

MOSAIC™ 100

Dispersion Management Module

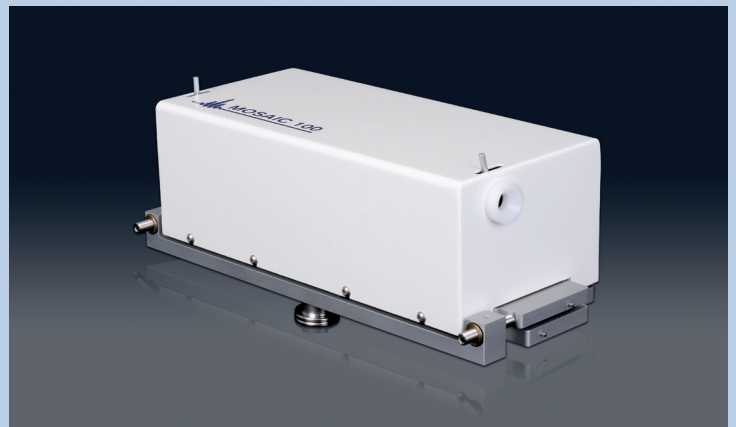
| up to -10000 fs^2 |

< 75 fs pulse delivery |

up to -10000 fs^2 |

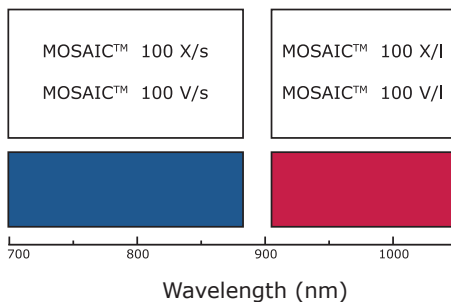
Applications

Dispersion management
Nonlinear microscopy
Ultrashort pulse delivery



The penetration depth accessible with nonlinear imaging is often limited by scattering, thermally induced sample damage, or by the inherently declining output power of tunable lasers at the edge of the Ti:Sapphire gain curve. All of these effects, however can be counteracted by reducing the pulse duration. With this approach, higher peak power and improved excitation efficiency can be achieved at lower average power levels.

50-fs pulses are stretched by more than one order of magnitude during propagation through a microscope having a group delay dispersion (GDD) of 10000 fs^2 . Approximate compensation of this amount of GDD with the MOSAIC™ module allows decreasing the on-sample pulse duration to $< 60 \text{ fs}$, leading to an > 8 -fold increase of the peak intensity.



Wavelength ranges covered by the MOSAIC™ modules

MOSAIC™

100

Extraordinary Features

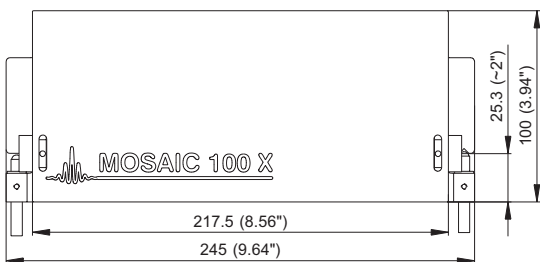
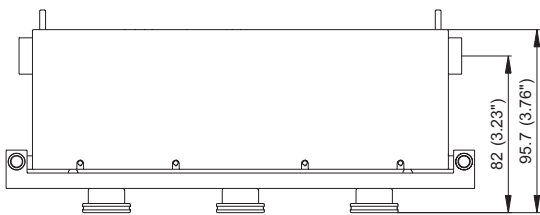
- Compact housing
- In-line input/output apertures
- High throughput
- Factory-set customer specified GDD
- Solid mechanical design

Dispersion Management module for ultrafast Microscopy

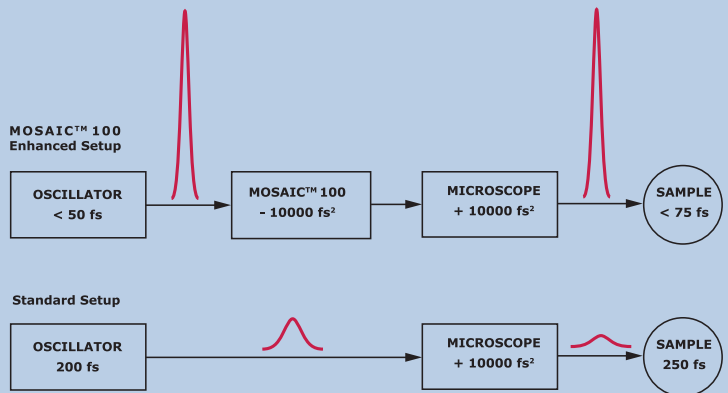
MOSAIC™ 100 is a dispersion compensation module which maintains ultrafast pulses undistorted at the target, even when passing through complex optical systems such as microscopes. The MOSAIC™ module is based on dispersive mirror technology and thus extremely compact and easy to use. The full tuning range of Ti:Sapphire based lasers can be substantially covered by employing only two different MOSAIC™ modules.

The MOSAIC™ in-line design guarantees minimum beam displacement when inserting or exchanging the modules. It allows easy integration into an existing setup, without the need for additional optical elements.

MOSAIC™ 100 - FRONT VIEW, Dimensions in [mm] ([in])



MOSAIC™ 100 - TOP VIEW, Dimensions in [mm] ([in])



SPECIFICATIONS	MOSAIC™ 100 X/s	MOSAIC™ 100 X/I	MOSAIC™ 100 V/s	MOSAIC™ 100 V/I
Footprint	100 x 245 mm	100 x 245 mm	100 x 245 mm	100 x 245 mm
Beam height	≥ 82 mm	≥ 82 mm	≥ 82 mm	≥ 82 mm
Clear aperture	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Total GDD	up to -10000 fs²	up to -10000 fs²	up to -5000 fs²	up to -5000 fs²
Wavelength range	700 - 870 nm	910 - 1040 nm	700 - 870 nm	910 - 1040 nm
Throughput ¹⁾	> 65 %	> 65 %	> 75 %	> 75 %
Polarization (input)	horizontal	horizontal	horizontal	horizontal

1) At max. GDD

All specifications are subject to change without notice



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FEMTOLASERS' laser products are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by Center of Devices and Radiological Health on all systems ordered for shipment after October 1, 2003.