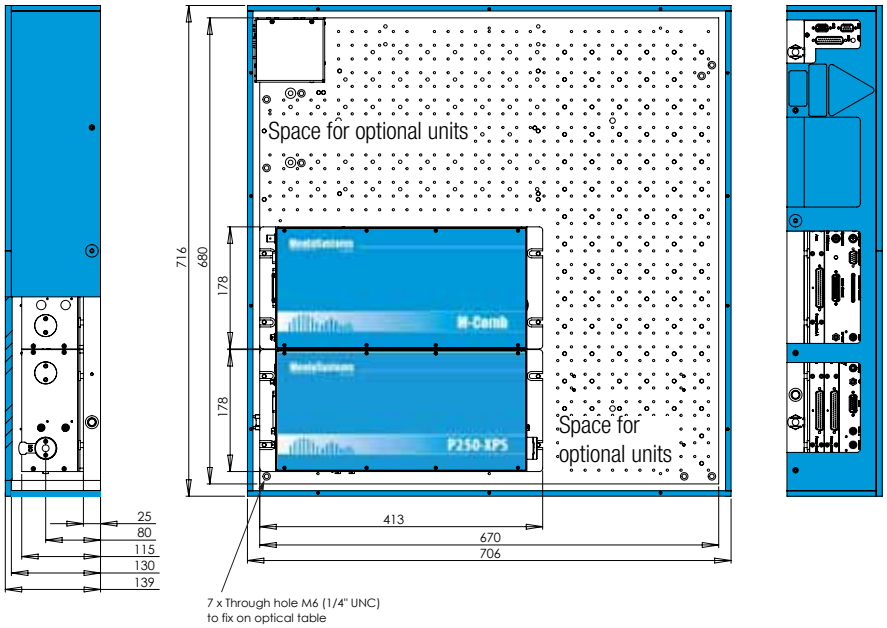
FC1500

MenloSystems

Optical Frequency Synthesizer

Directly measure absolute optical frequencies with Menlo Systems' optical frequency combs. The FC1500 Optical Frequency Synthesizer is a compact and flexible fiber-based femtosecond frequency comb system. With the extension packages M-VIS and M-NIR, the system covers the full visible to NIR spectrum from 500 nm to 2000 nm. Thanks to the mature system design including several motorized actuators, customers report long-term operation where the comb is phase locked over weeks. A wide range of optional units enables us to tailor this versatile optical frequency comb system to customer specific requirements.

OPTICAL UNIT OF FC1500-250-WG



KEY SPECIFICATIONS

- Comb Spacing 250 MHz
- Accuracy Better 10^{-14}
- Stability Better $5x10^{-13}$ in One Second
- Operational Range from 500 nm to 2 µm

APPLICATIONS

- High Precision CW Laser Stabilization
- FTIR Spectroscopy
- Calibration of Lasers
- High Resolution Spectroscopy
- Low-noise Microwave Generation

FEATURES

- High Repetition Rate
- Fully Fiber-coupled CEO Frequency Generation
- Turnkey Metrology System
  Fully automated with comb control and data acquisition software, designed for continuous operation

OPTIONS

- **EOM-Phase**
  Required for high-performance phase locking to an optical reference, allowing for sub-Hz comb linewidths.
- **WLM-NIR / WLM-VIS**
  Wavelength Meters
- **HMPXXX**
  Provides stabilized comb light with highest power at customer-defined wavelengths (e.g. 633 nm) for high precision measurement of lasers with low power levels (<100 µW).
- **M-VIS**
  Extends the stabilized comb spectrum to the 530-900 nm range.
- **M-NIR**
  Extends the stabilized comb spectrum to the 1050-2100 nm range.
- **GPS**
  GPS based 10 MHz reference
- **LLE**
  Laser locking electronics
- **P250 / P250 PM PULSE-EDFA**
  Delivers intense near infrared pulses. A combination of optional amplifiers can be added for multiple measurement ports with high-power output at 1560 nm.

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SPECIFICATIONS	FC1500-250-WG
Comb Spacing	250 MHz
Accuracy	10^{-14} or same as reference*
Stability	$5x10^{-13}$ in 1 s or same as reference*
Tuning Range of Spacing Between Individual Comb Lines	>2 MHz
Tuning Range of CEO Frequency	>250 MHz
Laser Outputs	three fiber-coupled, linearly polarized, PM output ports
Center Wavelength	1560 nm
Spectral Range	>25 nm (530-900 nm with M-VIS, 1050-2100 nm with M-NIR)
Average Output Power	>18 mW from each laser port (>60 mW with M-VIS, >200 mW with M-NIR)

* *whichever applies first*

REQUIREMENTS	
Input Requirements	10 MHz frequency reference, power level +7 dBm
Operating Voltage	100/115/230 VAC
Frequency	50 to 60 Hz
Power Consumption	<500 W
Cooling Requirements	no water cooling required
Operating Temperature	22 ± 5 °C
Optical Unit Dimensions/Weight	706 x 716 mm, approx. 80 kg
Control Electronics Dimensions/Weight	600 x 800 mm, approx. 140 kg

ORDERING INFORMATION	
Product Code	FC1500-250-WG

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

Invisible laser radiation
avoid exposure to beam
Class 4 laser

MenloSystems

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