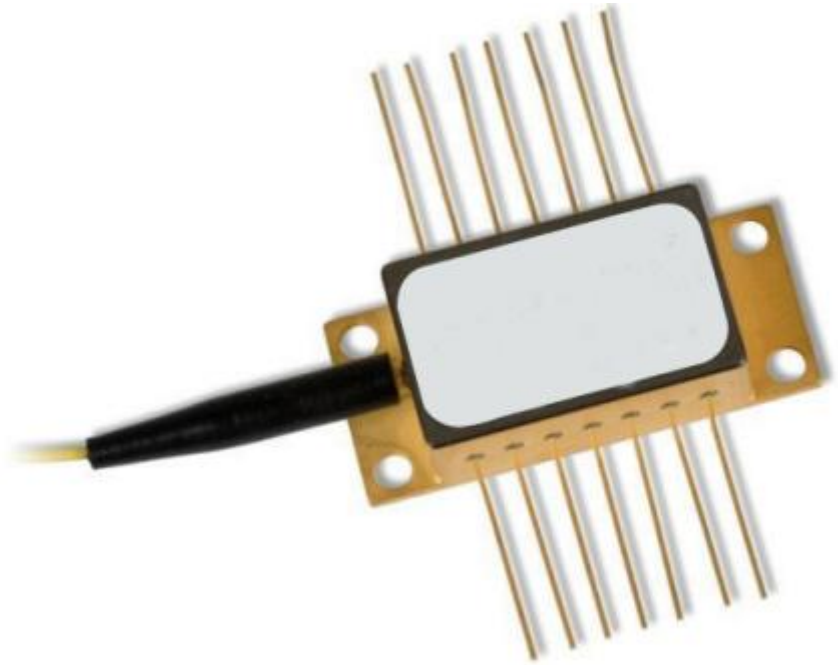
1310nm 30mW PM Comb Laser Diode



Product Description

A comb laser is a light source whose spectrum consists of equally spaced lines, each line corresponding to a longitudinal cavity mode. The emitted spectrum also shares a singular frequency. What distinguishes a comb laser is the number of its lines and their excellent individual temporal stability. Thanks to these features, our comb laser can be used as a high-precision, low-noise optical frequency comb generator (OFC), enabling you to measure unknown frequencies or tune a laser to match a specific frequency. Based on these characteristics, our comb laser is particularly useful in data

communication and telecommunications applications. Comb Laser – An excellent solution for optical communications.

Product features

Quantum dot gain medium; Optical frequency comb output; Fiber-coupled design; Low phase noise; Compact modular design

Part Number

MP-COMB-1310-30-PA

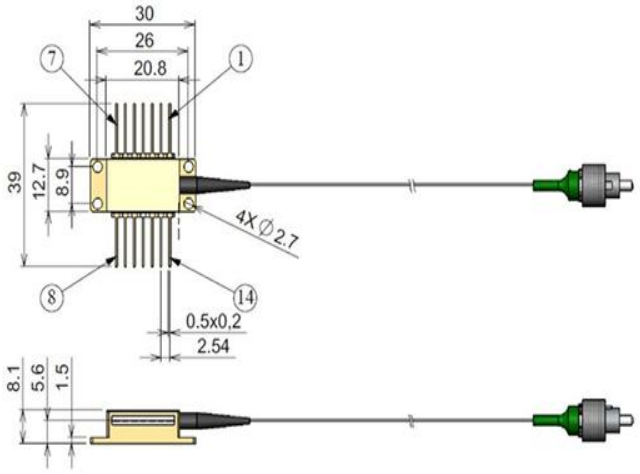
Application area

Optical communications | Absolute distance measurement | Gas sensing | Optical clocks | Quantum optics

Core parameters

Center Wavelength	Output Power	Fiber Type
1310nm	30mW	Panda PM1300

Dimension Drawing



Pin identification:
1. TEC "+"
2. Thermistor
3. -
4. -
5. Thermistor
6. Bias "-"
7. -
8. -
9. Common (LD Cathode "-", Bias "+")
10. LD Anode "+"
11. Common (LD Cathode "-", Bias "+")
12. -
13. Case
14. TEC "-"

General Parameters

Characteristics

only guaranteed uber recommended(Typ.) operating conditions: CW,

25°C,140mA, 0V

Parameter	Min.	Typ.	Max.	Unit
Total Optical Power	25	30		mW
Forward Voltage		2	2.5	V
Threshold Current		18	30	mA
Mean Wavelength*	1305	1310	1315	nm
Bandwidth(FWHM)	3.5	4		nm
Bandwidth(at -10dB level)	7.5	8		nm

Mode Spacing	78	80	82	GHz
Average Optical Power per Channel**	2	2.5		mW
Number of Channels**	8	10		
Beating Spectrum Linewidth***		400	600	kHz
Individual mode RIN(averaged in DC-10GHz range)		-130	-125	dB/Hz
Polarization Extinction Ratio(PER)	15	19		dB

*can be customized; ** at -3dB level; ***at -20dB level

Recommended Operating Conditions

at CW; case is mounted on a heatsink

Parameter	Min.	Typ.	Max.	Unit
Chip Temperature	20	25	30	℃
LD Forward Current		140	200	mA
Reverse Bias Voltage		0	2	V

Absolute Maximum Ratings

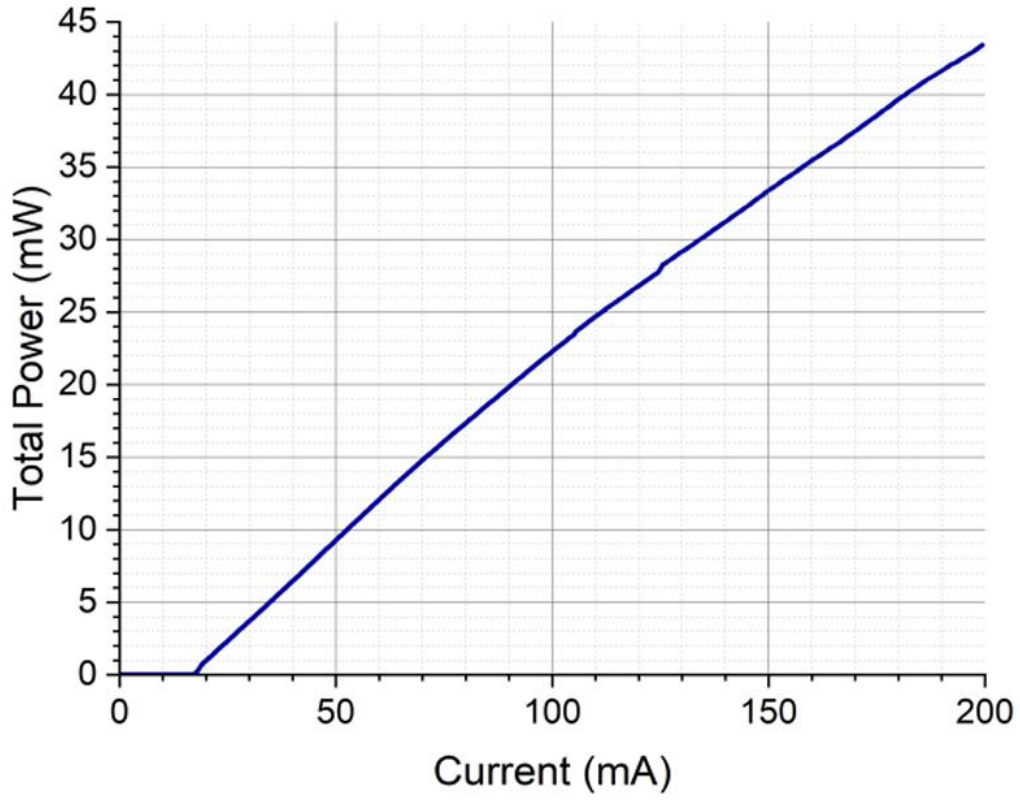
Parameter	Min.	Max.	Unit
LD Forward Current		200	mA
LD Reverse Voltage		1	V
Reverse Bias Voltage		2	V
Bias Forward Current		20	mA
TEC Current		3	A
TEC Voltage		4	V
Chip Operating Temperature	15	55	℃
Case Operating Temperature	0	70	℃
Pin Soldering Temperature(max 10 sec,max case temperature 85℃)		300	℃

Storage Temperature	**-40**	**85**	**℃**
Fiber Band Radius	**3**		**cm**

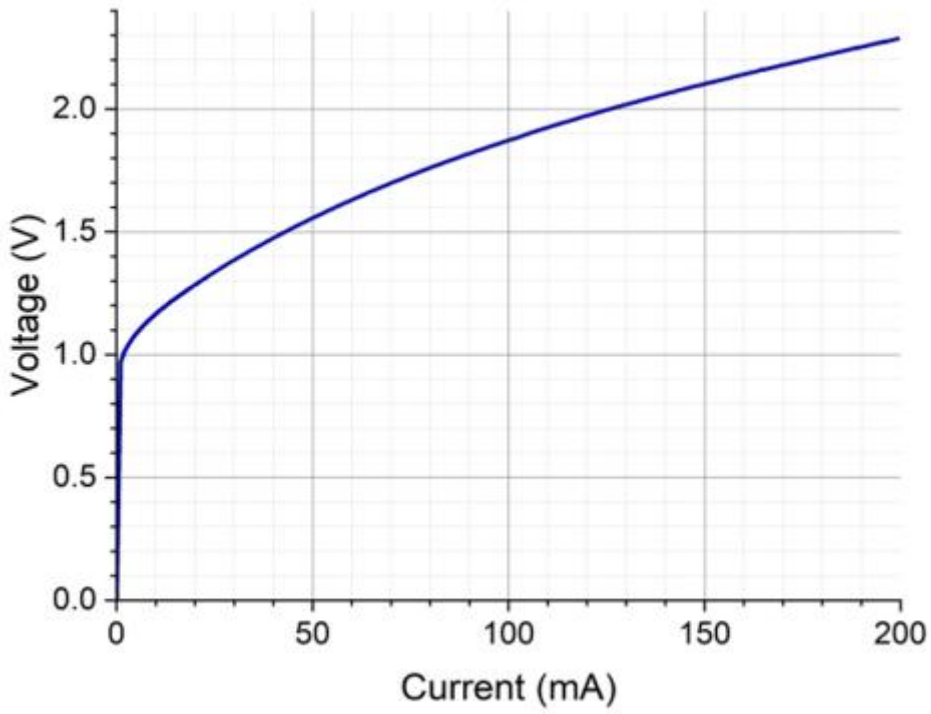
Typical Performance

unless otherwise stated,measured at CW, 25℃,140mA,0V

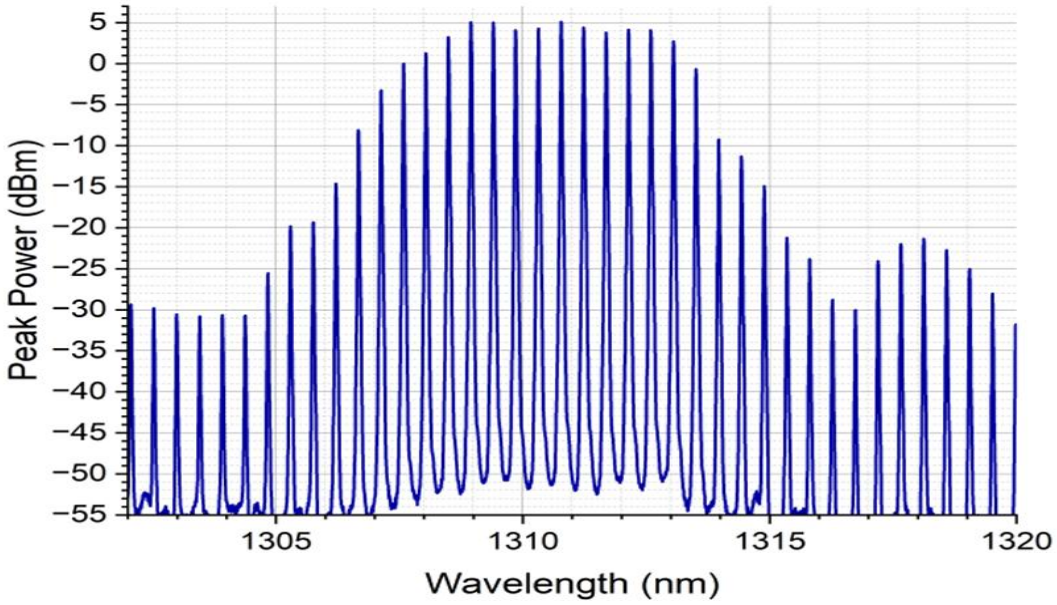
Total Output Power (L-I)



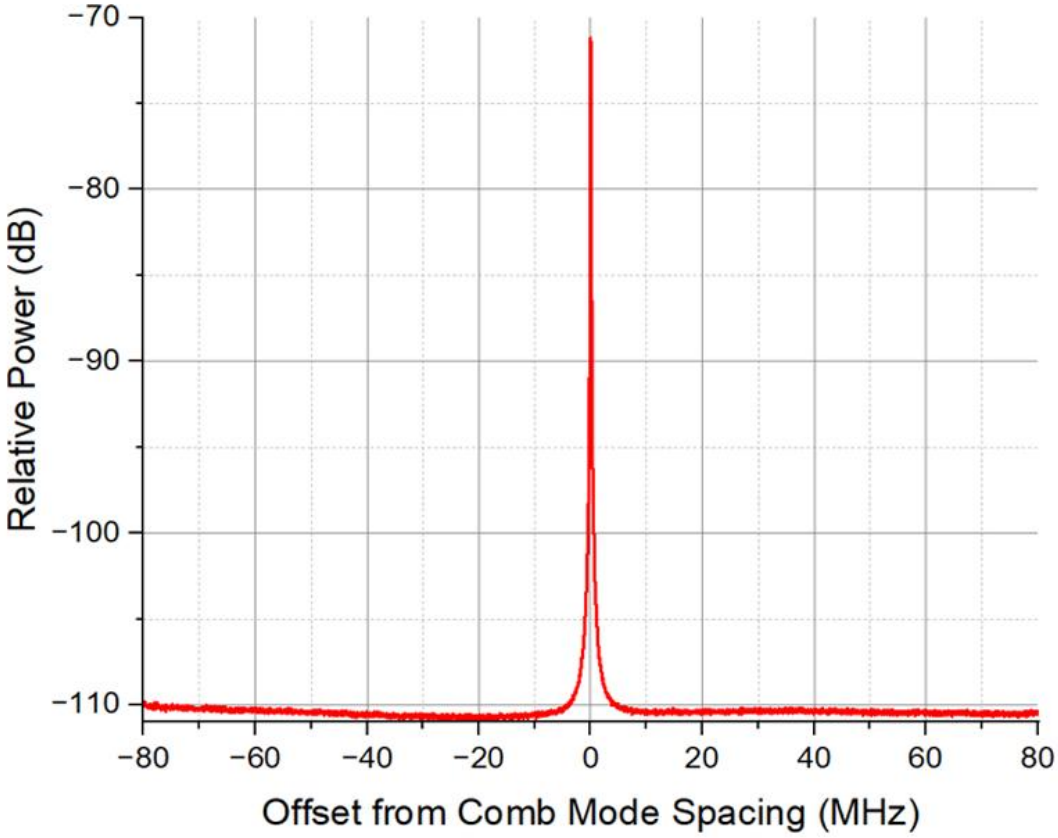
Forward Voltage (I-V)



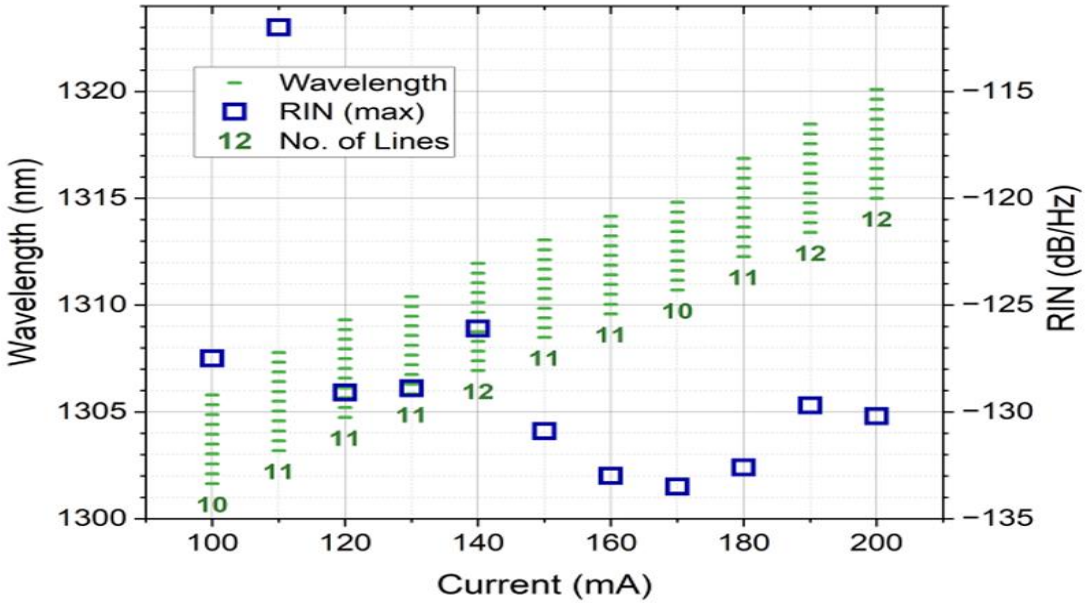
Optical Spectrum (res. 10pm)



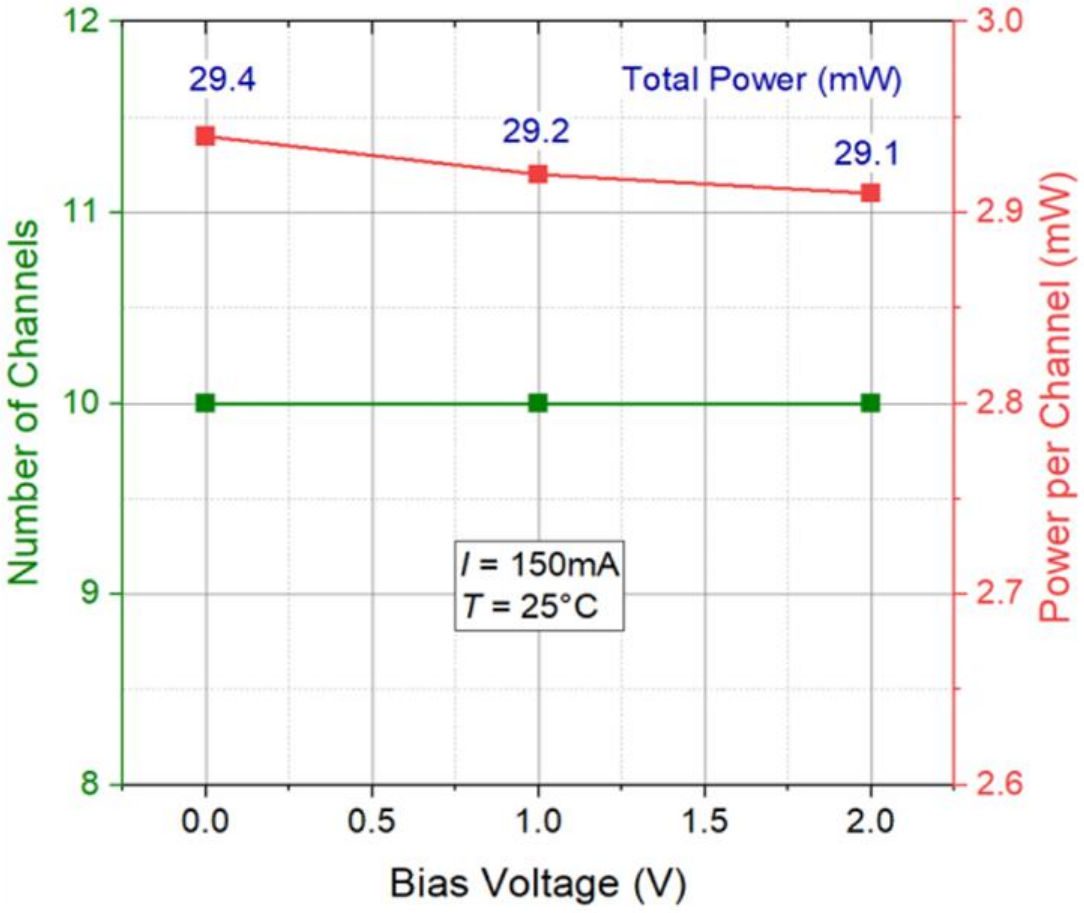
RF spectrum of all beating modes



Individual Mode RIN

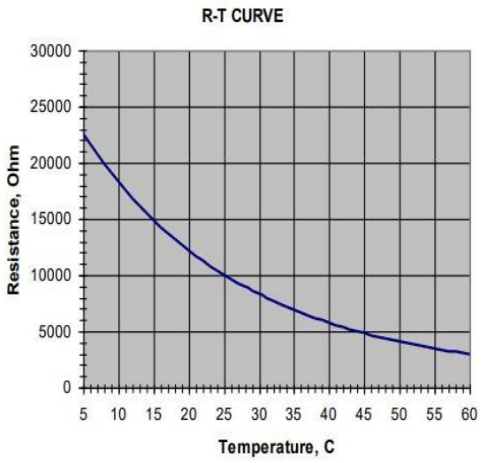


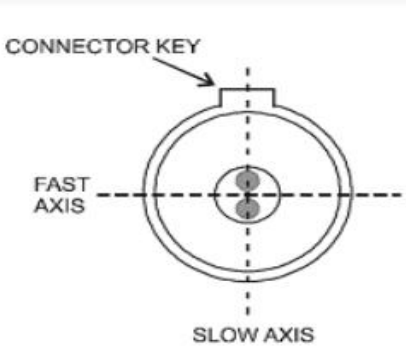
Bias Voltage Dependencies



Thermistor Specifications			Fiber Specifications		
Parameter	Value	Unit	Parameter	PM1300	Unit
Thermistor Type	NTC	—	Numerical Aperture, typical	0.12	—
Resistance @ 25 °C	10 ± 0.1	kΩ	Cutoff Wavelength	1200 ± 70	Nm

Beta (25–85 ° C)	3435 ± 1%	K	Mode Field Diameter (@ 1300 nm)	9.3 ± 0.5	μm
			Cladding Diameter	125±1	μm
			Coating Diameter	245±15	μm
			Loose Tube Diameter (Optional)	900	μm
			Connector	FC/APC (narrow key)	
			Connector Alignment aligned with PANDA fiber		
			Output light is polarized along the slo w axis of the PM fiber.		





Optional Configurations