ENABLING THE FUTURE THROUGH LIGHT

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Custom Optical Solutions for Ophthalmic Applications

2020 EPIC Online Technology Meeting on Ophthalmology

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EXCELITAS TECHNOLOGIES®

OUR MISSION

Provide innovative photonic components and subsystems to global customers who seek the highest-performance solutions from a market-driven partner.

EXCELITAS TECHNOLOGIES®

Excelitas at a glance

~$950M
Revenue

~7,000
Employees

17
Factories

Our Origins in Photonics

1947

Originates from MIT

professors establishing the opto-electronic cornerstone of EG&G

1999

Analytical Instrumentation Division, PerkinElmer

EG&G acquires the Analytical Instrumentation Division of PerkinElmer, assuming the PerkinElmer name

2010

Excelitas Technologies Corp. spins-off from PerkinElmer through private equity firm Veritas Capital

A Heritage in Strategic Growth

2010 — EXCELITAS TECHNOLOGIES®

2012 — Excelitas acquires Kaiser Systems and Carsan Engineering

2013 — Excelitas acquires Qioptiq

2013 — Excelitas Acquires Lumen Dynamics

2017 — AEA Investors acquires Excelitas from Veritas Capital

2018 — Excelitas acquires Research Electro Optics

2019 — Excelitas acquires Axsun Technologies

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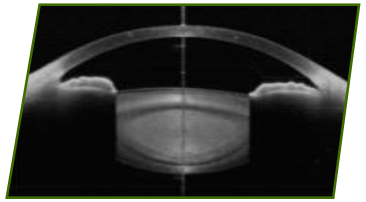
Extensive Expertise in Ophthalmology

We understand ophthalmic applications

- Retinal imaging and laser treatment
  - Fundus photography
  - Scanning laser ophthalmoscopy
  - Optical coherence tomography
  - Retinal photo coagulation
- Femtosecond-laser refractive and cataract surgery
  - Laser micro-keratotomy
  - Capsulotomy, lens fragmentation
- Eye biometry
- Surgical microscopes, slit lamps



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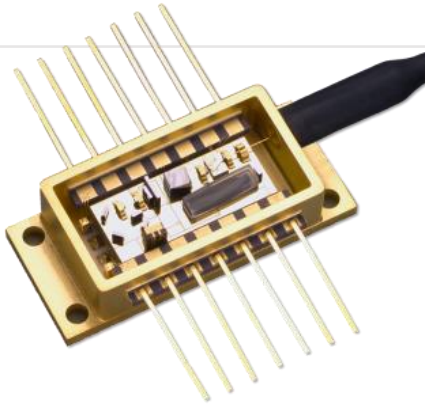
Excelitas Technologies for Ophthalmology



Addressing the needs of ophthalmic applications

Optical coherence tomography systems

- Axsun OCT swept laser engines
- Axsun OC data acquisition

Photon detection

- Avalanche Photo Diodes, with available TIA inside the TO-can
- Balanced receiver modules
- Single-photon light detection (SPCMs)

LED illumination systems

Complex custom-designed integrated optical systems

- Multiple beam paths
- Scanning
- Motorized functions

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OEM Optical System Product Examples

Laser Beam Delivery Systems for Femtosecond Laser Cataract and Refractive Surgery

Typical scope

- Laser beam path
  - X-Y-scanning
  - Diffraction-limited focus (>80% Strehl ratio)
  - High numerical aperture (up to NA 0,6)
  - Large field of view (up to 12mm)
  - Wide focusing range (up to 10mm)
- Diagnostic beam paths
  - Live image of the surgical field
  - OCT process monitoring
  - Laser power monitoring
- Surgical field illumination

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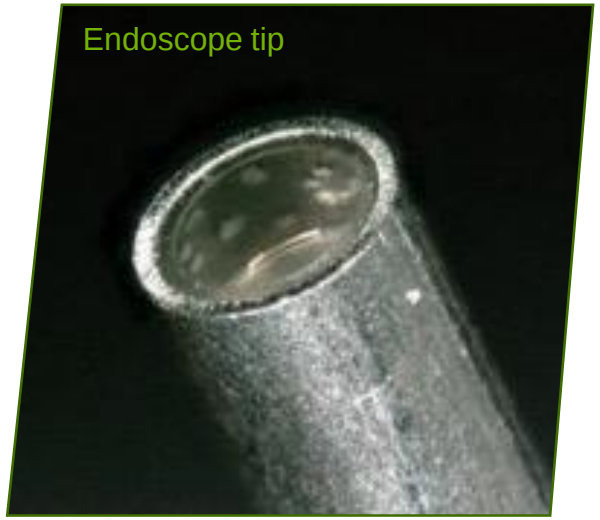
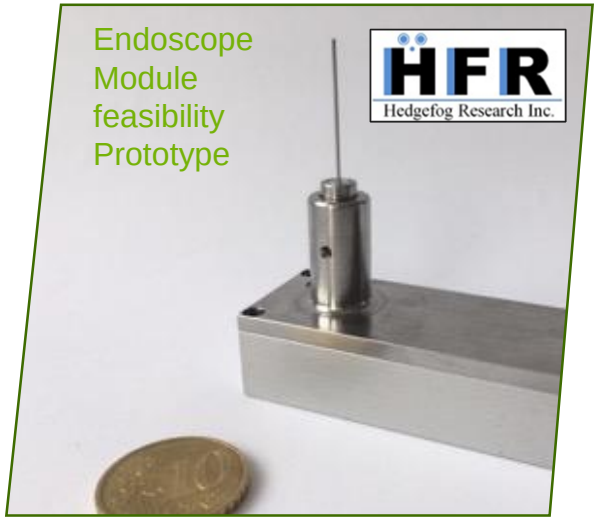
OEM Optical System Product Examples

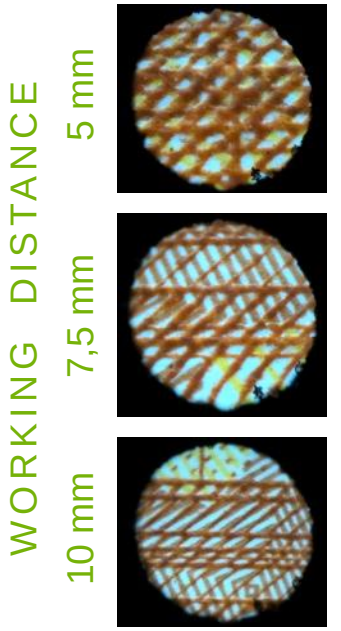
Needle Endoscope Feasibility Prototype (not for sale)

- 0.6mm outer diameter (23-gauge)
- 25mm needle length
- 5 – 10mm working distance
- 1.6mm – 3.2mm field of view
- Unprecedented image resolution





Test Images
(detail of 50€ bill)



Product by Hedgefog Research, Inc. Executed by Excelitas Technologies

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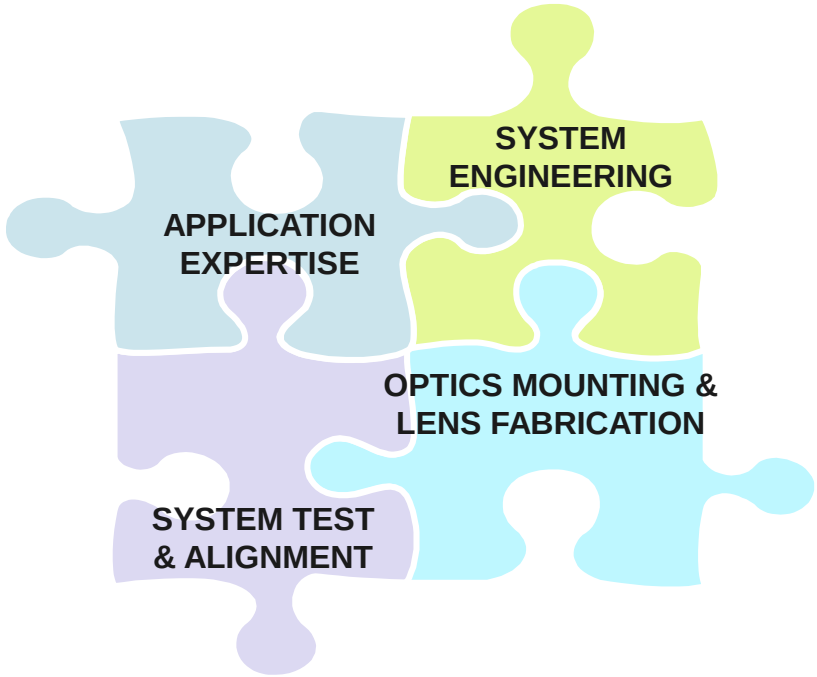
Enabling your Go-to-Market Vision

- Product Conceptualization
- Design and Consultation
- Optical Design
- Component Design & Manufacture
- System Integration
- Prototyping
- Volume Production



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The EPIC Question

What we seek

- Customers to challenge our photonic design and technological capabilities in the development and manufacture of groundbreaking products for ophthalmology and other medical disciplines
- New technologies that complement our portfolio and help us tackle new challenges and keep building cutting edge medical products

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Questions?

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