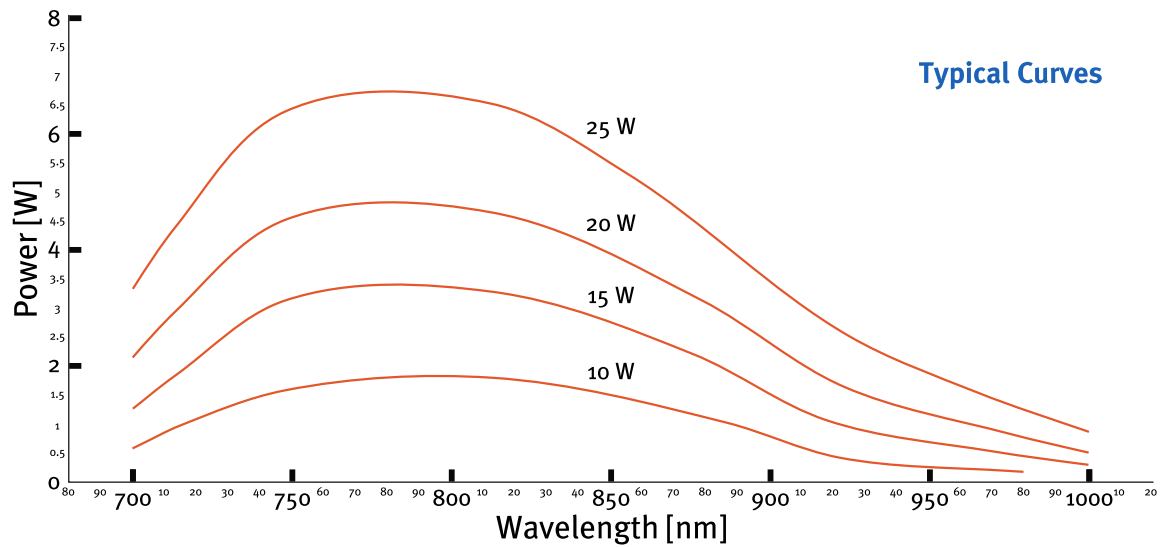


# Matisse CX

## Pound-Drever-Hall Stabilized Titanium:Sapphire Ring Laser with Intra-Cavity Modulator

- Sealed, fully automated design with purge ports for trouble free operation across atmospheric absorptions
- Hands free operation with ELSA (Electronic Laser Self Alignment)
- Wide tuning range (300 nm) with broadband option
- Compact design with pump laser included: only 720 mm length on laser table
- Extended scans over nanometers (requires wave-meter, optional fiber launch integrated in Matisse)
- Long term stable special developed mounts (no tweaking)
- Field serviceable: optics change, maintenance, upgrades
- Special optics for enlarged tuning range (668-1030 nm)
- High power output up to 7.0 W
- Extension modules available from 210-4200 nm
- Narrow linewidth: Best spectral resolution commercially available

## Tuning Range



| Specified Power                        | Millennia eV<br>25W | Millennia eV<br>20W | Millennia eV<br>15W | Millennia eV<br>10W |
|--|---------------------|---------------------|---------------------|---------------------|
| Broadband 700-1000 nm <sup>1) 2)</sup> | 5.3 W               | 4.0 W               | 3.0 W               | 1.5 W               |
| Three Optic Sets <sup>1) 2)</sup>      | 6.2 W               | 4.7 W               | 3.3 W               | 1.7 W               |

## General Characteristics

|                           |   |
|---------------------------|---|
| Beam Radius <sup>3)</sup> | 0.4-0.5 mm (typical)                                |
| Beam Divergence           | < 1.2 mrad (half angle)                             |
| Linewidth <sup>4)</sup>   | < 30 kHz rms / 100 msec, < 20 kHz rms / 100 µsec    |
| Amplitude Noise           | < 0.1 % rms (above pump noise, added in quadrature) |
| Scan Range <sup>1)</sup>  | > 50 GHz  |
| Beam Polarization         | horizontal  |

## Requirements

|                          |  |
|--------------------------|--|
| Pump Laser <sup>5)</sup> | Millennia Series   |
| Ambient Conditions       | constant temperature in the 20-30 °C range, 80% max. rel. humidity, non condensing |
| Cooling                  | required for crystal (ca. 30 Watt)   |
| Laboratory               | vibrational isolated optical table, dust-free air (flow box)                       |
| Computer Control         | Windows XP / Vista / 7 / 8 / 10, USB-Port  |

<sup>1)</sup> at approximately 780 nm

<sup>2)</sup> non-standard tuning ranges upon request

<sup>3)</sup> at Matisse output port

<sup>4)</sup> relative to built-in reference cavity

<sup>5)</sup> please contact Sirah for compatibility with other pump lasers

# Matisse CX

## Matisse CX + Ref Setup



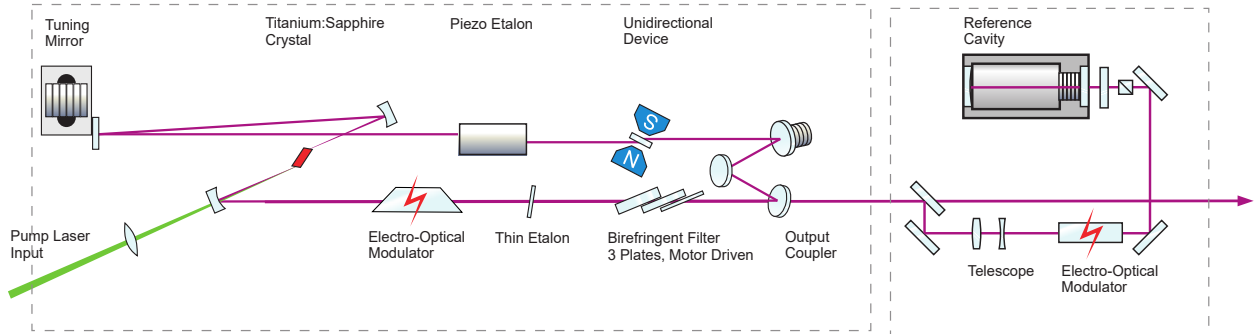
## ELSA



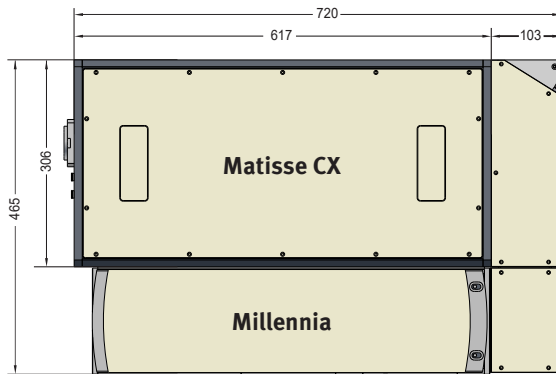
## Matisse CX



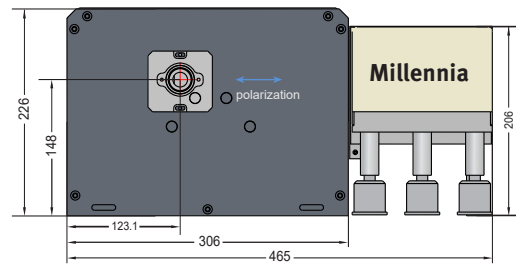
## Optical Layout



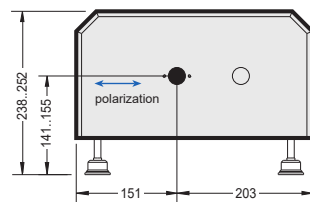
## Dimensions



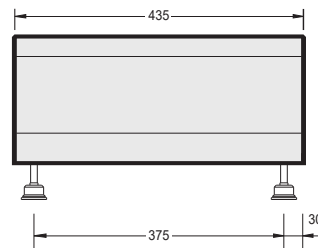
Matisse CX (Top view)  
(with Millennia eV 25W pump laser)



Matisse CX (Side view)



Reference Cell Front View



Reference Cell Side View

All Dimensions in mm  
Specifications are subject to change without notice  
U.S. Patent 7,489,715



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