Photon etc
A spectrum of solutions
5795 DE GASPE AVENUE, #222
MONTREAL, QUEBEC, H2S 2X3
CANADA

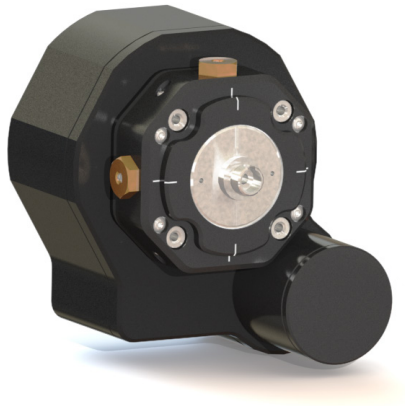
LLTF CONTRAST

ACCESSORIES & OPTIONS

LLTF DESCRIPTION

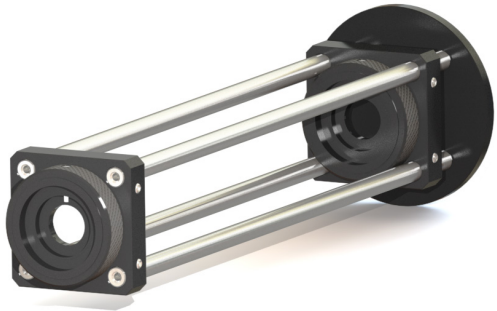
The Laser Line Tunable Filter (LLTF) is a non-dispersive tunable bandpass filter based on volume holographic gratings. It delivers the highest signal throughput in the industry, and is also unique in that it combines very high optical density (> OD6) and outstanding out-of-band rejection with wide tunability. A single filter can be tuned from 400 nm to 1000 nm (VIS) or 1000 nm to 2300 nm (SWIR), with bandwidths (FWHM) of <2.5 nm and <5 nm respectively. The output pointing is very stable, removing the need to realign optical setup. The LLTF Contrast is compatible with any VIS-NIR supercontinuum or laser source. Depending on the application, a series of options are available and described below.

ACCESSORIES



FIBEROPTIC INPUT/OUTPUT

The LLTF Contrast, in its basic configuration, delivers a collimated free-space output beam. The fibered output option takes this beam and couples it into a fiber to fit the needs of various applications. An X-Y-Z translation adjustment allows coupling optimization.



ALIGNMENT KIT (FOR FREE-SPACE)

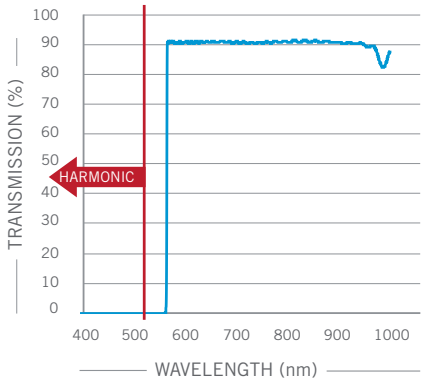
In free-space configuration, the alignment of the input laser into the LLTF is a challenging task without the proper tools. The alignment kit allows the user to rapidly find the correct alignment. Two irises, mounted on removable posts, are easily placed at the entrance of the filter. The laser beam then simply needs to follow the path created by the irises.

OPTIONS

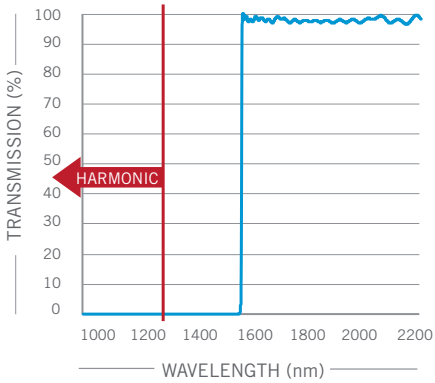
HARMONIC FILTER

Our filtering technology is based on the use of resonant gratings. Thus, 2nd harmonics of a given wavelength will not be blocked completely. The harmonic filter is a highpass filter that blocks this 2nd harmonic. The harmonic filter for the LLTF Contrast VIS option blocks the harmonics in the region 325-500 nm when the filter is set to wavelengths in the range 650-1000 nm. The harmonic filter for the LLTF Contrast SWIR1 option blocks the harmonics coming from the region 850-1250 nm when the filter is set to wavelengths in the range 1700-2500 nm. However, the harmonics present in the region 500-850 nm will not be blocked. Hence if your detector is sensitive in this spectral region, the harmonic filter SWIR2 option is best suited. This option combines a highpass filter to block harmonics coming from the region 500-850 nm and the SWIR1 harmonic filter for the region 850-1250 nm.

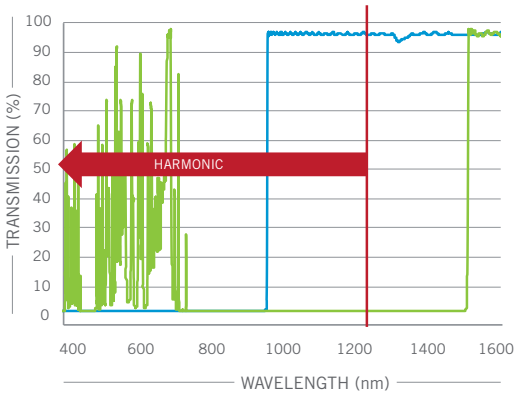
HARMONIC FILTER - VIS



HARMONIC FILTER - SWIR1

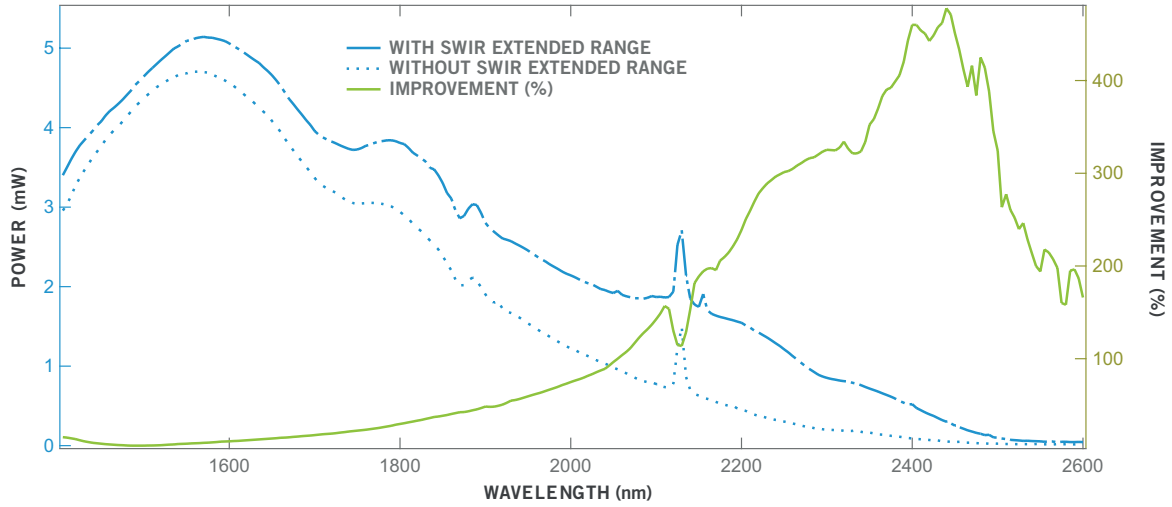


HARMONIC FILTER - SWIR2



ENHANCED SWIR

The Enhanced SWIR option allows to reach higher output power and to extend the spectral range of the LLTF up to 2500 nm. As shown below, the standard version of the LLTF Constrast SWIR (•••••), combined with a 4W supercontinuum source, already offers an interesting output power, but this can still be a limitation for certain demanding applications. The wide range of possible supercontinuum power output can of course solve this, but at a version high cost when compared to the Enhanced SWIR option. The spectral window of the Enhanced SWIR option gives access to the complete spectrum of the supercontinuum source used, a great advantage over the standard LLTF Contrast SWIR.



* Measured with WL-SC400-4 Fianium Supercontinuum Laser

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