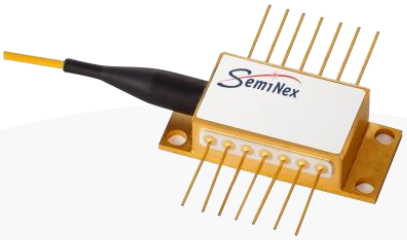
External Cavity Laser
14-pin Butterfly
Narrow Linewidth Single-Frequency

Part Number: 14BF-314

External Cavity Laser
14BF Narrow Linewidth Single-Frequency
CW Wavelength at 1310nm C-Band



Features

- Narrow linewidth (<3 kHz)
- Central wavelength 1310 nm or other O band
- Good wavelength stability
- Low power dissipation
- Ultra-low RIN, excellent SMSR
- **SemiNex ROSA Chip Inside**

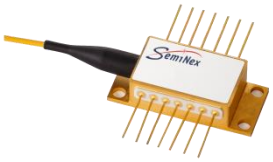
Application

- Fiber optical sensing: acoustic & seismic interferometric sensing, Oil & Gas – exploration and production
- LiDAR and industrial metrology
- Optical measurements and instrumentation

SemiNex delivers the highest available power at infrared wavelengths between 12xx and 19xx nm. When necessary, we will further optimize the design of our InP & GaSb laser chips to meet our customers' specific optical and electrical performance needs. Diodes, bars and packages are tested to meet customer and market performance demands. Typical results and packaging options are shown. Contact SemiNex for additional details or to discuss your specific requirements.

Specification

14BF-314



Optical	Symbol	Min.	Typ.	Max.	Units
Center Wavelength	λ_c		1310 or O band		nm
Linewidth (Lorentzian)	FWHM			3	kHz
Fiber Output Power	Pf		10		mW
Side Mode Suppression	SMSR		55		dB
Polarization Extinction Ratio	PER	20			dB
Random Intensity Noise	RIN			-145	dB/Hz
Optical Isolation	ISO		50		dB
Operating Temperature	T0	-20		60	°C
Storage Temperature	Ts	-40		85	°C
Operating Humidity	%	5		85	

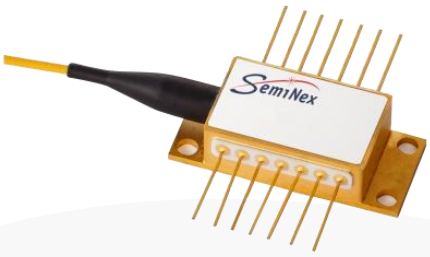
Parameter	Symbol	Min.	Typ.	Max.	Unit
LD Voltage	V_{LD}		1.6	1.8	V
LD Current	I_{LD}		150	300	mA
TEC Voltage	V_{TEC}		1.8	2.5	V
TEC Current	I_{TEC}		1	1.5	A
TEC Temp.	T_{TEC}		25	50	°C

*Specified values are rated at a constant heat sink temperature of 20°C.
**High temperature operation will reduce performance and MTTF.
Unless otherwise indicated all values are nominal.

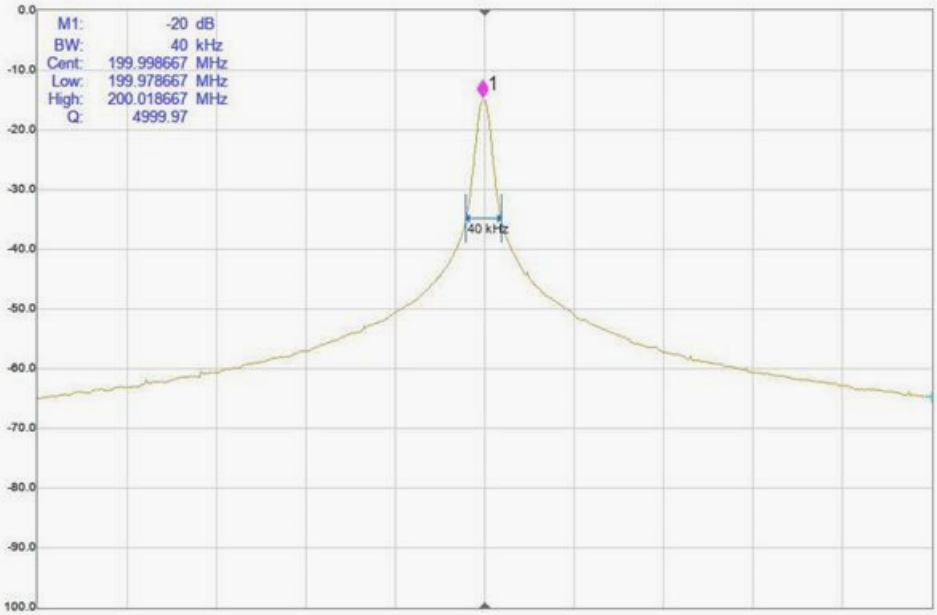
High Power Laser Diode
14BF Narrow Linewidth
Single-Frequency Laser

SemiNex Laser Diodes 14BF-314

Graphs & Data

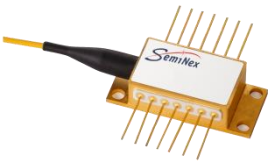


Lorentzian Linewidth (2kHz)

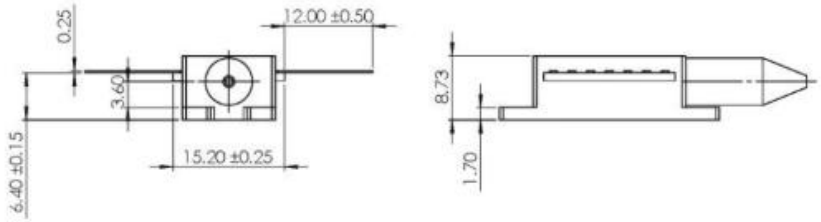


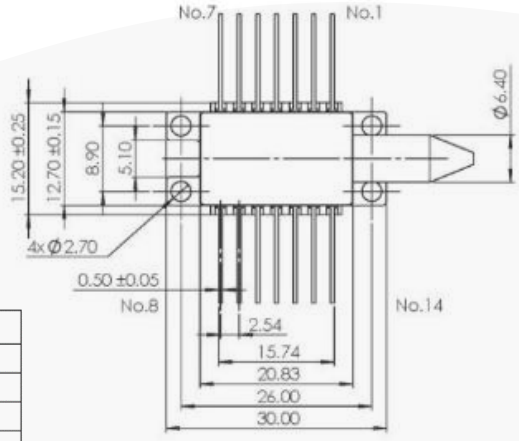
External Cavity Laser
14-pin Butterfly
Narrow Linewidth Single-Frequency

Mechanical Drawing



No.	Description	Parameter	Unit	Note
1	Fiber type	PMF Φ0.9mm red		PMF/SMF Optional
2	Fiber length	1000±10	mm	
3	Connector	FC/APC		





Pinout			
1	TEC +	8	NC
2	Thermistors	9	NC
3	PD -	10	LD+
4	PD +	11	LD-
5	Thermistors	12	NC
6	NC	13	Case
7	NC	14	TEC -

Warnings:
Make sure to wear protective goggles while operating high power laser that could be harmful to eyes. Nearby operators should wear protective goggles to avoid harms from the reflective of the laser. SemiNex reserves the right to modify this document without notice.

SemiNex Corporation • 153 Andover Street, Suite 201, Danvers, MA 01923 • 978-326-7700 • sales@seminex.com