

## 1.5 $\mu$ m Ultra-Narrow Line-width Laser Module

### ◆ Introduction

CSRayzer's 1.5 $\mu$ m single frequency narrow linewidth laser utilizes semiconductor DFB chip, with high Q quality Factor the F-P cavity as well as the VBG, through the self-injection locking method to achieve linewidth compression, reduce the phase noise of semiconductor lasers, to achieve compact ultra-narrow linewidth output, with the ultra-low noise driver circuit module, small package size, lower power consumption, better anti-environmental interference ability.

### ◆ Features

- Ultra-narrow line width ,down to 100 Hz
- Strong anti-environmental interference ability
- Very low long-term frequency drift
- Low Phase Intensity (RIN) Noise
- Stable single frequency operation without mode skipping
- Small size and low power consumption
- PZT FM Optional
- Wavelength range 1510-1590 nm

### ◆ Applications

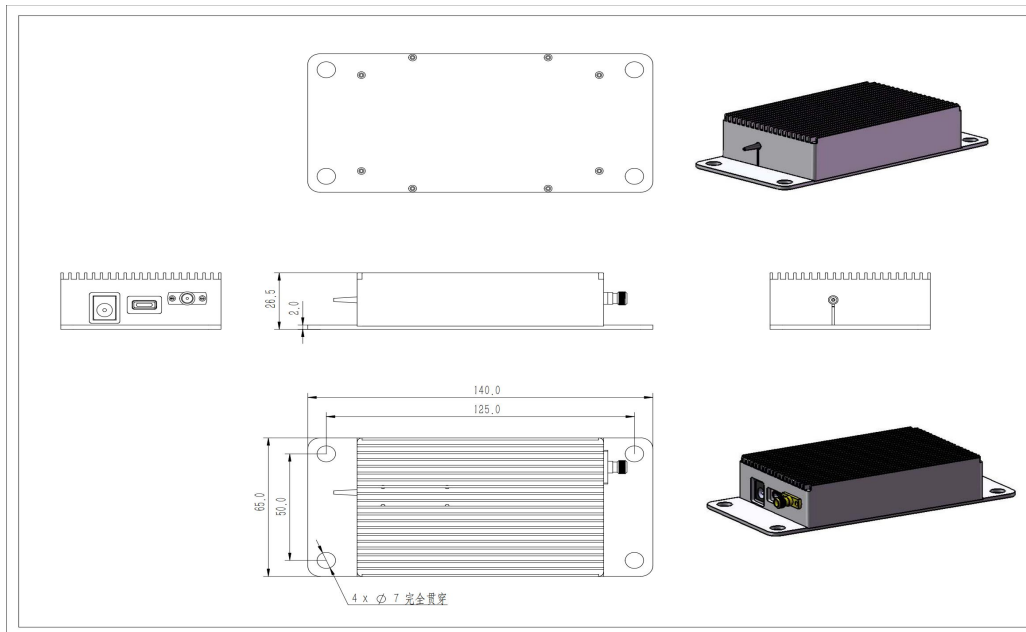
- Coherent communication
- Mid-infrared OPO pump source
- Spectral synthesis
- Physics of cold atoms
- Coherent laser radar
- Holographic imaging
- Precision spectral measurement
- Other scientific research

### ◆ Specification

Parameter	Unit	Index
Center Wavelength	nm	1535-1590
Output Power	mW	10-30
Lorentz linewidth	Hz	$\leq 100$
Relative intensity Noise RIN(@10Mhz)	dBc/Hz	-145
Side-mode Suppression Ratio	dB	$\geq 50$
Polarization extinction ratio	dB	$\geq 20$
Output Isolation	dB	$\geq 35$
Beam Quality $m^2$		$< 1.1$
Frequency drift	MHz	$\leq 50$
Power Stability RMS(24h)	%	$\leq 1$
Wavelength thermal tuning range	nm	0.5
PZT Voltage Input Range	V	-12.5 to 12.5

PZT frequency tuning coefficient	MHz/V	20MHz/V
Laser operating mode		Single frequency, continuous light
Output fiber		PM1550
Connector type		FC/APC or FC/PC
Working temperature	°C	-10 to 70
Supply Voltage	V	6-24V
Communication interface		Type C/RS485
Pigtail Length	m	≥0.5
Power Consumption	W	2
Dimension	mm	100*65*20

◆ Dimension(mm)



◆ Ordering information

RZNLN-xxxx-xx-xx-xx-xx

RZLD	Wavelength	Output Power	Output Type	Connector	Line width(Hz)
RZNLN=Narrow line width	...nm 1064 1550 ...	...mW 5 10 40 ...	S-SM PM1550-PM1550	FA=FC/APC FP=FC/PC ...	≤100Hz