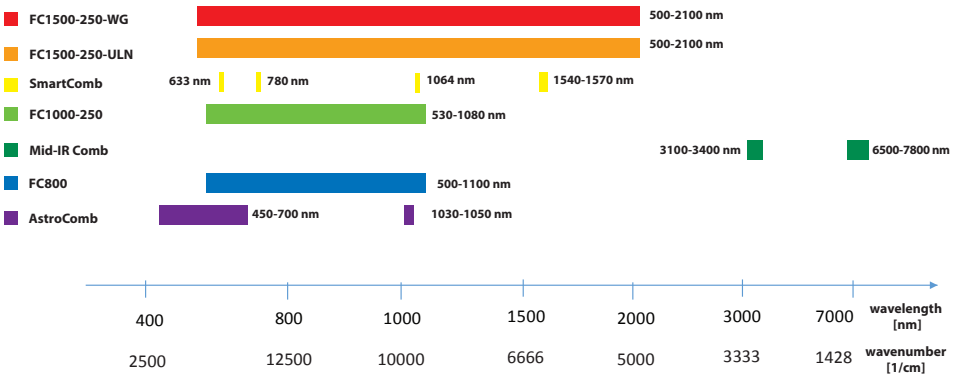
MenloSystems

Optical Frequency Comb Selection Guide

The leading solution for all applications

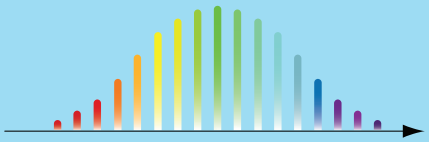
The Optical Frequency Comb technology is regarded as a breakthrough technology for measurements with highest accuracy. Lowest phase noise, wide wavelength coverage, and turn-key operation make the Menlo Optical Frequency Comb solutions unique in accuracy, usability, and reliability. According to our principles: The best Optical Frequency Combs for all applications.

Spectral Coverage of Menlo Optical Frequency Combs



All Menlo Systems Optical Frequency Combs are complete, ready-to-use systems. The fiber laser systems are based on the proprietary and patented Menlo figure 9® technology. Complete control electronics and software for 24/7 operation, remote access capabilities, and the Menlo CombWatch software for data analysis are included. **Prior to shipment, each system is calibrated against our in-house reference systems and comes with a calibration certificate.** A Menlo Optical Frequency Comb expert will be your personal assistant during installation, training, and first applications.

Nobel Prize Technology



Menlo Systems with co-founder Professor Theodor Hänsch has pioneered the Optical Frequency Comb technology. Named as "the biggest advance in precision electromagnetic measurements since people began to measure laser frequencies in the seventies" the technology has enabled numerous new applications in science and industry. In 2005, Professor Hänsch and Professor Hall received the Nobel Prize in physics for the technology and the contributions to the development of laser-based precision spectroscopy.

Menlo Systems holds major patents around the base technology and its applications as well as on specific implementations like e.g. difference frequency generation for offset free Optical Frequency Combs.

We care about our customers

With more than 200 Optical Frequency Combs in the field and numerous innovations for the last 15 years Menlo Systems is the No. 1 supplier worldwide. With headquarters in Germany and offices and service engineers in the US and in China we work closely with our customers from first discussions, to installation and training, as well as assisting during new applications. Frequency comb seminars with hands-on experience are offered in Germany, the US, and China. Please join us and become a certified frequency comb expert.

Quality Made in Germany

All our systems are manufactured in Germany. Each system undergoes a full qualification and is calibrated prior to shipment to guarantee best performance.

Selection Guide

MenloSystems

Top Seller	Applications
FC1500-250-WG Optical Frequency Comb for Metrology ■ Large mode spacing of 250 MHz ■ Flexible and universal system ■ Add-on functionality available in optional modules	**Dimensional metrology** **Length metrology**: calibrating He:Ne lasers at 633 nm **Cold atom** and **ion physics**, Quantum Optics **LIDAR** **Optical links**: distribution of frequency and time High resolution **spectroscopy** **Fourier transform** spectroscopy **Reference system** for OPOs, and lasers Synchronization of optical and RF signals within user facility
New Releases	
FC1500-250-ULN Ultra Low Noise Optical Frequency Comb ■ Linewidth of <1 Hz for every comb line ■ Can be locked to Menlo **ORS1500** Optical Reference System ■ Ultimate performance in regard to phase noise and stability ■ 2 x 10^{-16} in 1 sec, 3 x 10^{-18} in 1000 sec ■ Other system parameters identical to FC1500-250-WG	**Optical Clocks** Cold atom and ion physics with **1 Hz linewidth** Generation of **ultra stable microwaves** Optical links: distribution of frequency and time
SmartComb All-in-one Optical Frequency Comb ■ Fully transportable and easy to use in and outside the lab ■ Fully automated operation ■ Control via any Web interface	Length metrology: **calibrating He:Ne lasers at 633 nm** Cold atom physics for **Rb at 780 nm,** and others on request **LIDAR** Reference system for OPOs, and lasers
Application Driven Systems	
FC1000-250 Optical Frequency Comb for Metrology ■ Large mode spacing of 250 MHz ■ Highest average output power of >10 W	Metrology applications where **highest optical output powers** make a difference
Mid-IR Comb Optical Frequency Comb for Mid-IR Spectroscopy ■ Extended wavelength range to 3 and 7 microns (wave numbers of 3000 cm^{-1} and 1000 cm^{-1})	**Mid-IR** spectroscopy **Fingerprint** spectroscopy
AstroComb Optical Frequency Comb for Astronomy ■ Increased mode spacing of 15-25 GHz	**Calibration of telescopes** in astronomy in the visible and near-infrared
Ti:Sapphire laser based systems	
FC800 Ti:Sapphire laser based Optical Frequency Comb ■ 1 GHz mode spacing ■ Highest average power around 800 nm ■ Shortest pulse widths	Metrology applications where a **1 GHz mode spacing** is required and **shortest pulse widths** make a difference

ORDERING INFORMATION

Please contact our team of Optical Frequency Comb experts. We are happy to learn about your requirements and expectations.

MenloSystems

Menlo Systems GmbH
T+49 89 189 166 0
sales@menlosystems.com

Menlo Systems, Inc.
T+1 973 300 4490
ussales@menlosystems.com

Thorlabs, Inc.
T+1 973 579 7227
sales@thorlabs.com

www.menlosystems.com **www.frequencycomb.com**

D-COMB-EN 20/01/17