

# Inspire™ IR

## Automated Ultrafast Infrared OPO



The Spectra-Physics® Inspire IR optical parametric oscillator (OPO) delivers a wide, gap-free tuning range from 1000 nm to 1580 nm. Pumped with the Mai Tai® HP ultrafast Ti:Sapphire laser, the system also provides exceptionally high power across the full range. The Inspire IR OPO features user-friendly, computer-controlled tuning in a sealed hands-free package. The system's robust design ensures high stability and insensitivity to ambient temperature change.

### The Inspire IR OPO offers:

- Two output ports available: signal output (1000–1550 nm with >900 mW at the peak) and fundamental output (690–1040 nm with >1 W)
- Synchronized output from two output ports—ideal for applications requiring more than one wavelength such as CARS
- Fully-automated hands-free wavelength tuning complete with automated cavity alignment to maintain optimal power and pulse durations

Wide, gap-free wavelength coverage make the Inspire IR OPO the next-generation OPO for developing cutting-edge imaging and spectroscopy applications.

### The Inspire IR Advantage

- Wide, gap-free tuning from 1000 nm to 1550 nm
- Accepts a wide range of pump wavelengths
- Highest output power in the near IR
- Fully-automated, computer-controlled tuning
- Synchronized output of near IR (pump) and IR (signal) wavelengths

### Applications

- Coherent Anti-Stokes Raman Spectroscopy (CARS)
- Multiphoton excitation (MPE) microscopy
- Time-resolved spectroscopy
- Vibrational overtone spectroscopy
- Semiconductor research and spectroscopy
- Multiple wavelength pump-probe experiments
- Fiber optics and optical communications



# Inspire IR Specifications<sup>1, 2</sup>

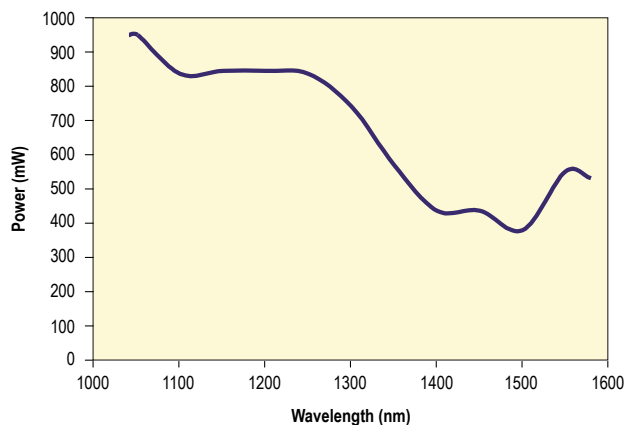
	Inspire IR	
Output Characteristics		
Pump Tuning Range	720–820 nm	
Pump Wavelength	760 nm	810 nm
Signal Tuning Range	1000–1400 nm	1010–1550 nm
Signal Average Power at Peak	N/A	>900 mW
Idler Tuning Range <sup>3</sup>	1662–3166 nm	1696–4090 nm
Idler Average Power at Peak <sup>3</sup>	>250 mW	
Signal Pulse Width at Peak	<200 fs	
Repetition Rate	80 MHz	
Noise at 1300 nm	<1% rms	
Power Stability	5%	
Spatial Mode	TEM <sub>00</sub> , M <sup>2</sup> <1.2	
Beam Diameter (Signal) at 1300 nm	1.4 mm ±10%	
Beam Divergence (Signal) at 1300 nm	<1.0 mrad	
Polarization	Horizontal (>100:1)	
Dimensions	15.6 x 27.1 x 7.6 (395 x 687 x 192 mm)	

1. Due to our continuous improvement program, specifications may change without notice.

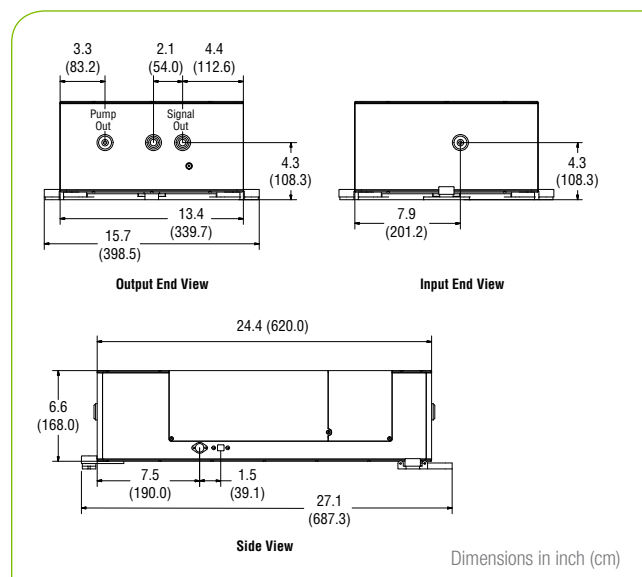
2. Specifications while pumped by a Mai Tai HP; average power is reduced when pumping with the Mai Tai HP DeepSee™.

3. Idler output available as an option.

Inspire IR Typical Tuning Curve<sup>1</sup>



1. Typically measured performance; not a guaranteed or warranted specification.



Inspire IR Dimensions

RADIANTIS

Manufactured by Radiantis

**mks** | Spectra-Physics®

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