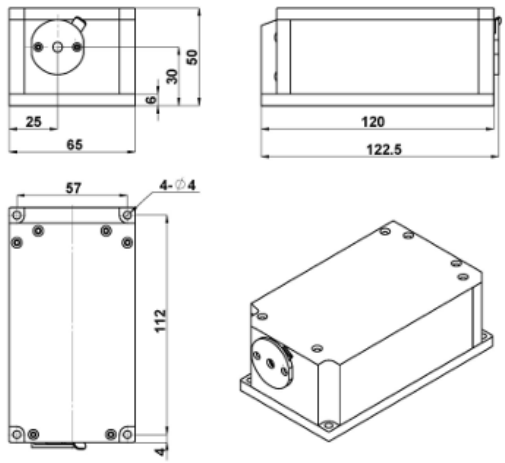
Parameter	LDLC785	LDLC808	LDLC830	LDLC852
Wavelength	785±0.5 nm	808±0.5 nm	830±0.5 nm	852±0.5 nm
Output power	>30 mW, >50 mW	>10 mW, >20 mW	>10 mW, >30 mW	>20 mW, >50 mW, >80 mW, >120 mW
Transverse mode	Near TEM_{00}			
Operating mode	CW			
Power stability (rms, over 4 hours)	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%	<3%, <2%, <1%
Coherent length	>1 m	>1 m	>1 m	>1 m
Beam diameter at aperture ($1/e^2$)	~2.0 mm	~3.5 mm	~3.5 mm	~1.5 mm
Beam divergence, full angle	<1.5 mrad	<1.5 mrad	<1.5 mrad	<2.0 mrad
M^2 factor	<1.5	<1.5	<1.5	<1.5
Polarization ratio	>10:1, Horizontal ±5 degree	>50:1, Horizontal ±5 degree	>10:1, Horizontal ±5 degree	>10:1, Horizontal ±5 degree
Warm-up time	<5 min			
Operating temperature	20-30°C			
Expected lifetime	10,000 hours			
Warranty period	10 months			

Remarks:

- Specifications of the CW laser is based on the laser performance at full power output after the specified warmup period. The stability of output power may change when output power is adjusted at a different power level.
- Specifications are subject to change without notice.

LDLC Series Laser Head Dimensions

Unit: mm



Parameter	LDLC Series
Dimensions	122.5(L)×65(W) ×50(H) mm^3
Weight	1.0 kg
Beam height from base plate	30 mm

LDLC Series Power Supply Dimensions

Unit: mm

Parameter	A Version Elite Power Supply
Dimensions	162(L) ×144(W) ×70(H) mm^3
Weight	1.0 kg
Input voltage	100-240VAC

Ordering Information

For more information, please contact Lasermate directly at sales@lasermate.com.

Part Number Configuration LDLC[1][2][3][4]				
LDLC = Laser Model Series	**[1] = Wavelength**	**[2] = Output Power**	**[3] = Power Supply**	**[4] = Power Stability**
		5= >5mW 10= >10mW 20= >20mW 30= >30mW 50= >50mW 60= >60mW 80= >80mW 100= >100mW 120= >120mW	T= A Version Laboratory Power Supply	E= <3% 2= <2% D= <1%

Note: The above specifications are subject to change without notice.