



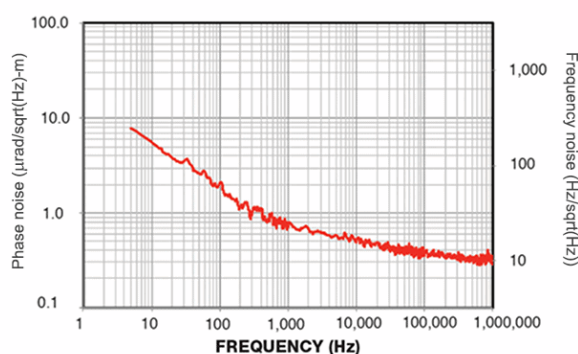
产品特点 / Features



应用领域 / Applications

- ◇ 分布式光纤声学/振动传感 (DAS/DVS)
- ◇ Distributed Acoustic/Vibration Sensing (DAS/DVS)
- ◇ 高分辨率激光雷达系统
- ◇ High-Resolution LiDAR Systems
- ◇ 相干光通信与信号处理
- ◇ Coherent Optical Communication and Signal Processing
- ◇ 高精度光谱分析与计量
- ◇ High-Precision Spectroscopy and Metrology
- ◇ 量子信息技术研究
- ◇ Quantum Information Technology Research

- ◇ 单片集成外腔设计实现 KHz 级超窄线宽
- ◇ Monolithically integrated external cavity for kHz-level linewidth
- ◇ 20 mW 保偏光纤输出, 功率稳定性优异
- ◇ 20 mW PM fiber output with excellent power stability
- ◇ 极低相位噪声与相对强度噪声
- ◇ Ultra-low phase noise and relative intensity noise (RIN)
- ◇ 内置 APC/ATC 电路, 适应宽温工作环境
- ◇ Built-in APC/ATC for wide-temperature operation
- ◇ RS-232 通信接口, 支持实时监测与控制
- ◇ Built-in APC/ATC for wide-temperature operation
- ◇ 紧凑 OEM 封装, 即插即用
- ◇ Compact OEM package, ready for integration



Ultra-Lock 1550nm 单频 (超窄线宽) 激光模块是一款基于单片集成外腔技术的高性能 OEM 光源。模块核心采用增益芯片与内置布拉格光栅的平面波导芯片精密耦合, 构成稳定外腔, 实现 kHz 量级超窄线宽、20 mW 输出功率与极低相位噪声的卓越性能。

The Ultra-Lock 1550 nm Single Frequency (Ultra-Narrow Linewidth) Laser Module is a high-performance OEM source based on monolithically integrated external cavity technology. The precise coupling between a gain chip and a planar waveguide chip with integrated Bragg grating forms a stable external cavity, delivering kHz-level ultra-narrow linewidth, 20mW output power, and ultra-low phase noise.

模块集成了精密的自动功率控制与温度控制电路, 确保在宽温环境下保持出色的功率稳定性与波长一致性。其紧凑的工业级封装提供保偏光纤输出, 支持 RS-232 数字接口, 可便捷地集成于各类高端光电系统, 大幅缩短开发周期。

The module incorporates precision automatic power control and temperature control circuits, ensuring outstanding power stability and wavelength consistency over a wide temperature range. Housed in a compact industrial-grade package with PM fiber output, it supports RS-232 interface for seamless integration into various high-end photonic systems, significantly reducing development cycles.



性能指标 / Specifications

性能参数 / Parameters	技术指标 / Specifications		
	最小值	典型值	最大值
线宽 / Linewidth (KHz)	10 / 5 / 3		
出光功率 / Output Power (mW)	20	-	-
中心波长 / Center Wavelength (nm)	1530	1550	1572
工作电流 / Operating Current (mA)	30	-	250
边模抑制比 / SMSR (dB)	45	-	-
偏振消光比 / PER (dB)	25	-	-
相对强度噪声 / RIN (dBc / Hz @ 10 KHz)	-	-	-135
相位噪声 / Phase Noise (dBc / Hz @ 10 KHz)	-	-	-120
光隔离度 / Isolation (dB)	32	-	-
光纤类型 / Fiber Type	保偏光纤 / polarization maintaining fiber		
光纤长度 / Fiber Length (m)	1.0 ± 0.1		
光纤直径 / Fiber Diameter (mm)	0.9 包层直径 / 0.9 cladding diameter		
光纤接口 / Fiber Connector	FC/APC		
工作温度 / Operating Temperature (°C)	-20	-	+60
存储温度 / Storage Temperature (°C)	-55	-	+85
工作电压 / Operating Voltage (V)	4.5	+5	+6
电气连接 / Electrical Connection	RS 232		
设备尺寸(L×W×H) / Dimensions L x W x H	101.6×57.0×12.7 mm		
静电防护 ESD (HBM) (V)	-	-	500

性能曲线 / Characteristic Figures

