



## Light Emission and Detection Solutions

for Clinical Diagnostics, Life Sciences  
and Analytical Instrumentation

Helping You Focus on  
Unlocking the Mystery

**EXCELITAS**  
TECHNOLOGIES



Sharing in Your Commitment  
to Finding Answers.



# Excelitas— Your Partner for Illumination and Detection Solutions

At Excelitas Technologies, we share in our customers' commitment to finding answers.

We provide leading OEMs with broad expertise in both light emission

and detection. Excelitas offers you a variety of light engine design options including both Xenon and solid state. On the detection side, Excelitas' growing range of technologies and products for low light level detection are ideally suited to your demanding clinical diagnostics, nucleic acid amplification, fluorescence and luminescence, and analytical instrumentation needs.

You can turn to Excelitas for answers so you can focus on unlocking the mysteries around disease and treatment.

## Unequaled Expertise and Global Resources

Our customers benefit from the power of Excelitas' sixteen global Illumination and Detection design and manufacturing sites in North America, Europe, and Asia.

We provide a host of components and sub-system design and manufacturing capabilities for OEMs in the life sciences and drug discovery, clinical diagnostics and analytical instrumentation fields including:

- Broad expertise in light management – UV/Vis, NIR and IR
- A variety of light engine design options – Xenon, LED-based and more
- Broad range of cutting-edge photon detector technologies and products – Avalanche Photodiodes (APDs), Single Photon Counting Modules (SPCMs), Channel Photomultipliers (CPMs), and Silicon Photomultipliers (SiPMs)
- Photonic bench design
- Optical design and testing
- Mechanical, thermal and electrical design
- High-voltage pulsed power supply design
- Microprocessor and software implementation and development
- Applications-specific algorithm development
- Comprehensive design, manufacturing, and testing capabilities in ISO 9001-certified facilities





# Broad Portfolio of Lighting Solutions.

## Xenon Lighting Solutions

Excelitas is a trusted market leader in pulsed Xenon lighting for analytical instrumentation. From components to subsystem assemblies to turnkey OEM solutions, we offer a range of Xenon lighting solutions including:

### Complete Photonic Benches

- Standard UV/Vis Spectrophotometers
- Custom OEM Fluorimeters and Spectrophotometers

### Standard and Custom Xenon Light Engines

- New PAX Family of Precision-Aligned Xenon Modules
- RSL Family of Miniature Xenon Flashlamp Systems
- Flashpacs

### Components

- 1100 Series of Xenon Flashlamps
- Power Supplies



## LED Solutions

At Excelitas, we provide the level of solutions integration that you require. We specialize in customer-specific designs where we become a part of your engineering development team, all to help you get your product to market faster. Our LED-based design and manufacturing capabilities include:

- Custom LED Light Engines
- Custom LED Packaging Using Advanced Chip-On-Board (COB) Technology
- Optical Design and Testing
- Thermal Management
- Mechanical Design
- Electrical Systems Design



## Pre-Aligned. Plug-and-Play. Hassle-Free.

At Excelitas, voice-of-the-customer (VOC) is not a simple “buzz word.” It is simply the way we work. We listened to you when you said you didn’t want to be building with nuts, bolts and screws – that you wanted to simply snap together pre-aligned modules.

With our new PAX Family, Excelitas is on the cutting-edge of providing OEM customers with pre-aligned and calibrated pulsed Xenon light engine modules. These plug-and-play modules – the PAX-6, PAX-10, and the newest PAX-10M – dramatically reduce your field service costs and down-time, eliminating cumbersome optical adjustments in the field.



# Cutting-edge Photon Detection Solutions.

## L<sup>3</sup>D – Low Light Level Detection Solutions

### Avalanche Photodiodes (APDs)

Excelitas' APDs are ideal for low light level detection applications. For instance, our new large area Short Wavelength-enhanced Si-APD – C30739ECERH – is intended for use in demanding Molecular Imaging and Fluorescence Detection applications.

### Channel Photomultipliers (CPMs)

Excelitas' new Gigahertz Photon Detection Module (GPDM) offers OEMs lowest noise and highest dynamic range for demanding luminescence and fluorescence measurements, all in a single module solution. Our family of Photon Counting Modules incorporating CPMs provides customers with a

state-of-the-art solution for high-level photon counting with lowest dark noise limits in clinical and analytical application.

### Single Photon Counting Modules (SPCMs)

Excelitas' cutting-edge SPCMs deliver high Photon Detection Efficiencies (PDE) and very low dark noise for confocal microscopy, particle sizing and time-correlated single photon counting (TCSPC) applications.

### Silicon Photomultipliers (SiPMs)

Excelitas has recently entered into an exclusive agreement with Max Planck Innovation for the licensing of its ultra-fast, low pixel cross-talk SiPM technology. Our SiPMs offer record-setting PDE, ultra-short response time and high QE, making it applicable to a variety of L<sup>3</sup>D applications. SiPMs offer OEMs the emerging solid state alternative to traditional PMTs in terms of sensitivity and cost.



Helping You  
Focus on Unlocking  
the Mysteries.



# Focusing on Your Markets with Customer-Specific Designs and Expertise

## Clinical Diagnostics

Excelitas' broad lighting portfolio and cutting-edge portfolio of technologies for low light level detection – L<sup>3</sup>D – position us uniquely to serve the demanding stability and low noise requirements of today's leading Clinical Diagnostic OEMs. When it comes to diagnostic screening for a range of conditions from anemia to thyroid disorders to cardiac disease, Excelitas Technologies' lighting and detection solutions are helping OEMs to improve quality and efficiency and reduce the time it takes to produce patient test results.



### Excelitas is partnering with a leading global Clinical Diagnostics OEM

to supply a Xenon-based high output illumination system and CPM-based low light level, low dark current detector, maximizing the system signal-to-noise (S/N) and system performance. We are currently developing a solid-state illumination solution for the next-generation instrumentation to provide superior stability, long life, and reduced cost.

## Life Sciences

Excelitas offers a wide array of illumination and detection solutions – inside the box – giving our OEM customers the freedom to think outside the box. We provide OEMs with full turnkey photonic benches that emit, control and detect light. Using tools such as our guided arc Xenon and photodiode arrays as part of a custom UV/Vis Spectrophotometer, we are able to rapidly help you surmount potential issues around drift and thermal stability at the system level.

Capabilities include:

- Optical Design, Modeling, and Testing
- Both Xenon and LED Solutions



The race for faster, lower cost DNA sequencing is on. This will lead to tailored, highly customized disease prevention. Excelitas is currently partnering with an innovative, new company targeting 4th generation genomic sequencing with a custom LED-based Solution. **Excelitas understands the advantage of speed when it comes to design-ins for life sciences and drug discovery.**

# Helping Detect Disease and Manage Patient Conditions. Faster.

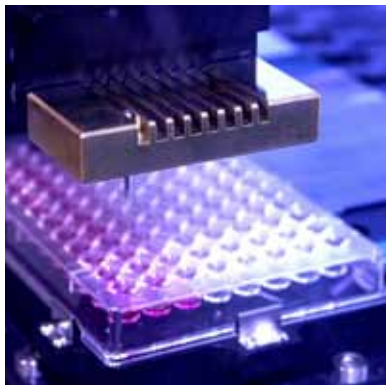


## Lab Automation

Microplate-based solutions are increasing productivity in the life sciences, pharmaceutical drug research, and disease analysis, with the goal of better understanding biological processes at the molecular and cellular levels. Excelitas' illumination and detection solutions are well-suited for designing into today's microplate readers and high throughput screening instrumentation.

Products include:

- APDs
- CPMs
- Xenon Light Engines
- LED Solutions



## Analytical Instruments

Excelitas has a long history of successful OEM design-ins in analytical instruments. Working hand in hand with our customers, we supply everything from components to full photonic solutions, customized to meet the specific technical and commercial requirements of our OEM partners.

Applications include:

- UV/Vis Spectroscopy
- Liquid Chromatography
- Colorimetry
- Time-resolved Fluorescence (TRF)



For over a decade, we have been providing custom Xenon assemblies to a world leader in microplate reader instrumentation; we have successfully provided ten Xenon-based designs for newly developed generations of instruments. **Excelitas' product design and engineering capabilities make us the number one choice for lighting solutions in microplate reader technology.**

Excelitas' OEM partner was experiencing significant manufacturing consistency and nagging drift issues in assembling an in-house UV/Vis Spectrophotometer. Based on our proven guided arc Xenon and photodiode array-based detection technologies, Excelitas was able to fully redesign the UV/Vis Spectrophotometer inside their unit. This resulted in **significantly reduced costs, cycle time, and an enhanced ability to react to their customers' requirements.**

## About Excelitas Technologies

Excelitas Technologies is a global technology leader focused on delivering innovative, customized solutions to meet the lighting, detection and other high-performance technology needs of OEM customers.

From analytical instrumentation, clinical diagnostics and life sciences applications to medical lighting, industrial, safety and security, and aerospace and defense applications, Excelitas Technologies is committed to enabling our customers' success in their specialty end-markets. Excelitas Technologies has approximately 3,000 employees in North America, Europe and Asia, serving customers across the world.

The company was previously the Illumination and Detection Solutions (IDS) business unit of PerkinElmer, and is now owned by Veritas Capital.

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