

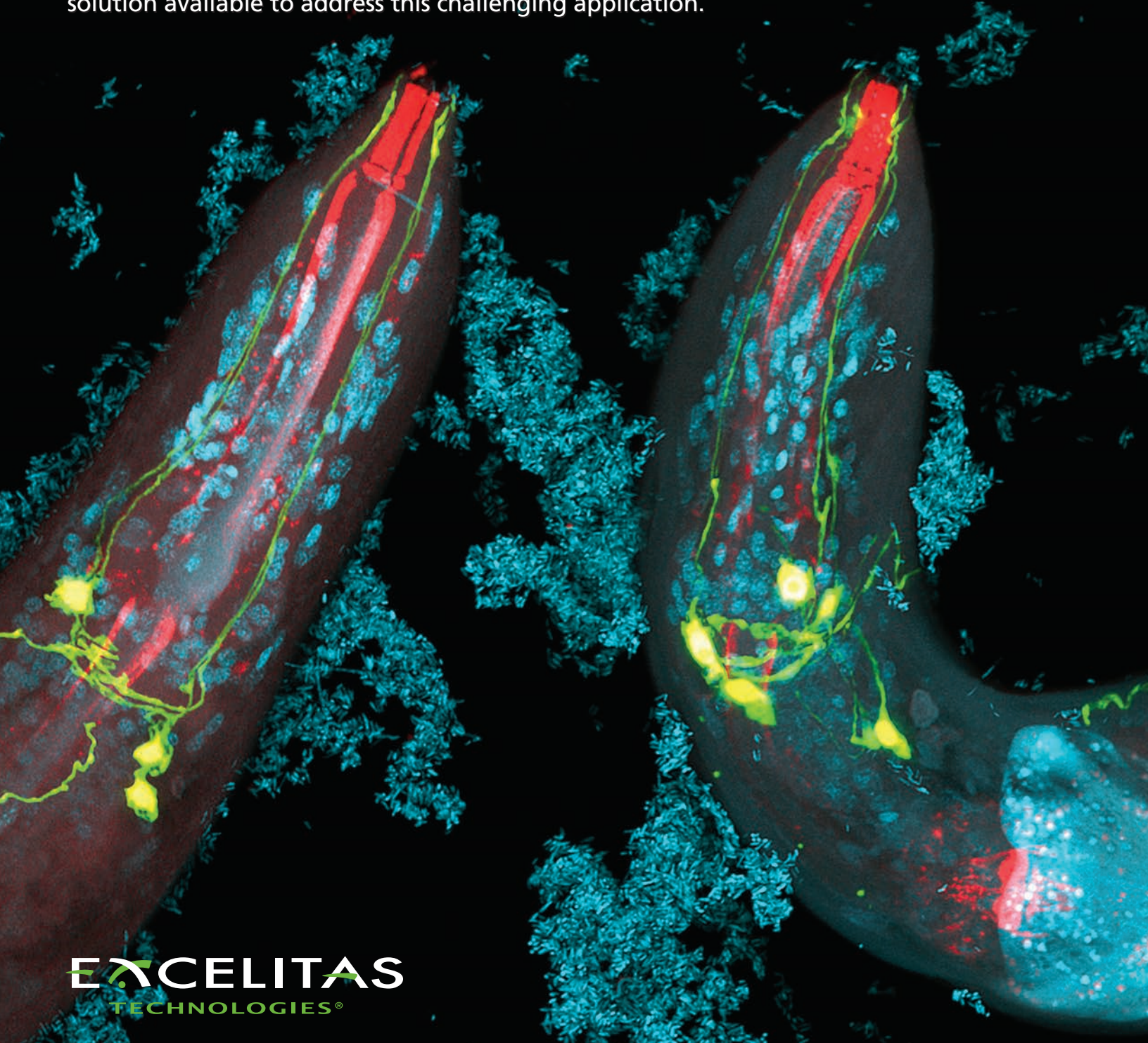
X-Cite®

Fluorescence Illumination • In Control

Fluorescence Stereomicroscopy

Application Overview

Fluorescence stereomicroscopy has traditionally relied on mercury lamps for the high power illumination required over a large field of view. Now there is a mercury-free LED solution available to address this challenging application.



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The Challenge

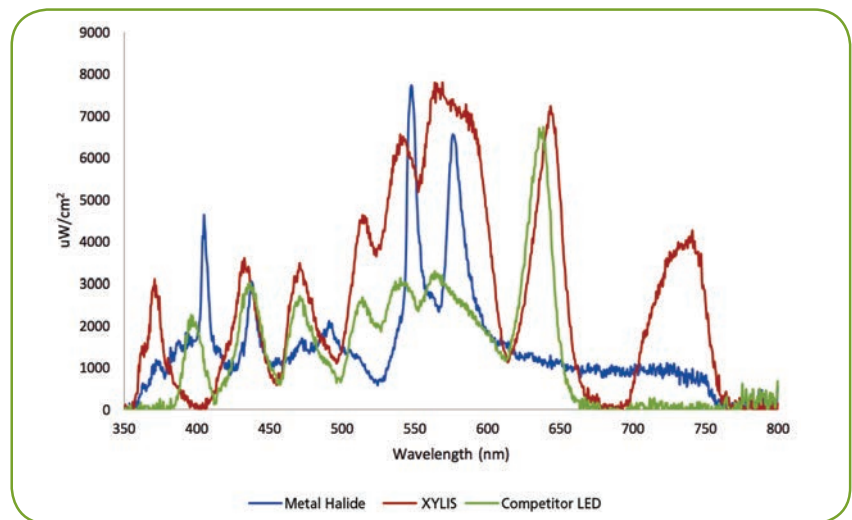
Fluorescence stereomicroscopy

The stereomicroscope or dissecting microscope is a microscope designed for low magnification observation of large samples. Stereomicroscopes use light reflected from the surface of an object rather than transmitted through it, enabling visualization of opaque or fluorescence samples. The instrument uses two separate optical paths with two internal objectives and eyepieces to provide slightly different viewing angles to the left and right eyes, allowing for three-dimensional visualization of samples. Long working distance and large field of view are critical to function in these microscopes, therefore requiring a powerful light source for illumination. In addition, living samples are often studied under this microscope, and care must be taken to avoid sample exposure to harmful UV wavelengths wherever possible.

The Solution

The newest X-Cite® system, X-Cite XYLIS is the strongest broadband illumination system available. Using **LaserLED Hybrid Drive® Technology**, it provides a powerful spectrum comparable to traditional mercury lamps enabling applications that were previously limited to utilizing lamp technology. Proven stereomicroscope tests with the X-Cite XYLIS include live *C. Elegans* and zebrafish expressing green, yellow and red fluorescence proteins. Additionally, the X-Cite XYLIS has a “UV off” mode which turns OFF the UV wavelength in the system, allowing researchers to image only with visible wavelengths, causing less sample damage from phototoxicity. Live samples are not labeled with DAPI as it intercalates with DNA and is toxic, negating the need for UV excitation when imaging these samples.

Mercury Arc Lamp vs X-Cite XYLIS



Spectrum of mercury arc lamp (red) vs. X-Cite XYLIS (green).

X-Cite XYLIS vs. metal halide lamp: Power measured at the sample plane

Nikon SMZ1500 with <i>C.Elegans</i>	X-Cite XYLIS	X-Cite 120PC
GFP	45mW	24mW
RFP	61mW	44mW

Why Use X-Cite XYLIS for Stereomicroscopy?

- Trusted X-Cite brand for superior images.
- Bright fluorescence signals over time (months, years) without having to replace lamps.
- Instant ON/OFF eliminates the need to wait for your system to warm up or cool down before it is ready to use.
- 1% intensity control with convenient hand controller allows each user to set a comfortable intensity level to help reduce eyestrain while working.
- Optional foot pedal is available.