High Performance Lasers by Cobolt

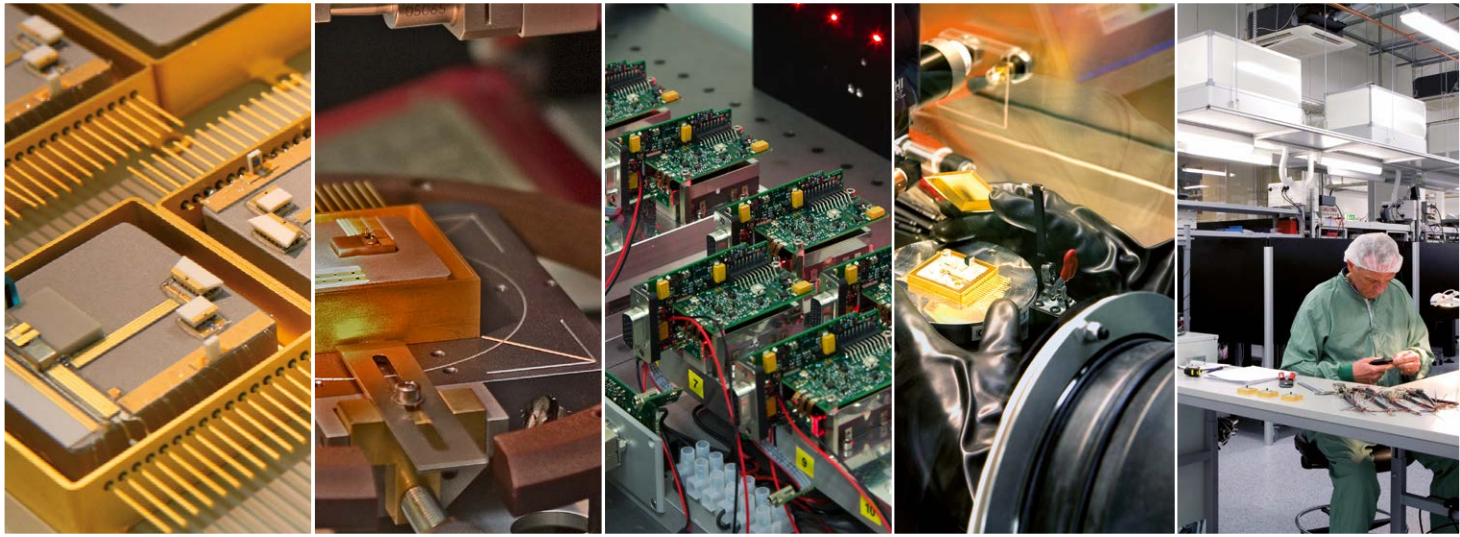
Cobolt
a HÜBNER Group company

Technology

High Temperature Curing or HTCure™ technology, is Cobolt's proprietary method for fixation of cavity components developed for a high level of reliability, exceptional optical performance and unrivalled robustness.

The HTCure™ technology is based on building the lasers into a hermetically sealed sub-package in a planar configuration. The material and design of each component in the architecture has been carefully chosen for extremely high overall thermomechanical stability. As a result, the design is so thermomechanically stable that the whole laser can be baked at >100° C for several hours and at multiple phases as part of the manufacturing process without the laser going out of alignment or any damage being caused.

This extraordinary capability of the design has enabled the use of a new advanced type of adhesive for the fixation of cavity components that cures at high temperatures. This thermal curing yields a very stiff and reliable fixation joint, free from outgassing and long-term drifts.



High performance lasers for advanced analytical instrumentation

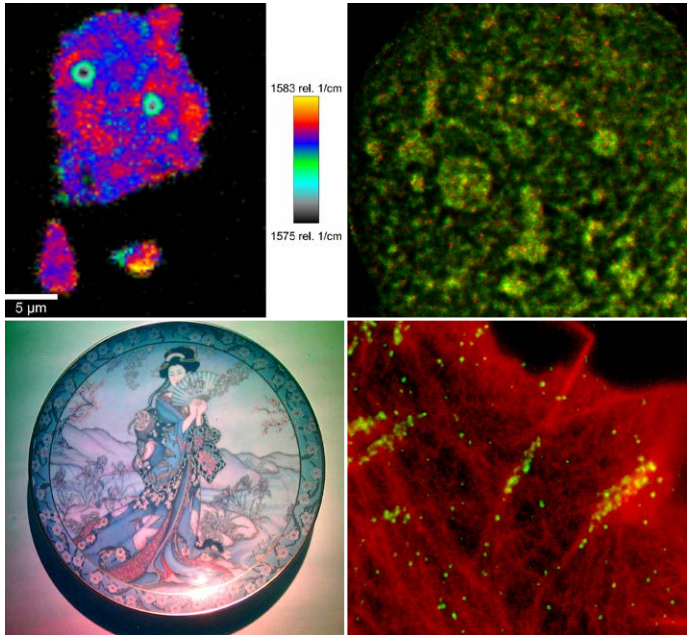
Cobolt is at the very forefront of the industry in the development and manufacture of high performance lasers.

We provide innovative laser solutions with high output power, stable single-mode operation and large wavelength flexibility in the UV-Visible-MIR spectral range.

The Cobolt lasers have become a preferred choice by leading instrument manufacturers and scientists in some of the most challenging applications in the fields of biomedical research, on-line quality and process control, clinical diagnosis, material research, particle analysis and semiconductor metrology.

Our commitment is to increase the availability of laser-based equipment that can contribute to quality of life improvements and a better environment.

A combination of sophisticated laser designs and the HTCure™ Technology for advanced laser manufacturing allows Cobolt to provide lasers in compact formats with the performance and reliability required by the most demanding applications and for use in industrial environments.



Applications

- Fluorescence microscopy
- Super-resolution microscopy
- DNA sequencing and analysis
- Raman spectroscopy
- Flow cytometry
- Interferometry
- Semiconductor metrology
- Gas detection
- Materials processing
- Optogenetics
- Optical tweezers
- Holography
- LIBS
- LIDAR

Cobolt CW and Modulated Lasers

04-01 Series and 05-01 Series
Powerful single frequency CW diode pumped lasers

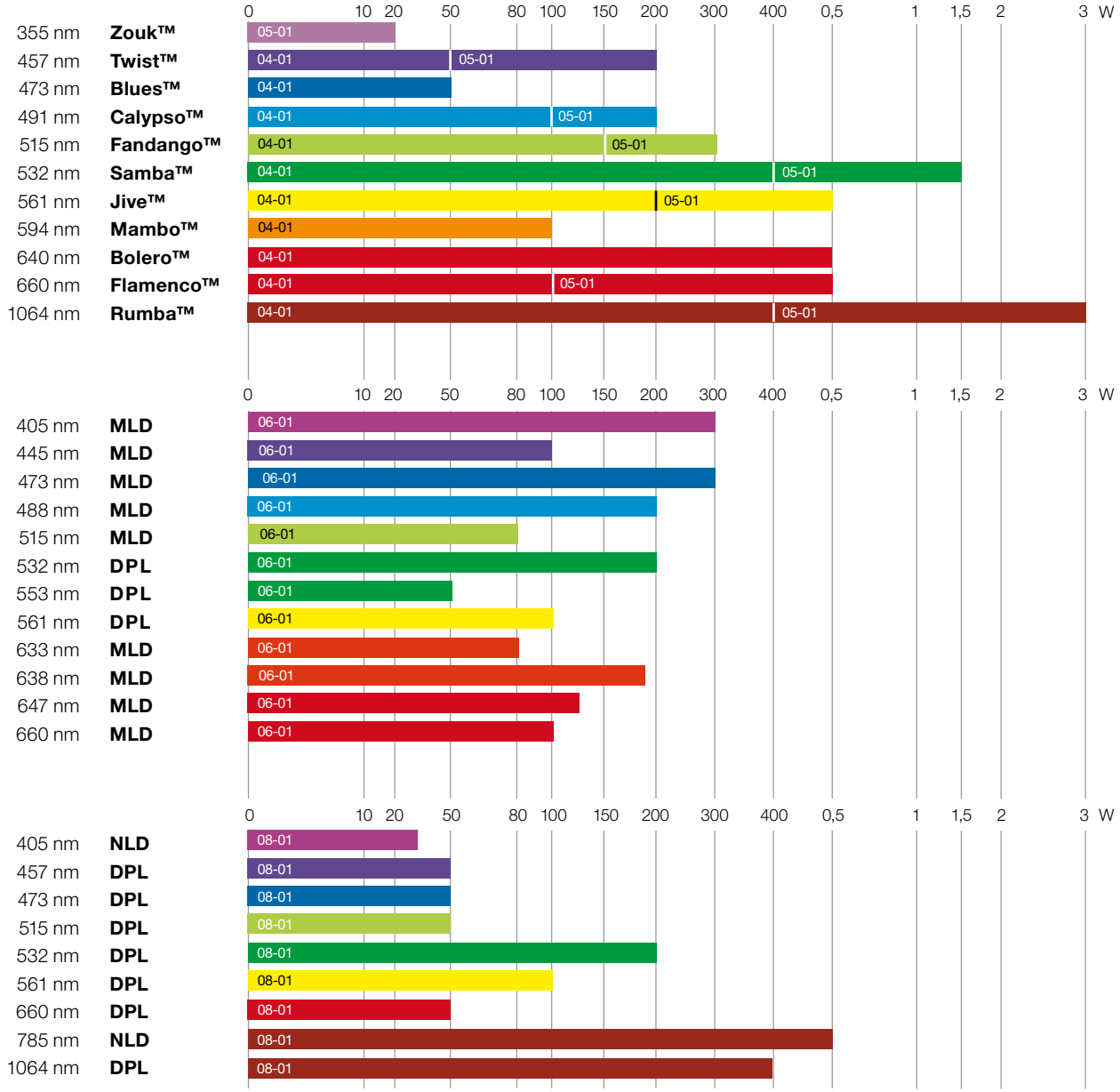
- 355 – 1064 nm up to 3 W
- < 0.1 % rms noise, in a perfect TEM00 beam
- < 1 MHz linewidth, superior spectral purity and wavelength stability

06-01 Series
Plug & play modulatable CW lasers

- 405 – 660 nm up to 300 mW
- Diode (MLD) and diode pumped lasers (DPL) with fully integrated electronics
- Fast and deep modulation, fiber pigtailed option

08-01 Series
Compact narrow-linewidth lasers

- 405 – 785 nm up to 500 mW
- SLM diode pumped lasers (DPL) and frequency stabilized diode lasers (NLD)
- Integrated optical isolator/filters



Cobolt Pulsed Lasers

Cobolt Odin™ Series
Compact, tunable Mid-IR OPOs

- Wavelength selectable 2-5 µm
- Tunable up to 50 nm, narrow linewidth option
- Up to 80 mW at 10 kHz

Cobolt Tor™ Series
High performance Q-switched lasers

- 1064 nm, 532 nm, 355 nm
- <5 ns, >7 kHz free running
- Single shot to 1 kHz triggerable
- Up to 160 µJ/pulse

Multi-line lasers and light engine integration

Cobolt Skyra™
Multi-line laser

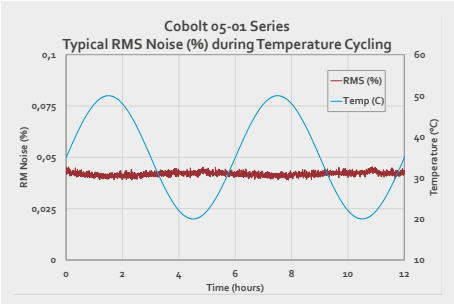
- Up to 4 laser lines, 405 nm – 660 nm
- Permanently aligned in a single beam
- Fully integrated electronics
- Fiber coupled

Options

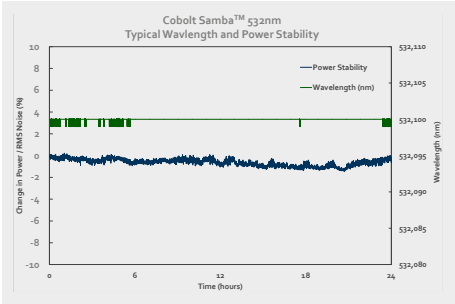
- Fiber pigtailed lasers
- Fiber coupled lasers
- Modulated DPSS lasers
- Optogenetics laser solutions

Performance data (Cobolt CW diode pumped lasers)

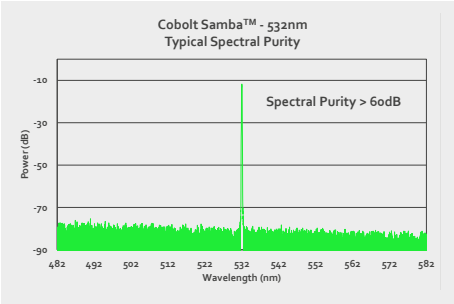
Intensity noise



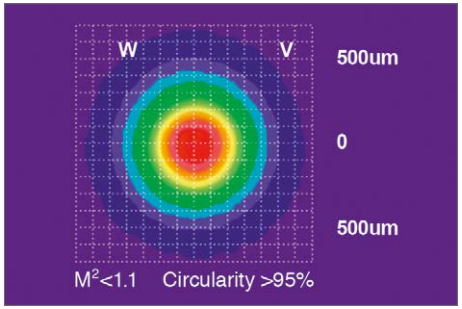
Wavelength stability

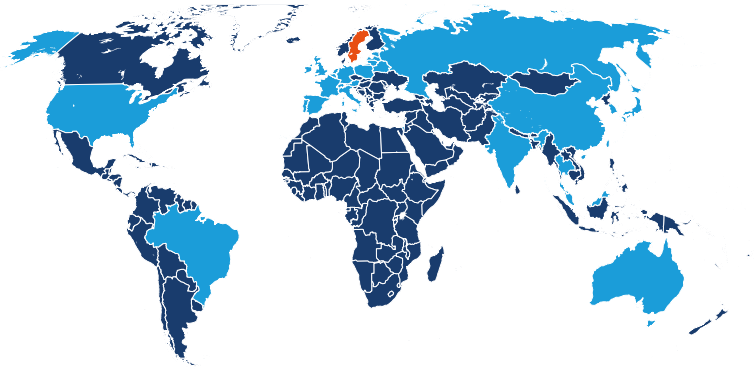


Spectral purity



Beam quality





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