Pressemitteilung

OneLight Spectra – Control Made Simple

A Spectrally Programmable Light Engine

If you could instantly control the spectrum, intensity and timing of your light source, what could you achieve?

Replacing light created by a frustrating assemblage of mechanical devices, OneLight Spectra improves illumination systems using a patented software-driven light engine – or Digital Light Source – to achieve an entirely new category of illumination. Employing simple-yet-powerful software, precise spectral profiles are created. Illumination, intensity and exposure duration are under your complete control. And the result is nothing short of evolutionary.

- Instantaneous dynamic control over color, exposure and intensity
- Increased dynamic range of measurement
- Increased measurement sensitivity
- Sequential loading of multiple spectra
- Elimination of filters and shutters
- Elimination of repeated calibrations
- Expedited time to market for new tests and instruments
- Optimized imaging systems with reduced cost of components

THE EVOLUTION OF SPECTRAL CONTROL
SPLE technology marks a major departure from conventional light solutions. It allows for any desired mix of wavelengths (color) and intensity of illumination to be dynamically configured and instantly selected under software control to produce currently unattainable contrast, intensity, purity and range of color.

Able to respond faster than most cameras capture images, OneLight Spectra can improve the performance of most microscopy or spectroscopy imaging systems. Fully programmable, the range of wavelengths you can use is no longer defined by how many band-pass or neutral density filters your filter wheel can accommodate, or how fast you can change them. Wavelength requirements are defined using an intuitive software application, instead of the coating laboratory. In this sense, OneLight Spectra is like having a filter factory right at your fingertips, with none of the limitations.

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Profile view of the OneLight Spectra Spectrally Programmable Light Engine (SPLE).

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THE MECHANICS

OneLight Spectra employs a Cermax xenon lamp as its light source. Xenon has become the preferred illumination for multispectral imaging and many in vivo applications, because it provides the full spectrum of wavelengths. If your light source does not produce all the wavelengths that interact with the tissue, cells or chemistry you are working with, you will miss significant information. Unlike the choppy spectrum of LEDs, mercury or metal halide lamps, OneLight provides all the wavelengths in its spectral range, not just some of them.
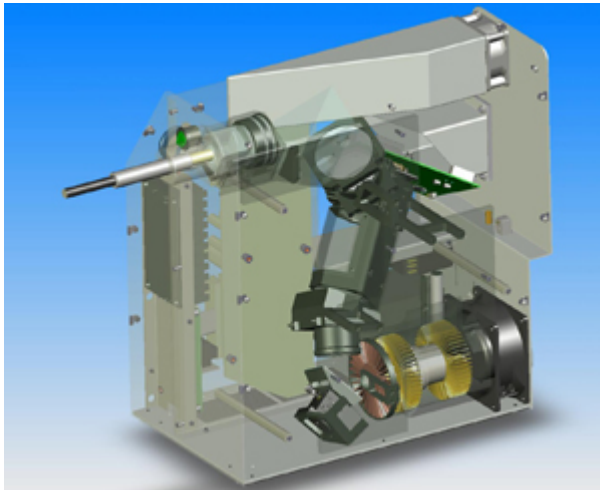
Under the hood, OneLight Spectra marks the complete integration of light source and spectral tuning optics – providing unprecedented functionality via a single, compact device under software control.

The mechanics behind OneLight Spectra are as simple as they are powerful. Light from the lamp in the SPLE is optically separated to produce the full spectrum that white light is composed of. This "rainbow" spectrum is then projected onto an array of mirrors formed on an integrated circuit.

The computer-controlled mirrors are switched on and off at high speed to change the color distribution projected from the mirror array. Turning on a single column of mirrors, for instance, turns on one wavelength. Since there are more than four columns per nm, and given that the spectral resolution of our standard devices is 10 nm (FWHM), there are about 30,000 mirrors for each wavelength region. This provides exceptional dynamic control of the range of output intensity at each wavelength.

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SOFTWARE CONTROL

OneLight Spectra comes with an intuitive software interface that provides easy command of the most commonly used functions of the instrument. Users can set up and save their own particular instrument configurations; recalling them quickly and easily to continue an experiment, without having to repeat the setup procedure. You can save and load any spectral profiles you create, as well as those from the libraries of spectral profiles that are provided to get you started.
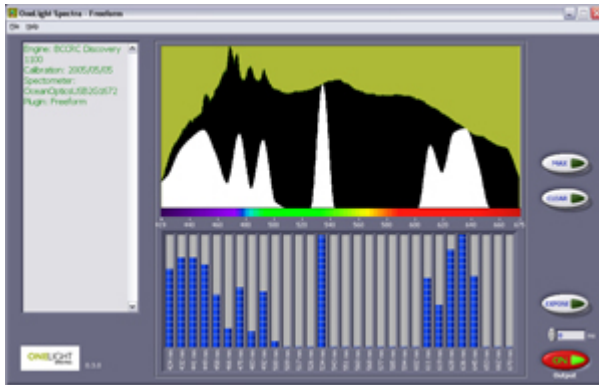
Spectral profile, intensity and duration of light are instantly controlled via OneLight Spectra's simple software GUI.

Profile view of the OneLight Spectra Spectrally Programmable Light Engine (SPLE).
The software is organized around a modular plug-in architecture, making it easy to add new features by simply adding new plug-ins. For example, the Tuner plug-in provides selection of wavelength bands or "filter functions" that are the digital light equivalent to short-pass, long-pass, band-pass or notch filters, and are just a few mouse clicks away.

Freeform is another plug-in that provides a graphic equalizer-type application for the construction of arbitrary spectral profiles on the fly. You can also construct spectral profiles from data you have measured, created or captured in any other manner. For those who want to add functionality and develop software for their own applications, we provide an optional SDK that gives programmatic access to all the functions available.
Simply put, creating light has never been this easy. And once you have experienced the simplicity and flexibility with which you can create light using OneLight Spectra's software, you will never want to do it any other way.

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APPLICATIONS

- MOLECULAR DISCOVERY
- CELLULAR RESEARCH
- PATIENT CARE
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Replacing complex assemblies with a simple module that is fast, that uses software to select wavelengths, and that can be integrated at equal or lower cost than existing systems provides a set of compelling advantages for OneLight Spectra. To this end, our technology is opening new doors to discovery for countless life science applications and techniques - in specific areas that range from Molecular Discovery, to Cellular Research and Patient Care.

About OneLight Corp.
OneLight™ is committed to the development of breakthrough digital imaging technologies for life science and clinical applications. OneLight has developed a color-programmable light engine that instantly provides any desired mix of wavelength (color) and intensity of illumination. OneLight's revolutionary technology platform will dramatically improve diagnostic capabilities in medicine.

About Laser 2000 GmbH:
LASER 2000 GmbH specializes in distribution of laser sources, accessories, components and instrumentation in the area of industrial vision equipment, fibre optics, instrumentation, telecommunications, measuring devices, scientific research etc.

LASER 2000 GmbH comprises of 60 people, within four locations in Germany. A highly skilled technical Sales Team as well as a dedicated Customer Support Team provides its clients with the highest level of service and Know-How. Equipped with a laser applications room, an electronics lab, an ESD area, local inventory and spare parts the clients have a strong local partner that is highly focused on customer satisfaction. For more information, please visit our Website: www.laser2000.de

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