

Inspire

Hands-Free femtosecond OPO for Ti:Sapphire Oscillators

Inspire is a synchronously Ti:Sapphire-pumped femtosecond OPO providing **gap-free tunability from 345 - 2500 nm** with near-transform-limited pulses and high average power. A single optical configuration enables access to the UV, visible, and near-infrared spectral regions without optics exchange. With fully automated wavelength tuning and locking, Inspire is specially designed for demanding applications such as multiphoton microscopy, ultrafast spectroscopy, nonlinear optics, semiconductor characterization, and quantum photonics.

APPLICATIONS

- Ultrafast spectroscopy
- Nonlinear microscopy
- Time-resolved and pump-probe spectroscopy
- Raman microscopy
- Plasmonics



Available models

- **Inspire HF100:** Fully automated tuning with full-range SHG and OPO outputs.
- **Inspire HF50:** Fully automated tuning with OPO outputs only.
- **Inspire Auto100:** Manual tuning with full-range SHG and OPO outputs.
- **Inspire Auto50:** Manual tuning with OPO outputs only.

KEY FEATURES

- Gap-free tuning across the UV, Visible and IR 345-2500 nm with a single optical configuration
- Simultaneous UV, Visible and IR outputs through 3 separate output ports.
- Integrated SHG unit for doubling the undepleted pump.
- High output power: >1.1 W (UV), >350 mW (Vis), >180 mW (IR)
- Ultrashort fs pulses (typ. 180 fs) at 80 MHz repetition rate.
- Fully-automated wavelength tuning and self-calibration.
- Integrated UV-Vis spectrometer for wavelength monitoring and locking.

Typical performance specifications^(1,2)

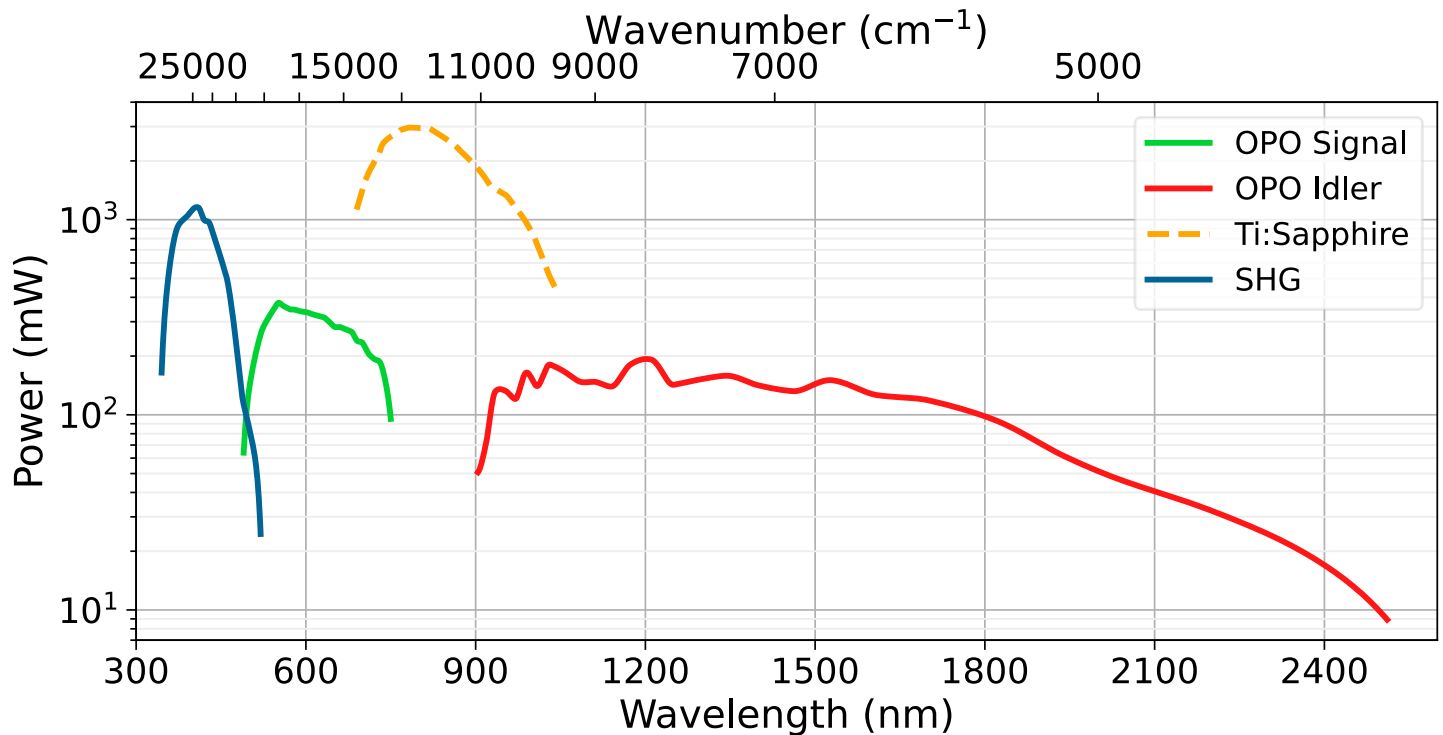
Specification	Inspire OPO			
	SHG ⁽³⁾	Signal	Depleted pump	Idler
Wavelength range	345 – 520 nm	490 – 750 nm	690 – 1040 nm	930 – 2500 nm
Output power	>1.1 W @410 nm	>350 mW @550 nm	>1.1 W @820 nm	>170 mW at peak
Pulse width (FWHM)	<140 fs	Typ. 200 fs	<140 fs	Typ. 200 fs
Wavelength stability (pk-pk)	-	<0.5 nm @550 nm	-	-
Power stability (RMS)	<1% @410 nm	<1% @550 nm	<0.5% @820 nm	<1.5% @1610 nm
Beam diameter ⁽⁴⁾	1 mm @410 nm	0.9 mm @550 nm	-	2.2 mm @1210 nm
Polarization	Vertical	Horizontal	Vertical	Horizontal
Spatial mode	TEM ₀₀	TEM ₀₀	TEM ₀₀	TEM ₀₀
Pump tuning with simultaneous OPO outputs ⁽⁵⁾	Available from 790 - 840 nm, standard			
Repetition rate	80 MHz			
Integrated spectrometer	Spectral range 350-810 nm			
Optical outputs	Free-space			
Size (OPO only)	36.0 x 95.4 x 23.2 cm (14.2 x 37.6 x 9.1 in)			

- 1) Specifications obtained when pumped by Mai Tai® HP Ti:sapphire oscillators, 2.8W, 100 fs, 820 nm. Output characteristics with alternative pump lasers may change.
- 2) Specifications are subject to change without notice
- 3) Full range of specifications for SHG only available for Inspire HF100 model.
- 4) Measured at 3 cm from output port.
- 5) Specifications may change if the system is pumped at a different wavelength from 820 nm.

Environmental specifications

Specification	Titan CW OPO
Power supply	±15 V/5 V
Communication interface	USB/Serial
Environmental conditions of use	Lab environment, dust-free air conditions, pollution degree 2
Operation humidity	20 - 80% non-condensing for temperatures up to 25°C
Operation temperature	18 - 26°C

Typical performance data



Typical Inspire HF100 tuning curve

Dimensions

