

Double Dye Laser

General

The Double Dye Laser combines two completely independent PrecisionScan lasers into a single housing. Each of the lasers can be pumped by different pump laser pulses and set to operate at different wavelengths. Like the PrecisionScan the Double Dye Laser is available with single or double gratings as well as a grating lift. A frequency

conversion stage for each laser can be integrated into the system.

However, the dimensions of the system fit to common door openings. Both lasers of the double dye system are accessed and operated from one side.

Linewidth Specifications

Dispersion Option	Tuning Range	Linewidth		Efficiency
1800 lines / mm, 60 mm	400 nm .. 920 nm	3.6 pm	0.1 cm ⁻¹ @ 625 nm	30 % ¹⁾
1800 lines / mm, 90 mm	400 nm .. 920 nm	2.4 pm	0.06 cm ⁻¹ @ 625 nm	30 % ¹⁾
2400 lines / mm, 60 mm	370 nm .. 760 nm	2.7 pm	0.08 cm ⁻¹ @ 570 nm	30 % ²⁾
2400 lines / mm, 90 mm	370 nm .. 760 nm	1.8 pm	0.06 cm ⁻¹ @ 570 nm	30 % ²⁾
3000 lines / mm, 60 mm	370 nm .. 620 nm	2.0 pm	0.06 cm ⁻¹ @ 570 nm	30 % ²⁾
3000 lines / mm, 90 mm	370 nm .. 620 nm	1.4 pm	0.05 cm ⁻¹ @ 570 nm	30 % ²⁾
Dual 1800 lines / mm	410 nm .. 900 nm	1.7 pm ³⁾	0.05 cm ⁻¹ @ 625 nm	27 % ¹⁾
Dual 2400 lines / mm	370 nm .. 710 nm	1.2 pm ³⁾	0.04 cm ⁻¹ @ 570 nm	27 % ²⁾
Dual 3000 lines / mm	370 nm .. 580 nm	1.0 pm ³⁾	0.03 cm ⁻¹ @ 570 nm	27 % ²⁾

¹⁾ at 625 nm (peak DCM) pumped at 532 nm

²⁾ at 570 nm (peak Rhodamine 6G) pumped at 532 nm

³⁾ exact linewidth depends weakly on wavelength; value given for 450 nm

Wavelength and Beam Characteristics

Absolute Wavelength Accuracy	< 20 pm	(prism models: 0.5 nm)
Wavelength Resetability	< 4 pm	(prism models: 0.05 nm)
Wavelength Stability	< 2 pm / °C	(prism models: 10 pm / °C)
Divergence (typical)	0.5 mrad	
Polarization	> 98 %	(vertical)
ASE	< 0.5 %	
Pump Energies (grating models)	50 .. 650 mJ @ 532 nm (800 mJ ⁴⁾)	
	50 .. 400 mJ @ 355 nm (500 mJ ⁴⁾)	

⁴⁾ with enhanced beam profile (capillary) dye cell

Requirements

Voltage	110 .. 230 V, single phase, 50 Hz / 60 Hz
Computer Control	XP / Vista / Windows 7 / Windows 8 / Windows 10, 2x USB port

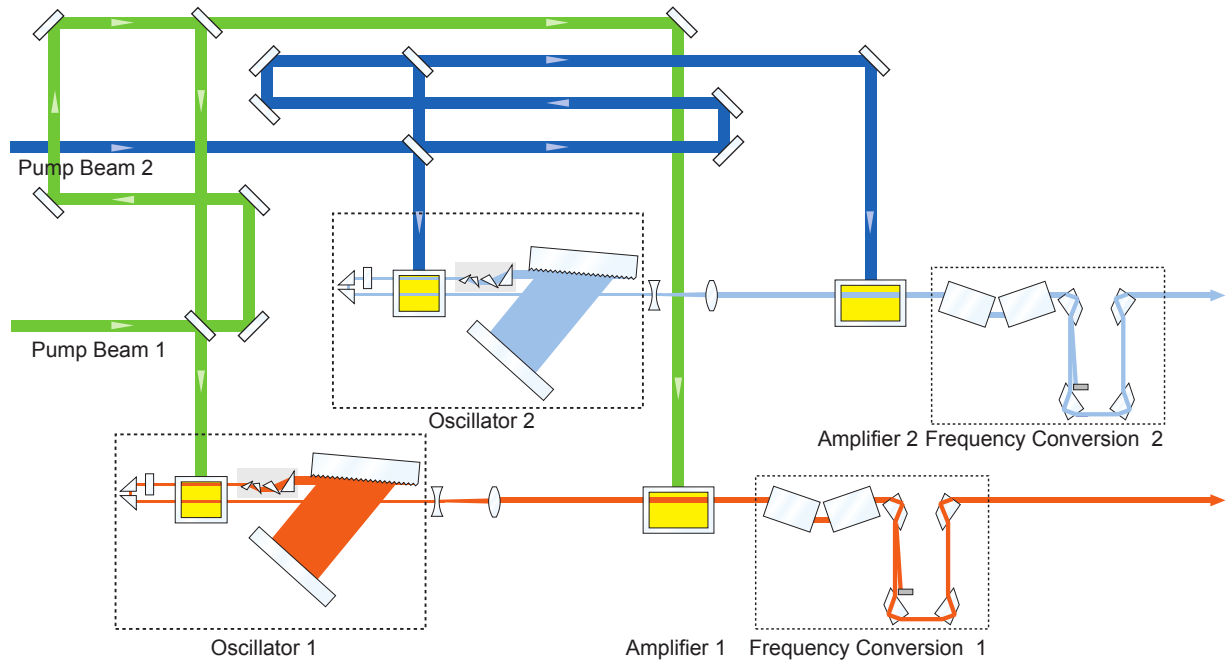
Options

- Automatic exchange of gratings
- Internal autotracking frequency doubling
- Internal open loop frequency doubling / mixing units (with 2nd main amplifier: external housing)
- Piezo wavelength control
- Dynamic mode option
- Double bandwidth option

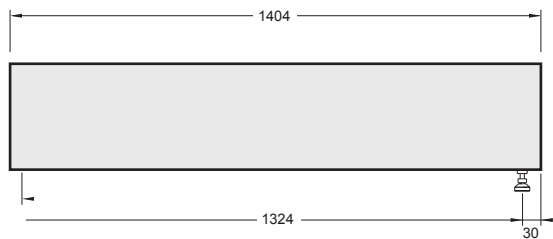
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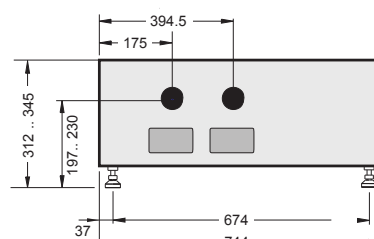
Optical Layout



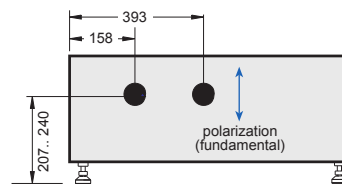
Dimensions



Double Dye (side view)



Double Dye (pump laser input end)



Double Dye (dye laser output end)

All Dimensions in mm
Specifications are subject to change without notice



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AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION
CLASS 4 LASER PRODUCT

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