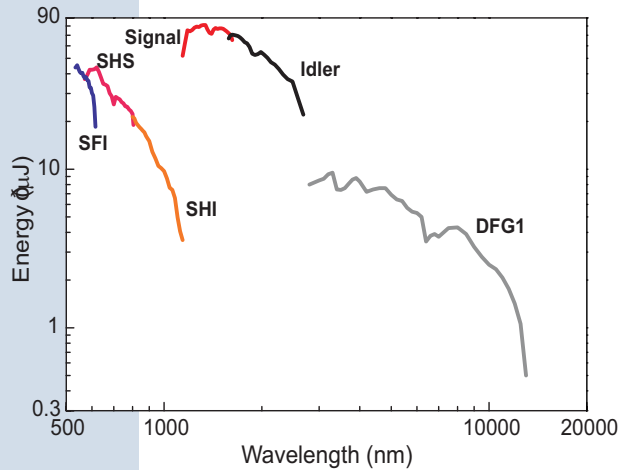


TYPICAL OUTPUT PERFORMANCE OF TOPAS 800-ps PUMPED WITH 0.49 mJ, 800 nm, 2 ps



TOPAS Model 800-ps is pumped by a fundamental harmonic of Ti:sapphire lasers and covers wavelength range from 1150 to 2600 nm. With optional frequency mixers this range can be extended from 189 nm to 20 microns.

PUMP REQUIREMENTS

Wavelength	770- 830 nm
Pulse width (FWHM)	1-4 ps
Pulse energy	0.2 to 5 mJ
Maximum average power	2 Watt
Polarization	horizontal
Spectral width	<1.2 times transform limit
Beam divergence	$M^2 < 1.5$
Pulse front tilt	<10% of pulsewidth
Pulse contrast	<5% of output energy in background
Energy instability	<3% peak-to-peak
Pulsewidth instability	<2% pulse-to-pulse
Spatial profile	Gaussian
Intensity modulation	<15%
Beam divergence	<1.2 x (diffraction limit)
Beam pointing instability	<0.1 x (diffraction limit)

PERFORMANCE SPECIFICATIONS WITH 800nm/1 mJ/ 3 ps/ 6 cm⁻¹ PUMP PULSES AT 1kHz

OUTPUT FROM TOPAS

Tuning range (signal+idler)	1150-2600 nm
Energy (signal+idler)	> 250 µJ at peak
Pulse duration	(0.7 to 1.0) x pump pulse width
Spectral width	<15 cm ⁻¹
Polarization	signal wave (1150-1600 nm) vertical idler wave (1600-2600 nm) horizontal
Energy instability	5% rms

OUTPUT FROM OPTIONAL SECOND-HARMONIC/SUM-FREQUENCY GENERATOR SH OF SIGNAL (SHS) & SH OF IDLER (SHI)

Tuning range	580-800 nm (SHS)	800-1150 nm (SHI)
Pulse energy	> 50 µJ at peak	
Spectral width	< 20 cm ⁻¹	
Polarization	horizontal(580-800nm)	vertical (800-1150nm)

PUMP+ IDLER (SFI)

Tuning range	533-600 nm
Pulse energy	> 60 μ J at peak
Spectral width	<20 cm^{-1}
Polarization	vertical

PUMP+ SIGNAL (SFS)

Tuning range	475-533 nm
Pulse energy	> 90 μ J at peak
Spectral width	<20 cm^{-1}
Polarization	vertical

SH OF SHS & SH OF SHI (FHS & FHI)

Tuning range	290-400nm (SH SHS)	400-475nm (SH of SHI)
Pulse energy	> 15 μ J at peak	> 6 μ J at peak
Spectral width	< 25 cm^{-1}	
Polarization	vertical (290-400nm)	horizontal (400-475nm)

OUTPUT FROM OPTIONAL UV-VIS GENERATOR**SH OF SFS & SH OF SFI**

Tuning range	240-266nm (SH SFS)	266-300nm (SH of SFI)
Pulse energy	> 10 μ J at peak	
Spectral width	< 25 cm^{-1}	
Polarization	horizontal	

OUTPUT FROM OPTIONAL DEEP UV GENERATOR***PUMP+ (SH OF SFI), PUMP+(SH OF SFS) AND FHS**

Tuning range	189-200nm (pump+SH of SFS)
	200-218nm (pump+SH of SFI)
	218-267nm (pump+FHS)
Pulse energy	> 2 μ J
Polarization	vertical

OUTPUT FROM OPTIONAL DIFFERENCE-FREQUENCY GENERATOR (SIGNAL-IDLER)

Tuning range with DFG#1	2.6-11 μ m	
Pulse energy	> 7 μ J @ 4 μ m	> 1 μ J @ 10 μ m
Spectral width	< 25 cm^{-1}	
Polarization	horizontal	
Tuning range with DFG#2	5-20 μ m	
Pulse energy	> 7 μ J @ 6 μ m	> 1 μ J @ 10 μ m
	> 0.2 μ J @ 18 μ m	
Spectral width	< 25 cm^{-1}	
Polarization	horizontal	

OUTPUT FROM OPTIONAL MID-IR GENERATOR****PUMP- SHI**

Tuning range	2.6 -5.1 μ m	
Pulse energy	>50 μ J @ 3 μ m	>25 μ J @ 4 μ m
	> 8 μ J @ 5 μ m	
Polarization	horizontal or vertical (depends on model)	
Spectral width	< 20 cm^{-1}	
Time- bandwidth product	< 0.7 (assuming Gaussian shapes)	

Pulse duration with all options: (0.7 to 1.0) x pump pulse width

Beam divergence with all options <2 x diffraction limit

* Assuming secondary 0.5 mJ pump channel

** Assuming secondary 1 mJ pump channel

Optional polarization controller may change output polarization

LIGHT CONVERSION LTD

Sauletekio av. 10
LT-10223 Vilnius
Lithuania
Tel. +370 (5) 2491830
Fax. +370 (5) 698723
E-mail: lc@lightcon.com



<http://www.lightcon.com>

Note: with increased pump energy TOPAS output energy scales up linearly