

# NKT PHOTONICS

Crystal Fibre • *aero*PULSE • Koheras • SuperK • LIOS • Fianium



# Vision

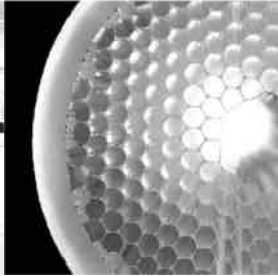
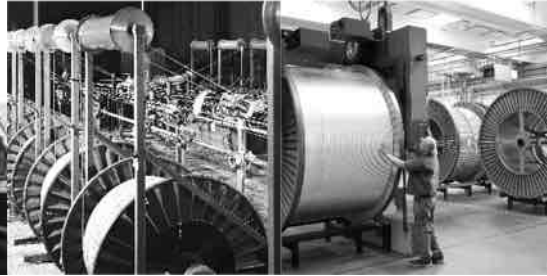
*“Through optical fiber- and laser technology, we deliver state-of-the-art commercial solutions in collaboration with our partners for the benefit of mankind”*



# 127 Years of Industrial History

**NKT**

**1891**



**2018**

# The Photonics journey so far...

**1980**

NKT starts production of optical fibers



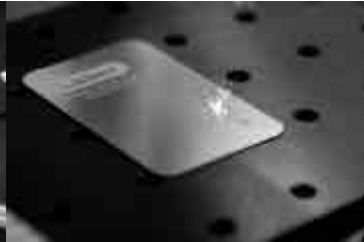
**2004–2009**

**2004: Acquisition of Blaze Photonics (GB)**

**2005: Acquisition of LG Laser (DE)**

**2007:** Koheras merges with NKT research

**2009:** Crystal Fibre and Koheras merge and become NKT Photonics



**2000**

NKT establishes Crystal Fibre and Koheras that would form the foundation of NKT Photonics

**2016**

LIOS technologies becomes part of NKT Photonics

**Acquisition of Fianium Ltd. (GB)**

**2017**

**Acquisition of Onefive GmbH (CH)**

# Organization

2017 split



**NKT**

8.950 employees  
2.2 bEUR revenue (2015)



- › Europe
- › North America
- › Oceania
- › Asia



**NKT**

- › Northern Europe
- › Central Europe
- › Eastern Europe
- › China



**NKT** Photonics

- › Manufacturing in  
Denmark,  
Switzerland, UK  
and Germany
- › Worldwide sales

# NKT Photonics at a glance

## Overview



Supplier of fiber-based lasers and sensing systems for industrial and scientific applications

Founded in 1999

## By the numbers



>330 employees  
>70mEUR run-rate  
2020 high ambitions  
15% EBITDA  
350 patents and applications

## Manufacturing



Manufacturing in  
DK, GB, DE and CH

> 5.000m<sup>2</sup> production floor  
> 6.000 units shipped in 2016  
> 15.000 system install base

# Manufacturing locations

**DK - Birkerød**

**Headquarter  
+ product lines**



**Products:** SuperK & Koheras lasers, Fibers



**GB - Southampton**

**R&D + pilot site**



**Products:** Industrial Ultrafast lasers



**DE - Cologne**

**Product line site**



**Products:** LIOS sensing systems



**CH - Zurich**

**Product line site**



**+ ALS Berlin site**

**Products:** Onefive ultrafast lasers



# Markets and products

## Imaging & Metrology

38% of revenue



**Bio-imaging & medical**  
**Semiconductor**  
**Industrial metrology**

Light sources and optical equipment to view  
microscopic details

Microscopes, medical, and industrial measuring  
instruments



SuperK &  
Fianium



Onefive

## Sensing & Energy

33% of revenue



**Energy**  
**Security**  
**Structural monitoring**

Temperature and disturbance detection

Optimisation of energy production, power cables,  
pipeline surveillance and fire detection



LIOS DTS



Koheras

## Material Processing

29% of revenue



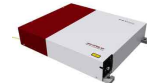
**Micromachining**  
**Medical**  
**R&D**

Highly accurate laser-based manufacturing

Mobile phone components, high-precision eye  
surgery



Onefive



aeroPULSE



aeroGAIN



# Imaging

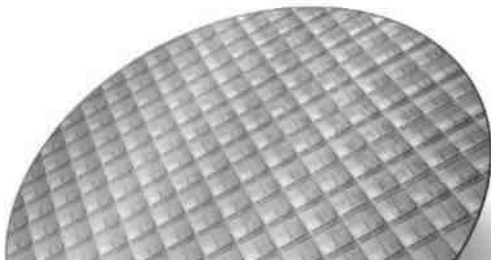
## Bio-imaging & Medical



Microscopy, cancer diagnostics,  
OCT, endoscopy, ophthalmology

Market size DKK ~5,500m  
CAGR 15%

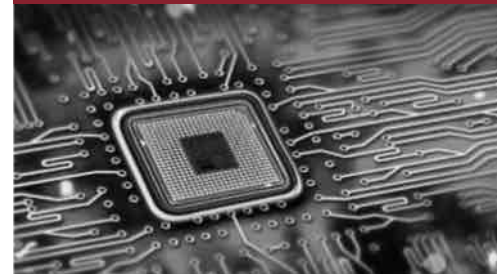
## Semiconductor



Metrology, lithography

Market size DKK ~300m  
CAGR 5%

## Industrial metrology



Microelectronics, sorting

Market size DKK ~1,250m  
CAGR 10%

# Sensing

## Energy



Power cables, wind farms, solar

Market size DKK ~750m  
CAGR 5%

## Security



Pipeline, perimeter

Market size DKK ~750m  
CAGR 4%

## Structural monitoring



Tunnels, metro lines

Market size DKK ~1,250m  
CAGR 6%

# Material Processing

## Industrial



Mobile, electronics, display

Market size DKK ~2,000m  
CAGR ~14%

## Medical



LASIK, cataract

Market size DKK ~750m  
CAGR ~30%

## Marking



Glass, metal, plastic

Market size DKK ~1,500m  
CAGR ~7%

# Moving towards industrialization

Past



- University laboratories
- Research institutions
- Pre-clinical studies



Present / Future

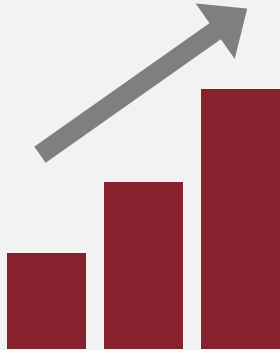


- Online characterization, sorting and quality control at production lines
- Semiconductor tools
- Equipment for medical procedures
- Industrial temperature monitoring and process control
- Large scale structural monitoring and fire protection
- Advanced monitoring and automatic load rating on high power cables

# Commercial strategy

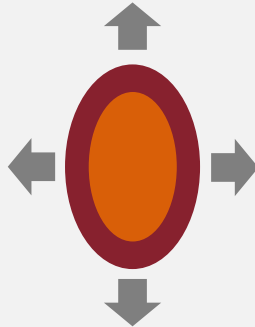
## Move up in value chain

Expand from supply of components to complete optical systems



## Focus on organic growth

Actively pursue growth opportunities within core organically and through partnerships



## LEAN Operations

Scalable manufacturing  
Commercial excellence



## Fast introduction of new products

Continued introduction of new products and technologies to meet customers' needs

