Narrow Linewidth Low Noise CW DPSS Laser System
DPNU Series

Data Sheet

Overview

The DPNU series is a family of blue, green, yellow, orange, and red diode pumped solid state (DPSS) lasers with narrow spectral linewidth up to <0.003nm and can deliver up to 1000 mW output power. The DPNU laser series features a narrow linewidth, low noise, high stability, ultra-compact design, long lifetime, easy operation, and FDA-compliant system with driver. The DPNU series laser is widely used in scientific experiment, medical measurement, instrument, spectrum analysis, and many other applications.

Features

- Blue, green, yellow, orange, and red spectral range
- CW operating mode
- Optical output power 30mW to 1000mW
- Narrow spectral linewidth <0.2nm, <0.003nm
- Low noise of amplitude
- Ultra-compact design
- FDA compliant

Applications

- Scientific experiment
- Optical instrument
- Medical measurement
- Spectrum analysis

457-561 nm Specifications

Parameter	DPNU457		DPNU473	DPNU532		DPNU550	DPNU561
Wavelength	457±1 nm		473±1 nm	532±1 nm		550±1 nm	561±1 nm
Output power	>50 mW, >100 mW	>300 mW	>50 mW, >100 mW	>300 mW	>500 mW, >1000 mW	>80 mW, >100 mW	>30 mW, >50 mW, >100 mW, >150 mW, >200 mW
Transverse mode	TEM_{00}		TEM_{00}	TEM_{00}		TEM_{00}	TEM_{00}
Operating mode	CW		CW	CW		CW	CW
Power stability (rms, over 4 hours)	<3%	<5%, <3%	<5%, <3%	<3%, <2%, <1%	<3%, <2%	<3%, <2%	<3%, <2%, <1%
Spectral linewidth (nm)	<0.2 nm, <0.003 nm		<0.2 nm, <0.003 nm	<0.2 nm, <0.003 nm		<0.2 nm, <0.003 nm	<0.2 nm, <0.003 nm
Noise of amplitude (rms, 1Hz-20MHz)	<1%		<1%	<1%, <0.5%		<1%	<1%, <0.5%
M^2 factor	<1.5		<1.2	<1.2		<1.2	<1.2
Beam diameter at aperture ($1/e^2$)	<1.0 mm		<1.0 mm	<1.0 mm		<1.0 mm	<1.0 mm
Beam divergence, full angle	<1.5 mrad		<1.5 mrad	<1.5 mrad		<1.5 mrad	<1.5 mrad
Polarization ratio	>100:1		>100:1	>100:1		>100:1	>100:1
Warm-up time	<5 min		<5 min	<5 min		<5 min	<5 min
Pointing stability after warm-up	<0.05 mrad		<0.05 mrad	<0.05 mrad		<0.05 mrad	<0.05 mrad
Operating temperature	10-35°C						
Expected lifetime	10,000 hours						
Warranty period	10 months						

Remarks:

- The laser head needs to be used on a heat sink with good heat dissipation.
- 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.

577-671 nm Specifications

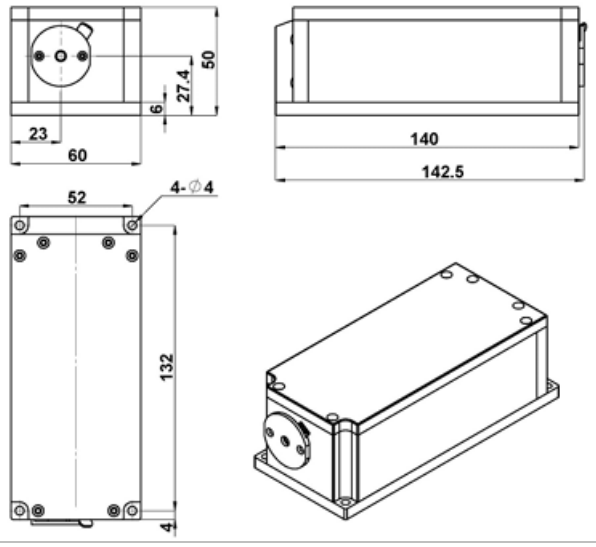
Parameter	DPNU577	DPNU588	DPNU589	DPNU671	
Wavelength	577±2 nm	588±2 nm	589±1 nm	671±1 nm	
Output power	>30 mW, >50 mW, >100 mW, >200 mW	>30 mW, >50 mW, >100 mW, >200 mW	>30 mW, >50 mW, >100 mW, >200 mW	>100 mW, >200 mW	>300 mW, >500 mW
Transverse mode	TEM_{00}	TEM_{00}	TEM_{00}	TEM_{00}	
Operating mode	CW	CW	CW	CW	
Power stability (rms, over 4 hours)	<3%, <2%, <1%	<3%, <2%, <1%, <0.5%	<3%, <2%, <1%, <0.5%	<3%, <2%, <1%	<3%, <2%
Spectral linewidth (nm)	<0.2 nm, <0.003 nm	<0.2 nm, <0.003 nm	<0.2 nm, <0.003 nm	<0.2 nm, <0.003 nm	
Noise of amplitude (rms, 1Hz-20MHz)	<1%	<1%, <0.5%	<1%, <0.5%	<1%, <0.5%	
M^2 factor	<1.2	<1.2	<1.2	<1.2	
Beam diameter at aperture ($1/e^2$)	<1.0 mm	<1.0 mm	<1.0 mm	<1.0 mm	
Beam divergence, full angle	<1.5 mrad	<1.5 mrad	<1.5 mrad	<1.5 mrad	
Polarization ratio	>100:1	>100:1	>100:1	>100:1	
Warm-up time	<5 min	<5 min	<5 min	<5 min	
Pointing stability after warm-up	<0.05 mrad	<0.05 mrad	<0.05 mrad	<0.05 mrad	
Operating temperature	10-35°C				
Expected lifetime	10,000 hours				
Warranty period	10 months				

Remarks:

- The laser head needs to be used on a heat sink with good heat dissipation.
- 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.

DPNU Series Laser Head Dimensions

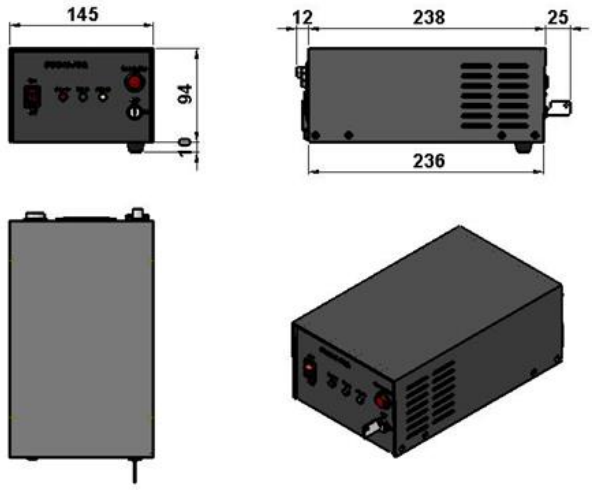
Unit: mm



Parameter	DPNU Series
Dimensions	142.5(L)×60(W) ×50(H) mm^3
Weight	1.0 kg
Beam height from base plate	27.4 mm

DPNU Series Power Supply Dimensions

Unit: mm



Parameter	High Power Elite Power Supply
Dimensions	275(L) ×145(W) ×104(H) mm^3
Weight	2.3 kg
Input voltage	90-264VAC

Ordering Information

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

Part Number Configuration DPNU[1][2][3][4][5][6]						
DPNU = Laser Model Series	**[1] = Wavelength**	**[2] = Output Power**	**[3] = Power Supply**	**[4] = Power Stability**	**[5] = Spectral Linewidth**	**[6] = Noise of Amplitude**
	457= 457nm 473= 473nm 532= 532nm 550= 550nm 561= 561nm 577= 577nm 588= 588nm 589= 589nm 671= 671nm	30= >30mW 50= >50mW 80= >80mW 100= >100mW 150= >150mW 200= >200mW 300= >300mW 500= >500mW 800= >800mW 1W= >1000mW	H=High Power Elite Power Supply	A= <5% E= <3% 2= <2% D= <1% S= <0.5%	K=<0.2nm J=<0.003nm	L=<0.5% 1=<1%

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