

LLTF
CONTRAST
Tunable high-contrast single-line filter

HAMAMATSU



Continuously tunable high-resolution bandpass filter

Ideal for visible and near-infrared spectra

The Laser Line Tunable Filter is a continuously tunable high-resolution bandpass filter which effectively converts a SuperK supercontinuum source into a widely tunable picosecond laser.

The filter blocks unwanted lines with excellent out-of-band suppression while transmitting a single laser line with high efficiency



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Applications

- Fluorescence
- Flow cytometry
- Raman spectroscopy
- Fluorescence excitation and
- Lifetime measurements

Ease of use

Covers the spectrum from visible to infrared

The LLTF is a non-dispersive filter which maintains the intrinsic single-mode beam quality of the supercontinuum laser and consequently enables a wide range of applications.

With two wavelength tuning options, visible and near-infrared, the full spectrum of the supercontinuum is covered.

Adapts directly to the output collimator

The LLTF Contrast is compatible with all SuperK supercontinuum lasers and is fully Plug and Play - adapting directly to the super-continuum output collimator.

The output is also compatible with our precision fiber single-mode coupling unit, SuperK FDS, and SuperK fiber deliveries (we recommend FD7 for VIS and FD8 for SWIR).

Graphical user interface and software development kit

The LLTF can be operated through a user-friendly PHySpec software or a direct interface through the free software development kit.

Model	Wavelength	Bandwidth	Power
VIS HP8	400-1000 nm	< 2.5 nm	8 W
SWIR HP8	1000-2300 nm	< 5 nm	8 W

Features

Single channel tunable band-pass filter

Exceptional out-of-band suppression

Narrow line-width and high resolution

Wideband tuning range across the visible and near-infrared range

Simple and intuitive user interface

Robust and compact industrial design

Maintenance-free 24/7 operation

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Support and warranty

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

All LLTF products are completely maintenance-free in the entire lifetime.

Specifications

Optical/Mechanical

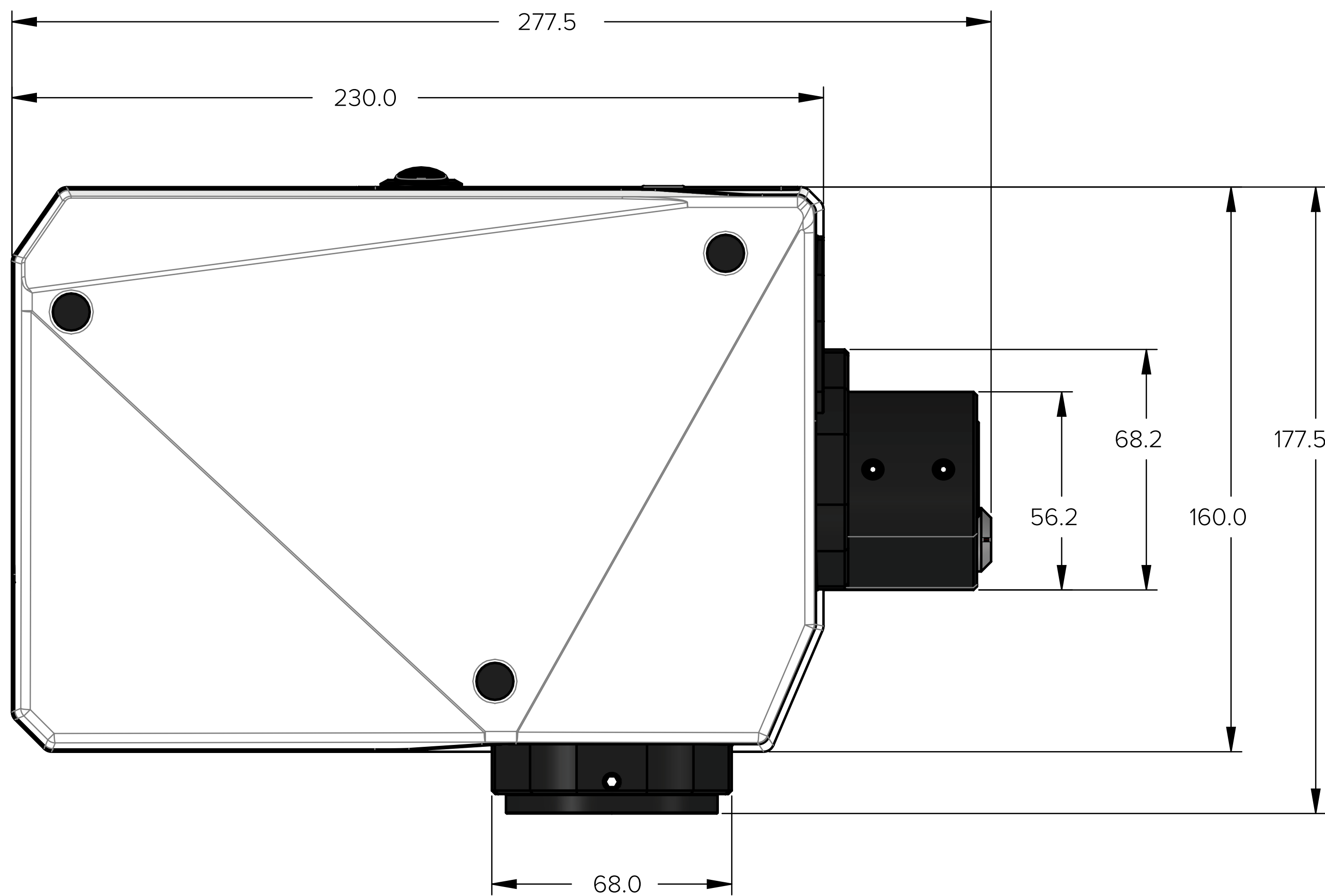
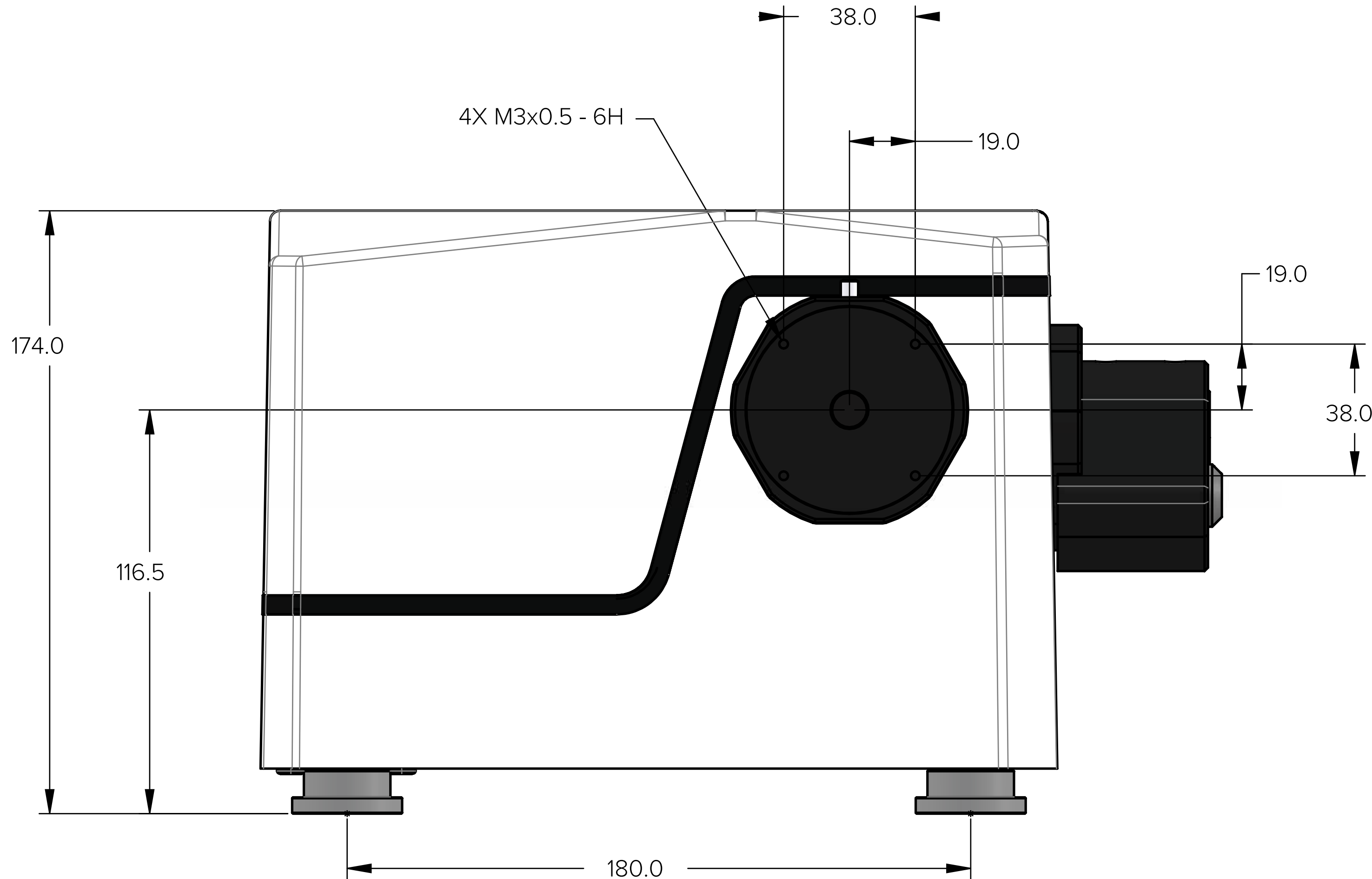
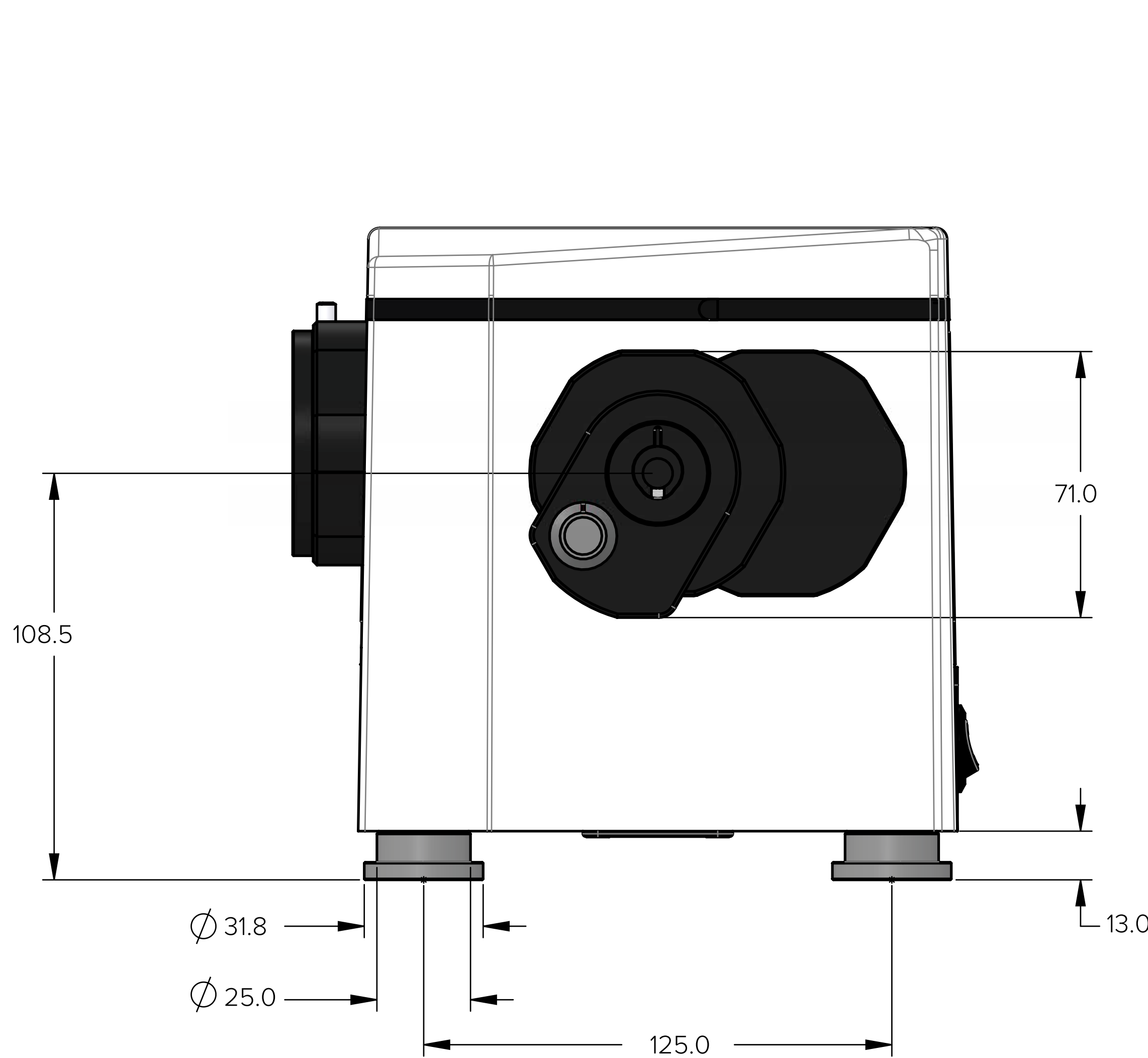
Model	VIS	SWIR
Tunable wavelength range [nm]	400 – 1000	1000 – 2300
Channel spectral bandwidth, FWHM [nm] ¹	< 2.5	< 5
Out-of-band suppression [dB]	60 @ ± 40 nm 30 @ ± 10 nm	60 @ ± 80 nm ² 30 @ ± 20 nm
Typical peak transmission efficiency [%]	65	65
Optical density	> OD6 @ 1064 nm	> OD6 @ 1064 nm
Damage treshold	< 5 GW/cm2 peak power @ 1064 nm, 8 ns	< 5 GW/cm2 peak power @ 1064 nm, 8 ns
Input aperture diameter [mm]	5	5
Input beam divergence requirement [mrad]	< 1.5	< 1.5
Wavelength resolution, relative	FWHM / 8	FWHM / 8
Pointing stability	< 1 mm lateral displacement @ 1 m from filter	< 1 mm lateral displacement @ 1 m from filter

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Model	VIS	SWIR
Scanning speed stabilization time, multiple step [ms]	35 for 0.1 nm step 45 for 0.2 nm step 55 for 1 nm step 60 for 2 nm step 65 for 5 nm step 70 for 10 nm step	35 for 0.1 nm step 45 for 0.2 nm step 55 for 1 nm step 60 for 2 nm step 65 for 5 nm step 70 for 10 nm step
Interface	Graphical user interface via USB (optional SDK)	Graphical user interface via USB (optional SDK)
Interlock	Integrated	Integrated
Dimensions (WxHxL) [mm]	177.5 x 174 x 277.5	177.5 x 174 x 277.5

¹ Valid if divergence of the input beam is < 1.5 mrad.
² Harmonic wavelengths < 850 nm will be present in the output. We recommend an external clean-up long-pass filter if the detector is sensitive to visible wavelengths.

Technical Drawings

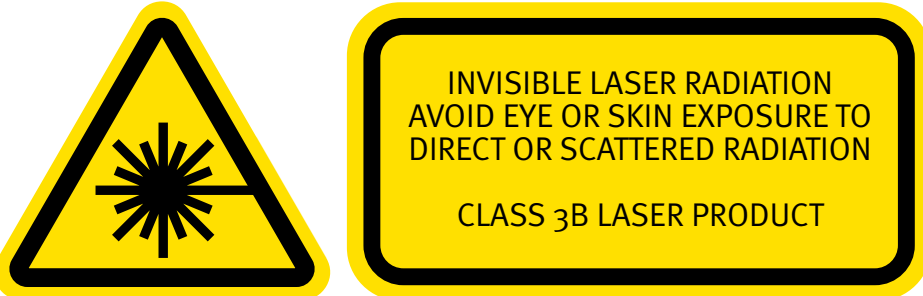


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All Hamamatsu Photonics A/S products are produced under our quality management system certified in accordance with the ISO 9001:2015 standard.

We're switching from NKT Photonics to Hamamatsu. Some documents and products still say NKT Photonics, others say Hamamatsu. The transition takes time, so please bear with us.

And rest assured, we're still the same people delivering the same high-quality fibers and lasers.



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