

PerkinElmer Opera Phenix

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PerkinElmer Opera Phenix

Specifications

General information

Microscope type: Spinning disk confocal and widefield

Purpose: High-throughput and high-content imaging of multi-well plates with full automation

FPbase link: <https://www.fpbases.org/microscope/rBKjsuQSCGgSnZuxcGRYSh/>

Equipment information

Location: JSCBB C350C

Serial number: 1400L18161

CU Tag: UCB 214288 RC16

Sample types

Fixed Cells	Yes
Live Cells	Yes

Software

- Harmony v4.9

Environmental control

- CO2, Humidity, Temperature

Laser lines

- 375 nm
- 425 nm
- 488 nm
- 561 nm
- 640 nm

Filters

Emission				Example fluorophores	Vendor	Model number
Center (nm)	Width (nm)	Min (nm)	Max (nm)			
457.5	45	435	480	DAPI, BFP, CFP	Semrock	FF01-457/50
492.5	115	435	550	DAPI, BFP, CFP		
475	80	435	515	DAPI, BFP, CFP		
525	50	500	550	GFP, Alexa Fluor 488, FITC	Chroma	ET525/50m
600	60	570	630	TRITC, Texas Red, dsRed, Alexa Fluor 568	Omega	600BP60 RapidBand
705	110	650	760	Cy5, Alexa Fluor 647, Draq5		

Objectives

Magnification	NA	Immersion medium
5	0.16	Air
10	0.3	Air
20	0.8	Air
20	1	Water
40	1.1	Water

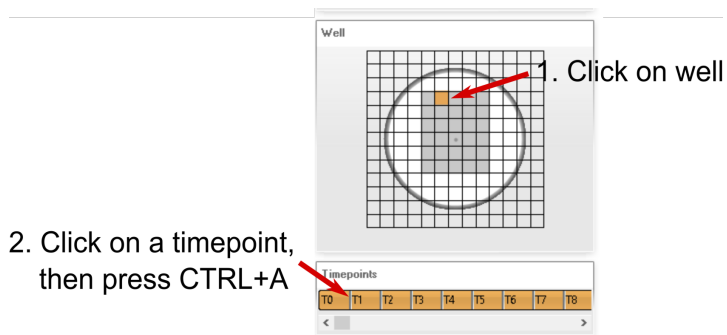
Detectors

- Andor Xyla x4 sCMOS camera

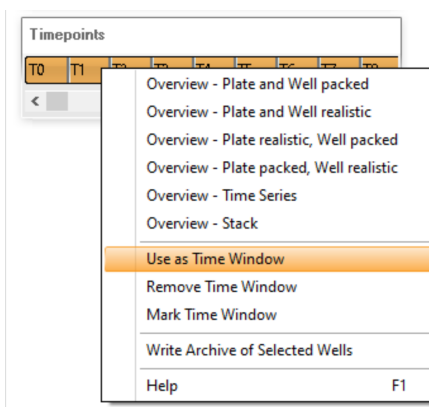
Exporting a video file

This document explains how to export a video file from a time-lapse dataset.

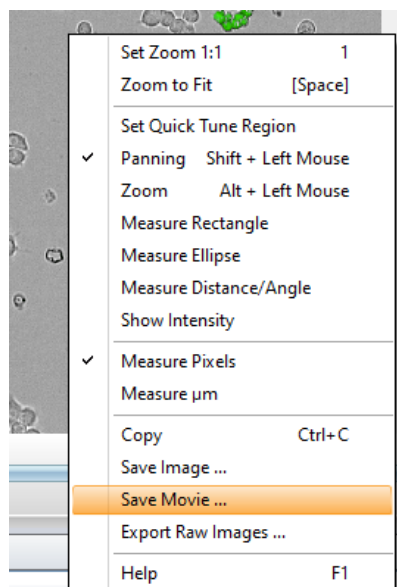
1. Click on a well in imaging dataset
2. Click on the Timepoints panel, then press CTRL+A to select all the timepoints



3. Right-click on one of the selected timepoints and select "Use as Time Window"



4. Wait for the images to finish loading. Then right-click on the image and select "Save Movie ..."



Exporting and deleting files

After your session, you should backup your data from the Opera Phenix. There are two main file formats for you to export your data: 1) as a TIFF series for analysis using MATLAB, ImageJ/Fiji, other programs, or 2) as an Archive file (compatible with Harmony only). The instructions for each are below (note that in the Harmony software "Measurements" refers to your images).

Exporting your data does not "delete" your data from Harmony. This is done through a separate process described below.

Exporting images as a TIFF series

This option should only be used for analyzing your data outside of Harmony. The TIFF series cannot be reimported back into Harmony.

To export the images:

1. Select Settings -> Data Management -> Export Data.
2. Select "Measurements Including Associated Files".

Exporting the archive

In the Harmony software, "archive" refers to a full and true backup of your data. Archives can be reimported back into Harmony for future analysis.

To export the data archive:

1. Select Settings -> Data Management -> Write Archive
2. Select the measurement files you wish to archive
3. Select the destination path

Tips:

- It may be a good idea to create a separate folder per experiment or per project to help you organize your archives
- Over time, you can add more data to an existing archive. When you import the archive, you can select the data you wish to import, so not the full archive
- Once you have saved your archived data, please delete the data as described below

Opera Phenix Data Deletion Protocol

Once you have backed up/transferred your data off the Harmony server, please delete your exported data from the User Data folder and your raw data through Harmony.

To delete data using Harmony:

1. Select Settings -> Data Management -> Delete Data
2. Please delete your Measurements only. The other files (experiment, analysis) can remain as these do not consume much disk space.

PerkinElmer - Opera Phenix manual

This microscope has excellent online resources that you can consult after completing your in-person training.

- The University of Colorado PerkinElmer Opera Phenix training site can be found [here](#).
- To login, please email Joe Dragavon at biof-imaging@colorado.edu and request login access.

The following topics are covered:

- **Short Instrument Operation Videos**
- **Harmony Short Analysis Videos**
- **Harmony Webinars**
- **Optics**
- **Misc Docs and Cleaning Procedures**
- **Data Management Guides**