



Fan-less Single Frequency Laser System

SLMFM Series

Data Sheet



Overview

The SLMFN series is a line of UV and visible CW lasers with single longitudinal mode / single frequency. The laser series delivers power levels up to 600mW. The SLMFN series laser features narrow spectral linewidth, long coherent length, ultra-compact design, long lifetime, easy operating, and FDA-compliant system with driver. The laser is widely used in DNA sequencing, flow cytometry, cell sorting, optical instrument, spectrum analysis, interference, measurement, holography, physics experiment and many other applications.

Features

- Available wavelengths: 355nm, 360nm, 457nm, 473nm, 522nm, 523.5nm, 526.5nm, 543nm, 552nm, 556nm, 561nm, 588nm, 589nm, 607nm, 639nm, 656.5nm, 660nm, 671nm, 698nm, and 721nm
- CW operating mode
- Optical output power 5mW to 600mW
- Single frequency / single longitudinal mode
- Frequency stabilized option
- FDA compliant

Applications

- DNA sequencing
- Flow cytometry
- Cell sorting
- Optical instrument
- Spectrum analysis
- Interference
- Measurement
- Holography
- Physics experiment

355-526.5 nm Specifications

Parameter	SLMFN355	SLMFN360	SLMFN457	SLMFN473	SLMFN522	SLMFN523	SLMFN526
Wavelength	355±1 nm	360±1 nm	457±1 nm	473±1 nm	522±1 nm	523.5±1 nm	526.5±1 nm
Operating mode	CW	CW	CW	CW	CW	CW	CW
Output power	>5 mW, >10 mW	>5 mW, >10 mW, >20 mW, >30 mW, >40 mW, >50 mW	>30 mW, >50 mW, >100 mW, >150 mW, >200 mW, >300 mW	>30 mW, >50 mW, >100 mW	>10 mW, >30 mW, >50 mW, >80 mW, >100 mW	>20 mW, >30 mW, >50 mW, >100 mW	>20 mW, >30 mW, >50 mW, >80 mW, >100 mW
Power stability (rms, over 4 hours)	<10%, <5%	<5%, <3%, <1%	<5%, <3%, <2%	<5%, <3%, <2%	<3%, <2%	<3%, <1%	<3%, <1%
Transverse mode	Near TEM ₀₀	TEM ₀₀	Near TEM ₀₀	TEM ₀₀	TEM ₀₀	TEM ₀₀	TEM ₀₀
Longitudinal mode	Single	Single	Single	Single	Single	Single	Single
Spectral linewidth	<0.00001 nm	<0.00001 nm	<0.00001 nm	<0.00001 nm	<0.00001 nm	<0.00001 nm	<0.00001 nm
Coherent length	>50 m	>50 m	>50 m	>50 m	>50 m	>50 m	>50 m
Noise of amplitude (rms, 1Hz~20MHz)	<1%	<1%, <0.5%	<1%, <0.5%	<1%, <0.5%	<1%	<1%	<1%
Beam diameter at aperture (1/e ²)	<1.2 mm	<1.2 mm	<2.0 mm	<2.0 mm	~2.0 mm	<1.5 mm	<1.5 mm
Beam divergence, full angle	<1.5 mrad	<1.0 mrad	<1.2 mrad	<1.2 mrad	<1.5 mrad	<1.2 mrad	<1.2 mrad
M ² factor	<1.5	<1.5	<1.2	<1.2	<1.5	<1.2	<1.2
Polarization ratio	>50:1	>50:1	>100:1	>100:1	>100:1	>100:1	>100:1
Warm-up time	<10 min	<10 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	<0.05 mrad	<0.05 mrad	<0.05 mrad	<0.05 mrad
Frequency shift over 8 hours (optional)	<±200 MHz	<±200 MHz	<±200 MHz	<±200 MHz	<±200 MHz	<±200 MHz	<±200 MHz
Frequency shift with temp (optional)	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C
Laser head consumption	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)
Max. laser head base plate temp	50°C	50°C	50°C	50°C	50°C	50°C	50°C
Operating temperature	10-40°C	10-40°C	10-40°C	10-40°C	10-40°C	10-40°C	10-40°C
Expected lifetime	/	/	10,000 hrs	10,000 hrs	10,000 hrs	10,000 hrs	10,000 hrs
Warranty period	10 months	10 months	10 months	10 months	10 months	10 months	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.

543-607 nm Specifications

Parameter	SLMFN543	SLMFN552	SLMFN556	SLMFN561	SLMFN589	SLMFN607
Wavelength	543±1 nm	552±1 nm	556±1 nm	561±1 nm	589±1 nm	607±1 nm
Operating mode	CW	CW	CW	CW	CW	CW
Output power	>30 mW, >50 mW, >100 mW	>30 mW, >50 mW, >80 mW, >100 mW	>30 mW, >50 mW, >80 mW, >100 mW	>30 mW, >50 mW, >80 mW, >100 mW, >150 mW	>30 mW, >50 mW, >100 mW, >150 mW, >200 mW	>30 mW, >50 mW, >80 mW, >100 mW
Power stability (rms, over 4 hours)	<3%, <2%, <1%	<5%, <3%	<5%, <3%, <2%, <1%	<5%, <3%, <2%, <1%	<5%, <3%, <2%	<3%, <2%, <1%
Transverse mode	TEM ₀₀	TEM ₀₀	TEM ₀₀	TEM ₀₀	TEM ₀₀	TEM ₀₀
Longitudinal mode	Single	Single	Single	Single	Single	Single
Spectral linewidth	<0.00001 nm	<0.00001 nm	<0.00001 nm	<0.00001 nm	<0.00001 nm	<0.00001 nm
Coherent length	>50 m	>50	>50	>50	>50	>50 m
Noise of amplitude (rms, 1Hz~20MHz)	<1%	<1%	<1%, <0.5%	<1%, <0.5%	<1%, <0.5%	<1%
Beam diameter at aperture (1/e ²)	<1.5 mm	<1.5 mm	<2.0 mm	<2.0 mm	<2.5 mm	<1.5 mm
Beam divergence, full angle	<1.2 mrad	<1.2 mrad	<1.2 mrad	<1.2 mrad	<1.2 mrad	<1.2 mrad
M ² factor	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
Polarization ratio	>100:1	>100:1	>100:1	>100:1	>100:1	>100:1
Warm-up time	<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	<0.05 mrad	<0.05 mrad	<0.05 mrad
Frequency shift over 8 hours (optional)	<+/-200 MHz	<+/-200 MHz	<+/-200 MHz	<+/-200 MHz	<+/-200 MHz	<+/-200 MHz
Frequency shift with temp (optional)	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C
Laser head consumption	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)
Max. laser head base plate temp	50°C	50°C	50°C	50°C	50°C	50°C
Operating temperature	10-40°C	10-40°C	10-40°C	10-40°C	10-40°C	10-40°C
Expected lifetime	10,000 hrs	10,000 hrs	10,000 hrs	10,000 hrs	10,000 hrs	10,000 hrs
Warranty period	10 months	10 months	10 months	10 months	10 months	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.

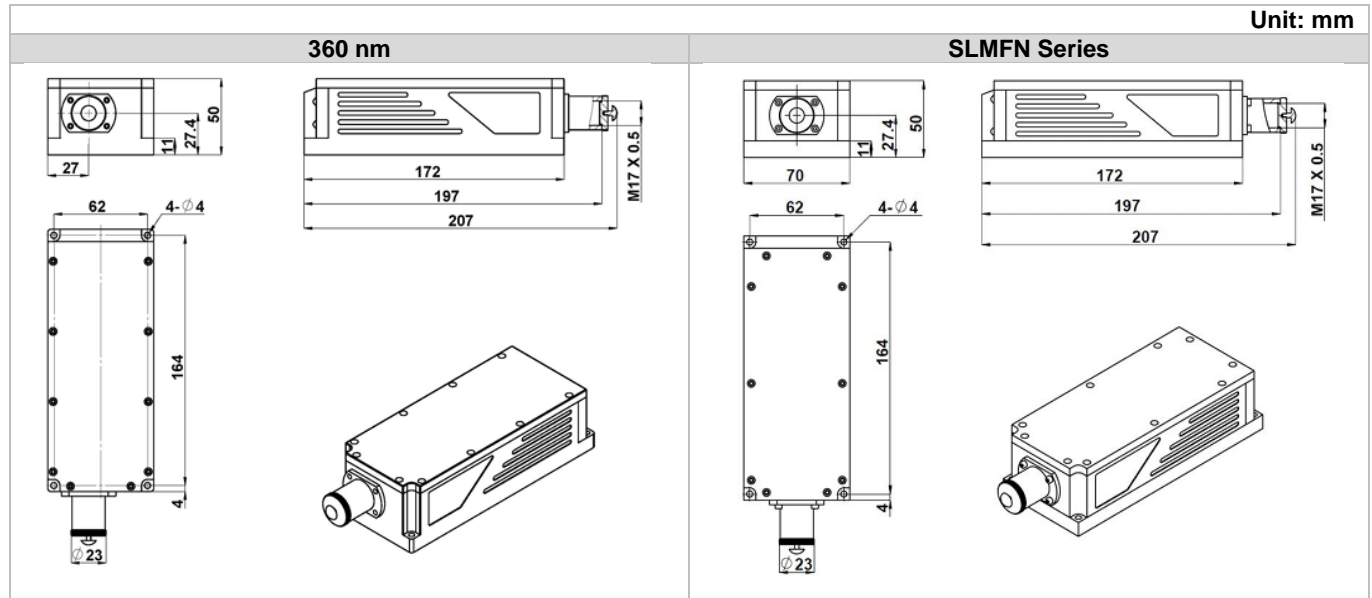
639-721 nm Specifications

Parameter	SLMFN639	SLMFN656	SLMFN660	SLMFN671	SLMFN698	SLMFN721
Wavelength	639±1 nm	656.5±1 nm	660±1 nm	671±1 nm	698±1 nm	721±1 nm
Operating mode	CW	CW	CW	CW	CW	CW
Output power	>50 mW, >100 mW, >150 mW, >200 mW, >250 mW, >300 mW, >350 mW, >400 mW, >500 mW, >600 mW	>20 mW, >30 mW, >50 mW	>10 mW, >20 mW	>50 mW, >100 mW, >200 mW, >300 mW, >400 mW, >500 mW	>30 mW, >50 mW, >80 mW, >100 mW	>30 mW, >50 mW, >80 mW, >100 mW
Power stability (rms, over 4 hours)	<3%, <2%, <1%	<5%, <3%, <2%, <1%	<5%, <3%	<5%, <3%, <2%	<5%, <3%, <2%, <1%	<5%, <3%
Transverse mode	TEM ₀₀	TEM ₀₀	TEM ₀₀	TEM ₀₀	TEM ₀₀	TEM ₀₀
Longitudinal mode	Single	Single	Single	Single	Single	Single
Spectral linewidth	<0.00001 nm	<0.00001 nm	<0.00001 nm	<0.00001 nm	<0.00001 nm	<0.00001 nm
Coherent length	>50 m	>50 m	>50 m	>50 m	>10 m	>50 m
Noise of amplitude (rms, 1Hz~20MHz)	<1%, <0.5%	<1%, <0.5%	<1%, <0.5%	<1%, <0.5%	<1%, <0.5%	<1%, <0.5%
Beam diameter at aperture (1/e ²)	<1.5 mm	<2.0 mm	<2.0 mm	<2.0 mm	<1.5 mm	<1.5 mm
Beam divergence, full angle	<1.5 mrad	<1.2 mrad	<1.2 mrad	<1.2 mrad	<1.5 mrad	<1.2 mrad
M ² factor	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
Polarization ratio	>100:1	>100:1	>100:1	>100:1	>100:1	>100:1
Warm-up time	<5 min	<5 min	<5 min	<5 min	<5 min	<5 min
Pointing stability after warm-up	6μrad/°C	<0.05 mrad	<0.05 mrad	<0.05 mrad	<0.05 mrad	<0.05 mrad
Frequency shift over 8 hours (optional)	<±200 MHz	<±200 MHz	<±200 MHz	<±200 MHz	<±200 MHz	<±200 MHz
Frequency shift with temp (optional)	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C	<200 MHz/°C
Laser head consumption	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)	15 W (typical), <25 W (40°C)
Max. laser head base plate temp	50°C	50°C	50°C	50°C	50°C	50°C
Operating temperature	10-40°C	10-40°C	10-40°C	10-40°C	10-40°C	10-40°C
Expected lifetime	10,000 hrs	10,000 hrs	10,000 hrs	10,000 hrs	10,000 hrs	10,000 hrs
Warranty period	10 months	10 months	10 months	10 months	10 months	10 months

Remarks:

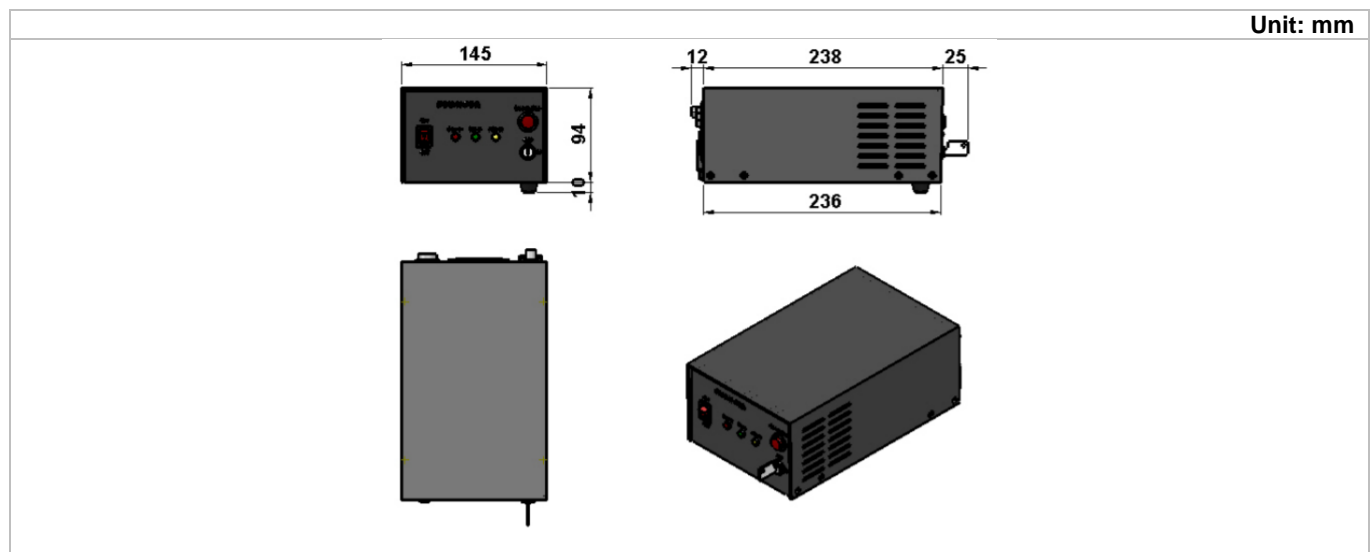
- The laser head needs to be used on a heat sink with good heat dissipation.
- Specifications of the CW laser is based on the laser performance at full power output after the specified warmup period. The stability of output power may change when output power is adjusted at a different power level.

SLMFN Series Laser Head Dimensions



Parameter	360 nm	SLMFN Series
Dimensions	197(L)x70(W) x50(H) mm ³	197(L)x70(W) x50(H) mm ³
Weight	1.5 kg	1.5 kg
Beam height from base plate	27.4 mm	27.4 mm
Beam exit (from side)	27 mm	35 mm

SLMFN Series Power Supply Dimensions



Parameter	High Power Elite Power Supply
Dimensions	275(L) x145(W) x104(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 SLMFN[1][2][3][4][5][6]						
SLMFN = Laser Model Series	[1] = Wavelength	[2] = Output Power	[3] = Power Supply	[4] = Power Stability	[5] = Noise of Amplitude	[6] = Frequency Stabilized Option
	355= 355nm 360= 360nm 457= 457nm 473= 473nm 522= 522nm 523= 523.5nm 526= 526.5nm 543= 543nm 552= 552nm 556= 556nm 561= 561nm 589= 589nm 607= 607nm 639= 639nm 656= 656.5nm 660= 660nm 671= 671nm 698= 698nm 721= 721nm	5= >5mW 10= >10mW 30= >30mW 40= >40mW 50= >50mW 80= >80mW 100= >100mW 150= >150mW 200= >200mW ... 600= >600mW	H= High Power Elite Power Supply	B= <10% A= <5% E= <3% 2= <2% D= <1%	1= <1% L= <0.5%	Blank = No FS = Yes

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