

OPSilent 1000 - 1 μ m

Low-noise high-coherence laser source

Relying on many years of research within the French Labs IES and LPN, INNOPTICS has designed a laser source based on VECSEL (Vertical External Cavity Surface Emitting Laser) technology.



“ OPSilent 1000 is a highly coherent low-noise laser source , made of a $\frac{1}{2}$ VCSEL semiconductor chip and an external mirror to form the cavity. This architecture combines the benefits of semiconductor lasers (reliability, wavelength agility,...) with those of DPSS lasers (coherence, beam quality,...), offering a singlemode tunable output beam. ”

► Description

This OPSEL module (Optically Pumped Semiconductor Laser) features a built-in optical pumping system for optimal performances.

In its compact footprint, it also integrates, together with the laser chip, a photodiode for optical power monitoring, a TEC for temperature control and a piezoelectric transducer for wavelength tuning.

► Benefits

- High SMSR
- Low intensity noise
- Narrow linewidth
- Circular TEM₀₀ singlemode beam, close to diffraction limit
- Low divergence

► Applications

- Scientific instrumentation
- Atomic clocks
- Interferometry
- Wind sensing
- Seed laser
- ...

Technical Data

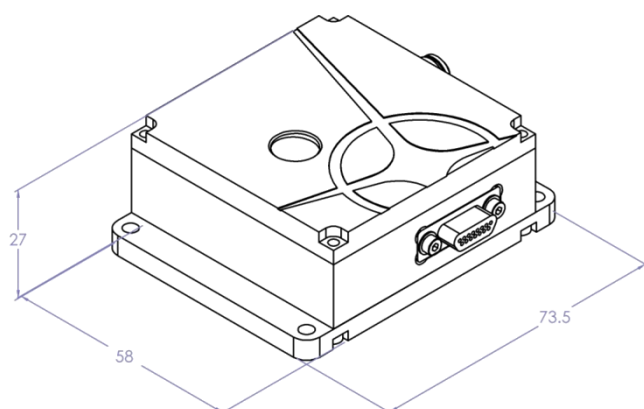
Preliminary

Specifications

Electro-Optical Parameters		Typ.	Units
Wavelength		950-1100	nm
Output Power	P_{OUT}	>200	mW
Linewidth	$t = 1\text{ms}$	<10	kHz
Side Mode Suppression Ratio (SMSR)		>50	dB
Polarization Extinction Ratio (PER)		>50	dB
Relative Intensity Noise (RIN)	@100kHz	< -110	dB/Hz
Relative Intensity Noise (RIN)	>200MHz	Shot Noise	dB/Hz
Beam Divergence		<1	deg.
Beam Quality	M^2	<1.4	
Threshold current		500	mA
Operating current		1500	mA

Thermal Parameters	Min.	Max.	Unité
Laser temperature range	0	+35	°C
Operating temperature range	-20	+50	°C
Storage temperature range	-40	+85	°C

Dimensions



Dimensions in mm

Wavelength spectrum

