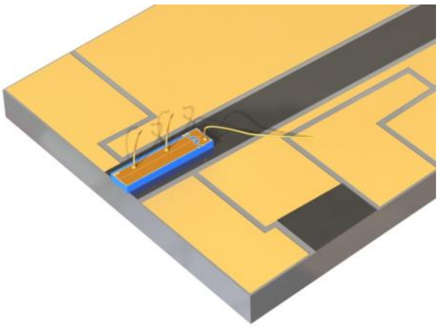
Specification

Innolume GmbH
Konrad-Adenauer-Allee 11
44263 Dortmund, Germany

COMB1300-25-CoC Preliminary

25GHz Comb-Laser, Chip on Submount



Features:

- 25 GHz channel spacing
- more than 32 channels at recommended operation point
- more than 70 channels possible for high bias voltage
- frequency modulated mode locking (no pulses)
- low relative intensity noise (RIN) of individual modes

Applications:

- O-band WDM signal source

Recommended Operating Conditions

at CW; carrier is mounted on a heatsink

Parameter	Min.	Typ.	Max.	Unit
Chip Temperature	20	25	30	°C
LD Forward Current		500	600	mA
Reverse Bias Voltage	0	2	3	V

Characteristics

only guaranteed under recommended (Typ.) operating conditions: CW, 25C, 500mA, 2V

Parameter	Min.	Typ.	Max.	Unit
Total Optical Power	150	260		mW
Forward Voltage		1.9	2.5	V
Threshold Current		40	50	mA
Mean Wavelength*	1295	1300	1305	nm
Bandwidth (FWHM)	4.5	5		nm
Bandwidth (at -10 dB level)		7		nm
Mode Spacing	24	25	26	GHz
Average Optical Power per Channel**	4	7		mW
Number of Channels**	35	37		
Beating Spectrum Linewidth***		200	500	kHz
Individual mode RIN (averaged in DC-10GHz range)		-135	-125	dB/Hz
Polarization Extinction Ratio (PER)	15	20		dB
Slow Axis Beam Divergence (FWHM)	6	7	9	deg
Fast Axis Beam Divergence (FWHM)	28	29	30	deg

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

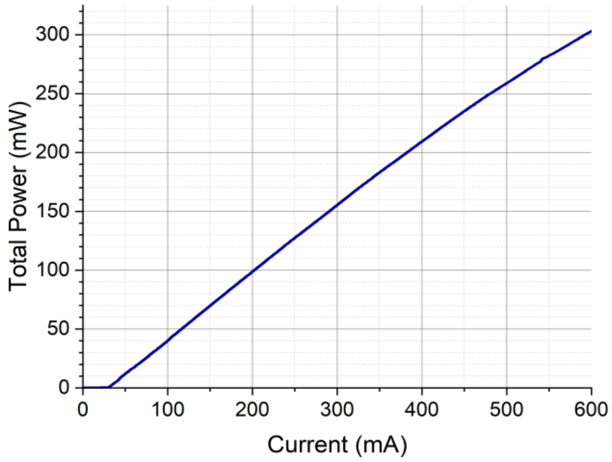
Absolute Maximum Ratings

Parameter	Min	Max	Unit
LD Forward Current		800	mA
LD Reverse Voltage		1	V
Reverse Bias Voltage		4	V
Bias Forward Current		60	mA
Chip Operating Temperature	15	55	°C
Soldering Temperature (5 sec. max)		250	°C
Storage Temperature	-40	85	°C

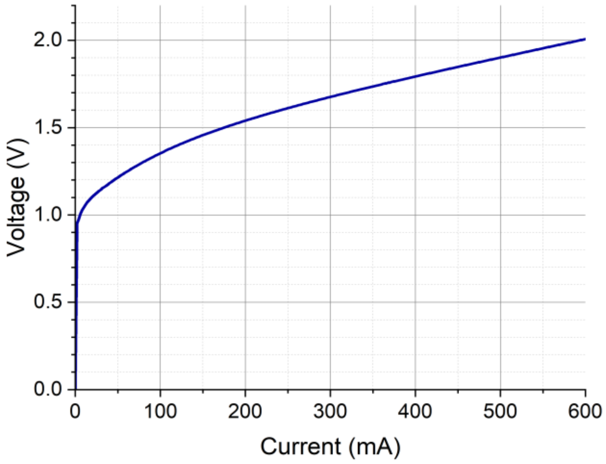
Typical Performance

unless otherwise stated, measured at CW, 25C, 500mA, 2V

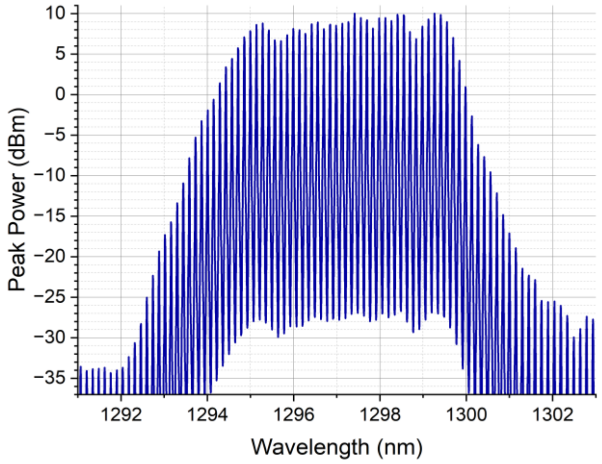
Total Output Power (L-I)



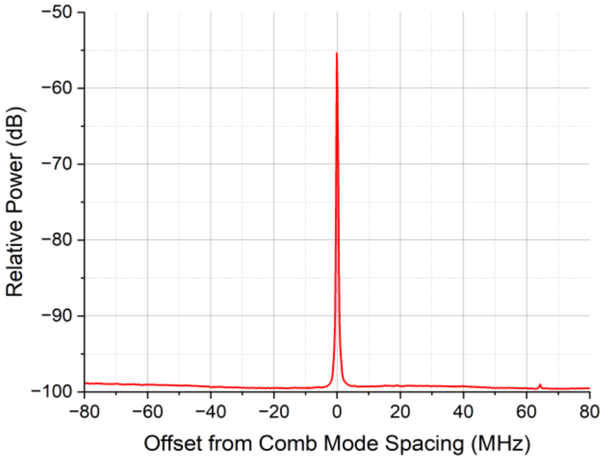
Forward Voltage (I-V)



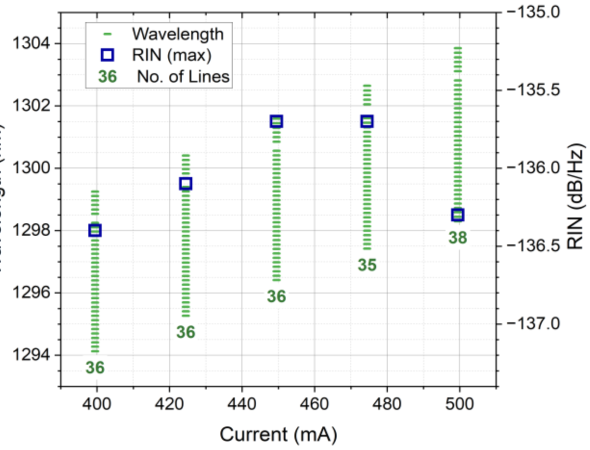
Optical Spectrum (res. 10pm)



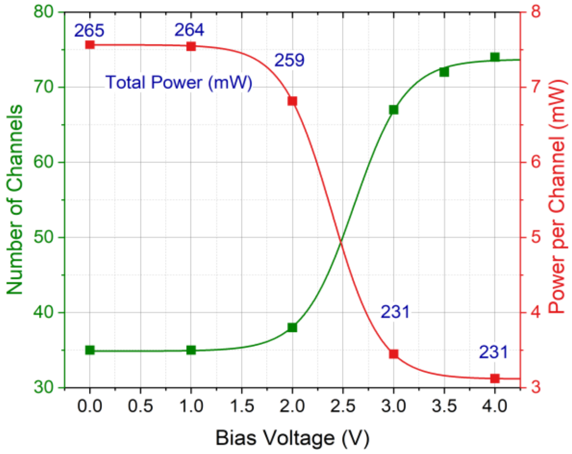
RF spectrum of all beating modes



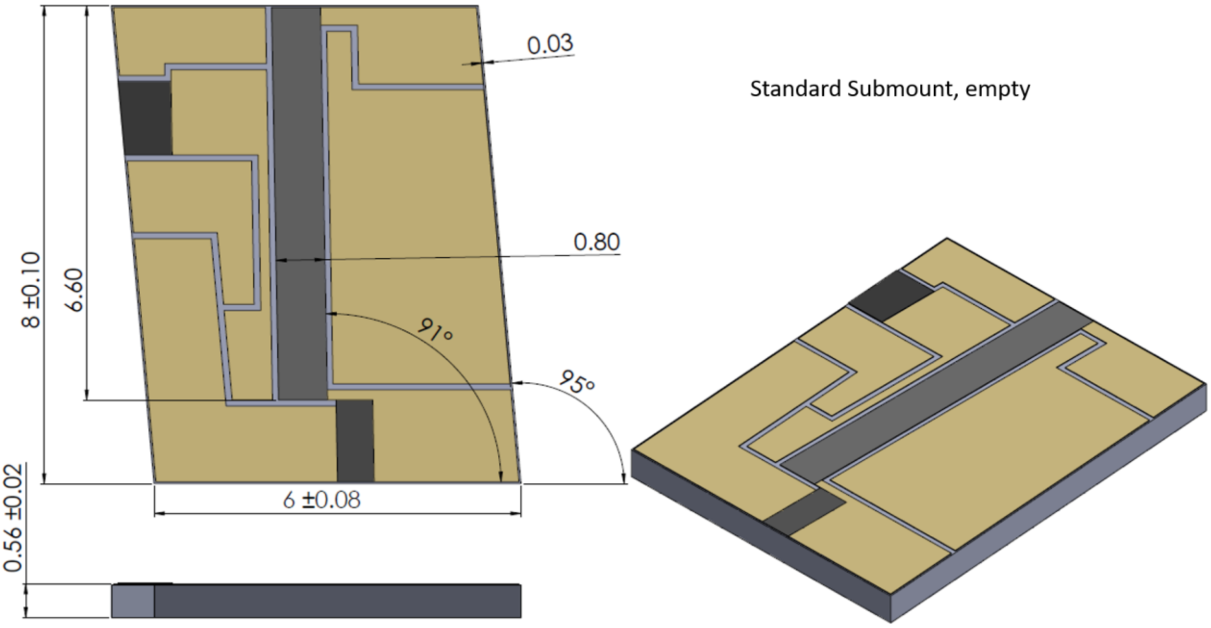
Individual Mode RIN



Bias Voltage Dependencies



Dimensions (in mm), carrier can be customized



Safety and Operating Instructions

The light emitted from this device is invisible and can be harmful to the human eye. Avoid looking directly into the laser diode when the device is in operation. Proper laser safety eyewear must be worn during operation with open connector.
Absolute Maximum Ratings may be applied to the device for short period of time only. Exposure to maximum ratings for extended period of time or exposure to more than one maximum rating may cause damage or affect the reliability of the device. Operating the device outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum forward current cannot be exceeded.
A proper heatsink for the device on thermal radiator is required. Sufficient heat dissipation and thermal conductance to the heatsink must be ensured either by flux-free soldering or by using of a thermal conductive and soft material (indium foil, graphite sheet) between the submount and the heatsink for thermal interface. It's undesirable to use thermal grease for this.
Avoid back reflection to the device. It may give impact on the device performance in aspects of spectrum and power stability. It also may cause fatal facet damage. Using of optical isolators is highly recommended to block back reflection.
The Device is an Open-Heatsink Diode Laser; it may be operated in cleanroom atmosphere or dust-protected housing only. Operating temperature and relative humidity must be controlled to avoid water condensation on the laser facets. Any contamination or contact of the laser facet must be avoided
Electrostatic discharge is the primary cause of unexpected product failure. Take extreme precaution to prevent ESD. During device installation, ESD protection has to be maintained - use wrist straps, grounded work surfaces and rigorous antistatic techniques when handling the product.

NOTE: Innolume product specifications are subject to change without notice