

Ideas taking shape – worldwide.



Patent pending.

Flexibility – With Precision C-WAVE advanced

Features

C-WAVE *advanced* has been developed as a precision source for demanding applications as in atomic physics or quantum optics: single frequency operation, narrow spectral line-width and options for frequency stabilization are combined with an unprecedented spectral coverage. Whether you need to work across a wide spectral range or just want some special wavelengths, C-WAVE *advanced* can deliver that light – with precision.

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

You need some special wavelengths for a particular application? Please inquire!

Possible Applications

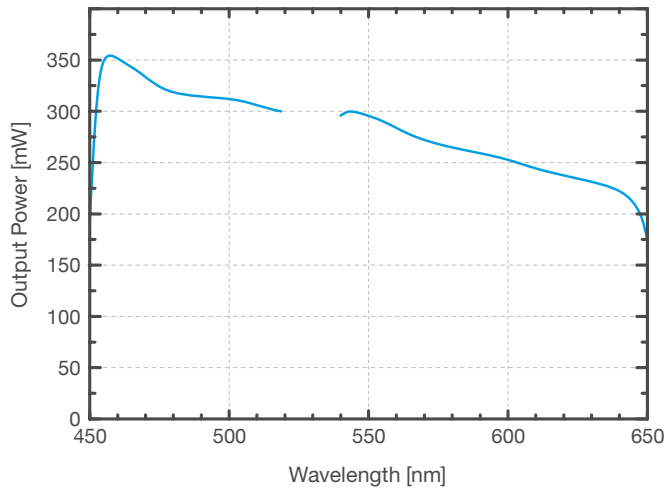
- Cold atom / ion experiments
- Atomic physics
- Quantum optics
- Metrology
- Spectroscopy

Specifications

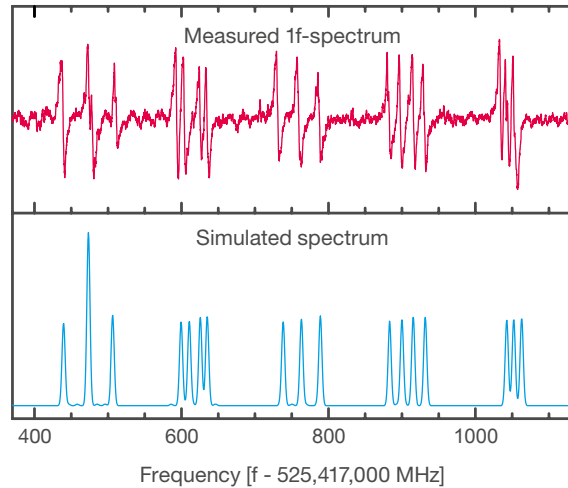
	visible	IR
Wavelength range	450 – 522 nm ^{a)} 542 – 650 nm ^{a)}	900 – 1044 nm ^{a)} 1084 – 1300 nm ^{a)}
Wavelength selection	computer controlled	
Power		
· with 1.5 W pump laser	> 30 mW	> 200 mW
· with 5 W pump laser	> 100 mW	> 500 mW
Amplitude noise	± 5 %	± 2 %
Beam profile	TEM ₀₀ , M ² < 1.2	
Beam diameter	1.2 mm ^{b)}	
Divergence (full angle)	< 1 mrad ^{b)}	
Beam polarization	linear, horizontal, > 100:1	
Linewidth	< 1 MHz	
Mode-hop-free tuning	5 GHz ^{b)}	

^{a)} Range depending on the selected wavelength modules; other wavelengths upon request.

^{b)} Typical values.



Typical output power over the visible wavelength range with 5 W pump laser.



Sub-Doppler spectrum of hyperfine transitions in iodine vapor, measured with the C-WAVE.

Top: measured spectrum with frequency modulation and 1f-detection.
Bottom: simulated absorption spectrum

Technical Data

Computer interface	LAN
Power supply	110 V / 230 V
Power consumption	100 W
Cooling	Closed-loop chiller ^{a)}

^{a)} Please contact us for compatible chillers.

Pump Laser Options

- Integrated pump laser (1.5 W)^{b)}
- External pump laser (5 W)^{b)}

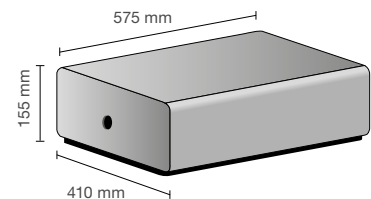
^{b)} Please contact us for compatible pump lasers.

Requirements

Operating temperature range	20–25 °C, constant
Max. relative humidity	10–85 %, non condensing
Mounting surface	vibration-isolated optical table
Air	free of dust

Dimensions

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



Frequency Tuning

Absolute wavelength control better than 1 nm requires an external reference: Wavemeter or reference spectrum (user's choice). Control and fine tuning are achieved using intra-cavity elements and piezo-tuning of the cavity length.

- 1) Connected wavemeter: Suitable for automation. Available at different absolute accuracies.
- 2) Frequency lock using an external analog frequency reference (e.g. iodine spectrum): Feedback via C-WAVE interface or direct access to the PID control of the cavity length.



Designed according to UL standards.
Extended warranty available.
Patent pending.



In cooperation with:

