

SmartComb

Compact Optical Frequency Comb

MenloSystems

KEY SPECIFICATIONS

- Accuracy Better 10^{-14} in 120 s
- Stability Better 5×10^{-13} in 1 s
- Operates at 1550 nm Plus One Additional Wavelength

APPLICATIONS

- High Precision CW Laser Stabilization
- Calibration of Lasers
- Length Metrology
- Cold Atoms and Ions
- LIDAR

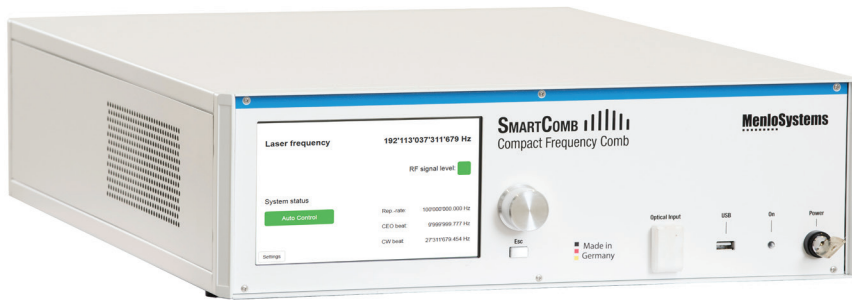
FEATURES

- Touch Panel Control
- Beat Detection Unit Included
- Class 1 Laser
- Full Automation
- Internal Atomic RF Clock

OPTIONS

- GPS-based 10 MHz Frequency Reference
- Additional Wavelength Port (780 nm, 1064 nm, 633 nm)
- Frequency-lock for External CW Laser

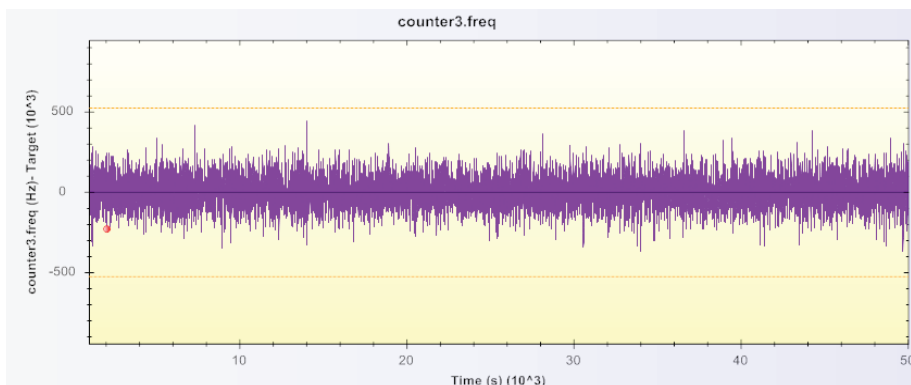
Please inquire for other wavelengths.



SmartComb is a full optical metrology system in a revolutionary compact package. In just 19" 3U it features the first fully automated turn-key optical frequency comb designed and built for use both in- and outside the optics lab. SmartComb can measure or stabilize CW lasers at 1550 nm and, if required, at one additional wavelength. Feed in your laser and get the optical frequency with 14 digits. Or continuously stabilize your laser within few 100 kHz over days. SmartComb has a robust design. Its underlying proprietary technology based on figure 9[®] has already been verified onboard of an aircraft and two sounding rocket missions, proving it is well-suited even for demanding environments.

CW LASER STABILIZED TO SMARTCOMB

Continuous frequency lock over 14 hours. Deviation from target value is plotted in units of kHz.



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COMPLETE SOLUTION:

The turn-key, fully hands-off optical setup is integrated into a 19" 3U rack, and offers unprecedented compactness. It includes an atomic clock as reference. Besides 1550 nm the single rack solution can provide one additional wavelength at 780 nm, 1064 nm or 633 nm. Please inquire for other wavelengths. Up to two lasers are simply connected to the SmartComb, and a 10^{-14} level accuracy reading is given.

SPECIFICATIONS

SMARTCOMB

Comb Spacing	100 MHz
Accuracy	10^{-14} in 120 s*
Stability	5×10^{-13} in 1 s*
Laser Input	up to two fiber-coupled, linearly polarized FC/APC PM input ports
Center Wavelength	1550 nm
Spectral Range @ 1550 nm	>25 nm
Additional Wavelengths	780 nm, 1064 nm or 633 nm

* or same as reference, whichever applies first. Internal atomic clock supports 3×10^{-10} stability in 1 s and accuracy 10^{-9} , which is subject to aging. Recalibration is available.

REQUIREMENTS

Input Requirements	10 MHz frequency reference, power level +7 dBm or internal atomic clock
Operating Voltage	100/115/230 VAC
Frequency	50 to 60 Hz
Power Consumption	<100 W
Cooling Requirements	none
Operating Temperature	22 ± 5 °C
Optical Unit Dimensions/Weight	19" x 3U, 17 kg

ORDERING INFORMATION

Product Code	SmartComb
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Please call for pricing. Specifications are subject to change without notice. Custom modifications are available, please inquire.

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Invisible laser radiation
avoid exposure to beam
Class 1 laser

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