

DPSS 266nm Deep UV Laser Module



Specifications:

Model	SDL-266-XXXX	
Wavelength (nm)	266nm	
Ave Output Power	1-5mW	10~200mW
Peak power (W)	~10	~450
Average power (mW)	Average power (mW) = Single pulse energy (μJ) * Rep. rate (kHz)	
Ave power stability	<5% (over 2 hours)	
Transverse mode	~TE00	
Warm up time	<15 minutes	
Beam parameters	Elliptical (4:1), Beam spot ~2 mm	Elliptical (4:1), Beam spot ~3 mm
Dimensions of laser head (mm)	280 × 105 × 75 mm	430 × 125 × 180 mm
Power supply (110 or 220VAC)	SDL-PS-100	SDL-PS-900
Operating Temperature	10°C ~ 35°C	
Dimensions of power supply	100 × 62 × 42 mm	430 × 365 × 125 mm
Expected Operating Lifetime	>5000 hours	

DPSS 355nm UV Laser Module



Specifications:

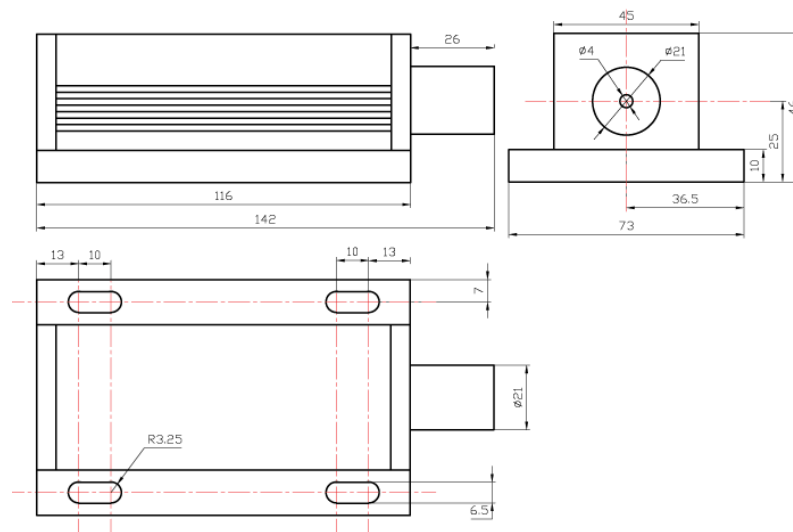
Model	SDL-355-XXXX	
Wavelength (nm)	355nm	
Ave Output Power	1-5mW	10~200mW
Peak power (W)	~10	~450
Average power (mW)	Average power (mW) = Single pulse energy (μJ) * Rep. rate (kHz)	
Ave power stability	<5% (over 2 hours)	
Transverse mode	~TE00	
Warm up time	<15 minutes	
Beam parameters	Elliptical (4:1), Beam spot ~2 mm	Elliptical (4:1), Beam spot ~3 mm
Dimensions of laser head (mm)	280 × 105 × 75 mm	430 × 125 × 180 mm
Power supply (110 or 220VAC)	SDL-PS-100	SDL-PS-900
Operating Temperature	10°C ~ 35°C	
Dimensions of power supply	100 × 62 × 42 mm	430 × 365 × 125 mm
Expected Operating Lifetime	>5000 hours	

DPSS 473nm Single Longitude Mode Blue Laser



Specifications :

Model	SDL-473-SLM-XXX
Output Power	1~ 5mW
Wavelength	473nm
Operation Mode	CW, TEM ₀₀ , Single Longitude Mode
Beam Diameter (1/e ²)	2.0mm
Power Stability	<3% (over 2 hours)
Output Noise (r.m.s, 10Hz - 20MHz)	<1%
Beam Divergence (1/e ² , Full Angle)	<1.5mrad
Coherent Length (m)	>50M
Spectra Linewidth	<0.0001nm
Point Stability	0.05mrad
Dimension of laser head	142 x 73 x 46mm
Power Supply	SDL-PS-300
Input Voltage	85~250VAC, 50/60Hz
Operating Temperature	10 °C ~35 °C
Dimensions of power supply	100 x 62 x 42mm
Warm up time	15 minutes
Expected Operating Lifetime	>10000 hours



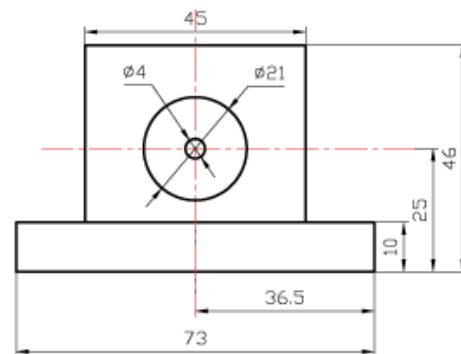
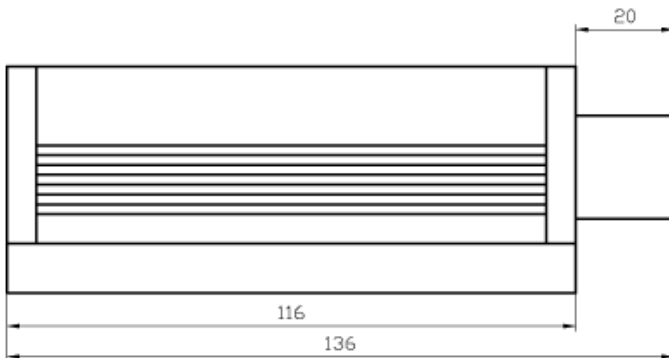
DPSS Laser

DPSS 532nm Single Longitude Mode Green Laser



Specifications :

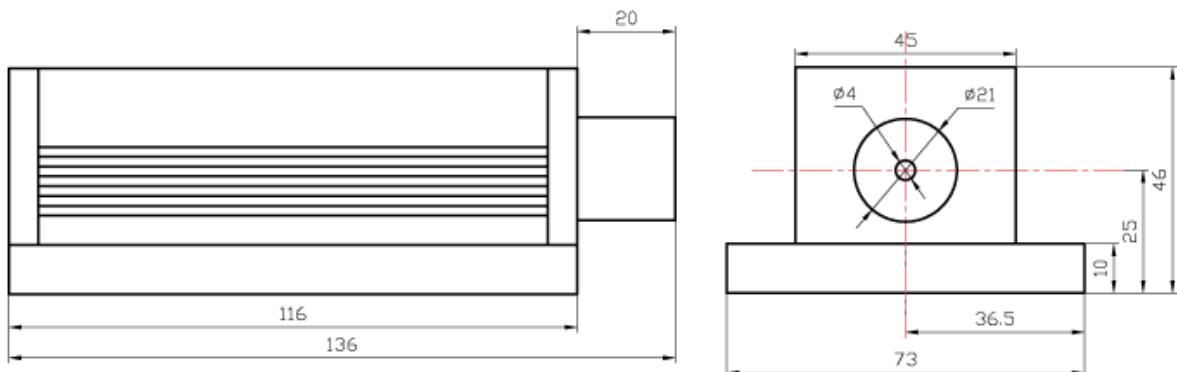
Model	SDL-532-SLM-XXX
Wavelength	532nm
Operation Mode	CW, TEM ₀₀ , Single Longitude Mode
Output Power	1-150mW
M ² factor	<1.2
Power Stability (rms, over 2 hours)	<3%
Noise of amplitude (rms)	<0.5%
Warm-up time (minutes)	<15
Beam divergence, full angle (mrad)	<1.5
Beam diameter at the aperture (mm)	~2
Beam height from base (mm)	25
Spectral linewidth (nm)	<0.0001
Polarization ratio	>100:1
Coherent length (m)	>50M
Point stability after warm-up (mrad)	<0.05
Operating temperature	15-35 °C
Expected lifetime (hours)	>10000
Dimensions of laser head (mm)	136 × 73 × 46 mm
Power Supply	SDL-PS-300
Dimensions of power supply(mm)	130 x 120 x 62 mm



DPSS 671nm Single Longitude Mode Red Laser



Specifications	SDL-671-SLM-XXX
Model	SDL-671-SLM-XXX
Wavelength	671nm
Operation Mode	CW, TEM ₀₀
Output Power	1-10mW
M ² factor	<1.2
Power Stability	<3%(rms, over 2 hours)
Output Noise (r.m.s, 10Hz - 20MHz)	< 1 %
Beam height from base(mm)	25
Polarization ratio	>100:1
Spectra Linewidth	<0.0001nm
Beam Diameter (1/e ²)	< 2 mm
Beam Divergence (1/e ² , Full Angle)	<1.5mrad
Point Stability	<0.05mrad
Warm up time	<15 minutes
Expected Lifetime (hours)	>10000 hours
Operating Temperature	10℃ ~ 35℃
Dimension of laser head	136 × 73 × 46 mm
Dimension of Power Supply	130 × 120 × 62 mm
Power Supply	SDL-PS-300



DPSS 473nm Blue Laser Module



Specifications :

Model	SDL-473-XXXXT
Output Power @ 25 °C	1 - 100mW
Wavelength	473nm
Operation Mode	CW, TEM00
Power stability (rms, over 4 hours)	<5%(over 2 hours)
Warm-up time (minutes)	<15
M2 factor	<1.2
Beam Divergence (1/e², Full Angle)	< 1.5mrad
Beam diameter at the aperture (mm)	~2 mm
Spectral linewidth (nm)	<0.1
Polarization ratio	>100:1
Noise of amplitude (rms)	~30%
Point stability after warm-up (mrad)	<0.05
Operating temperature	15°C ~ 30°C
Dimensions of Laser head (mm)	142 × 73 × 46 mm
Power supply	SDL-PS-100
Input Voltage	80-260VAC
Modulation	TTL Modulation or Analog Modulation
Dimensions of power supply	100 x 62 x 42mm
Expected Operating Lifetime	>5000 hours

DPSS 473nm Blue Laser Module

Specifications :

Model	SDL-473-XXXXT
Output Power @ 25 °C	150 - 500mW
Wavelength	473nm
Operation Mode	CW, TEM00
Power stability	<5%(rms, over 2 hours)
Warm-up time (minutes)	<15
M2 factor	<1.5
Beam divergence, full angle (mrad)	<1.5
Beam diameter at the aperture (mm)	<3
Spectral linewidth (nm)	<0.1
Polarization ratio	>100:1
Noise of amplitude (rms)	~30%
Point stability after warm-up (mrad)	<0.05
Operating temperature	15°C ~ 30°C
Dimensions of Laser head (mm)	156 × 77 × 60 mm
Power supply	SDL-PS-500
Dimensions of power supply (mm)	238 × 150 × 95mm
Modulation	TTL Modulation or Analog Modulation
Expected Operating Lifetime	>5000 hours

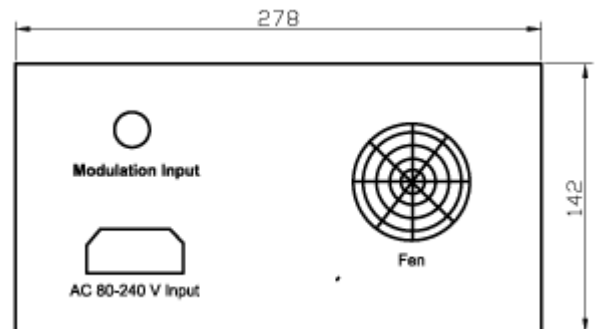
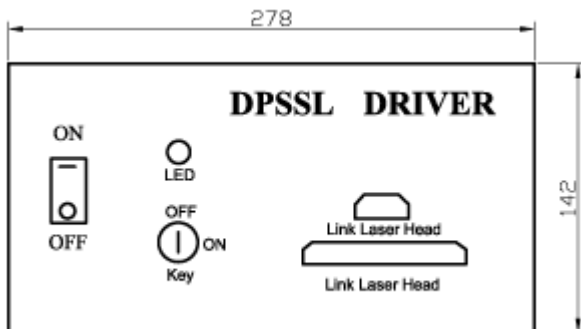
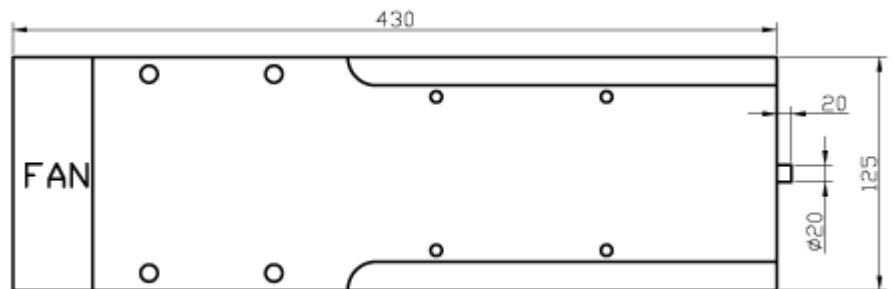
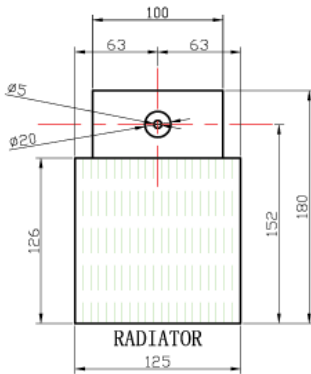
DPSS Laser

DPSS 473nm Blue Laser Module



Specifications :

Model	SDL-473-XXXT
Output Power @ 25 °C	600 - 1000mW
Wavelength	473nm
Operation Mode	CW, TEM00
Power stability	<5%(rms, over 2 hours)
Warm-up time (minutes)	<15 minutes
M2 factor	<2.0
Beam Divergence (1/e ² , Full Angle)	< 2.5mrad
Beam diameter at the aperture (mm)	<3.0
Spectral line width (nm)	<0.1
Polarization ratio	>100:1
Noise of amplitude (rms)	~30%
Point stability after warm-up (mrad)	<0.05
Dimensions of Laser head (mm)	430 × 125 × 180 mm
Operating Temperature	15 °C ~ 30 °C
Dimensions of power supply	325 × 278 × 142mm
Power supply	SDL-PS-800
Expected Operating Lifetime	>5000 hours



DPSS Laser

DPSS 532nm Green Lasers (without TEC)



Specifications :

Model	SDL-532-005F	SDL-532-010F	SDL-532-020F	SDL-532-030F
Output Power @ 25 °C	>5mW	>10mW	>20mW	>30mW
Operating Current	<450mA	<500mA	<550mA	<600mA
Operation Mode	CW @ 532nm, TEM ₀₀			
Linewidth	<0.1nm			
Beam Diameter (1/e ²)	<1.2mm			
Beam Divergence	<1.2mrad (1/e ² , Full Angle)			
Power Stability	<±10% (RMS, over 2 hours)			
Point Stability	0.05mrad			
Warm up time	<15 minutes			
Dimension	102 x 39 x 39 mm			
Power Supply	SDL-PS-400			
Input Voltage	85~250VAC, 50/60Hz			
Modulation	TTL, <5kHz (0V=Laser Off and 5VDC=Laser On)			
Operating Temperature	10 °C ~ 30 °C			
Dimensions of power supply	100 x 50 x 30mm			
Expected Operating Lifetime	>5000 hours			
Beam Roundness	>95%			

DPSS 532nm Green Lasers

Specifications :

Model	SDL-532-XXXT
Output Power @ 25 °C	50-200mW
Wavelength	CW 532nm
Operation Mode	TEM ₀₀
Linewidth	<0.1nm
Linear Polarization	>4:1
Beam Diameter (1/e ²)	<1.5mm
Beam Divergence (1/e ² , Full Angle)	<1.5mrad
Power Stability	<5% (RMS, over 2 hours)
Point Stability	0.05mrad
Warm up time	<15 minutes
Dimension of laser head	102 x 39 x 39mm
Power Supply	SDL-PS-200
Input Voltage	85~250VAC, 50/60Hz
Beam Roundness	>95%
Modulation	TTL Modulation or analog Modulation
Operating Temperature	10 °C ~ 30 °C
Dimensions of power supply	174 x 75 x 40mm

DPSS 532nm Green Lasers



Specifications :

Model	SDL-532-200T	SDL-532-300T
Output Power	>220mW	>320mW
Wavelength	CW @ 532nm	
Operation Mode	TEM ₀₀	
Linewidth	<0.1 nm	
Linear Polarization	>4:1	
Beam Diameter (1/e ²)	<2.0 mm	
Beam Divergence (1/e ² , Full Angle)	<1.5 mrad	
Power Stability	<5% (RMS, over 2 hours)	
Point Stability	0.05mrad	
Warm up time	<15 minutes	
Dimension	120 x 60 x 52mm	
Power Supply	SDL-PS-200	
Input Voltage	85~250VAC, 50/60Hz	
Beam Roundness	>95%	
Modulation	TTL Modulation or analog Modulation	
Operating Temperature	10 °C ~ 30 °C	
Dimensions of power supply	174 x 75 x 40mm	
Expected Operating Lifetime	>5000 hours	

DPSS 532nm Green Lasers

Specifications :

Model	SDL-532-XXXXT
Output Power @ 25 °C	400-600mW
Wavelength	532nm
Operation Mode	CW TEM ₀₀
Power stability	<5%(rms, over 2 hours)
M2 factors	<1.2
Beam diameter at the aperture (1/e ²) (mm)	<2.0 mm
Beam divergence, full angle (mrad)	<1.5 mrad
Operating temperature	10-35 °C
Point stability, after warm-up (mrad)	<0.05
Warm-up time (minutes)	<15
Dimensions of laser head (mm)	156 × 77 × 60 mm
Power supply	SDL-PS-100
Expected lifetime (hours)	>5000
Dimensions of power supply	100 x 62 x 42mm
Dimensions of transformer	119 x 60 x 38mm

DPSS Laser

DPSS 532nm Green Lasers



Specifications :

Model	SDL-532-XXXT
Output Power @ 25 °C	800-1000mW
Wavelength	532nm
Operation Mode	CW TEM ₀₀
Power stability	<5%(rms, over 2 hours)
Warm-up time (minutes)	<15
M2 factor	<2.0
Beam divergence, full angle (mrad)	<2.0 mrad
Beam diameter at the aperture (mm)	<2.5 mm
Spectral linewidth (nm)	<0.1 nm
Point stability after warm-up (mrad)	<0.05
Operating temperature	10-35°C
Expected lifetime (hours)	>5000
Dimensions of Laser head (mm)	156 × 77 × 60 mm
Power Supply	SDL-PS-500
Dimensions of power supply (mm)	238 × 150 × 95mm
Modulation	TTL or Analog Modulation

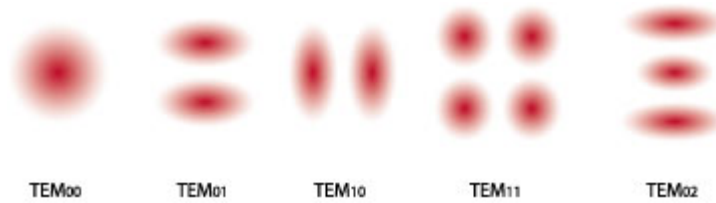
DPSS 532nm Green Lasers

Specifications :

Model	SDL-532-XXXT
Output Power	2-10W
Wavelength	532nm
Operation Mode	CW TEM ₀₀
Power stability	<5%(rms, over 2 hours)
Warm-up time (minutes)	<15 minutes
M2 factor	<2.0
Beam divergence, full angle (mrad)	<2.0 mrad
Beam diameter at the aperture (mm)	<4.0 mm
Spectral linewidth (nm)	<0.1 nm
Point stability after warm-up (mrad)	<0.05 mrad
Operating Temperature	10-35 °C
Dimensions of Laser head (mm)	430 × 125 × 180
Dimensions of power supply (mm)	325 × 278 × 142
Power Supply	SDL-PS-800
Expected lifetime	>5000 hours

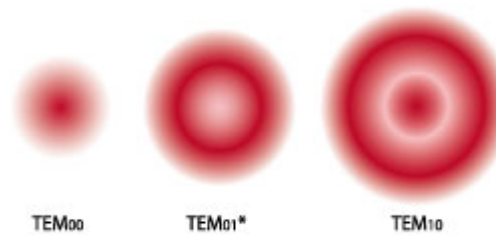
Laser Modes

The fundamental TEM_{00} mode is only one of many transverse modes that satisfy the round-trip propagation criteria. The figure below shows examples of the primary lower-order Hermite-Gaussian (rectangular) solutions to the propagation equation.



Low-order Hermite-gaussian resonator modes

Note that the subscripts n and m in the Eigenmode TEM_{nm} are correlated to the number of nodes in the x and y directions. In each case, adjacent lobes of the mode are 180° out of phase. The propagation equation can also be written in cylindrical form in terms of radius (r) and angle (ϕ). The eigenmodes (E_{rf}) for this equation are a series of axially symmetric modes, which, for stable resonators, are closely approximated by Laguerre-Gaussian functions, denoted by TEM_{rf} . For the lowest order mode, TEM_{00} , the Hermite-Gaussian and Laguerre-Gaussian functions are identical, but for higher order modes, they differ significantly, as shown in the figure below.



Low-order axisymmetric resonator modes

The mode, TEM_{01}^* , also known as the "bagel" or "doughnut" mode, is considered to be a superposition of the Hermite-Gaussian TEM_{10} and TEM_{01} modes, locked in phase quadrature. In real-world lasers, the Hermite-Gaussian modes predominate since strain, slight misalignment, or contamination on the optics tends to drive the system toward rectangular coordinates. Nonetheless, the Laguerre-Gaussian TEM_{10} "target" or "bulls-eye" mode is clearly observed in well-aligned gas-ion and helium neon lasers with the appropriate limiting apertures.

Longitudinal Modes

The output frequencies of a laser are determined by several factors. First, the gross wavelength is determined by the energy uncertainty (broadening) of the laser transition, which determines the wavelength and overall linewidth. Nonetheless, at any given instant, only a relatively few frequencies within this overall envelope are allowed to oscillate. These "longitudinal modes" result from the boundary conditions that, in a conventional two-mirror lasers, the amplitude of the wave must be zero at the mirror surface (i.e., that the oscillating wave is a standing wave).