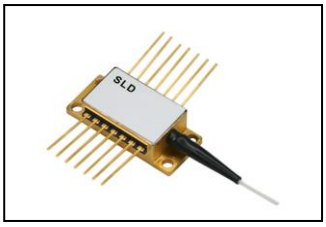
SUPERLUM — Wide spectrum SLD modules at 670 nm band type S670.15.1

Superluminescent diodes are semiconductor emitters that combine 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 like Optical Coherence Tomography, 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 – Optical Parameters

Parameter	MIN	TYP	MAX
S670.15.1			
Output power†, P_{op}, ex SM fiber, mW, SLD chip at 15 °C	1.0	1.1	–
Output power†, P_{op}, ex SM fiber, mW, SLD chip at 25 °C	0.6	0.75	–
Forward current at P_{op}, mA	–	100	125
Central wavelength at P_{op}, nm	660	670	680
Spectrum width at P_{op}, FWHM, nm	13	15	–
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	0.05	–	–

† - SLD chip may be stabilized at any temperature from +15 C (Thermistor at 15.7 kOhm) to +25 C (Thermistor at 10.0 kOhm)

†† - 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

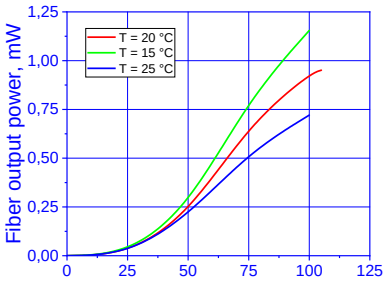
Other Parameters

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	–

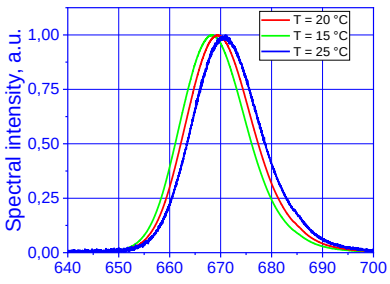
Applications

SLDs S670.15.1 had been developed specifically for applications where SLD spectrum width is more important than output power. Given a spectrum width of 15 nm, their coherence length (FWHM of coherence function) is estimated as less than 20 microns in the air.

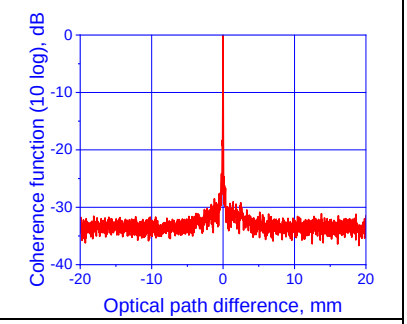
Typical Performance Examples



Light-current characteristic



Optical spectrum at P_{op}



Coherence function at P_{op}

The following marking should be used for ordering:

P/N (fiber type)

Examples : S670.15.1S – as rated above, SMF pigtail, FC/APC; **S670.15.1P** – 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. SLDs with LC/APC finished fiber pigtails are available upon request.

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