

# High Power Narrow Linewidth ECL External Cavity Semiconductor Laser Module 1550nm

## 10mW 5KHz



### ● Product Description

The laser uses a self-designed and produced external cavity chip, and achieves stable output with narrow line width, high power and low noise through hybrid integration, which is suitable for the field of highly integrated coherent detection. It has low phase noise, low frequency noise, and the integrated line width can reach below 3kHz; it has a small design size, stable performance and excellent vibration characteristics.

## ● Product features

Wavelength stability:  $\pm 10\text{pm}$  、 Power stability 0.01dB 、 Power consumption 5W 、 Dimensions: 96x27x68mm 、 Working temperature: -20~75°C

## ● Part Number

MP-ECL-1550-10-3k-PA-M

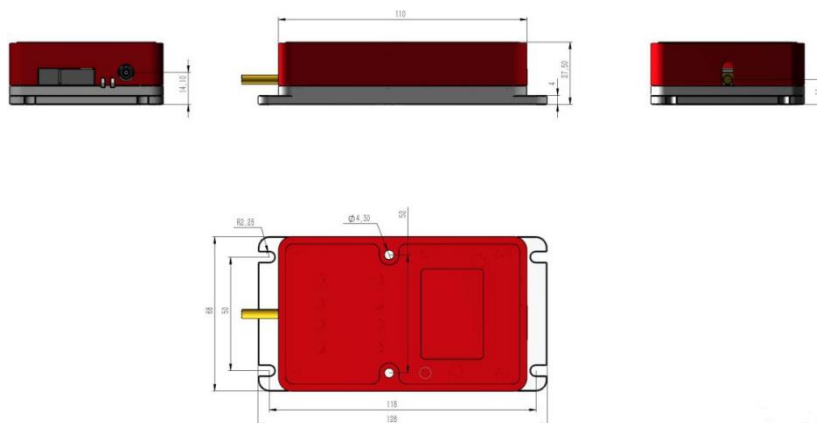
## ● Application area

Silicon photonic integrated chip technology、 ECL External Cavity Lasers、 Tunable Photonics Technology、 Ultra-narrow line width

## ● Core parameters

Center Wavelength	Output Power
1550 $\pm$ 5 or ITU-T Grid $\pm$ 0.2 nm	10,20mW

## ● Dimension Drawing



## ● General Parameters

Output light characteristics	Parameter	Unit
Output optical power	$\geq 10, 20$	mW
Integrated line width	$\leq 3, 5$ (note 1)	kHz
Intrinsic linewidth	$< 100$	Hz
Working wavelength	$1550 \pm 5$ or ITU-T Grid $\pm 0.2$	nm
Frequency stability	Typical $< 10^{-8}$ (2MHz)	@100s
Relative intensity noise	$\leq -150$	dBc /Hz
Operating temperature	-10~60	°C
Optical Isolation	$\geq 40$	dB
Electrical Characteristics	Parameter	Unit
Supply voltage	5- 6	V
Normal operating current	500 (note2)	mA
Module starting current	1500 (note3)	mA

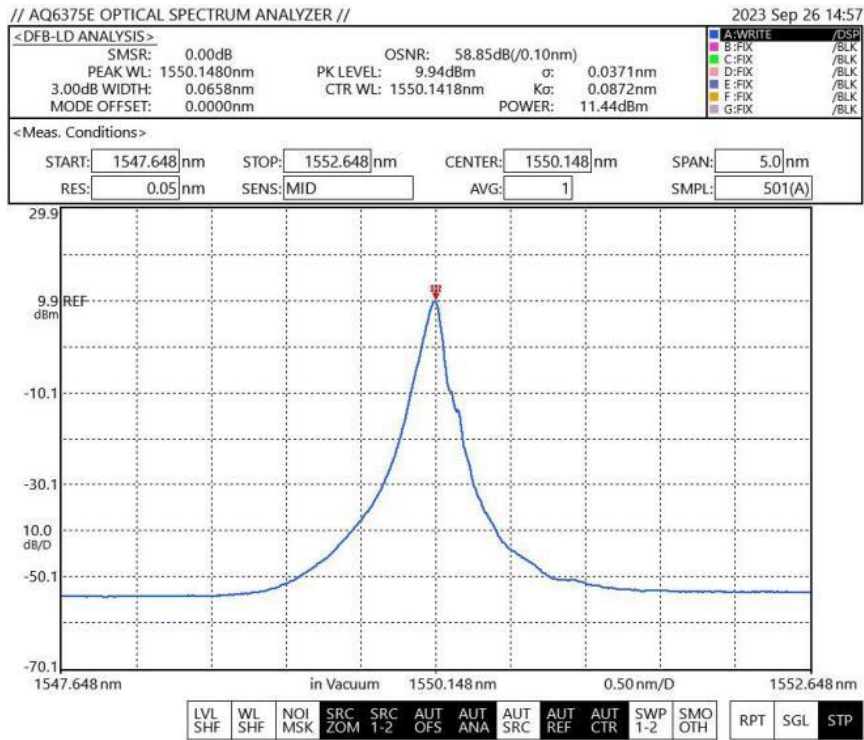
**Note 1:** Tested using the phase noise method, similar to the Lorentz linewidth for a simple test using the delayed self-heterodyne beat method.

**Note 2:** Typical values are related to external operating temperature.

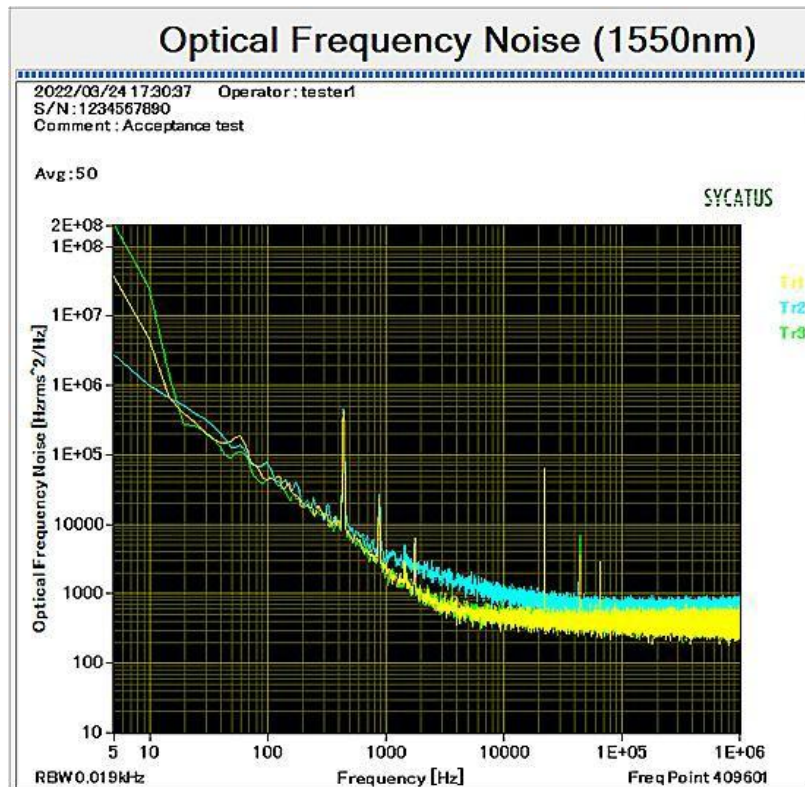
**Note 3:** The current value of the module when the TEC is in high current working state during startup. In order to ensure normal startup, the power supply usually needs to provide a current of 2A.



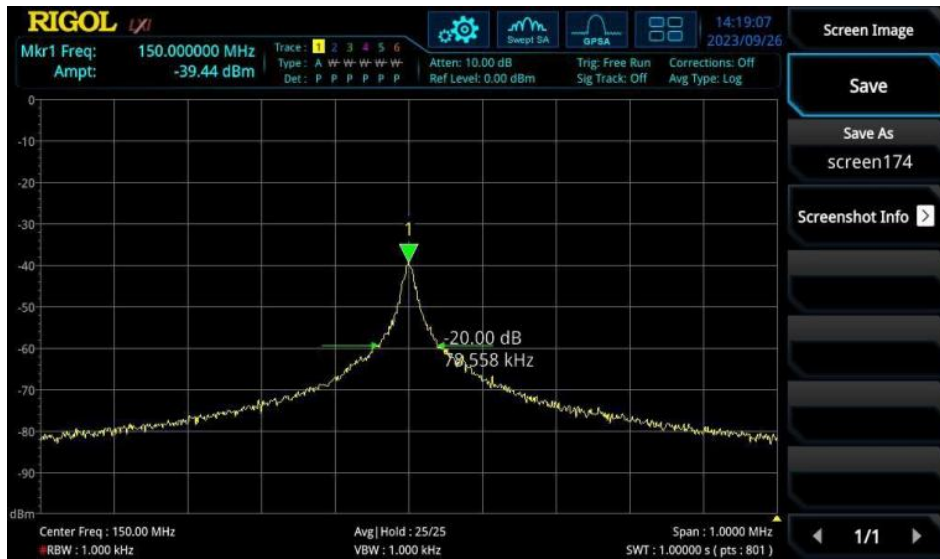
## spectrum



## Frequency Noise



## Line width measurement



## Model Description

MP-ECL-□□□□-☆-A8▽-L□□-M□-XX

□□□□: Wavelength

1530.33: 1530.33nm

1550.12: 1550.12nm

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1565.5: 1565.5nm

☆: Output Power

A:10mW

B:20mW

C:30mW

D:40mW

E:50mW



▽: Wavelength Tolerance

1: ±1nm

2: ±2nm

3: ±10nm

L□□: Linewidth

01: Grade 1 <1KHZ

02: Grade 2 <3KHZ

03: Grade 3 <5KHZ

04: Grade 4 <10KHZ

05: Grade 5 <20KHZ

M□: Modulation

0: CW

1: External Modulation

XX: Fiber and Connector Type

SA=SMF-28E+ FC/APC

SP=SMF-28E+ FC/PC

PP=PM Fiber+ FC/PC

PA=PM Fiber+ FC/APC

DWDM ITU wavelength 1

ITU channel	ITU Frequency	Wavelength nm	ITU channel	ITU Frequency	Wavelength nm	ITU channel	ITU Frequency	Wavelength nm



number	cy		number	y	m	number	cy	
	THz			THz			THz	
15	191.50	1565.50	30	193.00	1553.33	45	194.50	1541.35
16	191.60	1564.68	31	193.10	1552.52	46	194.60	1540.56
17	191.70	1563.86	32	193.20	1551.72	47	194.70	1539.77
18	191.80	1563.05	33	193.30	1550.92	48	194.80	1538.98
19	191.90	1562.23	34	193.40	1550.12	49	194.90	1538.19
20	192.00	1561.42	35	193.50	1549.32	50	195.00	1537.40
21	192.10	1560.61	36	193.60	1548.51	51	195.10	1536.61
22	192.20	1559.79	37	193.70	1547.72	52	195.20	1535.82
23	192.30	1558.98	38	193.80	1546.92	53	195.30	1535.04
24	192.40	1558.17	39	193.90	1546.12	54	195.40	1534.25
25	192.50	1557.36	40	194.00	1545.32	55	195.50	1533.47
26	192.60	1556.55	41	194.10	1544.53	56	195.60	1532.68
27	192.70	1555.75	42	194.20	1543.73	57	195.70	1531.90
28	192.80	1554.94	43	194.30	1542.94	58	195.80	1531.12
29	192.90	1554.13	44	194.40	1542.14	59	195.90	1530.33