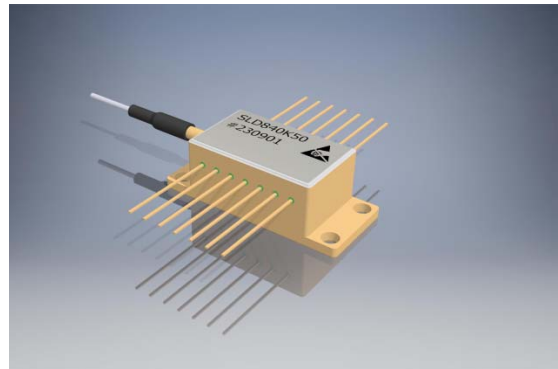
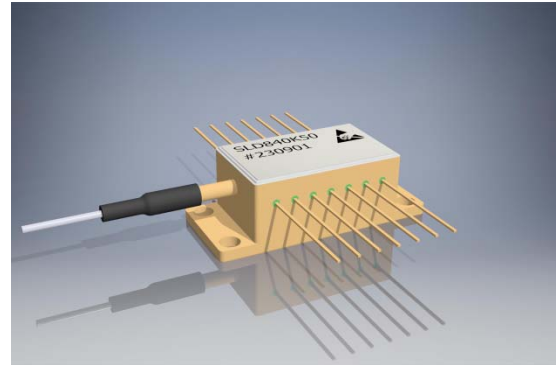




SLD840B25P50 and SLD840B25P20 – high-power, fiber-coupled Superluminescent Diodes, 840 nm, up to 50 mW fiber output, 25 nm spectrum width (FWHM)

Description

SLD840B25 devices are very high-power, highly reliable butterfly packaged Superluminescent Diode (SLD) modules for various applications requiring high-power, spatially-coherent, wide-spectrum light sources. The unique characteristic of superluminescent diodes is that they combine the features of laser diodes – such as high spatial coherence and high brightness – with the very wide spectrum inherent to light-emitting diodes. The output emission is the amplified spontaneous emission of laser diode epi-structures, in which lasing is suppressed by special measures. The SLDs are the light sources of choice for many disruptive technologies: optical coherence tomography, low-coherence interferometry, distributed Bragg grating sensing, speckle-free illumination and many others. The module design is Telcordia GR-468-CORE qualified.



Features

- Two optical power options, 20 mW and 50 mW ex fiber
- a wide, bell-shaped optical spectrum
- low relative intensity noise, < -135 dB/Hz
- Standard hermetically sealed Butterfly package with TEC, thermistor and PD monitor
- FC/APC optical connector
- SMF or PMF fiber output, MMF upon request

Applications

- optical coherence tomography
- white light interferometry
- spectroscopy
- low-speckle illumination
- testing of optical components
- fiber optic gyroscopes

General specifications

Parameter	SLD840B25P20	SLD840B25P50	Units
Output optical power, P _o	20	50	mW
Mean wavelength	840 ± 10	840 ± 10	nm
Spectrum width (FWHM) at P _o	25 ± 5	25 ± 5	nm
Residual modulation of spectrum by Fabry-Perot modes (ripple) at P _o	< 5	< 3	%
Secondary coherence subpeak at P _o	< 20	< 20	dB
Driving current at P _o (Beginning-of-Life)	350	450	mA
Maximum driving current at P _o (End-of-Life)	450	550	mA
Polarization extinction ratio at P _o (for PMF output)	> 10	> 10	dB
Relative Intensity Noise at P _o (RIN)	-135	-135	dB/Hz
Tracking error	< 10	< 10	%

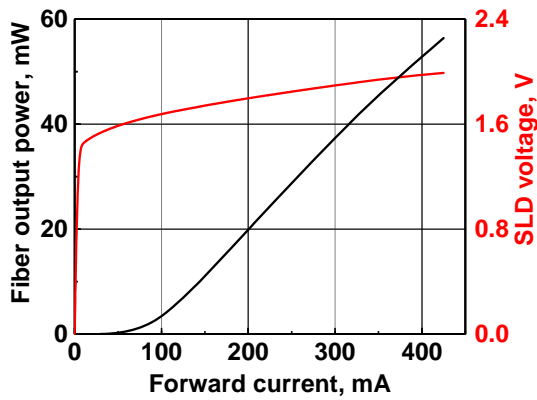
Electrical, Mechanical, Environmental and Other Specifications

Parameter	SLD840B25P20 and SLD840B25P50	Units
Photodiode monitor current at maximum power	> 100, < 3000	μA
Bias voltage to PD monitor	5.0	V
Peltier TEC current	< 1.2	A
Peltier TEC voltage	< 3.5	V
Thermistor temperature sensitivity, BETA	3892	K
Thermistor resistance at 25°C	10	kΩ
Operating temperature range at full power	-55...+75	°C
Storage temperature range	-55...+85	°C
Fiber type	Corning HI780 or PANDA PM850	
Output optical connector	FC/APC with narrow key	
Dimensions (W×H×D)	12.8 × 9.7 × 30	mm
Weight	15	g

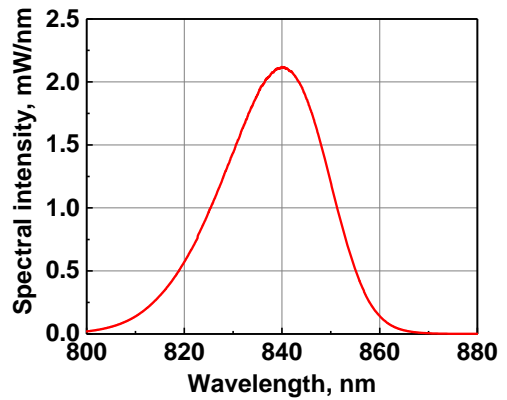
All parameters are guaranteed with an optical feedback of less than 10⁻³ for 20 mW and 10⁻⁴ for 50 mW. A stronger feedback can lead to an abrupt change in performance, or even to an immediate failure of the device when operating at powers comparable to the allowable maximum for this device type.

Typical performance examples – SLD840B25P50

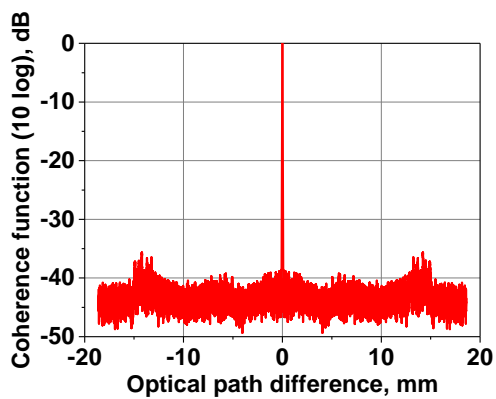
Light-Current and Current-Voltage curves



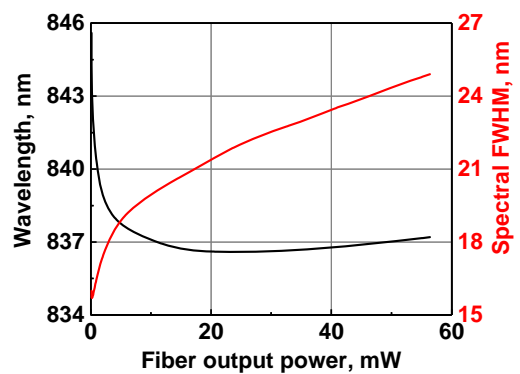
Spectrum at 50 mW



Coherence function at 50 mW



Center wavelength and 3dB spectrum width vs power



Ordering codes

Part number	Description
SLD840B25P20S	20 mW ex SM fiber
SLD840B25P50S	50 mW ex SM fiber
SLD840B25P20P	20 mW ex PM fiber
SLD840B25P50P	50 mW ex PM fiber

14-pins DBUT package with 250 μ m buffered fiber and FC/APC connector