

# X-Cite®

Fluorescence Illumination • In Control

## Fluorescence In-Situ Hybridization Microscopy

### Application Overview

Fluorescence in-situ hybridization microscopy has traditionally relied on mercury lamps for the high power illumination required to image subcellular fluorescence. With advancements in LED technology, there are now mercury-free LED solutions available to address this power-hungry application.

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## The Challenge

**Fluorescence In-Situ Hybridization (FISH)** is a technique that uses fluorescence to label nucleotides (DNA and RNA). This method allows researchers to image and locate proteins that have been expressed/transcribed (as DNA or RNA), providing spatio-temporal information about gene expression within cells and tissues. FISH signals can sometimes be low, depending on the protocol employed for staining the sample. As there are multiple fluorophores to be imaged in FISH, narrow-band filters are often used to enable signal separation, which also has the less-desirable effect of reducing the signal intensity. Thus, between potentially low signals and narrow-band filter use, a powerful illumination source is required to excite fluorescence in the sample.

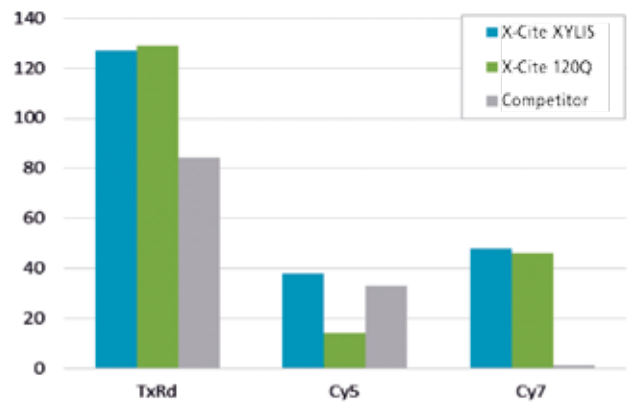
## The Solution

X-Cite® XYLIS with LaserLED Hybrid Drive® Technology. The unit uses Laser phosphor conversion to fill in the challenging “Green Gap” (540-590nm) where powerful LED excitation light was previously unavailable. In addition, the X-Cite XYLIS has boosted power in the following wavelengths: 385, 430, 460, 635 and 730nm to excite the wide range of fluorophores used in FISH.

### Why Use X-Cite XYLIS for FISH?

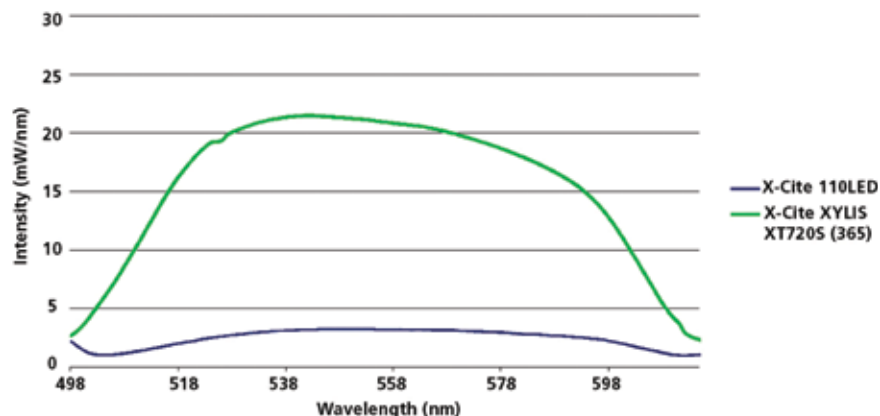
- Trusted X-Cite brand for superior images.
- Bright fluorescence signals long-term without having to replace lamps.
- Instant ON/OFF eliminates the need to wait for your system to warm up or cool down before it is ready to use.
- 1% intensity control with convenient hand controller allows each user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

### Comparison of Power



Comparison of power at the sample plane (Olympus BX50, 10X objective lens) measured using an X-Cite XP750 sample plane power meter.

### Green Gap



LED phosphor conversion technology increases power in the Green Gap.