SUPERLUM

High Power SLD modules at 840 nm
S840.25.12, S840.25.20

Superluminescent Diodes are semiconductor emitters combining the high brightness of laser diodes with a broad spectrum of LEDs. They are light sources of choice for numerous applications based on low coherence measurements, spectroscopy, low speckle illumination, and others.

Superlum offers a wide range of SLD modules and SLD-based light sources. Please also check our SLD controllers and light source modules to ensure safe and stable SLD operation in your system.

Specifications (Nominal Emitter Stabilization Temperature +25 °C)

Parameter	MIN	TYP	MAX
S840.25.12			
Output power, P_{op}, ex SM fiber, mW	10.0	12.0	–
Forward current at P_{op}, mA	–	200	250
Central wavelength at P_{op}, nm	830	840	850
Spectrum width at P_{op}, FWHM, nm	22	25	–
Residual spectral modulation depth† at P_{op}, %	–	–	2.0
Secondary coherence subpeaks†† at P_{op}, dB (10 log)	–	-25	-20
Slow / fast polarization ratio (PM modules) at P_{op}, dB	–	10	–
PD monitor current††† at P_{op} ,mA	0.1	–	–
S840.25.20			
Output power, P_{op}, ex SM fiber, mW	17.0	20.0	–
Forward current at P_{op}, mA	–	250	300
Central wavelength at P_{op}, nm	830	840	850
Spectrum width at P_{op}, FWHM, nm	22	25	–
Residual spectral modulation depth† at P_{op}, %	–	–	2.0
Secondary coherence subpeaks†† at P_{op}, dB (10 log)	–	-25	-20
Slow / fast polarization ratio (PM modules) at P_{op}, dB	–	10	–
PD monitor current††† at P_{op} ,mA	0.1	–	–

† - rated at P_{op} , decreases proportional to operating power

†† - **direct measurements by Michelson interferometer**, rated at P_{op}, lower at lower power

††† - at 5 V reverse bias

Attention: **all parameters are measured at optical feedback not exceeding 1E-3**

Features

- Two power categories
  - 12 mW P/N S840.25.12
  - 20 mW P/N S840.25.20
- Butterfly packaged with cooler and thermistor
- SMF or PMF pigtailed
- FC/APC connectors, LC/APC upon request

Applications

- optical coherence tomography
- optical sensors
- optical metrology
- atomic force microscopy
- others

Other parameters – all models

SLD forward voltage at P_{op}, V	–	–	2.6
PD monitor bias voltage, V	–	–	5.0
Operating temperature at P_{op}, °C	-20	–	+65
Storage temperature at P_{op}, °C	-40	–	+85
Cooler current, A	–	–	2.5
Cooler current, V	–	–	3.2
Thermistor BETA, K	–	3892	–
Thermistor Resistance at 25 °C, kΩ	–	10	–

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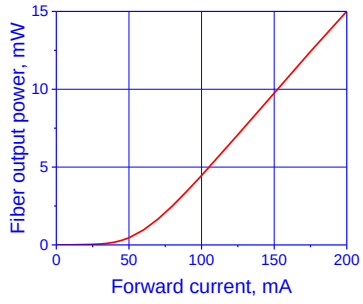
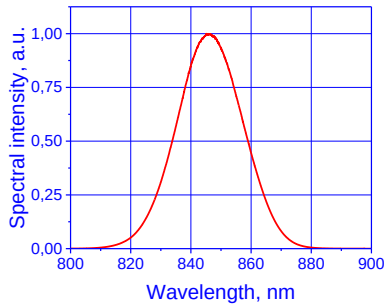
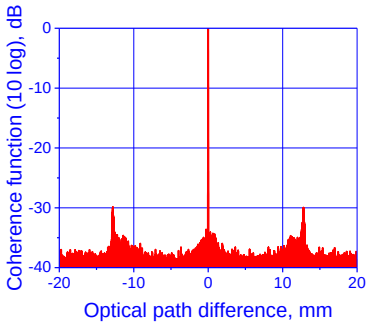
TYPICAL PERFORMANCE EXAMPLES

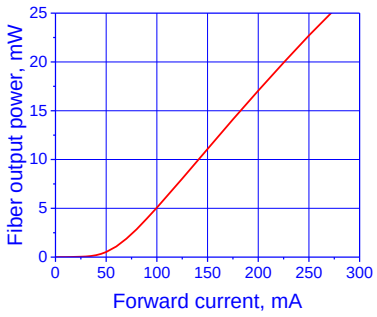
Light-current curve	Spectrum at rated power	Coherence at rated power

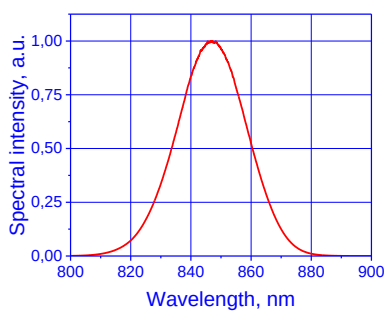


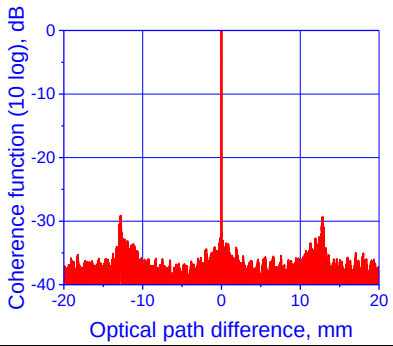




S840.25.12







S840.25.20

Notes: examples demonstrate typical performance only. Actual performance may vary from sample to sample and from lot to lot. All specifications are subject to change without notice. **Coherence function is measured by Michelson interferometer.** Mirror displacement = Optical path difference / 2

Attention: **SLDs are sensitive to optical feedback. The higher is the power, the stronger is the sensitivity. All parameters are measured at optical feedback not exceeding 1E-3.**

The following marking should be used for ordering:

P/N(type of fiber)

Examples : S840.25.12S – as rated above, SMF pigtail, FC/APC; **S840.25.20P** – as rated above, PMF pigtail, FC/APC.

MMF pigtailed SLDs are available upon request. Modules will be shipped FC/APC finished if not specified otherwise in the PO.

Superlum offers customization of its products to fit the requirements of every customer. Please get in touch with us for more details before ordering if you need customer-specific SLD parameters.