



## The tunable laser light source



- CW tunable laser light source
- 450 - 650 nm & 900 - 1300 nm
- Single frequency, < 1 MHz linewidth
- Output power > 200 mW VIS or > 400 mW NIR

### 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:

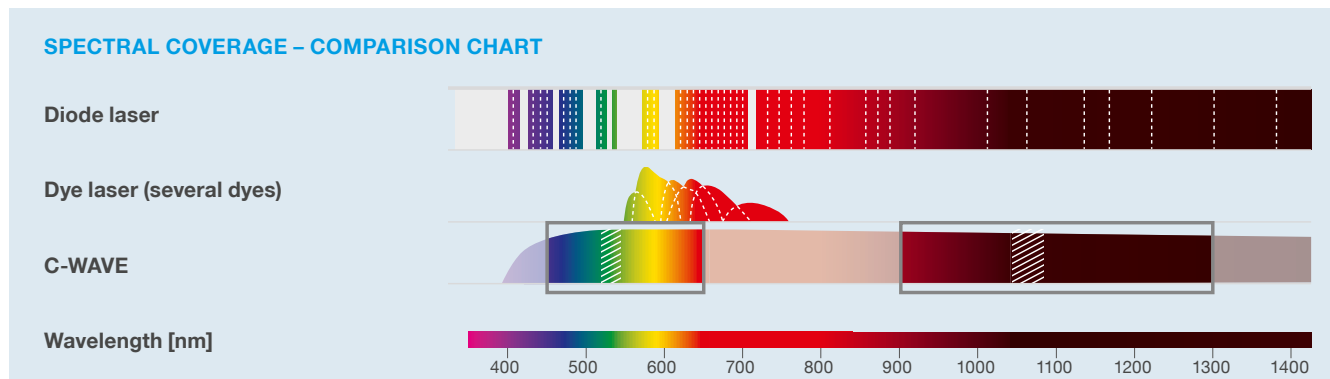
- Atomic physics
- Quantum optics
- Metrology
- Spectroscopy
- Biophotonics
- Photochemistry
- Holography
- Interferometry

**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

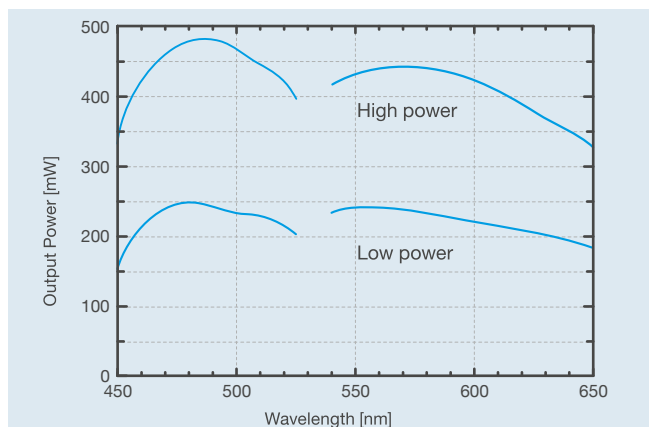
### Tunable output power

#### Low power

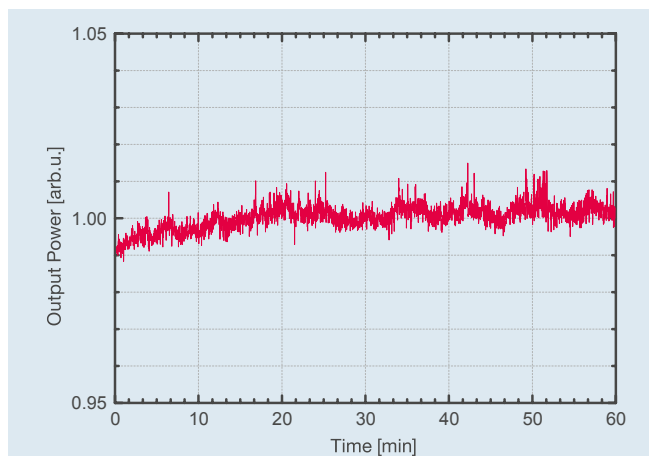
- > 200 mW for IR
- > 80 mW for Blue & Orange

#### High power

- > 400 mW for IR
- > 200 mW for Blue & Orange



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 <sup>a)</sup>	IR <sup>b)</sup>
<b>Wavelength range</b>	450 - 650 nm <sup>a)</sup> ± 1 nm	900 - 1300 nm <sup>b)</sup> ± 2 nm
<b>Wavelength selection</b>	computer controlled	
<b>Accuracy of wavelength setting</b>		
<ul style="list-style-type: none"> <li>■ internal</li> <li>■ with external wavelength measurement</li> </ul>	± 1 nm < 1 MHz <sup>c)</sup>	± 2 nm < 1 MHz <sup>c)</sup>
<b>Output power</b>		
<ul style="list-style-type: none"> <li>■ with 1.5 W Low power</li> <li>■ with 5 W High power</li> </ul>	> 80 mW > 200 mW	> 200 mW > 400 mW
<b>Amplitude noise</b>	< 5 % <sup>c)</sup>	< 1 % <sup>c)</sup>
<b>Beam polarization</b>	> 1000:1 (horizontal)	
<b>Beam profile</b>	TEM <sub>00</sub> , M <sup>2</sup> < 1.2 <sup>d)</sup>	
<b>Beam radius (1/e<sup>2</sup>)</b>	0.5 mm <sup>c)</sup>	0.2 mm <sup>c)</sup>
<b>Beam divergence (f.a.)</b>	0.5 mrad <sup>c)</sup>	2 mrad <sup>c)</sup>
<b>Linewidth</b>	< 1 MHz (typ. < 500 kHz)	
<b>Mode-hop-free tuning</b>	> 25 GHz <sup>e)</sup>	> 12 GHz <sup>e)</sup>
<b>Warranty</b>	12 months	

- <sup>a)</sup> not specified at 525 - 540 (±2) nm; range depending on selected wavelength modules  
<sup>b)</sup> not specified at 1050 - 1080 (±4) nm; range depending on selected wavelength modules  
<sup>c)</sup> typical value  
<sup>d)</sup> not specified at 450 - 480 nm and 900 - 960 nm  
<sup>e)</sup> depending on the pump laser

## Requirements

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

## Technical data

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

## Configurations

### Wavelength options (multiple selection possible):

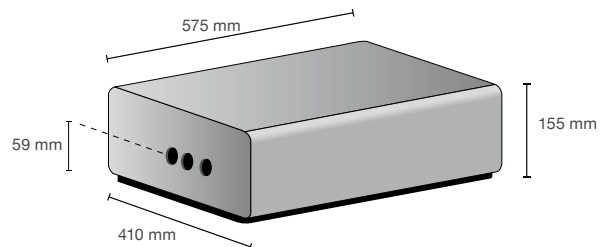
- IR (900 – 1300 nm)\* \* gap at 1050 – 1080 nm
- Blue (450 – 525 nm)
- Orange (540 – 650 nm)

### Power options:

- Low power:
  - > 200 mW for IR
  - > 80 mW for Blue & Orange
- High power:
  - > 400 mW for IR
  - > 200 mW for Blue & Orange

## Add-ons

- Fiber coupling VIS & IR
- Low noise add-on: Noise Eater setup
- Frequency stabilization on external reference: AbsoluteLambda™

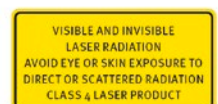


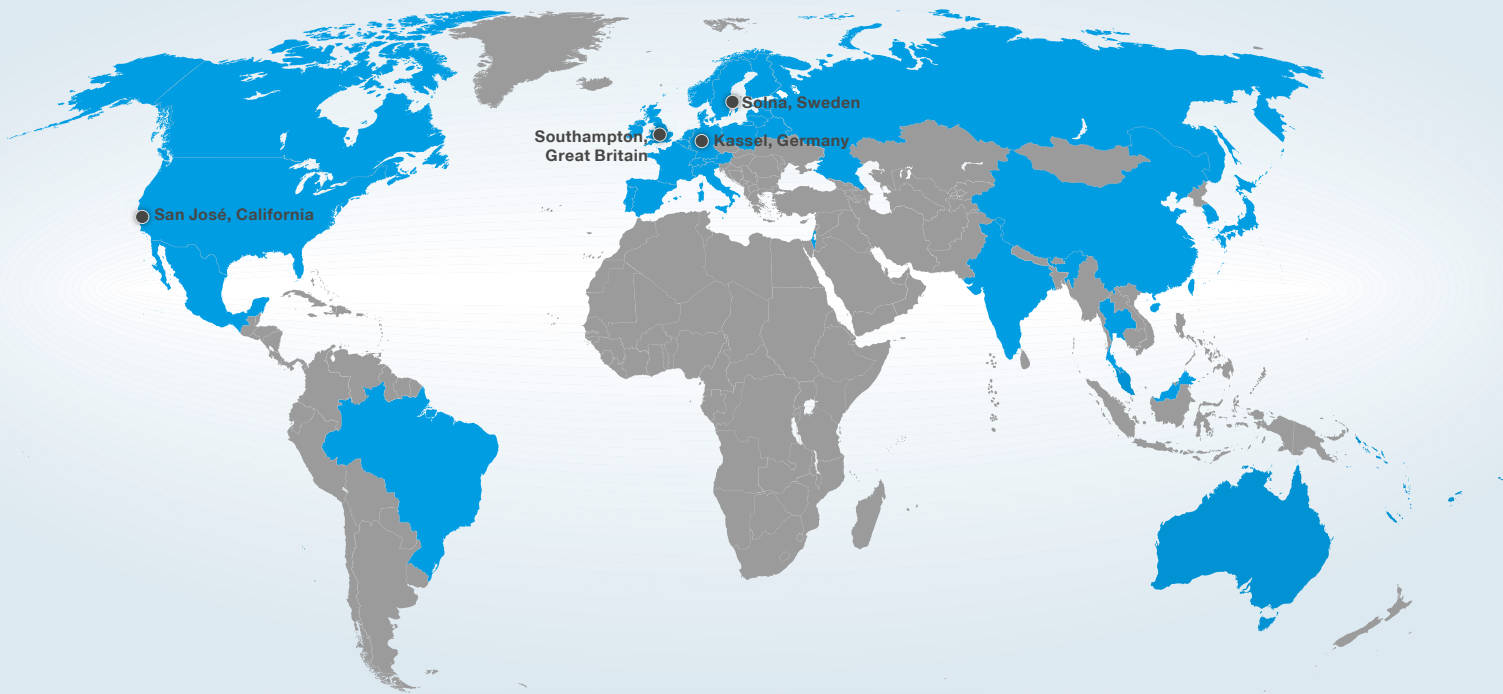
## Dimensions

<b>Length</b>	575 mm
<b>Width</b>	410 mm
<b>Height</b>	155 mm
<b>Weight</b>	34 kg



Designed according to UL standards.





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