Ultrabroad Band Single Mode Supercontinuum Light Source

(450-2300nm, single mode, perfect white light source, >3W)

DATASHEET

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The SUPL is an ultra-broadband, single-mode supercontinuum laser covering the 450–2300 nm spectral range, delivering over 3W of average power with exceptional stability (<0.5% standard deviation). It uses a 1060 nm pulsed fiber laser to pump a photonic crystal fiber (PCF), maintaining single-mode output across the entire broadband range from 450 to 2300nm. The SUPL is a turnkey benchtop, plug-and-play unit offering spatial coherence and a broad spectrum, making it an excellent alternative to traditional lamps, single-line lasers, LEDs, and ASE sources. Ideal for scientific and industrial applications — including absorption and transmission measurements, VIS/NIR/IR spectroscopy, single-molecule spectroscopy, and fluorescence excitation — the SUPL comes standard with a bare PCF output to ensure single-mode propagation. For ease of integration, we offer splicing to regular fibers using mole field adaptors. Agiltron uniquely produces various mode adaptors to match all types of fibers. Output power and repetition rates are adjustable via front-panel controls or remotely through a USB/GUI interface. A TTL repetition control BNC port is available for synchronization with measurements.

Features

- VIS+NIR Power Balanced
- Outstanding Power Stability
- 150 mW Average Power in Visible Range

Applications

- Microscopy (FRET, TIRF, CLSM…)
- Absorption /Transmission / Reflection Spectroscopy
- Optical Device Characterization
- Metrology
- Hyperspectral Imaging

Specifications

Parameter	Min	Typical	Max	Unit
Spectrum Range	450		2300	nm
Average Power (over the entire spectrum)		> 3	7	W
Repetition Rate *	40	100	400	kHz
Visible Range Average Power		150		mW
Pulse Duration (at 1060nm)		< 10		ps
Average Power Stability (std. dev.)		< 0.5		%
Output Power Adjustability	1		100	%
Beam Diameter		< 4		mm
Spatial Mode Quality (M^2)		< 1.2		
Polarization	Unpolarized			
PCF	SC-5.0-1040 (NKT)			
PCF 1st Zero Dispersion Wavelength	1050			nm
PCF Mode Field Diameter	4.6			µm
PCF Background Loss @1606nm	14			dB/km
PCF Background Loss @1550nm	10			dB/km
PCF Cladding Diameter	125			µm
PCF Outer Coating Diameter	245			µm
Output Port	Single Mode Fiber. 1m length			
Optical Output	Collimated(in the range 450-1000nm), Single-mode across full spectrum			
Cooling	air cooling			
Power Requirements	220 V / 110V - 50/60 Hz			
Operating Temperature	20		30	°C
Storage Temperature	-40		80	°C

* Two types of pump lasers: one with max repetition of 100kHz, another with 400kHz.

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link]:

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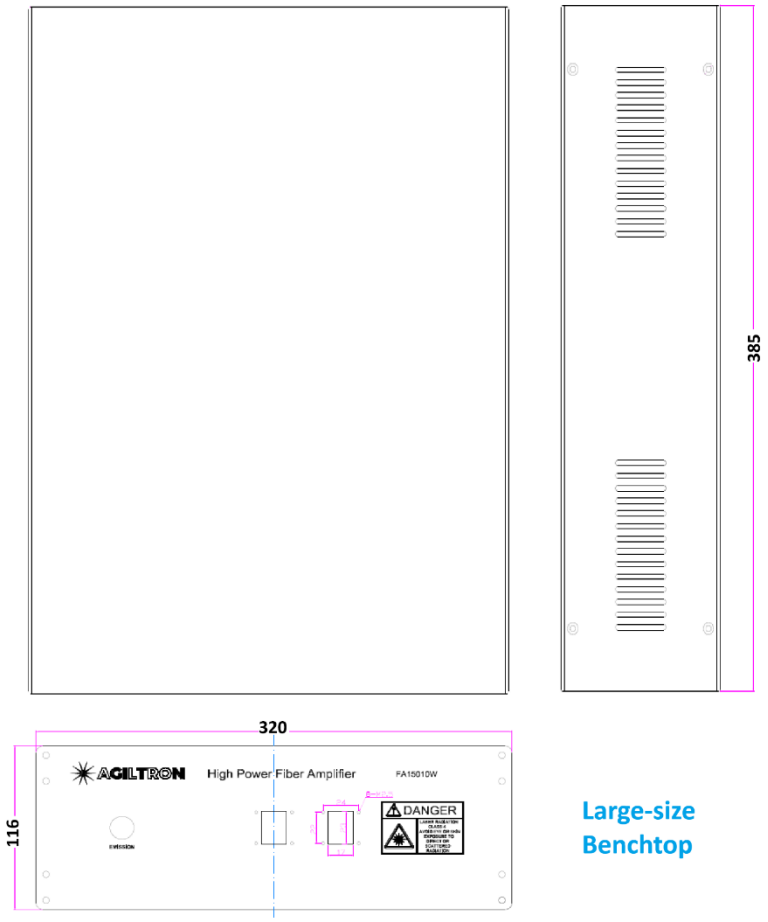
Dimensions (mm)



Large-size
Benchtop

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Accessory - Tunable Output

The SUPLF is the accessory for supercontinuum lasers to choose any wavelength in the visible range for bioimaging, nanophotonic and more.

- Spectral Range: 450-750 nm
- Optical Output: Free Space or 50/125 Multimode Fiber Output (1m) with FC/PC connector
- Linewidth: 10 nm to 300 nm
- Selectable lines: 1
- Resolution: 1 nm
- Power Transmissions: >75% (free space output) / > 25% (fiber output)
- USB computer control interface with GUI

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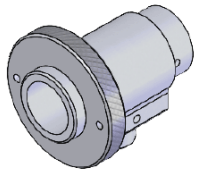
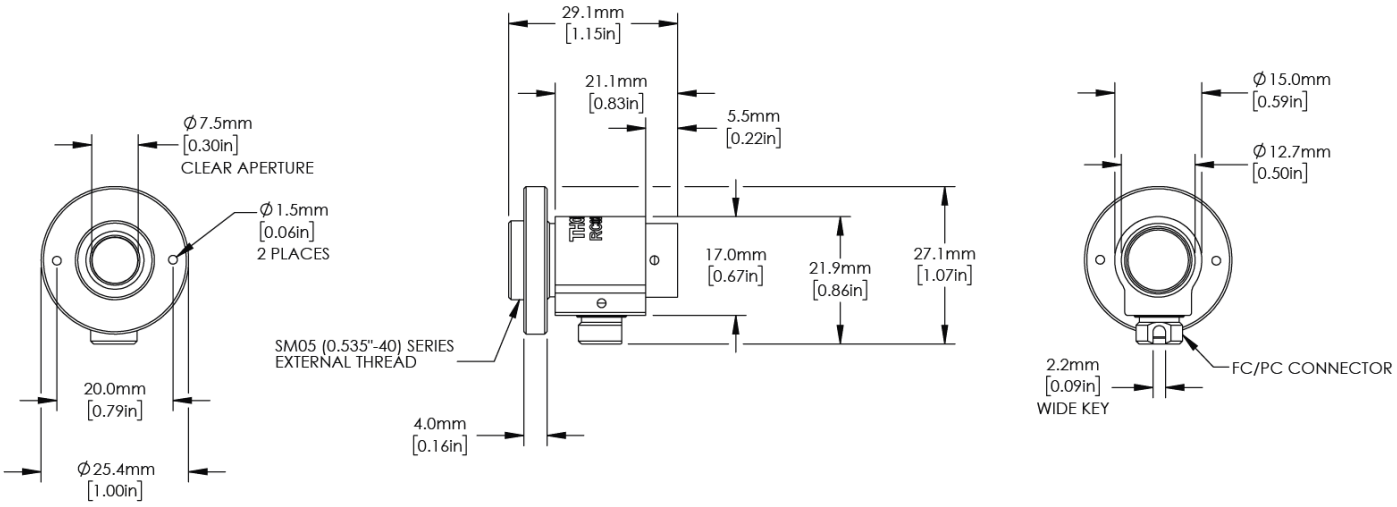
Collimator Mechanical Dimensions (mm[inches])





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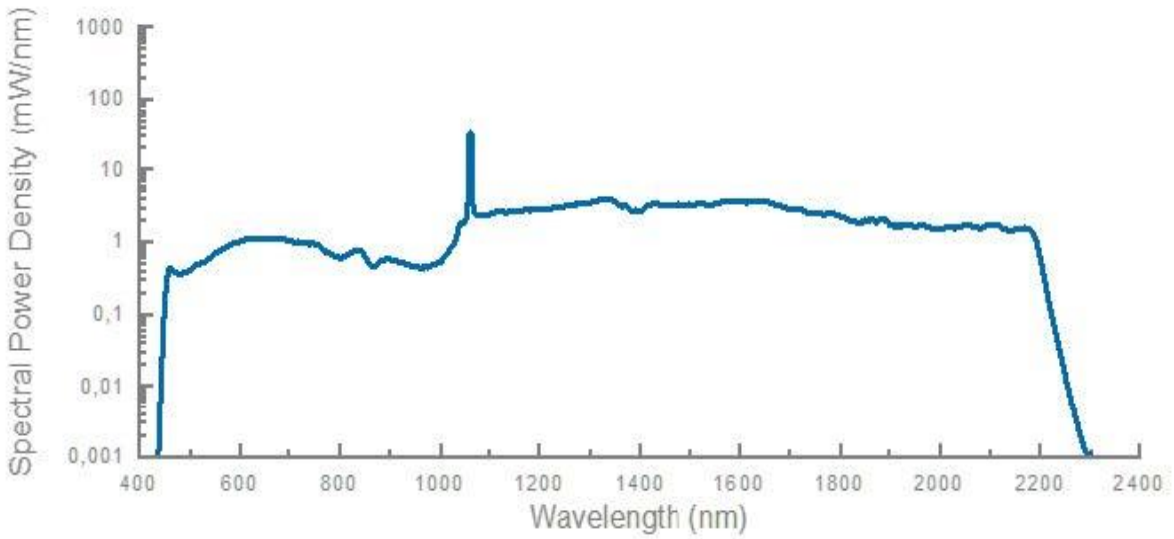
Typical Spectrum



Ordering Information

	☐	☐☐	☐	☐	☐	☐	☐	☐
Prefix	**Config**	**Total Output Power**	**Interface**	**Repetition**	**Trigger**	**Output ***	**Connector ****	**Collimator *****
SUPL-	Standard = 1 Special = 0	3W = 03 5W = 05 7W = 07 10W = 10 15W = 15 20W = 20 Special = 0	Non = 1 USB = 2 RS232 = 3 Special = 0	<100 kHz = 1 <400 kHz = 2	Non = 1 Yes = 2	Photonic Fiber = 1 50/125 Fiber = 2 105/125 Fiber = 3 SM28 = S Hi1060 = A Special = 0	None = 1 FC/PC = 2 Special = 0	Non = 1 4mm/50mm=2 Special = 0

* This Photonic Fiber (PCF) selection is the default only a fiber output without the connector. We offer splice regular fiber with the PCF for convenience uses, however, the single mode characters may be altered.

** The connector is only for regular fiber. For PCF connector can be used to protect the end face, but not for butt coupling. Photonic crystal fiber requires a mode field adaptor to couple into a glass fiber, which we produce.

*** 4mm/50mm- 4mm diameter parallel beam with a beam waist at a distance of 50mm

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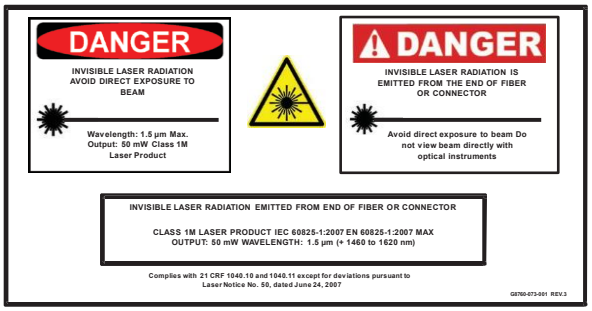
Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 µm.

Maximum power = 30 mW.



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