SPECTRAPRODUCT

January 2011

precision

Lumencor's first extension of the SPECTRA light engine timing capabilities for precise integration with cameras and synchronization with hardware from third party manufacturers.

SPECTRA7 Light Engine

Camera Interface Accessory (CIA)

Camera Interface Accessory (CIA)

Systems integration with a new level of precision

lumencor®

State of the Art Solid Sate Lighting for Instrument Manufacturers

Lumencor's new Camera Interface Accessory (CIA) offers complete synchronization capabilities for the integration of SPECTRA light engines with third party equipment such as cameras. In keeping with our philosophy of providing life science instrument makers optics *solutions* for bioanalysis products, Lumencor now provides a customizable unit that functions as the timing control center for all imaging applications. The CIA leverages Lumencor's optical design and electronics expertise and our proprietary solid state light engines.

A primary concern of the biological microscopist is sample viability and well being. Delivering too much light to a sample can cause photo-toxic events which interfere with normal cellular processes and/or result in premature cell death. Too much light can also cause photobleaching of flourophores, limiting the duration of otherwise long term imaging experiments because probes have limited visibility after photobleaching.

Lumencor's SPECTRA light engines already reduce photo-toxic events that occur while imaging samples due to its spectrally pure outputs. The use of solid state technology eliminates stray UV and IR light that can damage cells.

The CIA takes the SPECTRA's timing and control to the next level of precision allowing the SPECTRA to run as master or slave in an imaging system. This direct control ensures the SPECTRA is perfectly synchronized with the camera for acquisition and that the biological samples are exposed to the minimum amount of light needed for a given experiment.

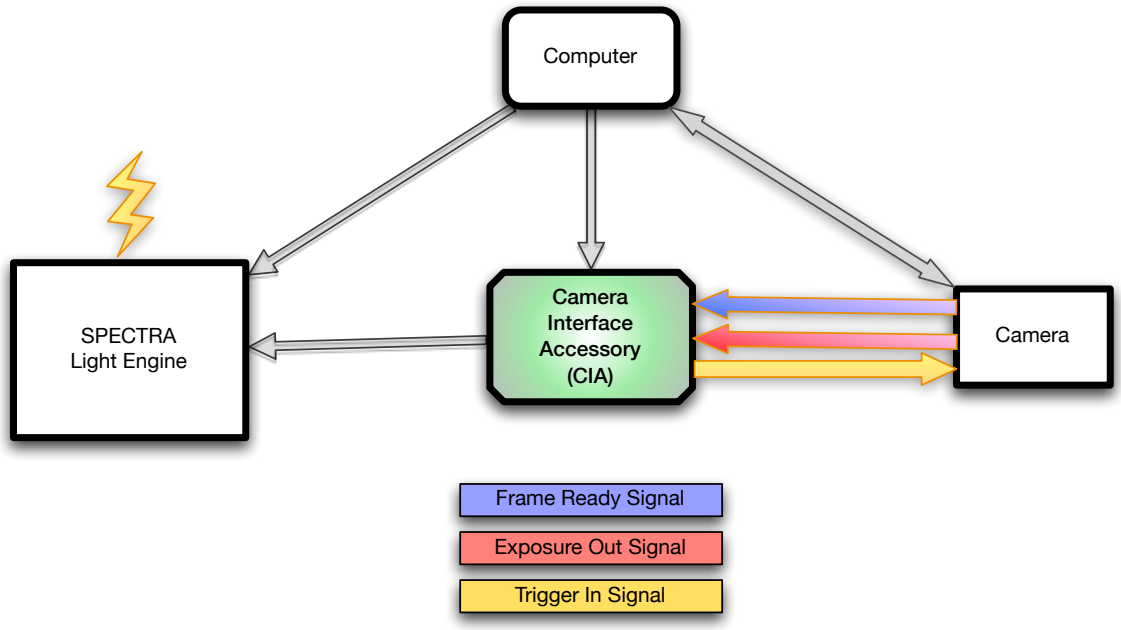
The CIA allows unparalleled performance in systems integration without difficult set-up or expensive 3rd party hardware.

Lumencor understands that biologists are concerned with the performance and viability of their samples during image acquisition. Cells can be both rare and/or difficult to grow and maintain, so each

CIA

The CIA allows the user to precisely time experiments to minimize the samples' exposure to light and to ensure constant illumination for quantitative imaging. In triggering the camera's exposure time via the CIA, the SPECTRA controls and synchronizes the timing of the instrument. This level of precision cannot be accomplished with traditional computer based clocking.

Camera Interface Accessory
Schematic Diagram



The schematic diagram shows a basic system interface using Lumencor's CIA to precisely control the camera while optimizing imaging speed. In this configuration, the SPECTRA can either be a master or a slave component of the system. In master mode, the CIA defines image capture duration via the camera's trigger input and uses the camera's exposure out signal to turn on and off the light engine. The CIA then repeats the trigger process when it receives the frame ready signal from the camera. In slave mode, the CIA monitors the expose out signal from the camera to turn on and off the light engine. Both of these methods eliminate delays in the image capture setup time. Moreover, they preserve sample viability by reducing the amount of light the sample sees during image acquisition.

experiment must yield accurate results for the periods of time needed by the biologist. In order to preserve sample viability, Lumencor has engineered the CIA to allow the tightest possible synchronization between camera and light source to limit the amount of light delivered to the sample to exactly the amount needed for image capture.

With the CIA, there is no longer a need to preprogram delays for gating the light source versus image capture; rather, the CIA takes care of precisely timing and gating capture such that no additional delays are required in which the sample may be unnecessarily illuminated by the light source.

The CIA is designed for flexibility. It enables the light engine to operate as either a master or slave component in the system with high-end imaging cameras from Andor, Photometrics, QImaging and others. Please contact Lumencor for questions pertaining to your specific camera.

In addition to gating the light engine and camera, the CIA can also be logically linked to other devices such as filter wheels and XYZ stages to reduce overhead and delays in image acquisition on more complex systems.

For additional information and pricing for the CIA, please contact Lumencor.

Lumencor, Inc.
14964 NW Greenbrier Parkway
Beaverton, OR 97006 USA
T 503-530-1008
E info@lumencor.com
www.lumencor.com