



# CW Diode Laser System

## DL Series (IR)



### Overview

The DL IR series is a family of infrared diode lasers that can deliver up to 2500 mW output power. The laser series is available in a wide range for wavelengths from 750nm to 1550nm, and features a compact design, long operating lifetime, easy operation, and FDA-compliant system with driver. The laser is widely used in measurement, communication, spectrum analysis, and many other applications.

### Features

- Infrared wavelength range
- CW operating mode
- Optical output power 5mW to 2500mW
- Ultra-compact design
- FDA compliant

### Applications

- Communication
- Measurement
- Spectrum analysis

## 750-808 nm Specifications

Parameter	DL750	DL785			DL793	DL800		DL808				
Wavelength	750 nm	785 nm			793 nm	800 nm		808 nm				
Wavelength tolerance	±10 nm	±5 nm	±10 nm			±5 nm	±5 nm		±3 nm	±10 nm	±3 nm	
Output power	>100 mW, >300 mW, >500 mW, >800 mW, >1000 mW, >1500 mW, >2000 mW	>10 mW, >100 mW	>100 mW	>200 mW, >350 mW	>500 mW, >1000 mW, >2000 mW, >2500 mW	>500 mW, >1000 mW, >2000 mW, >2500 mW	>1000 mW, >2000 mW	>300 mW, >500 mW	>50 mW, >100 mW	>100 mW	>300 mW, >500 mW	>1000 mW, >2000 mW
Operating mode	CW		CW	CW	CW	CW	CW		CW			
Transverse mode	Multimode	Near TEM <sub>00</sub>	Round	Multimode	Multimode	Round		Near TEM <sub>00</sub>	Round		Multi mode	
Power stability (rms, over 4 hours)	<2%, <1%, <0.5%	<2%, <1%, <0.5%			<2%, <1%, <0.5%	<2%, <1%		<2%, <1%, <0.5%	<2%, <1%		<2%, <1%, <0.5%	
M <sup>2</sup> factor	/	<1.5	/			/	/		~1.5	/		
Beam diameter at aperture (1/e <sup>2</sup> )	~5x8 mm	~4.0 mm	~2 mm	~5x8 mm	~5x8 mm	~5x8 mm	~2 mm	~3.5 mm	~2 mm	~2 mm	~5x8 mm	
Beam divergence, full angle	<3 mrad	<1 mrad	~10 mrad	~20 mrad	<3 mrad	<3 mrad	<3 mrad	~20 mrad	<1 mrad	~10 mrad	~20 mrad	<3 mrad
Polarization ratio	/	>50:1 Horizontal ±5 degree	/	/	/	/	/	>50:1 Horizontal ±5 degree	/	/	/	
Warm-up time	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	
Pointing stability after warm-up	/	<0.05 mrad	/	/	/	/	/	<0.05 mrad	/	/	/	
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.

## 830-880 nm Specifications

Parameter	DL830				DL845	DL852				DL860	DL880	
Wavelength	830 nm				845 nm	852 nm				860 nm	880 nm	
Wavelength tolerance	±10 nm				±10 nm	±10 nm				±10 nm	±5 nm	
Output power	>50 mW, >100 mW, >120 mW	>100 mW	>300 mW, >500 mW	>500 mW, >1000 mW, >2000 mW	>20 mW, >30 mW	>50 mW, >100 mW, >150 mW	>100 mW	>300 mW	>1000 mW, >1500 mW	>100 mW, >300 mW, >500 mW, >800 mW, >1000 mW	>5 mW, >10 mW	>1000 mW, >1500 mW
Operating mode	CW				CW	CW				CW	CW	
Transverse mode	Near TEM <sub>00</sub>	Round	Multimode		Near TEM <sub>00</sub>	Near TEM <sub>00</sub>	Round	Multimode		Multimode	Near TEM <sub>00</sub>	Multimode
Power stability (rms, over 4 hours)	<2%, <1%, <0.5%	<2%, <1%	<2%, <1%, <0.5%		<2%, <1%, <0.5%	<2%, <1%, <0.5%	<2%, <1%	<2%, <1%, <0.5%		<2%, <1%, <0.5%	<2%, <1%, <0.5%	
M <sup>2</sup> factor	~1.5	/			/	<1.5	/	/	/	/	~1.5	/
Beam diameter at aperture (1/e <sup>2</sup> )	~3.0 mm	~2 mm	~2 mm	~5x8 mm	~4.0 mm	~4.0 mm	~2 mm	~2 mm	~5x8 mm	~5x8 mm	~3.5 mm	~5x8 mm
Beam divergence, full angle	<1.0 mrad	~10 mrad	~20 mrad	<3 mrad	<1.0 mrad	<1.0 mrad	~10 mrad	~20 mrad	<3 mrad	<3 mrad	<1.0 mrad	<3 mrad
Polarization ratio	/				/	>50:1 Horizontal ±5 degree	/	/	/	/	>50:1 Horizontal ±5 degree	/
Warm-up time	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min
Pointing stability after warm-up	<0.05 mrad	/			/	<0.05 mrad	/	/	/	/	<0.05 mrad	/
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.

## 885-940 nm Specifications

Parameter	DL885			DL905		DL915				DL940			
Wavelength	885 nm			905 nm		915 nm				940 nm			
Wavelength tolerance	±5 nm			±10 nm		±5 nm				±5 nm			
Output power	>100 mW	>200 mW, >300 mW	>500 mW, >1000 mW, >1500 mW	>30 mW, >50 mW, >70 mW	>100 mW, >200 mW, >400 mW	>100 mW, >200 mW, >270 mW	>100 mW, >200 mW	>300 mW, >350 mW	>500 mW, >1000 mW	>100 mW, >200 mW, >250 mW	>100 mW, >200 mW	>300 mW, >350 mW	>500 mW, >1000 mW
Operating mode	CW			CW		CW				CW			
Transverse mode	Round		Multimode	Near TEM <sub>00</sub>	Multimode	Near TEM <sub>00</sub>	Round		Multimode	Near TEM <sub>00</sub>	Round		Multimode
Power stability (rms, over 4 hours)	<2%, <1%, <0.5%			<2%, <1%, <0.5%		<2%, <1%, <0.5%	<2%, <1%		<2%, <1%, <0.5%	<2%, <1%, <0.5%	<2%, <1%		<2%, <1%, <0.5%
M <sup>2</sup> factor	/		/	/	/	~1.5	/		/	~1.5	/		/
Beam diameter at aperture (1/e <sup>2</sup> )	~2 mm	~2 mm	~5x8 mm	~3.5 mm	~5x8 mm	~3.5 mm	~2 mm	~2 mm	~5x8 mm	~3.5 mm	~2 mm	~2 mm	~5x8 mm
Beam divergence, full angle	~10 mrad	~20 mrad	<3 mrad	<1.0 mrad	<3 mrad	<1.0 mrad	~10 mrad	~20 mrad	<3 mrad	<1.0 mrad	~10 mrad	~20 mrad	<3 mrad
Polarization ratio	/		/	/	/	/	/		/	/	/		/
Warm-up time	<5 min		<5 min	<5 min	<5 min	<5 min	<5 min		<5 min	<5 min	<5 min		<5 min
Pointing stability after warm-up	/		/	<0.05 mrad	/	/	/		/	<0.05 mrad	/		/
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.

## 975-1120 nm Specifications

Parameter	DL975			DL980			DL1060		DL1120	
Wavelength	975 nm			980 nm			1060 nm		1120 nm	
Wavelength tolerance	±10 nm			±10 nm			±5 nm		±10 nm	
Output power	>100 mW	>300 mW, >500 mW	>2000 mW	>100 mW, >150 mW, >200 mW	>100 mW	>300 mW, >500 mW	>2000 mW	>50 mW, >100 mW, >200 mW	>500 mW, >1000 mW	>100 mW, >300 mW, >500 mW, >800 mW, >1000 mW
Operating mode	CW				CW			CW		CW
Transverse mode	Round		Multimode	Near TEM <sub>00</sub>	Round		Multimode	Near TEM <sub>00</sub>	Multimode	Multimode
Power stability (rms, over 4 hours)	<2%, <1%		<2%, <1%, <0.5%	<2%, <1%, <0.5%	<2%, <1%		<2%, <1%, <0.5%	<2%, <1%, <0.5%		<2%, <1%, <0.5%
M <sup>2</sup> factor	/		/	~1.5	~1.5		/	~1.5	/	/
Beam diameter at aperture (1/e <sup>2</sup> )	~2 mm	~2 mm	~5x8 mm	~3.5 mm	~2 mm	~2 mm	~5x8 mm	~3.5 mm	~5x8 mm	~5x8 mm
Beam divergence, full angle	~10 mrad	~20 mrad	<3 mrad	<1.0 mrad	~10 mrad	~20 mrad	<3 mrad	<1.0 mrad	<3 mrad	<3 mrad
Polarization ratio	/		/	>10:1 Horizontal ±5 degree	/		/	/	/	/
Warm-up time	<5 min		<5 min	<5 min	<5 min		<5 min	<5 min	<5 min	<5 min
Pointing stability after warm-up	/		/	/	/		/	/	/	/
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.

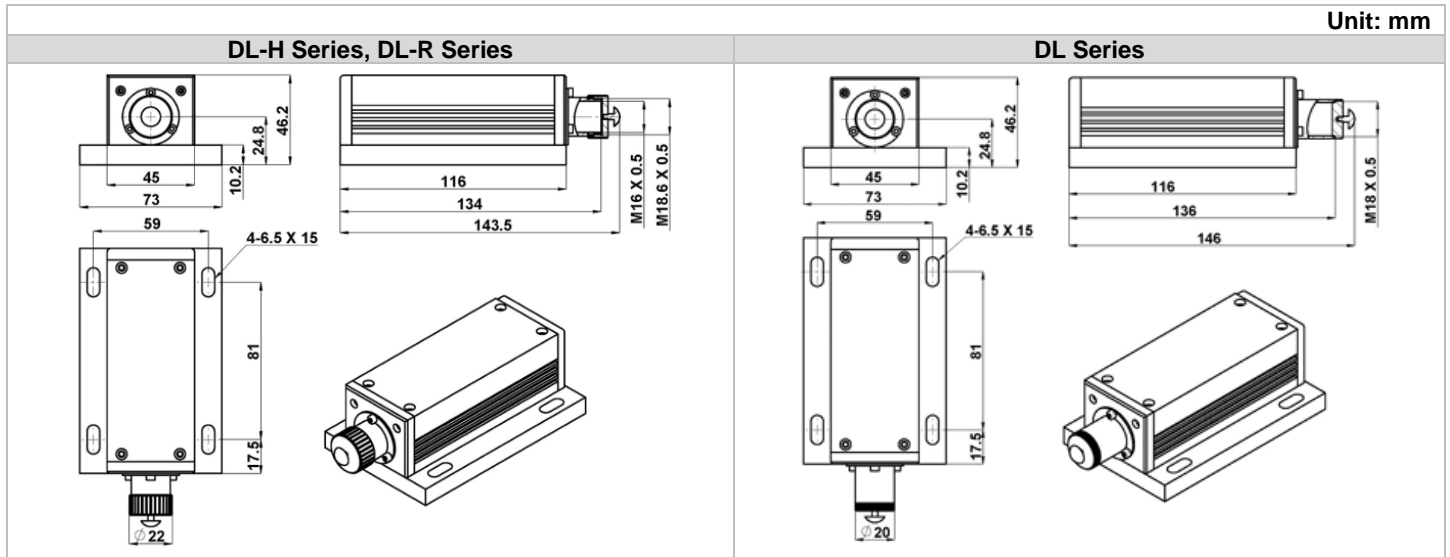
## 1310-1550 nm Specifications

Parameter	DL1310		DL1450			DL1470			DL1550			
Wavelength	1310 nm		1450 nm			1470 nm			1550 nm			
Wavelength tolerance	±20 nm		±15 nm			±10 nm	±20 nm		±10 nm	±20 nm		
Output power	>10 mW, >15 mW	>100 mW, >200 mW, >300 mW, >500 mW, >800 mW	>50 mW, >100 mW	>200 mW	>100 mW, >200 mW, >300 mW, >500 mW, >800 mW, >1000 mW	>50 mW, >100 mW	>200 mW	>100 mW, >200 mW, >300 mW, >500 mW	>5 mW, >10 mW	>50 mW, >100 mW	>200 mW	>100 mW, >300 mW, >500 mW, >600 mW
Operating mode	CW		CW			CW			CW			
Transverse mode	Near TEM <sub>00</sub>	Multimode	Round	Multimode		Round	Multimode		Near TEM <sub>00</sub>	Round	Multimode	
Power stability (rms, over 4 hours)	<2%, <1%	<2%, <1%	<2%, <1%			<2%, <1%			<2%, <1%			
M <sup>2</sup> factor	/	/	/	/	/	/	/	/	/	/	/	/
Beam diameter at aperture (1/e <sup>2</sup> )	~1.5 mm	~5x8 mm	~2 mm	~2 mm	~5x8 mm	~2 mm	~2 mm	~5x8 mm	~1.5 mm	~2 mm	~2 mm	~5x8 mm
Beam divergence, full angle	<2.0 mrad	<3 mrad	~10 mrad	~20 mrad	<3 mrad	~10 mrad	~20 mrad	<3 mrad	<3.0 mrad	~10 mrad	~20 mrad	<3 mrad
Polarization ratio	/	/	/	/	/	/	/	/	/	/	/	/
Warm-up time	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min
Pointing stability after warm-up	/	/	/	/	/	/	/	/	/	/	/	/
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:

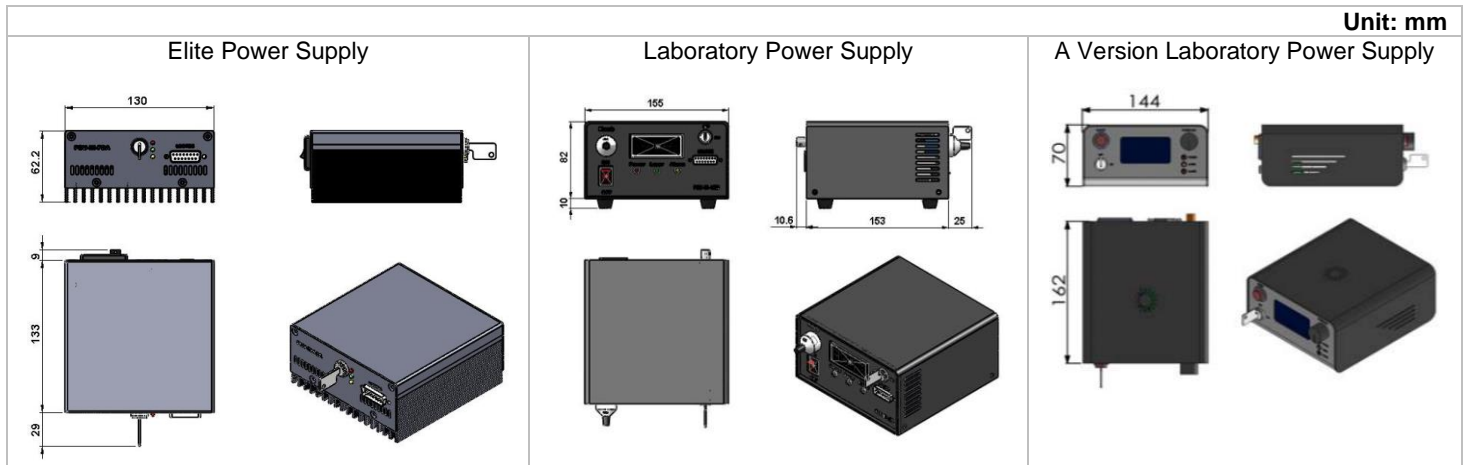
- Specifications of the CW laser is based on the laser performance at full power output after the specified warmup period. The stability of output power may change when output power is adjusted at a different power level.
- Specifications are subject to change without notice.

DL Series (IR) Laser Head Dimensions



Parameter	DL-H Series, DL-R Series	DL Series
Dimensions	143.5(L)×73(W) ×46.2(H) mm <sup>3</sup>	146(L)×73(W) ×46.2(H) mm <sup>3</sup>
Weight	0.7 kg	0.7 kg
Beam height from base plate	24.8 mm	24.8 mm

DL Series (IR) Power Supply Dimensions



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

## Ordering Information

For more information, please contact Lasermate directly at [sales@lasermate.com](mailto:sales@lasermate.com).

Part Number Configuration DL[1][2][3][4][5][6]						
DL = Laser Model Series	[1] = Wavelength	[2] = Transverse Mode	[3] = Output Power	[4] = Power Supply	[5] = Power Stability	[6] = Modulation
		H=Near TEM <sub>00</sub> R=Round Blank=Multimode	5= >5mW 10= >10mW 20= >20mW 30= >30mW 50= >50mW .... 800= >800mW 1W= >1000mW 1H= >1500mW 1E= >1800mW 2W= >2000mW 2H= >2500mW	E=Elite Power Supply L=Laboratory Power Supply T=A Version laboratory Power Supply	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

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