Chromacity

Company Overview
Product Portfolio Presentation

March 2021

Company Key Facts

2013
Founded

1
Industrial partnership

8
Channel partners

10
Employees

4
Products

3
Patents*

ISO 9001:2015
CE Mark
FDA approval

Investors

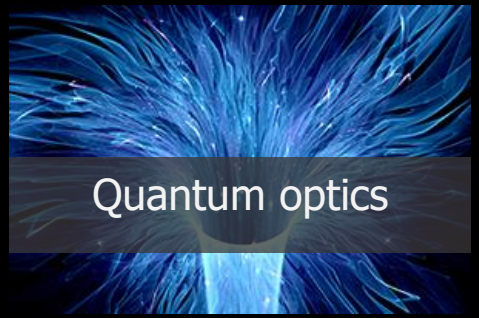
EOS
Kelvin Capital
Scottish Investment Bank

**licensed from Heriot Watt University*

What We Do

Design and manufacture ultrafast lasers that span the spectrum from visible to Mid IR.

Our range of lasers are used as an affordable light source/illumination for a number of applications, Chromacity are currently focused on:

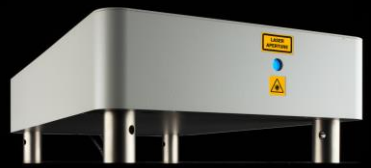


Our main applications are life science imaging and fundamental research, we are now developing industrial partnerships to deliver next generation solutions.

Current Products

520 nm

Output Power:
Up to 1.5 W
Pulse Duration:
< 150 fs
Repetition Frequency:
100 MHz
Beam Parameters:
Ellipticity > 0.95



1040 nm

Output Power:
Up to 4 W
Pulse Duration:
< 150 fs
Repetition Frequency:
100 MHz
Beam Parameters:
M2 < 1.2, Divergence < 2 mrad

Near-IR OPO

Spectral Range:
1.4 µm – 4 µm
Signal Average Power:
850 mW at 1.5 µm
Idler Average Power:
up to 350 mW at 3.3 µm
Repetition Frequency:
100 MHz

Mid-IR OPO

Spectral Range:
4.5 µm – 12 µm
Output Power:
Up to 100 mW at 5-7 µm
Up to 20 mW at 12 µm
Repetition Frequency:
100 MHz

Features & Benefits

Low Cost

Affordable ultrafast lasers without compromise to performance.

Usability

An **intuitive** web browser interface ensures ease-of-use.

Installation

Minimal set-up required and systems are **installed remotely**, without the need for an engineer onsite.

Size

Compact laser housing occupies a small space on the optical bench.

Operational Efficiency

Power efficient laser cavity (low power consumption).

Environmental Impact

Air-cooled systems avoid the use of water and additional infrastructure.

Product / Application Matrix

		Chromacity 520	Chromacity 1040	Near-IR OPO	Mid-IR OPO
Microscopy	Life Science Imaging - 2 Photons + SHG		●		
	Life Science Imaging - Lightsheet /SPIM		●		
Spectroscopy	FTIR (Stand-off Detection / Process Control)			●	●
	Time-resolved Fluorescence Lifetime Spectroscopy	●	●		
	Vibrational Spectroscopy	●		●	●
	Fundamental Research - Spectroscopy	●	●	●	●
Test and Measurement	Novel Semi Conductor Material			●	
	LIDAR	●		●	
Material Characterisation	Material Deformation - Sintering	●	●		
	Material Deformation - Nano Particles	●	●		
	Photopolymerisation		●		
Agritech	SHG Imaging (Collagen and Starch)		●		
Fundamental Research - Photonics	Nonlinear Optics	●	●	●	●
	Quantum Optics - Communications	●	●		
	Quantum Optics - Entanglement	●	●	●	

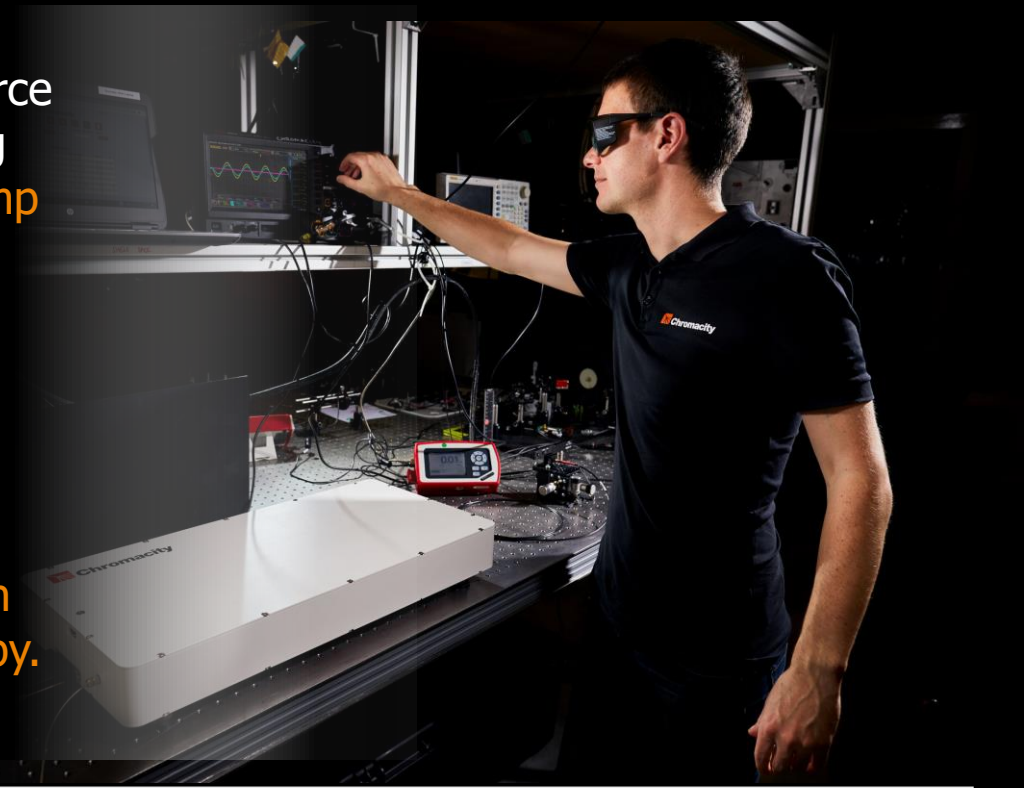
Femtosecond Lasers

- Chromacity 1040
- Chromacity 520

Applications

The Chromacity 1040 is an ideal light source for a wide variety of applications including two photon and SHG imaging, optical pump for SSL and fundamental research.

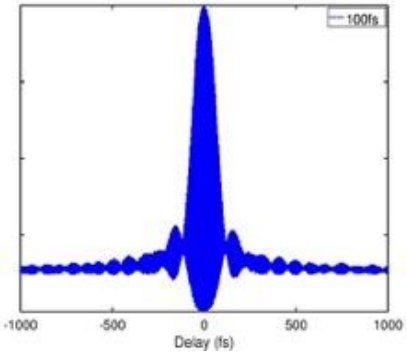
The Chromacity 520 can be used in a number of fundamental research applications including quantum optics, optical pump for SSL, imaging / inspection or as an alternative to Raman spectroscopy.

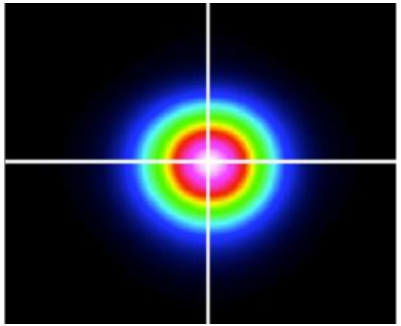


Chromacity 1040

Request Datasheet

Ytterbium fibre-based ultrafast laser delivering > 3.5 W output at 1040 nm with 100 MHz repetition frequency.





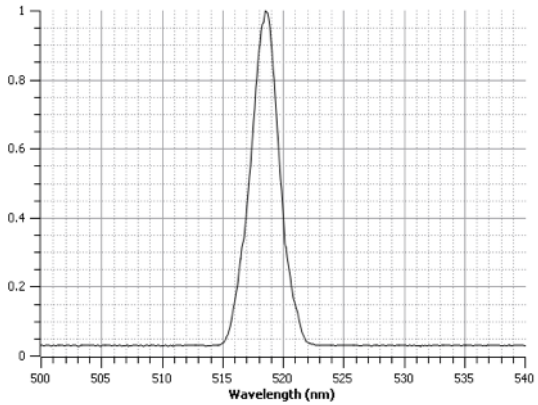
M^2 = 1.07, Ellipticity >0.9
Divergence < 2 mrad

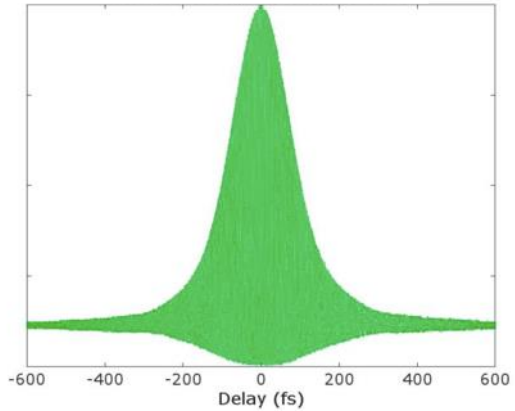
Average Power	Wavelength	Repetition Frequency	Pulse Duration	Beam Parameters
> 3.5 W	1040 nm	100 MHz	< 200 fs	M^2 <1.2 with Ellipticity >0.95
2.5 W	1040 nm	100 MHz	< 150 fs	M^2 <1.2 with Ellipticity >0.95

Chromacity 520

Request Datasheet

The Chromacity 520 delivers sub-150 fs pulses with 100 MHz repetition rate.





SHG module	Average Power	Wavelength	Repetition Frequency	Pulse Duration	Beam Parameters
External	up to 1.5 W	520 nm	100 MHz	<150 fs	M^2 <1.2, Ellipticity >0.9
Internal	500 mW	520 nm	100 MHz	<150 fs	M^2 <1.2, Ellipticity >0.9

Optical Parametric Oscillator

- Chromacity Near-IR OPO
- Chromacity Mid-IR OPO

Chromacity OPO

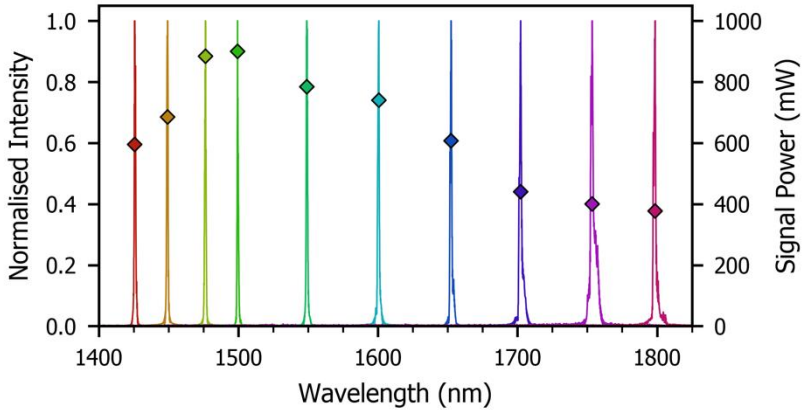
The Chromacity OPO provides high power, broad bandwidth and picosecond pulsed light which can be generated across the near and mid infrared. This means the laser is ideal for a wide range of applications including stand-off detection, IR spectroscopy, FTIR techniques, chemical and breath analysis.

Our high brightness mid-IR OPO can access the molecular fingerprint region, where chemical signatures can be uniquely identified or ‘fingerprinted’.

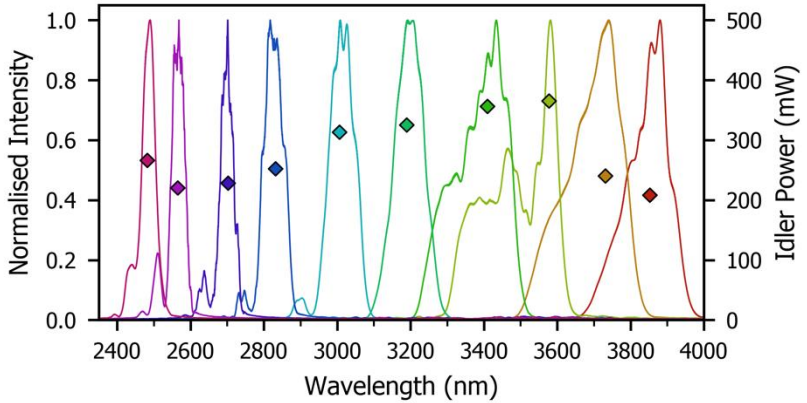
Near-IR OPO Specifications

Request Datasheet

The Near-IR OPO is an optical parametric oscillator, delivering light from 1.4 µm to 4 µm.



Representative Signal Output



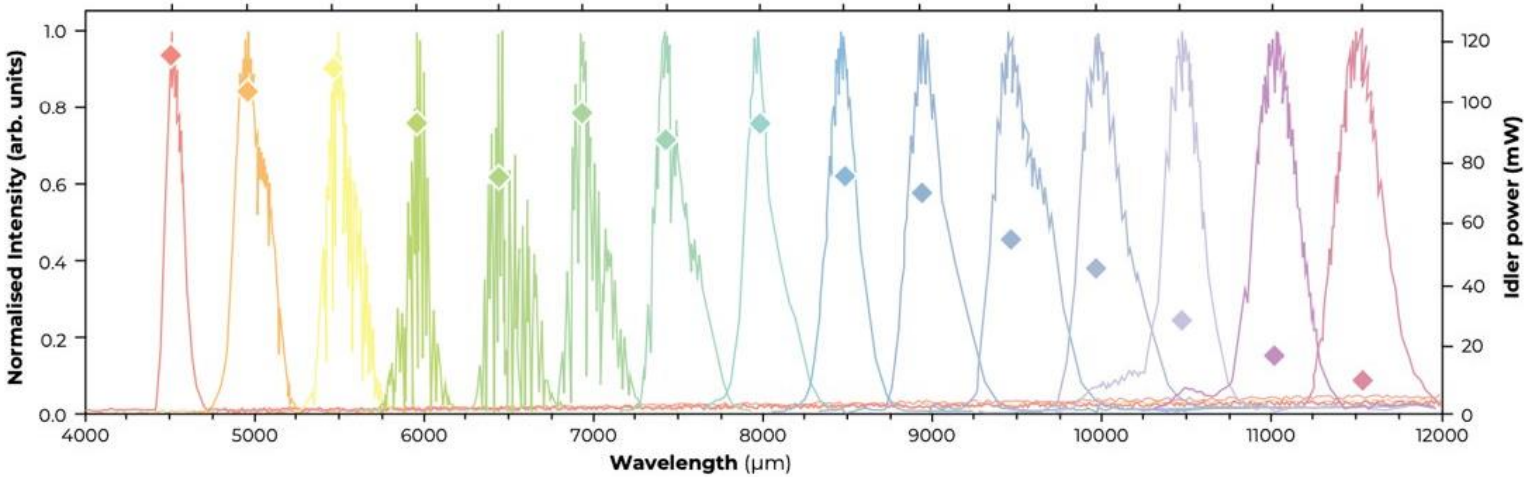
Representative Idler Output

Average Power	Wavelength	Repetition Frequency	Pulse Duration	Beam Parameters
Signal power: up to 850 mW	Signal: 1.42 µm – 1.8 µm	100 MHz	2-5 ps	Signal: 1-2 mm
Idler power: up to 350 mW	Idler: 2.4 µm – 4.0 µm	100 MHz	2-5 ps	Idler: ~6 mm

Mid-IR OPO specifications

Request Datasheet

The Near-IR OPO delivers light from 5 µm to 12 µm.

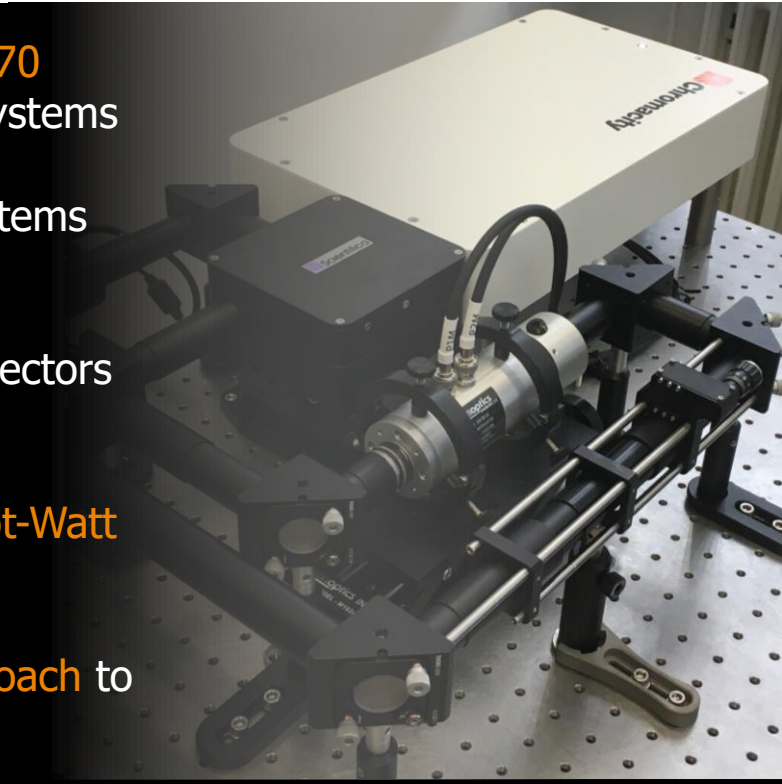


Representative Idler Output

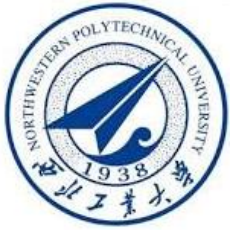
Average Power	Wavelength	Repetition Frequency	Pulse Duration	Beam Parameters
Idler Power : Up to 100 mW at 5-7 µm Up to 20 mW at 11 µm	4.5 µm – 12.0 µm	100 MHz	quasi-cw	Idler : ~2-3 mm

Technical Expertise

- We are an innovative laser manufacturer with over 70 years' combined expertise in ultrafast-short pulse systems
- Novel design processes ensure compact, robust systems with unique remote installation capability
- We've worked in Government, Security & Defence sectors including academic researchers across the globe
- Secured a Strategic Relations Agreement with Heriot-Watt University to accelerate IP
- In-house technical capabilities ensure an agile approach to system integration with OEM partners



Track Record



Collaboration

We're looking for:

- OEM industrial opportunities
- Strategic partners for microscopy and spectroscopic applications
- Academic researchers which require ultrashort pulse lasers
- Collaborations with photonics clusters

Contact

Dr Christopher G. Leburn
Commercial Director & Co-founder
Chromacity
E: c.g.leburn@chromacitylasers.com
T: +44 (0) 7940 733852

Bertrand Frossard
Business Development Manager
Chromacity
E: b.frossard@chromacitylasers.com
T: +44 (0) 7950 756436