

Grating Lift Option

PRINCIPLES

The Grating Lift option adds an additional grazing-incidence grating to a pulsed dye laser resonator. By using two different line densities on the gratings, the laser's tuning range is extended and gaps in the tuning range caused by Wood's anomaly are closed. Linewidth and efficiencies are optimized for specific wavelength regions.

The Grating Lift is compatible with long (90 mm) and short (60 mm) gratings. It fits into standard pulsed dye laser resonators (Cobra-Stretch, PrecisionScan) and high repetition rate resonators (Credo) as well.

The precision mechanics result in identical specifications for absolute wavelength accuracy, stability and resetability to the standard resonator.

OPERATION

The two grazing incidence gratings are mounted on top of each other on a motor driven sliding stage. The motor can slide one of the two gratings into the resonator for operation. The new configuration is immediately operational. The laser control program detects the new grating, and matching calibration parameters are used automatically.

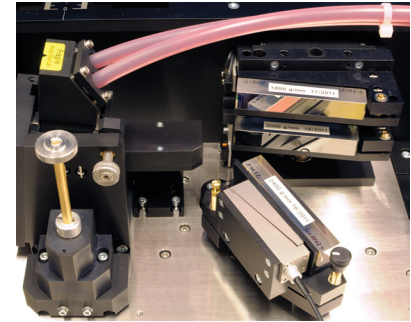
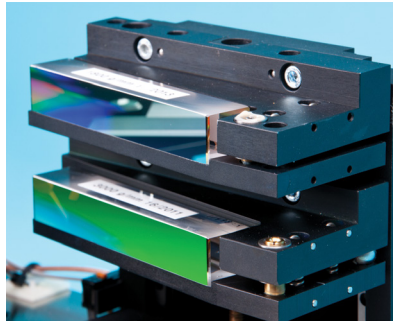
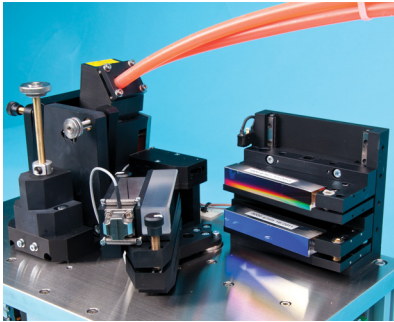
The Grating Lift motor can be controlled by the control software as well as by the handheld remote.

GENERAL CHARACTERISTICS

Absolute Wavelength Accuracy	<20 pm
Wavelength Resetability	<4 pm
Wavelength Stability	<2 pm/°C

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GRATING LIFT



GRATING SELECTION

Any two grazing incidence gratings with equal length may be combined on the Grating Lift.

Grazing Incidence Grating	Littrow Grating	Tuning Range	Linewidth	
1800 l/mm, 60 mm	Mirror	400 nm–920 nm	3.6 pm	0.10 cm ⁻¹ @ 625 nm
1800 l/mm, 90 mm	Mirror	400 nm–920 nm	2.4 pm	0.06 cm ⁻¹ @ 625 nm
1800 l/mm, 90 mm	1800 l/mm, 90 mm	410 nm–900 nm	1.7 pm	0.05 cm ⁻¹ @ 625 nm
1800 l/mm, 90 mm	2400 l/mm, 90 mm	410 nm–810 nm	1.3 pm	0.04 cm ⁻¹ @ 625 nm
1800 l/mm, 90 mm	3000 l/mm, 90 mm	410 nm–660 nm	0.9 pm	0.02 cm ⁻¹ @ 625 nm
2400 l/mm, 60 mm	Mirror	370 nm–760 nm	2.7 pm	0.08 cm ⁻¹ @ 570 nm
2400 l/mm, 90 mm	Mirror	370 nm–760 nm	1.8 pm	0.06 cm ⁻¹ @ 570 nm
2400 l/mm, 90 mm	1800 l/mm, 90 mm	370 nm–740 nm	1.3 pm	0.04 cm ⁻¹ @ 570 nm
2400 l/mm, 90 mm	2400 l/mm, 90 mm	370 nm–710 nm	1.2 pm	0.04 cm ⁻¹ @ 570 nm
2400 l/mm, 90 mm	3000 l/mm, 90 mm	370 nm–640 nm	1.0 pm	0.03 cm ⁻¹ @ 570 nm
3000 l/mm, 60 mm	Mirror	370 nm–620 nm	2.0 pm	0.06 cm ⁻¹ @ 570 nm
3000 l/mm, 90 mm	Mirror	370 nm–620 nm	1.4 pm	0.05 cm ⁻¹ @ 570 nm
3000 l/mm, 90 mm	1800 l/mm, 90 mm	370 nm–610 nm	1.3 pm	0.04 cm ⁻¹ @ 570 nm
3000 l/mm, 90 mm	2400 l/mm, 90 mm	370 nm–610 nm	1.1 pm	0.03 cm ⁻¹ @ 570 nm
3000 l/mm, 90 mm	3000 l/mm, 90 mm	370 nm–580 nm	1.0 pm	0.03 cm ⁻¹ @ 570 nm

Sirah

Manufactured by Sirah

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