



MetaXpress® 6 Software Guide

Batch Exporting Summary Measurements

Date Revised 06/25/15 Version B



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Chapter Purpose

The purpose of this chapter is to guide the user through batch exporting summary measurements for one or more plates through the **Plate Data Utilities** dialog. Summary measurements refer to measurements regarding the entire image (i.e. total nuclear count, % positive cells, etc.)

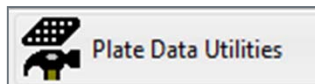
To batch export cell-by-cell data, refer to the corresponding chapter.



Setting Up Export of Image Measurements

1. Open **Plate Data Utilities**

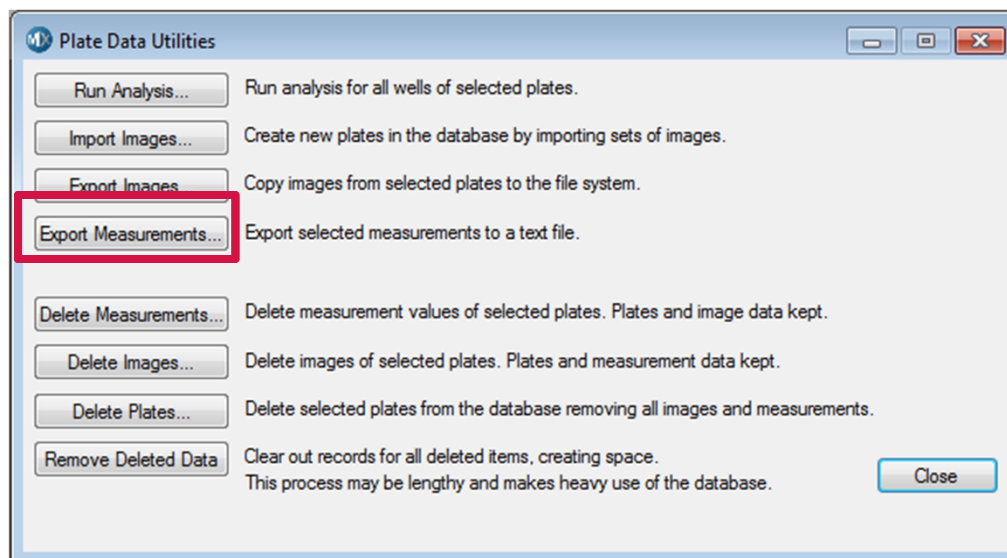
- In the main toolbar click on



OR

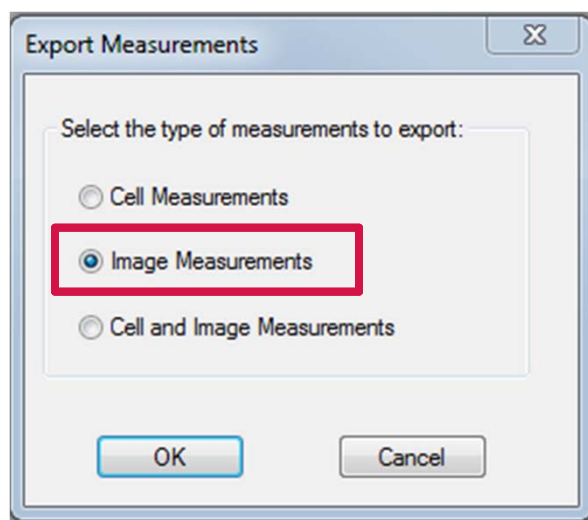
- Under the **Screening** menu, select **Plate Data Utilities**

2. Click on the **Export Measurements** button



Setting Up Export of Image Measurements

3. The **Export Measurements** dialog will appear
- Select **Image Measurements**
 - For **Cell Measurements** (cell-by-cell data), refer to corresponding chapter



Setting Up Export of Image Measurements

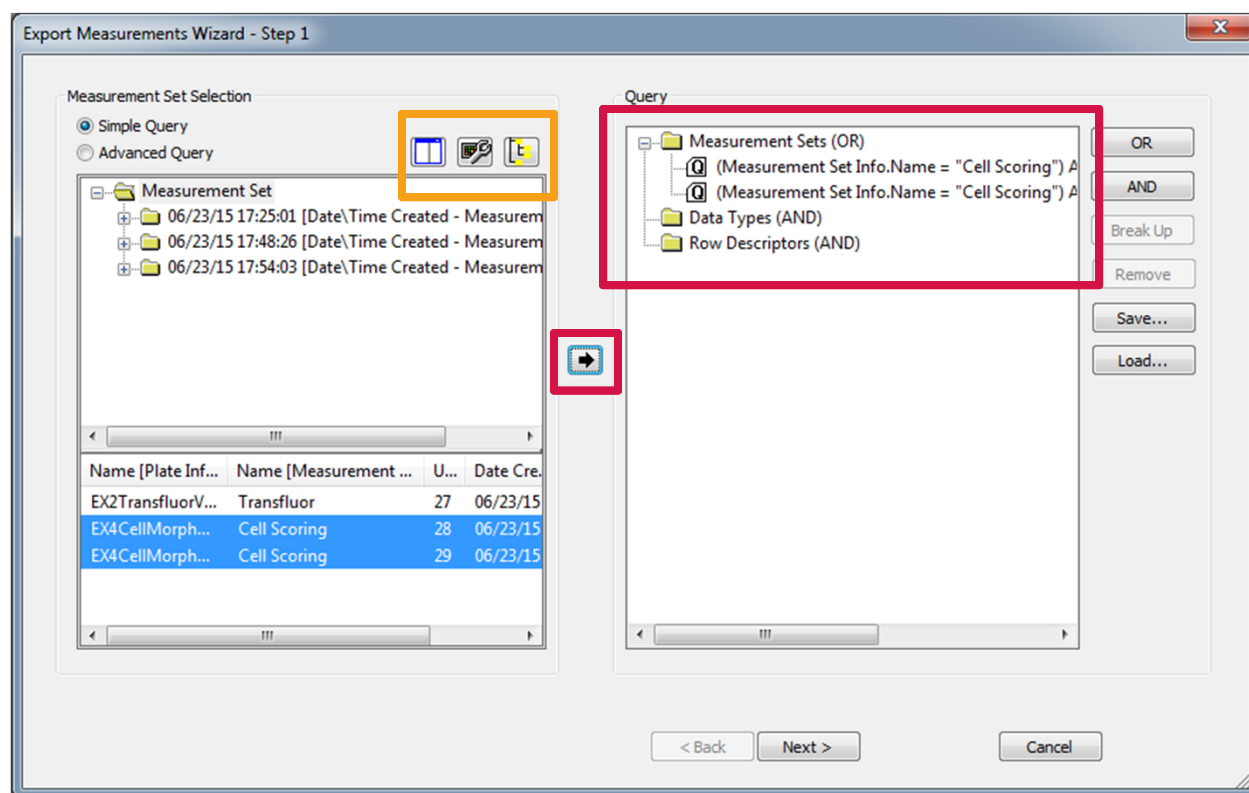
5. In the **Export Measurements Wizard – Step 1** dialog
- Highlight the plate(s) of interest and double-click or click the black arrow to add them to the query pane
 - Click the **Next** button

NOTE You can use the Ctrl or Shift keys to select multiple plates.

Use the **Configure** icons to change:

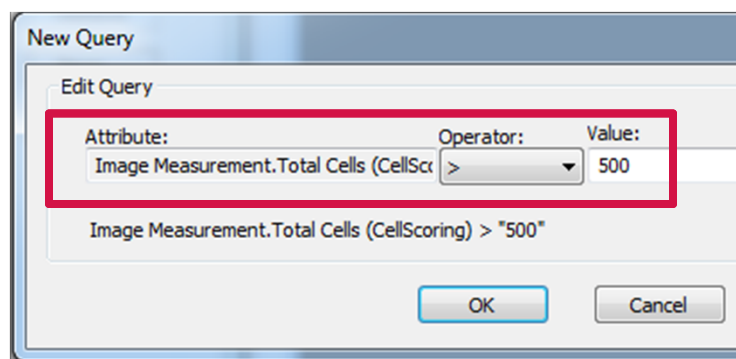
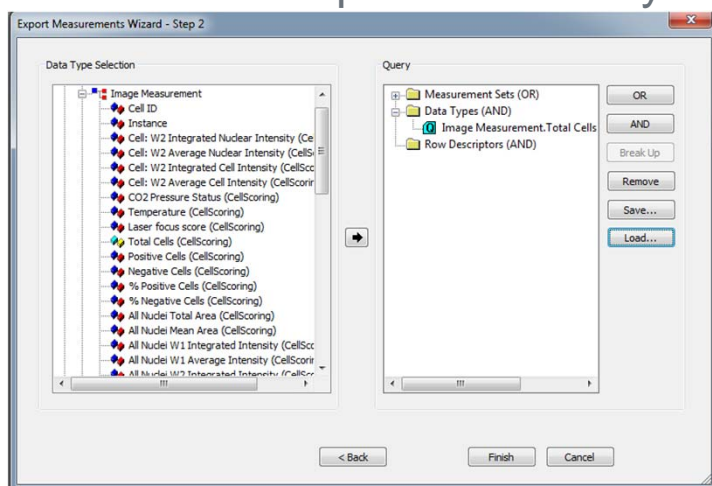
- Appearance of the Wizard
- How plates are organized and displayed in folders
- Identifying shown for the measurement sets

NOTE Only plates that have been analyzed will appear in this dialog



Setting Up Export of Image Measurements

4. If you do not wish to filter your data, skip Step 5 and click the **Finish** button
5. In the **Export Measurements Wizard – Step 2** dialog you can filter data based on the measurements made in the analysis
 - Expand the **Data Types** folder under the Data Types Section
 - Expand the **Image Measurement** tree
 - Double-click on the measurement of interest and the **New Query** dialog will appear
 - Select an **Operator** from the drop-down menu and enter the desired value
 - Click **OK**. The output file will contain only measurements that meet the query
 - Continue this process for any other measurements then click **Finish**



In the above example, only data from wells that have more than 500 cells will be exported



Setting Up Export of Image Measurements

6. In the **Configure Data Export** dialog, select how the rows and columns are organized
- Rows are organized based on plate information (i.e. Plate ID, Well ID, Site ID, etc.)
 - Columns are the measurements from the analysis completed on the plate
 - Double-click or highlight and use the arrow keys to move parameters from the Types section to the Selected sections.

The screenshot shows the 'Configure Data Export' dialog box with two main sections: 'Rows' and 'Columns'. Each section has an 'Available Measurement Types' list and a 'Selected' list. In the 'Rows' section, the 'Available' list contains 'Series ID', 'Well X', 'Well Y', and 'Concentration'. The 'Selected' list contains 'Plate ID', 'Well Name', and 'Site ID'. In the 'Columns' section, the 'Available' list contains various measurements like 'Cell: W2 Average Nuclear I...', 'CO2 Pressure Status', 'Temperature', 'Laser focus score', '% Positive Cells', '% Negative Cells', 'All Nudei Total Area', and 'All Nudei Mean Area'. The '% Positive Cells (CellScoring)' item is highlighted in blue. The 'Selected' list for columns contains 'Total Cells (C...', 'Positive Cells...', and 'Negative Cell...'. Red boxes highlight the arrow buttons between the 'Available' and 'Selected' lists in both sections.

Rows:

Available Measurement Types:

Name	Type	Format
Series ID	Image Measurement	Int
Well X	Image Measurement	Int
Well Y	Image Measurement	Int
Concentration	Well Annotation	Float

Selected:

Name	Type	Format
Plate ID	Image Mea...	Int
Well Name	Image Mea...	String
Site ID	Image Mea...	Int

Columns:

Available Measurement Types:

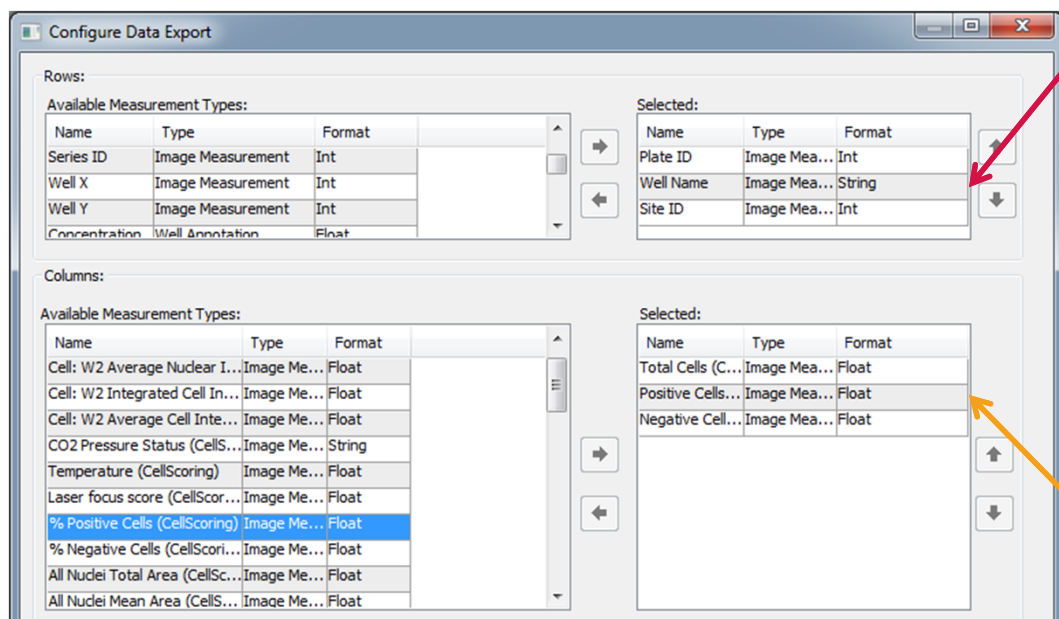
Name	Type	Format
Cell: W2 Average Nuclear I...	Image Me...	Float
Cell: W2 Integrated Cell In...	Image Me...	Float
Cell: W2 Average Cell Inte...	Image Me...	Float
CO2 Pressure Status (CellS...	Image Me...	String
Temperature (CellScoring)	Image Me...	Float
Laser focus score (CellScor...	Image Me...	Float
% Positive Cells (CellScoring)	Image Me...	Float
% Negative Cells (CellScori...	Image Me...	Float
All Nudei Total Area (CellSc...	Image Me...	Float
All Nudei Mean Area (CellS...	Image Me...	Float

Selected:

Name	Type	Format
Total Cells (C...	Image Mea...	Float
Positive Cells...	Image Mea...	Float
Negative Cell...	Image Mea...	Float



Configuring Data Export



NOTE You can click on the Name column header to sort the choices alphabetically

- Order matters! Data exported is hierarchal
- It is suggested to start from the top level of plate information (i.e. Plate ID) and then proceed down (i.e. Well ID, then Site ID).
- Always use **Image Measurement** or **Image Attribute** types
- DO NOT use **Annotation** types

- Move measurement(s) of interest to the right-hand pane to be included in the export.
- DO NOT include any measurements that are preceded by **Cell:**. These measurements are cell-by-cell data and should be exported as Cell Measurements (refer to corresponding chapter).



Configuring Data Export

Configure Data Export

Rows:

Name	Type	Format
Y_Position	Site Info	Int
Time Point	Image Attribute	Int
Z Index	Image Attribute	Int
Site ID	Image Measurement	Int

Selected:

Name	Type	Format
Plate ID	Image Mea...	Int
Well Name	Image Mea...	String

Columns:

Name	Type	Format
Cell: W2 Average Nuclear I...	Image Me...	Float
Cell: W2 Integrated Cell In...	Image Me...	Float
Cell: W2 Average Cell Inte...	Image Me...	Float
CO2 Pressure Status (CellS...	Image Me...	String
Temperature (CellScoring)	Image Me...	Float
Laser focus score (CellSc...	Image Me...	Float
% Positive Cells (CellScoring)	Image Me...	Float
% Negative Cells (CellScori...	Image Me...	Float
All Nuclei Total Area (CellSc...	Image Me...	Float
All Nuclei Mean Area (CellS...	Image Me...	Float

Selected:

Name	Type	Format
Total Cells (C...	Image Mea...	Float
Positive Cells...	Image Mea...	Float
Negative Cell...	Image Mea...	Float

Apply Calculation: None

Data Layout View:

Plate ID	Well Name	% Positive Cells (CellScoring)

OK Cancel

- If you have acquired multiple sites and would like to export the data for each site, include **Site ID** as part of the Row organization
- However, if you would like to combine the site data into a single value for the well (see below), remove **Site ID** from the list.

- Choose the appropriate calculation from the **Apply Calculation** drop-down menu. Select **None** if you would like the raw data
- If you have acquired multiple sites, select the appropriate calculation from the drop-down menu. This will be applied to all the measurements selected.
- Only one calculation can be applied at a time. To apply multiple calculations, you will need to run multiple export operations.

7. Click on the **OK** button when you have finished configuring data export



Configuring Data Export – Example

Selected:

Name	Type	Format
Plate ID	Image Mea...	Int
Well Name	Image Mea...	String
Site ID	Image Mea...	Int

+

Apply Calculation: None

Generates table where data from each image (site) is in a separate row

Plate ID	Well Nam	Site ID	MEASUREI	Nuclei (Gr	Granules (Granules Per Cell (C
50 A01		1	13	0	0	0
50 A01		2	13	532	145	0.272556
50 A01		3	13	306	93	0.303922
50 A01		4	13	0	9	0
50 A01		5	13	270	154	0.57037
50 B02		1	13	212	418	1.971698
50 B02		2	13	307	345	1.123778
50 B02		3	13	636	347	0.545597

Selected:

Name	Type	Format
Plate ID	Image Mea...	Int
Well Name	Image Mea...	String

+

Apply Calculation: Mean

Generates table where measurements for each individual image (site) are combined into one value for the whole well

Plate ID	Well Nam	MEASUREI	Nuclei (Gr	Granules (Granules Per Cell
50 A01		13	221.6	80.2	0.2293696
50 B02		13	461.4	317.6	0.8897796
50 C01		13	352.8	119.8	0.3792968
50 D02		13	396	639	1.7135644




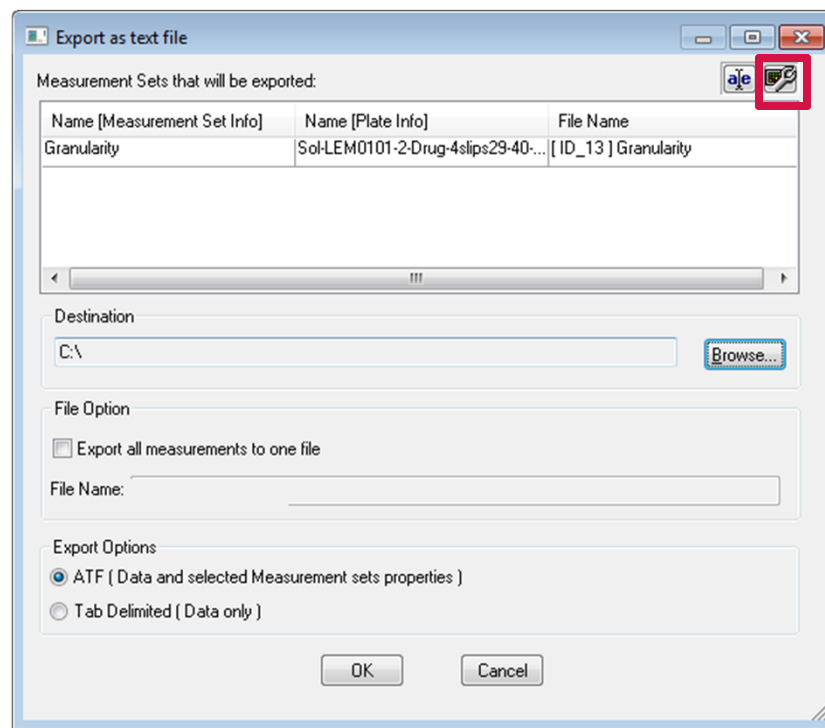
NOTE You can click on the Name column header to sort the choices alphabetically

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Setting Up Export of Image Measurements

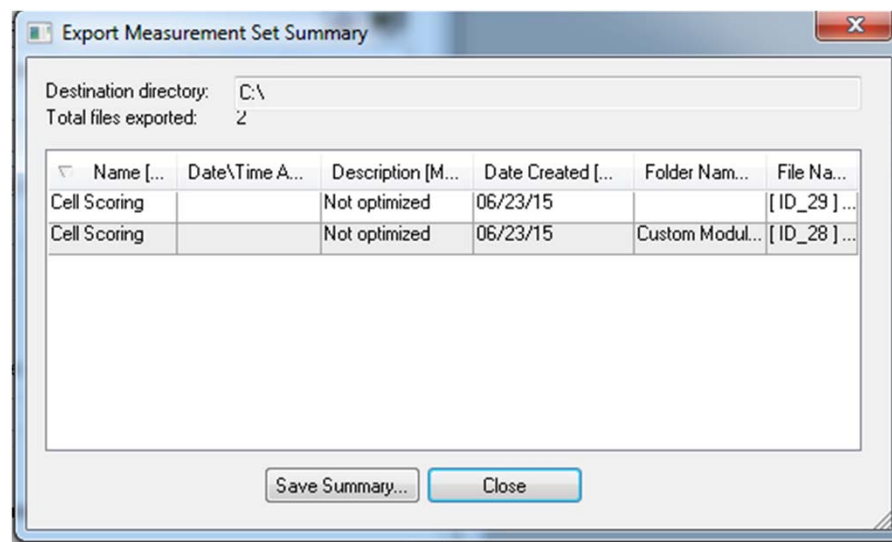
8. Export Options

- a) Click on the **Configure Columns**  icon to select additional plate information that is exported for each plate in the header. Recommend including **Name [Plate Info]**.
- b) Click on the **Browse** button to navigate to a directory to save the .txt file.
- c) Enable **Export all measurements to one file** and name the file if you would like to export all plates to one .txt file. Otherwise, a separate .txt file will be created for each plate and named according to the selections in Step 8.
- d) Under **Export Options** select **ATF**. This will create a tab delimited file with identifying info for each plate
- e) Click on the **OK** button



Setting Up Export of Image Measurements

13. You will be given the option to save a summary of the export. This file contains information related the .txt file(s) saved in the previous step.
- Click on the **Save Summary** button to save the report
 - Click on the **Close** button to complete the process and exit out of the wizard
- *NOTE: This file is only a summary report and cannot be used to repeat the exporting process
14. You can now open the .txt file in Microsoft Excel



Support Resources

- F1 / HELP within MetaXpress® Software
- Support and Knowledge Base: <http://mdc.custhelp.com/>
- User Forum: <http://metamorph.moleculardevices.com/forum/>
- Request Support: <http://mdc.custhelp.com/app/ask>
- Technical Support can also be reached by telephone:
 - 1 (800) 635-5577
 - Select options for Tech Support → Cellular Imaging Products → ImageXpress Instruments





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