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## BeST-SLED<sup>®</sup>

### **Integrated Spectral Bench (ISB) - Product Brief**

# Description: Integrated Spectral Bench: 5 SLEDs: 1300nm, 1340nm, 1390nm, 1430nm, 1480nm, PM Fiber, Spectral Coverage: 1265nm - 1500nm, FWHM: 235nm, CW: 1383nm, Fiber Output Power >35mW

The Luxmux Broadband source (BeST-SLED<sup>®</sup>) can be configured with up to 6 light sources combined as a single spectrum product. The system provides individual control of light sources through a digitally controlled interface. The ISB is designed to offer up to 19 spectral combinations, which creates a compact and powerful unit that can widen the performance of its intended application use. Individual SLED performance dashboards are provided for optimum set up calibration as required. The light source is integrated with a high-performance SLED driver and temperature control electronics in a rugged compact package. Power meters can be added for additional monitoring capability.

Luxmux's Spectral Stitching technique of integrating multiple wavelengths into a single broad spectrum is designed for optimum coupling efficiency into a single mode fiber. This brings exceptional flexibility and usability to the sensing marketplace. The BeST-SLED<sup>®</sup> product lines can be spectrally tailored to suit specific application needs and offer excellent back reflection immunity, better than 35dB. This provides extremely high stability, making these sources ideal for:

- Optical component Testing
- Telecom Test Equipment
- Optical Coherence Tomography
- Optical Sensing
- White Light Interferometry
- Research and Development

### **KEY FEATURES**

- 5 Superluminescent Diodes (SLEDs) in a single package
- All SLEDs can be run from 0-100% of maximum rating
- Fiber Coupled Output Power of >35mW
- Bandwidth FWHM>235nm, @10dB >275nm
- The best combination of power and spectrum width in multi-SLED modules
- Each SLED comes with a built-in independent monitor photodiode
- Optional: Integrated InGaAs Power Meter
- Internally Optimized for maximum coupling efficiency with PM1300-XP Fiber
- Integrated Optical Isolation (35dB)
- Light Output: FC/APC Connector (Optional FC/PC or SMA)

### PERFORMANCE HIGHLIGHTS

- CW operation (Excellent Stability < 0.1dB)
- Intensity modulation available

-0.08

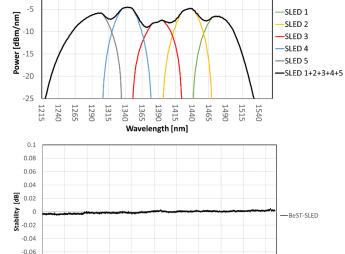
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- Custom API available
- USB, RS-232, Ethernet communication
- Spectrum Ripple:
  - Standard Performance < 0.45dB
  - Enhanced Performance < 0. 30dB
  - High Performance < 0.15dB
- RIN typical -130dB/Hz
- Operating temperature 0 to 35°C without additional Heatsink. Provides over temperature protection with internal optical bench temperature monitor
- 12 VDC powered
- Remote operation from a PC/laptop or manual dip switches

| Product        | Conditions                                 | CWL [nm] | I <sub>OP</sub> [mA] | P [mW] | B <sub>FWHM</sub> [nm] | B <sub>@10dB</sub> [nm] |  |
|----------------|--|----------|----------------------|--------|------------------------|-------------------------|--|
| SLED 1         |  | 1480     | 350                  | 7      | 40                     | 70                      | INVISIBILE CLASS 1M LASER<br>RADIATION<br>DO NOT VIEW DIRECTLY |
| SLED 2         | CW   | 1430     | 350                  | 7      | 30                     | 55                      | with optical instruments                                       |
| SLED 3         | $T_{OP} = 25^{\circ}C$                     | 1390     | 400                  | 6      | 35                     | 60                      | RoHS   |
| SLED 4         | $T_{OP} = 23 C$<br>$T_{TEC} = 21^{\circ}C$ | 1340     | 350                  | 7      | 30                     | 55                      |  |
| SLED 5         | $T_{\text{TEC}} = 21 \text{ C}$            | 1300     | 500                  | 8      | 45                     | 90                      | (d#1)  |
| SLED 1+2+3+4+5 |  | 1383     | 1950                 | 35     | 235                    | 275                     | Pb FREE  |

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Elapsed Time [hours]

10





**Redefining Spectral Boundaries** 

| ORDERING CODE: |   | LTC      | ISB | SLEDs | FT | sc | FWHM | cw | FOP |   |
|----------------|---|----------|-----|-------|----|----|------|----|-----|---|
| LTC<br>ISB     | Luxmux Technology Corporation<br>Best-sled® Optical Spectral Engine   |          |     |       |    |    |      |    |     | Product Code Available Options Taken From Table |
| SLEDs          | SLED center wavelength, choose<br>from one of the models in the table<br>1300, 1340, 1390, 1430, 1480, 1550,<br>1615, 1680 [choose up to 6] |          |     |       |    |    |      |    |     |   |
| FT             | Fiber Type, choose 1:<br>PM: Polarization Maintaining<br>SM: single Mode  |          |     |       |    |    |      |    |     |   |
| SC             | Spectral Coverage   | <u> </u> |     |       |    |    |      |    |     |   |
| FWHM           | Full Width Half Maximum<br>[FWHM defined as the bandwidth<br>from the lowest spectral dip]  |          |     |       |    |    |      |    |     |   |
| CW             | Center Wavelength   |          |     |       |    |    |      |    |     |   |
| FOP            | Fiber Output Power  | L        |     |       |    |    |      |    |     |   |

| Ordering Code: LTC-ISB-(SLEDS)-(FT)-(SC)-(FWHM)-(CW)-(FOP)     | SLEDs [nm]                         | FT | SC [nm]     | FWHM [nm] | CW [nm] | FOP [mW] |
|--|------------------------------------|----|-------------|-----------|---------|----------|
| LTC-ISB-1615_1680-PM-1575_1725-150-1650-12                     | 1615, 1680                         | PM | 1575 - 1725 | 150       | 1650    | 12       |
| LTC-ISB -1480_1550_1615-PM-1435_1640-205-1538-18               | 1480, 1550, 1615                   | PM | 1435 - 1640 | 205       | 1538    | 18       |
| LTC-ISB-1340_1390_1430-PM-1310_1465-155-1388-20                | 1340, 1390, 1430                   | PM | 1310 - 1465 | 155       | 1388    | 20       |
| LTC-ISB-1300_1340_1390_1430-PM-1265_1465-200-1365-25           | 1300, 1340, 1390, 1430             | PM | 1265 - 1465 | 200       | 1365    | 25       |
| LTC-ISB-1480_1550_1615_1680-PM-1435_1725-290-1580-25           | 1480, 1550, 1615, 1680             | PM | 1435 - 1725 | 290       | 1580    | 25       |
| LTC-ISB-1300_1340_1390_1430_1480-PM-1265_1500-235-1383-35      | 1300, 1340, 1390, 1430, 1480       | PM | 1265 - 1500 | 235       | 1383    | 35       |
| LTC-ISB-1340_1390_1430_1480_1550-PM-1305_1605-300-1455-35      | 1340, 1390, 1430, 1480, 1550       | PM | 1305 - 1605 | 300       | 1455    | 35       |
| LTC-ISB-1300_1390_1480_1550_1615_1680-PM-1265_1725-460-1495-40 | 1300, 1390, 1480, 1550, 1615, 1680 | PM | 1265 - 1725 | 460       | 1495    | 40       |
| LTC-ISB-1480_1550-PM-1435_1605-170-1520-12                     | 1480, 1550                         | PM | 1435 - 1605 | 170       | 1520    | 12       |
| LTC-ISB-1340_1390_1430_1480_1550_1615-PM-1310_1640-330-1475-38 | 1340, 1390, 1430, 1480, 1550, 1615 | PM | 1310 - 1640 | 330       | 1475    | 38       |
| LTC-ISB-1300_1340_1390_1430_1480_1550-PM-1265_1605-340-1435-40 | 1300, 1340, 1390, 1430, 1480, 1550 | PM | 1265 - 1605 | 340       | 1435    | 40       |
| LTC-ISB-1430_1480_1550-PM-1410_1605-195-1508-19                | 1430, 1480, 1550                   | PM | 1410 - 1605 | 195       | 1508    | 19       |
| LTC-ISB-1300_1340_1390-PM-1265_1420-155-1343-20                | 1300, 1340, 1390                   | PM | 1265 - 1420 | 155       | 1343    | 20       |
| LTC-ISB-1390_1430_1480-PM-1355_1500-145-1428-19                | 1390, 1430, 1480                   | PM | 1355 - 1500 | 145       | 1428    | 19       |
| LTC-ISB-1550_1615_1680-PM-1515_1725-210-1620-18                | 1550, 1615, 1680                   | PM | 1515 - 1725 | 210       | 1620    | 18       |
| LTC-ISB-1300_1340-PM-1265_1365-100-1315-12                     | 1300, 1340                         | PM | 1265 - 1365 | 100       | 1315    | 12       |
| LTC-ISB-1390_1480_1550-PM-1340_1610-270-1475-20                | 1390, 1480, 1550                   | PM | 1340 - 1610 | 270       | 1475    | 20       |
| LTC-ISB-1300_1390_1480-PM-1265_1500-235-1383-20                | 1300, 1390, 1480                   | PM | 1265 - 1500 | 235       | 1383    | 20       |
| LTC-ISB-1390_1480_1550_1615_1680-PM-1340_1725-385-1533-32      | 1390, 1480, 1550, 1615, 1680       | PM | 1340 - 1725 | 385       | 1533    | 32       |
|  | 1                                  | -  |             | -         | -       |          |

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