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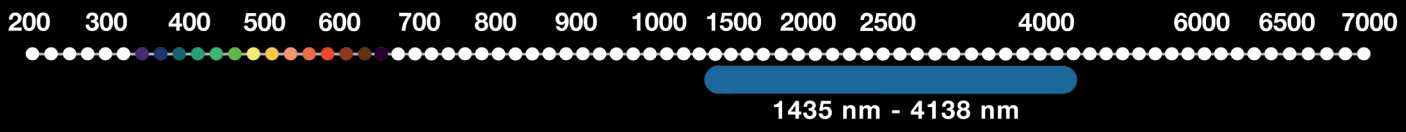
Broadly Tunable Laser in the Mid-IR

With integrated computer-controlled OPO for continuous tuning across 1435 - 4138 nm (6969 - 2416 cm^{-1})*



Titan

KEY FEATURES

- Wide wavelength tuning across 1435 - 4138 nm (6969 - 2416cm^{-1})*
- Simultaneous Outputs: All
- Average Power Models: High Power (>4 W)
- Linewidth: Signal <1 MHz, Idler <10 MHz
- Higher Power Models Available
- Built-in pump

APPLICATIONS

- Action Spectroscopy.
- Cavity Ring-Down Spectroscopy.
- Device Characterisation.
- Frequency Conversion.
- Gas Sensing.
- Laser Cooling and Trapping.
- Mid-IR Communications.
- Photon Entanglement.

Description

The extraordinary Titan is the pioneer commercial mid-infrared continuous-wave optical parametric oscillator (CW OPO). Introduced to the market in 2018, Titan delivers continuously tunable output wavelengths in the mid-IR, across 1435 - 4138 nm (6969-2416 cm^{-1})*. The full spectral range is achieved with a single set of optics without the need to exchange any module.

Radiantis´ unique expertise in frequency converted lasers has enabled the exceptional design of the Titan OPO family. As a sealed and fully-automated system, with excellent TEM_{00} beam quality ($M^2 < 1.3$) and beam pointing stability (<40 µrad), Titan delivers high CW output power (>4 W at the peak of the tuning range) with a linewidth <1 MHz in the signal range and <10 MHz in the idler.

Hands-free operation is ensured thanks to the all-digital control electronics and user control software which can be accessed through the PC GUI interface installed on a dedicated laptop delivered with the OPO. Titan can also be controlled via remote commands.

Titan integrates 4 key modules: 1) a rack DFB fiber laser and amplifier unit, 2) the OPO optical head, 3) a rack OPO all-digital control electronics and 4) a rack compact water-cooler. The fiber laser, the OPO control electronics and the water cooler are rackable The OPO optical head needs to be positioned on an optical table to reduce vibrations and ensure maximum stability.

The broad wavelength range, narrow linewidth, and fully-automated tunability across the mid-IR enables cutting-edge research in diverse areas such as spectroscopy and microscopy for biotechnology, fundamental physics and chemistry, as well as material characterisation, device calibration and quantum technologies.

Several Titan models are available which provide different characteristics of average output power and wavelength coverage, as detailed in the specification table below.coverage, as detailed in the specification table below.

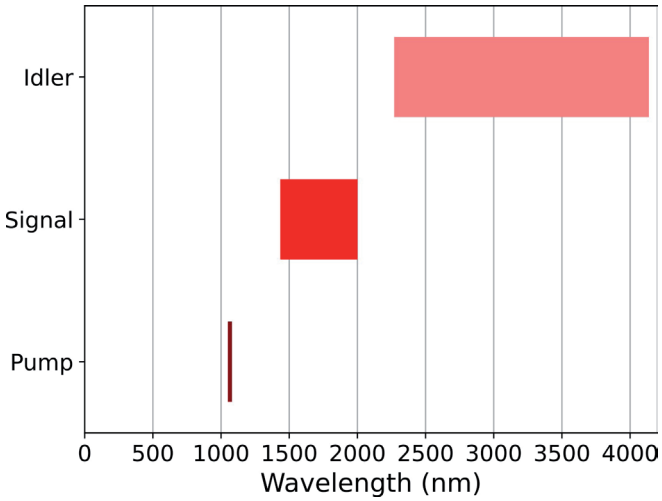
Titan Wavelength Coverage

Output Ports

Titan incorporates two output ports:

- Signal	1435 - 2000 nm (5000 - 6969 cm^{-1})
- Idler	2270 - 4138 nm (2416 -4405 cm^{-1})

This superior spectral coverage is provided with exceptional output power across the entire range (>4 W at peak wavelength).



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Specifications[1]

Output Characteristics	Titan LP	Titan HP
Tuning Range		
Signal output	1435 - 2000 nm (5000 -6968 cm^{-1})	1435 - 2000 nm (5000 -6968 cm^{-1})
Idler output	2270 - 4138 nm (2416 - 4405 cm^{-1})	2270 - 4138 nm (2416 - 4405 cm^{-1})
Output Power[2][3]		
Signal output	> 1.5 W	> 2.5 W
Idler output	> 2.5 W	> 4 W
Linewidth		
Signal output	<1 MHz	<1 MHz
Idler output	<10 MHz	<10 MHz
Beam Parameters		
Beam diameter at 1650 nm	<3.0 mm	<3.0 mm
Beam diameter at 3000 nm	<3.0 mm	<3.0 mm
Spatial mode	TEM_{00} ($M^2 \leq 1.3$)	TEM_{00} ($M^2 \leq 1.3$)
Beam pointing signal	<80 µrad	<80 µrad
Beam pointing idler	<20 µrad	
Beam displecement with tuning idler	<0.3 mm	
Polarization		
Signal	Linear - Horizontal	Linear - Horizontal
Idler	Linear - Horizontal	Linear - Horizontal
Power stability		
Signal	<0.5% rms[5]	<0.5% rms[5]
Idler	<0.5% rms[6]	<0.5% rms[6]
Size (W x L x H)	610 x 350 x 200 mm (24.0 x 13.8 x 7.9 inch)	

Notes:
(1) Specifications are subject to change without notice.
(2) At Peak of OPO tuning range.
(3) Higher powers available on request.
(4) Across the full spectral range.
(5) At 1478 nm.
(6) At 3800 nm.

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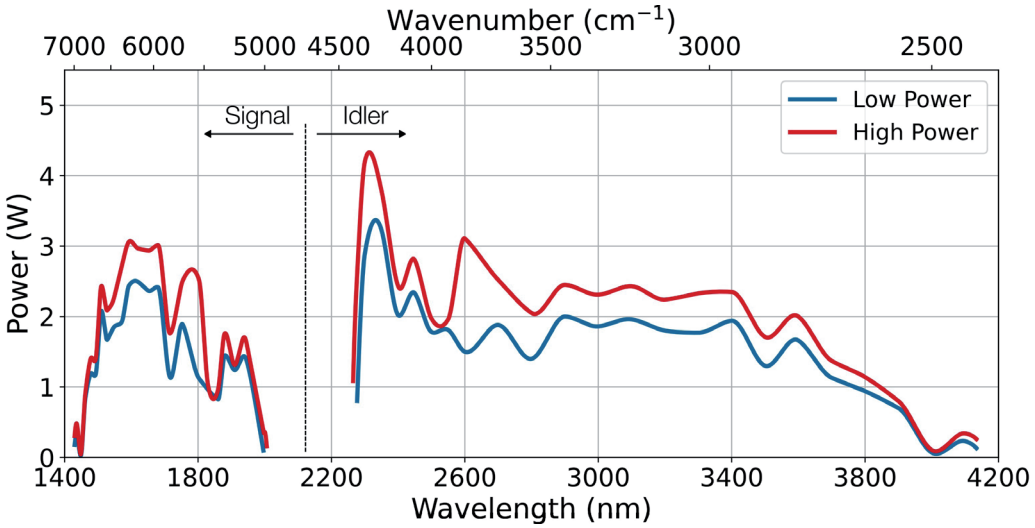
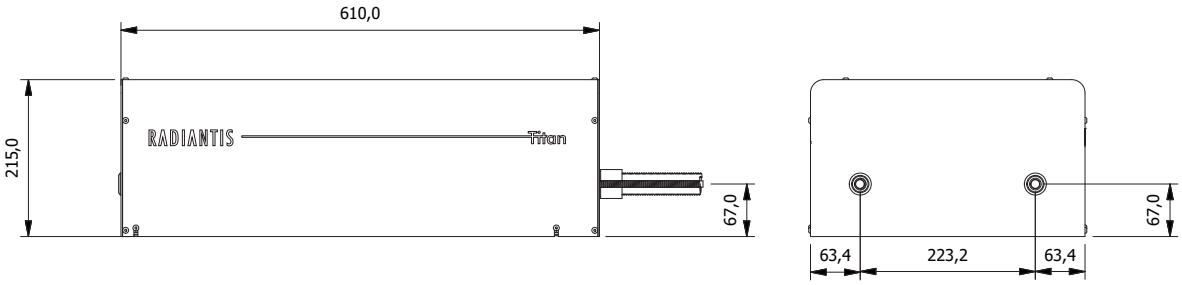
Titan Typical Tuning Curve



Dimensions



Notes: Dimensions in mm.

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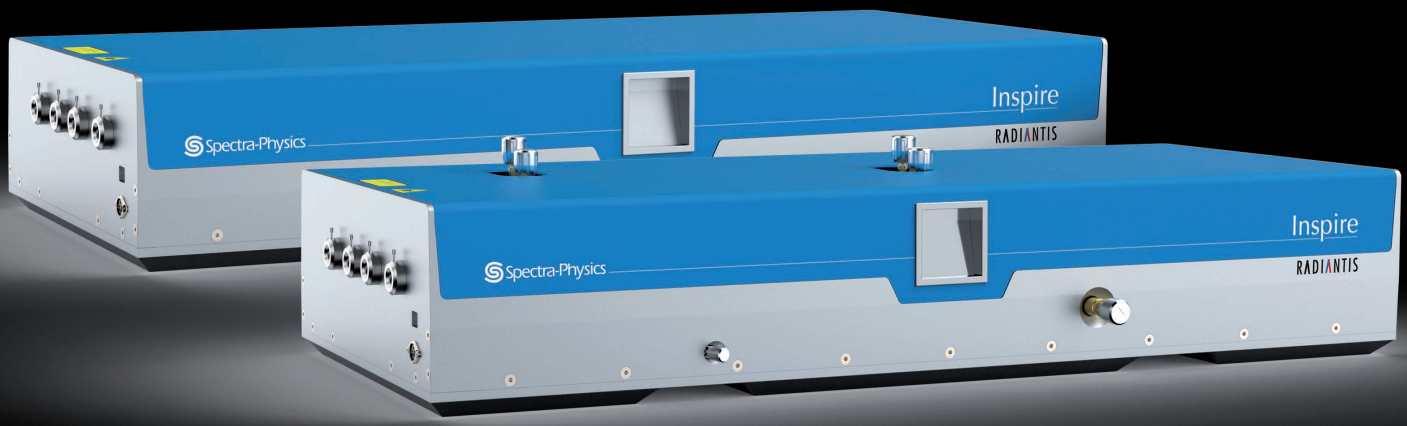
Femtosecond OPO for Ti:Sa Oscillators

Hands-Free Optical Parametric Oscillator Across 345 - 2500 nm (4000 - 28985 cm^{-1})

Inspire



Spectra-Physics official partner.

KEY FEATURES

- Gap-free tuning across the UV, Visible and IR 345-2500 nm (4000 - 28985 cm^{-1}) with a single configuration and without any change of optics.
- Simultaneous UV, Visible and IR outputs.
- Average Power: >350 mW
- Pulse Duration: <200 fs
- Repetition Rate: 80 MHz

APPLICATIONS

- Linear & Non-Linear Spectroscopy & Microscopy (SHG, THG, Two-Photon, Multiphoton)
- Plasmonics.
- Pump-Probe Spectroscopy.
- Raman Spectroscopy & Microscopy. (CARS, SRS).
- Time-Resolved Spectrocpy & Microscopy. (FLIM, TR-FRET, TCSPC)

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Description

Empower your research, using **the Visible, UV and IR femtosecond pulses** provided by the family of synchronously-pumped Optical Parametric Oscillators (OPOs), Inspire.

Based on Radiantis patented technology, Inspire delivers near-transform-limited pulses with high average power across the spectral range of 345–2500 nm (4000 - 28985 cm^{-1}), gap-free. With a single set of optics and just one standard configuration, the unique design of the Inspire offers best-in-class access to the complete spectral range, eliminating the need of change in configuration and ensuring simultaneous access to the Visible and IR.

The Inspire is available with both hands-free technology (the Inspire HF) and, for greater flexibility, as an automatic device (the Inspire Auto). The former providing computer-controlled tuning across the full spectral range and self-calibration, and the latter allowing adjustment of the pulse duration and enhanced functionality for multiple applications.

The Inspire is also tuned at room temperature, thereby avoiding the need for ovens, water-cooling units and pipes inside the OPO cavity.

Specifications[1]

Output Characteristics[2]	Inspire Auto 50	Inspire Auto 100	Inspire HF 50	Inspire HF 100
Average Power				
SHG @ 400 nm (25000 cm^{-1})	n/a	1100 mW	n/a	1100 mW
Signal @ 550 nm (18181 cm^{-1})	350 mW	350 mW	350 mW	350 mW
Depleted Fundamental @ 800 nm	1100 mW	1100 mW	1100 mW	1100 mW
Idler (at peak)	170 mW	170 mW	170 mW	170 mW
Pulse Width				
SHG	n/a	<140 fs	n/a	<140 fs
Signal	100 - 250 fs (adjustable)	100 - 250 fs (adjustable)	200 fs	200 fs
Depleted Fundamental	<140 fs	<140 fs	<140 fs	<140 fs
Idler	80 - 250 fs (adjustable)	80 - 250 fs (adjustable)	200 fs	200 fs
Tuning Range				
SHG	n/a	345 - 520 nm (19230 - 28985 cm^{-1})	n/a	345 - 520 nm (19230 - 28985 cm^{-1})
Signal (Simultaneous with Idler)	490 - 750 nm (13333 - 20408 cm^{-1})	490 - 750 nm (13333 - 20408 cm^{-1})	490 - 750 nm (13333 - 20408 cm^{-1})	490 - 750 nm (13333 - 20408 cm^{-1})
Depleted Fundamental	690 - 1040 nm (9615 - 14492 cm^{-1})	690 - 1040 nm (9615 - 14492 cm^{-1})	690 - 1040 nm (9615 - 14492 cm^{-1})	690 - 1040 nm (9615 - 14492 cm^{-1})
Idler (Simultaneous with Signal)	930–2500 nm (4000 - 10752 cm^{-1})	930–2500 nm (4000 - 10752 cm^{-1})	930–2500 nm (4000 - 10752 cm^{-1})	930–2500 nm (4000 - 10752 cm^{-1})
Repetition Rate	80 MHz			
Noise	<1% rms			
Wavelength Stability @ 555 nm	<0.5 nm			
Polarization	Horizontal for Signal and Idler, Vertical for SHG			
Spectrometer for UV and Visible Range[3]	350–900 nm (integrated into optics unit)			
Size (W x L x H)[4]	14.2 x 37.6 x 9.1 in (36.0 x 95.4 x 23.2 cm)			

Notes:
[1] Specifications are subject to change without notice.
[2] Pumped by Mai Tai® HP Ti:sapphire oscillators, 2.8W, 100fs, 820nm. Output characteristics for alternative pump lasers, such as Tsunami™ are available upon request.
[3] IR spectral region available upon request.
[4] PC controllable. No control electronics unit required.

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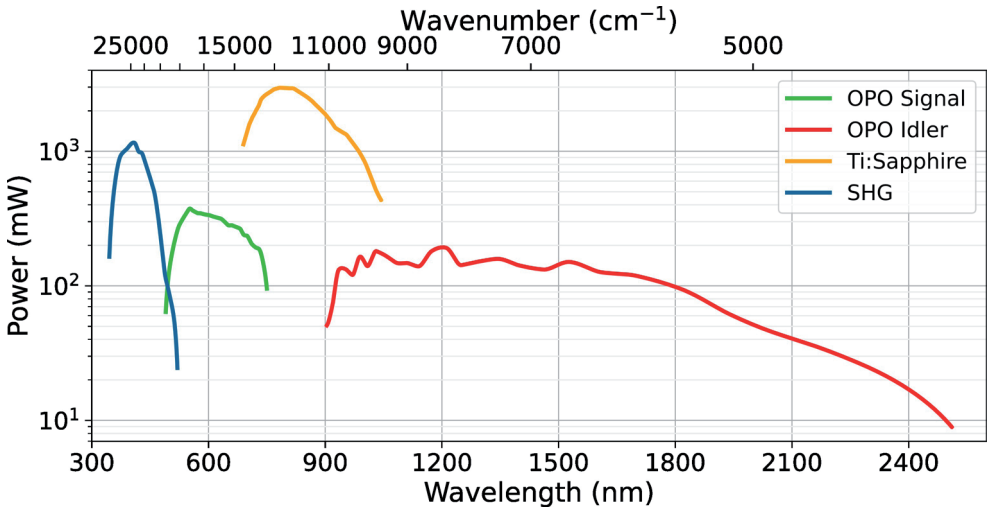
TUNE YOUR WAVELENGTH
Broadly Tunable Laser Systems for Science & Technology

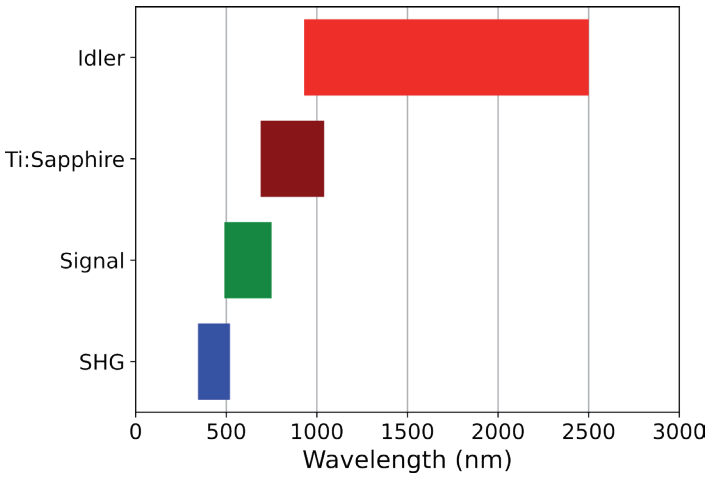
Idler Typical Tuning Curve



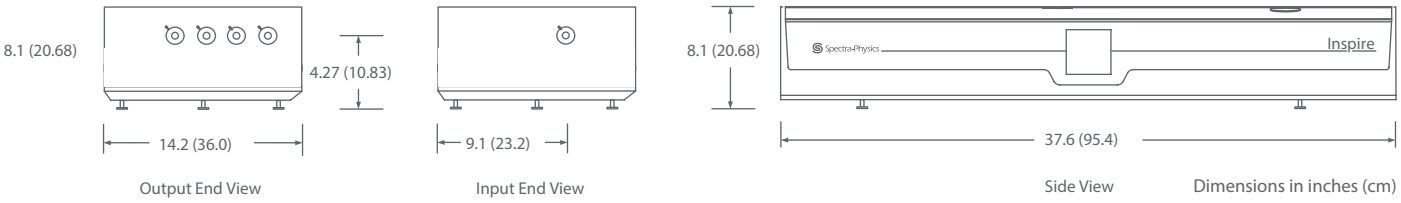
Inspire Wavelength Coverage

Outputs Ports

Four separate output ports provide the class-leading spectral coverage, consisting of the doubled pump [345 - 520 nm (19230 - 28985 cm^{-1})], signal [490 - 750 nm (13333 - 20408 cm^{-1})], idler [930 - 2500 nm (4000 - 10752 cm^{-1})] and depleted pump [640 - 1040 nm (9615 - 14492 cm^{-1})].



Dimensions



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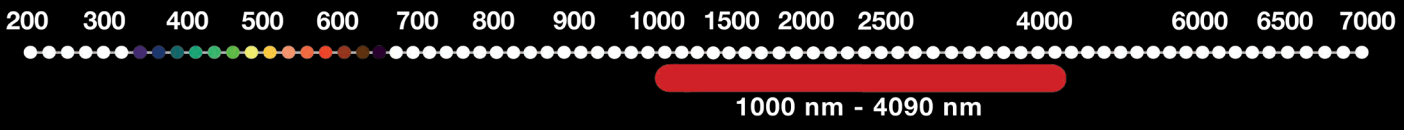
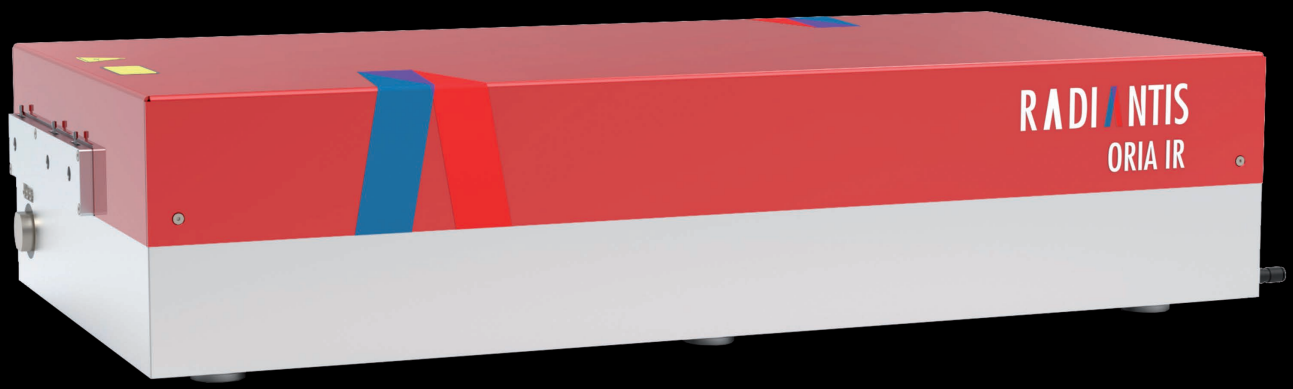
IMPROVED PRODUCT

Femtosecond IR OPO for Ti:Sapphire Oscillators

Hands-Free Optical Parametric Oscillator Tunable Across 1000 - 4090 nm (2444 - 10000 cm^{-1})



ORIA IR



KEY FEATURES

- Broad tuning across 1000 - 1580 nm (6329 - 10000 cm^{-1}) and 1696 - 4090 nm (2444 - 5890 cm^{-1}).
- Simultaneous Outputs: All. 3) with limited range
- Average Power: >1 W at peak of the range
- Pulse Duration: Signal 160 fs typ.
- Idler 96 fs typ.
- Repetition Rate: 80 MHz
- External SHG Extension Unit **ORIA VIS**

APPLICATIONS

- Linear & Non-Linear Spectroscopy & Microscopy. (SHG, THG, Two-Photon, Multiphoton)
- Plasmonics.
- Pump-Probe Spectroscopy.
- Raman Spectroscopy & Microscopy. (CARS, SRS)
- Time-Resolved Spectroscopy & Microscopy. (FLIM, TR-FRET, TCSPC)

Description

Sealed, fully automated femtosecond optical parametric oscillator (OPO) delivering broad wavelength coverage from 1000 to 4090 nm (2444 to 10000 cm ^{1}), with unmatched average power exceeding 1 W at the peak of its range. Designed for seamless integration, it is compatible with standard femtosecond Ti:Sapphire oscillators operating at MHz repetition rates.

Engineered for effortless pick-and-place installation, the ORIA IR features integrated, easily accessible alignment tools, simplifying both installation and alignment with the Ti:Sapphire pump. Its virtually maintenance-free operation and fully automated wavelength tuning with self-calibration maximize reliability and ensure effective operation and ease of use. It also incorporates comprehensive humidity control (both passive and active), ensuring optimal performance for low-noise measurements.

To ensure shortest pulse durations across the spectral range, a dynamic dispersion compensation module is incorporated within the ORIA IR which enables independent control of the dispersion for every wavelength.

A robust mechanical design and an efficient water-cooling system ensure high peak-to-peak power stability and excellent beam pointing across the complete spectral range, making the ORIA IR an ideal tool for advanced ultrafast spectroscopy and nonlinear microscopy applications.

Specifications(1)

Pumped by mode-locked Ti:Sapphire laser, at 2.8 Watts, 80 MHz, 90 fs

Output Characteristics	ORIA IR S	ORIA IR I	ORIA IR XT
Signal tuning range(2)	1000 – 1580 nm (6329 - 10000 cm^{-1})	n/a	1000 – 1580 nm (6329 - 10000 cm^{-1})
Idler tuning range(2)	n/a	1696 – 4090 nm (2444 - 5890 cm^{-1})	1696 – 4090 nm (2444 - 5890 cm^{-1})
Pump tuning range(2)(3)	720 – 810 nm (12195 - 14084 cm^{-1})	720 – 810 nm (12195 - 14084 cm^{-1})	720 – 810 nm (12195 - 14084 cm^{-1})
Signal output power(4)	> 1 W	n/a	> 1 W
Idler output power(4)	n/a	> 350 mW	> 350 mW
Signal pulse width	160 fs typ.	n/a	160 fs typ.
Idler pulse width	n/a	96 fs typ.	96 fs typ.
Beam diameter @ 1300 nm	1.4 mm +/- 10%	n/a	1.4 mm +/- 10%
Beam divergence	< 1 mrad	< 1 mrad	< 1 mrad
Signal beam displacement with wavelength	< 600 microns at < 40cm from output	n/a	< 600 microns at < 40cm from output
Signal beam pointing with wavelength	< 300 µrad	n/a	< 300 µrad
Spatial mode	TEM_{00} $M^2 \leq 1.2$	TEM_{00} $M^2 \leq 1.3$	TEM_{00} $M^2 \leq 1.2$ (signal) TEM_{00} $M^2 \leq 1.3$ (idler)
Signal noise at 1300 nm	< 1% rms	< 1% rms	< 1% rms
Output ports	1) 100% signal and idler with no pump bypass. 2) Partial signal and idler with 20% pump bypass. 3) 100% pump bypas		
Power stability (peak to peak)	<1 %	<1 %	<1 %
Polarization	Horizontal (>100:1)	Horizontal (>100:1)	Horizontal (>100:1)
Repetition rate	80 MHz	80 MHz	80 MHz
Size (W x L x H)	725 x 365 x 170.5 mm (28.54 x 14.37 x 6.71 inch)		

Notes: (1) Specifications are subject to change without notice. (2) Extended range available upon request. (3) Pump tuning range simultaneous with signal and idler tuning range. (4) At peak of pump and OPO signal tuning range.

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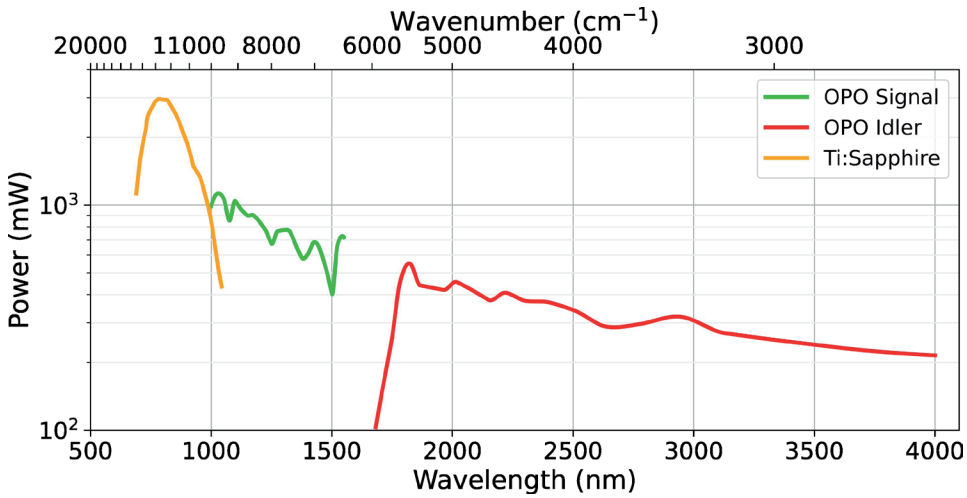
ORIA IR Typical Tuning Curves

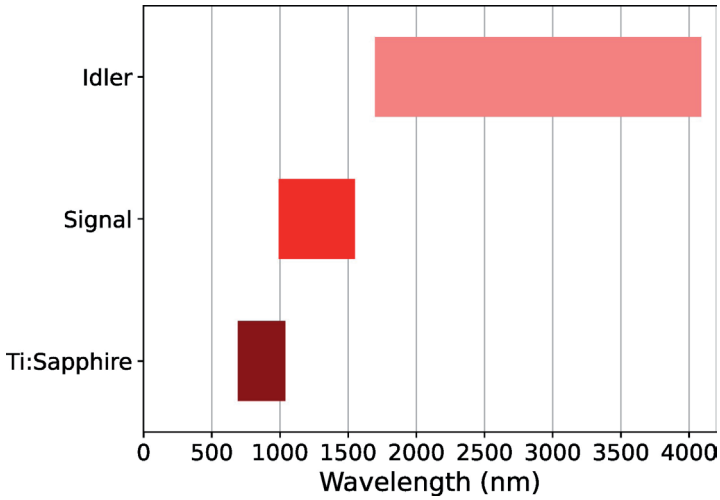


ORIA IR XT Wavelength Coverage

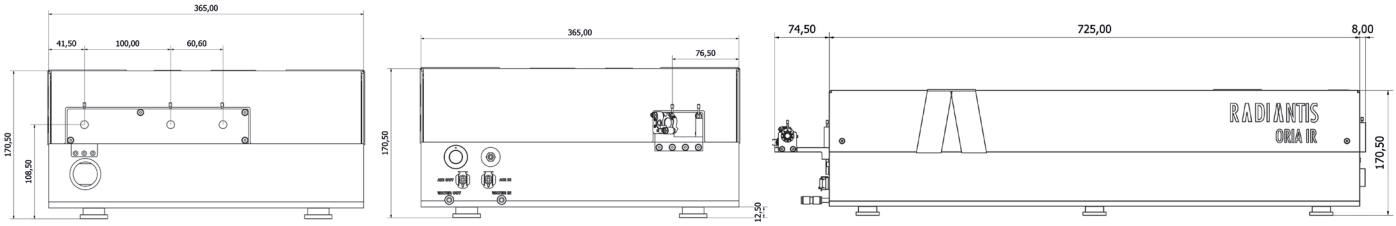
Output Ports

The ORIA IR XT includes three output ports which deliver
1) The Signal 1000 - 1580 nm (6329 - 10000 cm^{-1})
2) The Pump (typically) 680 - 1080 nm (9259 - 14705 cm^{-1})
3) The Idler 1696 - 4090 nm (2444 -5890 cm^{-1})

An important feature of the ORIA IR XT is the incorporated Ti:Sapphire pump bypass which enables the selection of 100% of the pump (with no signal and idler power), a percentage of the pump (simultaneously with partial signal and idler power) or 0% of the pump (with full signal and idler power).



Dimensions



Notes: Dimensions in mm

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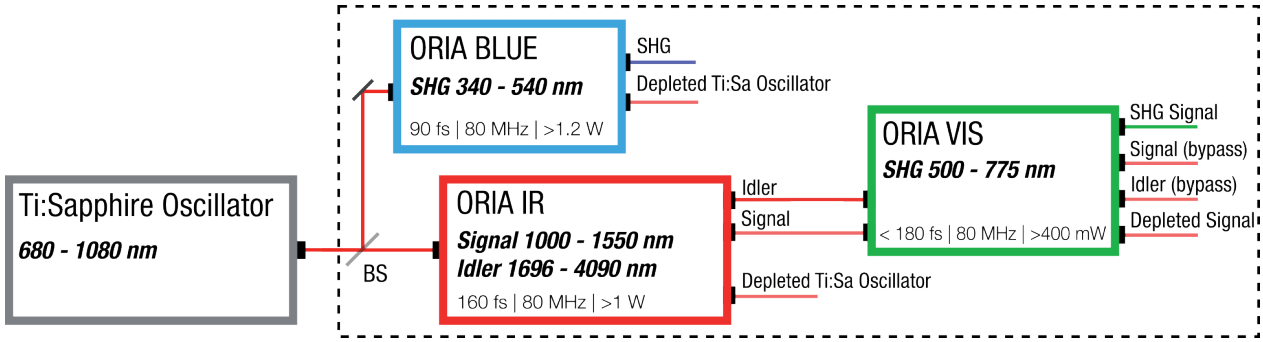
ORIA Series

TI:Sapphire Wavelength Extensions



- Broad wavelength tuning across 340 - 4090 nm
- (2444 - 29411 cm-1)
- Fully automated, hands-free tuning for simplified use
- Simultaneous pump, signal and idler outputs

Related Products

ORIA BLUE

Femtosecond & Picosecond Second Harmonic Generator

Key Features:

- Output Ports:

1) SHG: 340 - 540 nm (18518 - 29411 cm^{-1})
2) Undepleted Pump: 680 - 1080 nm (9259 - 14705 cm^{-1})

- Simultaneous Outputs: All
- Average Power: >1.2 W
- Pulse Duration Models:
- - Femtosecond <180 fs - Picosecond <5 ps
- Repetition Rate: 80 MHz

ORIA VIS

Femtosecond Second Harmonic Generator

Key Features:

- Output Ports:

1) SHG: 495 - 775 nm (12903 - 20202 cm^{-1})
2) Pump (OPO) Bypass Signal: 1000 - 1580 nm (6329 - 10000 cm^{-1})
3) Pump (OPO) Bypass Idler: 1696 - 4090 nm (2444 - 5890 cm^{-1})
4) Undepleted Pump (OPO): 1000 - 1580 nm (6329 - 10000 cm^{-1})

- Simultaneous Outputs: 1), 3) and 4)
- Average Power: >400 mW
- Pulse Duration: <180 fs
- Repetition Rate: 80 MHz

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Broadly Tunable Laser Systems for Science & Technology

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Femtosecond & Picosecond Second Harmonic Generation

Frequency Doubler for Ti:Sapphire Lasers

ORIA BLUE

KEY FEATURES

- Output Ports:
  1) SHG: 340 - 540 nm (18518 - 29411 cm-1)
  2) Undepleted Pump: 680 - 1080 nm (9259 - 14705 cm1)
- Simultaneous Outputs: All
- Average Power: >1.2 W
- Pulse Duration Models:
  - Femtosecond <180 fs
  - Picosecond <5 ps•
- Repetition Rate: 80 MHz

APPLICATIONS

- Linear & Non-Linear Spectroscopy & Microscopy.
  (SHG, THG, Two-Photon, Multiphoton)
- Plasmonics.
- Pump-Probe Spectroscopy.
- Raman Spectroscopy & Microscopy.
  (CARS, SRS)
- Time-Resolved Spectroscopy & Microscopy.
  (FLIM, TR-FRET, TCSPC)

Description

The ORIA BLUE offers an innovative, easy-to-use and reliable doubling unit that efficiently converts the near-IR emission of mode-locked ultrafast Ti:Sapphire lasers [typically 680–1100 nm (9259 - 14705 cm^{-1})] into the near-UV and visible spectrum [340–540 nm (18518 - 29411 cm^{-1})].

Based on novel nonlinear optical technology, the ORIA BLUE doubler provides exceptional beam quality, combined with high conversion efficiency and reduced pulse broadening.

The ORIA BLUE is available in both manual and automated hands-free versions and is compatible with standard femtosecond and picosecond MHz repetition rate Ti:Sapphire oscillators. Installation is straightforward and alignment-free.

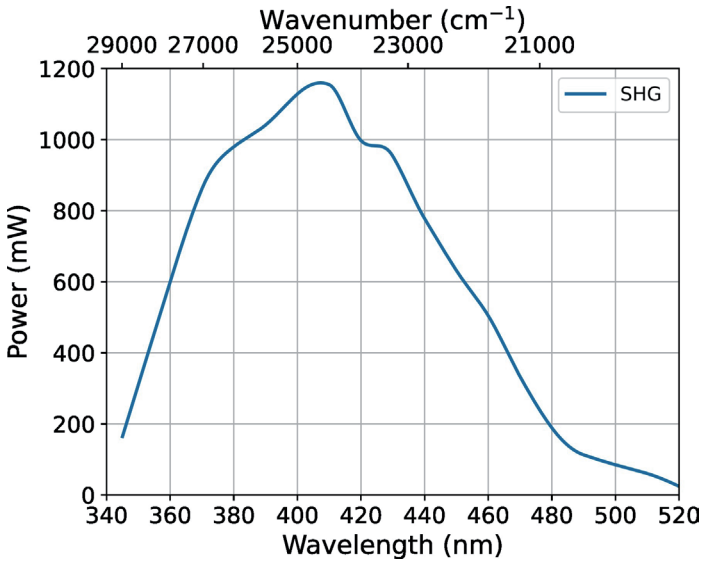
This compact unit provides an excellent tool for a wide range of applications requiring femtosecond and picosecond light pulses at MHz repetition rates.

Specifications(1)

Output Characteristics	Pumped with Ti:Sapphire oscillator, 2.8 W at 820 nm, 80 MHz, 90 fs [690 - 1040 nm (9615 - 14492 cm^{-1})]	Pumped with Ti:Sapphire oscillator, 3.3 W at 820 nm, 80 MHz, 140 fs [680 - 1080 nm (9259 - 14705 cm^{-1})]
Tuning Range	345 - 520 nm (19230 - 28985 cm^{-1})	340 - 540 nm (18518 - 29411 cm^{-1})
Average Power	> 1.2 W at 410 nm (24390 cm^{-1})	> 1.2 W at 410 nm (24390 cm_{-1})
Pulse Width	< 150 fs at 860 nm (11627 cm^{-1})	< 180 fs at 860 nm (11627 cm^{-1})
Spatial Mode	TEM_{00}	TEM_{00}
Repetition Rate	80 MHz	80 MHz
Operation	Manual and fully automated versions	Manual and fully automated versions
Size (W x L x H)	200 x 364 x 155 mm (7.9 x 14.3 x 6.1 inch)	200 x 364 x 155 mm (7.9 x 14.3 x 6.1 inch)

Notes: (1) Specifications are subject to change without notice.

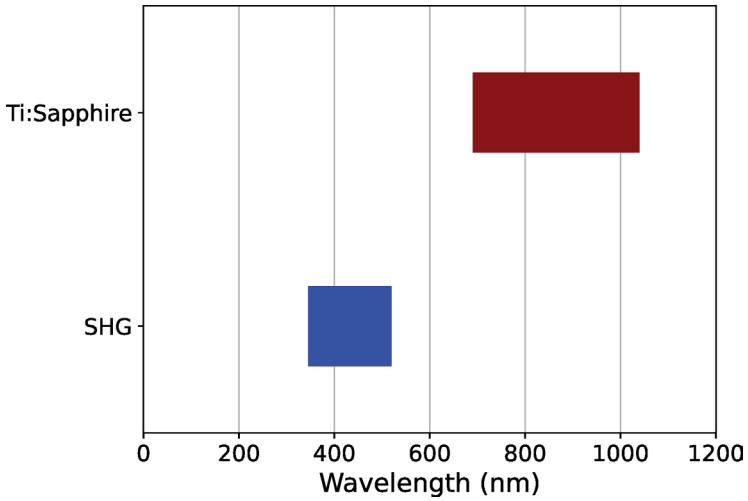
ORIA BLUE Typical Tuning Curve



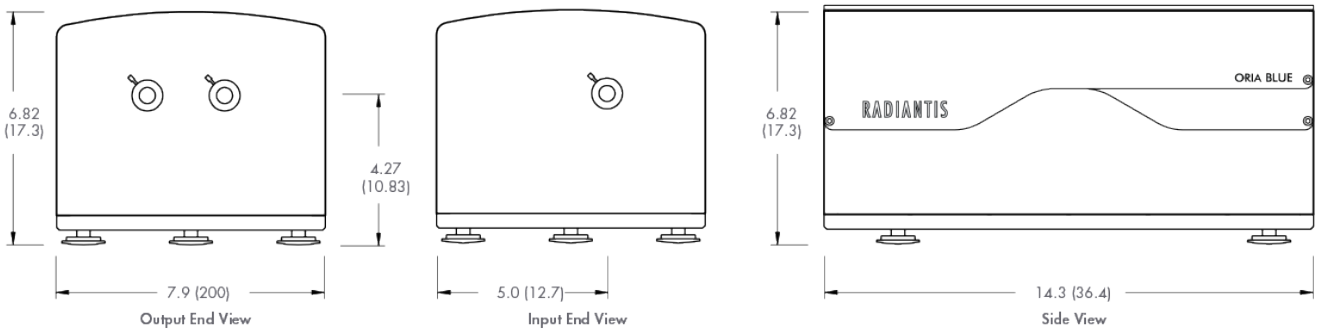
ORIA BLUE Wavelength Coverage

Output Ports

ORIA BLUE generates two synchronised beams that simultaneously provide the converted output in the near-UV and visible spectrum [340-540 nm (18518 - 29411 cm^{-1})] and the unconverted fundamental in the IR spectrum [680-1100 nm (9259 - 14705 cm^{-1})]. The full spectrum is covered by a single set of optics for maximum flexibility.



Dimensions



Notes: Dimensions in cm

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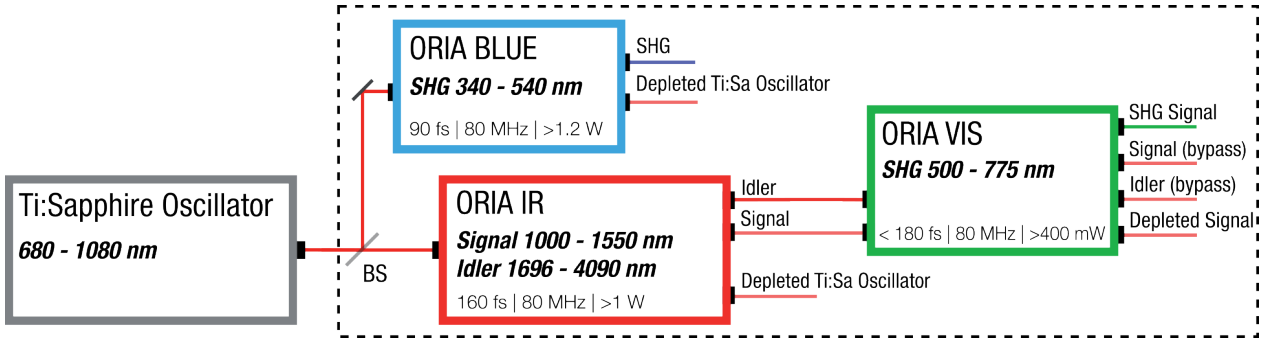
ORIA Series

TI:Sapphire Wavelength Extensions



- Broad wavelength tuning across 340 - 4090 nm
- (2444 - 29411 cm-1)
- Fully automated, hands-free tuning for simplified use
- Simultaneous pump, signal and idler outputs

Related Products

ORIA IR

Femtosecond IR OPO

Key Features:

- Output Ports:
1) Signal: 1000 - 1580 nm (6329 - 10000 cm^{-1})
2) Idler: 1696 - 4090 nm (2444 - 5890 cm^{-1})
3) Pump Bypass: 680 - 1080 nm (9259 - 14705 cm^{-1})

- Simultaneous Outputs: All. 3) with limited range
- Average Power: >1 W at peak of the range
- Pulse Duration: Signal 160 fs typ.
Idler 96 fs typ.
- Repetition Rate: 80 MHz

ORIA VIS

Femtosecond Second Harmonic Generator

Key Features:

- Output Ports:
1) SHG: 495 - 775 nm (12903 - 20202 cm^{-1})
2) Pump (OPO) Bypass Signal: 1000 - 1580 nm (6329 - 10000 cm^{-1})
3) Pump (OPO) Bypass Idler: 1696 - 4090 nm (2444 - 5890 cm^{-1})
4) Undepleted Pump (OPO): 1000 - 1580 nm (6329 - 10000 cm^{-1})

- Simultaneous Outputs: 1), 3) and 4)
- Average Power: >400 mW
- Pulse Duration: <180 fs
- Repetition Rate: 80 MHz

Address: Carrer Esteve Terradas, 1, Parc Mediterrani de la Tecnologia,
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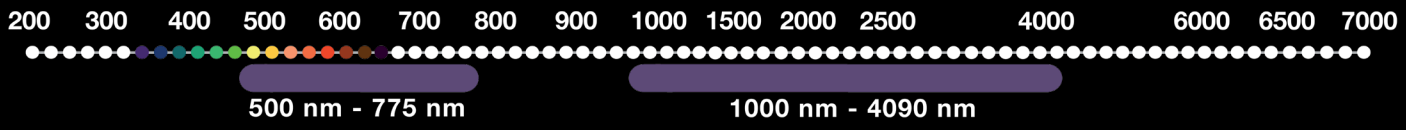
TUNE YOUR WAVELENGTH
Broadly Tunable Laser Systems for Science & Technology

RADIANTIS
www.radiantis.com

Visible Wavelength Extension for Femtosecond IR OPO

Fully-Automated Second Harmonic Generator Tunable across 495 - 775 nm (12903 - 202020 cm^{-1})



ORIA VIS

KEY FEATURES

- Four output ports: 1) 1000 - 1580 nm (6329 - 10000 cm^{-1}) at full power, 2) 500 - 775 nm (12903 - 20000 cm^{-1}), 3) 1696 - 4090 nm (2444 - 5890 cm^{-1}), and 4) 1000 - 1580 nm (6329 - 10000 cm^{-1}) undepleted.
- Simultaneous Outputs: 1), 3) and 4)
- Average Power: >400 mW
- Pulse Duration: <180 fs
- Repetition Rate: 80 MHz

APPLICATIONS

- Linear & Non-Linear Spectroscopy & Microscopy. (SHG, THG, Two-Photon, Multiphoton)
- Plasmonics.
- Pump-Probe Spectroscopy.
- Raman Spectroscopy & Microscopy. (CARS, SRS)
- Time-Resolved Spectroscopy & Microscopy. (FLIM, TR-FRET, TCSPC)

Description

Broad tuning in the visible spectrum is now possible with the ORIA VIS, a wavelength extension unit for most commercial femtosecond IR OPOs. This sophisticated second harmonic generation (SHG) module converts the IR spectrum of a femtosecond IR OPO [1000 - 1580 nm (6329 - 10000 cm^{-1})] into the visible range [500 - 775 nm (12903 - 20000 cm^{-1})] in a practical and easy-to-use architecture.

The ORIA VIS features the highest efficiency in its class, providing more than 40% conversion and 400 mW at the peak of the tuning range. As a result, output powers of more than 400 mW can be archieved when pumped by 1 W femtosecond pulses in the IR. High peak-to-peak power stability and excellent beam pointing across the complete spectral range make the ORIA VIS a convenient tool for a range of scientific applications, including time-resolved spectroscopy and quantum optics.

Designed for pick-and-place installation, ORIA VIS ensures virtually maintenance-free operation and highest usability since it does not require manual alignment, being exclusively controlled by a PC. Control drivers are also available.

Specifications(1)

Output Characteristics	ORIA VIS
Tuning range	500 - 775 nm (12903 - 20000 cm^{-1})
Output power(2)	> 400 mW
Pulse width(3)	< 180 fs
Beam diameter at 525 nm	2.5 mm
Beam divergence	< 1 mrad
Beam displacement with wavelength	< 2.5 µm
Spatial mode	TEM_{00}
Polarization	Vertical
Repetition rate	80 MHz
Size (W x L x H)	568.0 x 366.5 x 189.2 mm (22.4 x 14.4 x 7.5 inch)

Notes: (1) Specifications are subject to change without notice. (2) At the peak of the tuning range, when pumped by ORIA IR OPO. (3) When pumped with ORIA IR OPO.

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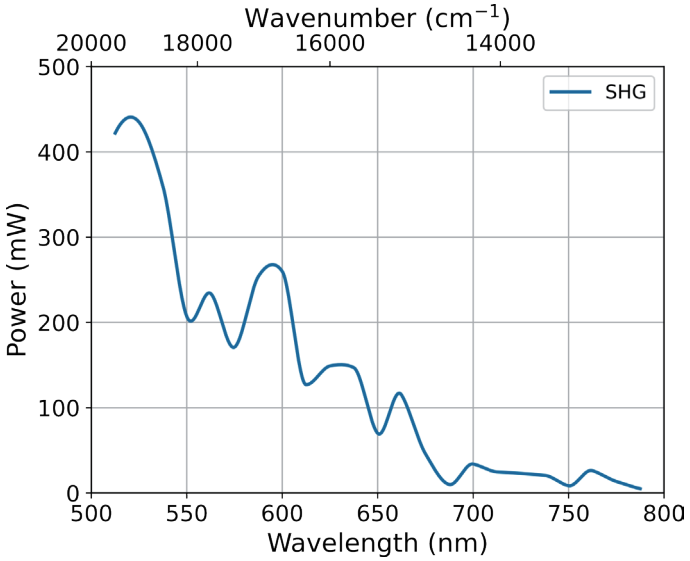
ORIA VIS Typical Tuning Curve



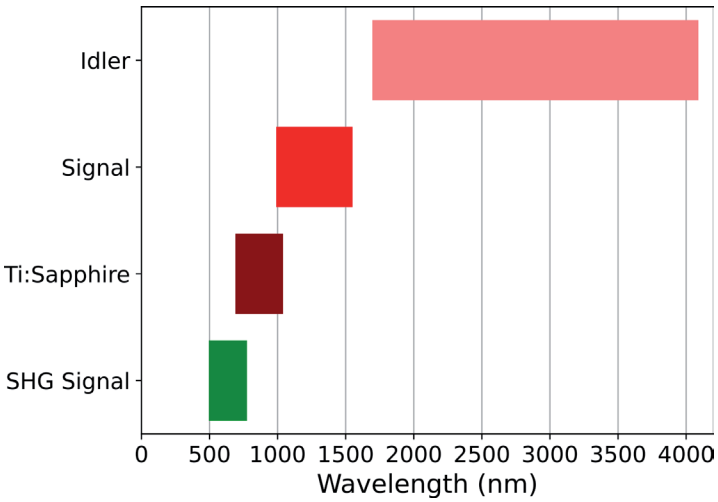
ORIA VIS Wavelength Coverage

Complete Spectral Coverage of Ti:Sapphire pump, ORIA IR XT, and ORIA VIS

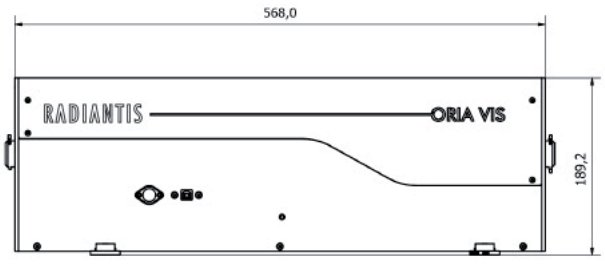
The Oria VIS includes four output ports which deliver :

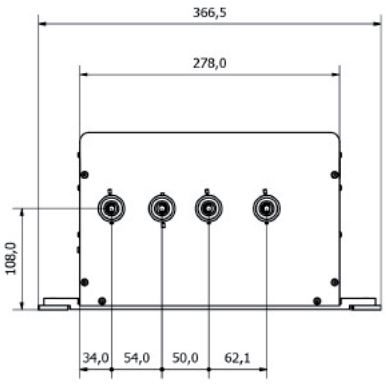
1) The OPO Signal 1000 - 1580 nm (6329 - 10000 cm^{-1})
2) The SHG of the OPO Signal 500 - 775 nm (12903 - 20000 cm^{-1})
3) The OPO Idler 1696 - 4090 nm (2444 -5890 cm^{-1})
4) The depleted OPO Signal 1000 - 1580 nm (6451 - 10000 cm^{-1})

It incorporates a pump bypass which enables the selection of 100% of the OPO signal and idler (with no SHG of the signal) or 100% of the SHG of the signal (simultaneously with the undepleted OPO signal and 100% of the idler).



Dimensions





Notes: Dimensions in mm

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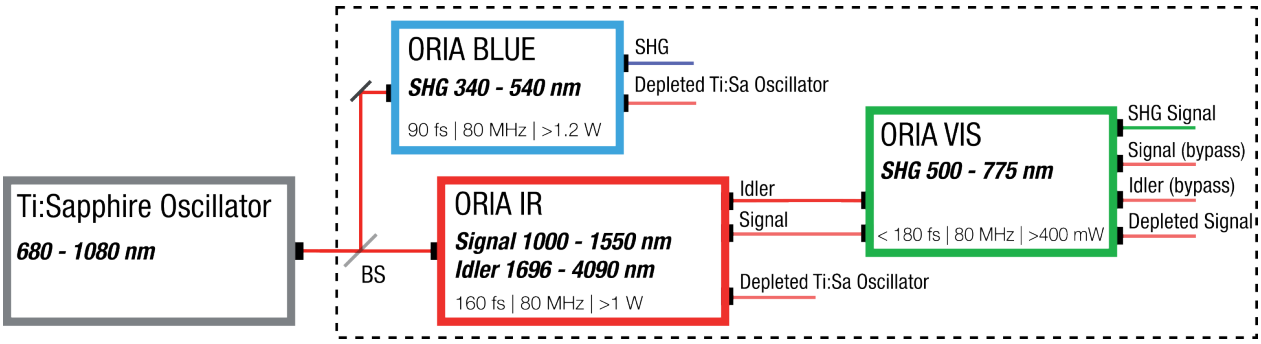
RADIANTIS

ORIA Series

TI:Sapphire Wavelength Extensions

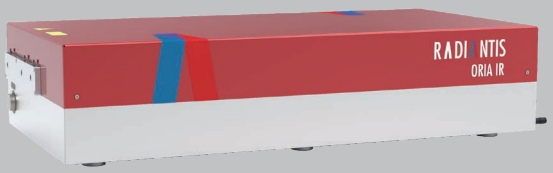


- Broad wavelength tuning across 340 - 4090 nm
- (2444 - 29411 cm-1)
- Fully automated, hands-free tuning for simplified use
- Simultaneous pump, signal and idler outputs

Related Products

ORIA IR

Femtosecond IR OPO



Key Features:

- Output Ports:

1) Signal: 1000 - 1580 nm (6329 - 10000 cm^{-1})
2) Idler: 1696 - 4090 nm (2444 - 5890 cm^{-1})
3) Pump Bypass: 680 - 1080 nm (9259 - 14705 cm^{-1})

- Simultaneous Outputs: All. 3) with limited range
- Average Power: >1 W at peak of the range
- Pulse Duration: Signal 160 fs typ.
  Idler 96 fs typ.
- Repetition Rate: 80 MHz

ORIA BLUE

Femtosecond & Picosecond Second Harmonic Generator

Key Features:

- Output Ports:

1) SHG: 340 - 540 nm (18518 - 29411 cm^{-1})
2) Undepleted Pump: 680 - 1080 nm (9259 - 14705 cm1)

- Simultaneous Outputs: All
- Average Power: >1.2 W
- Pulse Duration Models:
- - Femtosecond <180 fs - Picosecond <5 ps
- Repetition Rate: 80 MHz

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TUNE YOUR WAVELENGTH

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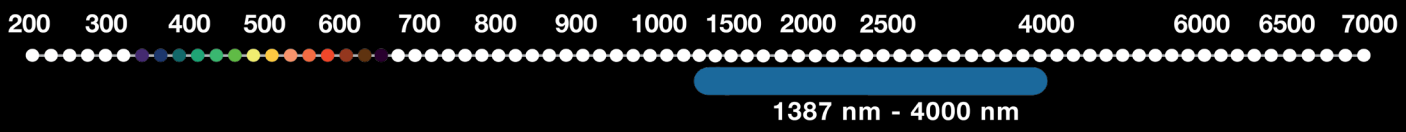
Broadly Tunable Picosecond OPO Laser

Tuning across 1387 - 2020 nm (4950 - 7209 cm^{-1}) and 2100 - 4000 nm (2500 -4761 cm^{-1})



ZENITH

KEY FEATURES

- Output Ports:
  1) Signal: 1387 - 2020 nm (4950 - 7209 cm-1)
  2) Idler: 2100 - 4000 nm (2500 -4761 cm-1)
  3) Pump Bypass: 1030 nm (9708 cm-1)
- Simultaneous Outputs: All
- Average Power: >4 W
- Pulse Duration: <7 ps (2 ps available on-demand)
- Repetition Rate: 80 MHz
- Built-in pump

APPLICATIONS

- Linear & Non-Linear Spectroscopy & Microscopy.
  (SHG, THG, Two-Photon, Multiphoton)
- Plasmonics.
- Pump-Probe Spectroscopy.
- Raman Spectroscopy & Microscopy.
  (CARS, SRS)
- Time-Resolved Spectroscopy & Microscopy.
  (FLIM, TR-FRET, TCSPC)

Description

Radiantis introduces ZENITH, a Picosecond OPO Laser broadly tunable across the 1387 – 4000 nm range. Featuring the highest power levels in the market [a >4 W across 1387 - 2020 nm (4950 - 7209 cm-1), >2 W across 2100 - 4000 nm (2500 -4761 cm-1)], ZENITH delivers a powerful and convenient source for ultrafast spectroscopy and pump-probe experimental sciences.

The picosecond OPO ZENITH has been especially designed for fully-automated tuning to enhance usability and practicality in applications. A simple and reliable control software renders it an extremely convenient hands-free system which enables the researcher to effectively focus on advancing their research with minimum time investment in laser maintenance. Control drivers are available.

Three output ports deliver: 1) the signal, 2) the idler and 3) the pump bypass. Excellent beam pointing stability with time and wavelength is provided.

ZENITH is a sealed fully-integrated laser system, incorporating the pump laser and OPO, which ensures maximum compactness and stability.

Specifications(1)

Output Characteristics	ZENITH LP	ZENITH HP
Signal Tuning Range(2)	1387 - 2020 nm (4950 - 7209 cm^{-1})	1387 - 2020 nm (4950 - 7209 cm^{-1})
Idler Tuning Range(3)	2100 - 4000 nm (2500 - 4761 cm^{-1})	2100 - 4000 nm (2500 - 4761 cm^{-1})
Pump Wavelength	1030 nm (9708 cm^{-1})	1030 nm (9708 cm^{-1})
Signal Output Power(2)	> 2 W	> 4 W
Idler Output Power(2)	> 1 W	> 2 W
Signal Pulse Width	> 5 ps	> 5 ps
Idler Pulse Width	> 5 ps	> 5 ps
Pump Pulse Width	> 5 ps	> 5 ps
Beam Diameter	3 mm +/- 10%	3 mm +/- 10%
Spatial Mode	TEM_{00}	TEM_{00}
Output Ports	1) Signal 2) Idler 3) Pump	1) Signal 2) Idler 3) Pump
Power Stability(5)	< 0.5% rms	< 0.5% rms
Polarization	Linear	Linear
Repetition Rate	80 MHz	80 MHz
Size (W x L x H)	625 x 330 x 163 mm (24.6 x 12.99 x 6.4 inch)	

Notes: (1) Specifications are subject to change without notice. (2) At peak of pump and OPO signal/idler tuning range. (3) Available for XT model. (4) SHG available on request. (5) Power Stability Signal Noise at 1700 nm and Idler Noise at 2613 nm.

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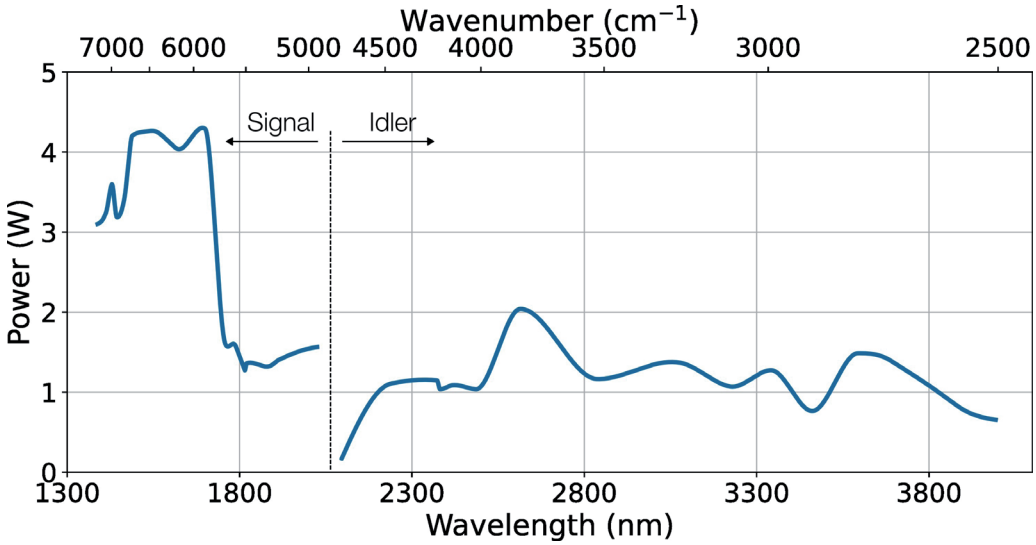
ZENITH Typical Tuning Curve

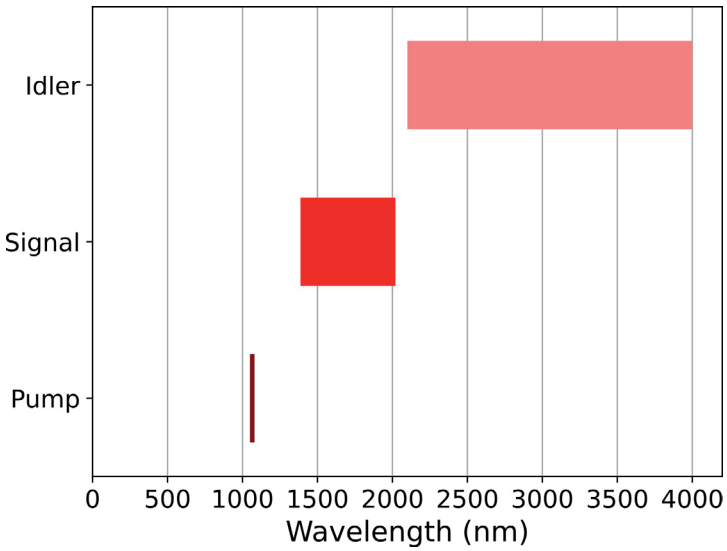


ZENITH Wavelength Coverage

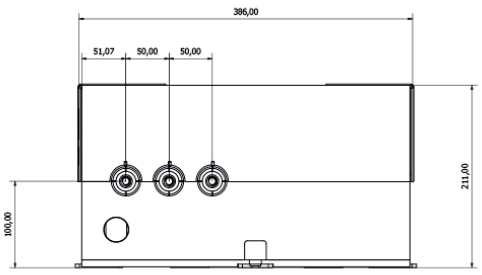
Output Ports

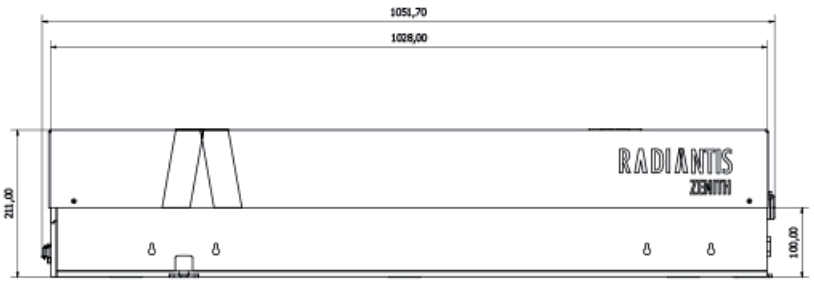
Includes three output ports which deliver:

1) The Signal 1387 - 2020 nm (4950 - 7209 cm^{-1})
2) The Idler 2100 - 4000 nm (2500 - 4761 cm^{-1})
3) The Pump 1030 nm (9708 cm^{-1})



Dimensions





Notes: Dimensions in mm

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