NKT Photonics

SuperK VARIA

Tunable wavelength filter with variable bandwidth

Bandwidth and center wavelength tuning

Ideal for Fluorescence-Lifetime Imaging Microscopy

The SuperK VARIA is a unique filtering solution that allows tuning of the center wavelength as well as the bandwidth of t he filtered light.

The VARIA suffers no polarization loss and delivers high-power throughput. For example, above 50 mW per wavelength across the full visible spectrum is easily achieved with the VARIA and the SuperK FIANIUM FIU-15 using only a 10 nm bandwidth

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Applications

Test and measurement

High-sensitivity detectors

Photon counting set-ups

Characterization of nano-structures

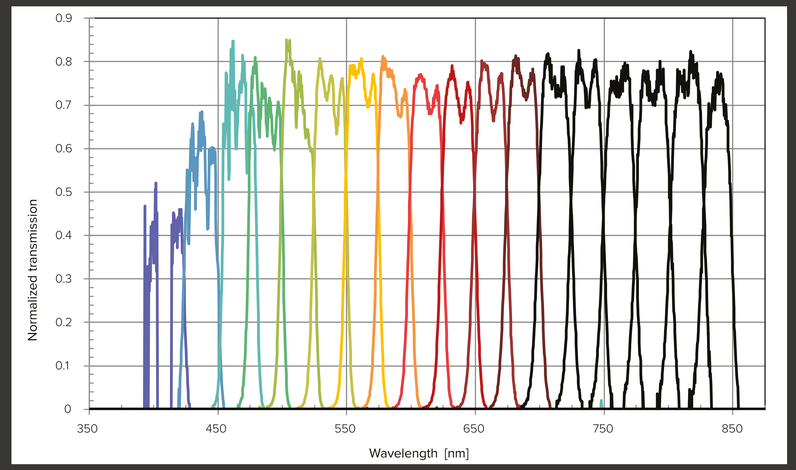
Fluorescence-Lifetime Imaging

Microscopy, FLIM

Ease of use

Co-linear output for all wavelengths

Choose your output to be either a free-space collimated beam or - via the SuperK CONNECT - a single-mode fiber delivery. The output from the VARIA is co-linear for all wavelengths.



Out-of-band suppression

The VARIA has an industry-leading 50 dB out-of-band suppression, i.e. the signal difference between the transmitted light within the selected wavelength region and the light leaking through outside the filter bandwidth. This makes the VARIA suitable for use with high-sensitivity detectors and photon counting setups.

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Software NKT Photonics CONTROL

The SuperK VARIA 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.

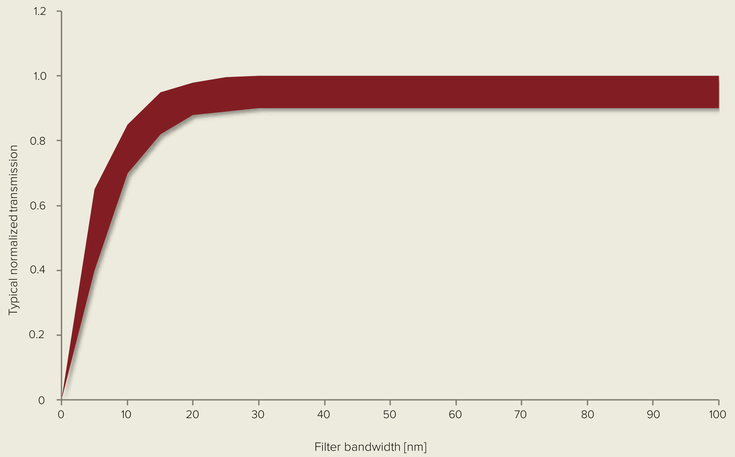
Features

IR pass-through

The IR pass-through port transmits the part of the SuperK spectrum above 900 nm without filtering. This IR output can then be used directly or coupled into another filter accessory like the SuperK SELECT.

Transmission versus bandwidth

The transmission through the VARIA is largely independent of wavelength and bandwidth down to a bandwidth of 15-20nm below which is drops off as shown in the following plot



Options

Fiber delivery

SuperK CONNECT is a high-performance fiber delivery system 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.

Fiber delivery

Typ. coupling efficiency	70-80 %
Output fiber mode	Single mode
Termination options	Collimator, FC/PC or FC/APC
Fiber length	2.5 m (5 m/10 m available)
Polarization	PM or non-PM

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400-840 nm tuning range
10-100 nm bandwidth
>50 dB out-of-band suppression
High transmission, no polarization loss
Tested and approved for FLIM
IR pass-through port
Easy Plug and Play connection source
Simple and intuitive user interface via NKT Photonics CONTROL
Robust and compact industrial design
Maintenance-free 24/7 operation

Specifications

Optical

Wavelength tuning range [nm]	400 – 840
Minimum bandwidth FWHM [nm]	< 10
Maximum bandwidth FWHM [nm]	100
Transmission through module [%] [1]	70 - 90 unpolarized
Upper out-of-band suppression [dB] [2]	> 50
Lower out-of-band suppression [dB] [3]	> 40
Output polarization	Unpolarized or P-polarized (with added polarizer)
Tuning speed [nm/s]	> 10
Repeatability of wavelength position [nm] [4]	< 0.2
Absolute wavelength accuracy [nm]	± 5
Wavelength temperature sensitivity [nm/deg]	< 0.05
Transmission temperature sensitivity [%/deg]	< 0.2
Interlock	Collimator, lead
Output mode	Collimated free-space or SuperK CONNECT with FC/APC

Mechanical/Electrical/Environmental

Electrical interface	SuperK BUS interface Analog feedback signal
Dimensions (WxHxL) [mm3	211.5 x 67.6 x 272
Weight [kg]	7.9

1) Average in 50 nm bandwidth.
2) 10 nm above lower FWHM transmission wavelength in the 400-900 nm range. With SuperK CONNECT single-mode fiber delivery, e.g. FD2.
3) 10 nm below lower FWHM transmission wavelength in the 400-900 nm range. With SuperK CONNECT single-mode fiber delivery, e.g. FD2.
4) With collimator inserted. Wavelength position may shift if collimator is removed and reinserted.

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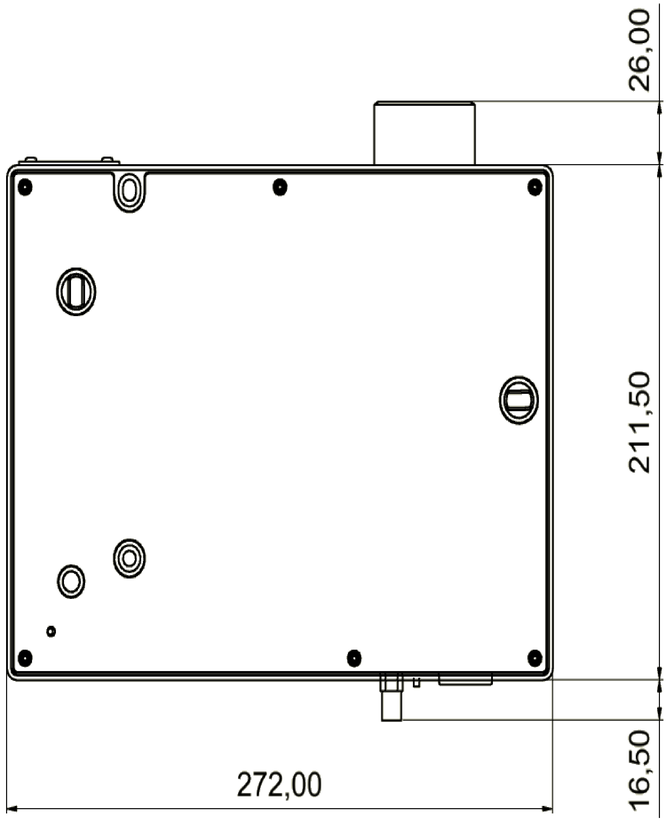
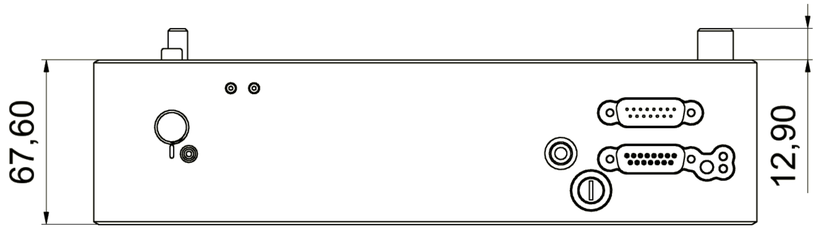
Support and warranty

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

Technical Drawings





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

FORCE Certification
Systemcertificering
DS/EN ISO 9001 - Kvalitet

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