

# Technical Note

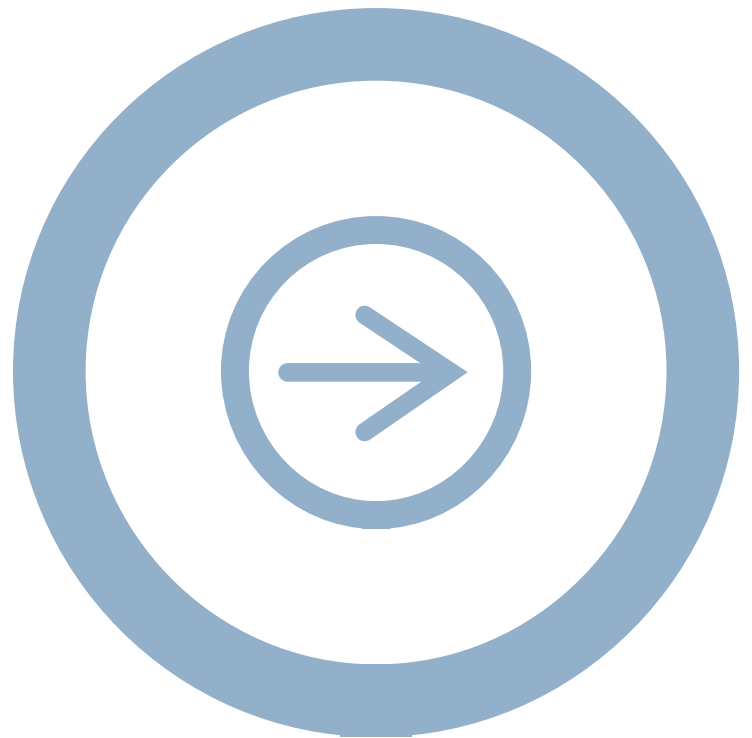
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## Using Chameleon™ Protein Ladders in Image Studio™ Software 1.x - 3.x

Developed for:

**Image Studio Software 1.x - 3.x**

*Please refer to your manual to confirm that this protocol is appropriate for the applications compatible with your instrument model.*



**LI-COR®**

Published December 2014. The most recent version of this Technical Note is posted at [www.licor.com/bio/support](http://www.licor.com/bio/support)

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### I. Introduction

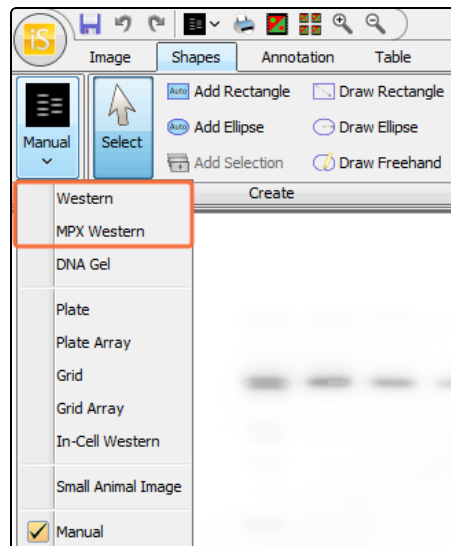
This Technical Note explains how to use LI-COR® Chameleon Pre-Stained Protein Ladders in Image Studio Software version 3.0 and earlier. Procedures for the following are covered: adding protein markers to a **Work Area**, sizing bands using protein markers, and exporting data.

## II. Start a Western or MPX™ Western Analysis


To add Chameleon Pre-Stained Protein Ladders to Image Studio Software or to use the markers in analysis, a **Western** or **MPX Western** application must be applied to an image.

To apply a **Western** or **MPX Western** application to an image:

1. Click the **Shapes** tab.
2. In the **Analysis** group, click **Western** or **MPX Western** in the **Analysis** type list.



The following resources explain how to use the **Western** application:

1. Click the blue question mark  in the upper right corner of the window to open the Image Studio Software Help.
2. Use the search function to search for **Western** Analysis or **MPX Western** Analysis.

 [Watch this video tutorial for a Western analysis demonstration.](#)

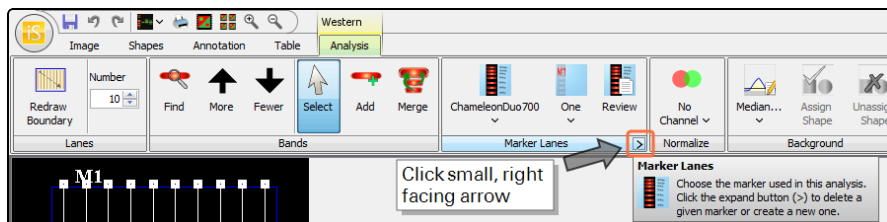
### III. Add Chameleon Protein Ladders to Image Studio Software

Use the following procedure to enter molecular weight values for Chameleon Pre-Stained Protein Ladders and save the ladder to the current **Work Area**:

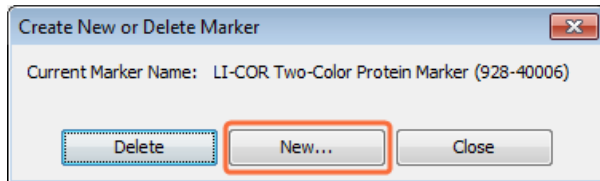
**NOTE:** The Chameleon Duo, Chameleon 700, Chameleon 800, and Chameleon Kit have a visible 260 kDa band. The band does not appear in the 700 nm channel for Chameleon 700, so **DO NOT** include this value when adding weights to the Chameleon 700 marker set.

**NOTE:** If you are using the Chameleon 700 only (not Chameleon 800), there will be no 125 kDa band.

1. Ensure the **Western Analysis Application** tab or **MPX Western** tab is visible.
2. Click the small right arrow at the bottom of the **Marker Lanes** group.



The **Create New or Delete Marker** dialog will open.



3. Click **New**.

The **Marker Name** dialog will open.

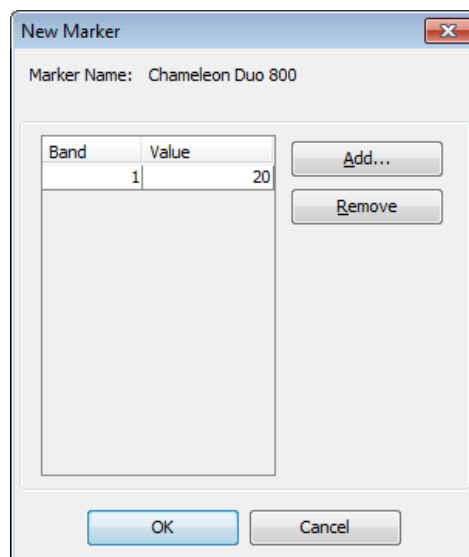
4. Enter the name of the marker and specify the channel (*e.g.* Chameleon Duo 700 or Chameleon Duo 800).

5. Click **OK**.

The **New Marker** dialog will open.

6. Click **Add** and enter all the appropriate weight markers from Table 1 below.

7. Click **OK** to add and save the new marker.



**NOTE:** For Image Studio 1.x and 2.x, a channel designation must be added. Type "700" into the **Channels** field for Chameleon 700 markers and "800" for Chameleon 800 markers.

**Table of Chameleon Protein Ladder Sizes**


Chameleon Duo (PN 928-6000)		Chameleon Kit (PN 928-90000)		Chameleon 700 (PN 928-70000)	Chameleon 800 (PN 928-80000)
700 Channel	800 Channel	700 Channel	800 Channel	700 channel	800 channel
160	260	160	260	160	260
125	125	125	125	90	125
90	70	90	70	50	70
50	38	50	38	30	38
30	25	30	25	15	25
15	8	15	8	8	8
8		8			

**Table 1.** Use these values when entering marker data into Image Studio Software.

## IV. Size Bands Using Markers


Follow this procedure to estimate unknown band sizes based on protein markers.

1. Ensure that a **Western Analysis** or **MPX Western Analysis** has been applied to the image, and ensure all appropriate marker and sample protein bands have been found (enclosed by a rectangle).

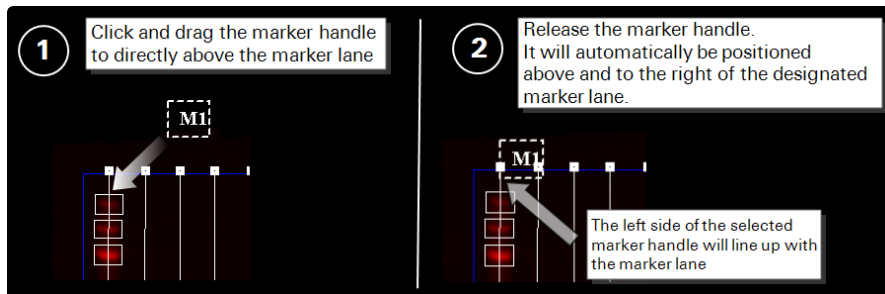
**MORE INFO:** For help using one of these applications, search the help system  for the "Western Analysis" or "MPX Western" topic.

2. Click the **Select Marker Lanes Set** list  on the far left of the **Marker Lanes** group and select the appropriate marker.

A marker handle will appear above the blot .

**NOTE:** To designate more than one marker lane, click the **Number of Marker Lanes** list  and select the number of marker lanes being used.

3. Click and drag the marker handle directly above the marker lane. After releasing the marker handle, it will automatically be positioned above and to the right of the designated marker lane.



4. The estimated band sizes will appear in the **Size** column in the **Western Bands Table**.

Image Name	Channel	Lane Name	Size
Useful_Western	700	M1	160
			125
			90.0
			50.0
			30.0
Useful_Western	700	M1	15.0
Useful_Western	700	M1	8.00
Useful_Western	700	M1	NaN


The **Size** column. Columns can be moved and may not appear in this order.

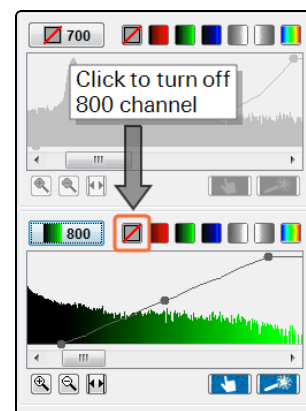
## V. Export Size Data for Chameleon Duo or Chameleon Kit

Use this procedure to export data if Chameleon Duo or Chameleon Kit markers were used. Data will be exported to a .xls file or opened using a spreadsheet program.

**NOTE:** Size data from the 700 and 800 channels must be exported separately.

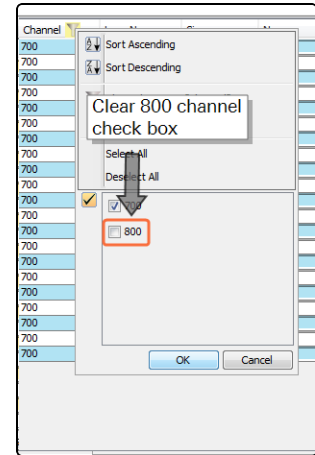
Begin by filtering out 800 channel data and exporting 700 channel data.



1. Turn off 800 channel visibility by clicking the **Don't Show Channel** button  in the 800 channel section of the **Display** tab.

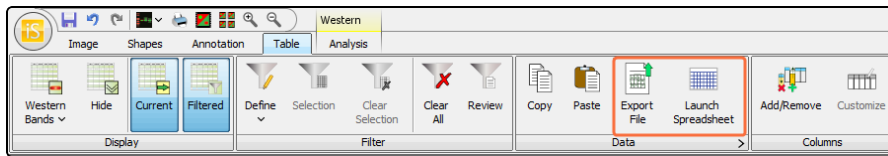




2. In the **Marker Lanes** group, check to ensure the correct 700 marker set is chosen.


3. In the **Western Bands Table**, right click the **Channel** column header, and click to disable the 800 channel check box.



4. Click **OK**.
5. Export the data to a spreadsheet by clicking the **Table** tab and clicking **Export File**  or **Launch Spreadsheet**  in the **Data** group.



6. Click **Export File**  to save the data to a .xls file or click **Launch Spreadsheet**  to open the data in the default program for opening .xls files.

To export 800 channel data, repeat the above procedure but with 700 channel visibility turned off (using the **Don't Show Channel** button ) and 700 channel data filtered out (right click the **Channel** column header and disable the 700 channel check box).



## VI. Export Size Data for Chameleon 700 or 800

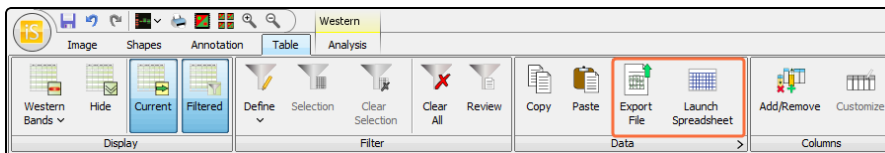
Use this procedure to export data if Chameleon 700 or Chameleon 800 markers were used. Data will be exported to a .xls file or opened using a spreadsheet program.



**NOTE:** If the Chameleon 700 ladder is being used, ensure no bands defined in the 800 channel are visible and *vice versa*.

1. In the **Marker Lanes** group, check to ensure the correct 700 or 800 marker set is chosen.



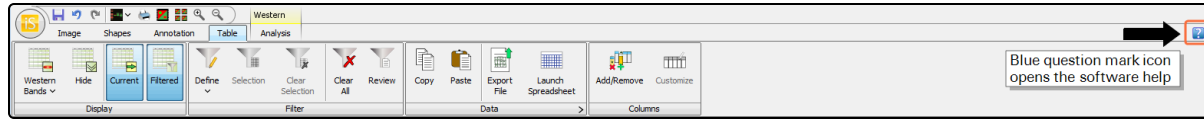
2. Export the data to a spreadsheet by clicking the **Table** tab and clicking **Export File**  or **Launch Spreadsheet**  in the **Data** group.



3. Click **Export File**  to save the data to a .xls file or click **Launch Spreadsheet**  to open the data in the default program for opening .xls files.

## VII. Further Questions

1. See the software help. Click the blue question mark in the upper right corner of the window to open the help. The upper right corner of the software help has a search box for quickly finding answers.



2. Contact LI-COR Technical Support (details in the footer of this document).

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Global Headquarters, Serving the United States • 4647 Superior Street • Lincoln, NE 68504  
Toll free: 800-645-4267 • Fax: +1-402-467-0819 • [biosales@licor.com](mailto:biosales@licor.com)

LI-COR GmbH, Germany, Serving Europe, Africa, and the Middle East.  
LI-COR Biosciences GmbH • Siemensstraße 25A • 61352 Bad Homburg • Germany  
Phone: +49 (0) 6172 17 17 771 • Fax: +49 (0) 6172 17 17 799 • [bio-eu@licor.com](mailto:bio-eu@licor.com)

LI-COR Ltd., United Kingdom, Serving Denmark, Finland, Iceland, Ireland, Norway, Sweden, and UK  
LI-COR Biosciences UK Ltd. • St. John's Innovation Centre • Cowley Road • Cambridge • CB4 0WS  
United Kingdom • Phone: +44 (0) 1223 422104 • Fax: +44 (0) 1223 422105 • [bio-eu@licor.com](mailto:bio-eu@licor.com)

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