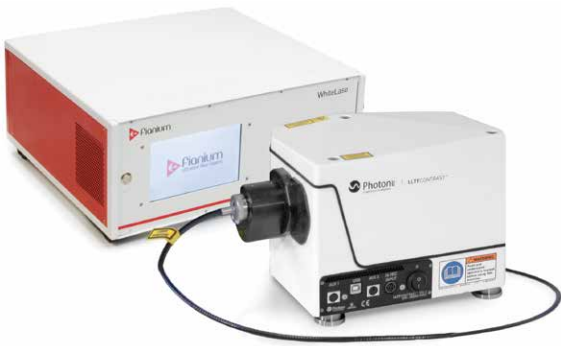


TUNABLE LASER SOURCE

UP TO 20W INPUT POWER



The tunable laser source (TLS) provides continuous output from 400 nm to 1000 nm (VIS) and 1000 nm to 2500 nm (SWIR) with bandwidths (FWHM) of 2.5 nm and 5 nm respectively. Custom and extended spectral ranges (up to 2500 nm) and bandwidths (sub-nm) are also available. Photon etc. tunable Laser Source (TLS) is compatible with any VIS-NIR broadband source, but is optimized for Fianium's, NKT's and Leukos' supercontinuum sources. This high-end product provides the highest out-of-band refection (< -60 db) available on the market. It is an ideal tool for instruments calibration, spectroscopy and hyperspectral imaging.

TECHNICAL SPECIFICATIONS

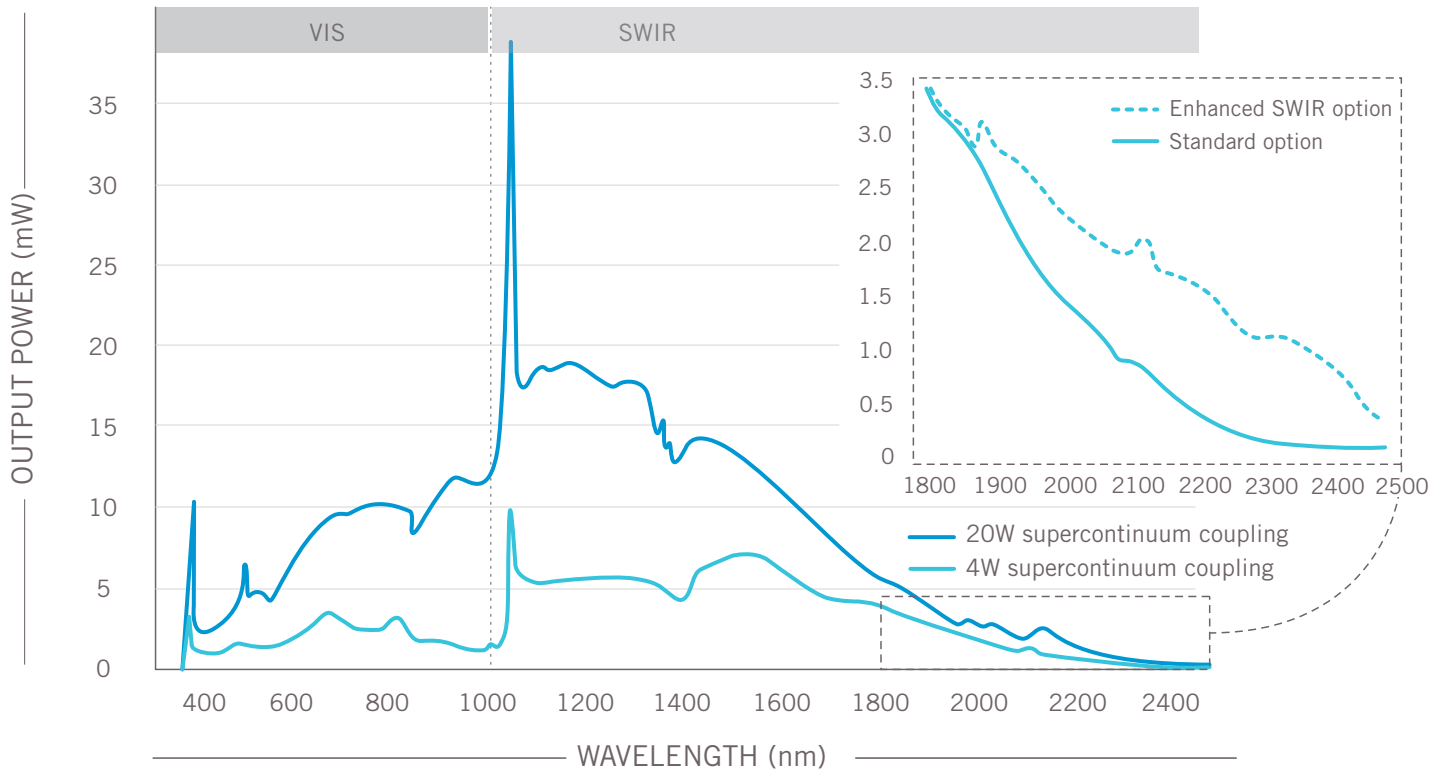
	CONTRAST VIS	CONTRAST SWIR	CONTRAST X
Spectral Range (extended and reduced spectral ranges also available**)	400-1000 nm	1000-2300 nm (2500 nm optional*)	where X represents a custom spectral range
Bandwidth (FWHM)	1.0 - 2.5 nm	2.0 - 5.0 nm	High resolution 0.15 nm - 0.9 nm
Out of Band Rejection (fibered output or with the background suppressor accessory)	< -60 dB @ ± 40 nm	< -60 dB @ ± 80 nm (measured up to 1.7 μm)	Depends on the bandwidth
Maximum input average power	HP8 (up to 8W), HP20 (up to 20W)	HP8 (up to 8W), HP20 (up to 20W)	HP4 (up to 4W)
Peak Efficiency	typically around 65%		
Optical Density (OD)	> OD6 (measured at 1064 nm)		TBD
Spectral Power Density	Coupled with 4W supercontinuum source < 1 - 3 mW Coupled with 8W supercontinuum source < 2 - 5 mW	Coupled with 4W supercontinuum source < 2 - 5 mW Coupled with 8W supercontinuum source < 5 - 9 mW	Depends on the bandwidth
Damage Threshold	< 5 GW/cm ² peak power @ 1064 nm, 8 ns		
Beam Diameter	2 to 5 mm (depending on λ)		
Input Beam Divergence Requirement	< 0.45 mrad		
Wavelength Resolution (Relative)	FWHM / 8		
Pointing Stability	< 1 mm lateral displacement @ 1 m from filter		
Scanning speed (multiple step)	35 ms stabilization time for 0.1 nm step, 45 ms stabilization time for 0.2 nm step, 55 ms stabilization time for 1 nm step, 60 ms stabilization time for 2 nm step, 65 ms stabilization time for 5 nm step, 70 ms stabilization time for 10 nm step		
Operating System (OS)	Windows Vista (32 & 64 bits), Windows 7 (32 & 64 bits), Windows 8 (32 & 64 bits)		
Software	PhySpec™ included (SDK available)		
Computer Connection	USB 2.0 (compatible 1.1)		
Dimensions (L x W x H)	9" x 6.3" x 6.7" / 23 cm x 16 cm x 17 cm (filter)		
Operating Temperature	5 to 40°C		
Storage Temperature	0 to 50°C		
Power Supply	100 - 240 V , 50 - 60 Hz		

OPTIONS & ACCESSORIES

Enhance SWIR	N/A	* up to 2500 nm	
Fibered Output	An X-Y-Z translation adjustment allows coupling optimization		
Harmonic Filter	Blocks the harmonics coming from the region 400-500 nm	Blocks the harmonics coming from the region 500-1000 nm and/or 1000-1250 nm	Filter chosen according to spectral range
Alignment Kit (for free space)	In free-space configuration, the alignment kit allows the user to rapidly find the correct alignment		
** Extended and reduced spectral ranges also available	e.g.: 500-2000 nm, 400-1700nm, 500-900 nm, 400-650 nm, 650-1000 nm, 1000-1700 nm, 1700-2300 nm, etc.		

NOTE: Photon etc reserves the right to change the design and specification of the product at any time, without notice.

LLTF VIS AND SWIR OUTPUT POWER



LLTF EXTENDED (500-2000 nm) OUTPUT POWER

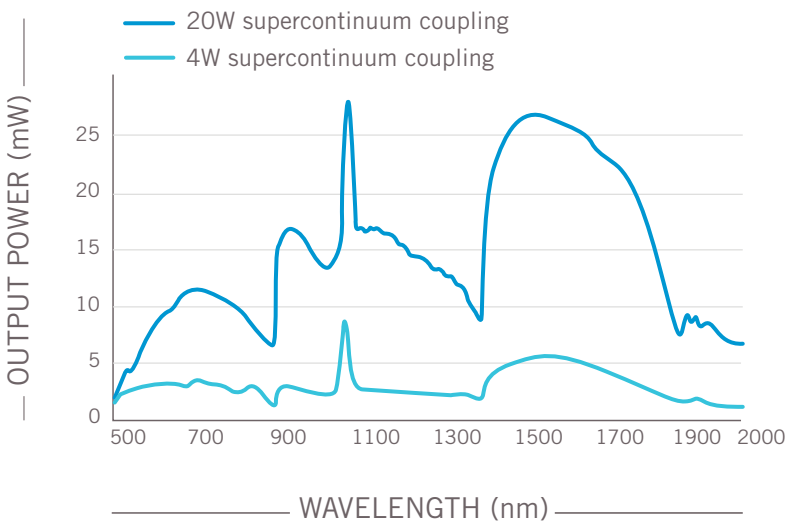
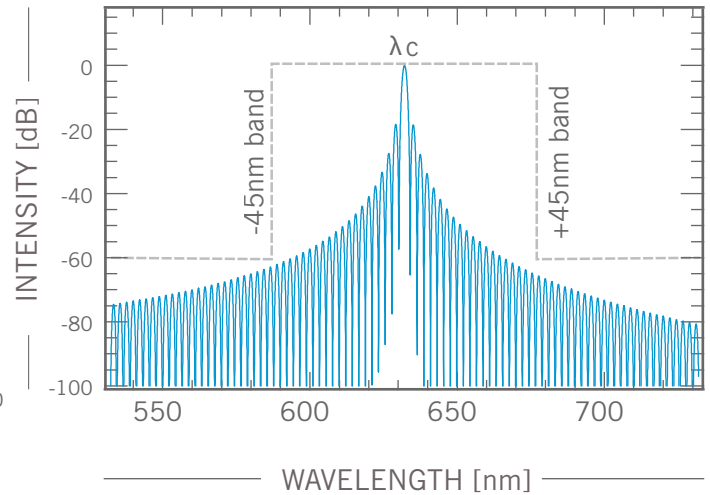


Illustration of the out-of-band rejection of a volume holographic grating at $\lambda_c = 632$ nm. Bands of ± 45 nm are presented and an out-of-band rejection of -60 dB is obtained.



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