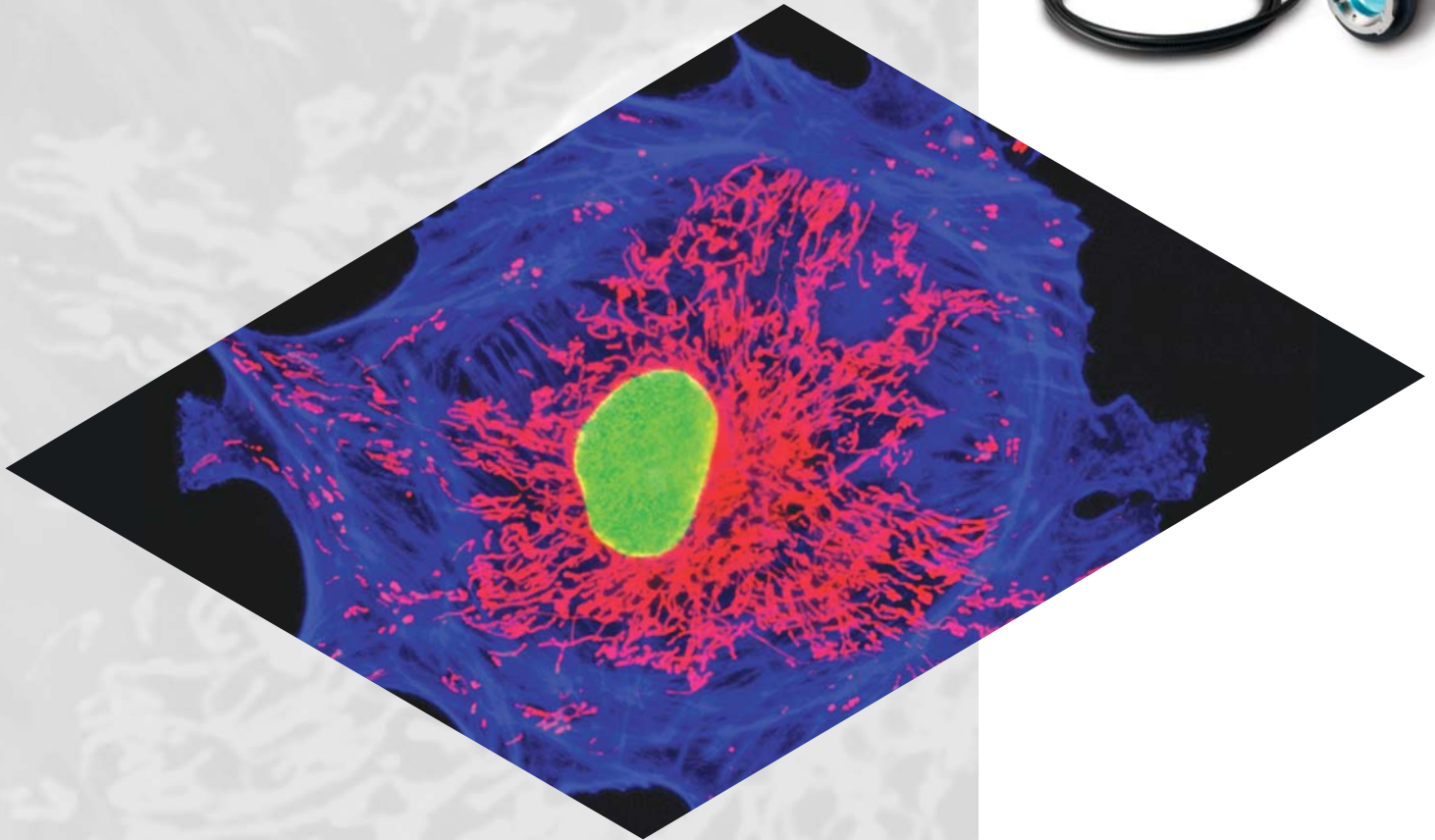


Lumen 200 Series

PRIOR
Scientific

Advanced Fluorescence Illumination



Lumen 200: Superior Fluorescence Illumination

Lumen 200 is a high performance, cost effective system for fluorescence illumination designed and manufactured by Prior Scientific. Prior Scientific has been manufacturing illumination systems for fluorescence microscopy for over 20 years. This wealth of experience has been used to design the most powerful, cost effective and flexible fluorescence illumination system on the market. Fluorescence has never been so easy.

The Lumen system from Prior has the potential to revolutionise the way you illuminate your fluorescently labelled specimens. It replaces, short life, hard to set up mercury and xenon illuminators with a system that really is state of the art in all respects with significantly lower running costs.

An advanced metal halide lamp produces a spectral output that closely mirrors traditional mercury (HBO) style lamphouses with intensity peaks that have a larger bandwidth leading to improved excitation. Each lamp is good for up to 2000 hours compared to a maximum of 300 with a typical HBO system.

Another major step forward is the way that the Lumen 200 series delivers the light to the specimen. By mounting the lamp away from direct mechanical contact with the microscope there is a marked reduction in heat transfer to the microscope making it more stable for long term experiments. The liquid light guide that links the lamphouse and microscope also homogenises the light meaning that bulb alignment is no longer critical and evenness of illumination is achieved without any user adjustments. Bulb changes, which already happen much less frequently, now take significantly less time to complete.

The Lumen 200PRO features an integrated motorised 6 position filter wheel for control of excitation wavelength and a variable aperture shutter for attenuation or shuttering of the light source.

Powerful 200W Illumination

A 200W metal-halide lamp gives a similar spectral output to more traditional (HBO) mercury vapour lamps with up to 20 times longer bulb life.

Long Life Lamp - Up to 2000 Hours

The metal-halide lamp is safe for use for up to 2000 hours. Sophisticated electronics mounted on every Lumen 200 lamp monitor the number of hours used and warn the user through both a visual and audible alarm, when lamp replacement is necessary.

Easy Lamp Replacement

Unlike mercury vapour lamps the lamps used in the Lumen 200 system require no precision arc alignment for them to provide bright and even illumination. Lamps are pre-centred, changes take only a few minutes.



Flexible Liquid Light Guide

A highly efficient 2m liquid light guide delivers full spectrum illumination from 350 to 650nm. Coupling adapters are available for all research microscopes. These adapters are also fully compatible with the complete range of filter wheels and shutters from Prior.



Low Heat Transfer

By mounting the Lumen 200 remotely from the microscope stand the amount of heat transferred is significantly lower. This aids stability and helps reduce drift due to thermal expansion in long term time lapse experiments.

Stabilised Output

The Lumen 200 features a stabilised DC power supply to drive the lamp. The very minor variation in output (< 1% at 27KHz) produced by this unit is undetectable during normal use. Some competing products feature AC power supplies which have a >25% drop in intensity every 1ms. This is easily detectable and makes any quantitative or comparative measurements unreliable.

Shutters & Attenuation

The Lumen 200 features a manually operated shutter mechanism that can be partially closed to attenuate illumination intensity protecting valuable samples from photo-bleaching. The Lumen 200PRO includes a motorised light attenuator which can also function as a high speed shutter. Light intensity can be quickly and reliably set in 1% increments from 0-100%.

Motorised Filter Wheel

The Lumen 200PRO features a built in, six position filter wheel compatible with all standard 25mm diameter filters for automated control of excitation wavelength. The unit is driven by the Prior range of ProScan, PCI and OptiScan advanced motor controllers allowing it to be combined with the highest performance scanning stages and focusing devices available. By removing the filter wheel and shutter from direct contact with the microscope stand problems of vibration, heat transfer and long settling times are practically eliminated.



Lumen 200 Features

Lumen 200

- 200W Metal Halide Lamp
- Up to 2000 Hours Lamp Life
- Fast And Easy lamp Changes
- No Complex Realignment Required
- Reduced Heat Transfer Giving Greater Stability
- Manual Light Attenuation
- Adapters For All Research Microscopes
- Higher Output than Traditional Light Sources
- Manual Variable Aperture Shutter
- DC Power Supply Ensures Stable Output

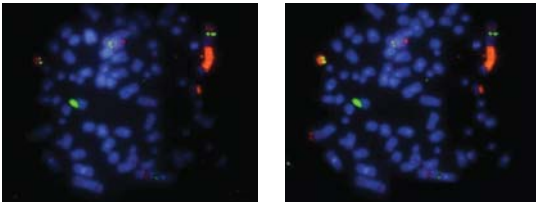
Lumen 200PRO

- Internal Motorised 6 Position Filter Wheel
- Fast Selection Of Excitation Wavelength
- No Vibration To Blur Images
- Computer Controlled Light Attenuation
- Driven by ProScan and OptiScan Controllers
- Motorised Variable Aperture Shutter



Lumen 200 Performance Data

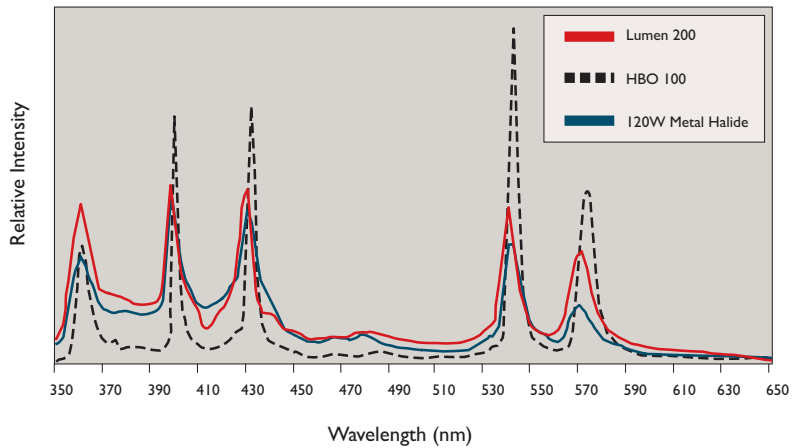
One of the common problems with the conventional fluorescence microscope light source is optimising and maintaining its proper adjustment to provide even illumination over the whole field of view. Uneven illumination becomes much more of a problem when using digital imaging. This is because contrast stretching used to bring out the signals from the background also enhances uneven illumination across the image. Note how the chromosomes in the left image become darker around the periphery of the image, the red signal on the left is nearly lost altogether.



Sub optimal illumination with conventional lamp

Even illumination with Lumen 200

Lumen 200 Spectral Output



CERTIFICATE NO: FM 61600
STANDARD: BS EN ISO 9001:2000



PRIOR SCIENTIFIC INSTRUMENTS LIMITED
3-4 FIELDING INDUSTRIAL ESTATE
WILBRAHAM ROAD FULBOURN CAMBRIDGE CB1 5ET
TELEPHONE 01223 881711 FAX 01223 881710

PRIOR SCIENTIFIC INC.
80 RESERVOIR PARK DRIVE
ROCKLAND MA 02370-1062
TELEPHONE 781-878-8442 FAX 781-878-8736

VISIT PRIOR ON THE WEB AT www.prior.com
Specifications subject to change without notice.

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