X-Cite®
Fluorescence Illumination • In Control

X-Cite XLED1

Advanced LED Illumination for Fluorescence Microscopy

Setting the standard in LED illumination

High powered LED solution for optimized fluorophore excitation

Unmatched field uniformity at the specimen

Plug-and-play modularity to evolve with future applications

Rapid wavelength switching to capture fast cell dynamics

Flexible triggering for sequential or simultaneous imaging

Extended live-cell imaging with limited photobleaching and cellular damage

EXCELITAS
TECHNOLOGIES®

X-Cite® XLED1 represents the industry's next generation of LED illumination for fluorescence microscopy applications. The X-Cite XLED1 offers superior LED illumination and advanced control for high-speed automated fluorescence imaging.

Harnessing the intrinsic advantages of solid-state LED technology, the X-Cite XLED1 provides unprecedented wavelength and power stability over extended lifetimes. Integrated with state-of-the-art technology that provides full control over LED intensity and signaling, the X-Cite XLED1 can trigger, or be triggered by, external hardware. By combining these features with an easy-to-use intelligent GUI or optional controller, the XLED1 offers maximum control with the convenience and versatility of an X-Cite.

Maximum power and individual LED control

The X-Cite XLED1 offers the ability to use up to four high-powered LED modules with fine excitation control allowing users to balance illumination intensity between channels while protecting specimens against photodamage.

Unmatched field uniformity at the specimen

The optimized X-Cite microscope adaptors for the XLED1 leads the industry in field uniformity without the need for alignment. Researchers are able to save time on maintenance while ensuring peace-of-mind in experimental results.

Adaptable plug-and-play modularity

The X-Cite XLED1 offers the flexibility to evolve with changing application needs through a unique plug-and-play modular system design. Each LED module and excitation filter can be quickly swapped in the field for another wavelength depending on the needs of your application, with no wires to reconnect and without the need for special tools.

Rapid wavelength switching to capture fast cell dynamics

Capturing fast cell dynamics when using more than one fluorophore requires automated wavelength switching and the speed of a motorized filter turret becomes a limiting factor. The X-Cite XLED1 is designed with the flexibility to interchange

individual excitation filters in each LED module allowing accelerated wavelength switching beyond the scope of motorized filter wheels into unprecedented microsecond speeds.

Flexible triggering for sequential or simultaneous imaging

The X-Cite XLED1 system offers a high degree of control over the individual intensity and triggering of up to four LED modules. Triggering sequences can be combined to simultaneously excite and image multiple fluorophores when examining very fast moving specimens or for live-cell ratio imaging.

X-Cite Live Cell Mode® cell mode to limit photobleaching and cellular damage

Researchers can extend the time frame of their live-cell imaging experiments by reducing the effects of photobleaching and cellular damage. The XLED1's X-Cite Live Cell Mode® can reduce the degree of free radical formation caused by the continuous illumination of fluorescent proteins.

Bundled Systems to meet your needs

To simplify system selection, the XLED1 offers three bundled configurations as standard options that are designed to address primary fluorescence applications. These bundles provide a complete system solution with the following components included:

- X-Cite XLED1 base unit and GUI software
- Four LED modules and appropriate dichroics
- One liquid light guide and microscope adaptor
- Set of four excitation filter holders

Researchers also have the flexibility to tailor an XLED1 system as necessary to meet the needs of their application.

LED Spectral Profiles
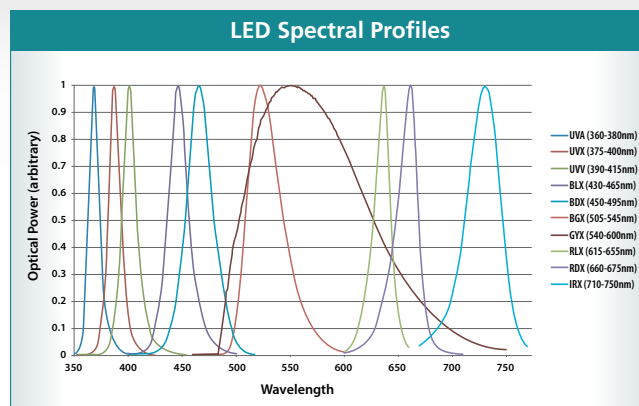
LED Module	Excitation Range-of-Use	Bundled System Configurations		
		Live Cell	Fixed Cell #1	Fixed Cell #2
UVA	360-380 nm		•	
UVX	375-400 nm			•
UVV	390-415 nm			
BLX	430-465 nm	•		
BDX	450-495 nm	•	•	•
BGX	505-545 nm	•		
GYX	540-600 nm	•	•	•
RLX	615-655 nm		•	•
RDX	660-675 nm			
IRX	710-750 nm			

LED Touch Screen Controller

Ease of Use and Control Options

To enhance the user experience and simplify system integration, control of the X-Cite XLED1 is supported by most market leading imaging software suites. An optional touch screen controller is available that features an intuitive interface and access to advanced system status and controls; a PC version of the GUI is also included with the XLED1.

System control through proprietary software is also available through the use of a Software Development Kit (SDK) available upon request.

TECHNICAL SPECIFICATIONS

X-Cite XLED1 configurations includes:	X-Cite XLED1 illumination system, optional XLED1 touch screen controller, four modules, user manual (CD) with GUI and USB driver, quick start guide, liquid light guide, microscope adaptor, power cord, four excitation filter holders, USB cable

X-Cite XLED1 System

Wavelengths:	Wavelengths and configurator available at http://ldgi-xcite.com/products-xled1-configurator.php
Dimensions:	8.5" (W) x 8" (H) x 15" (D) (22cm x 20cm x 39cm)
Weight:	~7.3kg, ~16lbs (full system)
Supply:	Universal input of 100-240Volts AC, 50-60Hz. Fused at 6.3A
Connectivity:	USB type-B female Trigger Input BNC (TTL-compatible) Sync Output BNC (TTL-compatible) } *Optional cables required*
Triggering:	Internal/External User-defined per channel Global trigger input User-defined free-running or single shot pulse modes Internal triggering generated from internal pulse generator 10µs (min), up to 18 hours (max)
Sync Out:	Mapped echo of LED cycles on separate output pins
Sync Out Phase Control:	Individual control of sync phase advance/retard (half of max cycle duration)
Channel Switching Speeds:	USB < 1ms; Internal/External TTL Triggering down to10µs
Minimum Duty Cycle:	10µs

X-Cite XLED1 Touch Screen Controller (Optional)

Screen:	Medical/Industrial grade 7" touch screen; 16:9 aspect ratio and LED backlight with adjustable intensity
Resolution:	800 x 480 pixels
Display Viewing Area:	6" (W) x 3.5" (H) (15cm x 9cm)
External Dimensions:	8" (W) x 2.5" (H) x 5.5" (D) (20cm x 7cm x 14cm)
Program:	Excelitas Technologies proprietary graphical user interface
Connectivity:	~2.5m connectorized power and data combo cable
Power:	<10 watts
Certifications:	CE Marked, Certified to IEC, Canadian and US standards, RoHS compliant
Warranty:	X-Cite XLED1 System, XLED1 touch screen controller and XLED1 LED drivers: 12 months from shipping. LED modules: 20,000 hours or 3 years

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