FRAP Key Features

<http://www.formulatrix.com/demosite/protein-crystallization/products/frap/index.html#tabbed-nav=tab2>

**Pre-Screen Crystallization Conditions**

One of the main factors for successful LCP crystallization is the ability of the protein to diffuse within the lipid bilayer. The diffusion rate of the protein is influenced by protein aggregation, structural properties of the LCP, and the chemical environment. The diffusion rate can be determined by Fluorescence Recovery After Photobleaching (FRAP), which measures the amount of time required for the fluorescence intensity of a tagged protein to reestablish itself within a small area in the LCP drop that has been subject to optical bleaching. Using FRAP you can screen your crystallization experiment in under 45 minutes to determine the mobile fraction of your protein and whether or not that condition is conducive to forming protein crystals.

**Easy Data Review**

The entire FRAP mobile fraction data is grouped into a canvas view with a color coded background to allow the user to identify positive wells at a glance. Users can mark positive wells in the software for future reference. In the example to the left, well H8 had the highest mobile fraction rate and is most likely to grow crystals. Well D12 had no mobile fraction and is the least likely to grow crystals.

**Dual Imager Setup with Rock Imager 1000**

[Rock Imager 1000](http://www.formulatrix.com/demosite/protein-crystallization/products/rock-imager-1000/index.html) can be expanded to include FRAP in the base of its chassis. The dual imager setup has the complete functionality of a FRAP benchtop imager and also includes an automated visible imager for routine imaging of crystallization plates. The Rock Imager can store and incubate up to 1,000 plates and can image plates in the visible imager while FRAP experiments are being performed in the FRAP cabinet. UV imaging can also be included in the setup.

**Precision Mechanics for Extremely Low Vibration**

Innovative structural design, advanced vibration damping materials, and special motor tuning work together to ensure extremely low vibration disturbance to the protein drop. All robotic microplate handling has been verified to cause fewer vibrations than a person carefully handling a plate.