

1.5μm Ultra-Narrow Line-width Laser Diode

◆ Introduction

CSRayzer's 1.5μm 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

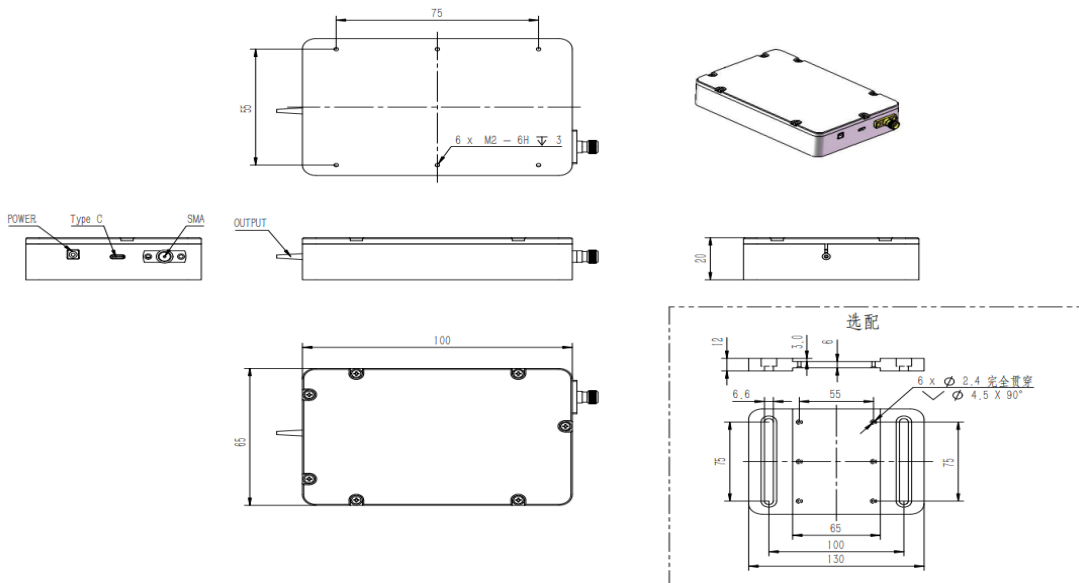
- Coherent communication
- Mid-infrared OPO pump source
- Spectral synthesis
- Physics of cold atoms
- Coherent laser radar
- Holographic imaging
- Precision spectral measurement
- Other scientific research

◆ Specification

| Parameter | Unit | Index |
|--------------------------------------|--------|---------------|
| Center Wavelength | nm | 1535-1590 |
| Output Power | mW | 10-30 |
| Lorentz linewidth | Hz | ≤100 |
| Relative intensity Noise RIN(@10Mhz) | dBc/Hz | -145 |
| Side-mode Suppression Ratio | dB | ≥50 |
| Polarization extinction ratio | dB | ≥20 |
| Output Isolation | dB | ≥35 |
| Beam Quality m^2 | | <1.1 |
| Frequency drift | MHz | ≤50 |
| Power Stability RMS(24h) | % | ≤1 |
| Wavelength thermal tuning range | nm | 1.0 |
| 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

RZNLD-xxxx-xx-xx-xx-xx

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