

The Chromacity **Spark FIR** – the first optical parametric oscillator in the mid-infrared region providing broadband output from 5 – 12 μm (2000 cm^{-1} – 833 cm^{-1}).



Powerful mid-infrared broadband quasi-CW optical parametric oscillator with high brightness over a wide spectrum. The Spark FIR is the first commercial OPO of its kind in this important wavelength range enabling end-users to perform state of the art research.

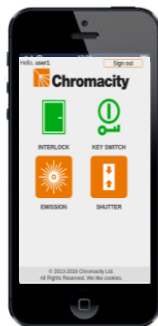
- First commercial quasi-CW OPO covering the molecular fingerprint region
- Spectral output available in the 5-12 μm range via discrete broadband spectral output
- 100 MHz repetition frequency
- Integrated pump laser (optional 1040 nm output)
- Turnkey operation
- Manufactured using a single high grade aluminium baseplate for the pump laser and OPO

Applications include:

- Finger-print region spectroscopy
- Infrared spectroscopy
- Gas and pollution sensing
- Stand-off chemical sensing
- Material characterization
- Metrology
- Hyperspectral imaging
- Breath analysis / Endoscopy
- Atmospheric research
- Combustion diagnostics
- Photoacoustic spectroscopy
- Explosive detection

Web-based control

- Easy to use interface
- Safety shutter and laser emission control over ethernet and wifi
- Door interlock error alerts
- RS232 control as standard



Crystal	Peak Wavelength	Power
1	5.5 μm = 1820 cm^{-1}	Up to 80 mW
2	6.5 μm = 1540 cm^{-1}	Up to 40 mW
3	7.2 μm = 1388 cm^{-1}	Up to 30 mW
4	8.6 μm = 1160 cm^{-1}	Up to 20 mW
5	9.8 μm = 1020 cm^{-1}	Up to 15 mW
6	10.7 μm = 935 cm^{-1}	Up to 13 mW
7	11.8 μm = 847 cm^{-1}	Up to 10 mW

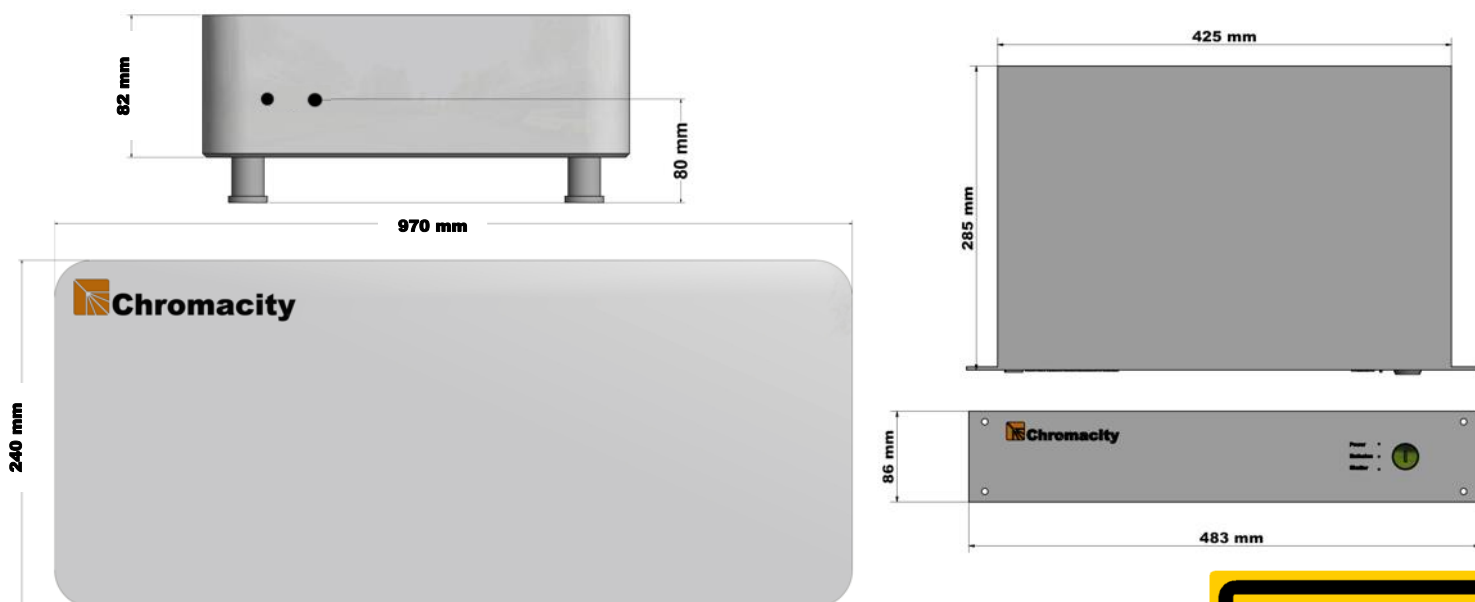
Specifications and options

Comments

Output wavelength	Output within 5-12 μm available (2000 cm^{-1} – 833 cm^{-1})	Individual crystals provide instantaneous broadband spectra.
Output power	Up to 80 mW at 5-7 μm and up to 10 mW at 12 μm	Optimised systems for specific wavelengths available on request
Crystal specifications	Crystals available as per table provided, up to 5 mounted in the system	Crystals with different central wavelengths are available – please contact for details
Pump source	Integrated Spark 1040 laser oscillator	Optional output of 1040 nm
Pump wavelength	1040 nm	
Repetition frequency	100 MHz Monitor photodiode	
Control interface	Ethernet, and web page Serial port (for control via LabView/MatLab)	Custom interface available
Dimensions	970 x 245 x 82 mm (laser head) 483 x 285 x 86 mm (control unit)	
Weight	16 kg (laser head) 2 kg (control unit)	
Electrical	Voltage 110 – 240 V AC Frequency 50 – 60 Hz, Power 80W	
Cooling	Air cooled - no water cooling required	
Accessories	Chromacity is able to supply a range of ancillary accessories such as power meters, integration optics, oscilloscopes and other diagnostic/laboratory equipment. Please discuss for more details.	
Spectrometer	Chromacity can provide a high-resolution, real-time spectrometer with broadband detection covering 2-10 μm (5000- 833 cm^{-1}) – please contact us for further details.	

Specifications Subject To Change

Dimensions



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