# SuperK SELECT

## Multi-channel tunable AOTF filter

## ACOUSTO-OPTICAL TUNABLE FILTERS GIVE WIDE SPECTRAL COVERAGE

### Tunes over one octave of optical frequency

The SuperK SELECT is a tunable wavelength filter based on Acousto-Optic Tunable Filters (AOTF).

AOTFs tune over one octave of optical frequency and the SuperK SELECT can integrate two AOTF crystals to provide wide spectral coverage, thereby giving easy-to-use and flexible access any wavelength in the spectrum of our SuperK supercontinuum sources.

### Applications

- Spectroscopy
- Single-line laser replacement
- Fluorescence-Lifetime Imaging Microscopy, FLIM

# SUPERK SELECT

## Built-in intelligence and RF switch

When the SuperK SELECT is connected to the SuperK EXTREME, the CONTROL software automatically recognizes and initializes the SELECT.

SuperK SELECT also features a built-in RF switch for toggling between the two AOTFs without physical cable connection changes.

# OPTIONS

## Fiber delivery via SuperK CONNECT

The SuperK SELECT can be combined with our high-performance SuperK CONNECT fiber delivery system.

It comes complete with broadband fibers and a range of termination options such as FC/PC connectors or high-quality collimators.

Interfacing is handled by the CONNECT fiber coupling block which ensures easy and stable single-mode coupling that can be disconnected and reconnected without alignment.

## Power Lock - External power stabilization

The Power Lock option enables you to lock the power output of the SuperK SELECT via a built-in photodetector. Simply connect the detector to the External Feedback BNC connector of the SuperK.

Activate locking from the control panel to make the SuperK lock the power output of the SELECT. Power Lock monitors are available for both output ports.
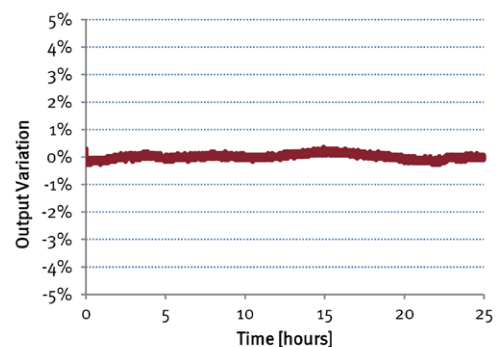
The long-term stability of a locked output will typically be better than +/- 0.5 % (over many hours), depending on the wavelength.

## Features

- 400-2400 nm tuning range
- 8 simultaneous, freely tunable channels
- Dual VIS/nIR, VIS/IR, nIR/IR port access
- Easy connection to SuperK EXTREME
- Robust and compact industrial design
- Maintenance-free 24/7 operation
- Simple and intuitive user interface, NKT Photonics CONTROL, via SuperK EXTREME

## Options

- Fiber delivery
- Power Lock for ultra-stable output
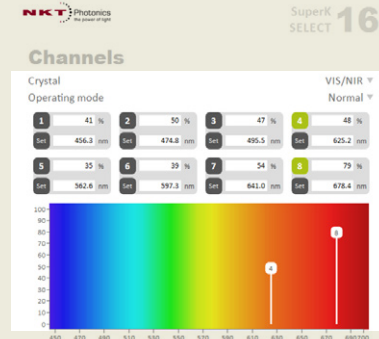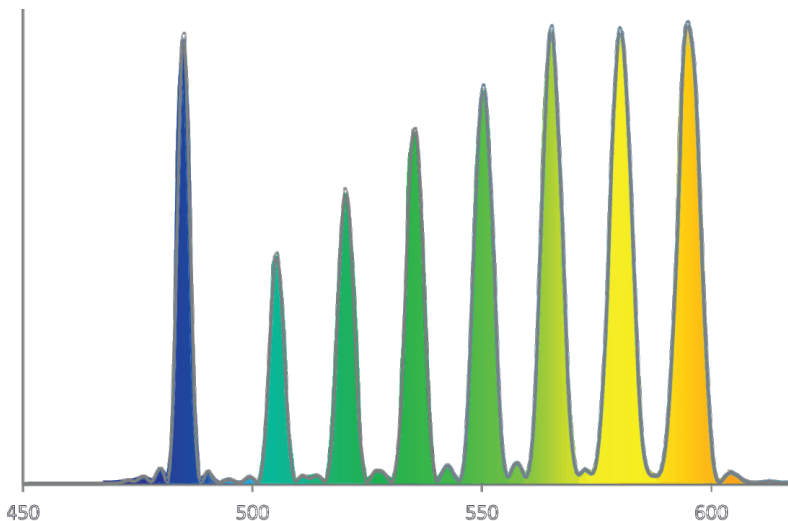- 7 different AOTF crystals

# OPTIONS

## Wavelength ranges

The SuperK SELECT offers a choice of AOTF crystals whichy must be selected to cover the needed wavelength range. Seven different crystals are available covering the wavelength range from 400 nm to 2000 nm.

Possible crystal combinations are listed below with wavelength ranges for each crystal and combination.

| AOTF1/AOTF2 | VIS-nIR 500-900 nm | nIR1 640-1100 nm | nIR2 800-1400 nm | IR 1100-2000 nm |
|---|---|---|---|---|
| UV-VIS 400-650 nm | 400-650 nm/ 690-900 nm | 400-650 nm/ 690-1100 nm | 450-650 nm/ 850-1400 nm | 450-650 nm/ 1100-2000 nm |
| VIS (1x) 430-700 nm | - | 430-670 nm/ 690-1100 nm | 450-700 nm/ 850-1400 nm | 450-700 nm/ 1100-2000 nm |
| VIS (4x) 450-700 nm | - | 450-670 nm/ 690/1100 nm | 450-700 nm/ 850-1400 nm | 450-700 nm/ 1100-2000 nm |
| VIS-nIR 500-900 nm | - | - | 500-800 nm/ 850-1400 nm | 500-900 nm/ 1150-2000 nm |
| nIR1 640-1100 nm | - | - | - | 640-1100 nm/ 1200-2000 nm |
| nIR2 800-1400 nm | - | - | - | 800-1100 nm/ 1200-2000 nm |

## Typical output spectrum [nm]

## Software
## — NKT Photonics CONTROL

Via a SuperK EXTREME laser, the SuperK SELECT can be controlled by our intuitive CONTROL software that gives easy access to all laser functions.

The software automatically detects all units attached to the computer. You can control several lasers simultaneously. It is easy to use and supports touch input as well as traditional mouse+keybord control.

# SPECIFICATIONS

## Optical

| | |
|---|---|
| Number of tunable lines | 1 – 8 (per AOTF) |
| Filter bandwidth of AOTF (UV-VIS) [1] [nm] | 1.8 – 8.5 |
| Filter bandwidth of AOTF (VIS1x/VIS4x) [1] [nm] | 0.5 – 1.85 / 2.5 – 8.5 |
| Filter bandwidth of AOTF (VIS-nIR) [1] [nm] | 3.5 – 14 |
| Filter bandwidth of AOTF (nIR1/nIR2) [1] [nm] | 1.8 – 5 / 2.6 – 9.6 |
| Filter bandwidth of AOTF (IR) [1] [nm] | 6.4 – 19.8 |
| AOTF deflection efficiency [%] | > 90 (1 – 8 channel operation) |
| Polarization [2] | Linear |
| Output mode | Fiber or free-space collimated |
| Mechanical shutter | Integrated for both ports |
| Laser safety interlock | Integrated |

1) Collimated free-space output, FWHM bandwidth.
2) Horizontal with respect to base.

## Support and warranty

**SuperK warranty**
The SuperK SELECT 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 an extensive 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.
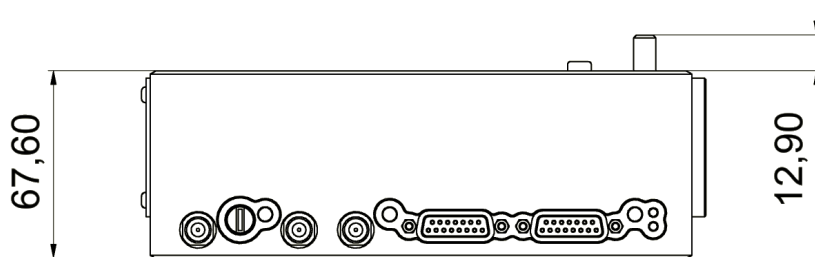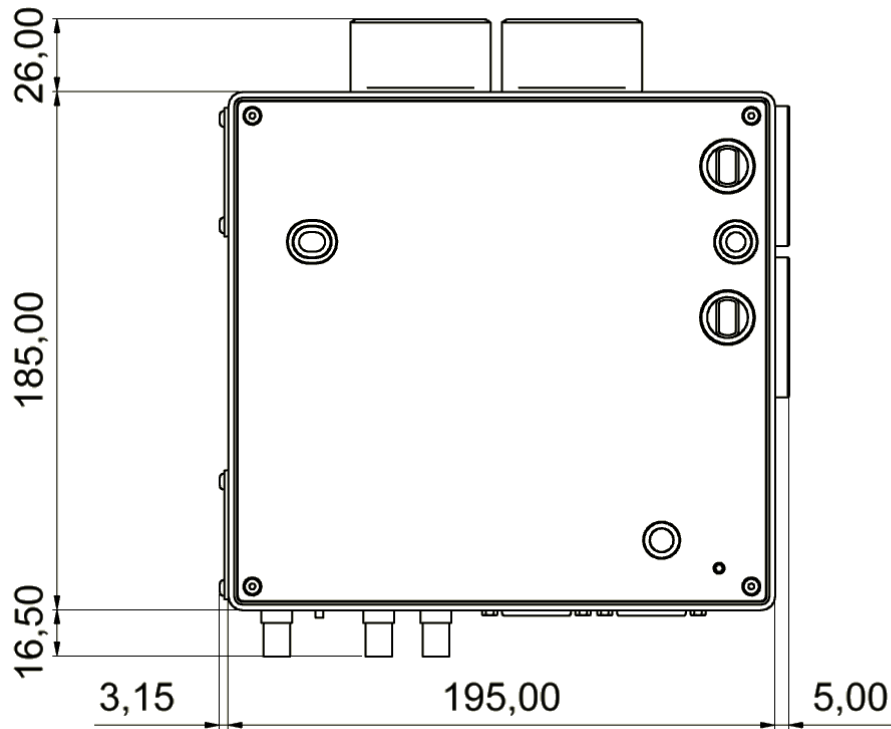
# SUPERK CONNECT FIBER DELIVERY

## Standard for fiber-to-fiber connections

| AOTF1/AOTF2 | VIS-nIR | nIR1 | nIR2 | IR |
|---|---|---|---|---|
| UV-VIS | FD1 | FD1 | FD1 | FD1 |
| | FD3 | FD3 (FD4) | FD4 (FD5) | FD5 (FD6) |
| VIS (1x) | - | FD2 | FD2 | FD2 |
| | | FD4 (FD3) | FD4 (FD5) | FD5 (FD6) |
| VIS (4x) | - | FD2 | FD2 | FD2 |
| | | FD4 (FD3) | FD4 (FD5) | FD5 (FD6) |
| VIS-nIR | - | - | FD2 (FD3) | FD2 (FD3) |
| | | | FD4 (FD5) | FD5 (FD6) |
| nIR1 | - | - | - | FD3 (FD4) |
| | | | | FD5 (FD6) |
| nIR2 | - | - | - | FD4 (FD5) |
| | | | | FD5 (FD6) |

## Standard for fiber-to-free-space connections

| AOTF1/AOTF2 | VIS-nIR | nIR1 | nIR2 | IR |
|---|---|---|---|---|
| UV-VIS | FD7 | FD7 | FD7 | FD7 |
| | | | FD9 (non-PM) | FD8 (non-PM) |
| VIS (1x) | - | FD7 | FD7 | FD7 |
| | | | FD9 (non-PM) | FD8 (non-PM) |
| VIS (4x) | - | FD7 | FD7 | FD7 |
| | | | FD9 (non-PM) | FD8 (non-PM) |
| VIS-nIR | - | - | FD7 | FD7 |
| | | | FD9 (non-PM) | FD8 (non-PM) |
| nIR1 | - | - | - | FD7 |
| | | | | FD8 (non-PM) |
| nIR2 | - | - | - | FD9 (non-PM) |
| | | | | FD8 (non-PM) |

# TECHNICAL DRAWINGS

FORCE Certification
Systemcertificering
DS/EN ISO 9001 - Kvalitet

INVISIBLE LASER RADIATION
AVOID EYE OR SKIN EXPOSURE TO
DIRECT OR SCATTERED RADIATION

CLASS 3B LASER PRODUCT