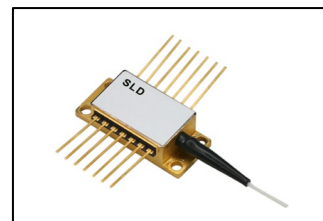


Superluminescent diodes are semiconductor emitters that combine the high brightness of laser diodes with a broad spectrum of LEDs. They are light sources of choice for numerous applications based on low coherence measurements like Optical Coherence Tomography, spectroscopy, low speckle illumination, 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     |
|----------------------------------------------------------------------|------|---------|---------|
| <b>S655.7.5</b>                                                      |      |         |         |
| Output power, $P_{op}$ , ex SM fiber, mW, SLD chip at 20 °C          | 4.0  | 5.0     | –       |
| <b>S655.7.10</b>                                                     |      |         |         |
| Output power, $P_{op}$ , ex SM fiber, mW, SLD chip 20 °C             | 9.0  | 10.0    | –       |
| <b>S655.7.5 / S655.7.10</b>                                          |      |         |         |
| Forward current at $P_{op}$ , mA                                     | –    | 120/140 | 160/180 |
| Central wavelength at $P_{op}$ , nm                                  | 650  | 655     | 660     |
| Spectrum width at $P_{op}$ , FWHM, nm                                | 6    | 7       | 8       |
| Residual spectral modulation depth <sup>†</sup> at $P_{op}$ , %      | –    | –       | 2.0     |
| Secondary coherence subpeaks <sup>††</sup> at $P_{op}$ , dB (10 log) | –    | -25     | -20     |
| Slow / fast polarization ratio (PM modules) at $P_{op}$ , dB         | –    | 10      | –       |
| PD monitor current <sup>†††</sup> at $P_{op}$ , mA                   | 0.05 | –       | –       |

<sup>†</sup> - rated at  $P_{op}$ , decreases proportional to operating power

<sup>††</sup> - direct measurements by Michelson interferometer, at  $P_{op}$ , lower at lower power

<sup>†††</sup> - at 5 V reverse bias

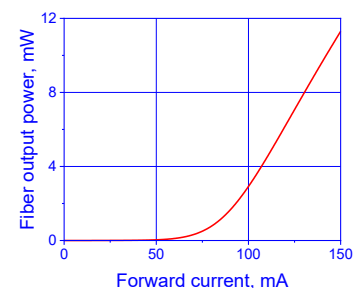
### Other Parameters

|                                        |     |      |     |
|----------------------------------------|-----|------|-----|
| 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   | –   |

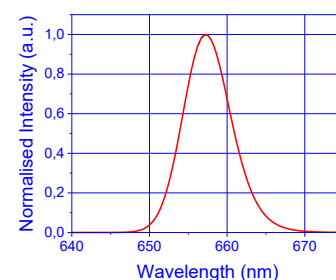
### Applications

SLDs S655.7.5 and S655.7.10 extend Superlum's "red wavelength" SLD line with 5 mW and 10 mW fiber-coupled output. Applications include low-coherence interferometry, low-speckle illumination, spectroscopy, and optical sensing.

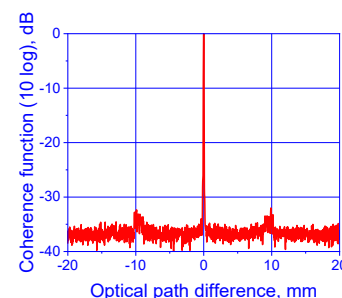
### Typical Performance Examples



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 :** **S655.7.5S** – 5 mW rated output, SMF pigtail, FC/APC; **S655.7.10P** – 10 mW rated output, PMF pigtail, FC/APC.

Modules will be shipped with FC/APC connectors unless 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 before ordering if you need customer-specific SLD parameters.