



INTEGRAL™

OCT

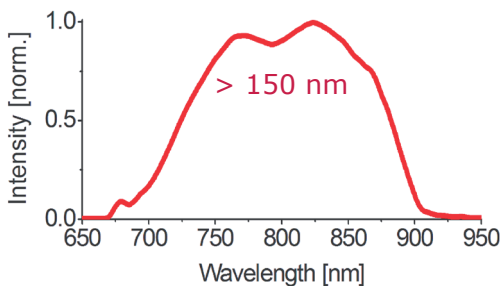
| < 2 μm resolution |

| > 150 nm |

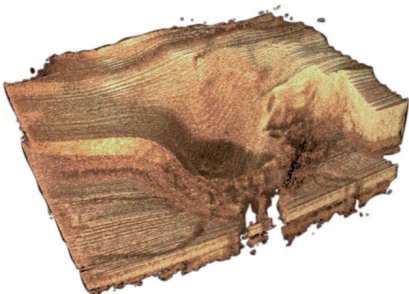
| > 40 mW ex fiber |

Applications

- Ultra high resolution OCT
- Imaging of individual cells
- Imaging of sub-cellular structures
- Spectrally encoded endoscopy
- Ultra high speed 3D OCT
- Spectroscopic OCT
- Polarisation sensitive OCT
- Spectrally encoded endoscopy
- Non-destructive quality control



Typical spectrum directly from the S/M fiber



Section of optic nerve head in the eye. Structures show cross-section of blood vessels. (Courtesy of W. Drexler et al).



INTEGRAL™ OCT is a turn key compact ultra broadband coherent light source, supporting sub-2 μm of axial spatial resolution. Generation of ultra broadband laser radiation directly from a low loss laser oscillator is guaranteed by FEMTOLASERS™ patented Dispersive Mirror (DM) technology.

Active thermal stabilization with feedback loops in combination with a compact design enable output parameters of unprecedented quality, stability, and reproducibility. Due to its turnkey operation, the INTEGRAL™ OCT is best suited for everyday use in medical, industrial, and scientific applications.

INTEGRAL™

OCT

Extraordinary Features

- Turn-key operation
- S/M fiber coupled
- Integrated pump source
- Integrated diagnostics system
- Active stabilization of system parameters
- Temperature stabilized laser head
- Ultra broad Gaussian spectrum
- Maintenance free
- Sealed cavity | Ultra low noise

Ultra high axial resolution of sub-2 μm supported

Video rate 2D and 3D volume scans at ultra high resolution are supported by the unique combination of ultra broad spectral bandwidth and the powerful and highly polarized output from the S/M fiber. The smooth and quasi Gaussian ultra broad spectrum centered at 800 nm supports a theoretical limit of sub-2 μm in axial resolution. Optimized for lowest optical noise and side-lobe free coherence functions the INTEGRAL™ OCT is the best light-source for high-end OCT imaging and functional OCT.

Ease of Operation & Integration

The INTEGRAL™ OCT supports full integration to your setup via its computer interface. All vital functions can be controlled via the integrated user interface or remotely via a computer.

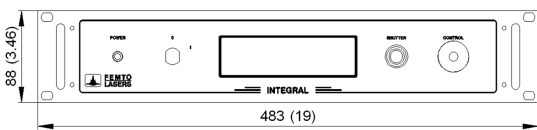
Stability & Reliability

The INTEGRAL™ OCT supports ultra high resolution and fast scanning at the same time. This is enabled by its extraordinary wide and smooth spectrum, paired with the uniquely high output power, which is in strong contrast to most of its alternatives. Owing to the fact that DM-controlled systems provide more bandwidth without the need of nonlinear broadening or supercontinuum generation, unprecedented low noise and reproducibility of the output parameters are guaranteed.

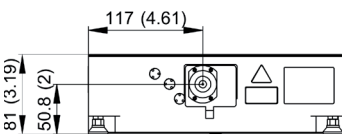
Fiber coupling

The INTEGRAL™ OCT output is coupled into a standard commercial 5 meter long single mode fiber with FC/APC connector, ensuring maximum ease of use and compatibility with other systems. All parameters are measured at the fiber output.

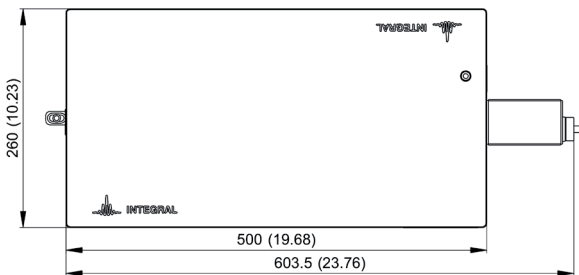
INTEGRAL™ - USER INTERFACE, Dimensions in [mm] ([in])



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



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



SPECIFICATIONS

Bandwidth (FWHM) @ 800 nm ex fiber	> 150 nm
Mode locked output power (avg.) ex fiber	> 40 mW
Noise (measured 10 Hz - 100 kHz)	< 0.05 % rms
Power stability ¹⁾	± 1%
Length of single mode fiber	5 m

1) Measured over 8 hours after 30 min. warmup at constant environmental conditions

INTEGRAL™ OCT

> 150 nm
> 40 mW
< 0.05 % rms
± 1%
5 m

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.