



The tunable laser light source



- CW tunable laser light source
- 450 - 650 nm & 900 - 1300 nm
- Single frequency, with < 1 MHz linewidth (> 300 m coherence length)
- Output power up to > 500 mW VIS or > 1 W IR

Flexibility with precision

C-WAVE is the first fully-automated tunable laser light source for continuous-wave (CW) emission in the visible and near-infrared wavelength range based on optical parametric oscillation (OPO) technology. Thus, C-WAVE provides tunable high-performance laser light output tuning from blue to red and into the near-infrared by the click of a button. It offers you single frequency operation, narrow spectral linewidth combined with its unprecedented spectral coverage and ease of use to let you focus on your research, not on laser handling.

Applications:

- Atomic physics
- Quantum optics
- Metrology
- Spectroscopy
- Biophotonics
- Photochemistry
- Holography
- Interferometry

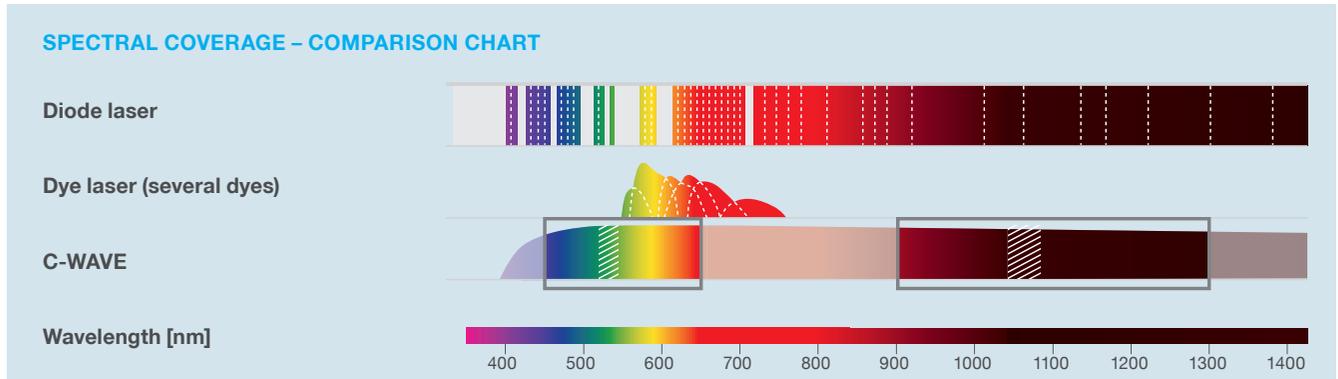
HÜBNER Photonics | Coherence matters.





Spectral coverage

The concept of C-WAVE allows for building tunable continuous-wave laser light sources from the near UV to the infrared. The bright windows in the spectral coverage chart indicate the full standard tuning range of C-WAVE. Other wavelength ranges are available on request.



Output power

Tailored to your needs

Depending on the required output power level, C-WAVE is either pumped by an external single-frequency laser or comes with an integrated laser, making operation and application even easier for you.

Pump laser options

- Integrated pump laser (1.5 W) – low power
- External pump laser (5 W) – high power

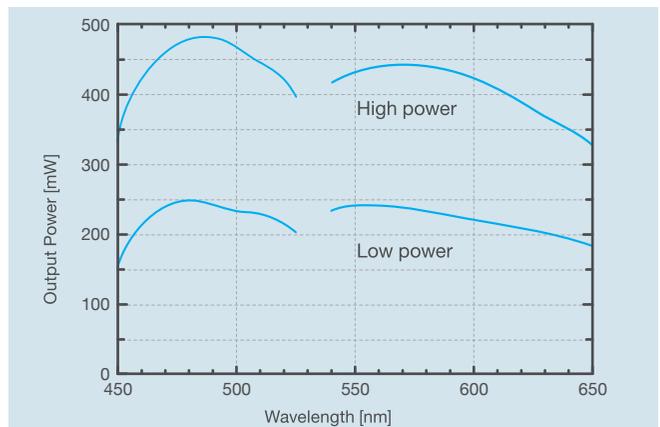
Output power

Low power

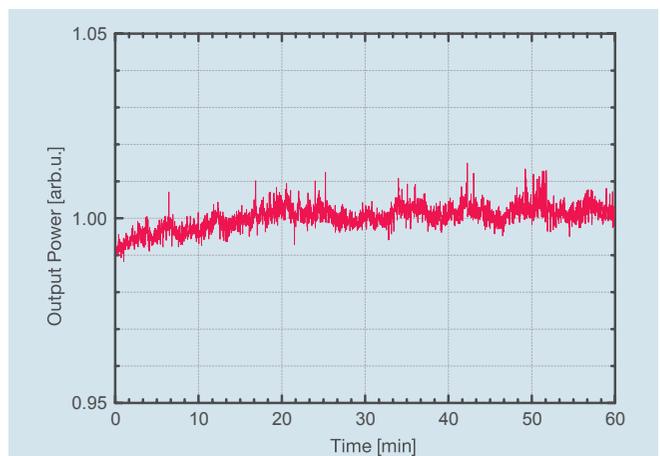
- up to > 400 mW IR
- up to > 200 mW VIS

High power

- up to > 1 W IR
- up to > 500 mW VIS



Typical output power over the visible wavelength range with 5 W pump laser (high power) and 1.5 W pump laser (low power).



Power stability of C-WAVE: Output power over time measured at 571 nm.

Specifications

	VIS	IR
Wavelength range	450 – 650 nm ^{a)}	900 - 1300 nm ^{b)}
Accuracy of wavelength - internal reference (mapping) - with external wavelength measurement using AbsoluteLambda®	± 1 nm < 2 MHz (depending on wavemeter)	± 2 nm
Output power at max. gain - C-WAVE Low Power (1.5 W pump laser, internal) - C-WAVE High Power (5 W pump laser, external)	> 200 mW (typ. at around 470 nm) > 500 mW (typ. at around 470 nm)	> 400 mW (typ. at around 940 nm) > 1 W (typ. at around 940 nm)
Output power - C-WAVE Low Power (1.5 W pump laser, internal) - C-WAVE High Power (5 W pump laser, external)	> 80 mW > 200 mW	> 200 mW > 400 mW
Amplitude noise (typ. values)	< 5 %	< 1 %
Beam polarization (linear, horizontal)	> 1000:1	
Beam profile	TEM00, M ² < 1.2 ^{c)}	
Beam radius (1/e ²)	0.5 mm	0.2 mm
Beam divergence (full angle)	0.5 mrad	2 mrad
Linewidth	< 1 MHz (typ. < 500 kHz)	
Mode-hop-free tuning range (typ. values depending on wavelength range)	> 20 GHz (up to 40 GHz)	> 10 GHz (up to 20 GHz)

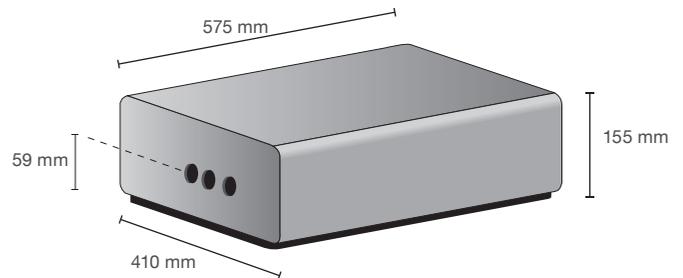
^{a)} not specified at 525 -540 (±1) nm; range depending on selected wavelength modules

^{b)} not specified at 1050 -1080 (±2) nm; range depending on selected wavelength modules

^{c)} not specified at 450 – 480 nm and 900 – 960 nm

Dimensions

Length	575 mm
Width	410 mm
Height	155 mm
Weight	34 kg



Requirements

Operating temperature range	20 - 25 °C, constant
Relative humidity	10 - 85 %, non condensing
Mounting surface	vibration-isolated optical table
Environment	free of dust

Technical data

Computer interface	Ethernet / RJ 45
Power supply	110 V / 230 V
Power consumption	< 200 W
Cooling	Closed-loop chiller



Designed according to UL standards.





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