Introducing the first of its kind...

BeST-SLED™

The Broad Spectrum Tunable Superluminescent Diode Spectrometer
**BeST-SLED™**

**Three Models**

This state of the art, high optical power, fiber-coupled light source, with built in high-resolution spectrometer is available in three different models. Bands. Tunable and FTNIR.

**BeST-SLED™ Bands**

BeST-SLED Bands provides six selectable spectral bands. Each band can be selected individually, or any combination of the six bands can be enabled through the output fiber.

**Wavelengths (nm)**

- 1200
- 1300
- 1400
- 1500
- 1600
- 1700
- 1800

**Power (a.u.)**

- 0.1
- 0.2
- 0.3
- 0.4
- 0.5
- 0.6
- 0.7
- 0.8
- 0.9
- 1

**BeST-SLED™ Tunable**

BeST-SLED Tunable comes with an integrated tunable filter providing high spectral resolution of 0.7nm @ 1550nm (FWHM).

**BeST-SLED™ FTNIR**

BeST-SLED FTNIR includes Luxmux’s proprietary and patented silicon nanophotonic interferometer, providing the world’s first Fourier Transform Near Infrared Spectrometer with no moving parts.
The First of its Kind All-in-one-Spectrometer
Luxmux is pleased to introduce the BeST-SLED the first of its kind all-in-one spectrometer. BeST-SLED stands for: Broad Spectrum Tunable Superluminescent Diode Spectrometer.

BeST-SLED contains all you require for spectroscopy, from an integrated high power light source to a built in high-resolution spectrometer. BeST-SLED is ready to integrate as a complete solution into your spectroscopy applications.

Multiple Superluminescent Diode Light Source
The first component of this patented all-in-one system is the integrated multiple superluminescent diode light source. A light source providing high power and broad spectrum for state-of-the-art intensity and optical throughput. Built-in optical feedback ensures light source stability.

BeST-SLED powers up to 100mW over the spectral band of 1250nm to 1750nm (on average this equals 200uW/nm).

A powerful onboard processor provides 60dB of automatic dynamic range.

Connections
BeST-SLED offers a 12-24V power connection, continuous communication over USB or Ethernet, and for industrial applications, BeST-SLED provides RS-485 and two RS-232 channels. RTD and 4-20mA inputs are on board as well. An optional Bluetooth module provides device access via mobile app.

Ready to Sample
BeST-SLED comes coupled with a polarization maintaining single-mode fiber optic with a standard FC/APC connector. BeST-SLED is ready to work with almost any fiber-coupled sampling accessory. The accurate and repeatable measurements make it an ideal all-in-one light source and spectrometer.

Example Applications: Maximizing Process Control
BeST-SLED is a robust stand-alone product, yet an even more powerful solution as the heart of a process control system. Luxmux, and our partners, are commercializing the following:

Steam Quality - Process optimization & GHG reduction for heavy oil.
Gas Composition - Continuous measurement at pipeline conditions.
Air Quality - Enabling ppb measurements with broad spectrum.

Other applications are waiting to be enabled with BeST-SLED, the ready to implement, fiber-coupled, high optical power light source and spectrometer. How can Luxmux empower you?

www.luxmux.com
**Key Advantages**

Compact, accurate, and stable, BeST-SLED offers these key advantages over other spectrometers in the market:

**High optical power** – up to 100mW over the spectral band of 1250nm to 1750nm (on average, 200uW/nm)

**High spectral resolution** – 0.7nm at 1550nm (FWHM)

**Polarization maintaining single mode fiber-coupled output** – Enabling users to collimate the light over the entire spectral band.

**Acknowledgement** – Steam Quality and Oil in Water measurement systems have been developed with the collaboration and support of: AGAR CORPORATION

**Note:** BeST-SLED and several measurement technologies derived from the utilization of a light source and spectrometer are protected by multiple patents. Some patents are jointly held with Luxmux and application partners.

### OPTICAL

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<th>Wavelength range</th>
<th>1250nm to 1750nm</th>
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<tr>
<th>Optical resolution FWHM (nm)</th>
<th>Peak Wavelength</th>
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| Optical Output Power (Out of fiber) | 100mW |
| Output polarization | Polarized, aligned to slow axis key |
| Fiber optic output connector | FC/APC |
| Fiber type | PM-1300-XP |
| Detector | Hamamatsu InGaAs PIN G12182-110K - 2.05um cut off |
| Optical inputs (In and Ref) | FC/PC |
| Dynamic range | 60dB |

### ELECTRICAL & COMMUNICATIONS

| Power input | 12-24V DC |
| Communications | Ethernet, USB, Optional Bluetooth |
| Industrial connections | RS-485, RS-232 X2 channels, RTD input, 4-20mA input |

### MECHANICAL

| Dimensions | 184.3 x 120.3 x 54.0 mm |