



**SUPERLUM**

The driving pulse of SLD technology

# The new BLL Ultra-Compact Broadband Light Sources

EPIC Members New Product Release, April 2023

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# About Superlum.

## History

The first company **focused on SLDs as its core business**, the **longest history of SLD supply** in the industry

## ISO certified

**ISO9001:2015 certified.**

## Mission

To continuously supply **the best SLD products.**

## Team

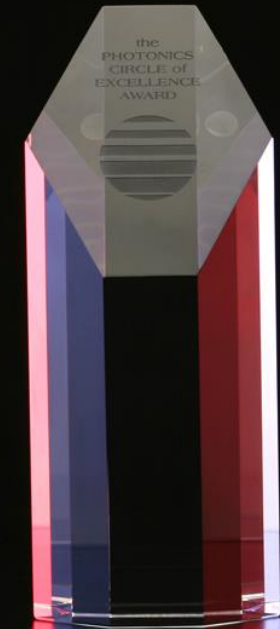
Highly qualified researches, engineers and technicians **with over 20 years industry experience.**

## Quality

Strategic **supplier** to many companies from **Forbes Global 2000 list.**

## Innovation

A developer and manufacturer of SLDs **awarded the Photonics Circle of Excellence Award.**



# Applications of SUPERLUM products.

## Optical coherence tomography



**Medical and Biomedical OCT systems**

High precision, **Non-Destructive Industrial OCT systems**

## Optical sensors



**Fiber Optic Gyroscopes** for wide range of applications in the air and sea

**Distributed Fiber Bragg Grating sensors** for complex constructions and apparatus - bridges, ships, airplanes

## Other important applications



Other **interferometric** and **non/interferometric Industrial Sensors** and Industrial Process Control

**Testing of various optical components** over wide wavelength range

**Optical Spectroscopy**

Low-speckle, high beam quality, high-brightness **optical illumination**

# SUPERLUM product portfolio: an overview.

Wide Spectrum and High Power Superluminescent Diodes (SLDs) and Semiconductor Optical Amplifiers (SOAs)  
Fiber-coupled broadband semiconductor emitters

Stable and Low Noise OEM SLD light source modules, Swept/Tunable Lasers and their Power Boosters

Benchtop SLD based equipment

Designed to be used as a standalone light source in the laboratory

Designed to be integrated into Customer system



14-pin butterfly package

14-pin butterfly SOA



SLD-mCS

SLD-cBLMD

**New - SLD-BLL**



*BroadLighters:*  
Wide Spectrum SLD light sources



# BLL OEM Ultra-Compact Light Source

All features of the BLL in a nutshell.

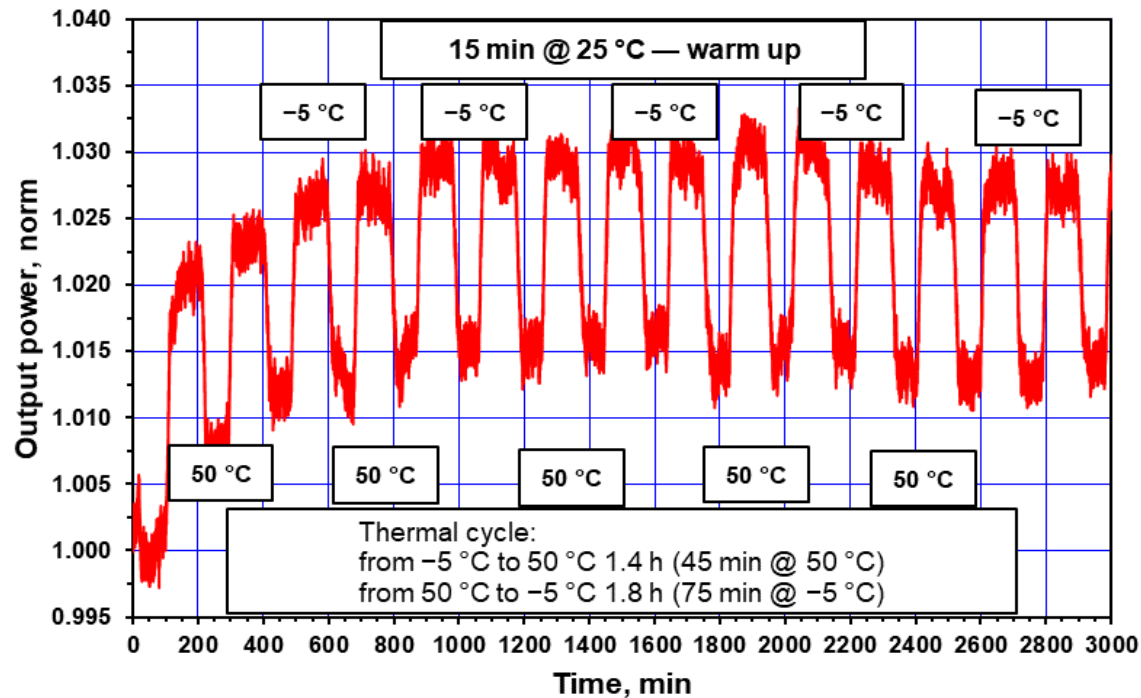
## The BLL features:

- Ultra-Compact dimensions 45x60x21.5 mm.
- Designed for PCB board integration
- UART control interface.
- Pushbutton control.
- Up to 400 mA SLD drive current, compatible with most Superlum SLDs.
- Supply voltage DC 5 V.
- Up to 40 kHz modulation (ON/OFF).
- 0...+50 °C operating temperature range.

*Superlum BLL SLD light source*



# SUPERLUM OEM products – new BLL light source modules. Example of stability.



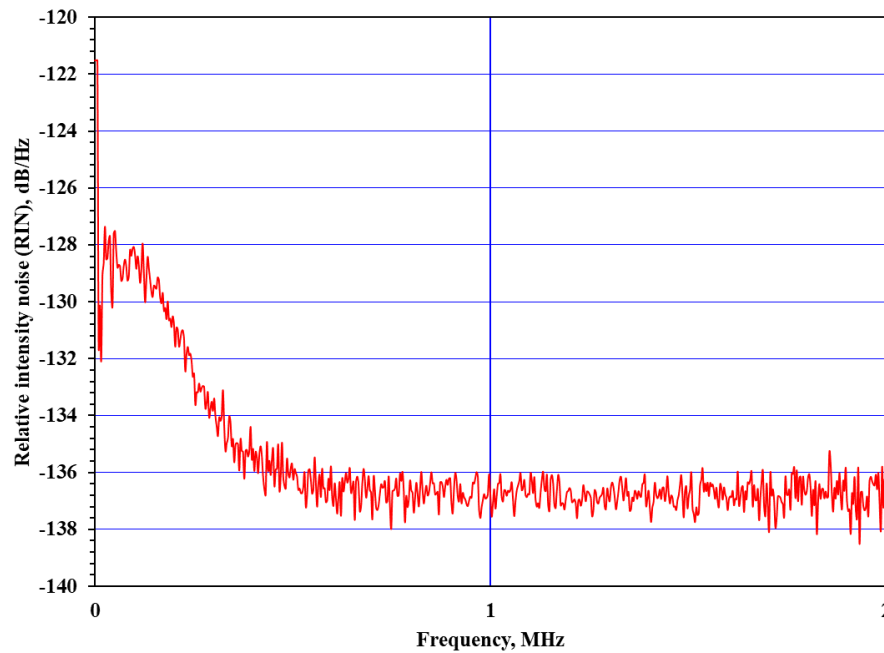
- Temperature cycling of SLD light source at 850 nm.
- No warming up.
- Normalized output power vs time, 10 mW output power, constant current mode.

**~0.04% / C° change of power**

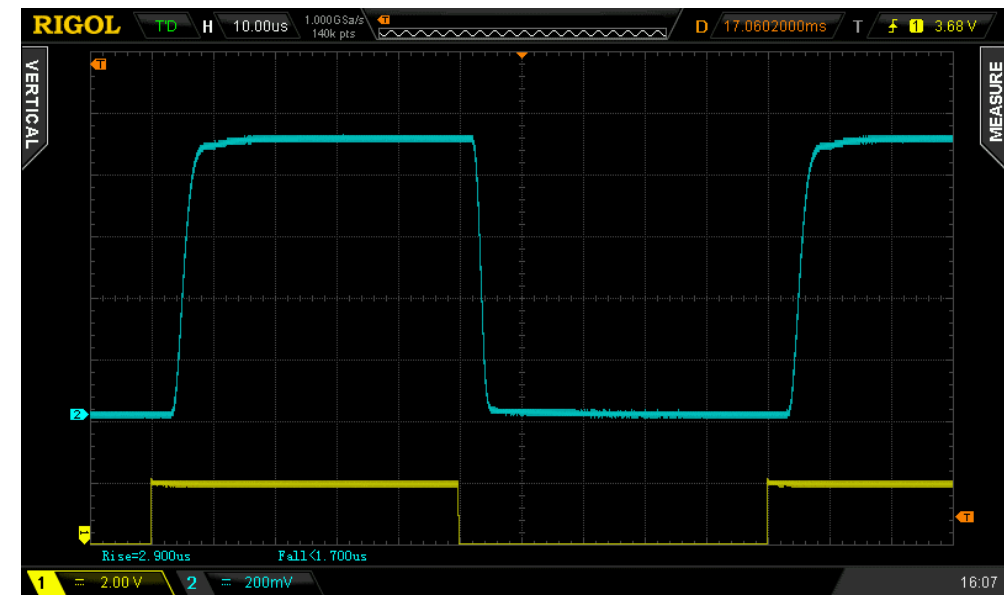
# SLD-BLL performance examples

**$\lambda$  850 nm,  $\Delta\lambda$  50 nm, 10 mW ex SM fiber, Ophthalmic OCT SLD best-selling SLD.**

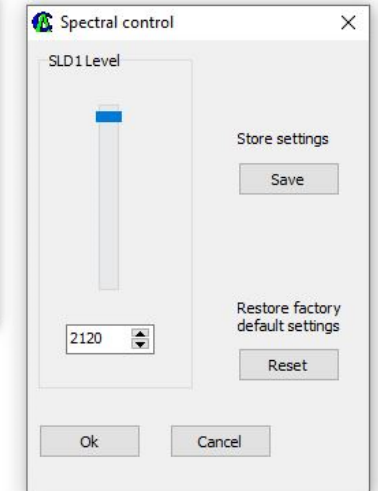
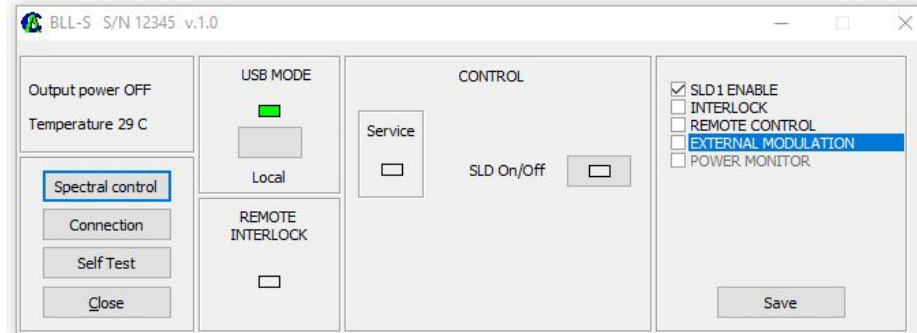
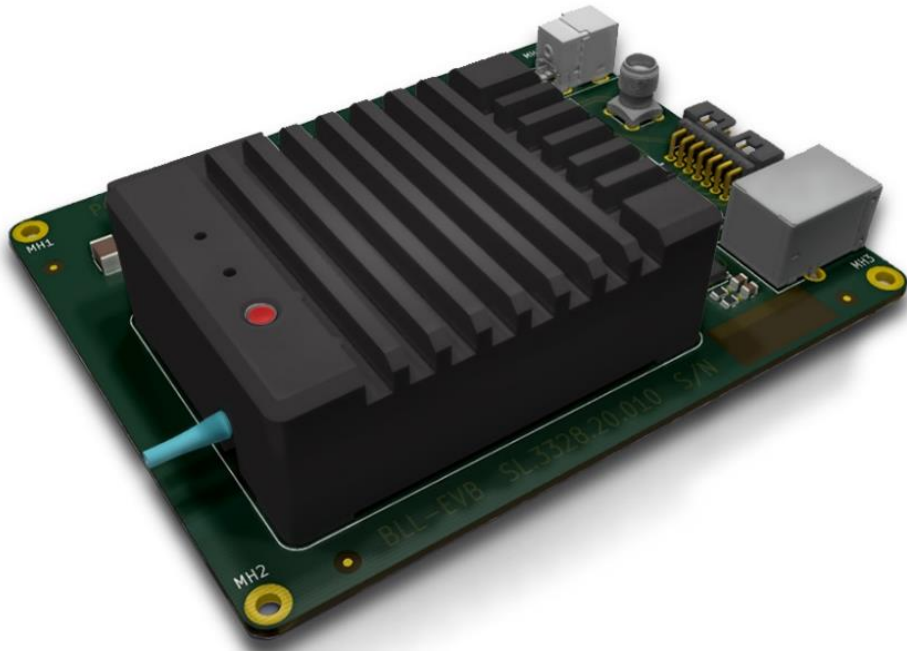
RIN at 10 mW SM fiber



Modulation pattern at 10 kHz



# BLL OEM Evaluation Board for Convenient Setup and Testing



Evaluation board comes with Superlum Software for BLL control

Superlum BLL light source module mounted  
On the Superlum Evaluation Board



# BLL OEM Ultra-Compact Light Source

Why the BLL?



- Miniature size
- High stability, low noise
- Designed for PCB integration
- UART/USB Connectivity
- **Made for SLDs, fully compatible with SOAs and temperature controlled butterfly-packaged LDs**

Superlum BLL light source modules with SLD (top) and SOA (bottom)



# Thank you!

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