ORC-Micro

Optical Reference Cavity

MenloSystems

ORC-Micro

ORC-Micro with Fiber-coupling Option

The ORC-Micro is the most price-sensitive optical reference cavity with reduced form factor for linewidth reduction and short-term laser stabilization, ideal for all applications for which the ultimate performance provided by the ORC-Cubic and ORC-Cylindric is not required. The ORC-Micro allows to couple an external laser in free-space through a viewport while monitoring the transmission output signal. Moreover, it offers tunability with temperature via a Peltier element. Optionally, it provides the possibility to support laser incoupling and outcoupling with FC/APC collimators.

KEY SPECIFICATIONS

- Wavelength 1542 nm or 1550 nm
- Finesse >50 k
- Free Spectral Range 4 GHz

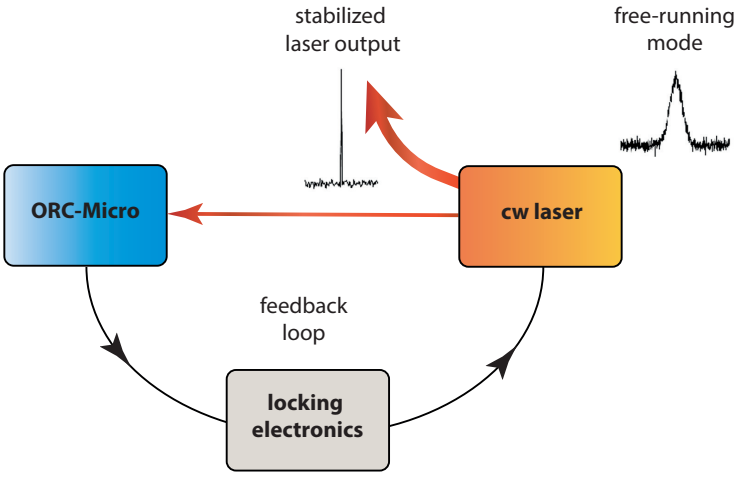
APPLICATIONS

- Linewidth Narrowing for Laser-state-preparation Experiments
- Thermal Beams
- Frequency Stabilization for Metrology Standards

OPTIONS

- Fiber-coupling (ORC-Micro-FC)
- TEC Controller (ORC-TEC)
- Pound-Drever-Hall Servo Electronics-with TEC Controller (ORC-SYNCRO)
- Pound-Drever-Hall Servo Electronics-with TEC Controller and 1542/1550nm Laser Module (ORC-SYNCRO-RLD)

APPLICATION EXAMPLE (ORC-MICRO WITH FIBER INCOUPLING)



CW-Laser stabilization with sub-kHz linewidth performance

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SPECIFICATIONS	ORC-MICRO	ORC-MICRO WITH ORC-MICRO-FC
Wavelength	1542 nm or 1550 nm	
Finesse	>50 k	
Free Spectral Range	4 GHz	
Temperature Tunability	~1FSR/3°C @ T=24°C	
In- and Output Port	free space	fiber-coupled
Dimensions	W 95 mm, L 160 mm, H 67 mm	
Vacuum Chamber Material	aluminium	
Mass	1 kg	1.2 kg

OPERATIONAL REQUIREMENTS	
Electrical Input (Peltier)	Input current: ≤ 2 A
Laboratory Temperature	T=22 ± 5 °C

ACHIEVABLE PERFORMANCE*	ORC-MICRO	ORC-MICRO WITH ORC-MICRO-FC
Stability (MADEV at 10 ms)**	$\leq 1 \cdot 10^{-12}$	

**The ultimate achievable ORC-Micro stability and drift performance depends on several factors, such as the laboratory environment in which the cavity is placed, as well as the electronics and the laser employed. All components from one supplier with full automation guarantees hands off operation and more time for your experiments. No stability and drift performance guaranteed.*

***With the linear drift ≤ 5 kHz/s removed*

ORDERING INFORMATION	
Product Code	ORC-Micro

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

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