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# POLARIS O-band

ULTRA-NARROW LINEWIDTH
SINGLE-FREQUENCY LASER SOURCE

# DATASHEET

# POLARIS O-band

## ULTRA-NARROW LINEWIDTH SINGLE-FREQUENCY 1310 LASER SOURCE




**≤ 3 kHz linewidth** **Excellent stability** **Fiber connected**

## Applications

- Optical Fiber Sensing
- Coherent Optical communication
- Quantum
- Scientific instrumentation
- Fiber-optic hydrophones/ ultrasonic sensing

## Key Features

- Center wavelength at 1310 nm
- Ultra narrow linewidth
- Low phaise noise
- High optical power
- Stable power and wavelength
- In-built isolator
- Easy to set-up and use

## Laser Description

The POLARIS O-band is an ultra narrow linewidth single-frequency laser module, comprising of an external cavity laser (ECL) laser with in-built isolator packaged in a deck-of-cards sized electronic driver. It delivers high output power at low power consumption, with low-noise, wavelength-stable operation. Built for reliability across a wide temperature range, the POLARIS O-band offers stable performance in a compact, low-power, easy-to-integrate package.

# Performance and specifications

| Parameter | Min. | Typ. | Max. | Unit | Testing conditions |
|---|---|---|---|---|---|
| Center Wavelength | | 1310 | | nm | |
| Output Power | | 20 | 40 | mW | |
| Intrinsic linewidth | | | 3 | kHz | |
| Relative Intensity Noise | | -145 | | dBc/Hz | |
| Side-Mode Suppression Ratio | | 55 | | dB | |
| Polarization Extinction Ratio | | 23 | | dB | Slow axis aligned |
| Optical Isolation | | 50 | | dB | |
| Voltage | 4.75 | 5 | 5.25 | V | |
| Power consumption | | 2.5 | 5 | W | |
| Working temperature | -20 | | 60 | ℃ | Placed on heat sink |
| Storage Temperature | -40 | | 85 | ℃ | |

| Package | Specified values |
|---|---|
| Fiber & Connector | PM Fiber, FC-APC, 1m-long pigtail |
| Dimensions L x W x H | 85 x 47 x 14 mm |
| Module weight | 120g |
| Power supply | DC 5V/3A |
| Communication interface | Micro DB9 |
| Safety control | Interlock |

# Certifications

CE RoHS COMPLIANT

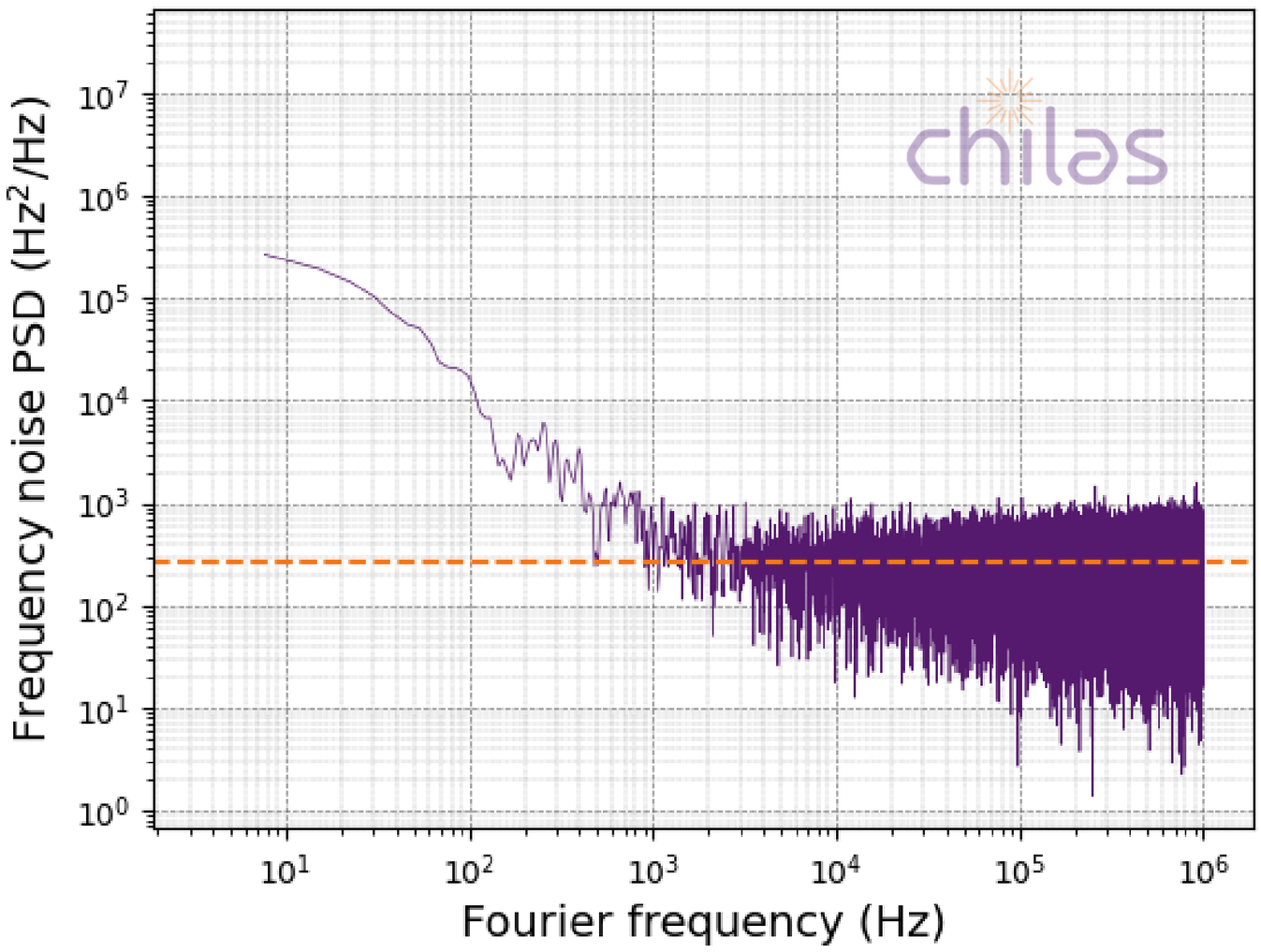
LASER 1 — INVISIBLE LASER RADIATION CLASS 1 LASER PRODUCT — IEC 60825-1:2014

**NOTE**

This laser product complies with FDA performance standards 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

# Graphs

## Frequency noise of POLARIS O-band




Measured frequency noise (purple) and the average white noise level (orange). The intrinsic linewidth of 850 Hz is calculated from the white noise level above the Fourier frequency of 50 kHz.

## Picture of POLARIS O-band



## Chilas Lasers, Tuned to your Wavelength

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