



# SOFTWARE

## Q9 ALLIANCE

License-free software for unlimited users. Multi-user platform for advanced image acquisition, editing and analysis.



Acquisition



Customisation



Visualisation



Editing



Analysis

## APPLICATIONS

- Software comes with default protocols for easier, faster use:
  - Default protocols are already configured, optimized and ready-to-use
  - Default protocols cannot be modified nor deleted, to avoid loss or confusion
  - Default protocols automatically appear when modules are incorporated into the system
  - Choose from numerous default protocols: Chemiluminescence, UV Fluorescence, Blot Marker, Conversion Screen, Chroma Blue, Chroma Green, Chroma Red, Chroma InfraRed, Epi-UV... depending on system configuration
- Create single or multi-channel/sequence protocol to study either one or several dyes at a time:
  - Automatic sequential imaging for multi labelled sample & automatic multiplex acquisition and analysis capabilities
- Define/modify/customise/delete as many user-defined protocols as desired:
  - All parameters easily customisable to users' sample requirements and preferences
  - Change/adjust lighting, emission filter, lens aperture, camera sensibility, focus, display enhancements, image colour...
  - Use the camera's full 9-megapixel resolution or binning modes to increase sensitivity
  - Choose from numerous binning modes to customize sensitivity: 2x2, 3x3, 4x4, 8x8
  - Define a specific location for every single protocol to automatically save pictures
- Adjust button: quickly adjust a protocol's parameters (filter, excitation source, focus, sensitivity) for a single acquisition to save considerable time, without modifying the actual protocol or having to create a new one
- Extended resolution: effective pixels technology allows extension of camera's native resolution by software interpolation

## ACQUISITION

- Exposure of 0.1 second to 160 minutes or more
- Required camera cooling time inferior to 2 minutes (3-stage Peltier cooling system, -60°C regulated)
- 4 different acquisition modes to choose from, and easily switch from one to another
  - Auto acquisition mode:
    - Automatically selects the appropriate filters, light sources and camera settings for the application
    - 1-click image acquisition process (fully-automated) for extremely easy and fast image acquisition
    - Fully-automated capture: optimal exposure time is automatically calculated through advanced algorithm
    - Adjust manually the desired exposure time from the Auto mode suggestion
    - Focus on specific area, so exposure time is automatically recalculated based on selection
  - Manual acquisition mode:
    - Exposure time is entered as desired and can be easily adjusted at all times
    - Live & live-3D modes during acquisition with all fluorescence applications (live-picture displayed during acquisition)
  - Serial acquisition mode:
    - Choose between repetitive, incremental, accumulative and programmed modes
    - All modes fully customisable (number of images, 1<sup>st</sup> exposure time, incremental time, time gap between captures, whether to stop when saturation is reached or not...).
    - For instance: 1 exposure of 2 minutes every hour, or 10 images in a row with a 10-sec incremental time...
    - Catalogue: a series of acquired images is saved and easily accessible
    - Get kinetic graph to effectively monitor the enzymatic reaction on western blots
  - Preview acquisition mode:
    - Advanced live mode to preview sample and image direct visualisation
    - Easily position sample on the tray/table, and adjust the lens aperture and focus while positioning the sample
- Automatic add-marker function: automatically acquire signal + marker + final merged one (with all 3 pictures kept)

## VISUALISATION

- Autofit: untick the autofit button to view the whole image, regardless of the window size
- Zoom in or out on the image
- Visualise any picture in 3D:
  - Instantly check levels of signal and saturation
  - Apply a grid on 3D view to find out about the intensity of signals (shades of grey)
  - Quickly adjust 3D image colours with the palette button
- Compare images together:
  - Compare as many images as desired with a simple click
  - Compare images in 3D
  - Normalise all images to the designated reference one
- Click the saturation button to highlight the image's over-saturated areas in red
- Check the image dynamic at a simple glance
- Change the image display by modifying the image greyscale using 5 image pre-sets (100%, 80%, 60%, 40%, 20%)
- Inverse display option, to inverse the grey level of the image
- Adjust Gamma to better display details and lighting darker areas without burning out bright ones
- Pseudo colour display: replace original grey levels of the image by another palette (green, blue, red, multicolour)
- GLP (Good Laboratory Practice): retrieve all technical details about the image (date, exposure time, system, aperture...), print, save, export

## EDITING / POST PROCESSING

- Save images in tiff, tagged tiff, jpeg or bitmap format, 16-bit or 8-bit images
- Rotate the image with different tools: 90° left, 90° right, horizontal mirror, vertical mirror, rotate by angle...
- Add text: annotate images with text and arrows, modify font colour, select the text orientation
- Insert object: use an arrow, symbol or a rectangle to emphasize on a particular area
- Add the current time, or the GLP-file time to the image
- Crop the image: cut out a portion of an image
- Merge or paste a marker: choose and adjust the intensity and proportion of marker and signal
- Background subtraction: separate foreground objects from the background clutter
- Artefact correction: remove dust or small defect from an image
- Flat field: correct uneven illumination intensity for both background and signal

## ANALYSIS

- Free, unlimited analysis tools for Quantification and Molecular Weight
- Analyse chemiluminescent blots, fluorescent westerns, spot blots, 1D DNA/RNA gels, protein gels...
- Quantification with volume %, volume, intensity and area:
  - Quickly position boxes on top the bands of interest
  - Auto-save boxes selection, order and position for next quantification
  - Background subtraction option with user-friendly 1D graph, either rolling ball or linear
  - Add as many band separations as desired for one single box or apply to all bands at once to save time and use the same area across the image
  - Normalise by modifying the quantity of reference and choosing the band(s) of reference to compare others with
- Molecular weight:
  - For either horizontal or vertical gels
  - Easily select the desired number of lanes and optional gap between lanes
  - Automatic band detection, manually adjustable with user-friendly 1D graphs
  - Quickly create a new marker, save or load an existing marker
  - Easily choose the marker lane, then automatic or manual marker assignment
- All results and data exportable to Excel at a simple click
- Print, copy, save data