

SUPERK EXTREME OCT

Low-noise supercontinuum white light laser



BROADBAND OUTPUT AND LOW NOISE

Ideal for Optical Coherence Tomography

The SuperK EXTREME OCT series is the first supercontinuum source on the market optimized for ultra-high resolution Optical Coherence Tomography and multimodality applications.

The ultra-broad output and low noise makes SuperK supercontinuum lasers ideal OCT sources when micron resolution or a special wavelength range is needed.

Applications

- Optical Coherence Tomography
- White light interferometry
- Multimodality OCT applications:
 - Autofluorescence
 - Spectroscopy
 - Doppler OCT

SUPERK EXTREME OCT

Optimized for ultra-high resolution OCT

The new SuperK EXTREME OCT series from NKT Photonics is the first supercontinuum source on the market optimized for ultra-high resolution OCT and multimodality applications.

The SuperK EXTREME OCT series have the market's lowest noise. It is optimized for low-noise performance to yield high-contrast, low-noise images in OCT systems.

Combined with a broadband spectrometer, the SuperK EXTREME OCT can power Optical Coherence Tomography systems down to 1-2 μm axial resolution.

Replaces expensive Ti:Sapphire lasers

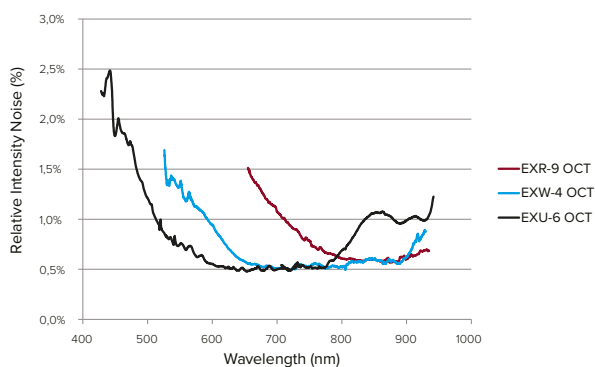
Due to its low noise and broadband output, it matches the performance of the bulky and costly Ti:Sapphire lasers.

Model	EXR-9 OCT	EXW-4 OCT	EXU-6 OCT
Cut-in wavelength	<600 nm	<500 nm	<400 nm
Visible power	>900 mW	>400 mW	>600 mW
Typ. avg. power density in 600-1000 nm	>3 mW/nm	–	–

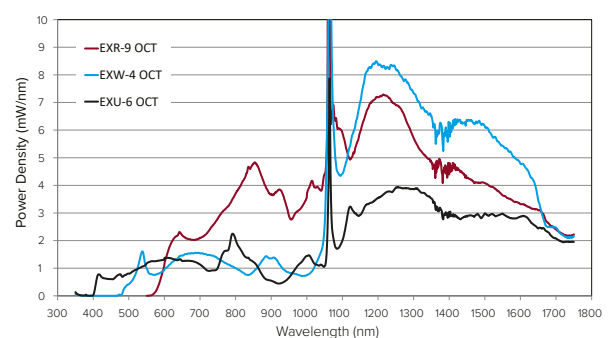
Features

- Low noise
- Broadband output
- True single-mode output
- Multimodal OCT light source
- Replaces Ti:Sapphire lasers and SLEDs
- Unsurpassed reliability and lifetime
- OCT optimized filter option

Relative Intensity Noise



Typical output spectrum



SPECIFICATIONS

Optical

Model	EXR-9 OCT	EXW-4 OCT	EXU-6 OCT
Cut-in wavelength [nm]	< 600	< 500	< 400
Visible power (350-650 nm) [mW]	> 900	> 400	> 600
Master seed laser pulse [ps]	≈ 5	≈ 5	≈ 5
Polarization	Unpolarized	Unpolarized	Unpolarized
Beam output	Gaussian, single mode	Gaussian, single mode	Gaussian, single mode
Beam quality	$M^2 < 1.1$	$M^2 < 1.1$	$M^2 < 1.1$
Beam diameter [mm]	≈ 1 @ 530 nm ≈ 2 @ 1100 nm ≈ 3 @ 2000 nm	≈ 1 @ 530 nm ≈ 2 @ 1100 nm ≈ 3 @ 2000 nm	≈ 1 @ 530 nm ≈ 2 @ 1100 nm ≈ 3 @ 2000 nm
Beam divergence (half angle) [mrad]	< 5	< 5	< 5
Beam pointing accuracy [mrad] ¹⁾	< 1	< 1	< 1
Beam pointing stability [μrad]	< 50	< 50	< 50
Typical single mode fiber coupling efficiency [%]	> 70	> 70	> 70

1) Measured relative to the mechanical axis running through the center of the collimator.

Mechanical/Electrical/Environmental

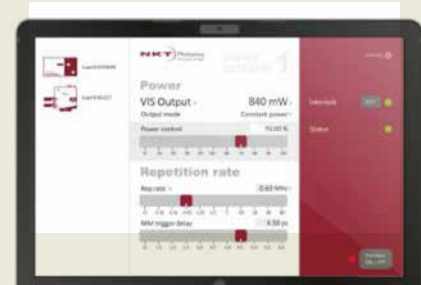
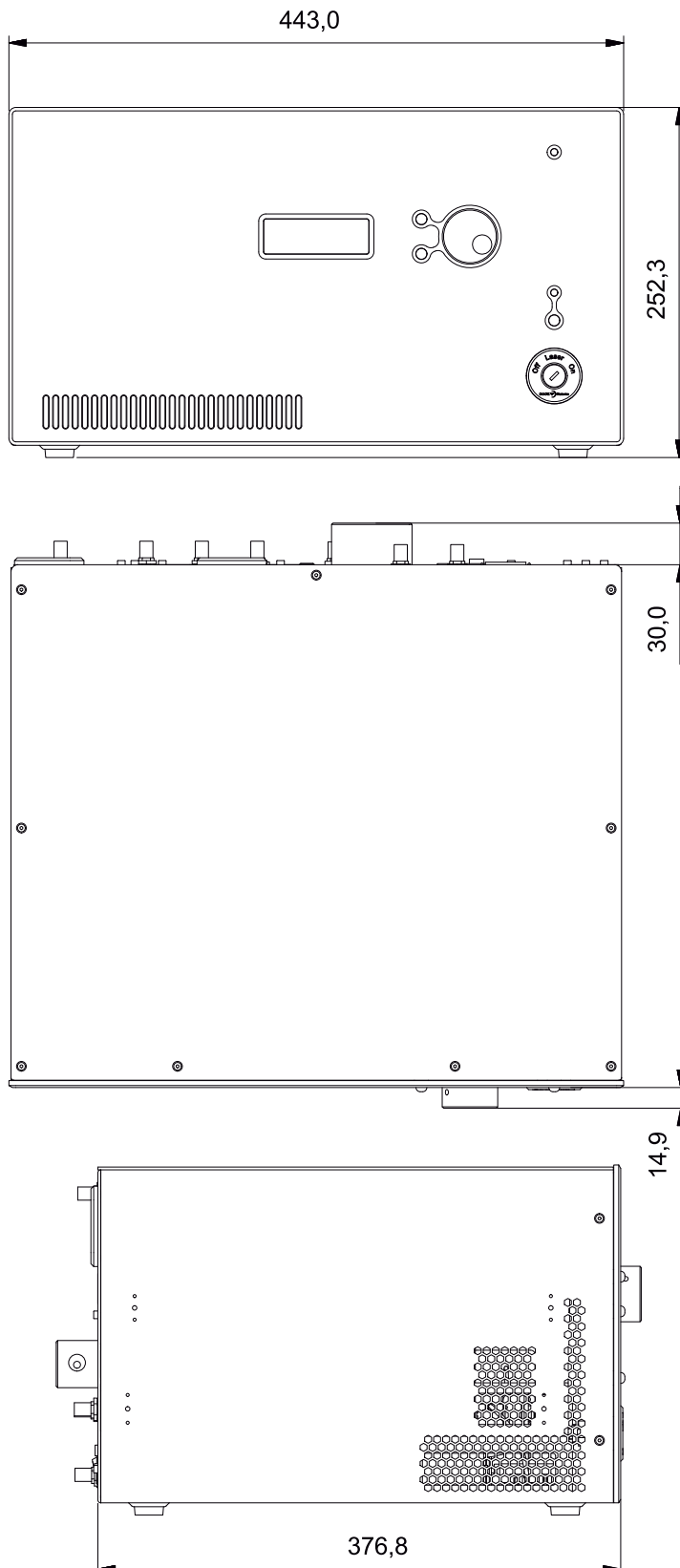
Model	All models
Laser output	Standard: Collimated Optional: Divergent
Output fiber length [m]	1.5
Computer interface	USB 2.0
Power supply requirements [VAC, Hz]	100-240 VAC, 50-60 Hz
Door interlock connector ²⁾	2-pin LEMO
External bus interface ³⁾	15-pin sub-D
Operation temperature [°C]	18 – 30
Storage temperature (non-condensing) [°C]	-10 – 60
Humidity [% RH]	20 – 80
Dimensions (WxHxL) [mm ³]	443 x 252.3 x 421.7
Weight [kg]	18 (19) ⁴⁾

2) The SuperK EXTREME is a class 4 laser and required to be connected to a door interlock/circuit.

3) External communication and power supply port for accessories.

4) The weight is 19 kg with pulse picker.

TECHNICAL DRAWINGS



Software — NKT Photonics CONTROL

Like other NKT Photonics lasers, the SuperK EXTREME OCT can be controlled by our intuitive CONTROL software that gives easy access to all the functions in the laser.

The software automatically detects all units attached to the computer. You can control the source and any filtering accessories from CONTROL. It is easy to use and supports touch input as well as traditional mouse+keyboard control.

Support and warranty

SuperK warranty

All SuperK EXTREME products comes with industry leading reliability and are backed by our standard 2 year warranty.

Lifetime and service

Before shipping, all our SuperK lasers undergo a 96 hours burn-in to ensure performance and conformity to specifications.

Our systems boast over 10,000 hours of continuous lifetime and underlines the high reliability of our NKT Photonics Crystal Fibre technology.

Maintenance-free in the entire lifetime

A SuperK laser is completely maintenance-free in the entire lifetime.

Should your laser be damaged, the modular platform ensures fast turnaround on service and repairs. Typically, it takes four weeks or less to get your laser back.

All NKT Photonics products are produced under our quality management system certified in accordance with the ISO 9001:2015 standard.

