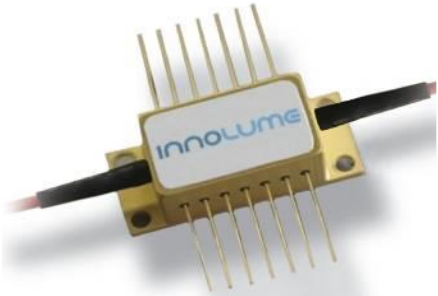


BOA-1310-50-YY-200mW Booster optical amplifier at 1310 nm	
	<p>Features:</p> <ul style="list-style-type: none"> • High saturation output power > 21 dBm • Low ripples • Strong linear polarization • RoHS compliance <p>Applications:</p> <ul style="list-style-type: none"> • Swept-source, tunable lasers • Boosting laser transmitters • Optical coherence tomography (OCT)
Specification	DATE: 25 th October 2018

RECOMMENDED OPERATING POINT				
Parameter	Min	Typ	Max	Unit
Current		1000	1500	mA
Forward voltage		1.6	1.8	V
Thermistor temperature	20	25	35	C

GAIN @ CW, recommended operating point,				
Parameters	Min	Typ	Max	Unit
Output power ^{1,2}	200	250		mW
Mean wavelength ²	1290	1305	1320	nm
Bandwidth ² @ P _{peak} /P _{ASE} >95% (ref. graph 1)		50		nm
Small signal gain ^{1,3}	36	39		dB
Saturation output power ¹ @ 3dB	18	21		dBm

¹ at wavelength of gain maximum

² at +10dBm input signal

³ at -25dBm input signal

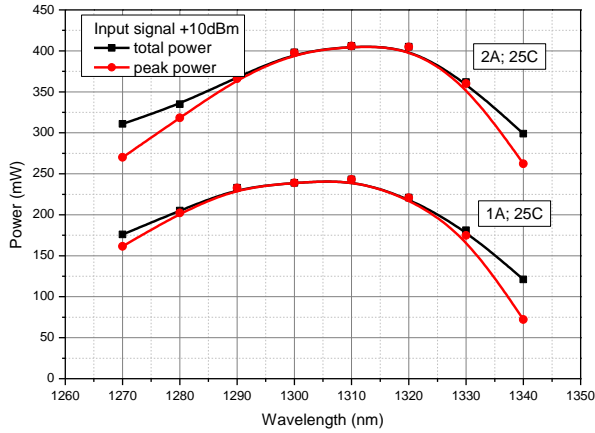
AMPLIFIED SPONTANEOUS EMISSION (ASE) Tested for each device @ CW, recommended operating point, without input light				
Parameter	Min	Typ	Max	Unit
Optical power ex fiber from each port		60		mW
Mean wavelength		1300		nm
Bandwidth @ -3dB		17		nm
Spectrum ripples ² (RMS in 1nm range, 10pm resolution)		0.1	0.3	dB
Polarization extinction ratio (PER) at each port	15	18		dB
ASE rise time		0.5		ns
ASE fall time		0.5		ns

² at wavelength of ASE maximum

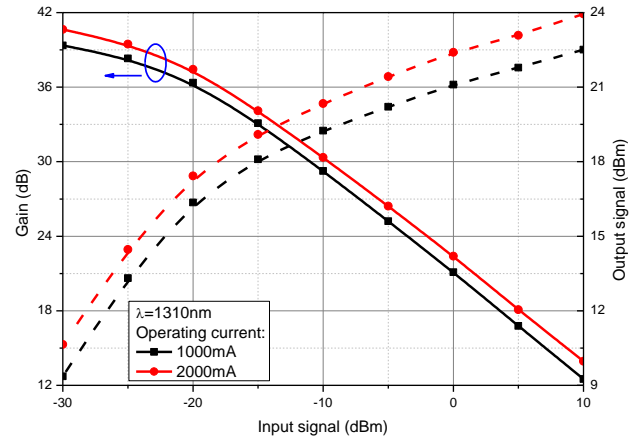
TYPICAL PERFORMANCE (for reference only)

@ CW, 25° chip temperature, the case is mounted on room temperature heatsink

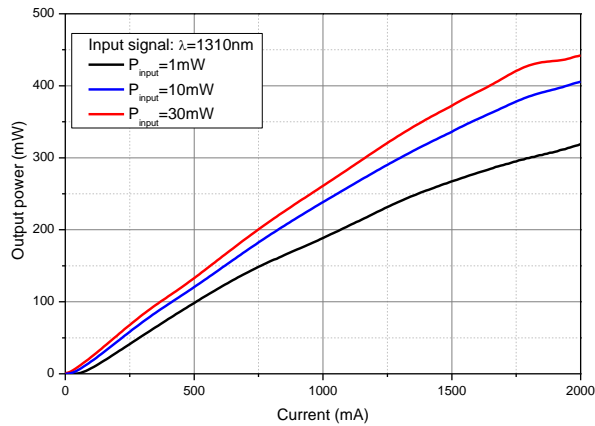
Power spectra at different currents



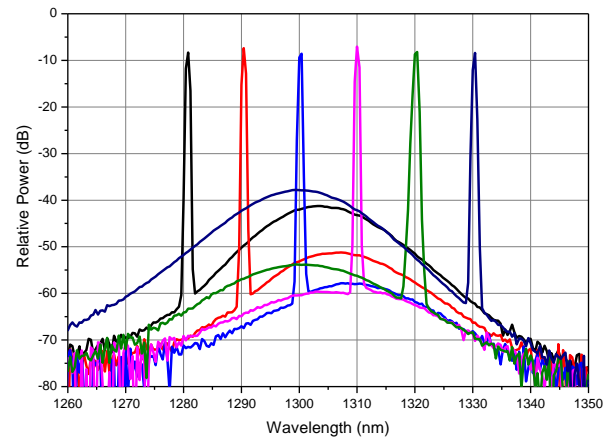
Gain vs. Output power



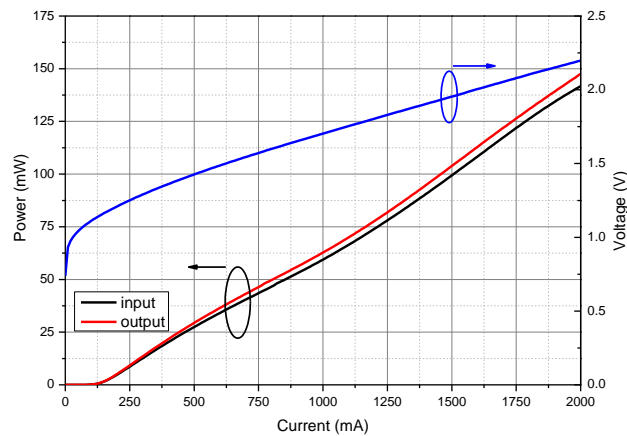
Output power at different input signals



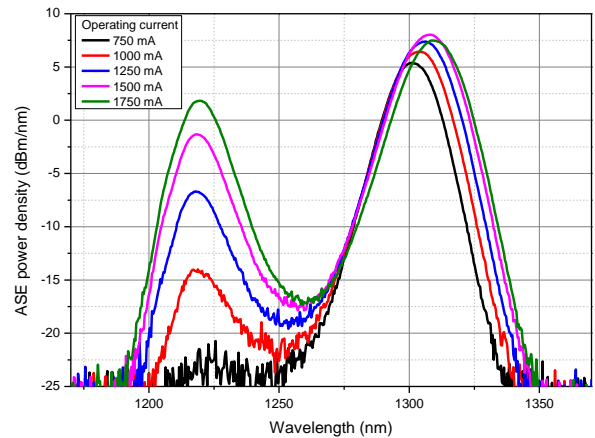
Spectra of amplified optical signal



ASE LIV characteristics



ASE spectra



ABSOLUTE MAXIMUM RATINGS			
Parameters	Min.	Max.	Unit
BOA reverse voltage	-	2	V
BOA CW forward current	-	2000	mA
Input optical power	-	20	dBm
Thermo Electric Cooler current	-	3	A
Thermo Electric Cooler voltage	-	4	V
Fiber bend radius	3	-	cm
Chip operating temperature range	10	40	°C
Case operating temperature range	0	70	°C
Storage temperature range	-40	85	°C

THERMISTOR SPECIFICATION		
Parameters	Value	Unit
Thermistor type	NTC	-
Resistance @25°C	10 ± 0.1	kOhm
Beta 0-50°C	3375±1%	K

R-T CURVE

Temperature (C)	Resistance (Ohm)
5	25000
10	20000
15	16000
20	13000
25	10000
30	8000
35	6500
40	5500
45	4800
50	4200
55	3800
60	3500

FIBER SPECIFICATION			
Parameters	SMF28	PM1300	Unit
Numerical aperture (Typical)	0.14	0.14	
Cutoff wavelength	≤1260	1200±90	nm
Mode-field diameter (@1300nm)	9.2±1	9.5±1	µm
Cladding diameter	125±1	125±1	µm
Coating diameter	245±15	245±15	
Length (each port)	1.0 ± 0.2		m
Connector	FC/APC		

Connector alignment to Panda fiber:
CONNECTOR KEY

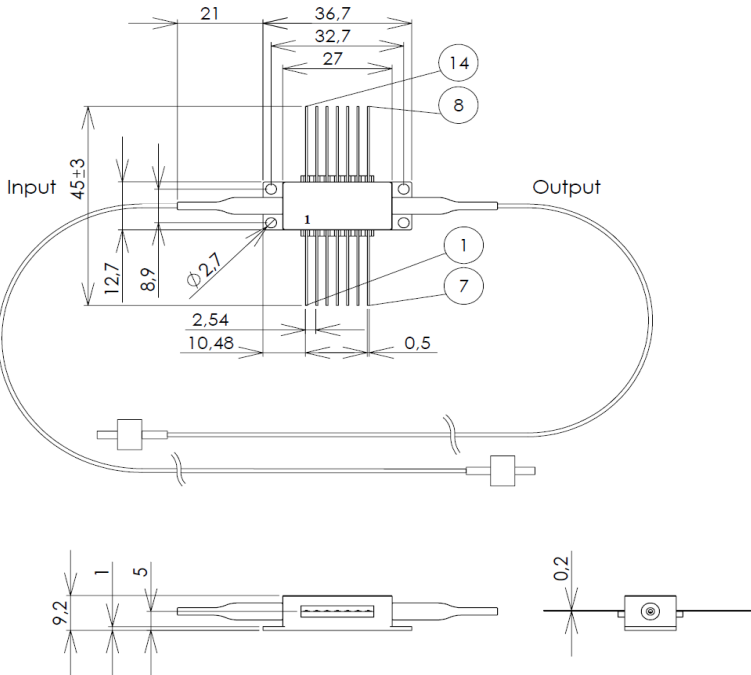
FAST AXIS

SLOW AXIS

PART NUMBER IDENTIFICATION
BOA-1310-50-YY-200mW
YY: Optical fiber type
PM – PM1300 fiber
Example: BOA-1310-50-PM-200mW

DIMENSIONS (subject to change)

(All sizes in mm)



Pin identification:

1. TEC " + "
2. Thermistor
- 3.
- 4.
5. Thermistor
- 6.
- 7.
- 8.
- 9.
10. BOA anode (+)
11. BOA cathode (-)
- 12.
13. Case ground
14. TEC " - "

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 fiber connector 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 BOA 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 BOA 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 BOA on thermal radiator is required. The BOA must be mounted on radiator with 4 screws (bolt down in X-style fashion with initial torque set to 0.075Nm and final X-style bolt down at 0.15Nm) or with clamps. The deviation from flatness of radiator surface must be less than 0.05mm. It's recommended using of Indium foil or thermal conductive and soft material between bottom of the case and heatsink for thermal interface. It's undesirable to use thermal grease for this.

Do not pull the fiber. Do not bend a fiber with a radius smaller than 3 cm. Operate the BOA with clean fiber connector only. Periodically check and clean the connector if necessary. To clean the connector use a clean-room compatible tissue only, put some Isopropyl alcohol onto it and carefully clean the facet of the connector, or use special fiber cleaning tools. Perform cleaning only with the BOA current switched off.

Electrostatic discharge can lead to device failure. Take necessary precautions to prevent ESD."



NOTE: Innolume product specifications are subject to change without notice.