Fan-less CW DPSS Laser System
DPFN Series (Visible)

Data Sheet

Overview

The DPFN visible series is a family of blue, green, yellow, orange, and red diode pumped solid state (DPSS) lasers that can deliver up to 1200 mW output power. The laser series features a compact design, long lifetime, easy operation, and FDA-compliant system with driver. The laser is widely used in collimation, laser medical treatment, scientific experiment, optical instrument, and many other applications.

Features

- Blue, green, yellow, orange, and red spectral range
- CW operating mode
- Optical output power 10mW to 1200mW
- Ultra-compact design
- FDA compliant

Applications

- Collimation
- Laser medical treatment
- Scientific experiment
- Optical instrument

473-536 nm Specifications

Parameter	DPFN473		DPFN522	DPFN523		DPFN526		DPFN532		DPFN536	
Wavelength	473±1 nm		522±1 nm	523.5±1 nm		526.5±1 nm		532±1 nm		536±1 nm	
Output power	>50, >100 mW	>200, >300, >400, >500 mW	>10, >30, >50, >80, >100 mW	>30, >50, >80, >100, >200, >300 mW	>500, >800 mW	>30, >50, >80, >100, >200 mW	>300 mW	>500 mW	>1000, >1500 mW	>30, >50, >80, >100 mW	>200, >300, >500 mW
Transverse mode	TEM_{00}	Near TEM_{00}	Near TEM_{00}	Near TEM_{00}		Near TEM_{00}		TEM_{00}		TEM_{00}	
Operating mode	CW										
Power stability (rms, over 4 hours)	<3%, <2%, <1%	<5%, <3%, <2%	<5%, <3%, <2%	<5%, <3%, <1%	<5%, <3%	<5%, <3%, <2%	<5%, <3%	<5%, <3%, <2%, 1%	<5%, <3%, <2%	<5%, <3%, <2%	<5%, <3%
M^2 factor	<1.2	<1.5	<1.5	<1.5		<1.5		<1.2	<1.5	<1.5	
Beam diameter at aperture ($1/e^2$)	~2.0 mm	~3.0 mm	~2.0 mm	~2.0 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		<1.5 mrad	
Polarization ratio	>100:1 Vertical		>100:1 Vertical	>100:1 Vertical		>100:1 Vertical		>100:1 Horizontal		>100:1 Horizontal	
Warm-up time	<5min		<5min	<5min		<5min		<5min		<5min	
Pointing stability after warm-up	<0.05 mrad		<0.05 mrad	<0.05 mrad		<0.05 mrad		<0.05 mrad		<0.05 mrad	
Operating temperature	10-35°C										
Modulation option	TTL/Analog: 1Hz-1kHz, 1kHz-10kHz, 10kHz-30kHz										
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.
- Specifications are subject to change without notice.

537-555 nm Specifications

Parameter	DPFN537	DPFN543		DPFN545	DPFN550	DPFN552	DPFN555
Wavelength	537±1 nm	543±1 nm		545±1 nm	550±1 nm	552±1 nm	555±1 nm
Output power	>10, >30 mW	>30, >50, >100, >150, >200, >300 mW	>500, >800, >1000 mW	>10, >20 mW	>30, >50, >80, >100, >150, >200 mW	>30, >50, >80, >100, >150, >200, >300 mW	>30, >50, >80, >100 mW
Transverse mode	Near TEM_{00}	TEM_{00}	Near TEM_{00}	Near TEM_{00}	Near TEM_{00}	Near TEM_{00}	Near TEM_{00}
Operating mode	CW						
Power stability (rms, over 4 hours)	<5%, <3%, <2%	<5%, <3%, <2%, <1%		<10%, <5%	<5%, <3%	<5%, <3%, <2%	<5%, <3%
M^2 factor	<1.5	<1.2		<1.5	<1.5	/	<2.0
Beam diameter at aperture ($1/e^2$)	<2.0 mm	<2.0 mm		<2.0 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	<2.0 mrad	<2.0 mrad
Polarization ratio	>50:1, Horizontal	>100:1, Vertical		>50:1, Vertical	>100:1, Vertical	>100:1, Vertical	>100:1, Vertical
Warm-up time	<5min	<5min		<5min	<5min	<5min	<5min
Pointing stability after warm-up	<0.05 mrad	<0.05 mrad		<0.05 mrad	<0.05 mrad	<0.05 mrad	<0.05 mrad
Operating temperature	10-35°C						
Modulation option	TTL/Analog: 1Hz-1kHz, 1kHz-10kHz, 10kHz-30kHz						
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.
- Specifications are subject to change without notice.

556-589 nm Specifications

Parameter	DPFN556		DPFN561		DPFN570	DPFN577	DPFN588		DPFN589	
Wavelength	556±1 nm		561±1 nm		570±1 nm	577±2 nm	588±1 nm		589±1 nm	
Output power	>30, >50, >80, >100, >200, >300 mW	>500, >800 mW	>30, >50, >100, >150, >200, >300 mW	>500, >800, >1000 mW	>10, >30, >50, >80, >100 mW	>800, >1000, >1200 mW	>200, >300 mW	>500, >800 mW	>200, >300 mW	>500, >800 mW
Transverse mode	TEM_{00}	Near TEM_{00}	TEM_{00}	Near TEM_{00}	Near TEM_{00}	Multimode	TEM_{00}	Near TEM_{00}	TEM_{00}	Near TEM_{00}
Operating mode	CW									
Power stability (rms, over 4 hours)	<5%, <3%, <2%, <1%	<5%, <3%, <2%	<5%, <3%, <2%, <1%	<5%, <3%, <2%	<5%, <3%	<5%, <3%, <2%, <1%	<3%, <2%, <1%		<3%, <2%, <1%	
M^2 factor	<1.2		<1.2	<1.5	<1.5	<2.0	<1.2	<1.5	<1.2	<1.5
Beam diameter at aperture ($1/e^2$)	<2.0 mm		<2.0 mm		<1.5 mm	<2.5 mm	<1.5 mm		<1.5 mm	
Beam divergence, full angle	<1.5 mrad		<1.5 mrad		<1.5 mrad	<1.5 mrad	<1.5 mrad		<1.5 mrad	
Polarization ratio	>100:1, Vertical		>100:1, Vertical		>100:1, Horizontal	>100:1, Horizontal	>100:1, Horizontal		>100:1, Horizontal	
Warm-up time	<5min		<5min		<5min	<5min	<5min		<5min	
Pointing stability after warm-up	<0.05 mrad		<0.05 mrad		<0.05 mrad	<0.05 mrad	<0.05 mrad		<0.05 mrad	
Operating temperature	10-35°C									
Modulation option	TTL/Analog: 1Hz-1kHz, 1kHz-10kHz, 10kHz-30kHz									
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.
- Specifications are subject to change without notice.

594-656.5 nm Specifications

Parameter	DPFN594	DPFN604	DPFN607		DPFN613	DPFN639		DPFN656
Wavelength	594±1 nm	604±1 nm	607±3 nm		613±1 nm	639±1 nm		656.5±1 nm
Output power	>10, >20, >30, >50, >80, >100 mW	>10, >30, >50, >80, >100 mW	>30 mW, >50 mW, >100 mW	>200 mW, >300 mW, >400 mW	>10 mW, >20 mW	>100 mW, >200 mW, >300 mW	>500 mW, >800 mW, >1000 mW	>30 mW, >50 mW, >100 mW, >200 mW
Transverse mode	TEM_{00}	Near TEM_{00}	TEM_{00}		Near TEM_{00}	TEM_{00}		TEM_{00}
Operating mode	CW							
Power stability (rms, over 4 hours)	<5%, <3%, <2%	<3%, <2%, <1%	<3%, <2%, <1%, <0.5%		<5%, <3%, <2%	<5%, <3%, <2%, <1%, <0.5%		<2%, <1%
M^2 factor	<1.5	<2.0	<1.2		<1.2	<1.2	<1.5	<1.2
Beam diameter at aperture ($1/e^2$)	<1.5 mm	<1.5 mm	<1.0 mm	<2.0 mm	<1.0 mm	<1.0 mm	<1.5 mm	<2.0 mm
Beam divergence, full angle	<2.0 mrad	<1.5 mrad	<1.5 mrad		<1.5 mrad	<1.5 mrad		<1.5 mrad
Polarization ratio	>100:1, Horizontal	>100:1, Vertical	>100:1, Vertical		>100:1, Vertical	>100:1, Horizontal		>100:1, Vertical
Warm-up time	<5min	<5min	<5min		<5min	<5min		<5min
Pointing stability after warm-up	<0.05 mrad	<0.05 mrad	<0.05 mrad		<0.05 mrad	<0.05 mrad		<0.05 mrad
Operating temperature	10-35°C							
Modulation option	TTL/Analog: 1Hz-1kHz, 1kHz-10kHz, 10kHz-30kHz							
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.
- Specifications are subject to change without notice.

660-678 nm Specifications

Parameter	DPFN660	DPFN666	DPFN669	DPFN670		DPFN671		DPFN678
Wavelength	660±1 nm	666±1 nm	669±1 nm	670±0.5 nm		671±1 nm		678±1 nm
Output power	>50, >100, >200, >300, >400 mW	>50, >100, >150, >200 mW	>50, >100, >150, >200 mW	>50, >100, >150 mW	>200, >300 mW	>100, >200, >300 mW	>500, >800, >1000 mW	>20, >50, >100 mW
Transverse mode	Near TEM_{00}	Near TEM_{00}	Near TEM_{00}	TEM_{00}	Near TEM_{00}	TEM_{00}		TEM_{00}
Operating mode	CW							
Power stability (rms, over 4 hours)	<5%, <3%, <2%, <1%	<10%, <5%, <3%	<3%, <2%	<3%, <2%, <1%, <0.5%		<5%, <3%, <2%, <1%	<5%, <3%, <2%	<5%, <3%, <2%
M^2 factor	<1.2	<2.0	<2.0	<1.2	<2.0	<1.2, <1.1	<1.2	<1.5
Beam diameter at aperture ($1/e^2$)	<2.0 mm	<2.0 mm	<2.0 mm	<2.0 mm		~2.0 mm		<1.0 mm
Beam divergence, full angle	<1.5 mrad	<2.0 mrad	<2.0 mrad	<1.2 mrad		<1.5 mrad		<1.5 mrad
Polarization ratio	>100:1, Vertical	>100:1, Vertical	>100:1, Vertical	>100:1, Vertical		>100:1, Vertical		>100:1, Vertical
Warm-up time	<5min	<5min	<5min	<5min		<5min		<5min
Pointing stability after warm-up	<0.05 mrad	<0.05 mrad	<0.05 mrad	<0.05 mrad		<0.05 mrad		<0.05 mrad
Operating temperature	10-35°C							
Modulation option	TTL/Analog: 1Hz-1kHz, 1kHz-10kHz, 10kHz-30kHz							
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.
- Specifications are subject to change without notice.

679-721 nm Specifications

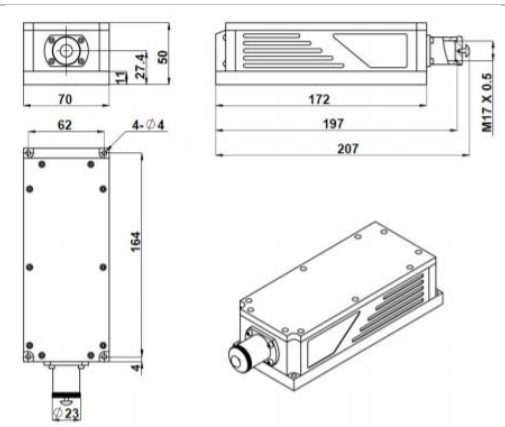
Parameter	DPFN679	DPFN698		DPFN721	
Wavelength	679±1 nm	698±1 nm		721±1 nm	
Output power	>10, >20, >30 mW	>50, >100, >200, >300, >400 mW	>500, >600, >800, >1000 mW	>50, >100, >200, >300 mW	>400, >500 mW
Transverse mode	TEM_{00}	TEM_{00}	Near TEM_{00}	TEM_{00}	Near TEM_{00}
Operating mode	CW				
Power stability (rms, over 4 hours)	<5%, <3%, <2%	<5%, <3%, <2%, 1%	<5%, <3%	<5%, <3%, <2%, 1%, <0.5%	
M^2 factor	<1.5	<1.5		<1.5	
Beam diameter at aperture ($1/e^2$)	<1.0 mm	~2.0 mm		<1.2 mm	
Beam divergence, full angle	<1.5 mrad	<1.5 mrad		<1.5 mrad	
Polarization ratio	>100:1, Vertical	>100:1, Vertical		>100:1, Vertical	
Warm-up time	<5min	<5min		<5min	
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				
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.
- Specifications are subject to change without notice.

DPFN Series (Visible) Laser Head Dimensions

Unit: mm

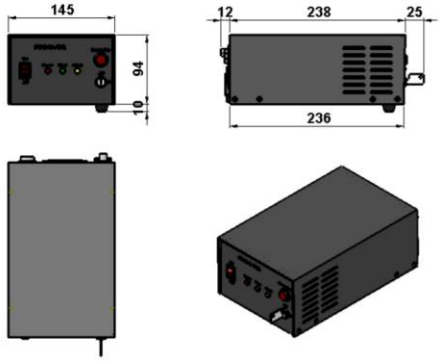


Parameter	DPFN Series (Visible)
Dimensions	197(L)×70(W) ×50(H) mm^3
Weight	1.5 kg
Beam height from base plate	27.4 mm

DPFN Series (Visible) Power Supply Dimensions

Unit: mm

High Power Elite Power Supply



High Power Laboratory Power Supply

High Power S Version Laboratory Power Supply

Parameter	High Power Elite Power Supply	High Power Laboratory Power Supply	High Power S Version Laboratory Power Supply
Dimensions	275(L) ×145(W) ×104(H) mm^3	277(L) ×145(W) ×106(H) mm^3	188(L) ×145(W) ×83(H) mm^3
Weight	2.3 kg	2.6 kg	1.2 kg
Input voltage	90-264VAC	90-264VAC	90-264VAC
Feature	Standard	Adjustable power	Adjustable power

Ordering Information

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

Part Number Configuration DPFN[1][2][3][4][5]					
DPFN = Laser Model Series	**[1] = Wavelength**	**[2] = Output Power**	**[3] = Power Supply**	**[4] = Power Stability**	**[5] = Modulation**
		10= >10mW 30= >30mW 50= >50mW 80= >80mW 100= >100mW 200= >200mW 300= >300mW 400= >400mW 500= >500mW 600= >600mW 800= >800mW 1W= >1000mW 1F= >1200mW	H= High Power Elite Power Supply M= High Power Laboratory Power Supply S= High Power S Version Laboratory Power Supply	B=<10% A=<5% E=<3% 2=<2% D=<1% S=<0.5%	0=None T1=TTL 1Hz-1kHz T2=TTL 1kHz-10kHz T3=10kHz-30kHz A1=Analog 1Hz-1kHz A2=Analog 1kHz-10kHz A3=10kHz-30kHz

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