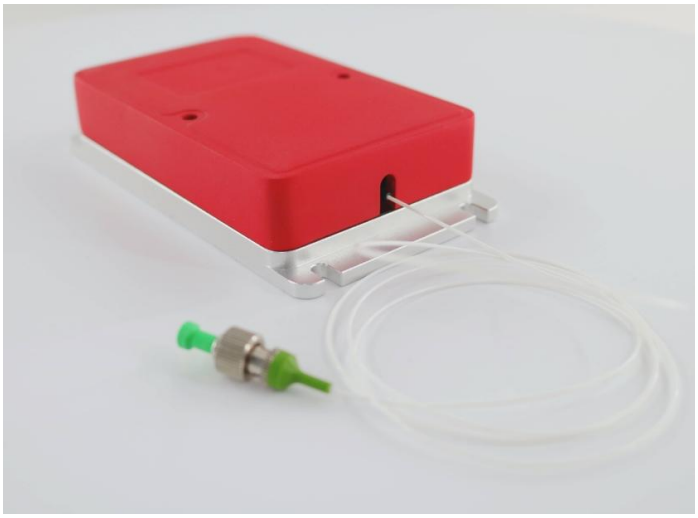
KHz ultra-Narrow Linewidth High-Power DFB Module 1550nm 60mW



Product Description

These are Idealphotonics' narrow linewidth DFB laser modules with excellent performance and excellent reliability (in compliance with Telcordia GR-486 specification). Up to 100mW output power, very low relative intensity noise (RIN), ultra-low phase noise and narrow linewidth, high wavelength stability and low frequency jitter. Our low noise and narrow linewidth make this semiconductor optical solution ideal for a wide range of applications where accuracy, lifetime reliability under harsh field conditions and high resolution are critical, such as fiber and solid-state laser seed sources, second harmonic generation (SHG), optical parametric oscillators (OPO), laser spectroscopy, LiDAR and other precision metrology applications.

Part Number

SCL0-DFB-1550-F-A81-L01-M0-SA

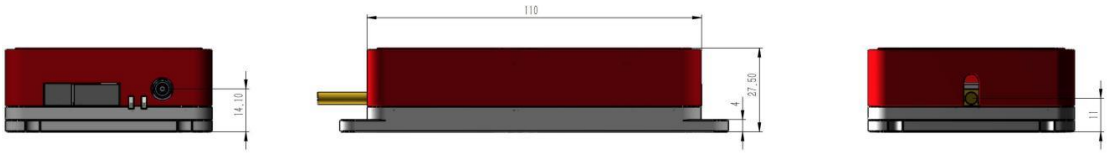
Product features

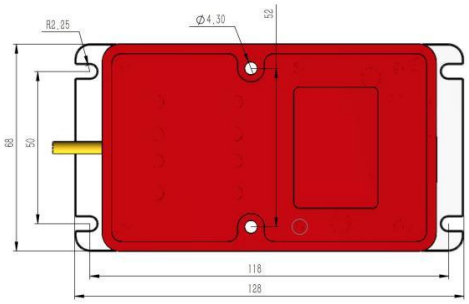
Single longitudinal mode、 Ultra-low phase noise and relative intensity noise (RIN)、 Low sensitivity to vibration and noise、 Narrow linewidth (<100 kHz), long coherence length 、 1530 nm-1565 nm, ITU-T DWDM wavelength or customized、 Guaranteed mode hopping free over lifetime and temperature、 Wavelength tunable 、 Excellent wavelength stability over lifetime and temperature、 Excellent SMSR、 SMF or PMF pigtail options、 0 to 70°C operating temperature、 Telcordia GR-468 compliant and RoHS certified

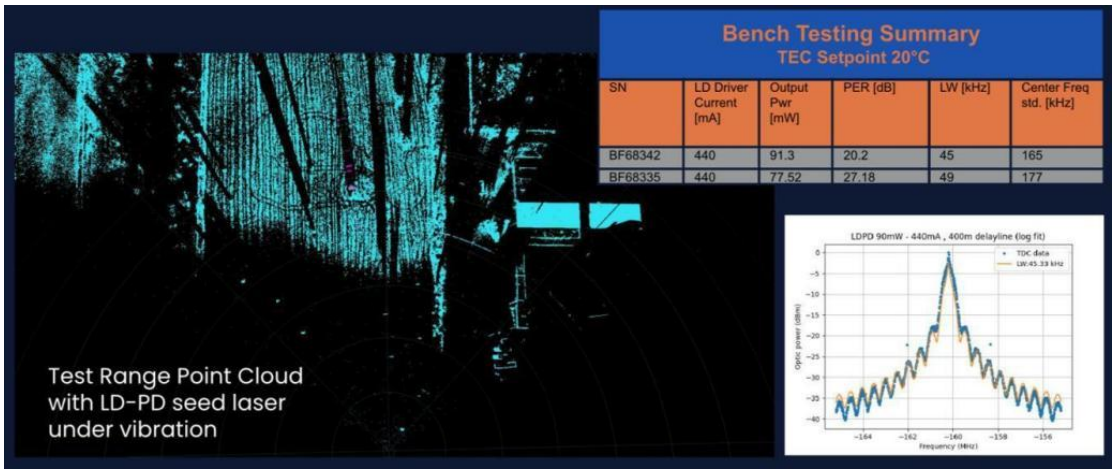
Application area

Acoustic and seismic sensing、 Defense and Security、 Oil and Gas Exploration and Production、 LiDAR and Remote Sensing1
1 、 Interferometric Fiber Optic Sensing、Metrology、
RF and microwave photonics、 Coherent communications

Dimensional Drawing



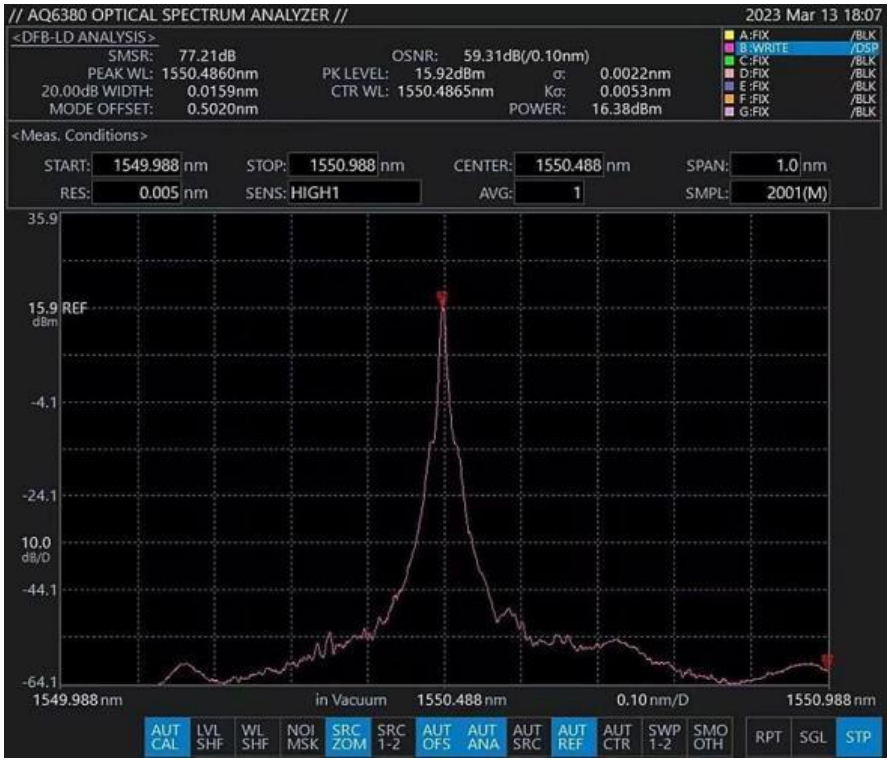




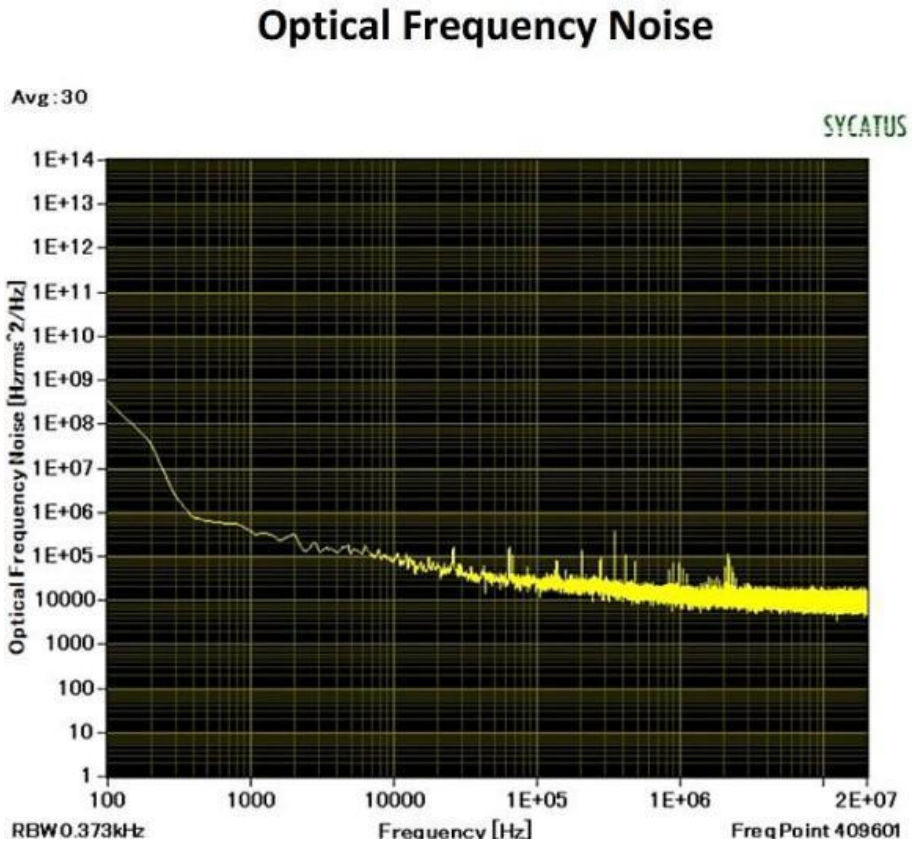
Parameters

Parameter	Value	Unit
Output Power	10- 60	mW
Central Wavelength (ITU Grid and Custom)	1535-1590,1635-1685	nm
Thermal wavelength tuning range	30	pm
Relative intensity noise, ≥500KHz	shot noise limit	dB/Hz
Polarization extinction ratio (polarization-maintaining fiber)	≥20	dB
FM bandwidth (high frequency)	DC- 10	MHz
Operating temperature	0 ~ +70	℃
Optical Isolation	≥40	dB

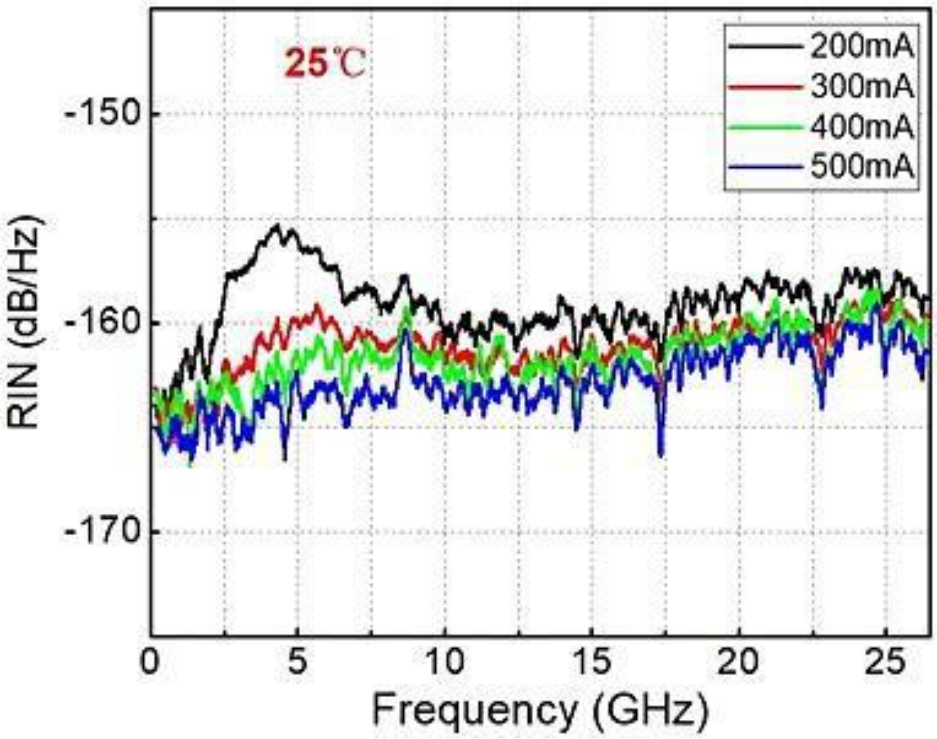
Test spectrum



Phase Noise Curve



Intensity Noise Curve



● Model Description

SCL0-DFB-□□□□-☆-A8▽-L□□-M□- XX

□□□□: Wavelength

1018:1018nm
1530.33:1530.33nm
1550.12: 1550.12nm
*****
1700: 1700nm
1735:1735nm
1742:1742nm

☆: Output Power

A: 10mW
B: 20mW

C: 30mW
D: 40mW
E: 50mW
F: 60mW
G: 80mW
H: 100mW

▽: Wavelength Tolerance

1: ±1nm

2: ±2nm

3: ±10nm

L□□: Linewidth

01: Grade 1 ⩽100KHZ

02: Grade 2 ⩽200KHZ

03: Grade 3 ⩽500KHZ

04: Grade 4 ⩽3000KHZ

M□: Modulation

0: CW
1: External Modulation
XX: Fiber and Connector Type
SA=SM Fiber+ FC/APC
SP=SM Fiber+ FC/PC
PP=PM Fiber+ FC/PC
PA=PM Fiber+ FC/APC

Parameter	Grade 1	Grade 2	Grade 3	Grade 4	Unit
Linewidth	≤100	≤200	≤500	≤3000	KHz

Grade 1(line width ⩽ 100KHZ) table

Wavelength (nm)	Linewidth (KHZ)	Tuning Range (n m)	Power (mW)
1535	Typical 75KHZ	2-3	80-100mW
1540	Typical 75KHZ	2-3	80-100mW
1545	Typical 75KHZ	2-3	80-100mW
1550	Typical 75KHZ	2-3	80-100mW
1555	Typical 75KHZ	2-3	80-100mW
1560	Typical 75KHZ	2-3	80-100mW
1565	Typical 75KHZ	2-3	80-100mW
1570	Typical 75KHZ	2-3	80-100mW
1575	Typical 75KHZ	2-3	80-100mW
1580	Typical 75KHZ	2-3	80-100mW
1585	Typical 75KHZ	2-3	80-100mW
1590	Typical 75KHZ	2-3	80-100mW
1635	Typical 95KHZ	2-3	80-100mW
1640	Typical 95KHZ	2-3	80-100mW
1650	Typical 95KHZ	2-3	80-100mW
1660	Typical 95KHZ	2-3	80-100mW
1670	Typical 95KHZ	2-3	80-100mW
1680	Typical 95KHZ	2-3	80-100mW

We can provide any narrow linewidth DFB module secondary (linewidth ≤ 200KHZ) with center wavelength between 1535-1590nm and 1635-1685nm

Grade 2 (Linewidth≤200KHz)

Wavelength (nm)	Linewidth (KHZ)	Tuning Range (n m)	Power(mW)
1260	Typical 170KHZ	2-3nm	40-60mW
1270	Typical 170KHZ	2-3nm	40-60mW
1280	Typical 170KHZ	2-3nm	40-60mW
1290	Typical 170KHZ	2-3nm	40-60mW
1300	Typical 170KHZ	2-3nm	40-60mW
1310	Typical 170KHZ	2-3nm	40-60mW
1320	Typical 170KHZ	2-3nm	40-60mW
1520	Typical 150KHZ	2-3nm	40-50mW
1530	Typical 150KHZ	2-3nm	40-50mW
1540	Typical 150KHZ	2-3nm	40-50mW
. *	Typical 150KHZ	2-3nm	40-50mW
1700	Typical 150KHZ	2-3nm	40-50mW
1735	Typical 150KHZ	2-3nm	40-50mW
1742	Typical 150KHZ	2-3nm	40-50mW

We can provide any narrow linewidth DFB module with a central wavelength between 1520-1700nm 4-level (linewidth ≤ 3MHZ) table

Grade 4 (Linewidth⩽3MHz)

Wavelength (nm)	Linewidth (MHZ)	Tuning Range (nm)	Power (mW)
760	Typical 3MHZ	2-3nm	10-20mW
972	Typical 3MHZ	2-3nm	40-60mW
976	Typical 3MHZ	2-3nm	40-60mW
980	Typical 3MHZ	2-3nm	40-60mW
1018	Typical 3MHZ	2-3nm	40-60mW
1030	Typical 3MHZ	2-3nm	40-60mW
1038	Typical 3MHZ	2-3nm	40-60mW
1050	Typical 3MHZ	2-3nm	40-60mW
1064	Typical 3MHZ	2-3nm	40-60mW
1083	Typical 3MHZ	2-3nm	40-60mW
1120	Typical 3MHZ	2-3nm	40-60mW
.....	Typical 2MHZ	2-3nm	20-30mW
1700	Typical 2MHZ	2-3nm	20-30mW
1735	Typical 2MHZ	2-3nm	20-30mW
1742	Typical 2MHZ	2-3nm	20-30mW
1814	Typical 3MHZ	2-3nm	2-3mW
1850	Typical 3MHZ	2-3nm	2-3mW
1854.1	Typical 3MHZ	2-3nm	2-3mW

1908	Typical 3MHZ	2-3nm	2-3mW
1910	Typical 3MHZ	2-3nm	2-3mW
1920	Typical 3MHZ	2-3nm	2-3mW
1940	Typical 3MHZ	2-3nm	2-3mW
1945	Typical 3MHZ	2-3nm	2-3mW
1947	Typical 3MHZ	2-3nm	2-3mW
1950	Typical 3MHZ	2-3nm	2-3mW
1960	Typical 3MHZ	2-3nm	2-3mW
1970	Typical 3MHZ	2-3nm	2-3mW
1980	Typical 3MHZ	2-3nm	2-3mW
1984	Typical 3MHZ	2-3nm	2-3mW
2000	Typical 3MHZ	2-3nm	2-3mW
2004	Typical 3MHZ	2-3nm	6-8mW
2040	Typical 3MHZ	2-3nm	2-3mW
2327	Typical 3MHZ	2-3nm	2-3mW
2330	Typical 3MHZ	2-3nm	2-3mW

Note:
1. We can provide DFB modules with any wavelength from 1018-1700nm