

Prizmatix

Application Note #009

Microscope LED Illumination for Fluorescence Microscopy

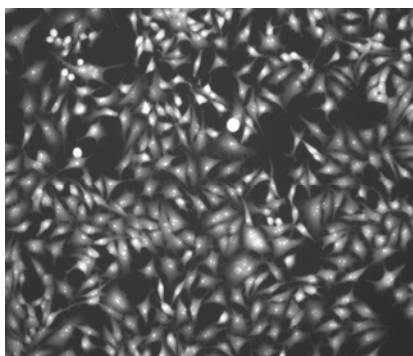
Compared to classic Hg Lamps

Classical Hg Lamps are gradually giving up their position to new illumination systems based on high-power LEDs. Prizmatix offers two series of microscope fluorescence illumination: the standard MIC-LED series and the new x10 brighter Ultra High Power UHP-MIC-LED series. Prizmatix's compact high power LED light source modules are an effective replacement of lasers and Hg lamps in many applications.

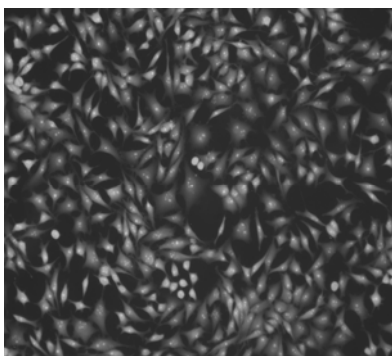
The images below were taken with an Olympus IX81 inverted microscope equipped with a Qimaging Retiga 1300R monochrome camera. Note that while exposure times between the arc lamp (middle) and High Power LED (right) were the same, while exposure times for the UltraLED were shorter (left).

Sample: Molecular Probes prepared slide #3 (Kidney) stained with Alexafluor 488.

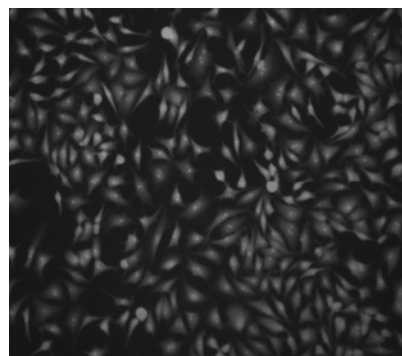
As demonstrated in the images below, the Prizmatix's Mic-LED is found to be similar to 50W mercury lamp, while the new UHP-Mic-LED is significantly brighter than 100W mercury arc lamp.



Prizmatix UHP-Mic-LED-460
Exposure time: 2500ms



100W Hg lamp
Exposure time: 5000ms



Prizmatix Mic-LED-480
Exposure time: 5000ms

(Images courtesy to G. Sobocinski, University of Michigan)

LEDs key features:

- Single chip LED
- TTL external triggering
- Excellent for fluorescence excitation
- Stable precisely adjustable power
- Long life (no lamp or laser tube replacement required)
- Speckle free
- Rapid warm up time

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