

TITAN

Broadly Tunable Laser in the Mid-IR

The Titan is a continuous-wave optical parametric oscillator (CW OPO) providing continuously tunable mid-infrared output across **1435 - 4138 nm (6969 - 2416 cm^{-1})** spectral range, while maintaining Watt-level output power, narrow linewidth and excellent spatial beam quality. Fully digital control and automated operation enable precise wavelength tuning and stable performance for demanding applications in spectroscopy, microscopy, metrology, and materials research.



APPLICATIONS

- Gas sensing
- High-resolution spectroscopy
- Mid-IR material characterization
- Nonlinear optical characterization
- Quantum communication
- Advanced photonics

KEY FEATURES

- Wavelength tuning across 1435 - 4138 nm (6969 - 2416 cm^{-1}).
- Three simultaneous outputs: signal, idler and pump bypass.
- High output power: >4 W at the peak of the range.
- Narrow linewidth: <1 MHz (signal), <10 MHz (idler).
- Built-in and rack-mountable pump laser, chiller and control unit.
- Fully automated and hands-free wavelength tuning.
- Sealed and water-cooled design for long-term stability and low drift.

Typical performance specifications⁽¹⁾

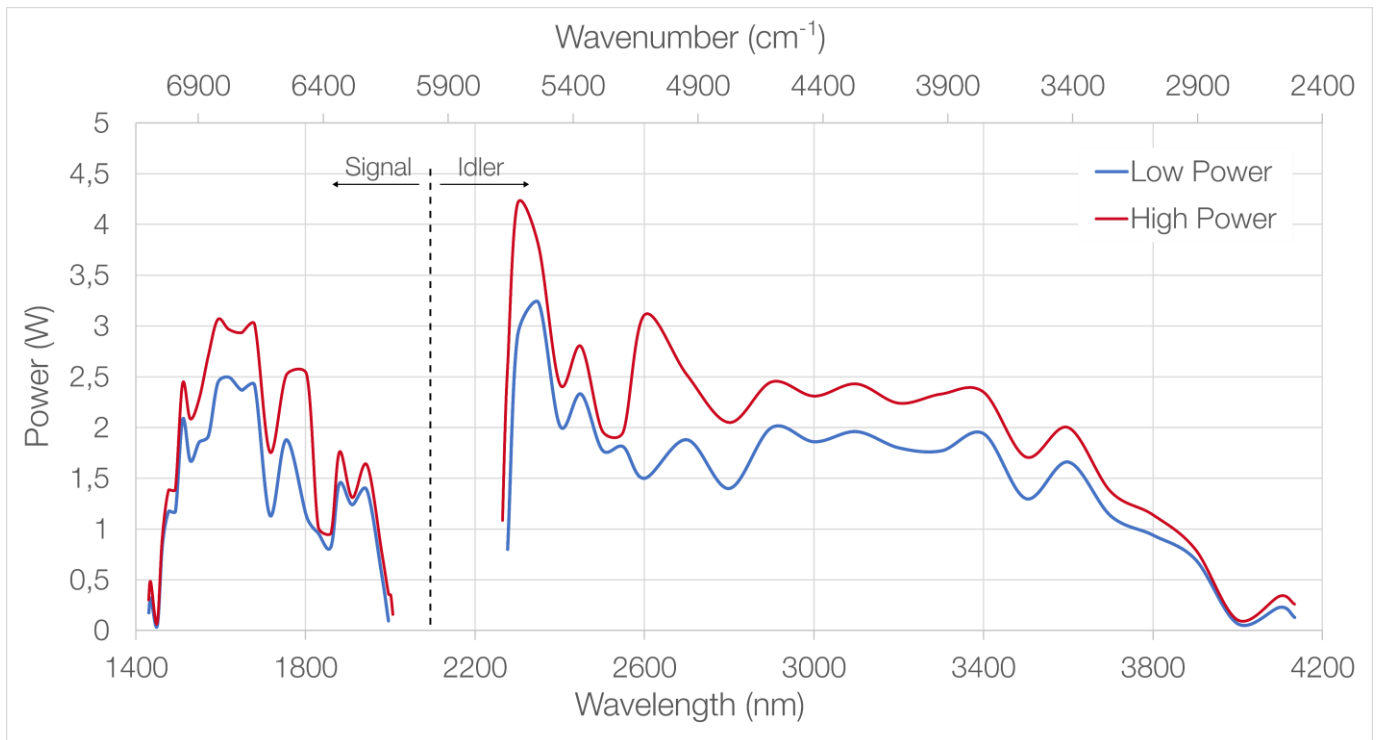
Specification	Titan CW OPO	
	Signal	Idler
Wavelength range	1435 - 2000 nm (5000 - 6968 cm ⁻¹)	2270 - 4138 nm (2416 - 4405 cm ⁻¹)
Output power	>2.5 W at peak	>4 W at peak
Linewidth ⁽²⁾	<1 MHz	<10 MHz
Power stability	<0.5% RMS @1478 nm	<0.5% RMS @3800 nm
Beam diameter ⁽³⁾	<3.0 mm @1650 nm	<3.0 mm @3000 nm
Spatial mode	TEM ₀₀ (M ² <1.3)	TEM ₀₀ (M ² <1.3)
Beam pointing ⁽⁴⁾	<80 μrad	<20 μrad
Beam displacement ⁽⁵⁾	-	<0.3 mm
Polarization	Linear – Horizontal	
Optical outputs ⁽⁶⁾	Free-space	
Pump bypass ⁽⁷⁾	Built-in, available through third output port, standard, 1064 nm	
Pump bypass output power ⁽⁸⁾	>1 W	
OPO head size (W x L x H)	610 x 350 x 200 mm (24.0 x 13.8 x 7.9 in)	

- 1) Specifications are subject to change without notice
- 2) Theoretical value. For more information, contact sales@radiantis.com
- 3) Maximum displacement across the range
- 4) Fiber-coupled output available upon request
- 5) Other available upon request

Environmental specifications

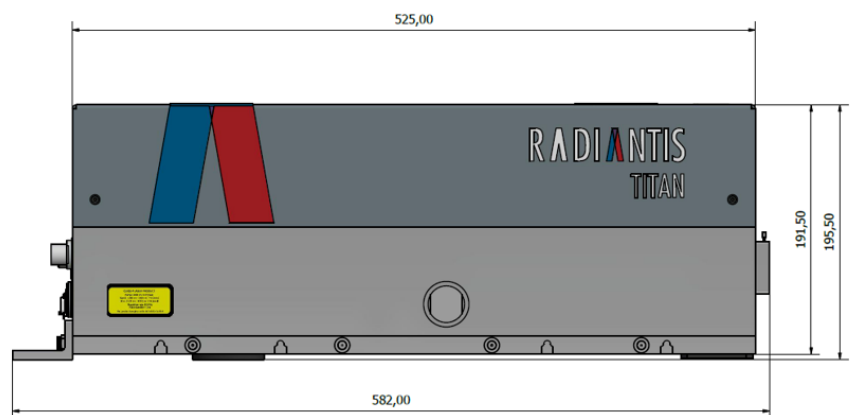
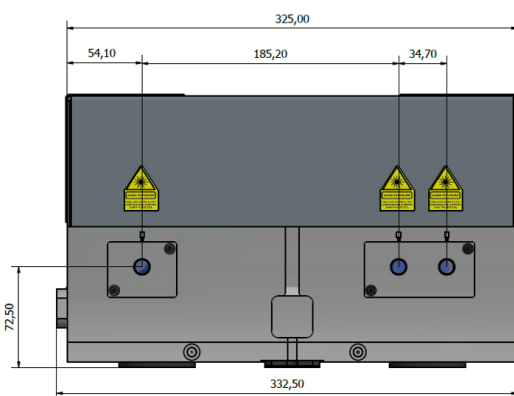
Specification	Titan CW OPO
Communication interface	USB/Serial
Environmental conditions of use	Lab environment, dust-free air conditions, pollution degree 2
Operation humidity	20 - 80% non-condensing for temperatures up to 25°C
Operation temperature	18 – 26°C
Power consumption	≈1kW
Cooling mechanism	Water cooling

Typical performance data



Typical Titan CW OPO tuning curve

Dimensions



Note: Dimensions in mm.