Matisse DX

The Matisse series is a family of state-of-the-art tunable ring lasers. It incorporates technologies like wavelength scan by a long travel piezo, frequency stabilization by an intra-cavity electro-optical modulator (EOM), high performance digital signal processing (DSP) technology, or optical diode effect by non-planar resonator configuration. The Matisse can be configured for either titanium:sapphire (Ti:Sa) or dye as laser gain medium.

Pound-Drever-Hall Stabilized Dye Ring Laser

The Matisse-DX is the ultra-narrow linewidth model of the Matisse laser series. Based on the Matisse-DS, further linewidth narrowing down to 100 kHz is achieved by introduction of an electro-optical modulator into the cavity of the dye ring laser. The unique long travel piezo mechanics allows single frequency scanning over 60 GHz without mode hopping. The Matisse-DX can be converted into the Matisse-TX ring Titanium:Sapphire laser.

Tuning Range

Optics Set	Millennia Pro 15s	Millennia Pro 10s
MOS-4	550 .. 660 nm	550 .. 660 nm
MOS-5	650 .. 780 nm	650 .. 780 nm

Power Output

Pump Laser	Specified Power[1)]
Millennia Pro 10s	1400 mW
Millennia Pro 15s	2200 mW

1) at maximum of Rhodamine 6G

General Characteristics

Spatial Mode	TEMoo
Beam Diameter [2)]	1.2 .. 1.4 mm (typical)
Beam Divergence	< 2 mrad
Linewidth [3)]	< 100 kHz rms / 100 msec
Amplitude Noise	3.5% rms
Beam Polarization	horizontal

2) at Matisse output port

3) relative to built in reference cell

Requirements

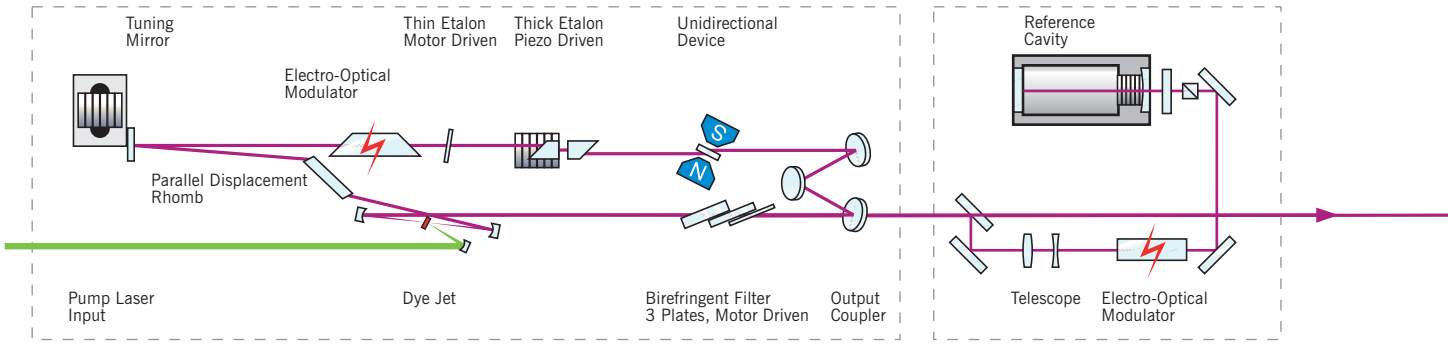
Pump Laser [4)]	Millennia Pro Series
Pump Laser Polarization	horizontal
Pump Laser Power	10 .. 20 Watt
Ambient Conditions	constant temperature in the 20 .. 25°C range,
	non condensing humidity conditions
Cooling	required for circulator (~100 Watt)
Laboratory	vibrational isolated optical table,
	dust-free air (flow box)
Electrical	100 .. 250 Volt, max. 2.5 Amps
Computer Control	Windows 2000 or Windows XP system,
	USB port

4) please contact Sirah for compatibility with other pump lasers

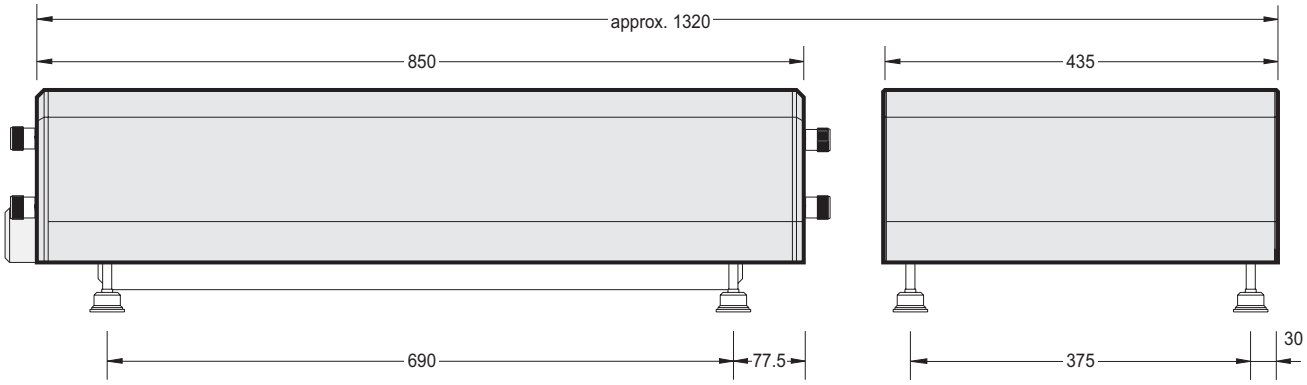
Sirah

Matisse DX

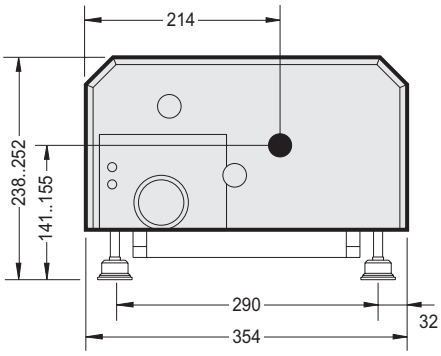
Optical Layout



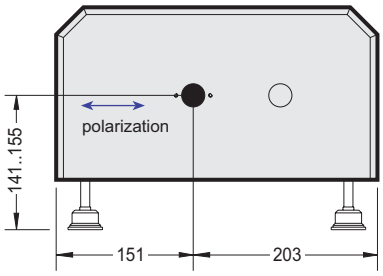
Dimensions



Matisse DX (side view)



Matisse DX (pump laser input end)



Matisse DX (Ti:Sa output end)

All Dimensions in mm
Specifications are subject to change without notice

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