



Single Mode Fiber Coupled Diode Laser System

DL-SM Series

Data Sheet



Overview

The DL-SM series is a family of single mode fiber coupled diode lasers that can deliver up to 1000 mW output power. The laser series is available in a wide range for wavelengths from 405nm to 1064nm, and features a compact design, high power stability, long operating lifetime, and easy operation. The laser is widely used in measurement, communication, spectrum analysis, and many other applications.

Features

- Visible and infrared wavelength range
- CW operating mode
- Optical output power 3mW to 1000mW
- SM fiber output
- Ultra-compact design

Applications

- Communication
- Measurement
- Spectrum analysis

405-505 nm Specifications

Parameter	DL405SM	DL410SM	DL445SM	DL450SM	DL488SM	DL505SM
Wavelength	405 nm	410 nm	445 nm	450 nm	448 nm	505 nm
Wavelength tolerance	±10 nm	±10 nm	±10 nm	±10 nm	±10 nm	±10 nm
Output power after fiber	>5 mW, >10 mW, >20 mW, >30 mW, >40 mW	>5 mW, >10 mW, >20 mW, >30 mW, >40 mW	>5 mW, >10 mW, >20 mW, >30 mW, >40 mW, >50 mW	>5 mW, >10 mW, >20 mW, >30 mW, >40 mW, >50 mW	>5 mW, >10 mW, >25 mW	>5 mW, >10 mW, >20 mW, >30 mW
Operating mode	CW					
Power stability (rms, over 4 hours)	<3%, <2%, <1%, <0.5%					
Fiber type	SM fiber					
Fiber core diameter	4 um, 6 um, 9 um					
Fiber NA	0.12					
Fiber connector	FC/PC, FC/APC					
Fiber length	1 m					
Transverse mode	TEM ₀₀					
Ellipticity	>0.95					
M ² factor after fiber	~1.1					
Warm-up time	<5 min					
Operating temperature	10-35°C					
Modulation option	TTL/Analog: 1Hz-1kHz, 1kHz-10kHz, 10kHz-30kHz, 30kHz-100kHz					
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.

514.5-660 nm Specifications

Parameter	DL514SM	DL520SM	DL633SM	DL637SM	DL640SM	DL660SM
Wavelength	514.5 nm	520 nm	633 nm	637 nm	640 nm	660 nm
Wavelength tolerance	±5 nm	±10 nm	±10 nm	±10 nm	±10 nm	±10 nm
Output power after fiber	>3 mW, >5 mW, >10 mW	>5 mW, >10 mW, >20 mW, >30 mW, >40 mW, >50 mW	>5 mW, >10 mW, >20 mW, >30 mW	>10 mW, >30 mW, >50 mW, >80 mW, >100 mW	>10 mW, >30 mW, >50 mW, >80 mW, >100 mW	>10 mW, >30 mW, >50 mW, >80 mW
Operating mode	CW					
Power stability (rms, over 4 hours)	<3%, <2%, <1%, <0.5%					
Fiber type	SM fiber					
Fiber core diameter	4 um, 6 um, 9 um					
Fiber NA	0.12					
Fiber connector	FC/PC, FC/APC					
Fiber length	1 m					
Transverse mode	TEM ₀₀					
Ellipticity	>0.95					
M ² factor after fiber	~1.1					
Warm-up time	<5 min					
Operating temperature	10-35°C					
Modulation option	TTL/Analog: 1Hz-1kHz, 1kHz-10kHz, 10kHz-30kHz, 30kHz-100kHz					
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.

670-785 nm Specifications

Parameter	DL670SM	DL680SM	DL685SM	DL705SM	DL730SM	DL785SM
Wavelength	670 nm	680 nm	685 nm	705 nm	730 nm	785 nm
Wavelength tolerance	±5 nm	±10 nm	±10 nm	±10 nm	±10 nm	±10 nm
Output power after fiber	>10 mW, >30 mW, >50 mW, >80 mW	>5 mW, >10 mW, >20 mW	>5 mW, >10 mW, >20 mW	>5 mW, >10 mW, >15 mW	>5 mW, >10 mW, >15 mW	>10 mW, >30 mW, >50 mW
Operating mode	CW					
Power stability (rms, over 4 hours)	<3%, <2%, <1%, <0.5%					
Fiber type	SM fiber					
Fiber core diameter	4 um, 6 um, 9 um					
Fiber NA	0.12					
Fiber connector	FC/PC, FC/APC					
Fiber length	1 m					
Transverse mode	TEM ₀₀					
Ellipticity	>0.95					
M ² factor after fiber	~1.1					
Warm-up time	<5 min					
Operating temperature	10-35°C					
Modulation option	TTL/Analog: 1Hz-1kHz, 1kHz-10kHz, 10kHz-30kHz, 30kHz-100kHz					
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.

808-975 nm Specifications

Parameter	DL808SM	DL830SM	DL852SM	DL905SM	DL940SM	DL975SM	
Wavelength	808 nm	830 nm	852 nm	905 nm	940 nm	975 nm	
Wavelength tolerance	±10 nm	±10 nm	±10 nm	±10 nm	±10 nm	±5 nm	±2 nm
Output power after fiber	>5 mW, >10 mW, >15 mW	>10 mW, >30 mW, >50 mW, >80 mW, >100 mW	>10 mW, >30 mW, >50 mW, >70 mW	>10 mW, >30 mW, >50 mW	>10 mW, >30 mW, >50 mW, >80 mW, >100 mW	>5 mW, >10 mW, >20 mW	>50 mW, >100 mW, >300 mW, >500 mW, >800 mW, >1000 mW
Operating mode	CW						
Power stability (rms, over 4 hours)	<3%, <2%, <1%, <0.5%						
Fiber type	SM fiber						
Fiber core diameter	4 um, 6 um, 9 um						
Fiber NA	0.12						
Fiber connector	FC/PC, FC/APC						
Fiber length	1 m						
Transverse mode	TEM ₀₀						
Ellipticity	>0.95						
M ² factor after fiber	~1.1						
Warm-up time	<5 min						
Operating temperature	10-35°C						
Modulation option	TTL/Analog: 1Hz-1kHz, 1kHz-10kHz, 10kHz-30kHz, 30kHz-100kHz						
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.
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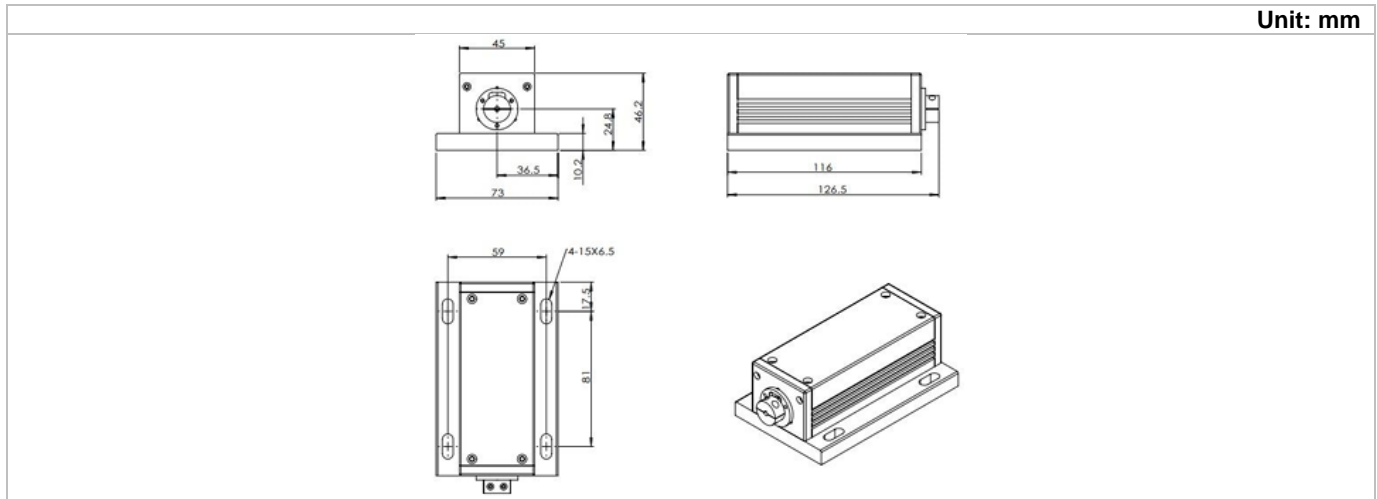
976-1064 nm Specifications

Parameter	DL976SM		DL980SM		DL1060SM		DL1064SM	
Wavelength	976 nm		980 nm		1060 nm		1064 nm	
Wavelength tolerance	±5 nm	±2 nm	±10 nm	±5 nm	±10 nm	±5 nm	±10 nm	±2 nm
Output power after fiber	>5 mW, >10 mW, >20 mW	>50 mW, >100 mW, >300 mW, >500 mW, >800 mW, >1000 mW	>5 mW, >10 mW, >20 mW	>50 mW, >100 mW, >300 mW, >500 mW, >800 mW, >1000 mW	>3 mW, >5 mW, >10 mW	>20 mW, >50 mW, >100 mW, >300 mW, >500 mW	>3 mW, >5 mW, >10 mW	>20 mW, >50 mW, >100 mW, >300 mW, >500 mW
Operating mode	CW							
Power stability (rms, over 4 hours)	<3%, <2%, <1%, <0.5%							
Fiber type	SM fiber							
Fiber core diameter	4 um, 6 um, 9 um							
Fiber NA	0.12							
Fiber connector	FC/PC, FC/APC							
Fiber length	1 m							
Transverse mode	TEM ₀₀							
Ellipticity	>0.95							
M ² factor after fiber	~1.1							
Warm-up time	<5 min							
Operating temperature	10-35°C							
Modulation option	TTL/Analog: 1Hz-1kHz, 1kHz-10kHz, 10kHz-30kHz, 30kHz-100kHz							
Expected lifetime	10,000 hours							
Warranty period	10 months							

Remarks:

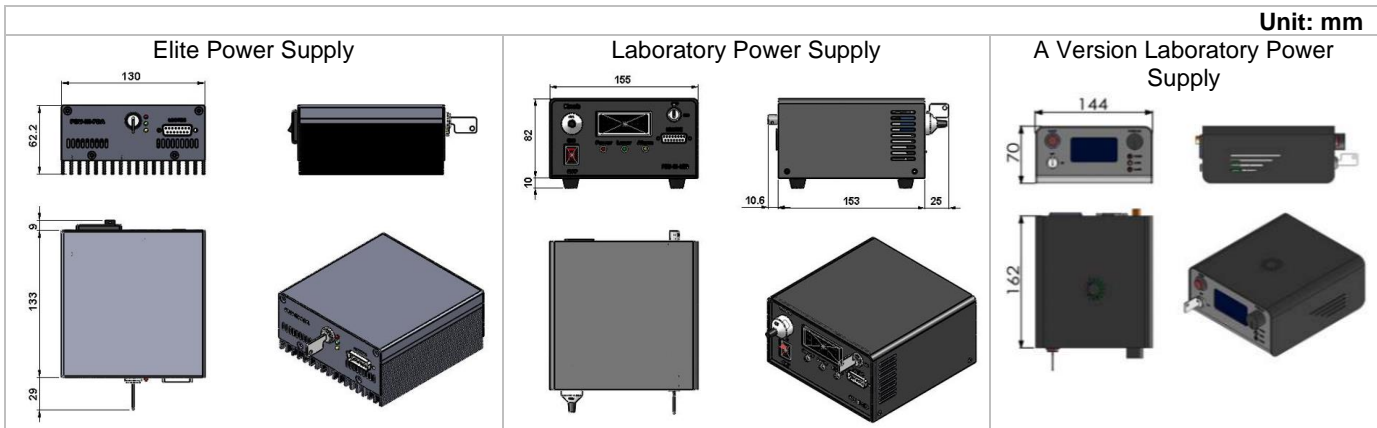
- Specifications of the CW laser is based on the laser performance at full power output after the specified warmup period. The stability of output power may change when output power is adjusted at a different power level.
- Specifications are subject to change without notice.

DL-SM Series Laser Head Dimensions



Parameter	DL-SM Series
Dimensions	126.5(L)×73(W) ×46.2(H) mm ³
Weight	0.7 kg
Beam height from base plate	24.8 mm
Beam exit (from side)	36.5 mm

DL-SM Series Power Supply Dimensions



Parameter	Elite Power Supply (Frequency 1Hz-30kHz)	Laboratory Power Supply (Frequency 1Hz-30kHz)	A Version Laboratory Power Supply (LCD Display, Frequency 30kHz-100kHz)
Dimensions	171(L) ×130(W) ×62.2(H) mm ³	188.6(L) ×155(W) ×92(H) mm ³	162(L) ×144(W) ×70(H) mm ³
Weight	1.2 kg	1.5 kg	1.0 kg
Input voltage	85-264VAC	85-264VAC	100-240VAC
Feature	Standard	Adjustable power	Adjustable power

Ordering Information

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

Part Number Configuration DL[1]SM[2][3][4][5][6]							
DL = Laser Model Series	[1] = Wavelength	SM = Single Mode Fiber Coupling	[2] = Output Power	[3] = Power Supply	[4] = Power Stability	[5] = Modulation	[6] = Fiber
	405= 405nm 410= 410nm 445= 445nm 450= 450nm 488= 488nm 505= 505nm 514= 514.5nm 520= 520nm 633= 633nm 637= 637nm 640= 640nm 660= 660nm 670= 670nm 680= 680nm 685= 685nm 705= 705nm 730= 730nm 785= 785nm 808= 808nm 830= 830nm 852= 852nm 905= 905nm 940= 940nm 975= 975nm 976= 976nm 980= 980nm 1060= 1060nm 1064= 1064nm		3= >3mW 5= >5mW 10= >10mW 15= >15mW 20= >20mW ... 300= >300mW 500= >500mW 700= >700mW 800= >800mW 1W= >1000mW	E= Elite Power Supply L= Laboratory Power Supply T= A Version Laboratory Power Supply	E= <3% 2= <2% D= <1% S= <0.5%	0=None T1=TTL 1Hz-1kHz T2=TTL 1kHz-10kHz T3=TTL 10kHz-30kHz A1=Analog 1Hz-1kHz A2=Analog 1kHz-10kHz A3=Analog 10kHz-30kHz	L= 4um core diameter SM fiber, FC connector P= 6um core diameter SM fiber, FC connector N= 9um core diameter SM fiber, FC connector S= 4um core diameter SM fiber, FC/APC connector

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