DL SERIES

HIGH PERFORMANCE DYE LASERS

The versatile DL Series are the dye laser companions for the reliable UV Series pulsed nitrogen lasers. The UV/DL combination is the most energetic nitrogen/dye laser system commercially available. The broad range of accessories allow these systems to be tailored to specific budgets an applications.

FEATURES

- ***Broad Tuning Range*** - Innovative optical system also permits pumping by excimer (XeCl), Nd:YAG (harmonic) and Copper Vapor Lasers.
- ***Narrow Bandwidth*** - patented beam expander for near diffraction limited, narrow spectral bandwidth beam.
- ***Oscillator/Amplifier Design*** - delivers superior efficiency and excellent beam quality.
- ***Modular Design*** - provides ease of operation and accommodates addition of accessories.

MODEL DESCRIPTION

The DL Series dye lasers are a modified Hansch cavity configuration incorporating a patented (U.S. Patent No. 4,127,828) achromatic, multiple prism beam expander. This enhances the conversion efficiency and delivers narrow linewidth over a broad running range. The cavity is formed by the front mirror, diffraction grating and prism beam expander. This design offers greater optical integrity since the tilt is no longer critical as the grating is rotated to change wavelength.

A grating sine drive provides linear wavelength readout on a counter with accuracy to 0.2 nm across the entire tuning range. The nitrogen pumped dye laser has a range of 360-950 nm and may be frequency doubled to achieve 205 to 330 nm.

The modular design adds flexibility as applications change or accessories are added.

DL10

The DL10 dye laser consists of the oscillator cavity with grating, front mirror and beam focusing lens. The grating sine drive and wavelength readout are also included. Provision is made for the addition of an interactive etalon, amplifier dye cell with N_2 beamsplitters, frequency doubler, flowing dye cell and grating drive motor. It does not include the DL210 beam expander resulting in a line width of 3.0 nm.

DL12
DL10 plus beam expander with resulting linewidth of 0.01 nm.

DL14
DL12 with the addition of a dye amplifier assembly (including beamsplitter). Preferred configuration for narrow band and frequency doubled applications.

APPLICATIONS

The DL Series dye lasers are designed to accept horizontal beam dimensions of 6 mm x 25-32 mm with a 10 ns pulsewidth. Although the shortened cavity will permit the use of a shorter pulse nitrogen laser, the 10 ns pulse offers greater pumping efficiency (please request application note 113 for complete details).

Another pump source for high pulse energies is the Nd:YAG laser-second, third, and fourth harmonics. Some modification of the dye laser input optics is needed to accept the YAG pump beam geometry.

The DL14 may be tailored to accept pump beams from UV excimer lasers (XeCl). Special optics may be required to accept input beam dimensions other than those listed above.

ACCESSORIES

DL251/261 Dye Cells and DL260 Flowing Dye System - The DL251 dye cuvette is the standard for oscillator/amplifier use in any DL Series dye laser at repetition rates to 20 pps. At higher repetition rates, the DL261 flowing dye cell is recommended for optimum performance. The DL260 system includes the DL261 cell plus a Teflon pump and 100 cc capacity glass reservoir. Pump speed can be adjusted for optimum flow rate.

L-SCAN/1/DL Digital Drive Unit - For scanning one dye laser only. Includes stepper motor and clutch assembly, optional IEEE or RS-232 interface.

L-SCAN/2/DL Digital Drive Unit - For synchronously scanning one dye laser and frequency doubler. Includes stepper motor and clutch assembly. Optional IEEE or RS-232 interface.

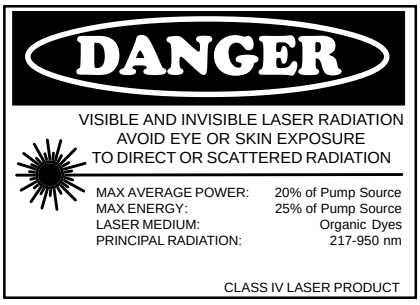
L-2X/DL Frequency Doubler - Available with KDP/1 or KDP/2 crystal. Optional BBO crystals available.

DL218 Conversion kit to Nd:YAG optics

SPECIFICATIONS

	DL10*	DL12*	DL14*
Spectral Range (nm)	360-950	360-950	360-950
Spectral Broadwidth (nm, @ 580 nm)	0.3	0.01	0.01
Wavelength Accuracy (nm)	0.3	0.2	0.2
Wavelength Stability (nm/°C @ 580 nm)	0.01	0.01	0.01
Pulsewidth (ns)	5-7	5-7	6-8
Conversion Efficiency (% @ 580 nm)	6	6	14
Energy Stability	±10	±10	±5
Beam Dimensions (mm, at exit)	03.-0.5	0.3-0.5	0.3-0.5
Beam Divergence (mrad, 1/2 angle)	0.5	0.5	0.5
Beam Polarization	Various	Horizontal	Horizontal
Polarization Ratio (@ 580 nm)	20:1	20:1	20:1
Beam Height (in)	6	6	6
Dimensions (LxWxH) (in/cm)	19.3x29.5x9.8/49x75x25		

* When Pumped with UV Series Nitrogen Lasers
Specifications subject to change without notice.



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