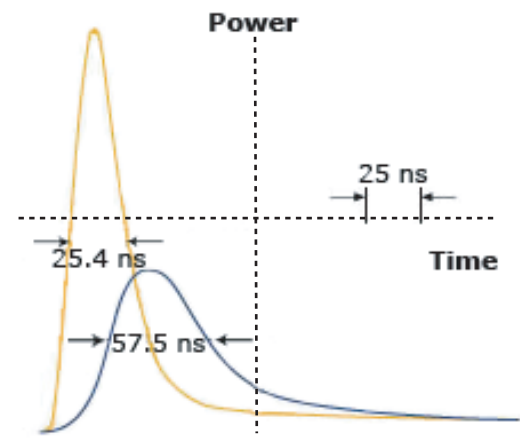


Series 3500 UV Laser

High Repetition Rate, Efficient, Quasi-CW

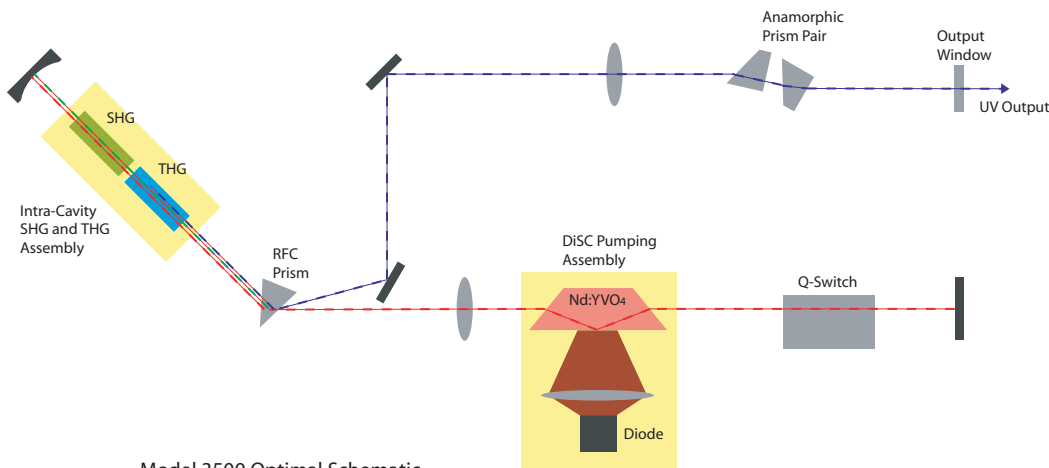
FEATURES

- Up to 3W Power at 355 nm
- Rugged, Low Maintenance Design
- Excellent Beam Quality $M^2 < 1.2$
- Q-Switched Repetition Rate
- Stability Better Than 5% Over 8 Hours
- Single Shot to > 100 kHz (Quasi-CW)
- Low Cost of Ownership



Typical Pulse Width of UV Output at 30 kHz and 100 kHz

The Series 3500 DPSS laser (US Patent #6,002,695) is the most efficient, high power, quasi-CW DPSS UV laser commercially available. Using only a single 20W diode bar, the Series 3500 has demonstrated powers in excess of 3.0 Watts at 355 nm. This high efficiency conversion means that the laser can be operated at the normal specification, with minimum stress to the optical components and with a reduced diode current to extend the operating life. Minimizing the diode power required to generate the 355nm third harmonic output from the laser also minimizes the thermal effects in the gain medium (Nd:YVO₄), which results in the lowest possible distortion to the beam. Both the second and third harmonics are generated intra-cavity, thus reducing the need for tight focusing into the non-linear crystals. The result is a stable, high power UV laser with an M^2 specification of < 1.2 , a near perfect TEM₀₀ mode.



Model 3500 Optical Schematic

APPLICATIONS

- ITO Removal
- Spectroscopy
- Laser Marking
- Micromachining
- Wafer Inspection
- Stereolithography
- Direct Write/ Repair
- Molecular Uncaging
- Bio-Particle Detection

SPECIFICATIONS

<u>Model</u>	<u>Avg. Power</u>	<u>Warranted Avg. Power</u>	<u>Pulse Length</u>	<u>Repetition Rate</u>	<u>Pulse Energy</u>
3501-100	> 100 mW	> 100 mW	< 65 nsec	100 kHz	1 μ J
3505-100	> 500 mW	> 350 mW	< 65 nsec	100 kHz	5 μ J
3510-30	> 1.0 W	> 0.7 W	< 30 nsec	30 kHz	33 μ J
3510-50	> 1.0W	> 0.7 W	< 40 nsec	50 kHz	20 μ J
3510-100	> 1.0 W	> 0.7 W	< 70 nsec	100 kHz	10 μ J

Other models can be specified from 50 mW to 3 W, with any customer defined rep. rate from 20 kHz to 150 kHz.

COMMON SPECIFICATIONS

PERFORMANCE

Wavelength	354.7 nm
Mode (M ²) Specification	TEM ₀₀ (M ² < 1.2)
Beam Diameter (1/e ²)	1.5 mm
Pulse to Pulse Stability	< 10%
Power Stability (8 hr. drift at const. temp)	< 5%
Beam pointing stability (at const. temp.)	< 50 μ rad
Polarization (Linear, Vertical)	> 100:1
Beam Divergence (full angle)	< 0.5 mrad

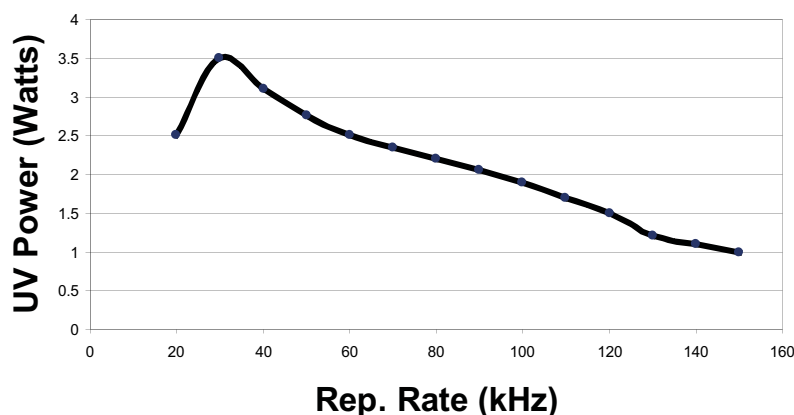
ELECTRICAL

Input Voltage	90- 240 VAC
Power Consumption (max.)	500 W
Ambient Operating Temp. (non- condensing)	10 - 30°C

PHYSICAL

Laser Head Dim. (LWH)	50.8 x 19.1 x 16.5 cm
Laser Head Weight	13.6 Kg
Laser Power Supply Dim. (LWH)	31 x 34.3 x 13.7 cm
Laser Power Supply Weight	5 Kg
Cooling Systems Dim. (LWH)	28.7 x 22.4 x 38.9 cm
Cooling Systems Weight	9.1 Kg

3500 - Rep. Rate vs Power



SYSTEM REQUIREMENTS

Models can be specified from 50 mW to 3 Watts, with any customer defined rep. rate from 20kHz to 150 kHz. All models consist of a head, compact power supply (3500 PS) and closed loop cooling system. The system requires a standard electrical outlet (100 to 240 VAC, 50/60 Hz) capable of supplying 600W. The laser head can be mounted in any orientation using the standard mounting feet. Power supply and cooling system should be located in a ventilated environment. The 3500 Series complies with all Laser safety and CE electrical standards. The closed loop cooling system requires approximately three liters of distilled water at install.

Please contact DPSS Lasers Inc. to discuss your specific needs and how we can best serve you.