High Radiance Broadband Sources

Dr Christian Vélez

EXALOS AG

www.exalos.com

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SwissLaserNetwork – Berner Fachhochschule

Outline

> EXALOS Company Background

> High Radiance Sources -> What are SLEDs?

> Markets and Products

> New Products Roadmap

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Company Background

- Founded in 2003 as MBO of ex-Opto Speed SLED Line (ex-Opto Speed was spin-off from Swiss Federal Inst. of Tech. ETH)
- Our SLED technology is since 1995 on the market
- Private held company headquartered in Schlieren-ZH
- ISO 9000:2001 certified since 2004
- Profitable since 2006
- Focused on engineering, sales and marketing
- Subcontracting of labor intensive manufacturing steps to a world wide established supply chain

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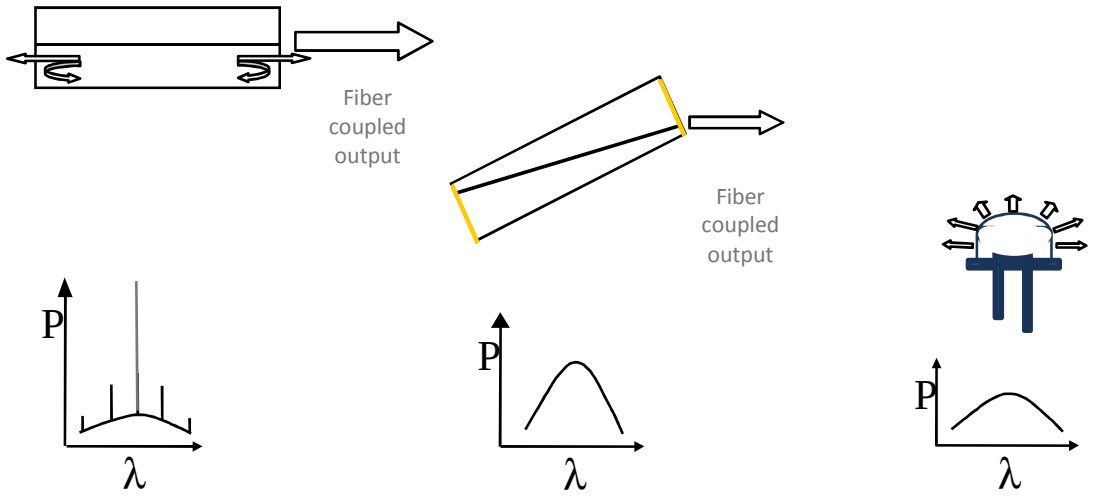
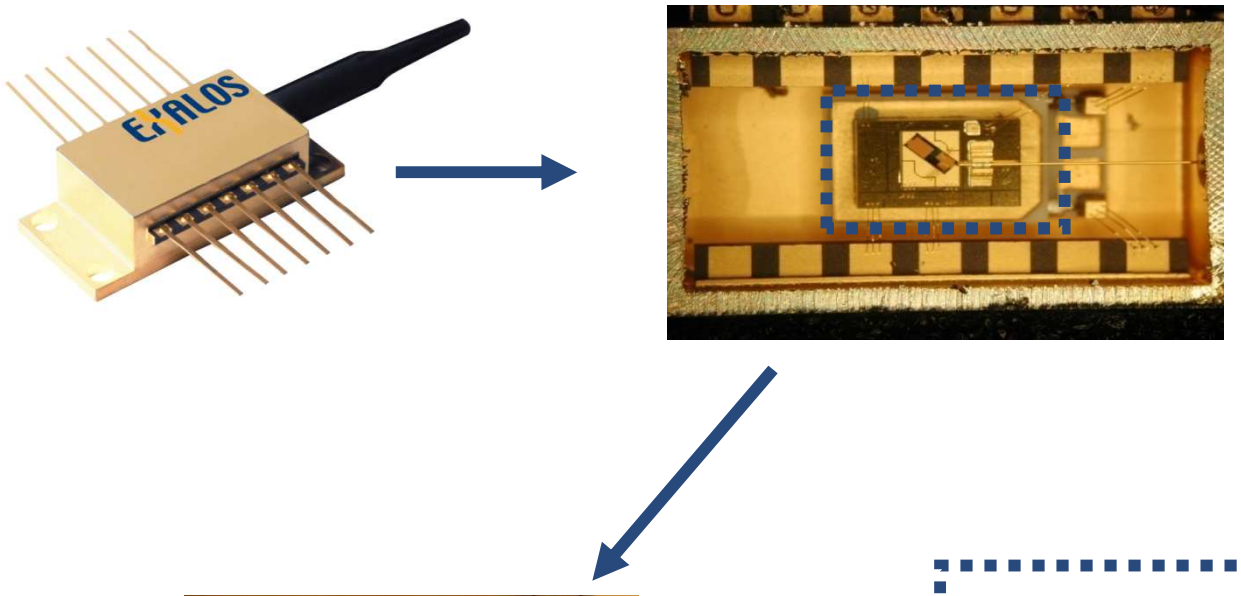
What are SLEDs?

Superluminescent Light-Emitting Diodes (SLEDs) are closing the gap between Laser Diodes (LDs) and Light Emitting Diodes (LEDs) being in markets where both the broadband optical spectra and the spatial coherence of the light source are the preconditions to achieve optimum results for the application.



FP LD SLED LED

SLED Product Sketch



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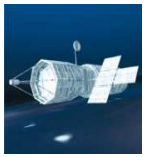
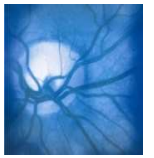
EXALOS Markets

EXALOS high power, broad bandwidth and low spectral ripple SLEDs find various applications in many different market segments all over the world

- Fiber Optics Gyroscopes (FOG)


- Medical Applications (OCT)


- Fiber Optic Test Equipment (FOT)

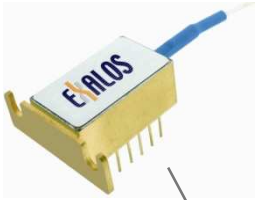


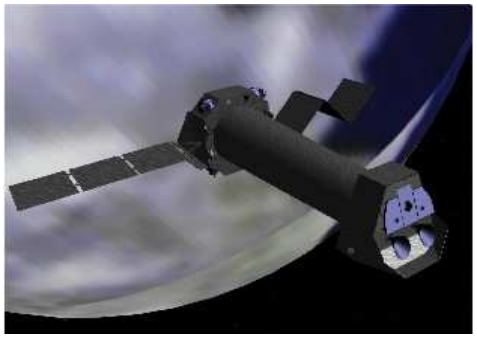
- Fiber Optics Sensors (FOS)



Fiber Optic Gyroscopes

SLEDs are a key optical component inside FOGs in navigation systems





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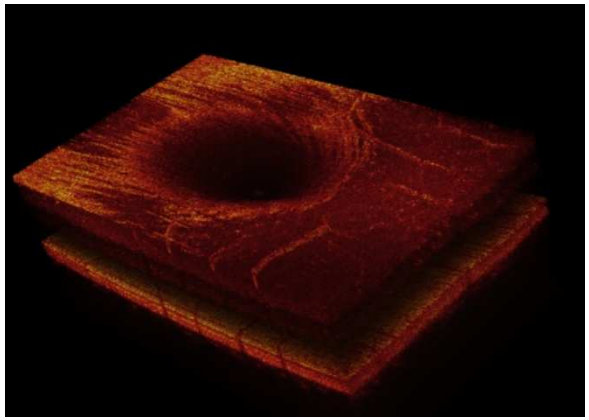
Optical Coherence Tomography

For medical imaging such as

> cornea and retina diagnostics

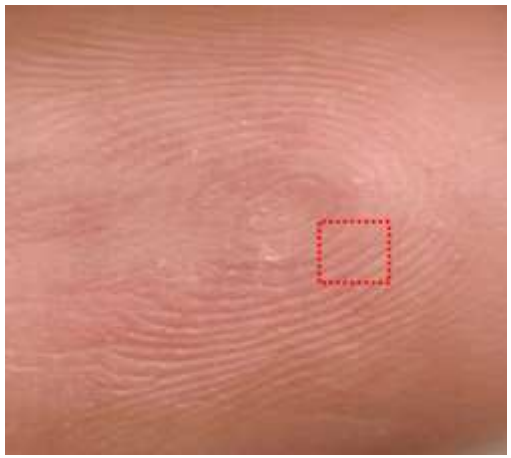
> cardiovascular and gastrointestinal

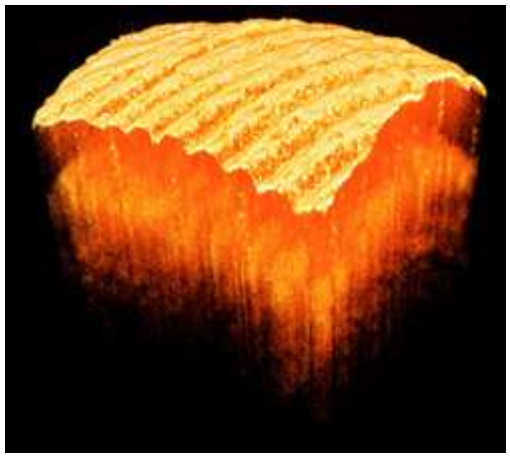


	OCT	Ultrasound	MRI	Fluoroscopy	Angioscopy
					
Resolution (µm)	1–15	80–120	80–300	100-200	<200
Probe Size (µm)	140	700	N/A	N/A	800
Ionizing Radiation	No	No	No	Yes	No

The SLED is the key optical component defining the maximum resolution of the OCT system

OCT Images





Human finger pad

3D optical sectioning of the African frog tadpole

Developmental Biology

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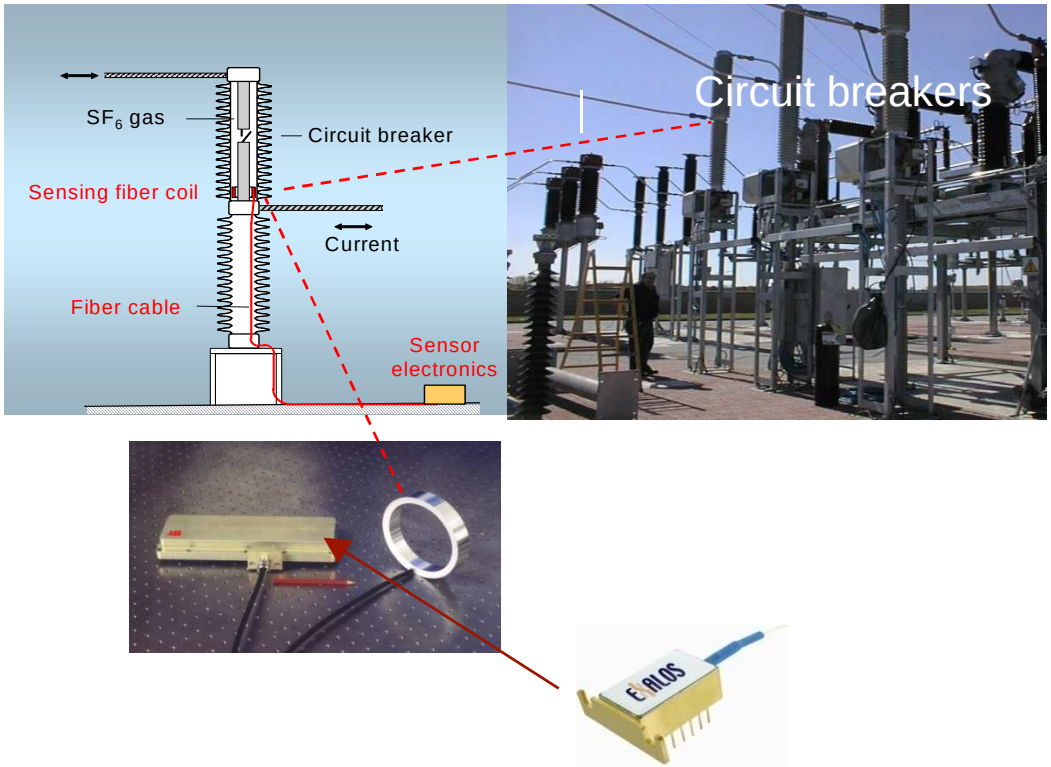
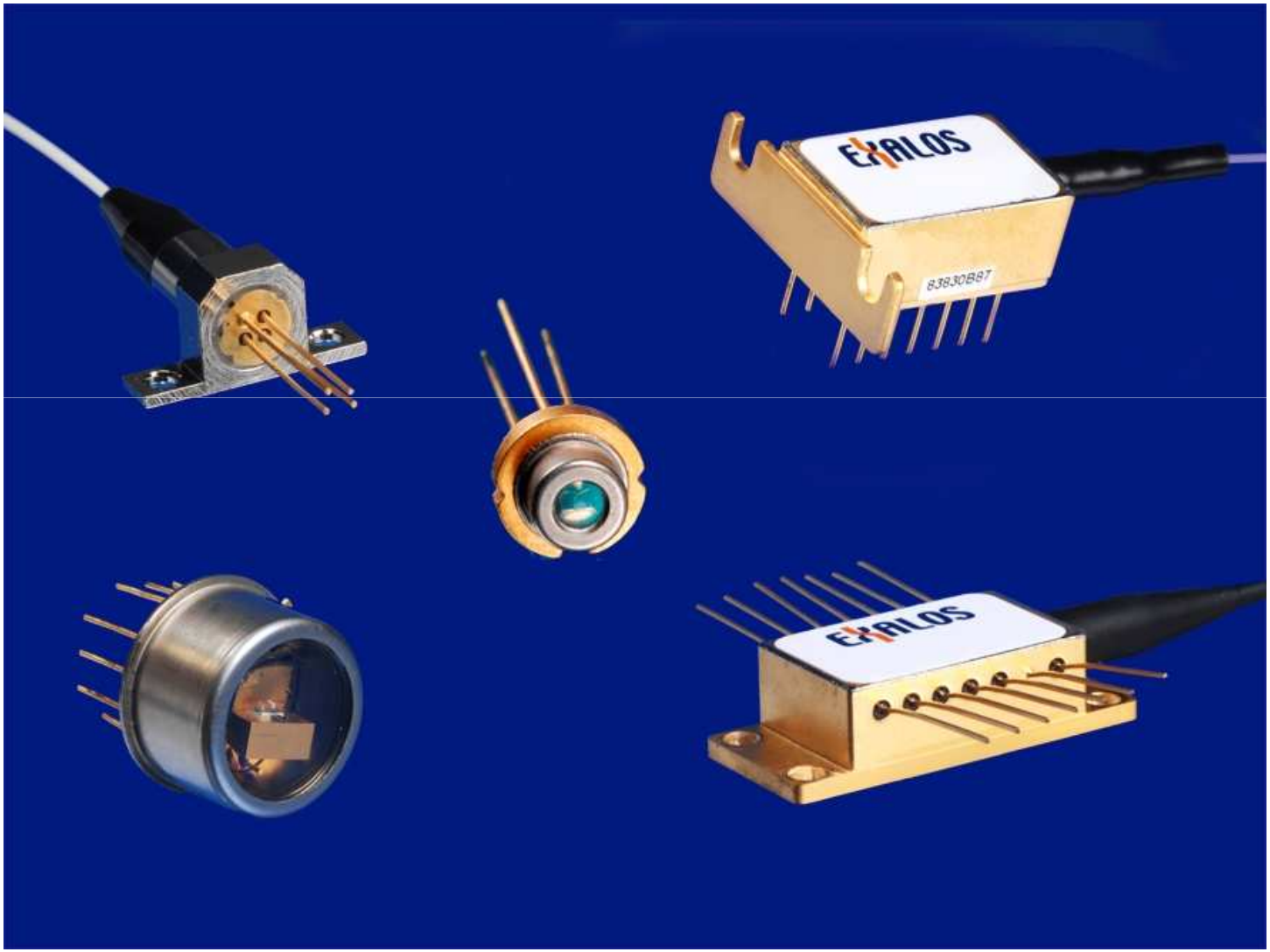
Fiber Optic Sensors

For temperature, pressure, strain, electrical power and current measurements required in many fields

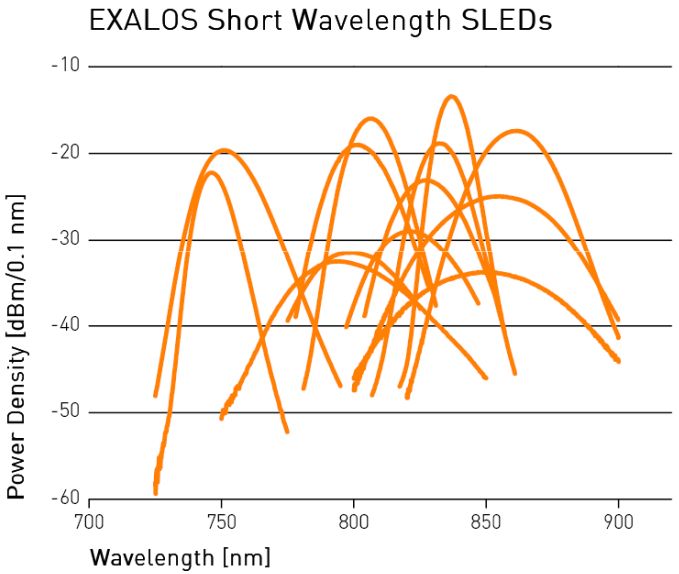
High voltage fiber optic current sensor:

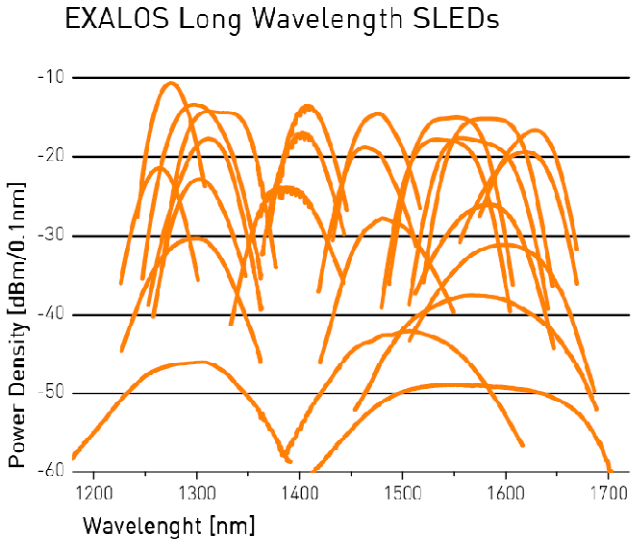


Various Form Factors



Different Wavelengths





Full Solutions

OEM Solutions

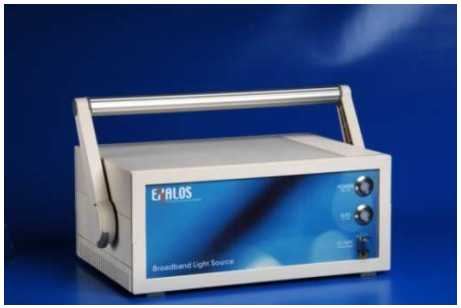
Benchtop instrument for R&D or Lab applications

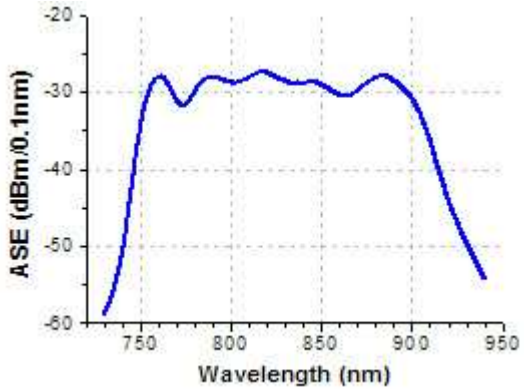
EBS4000

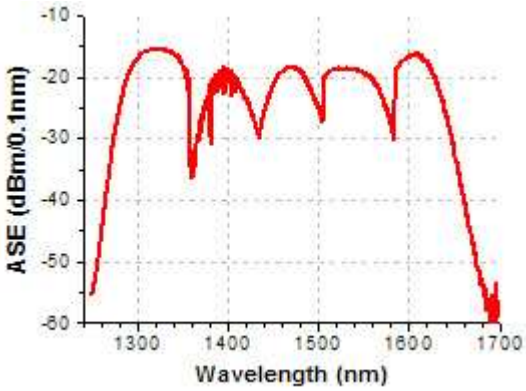
→ up to 4

EBS8000

→ up to 8







Thank you!

EXALOS AG
8952 Schlieren
Switzerland

velez@exalos.com

www.exalos.com

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