

CLARITY LFC

LASER-FREE CONFOCAL



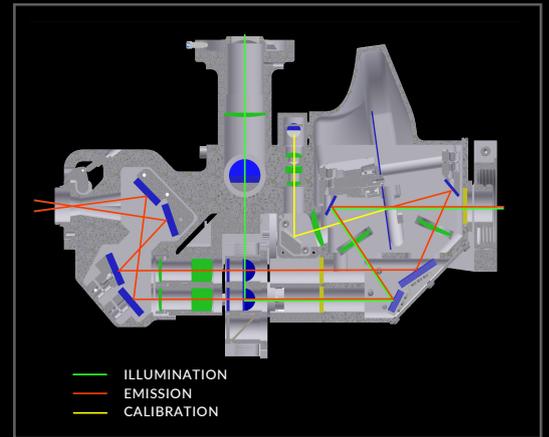
TECHNOLOGY

The Aurox Clarity laser free confocal unit uses Aurox's patented optical system, based on a new design of spinning disc with a grid-like structured illumination pattern. This structured illumination pattern is used to both modulate the illumination field and demodulate the light emerging from the sample.

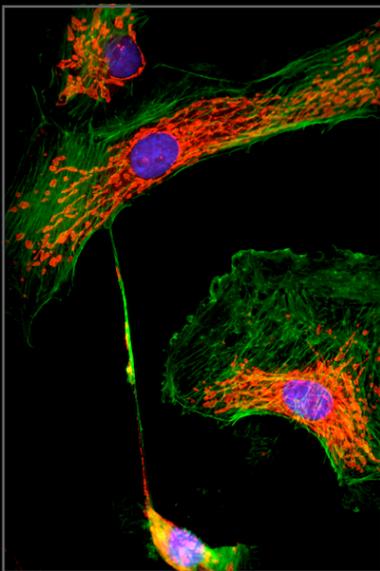
The unique optical system inside the Clarity LFC allows capturing of the images both transmitted (T) and reflected (R) by the disc to easily differentiate between in-focus and out-of-focus information. Computer subtraction of these images (T-R) creates a sectioned image whereby all out-of-focus blur is effectively

suppressed and only the sharp in-focus image of the sample is retained. At the same time a conventional image can be readily obtained by adding the two images (T+R).

The Clarity LFC demonstrates an impressive combination of speed and image quality: it is noteworthy that the optical sectioning of Clarity LFC is on a par with the more traditional (and significantly more expensive) point-scanning confocal microscopes. Using a spinning disc to generate structured illumination pattern removes problems related to image processing artefacts; this is one of the many benefits of the Clarity LFC approach.



Schematic diagram of the Clarity LFC



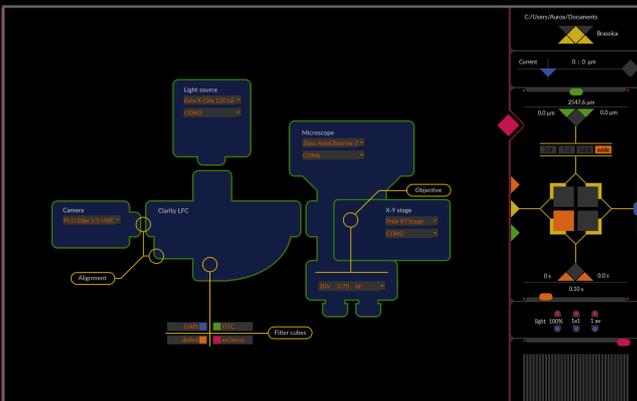
APPLICATION AREAS

The extended 370–700 nm range, high imaging speed, long uptime, low photo-bleaching and photo-toxicity make the Clarity LFC useful over a wide range of applications. These include:

- Immunofluorescence
- Electrophysiology
- Embryology
- Developmental biology
- Plant tissue imaging
- Fluorescent protein dynamics
- Motility and chemotaxis assays
- Cytoskeleton and membrane dynamics

KEY SPECIFICATIONS

Confocality	0.6 μm (FWHM) with 1.4 NA oil immersion
Disk speed	3000 rpm
Min exposure	20 ms (1 full disk rotation)
Max frame rate	22 fps (12-bit confocal, 2.3 MP, no binning) 50 fps (2x2 binning)
Imaging channels	4 user-replaceable cubes on an internal turret
Channel switching	<200 ms
Excitation range	370 - 700 nm
Emission range	410 - 750 nm



VISIONARY SOFTWARE

The Aurox Visionary software has been specially developed for the acquisition of live cell imaging data using the Aurox Clarity LFC unit as part of a laser free confocal microscopy system. Designed with simplicity and ease of use at its core, the software provides a single graphical user interface, which relates device and experimental settings directly to the connected instrument hardware.

The Visionary software provides tools for the optimisation and control of the imaging set-up and supports a wide range of experimental protocols: from high-speed movies to multi-channel multi-position time lapse stacks. Data integrity is ensured by robust storage algorithms that use OME TIFF file format and Bio-Formats compatible meta-data structures.

CONTACT