

Lenticular 201



More Advanced discussion

Lenticular 3D 201

Processing a larger lenticular image.

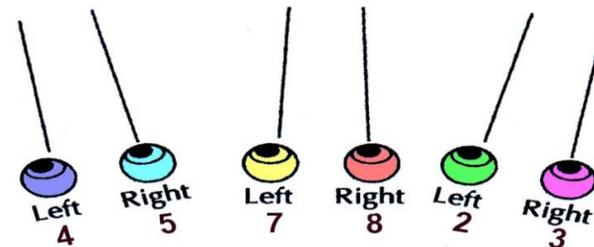
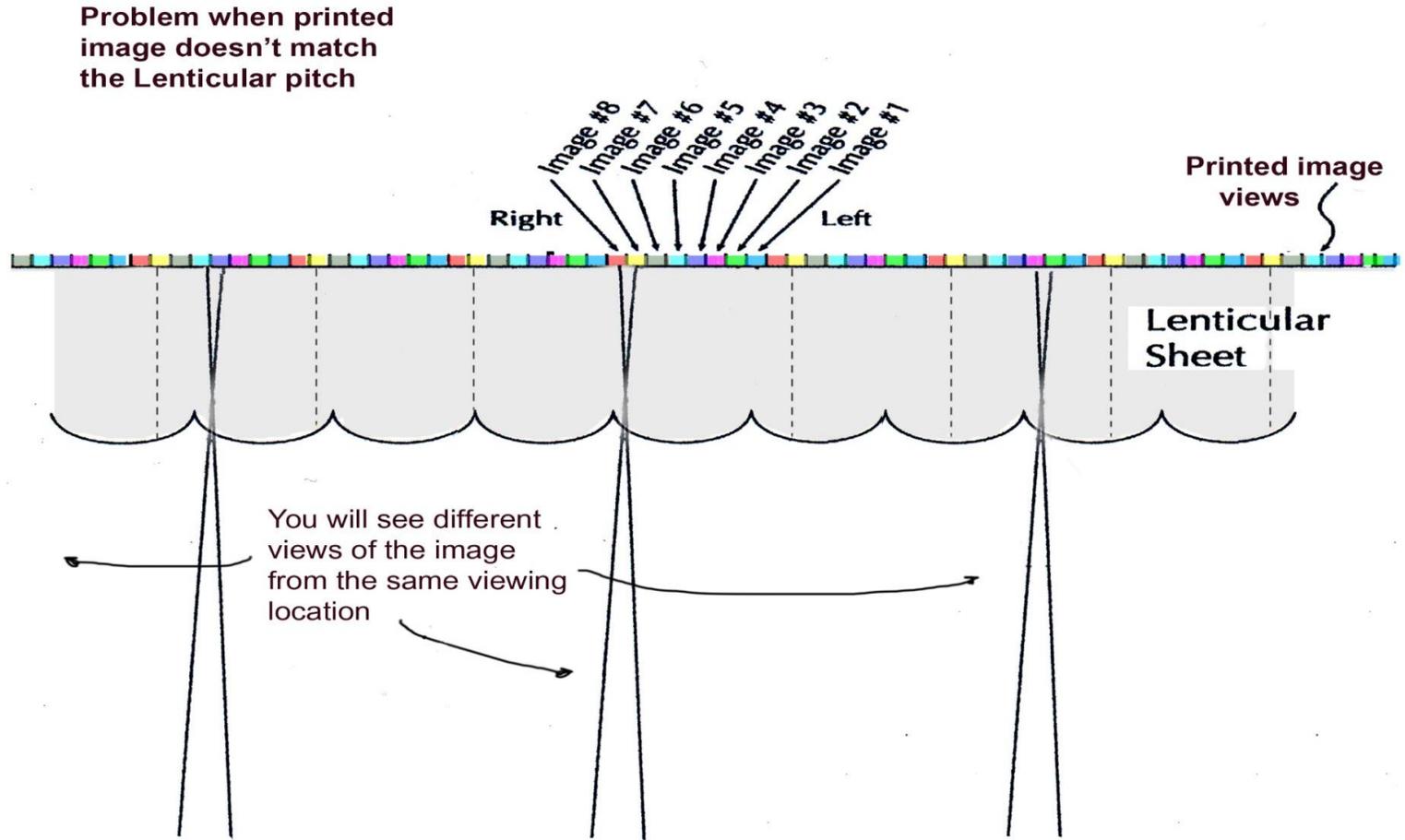
Processing a 6-inch-wide lenticular image with Stereo Photo Maker (SPM) seems to work just fine, at least with my printer. SPM isn't that good for interlacing or printing large images.

SPM is a great program to adjust, align, crop and save images. I've done images as large as 13" X 19". The process for larger images is the same as described in Lenticular 101. The setup and use of the slide bar to take larger images is also the same.

SuperFlip is a better program to interlace and print a larger lenticular image.

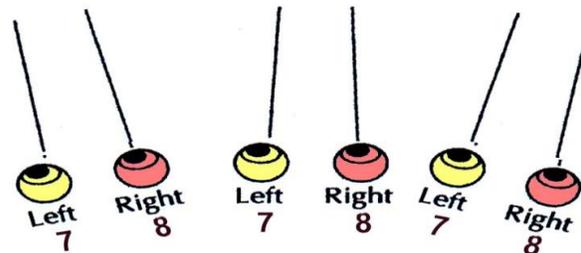
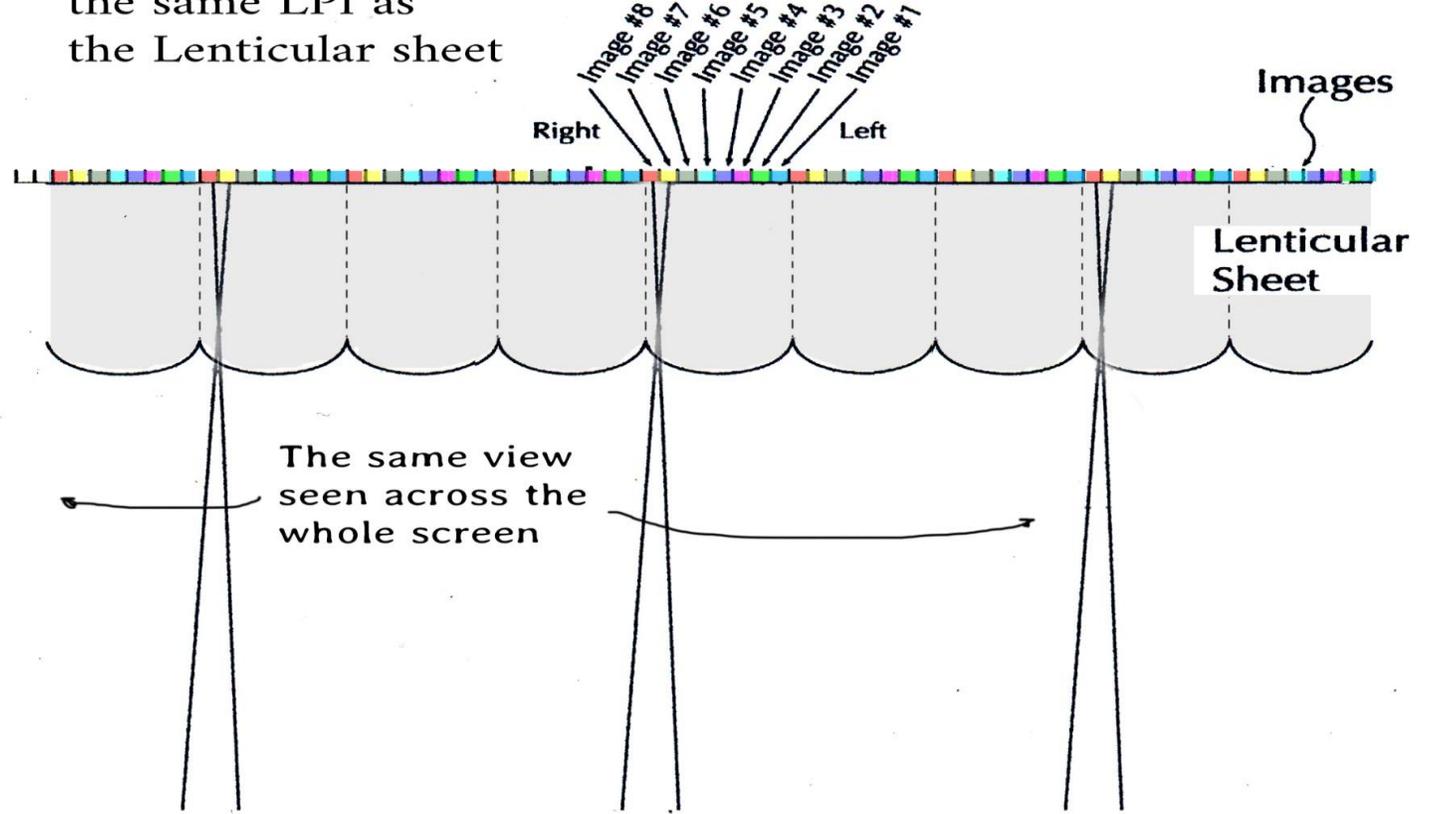
To process a larger lenticular image, it is essential that the pitch of the interlaced image (IPI) matches the lenticular pitch of the lenticular sheet (LPI).

If the image is too wide or narrow for the lenticular sheet you will see different views of the 3D image from side to side of the finished image.



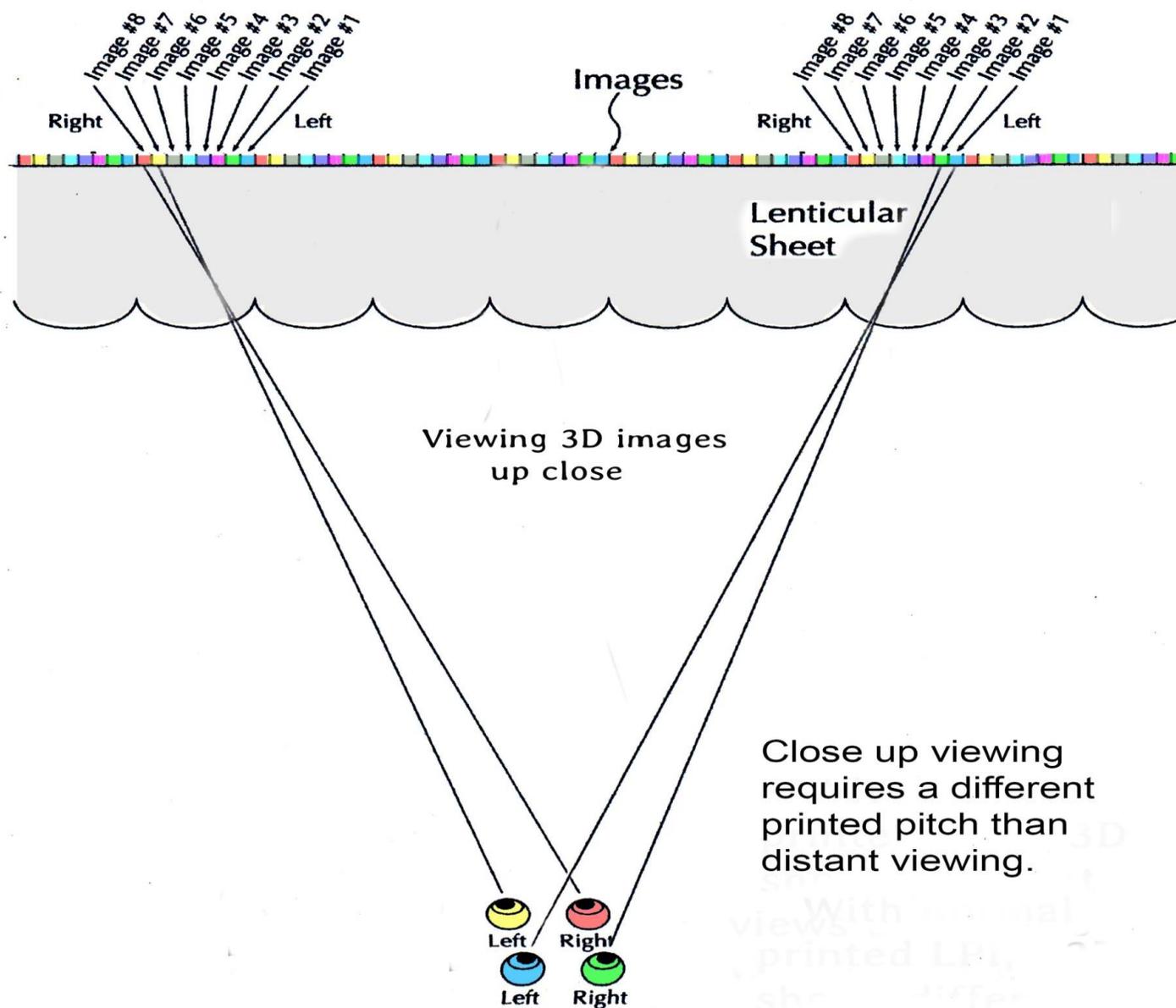
When the images matches the lenticular sheet pitch the same view of the 3D image is seen across the whole screen.

When the image is adjusted to be the same LPI as the Lenticular sheet

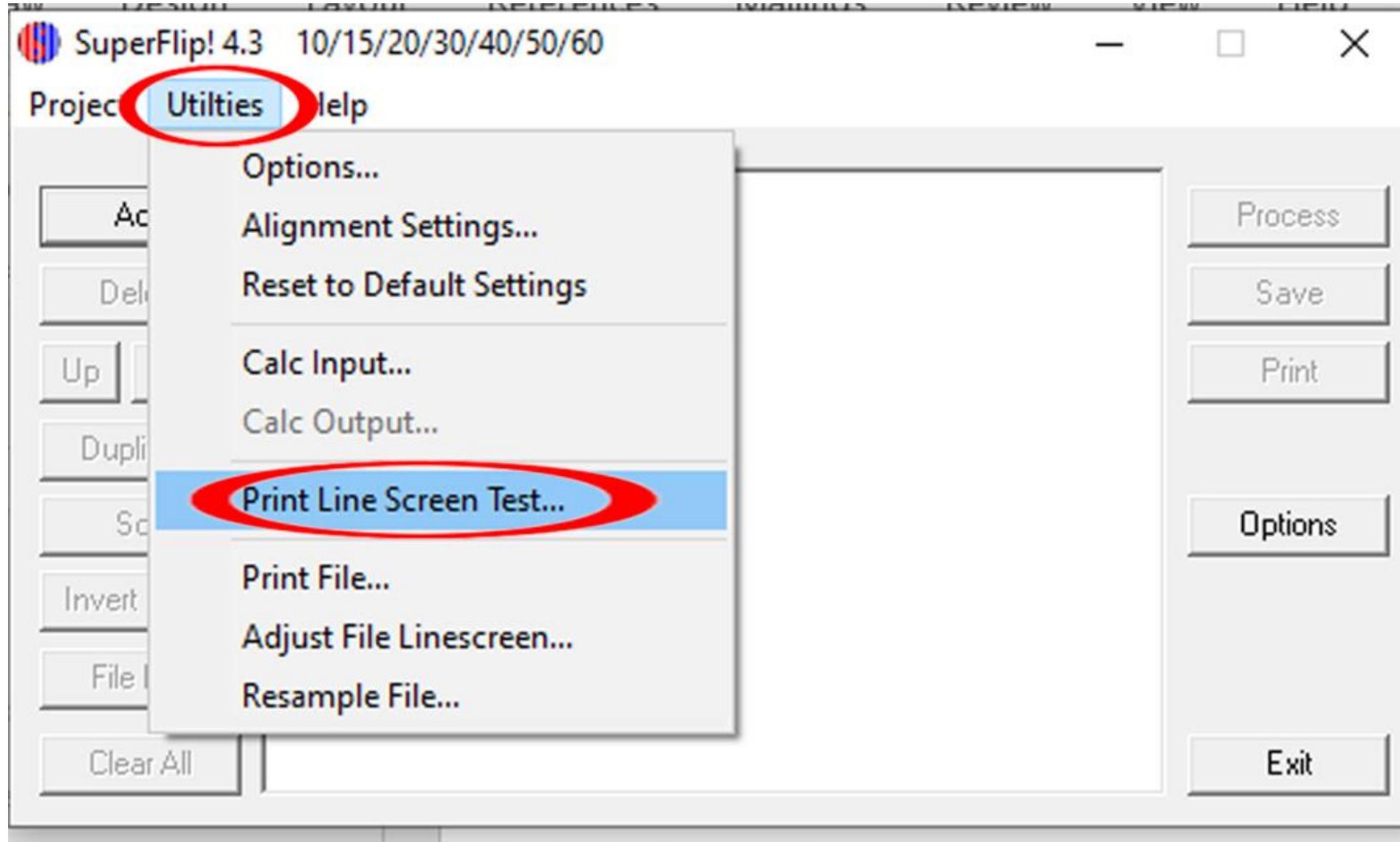


It is also important to process the lenticular image with regard to the expected viewing distance from the image.

To make sure the printed lenticular image matches the lenticular sheet, SuperFlip can print a line screen test pattern.



To print a test pattern to match your printed image to the lenticular sheet (LPI), launch SuperFlip, click on “Utilities” and click on “Print Line Screen Test”.



Set the “Starting Lines Per Inch” at 0.4 smaller than the LPI of your lenticular sheet (59.6 for 60LPi sheet). Set the “Print Accuracy” to 0.1 LPI. Select “just Triplet” and check “Print Triplet with white”.

You can try the other Test Strip Options if you like.

Pitch Test [X]

Starting Lines Per Inch:

Print Accuracy

- 1 LPI
- 0.1 LPI
- 0.01 LPI
- 0.001 LPI

Print to File Options

- Print to File
- 24 bit
- Width (inches):
- Resolution (dpi):

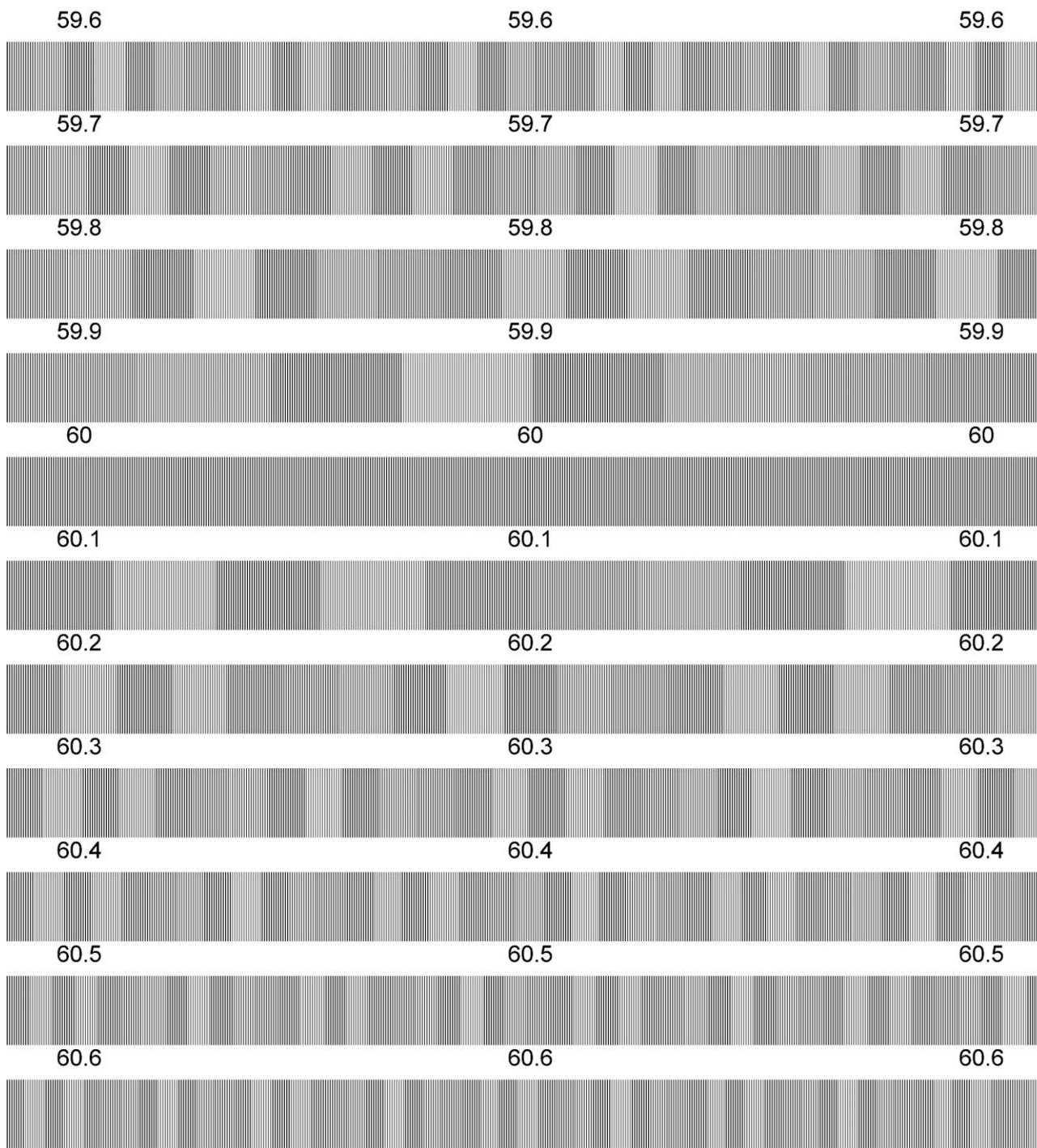
Test Strip Options

- Both Doublet Triplet
- Just Doublet
- Just Triplet
- Print triplet with white instead of red

Height of Strips (inches):

Put in some good Photo Paper and select “Print” to print the test sheet.

You will get a set of LPI test patterns with 60LPI in the middle and a spread of LPI patterns above and below.



Place the test sheet on the desk and place your lenticular sheet over the test pattern.

At a distance of about 20 inches, Look at the test patterns with only one eye and adjust the lenticular sheet until one of the lines is black all the way across the test sheet. Slight tilting and left/right adjustment will be needed.

60.1 LPI is the correct pitch to print your image for viewing at ~ 20 inches.

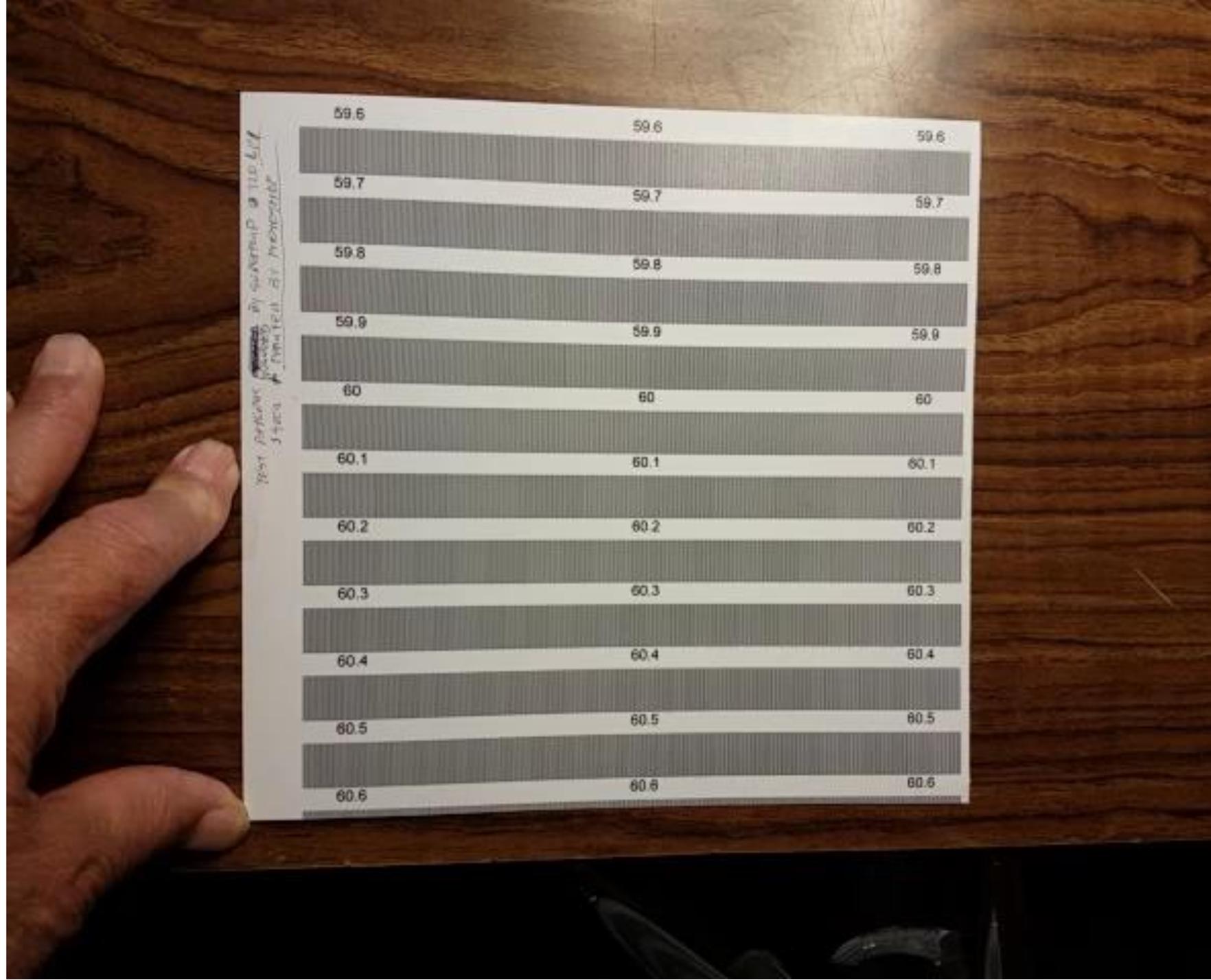
(you will have to watch the 201 .mp4 video to see what this action looks like)



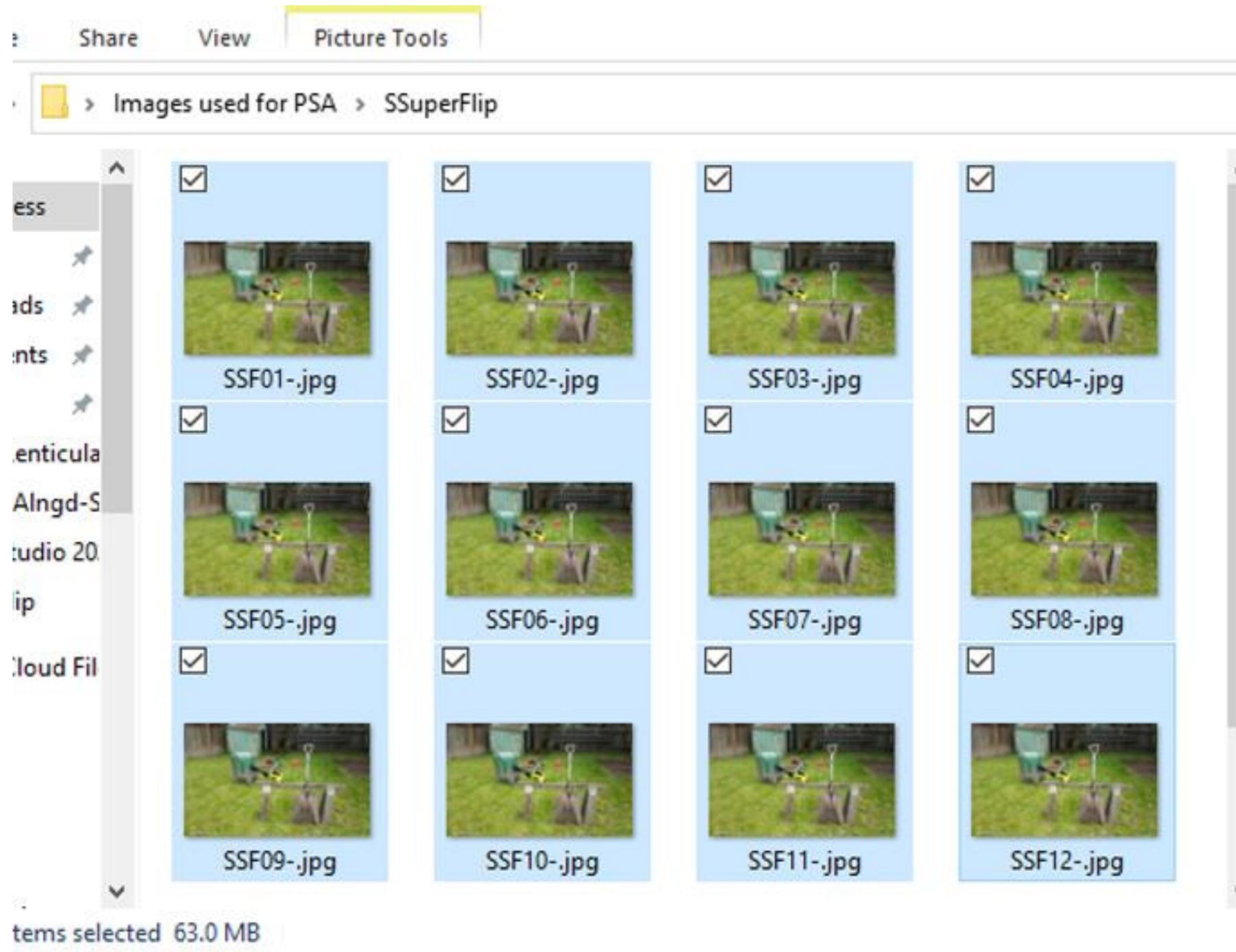
You will notice that the printed line pitch is different for viewing the image at 6 inches and 20 inches. At 6 inches, 60 PLI is correct. Choose the pitch for the viewing distance you expect your image will be seen.

Use that pitch to process your large lenticular images.

(you will have to watch the 201 .mp4 video to see what this action looks like)

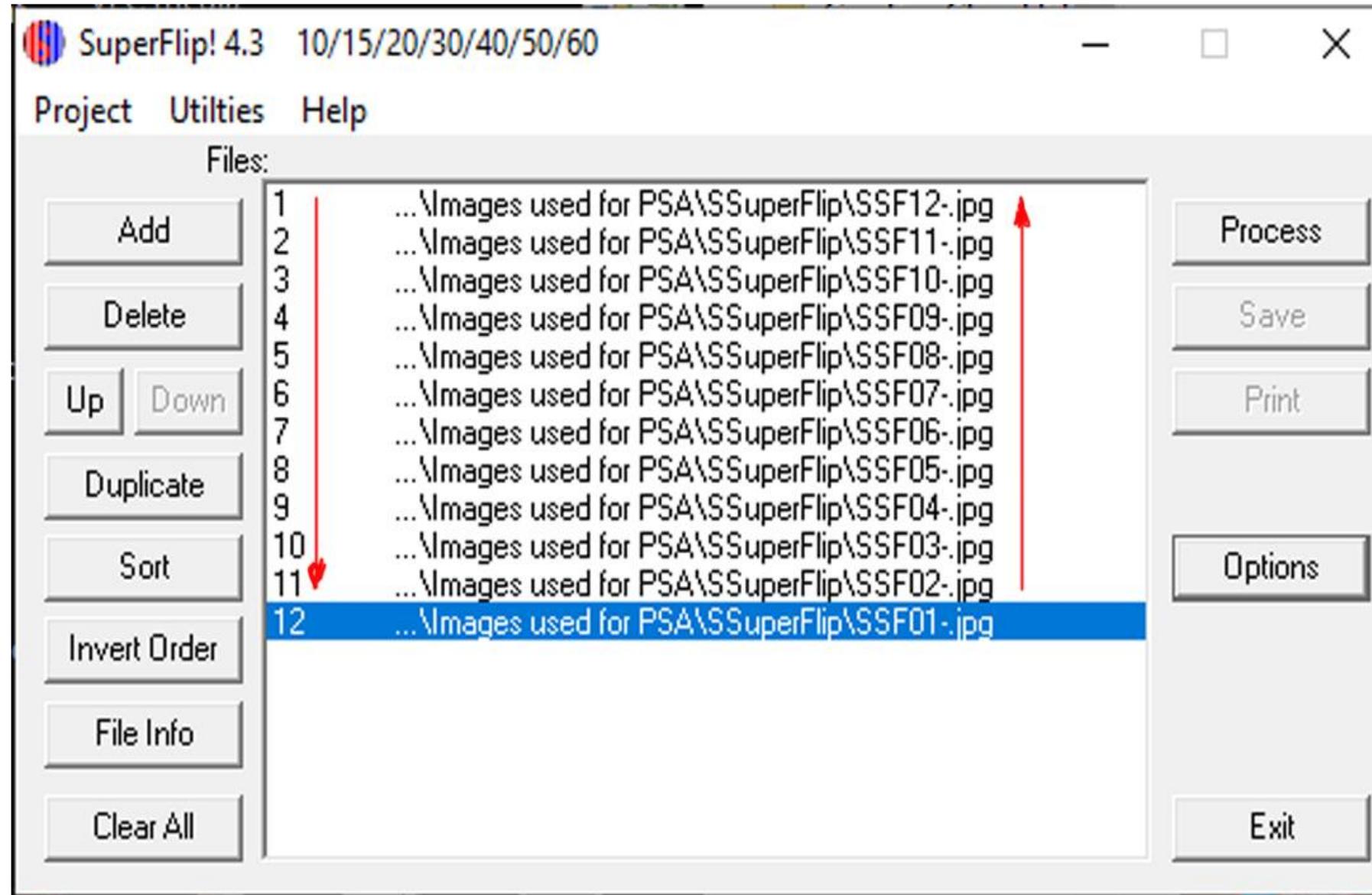


To process your image, launch SuperFlip, locate your final adjusted images and open them. Click on “Add” to load the images.

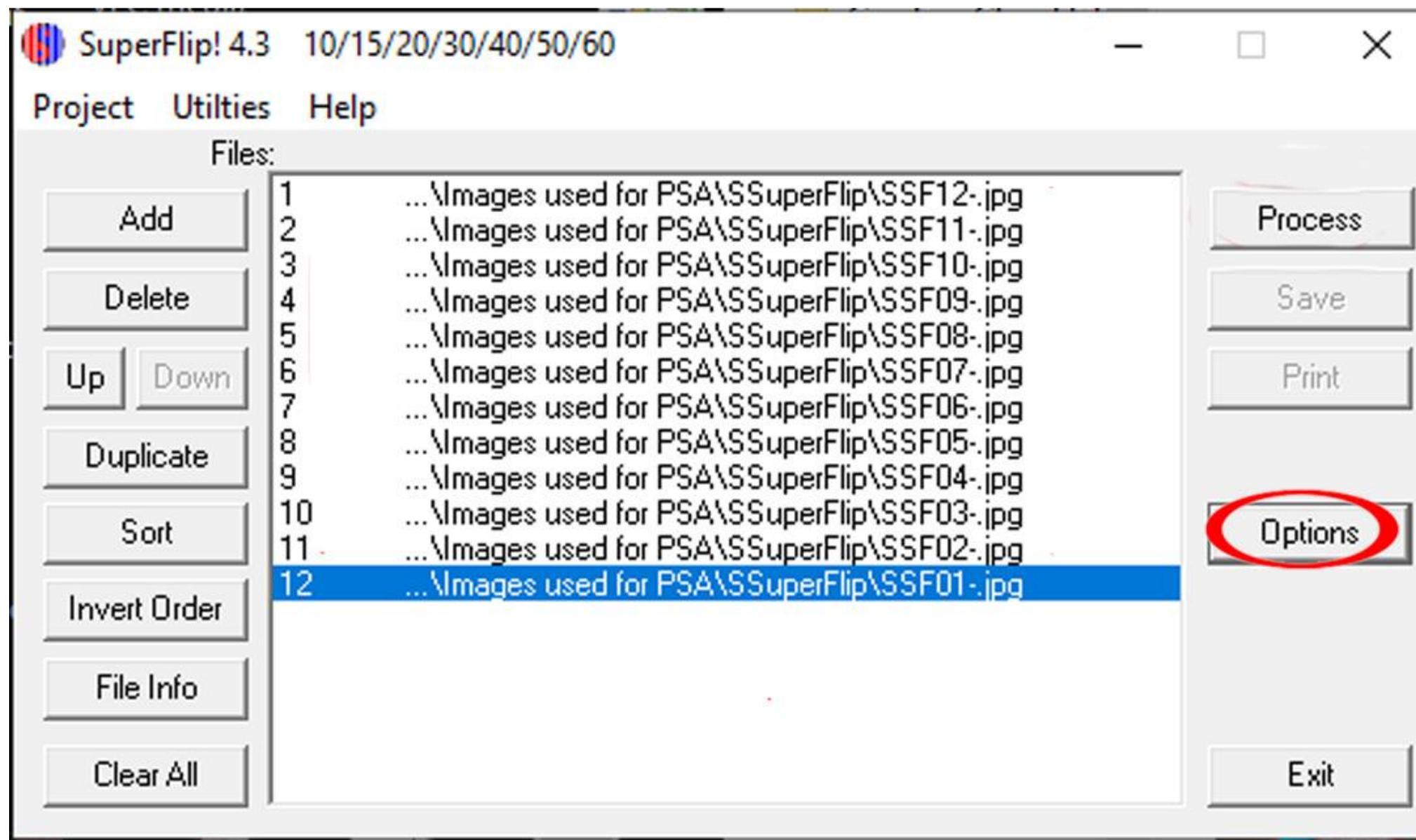


If you took your images starting from the left and moving to the right, then SuperFlip will have your images in inverted order. SuperFlip numbers going down and images numbered going up.

This is the way it has to be for a good 3D image!

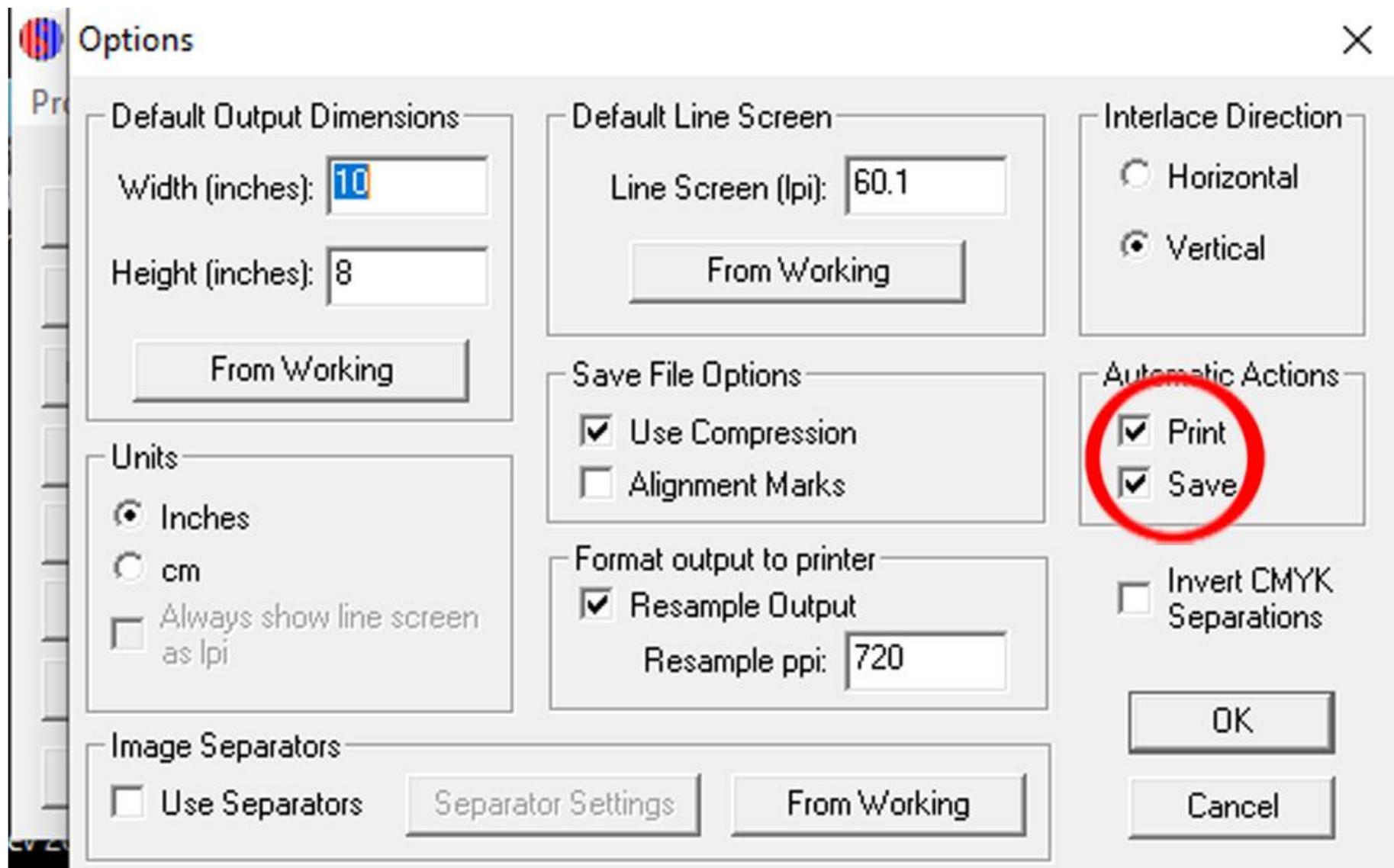


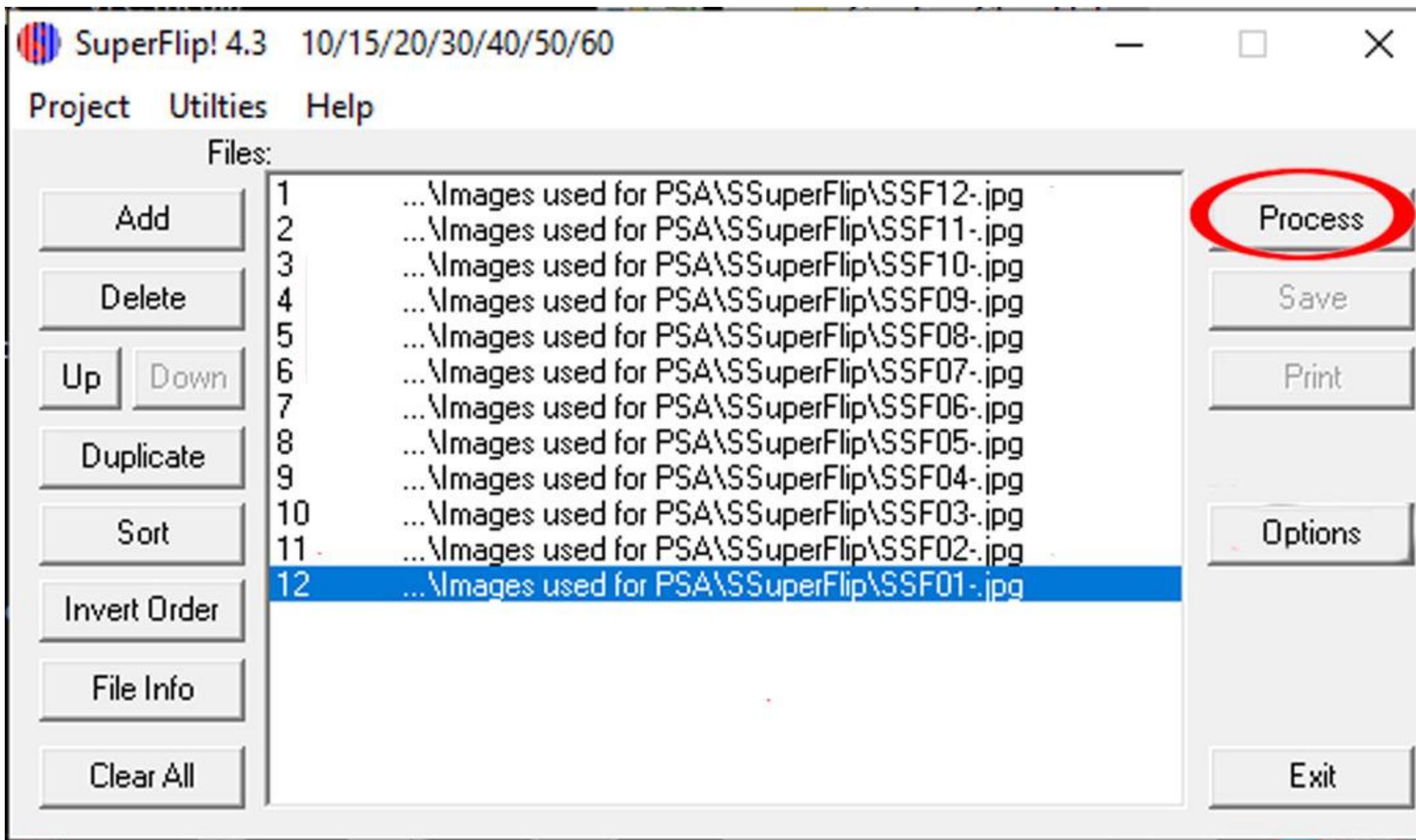
Now, click on
"Options".



Make sure your interlaced image will be saved and printed.

Don't worry about the other items now

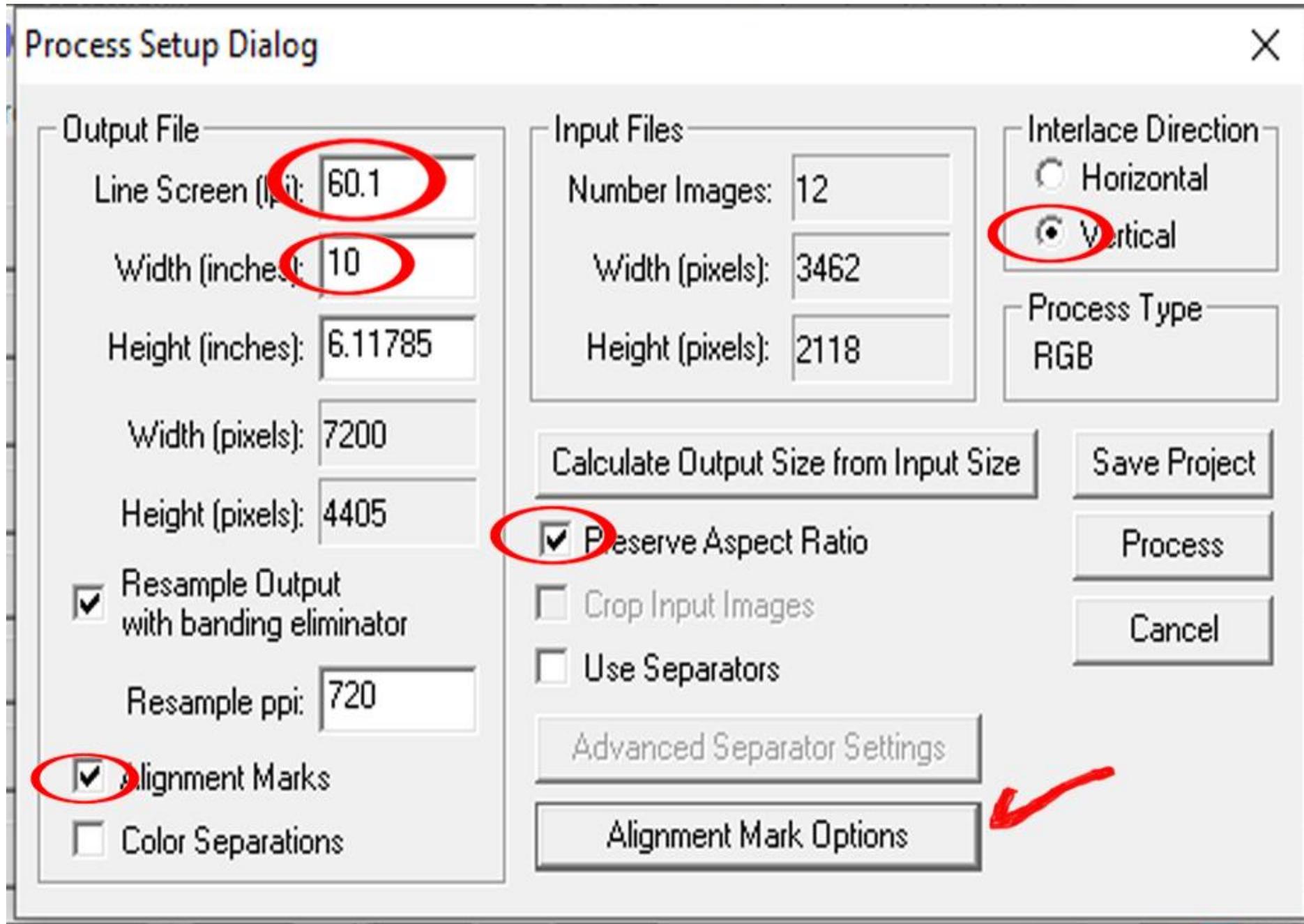




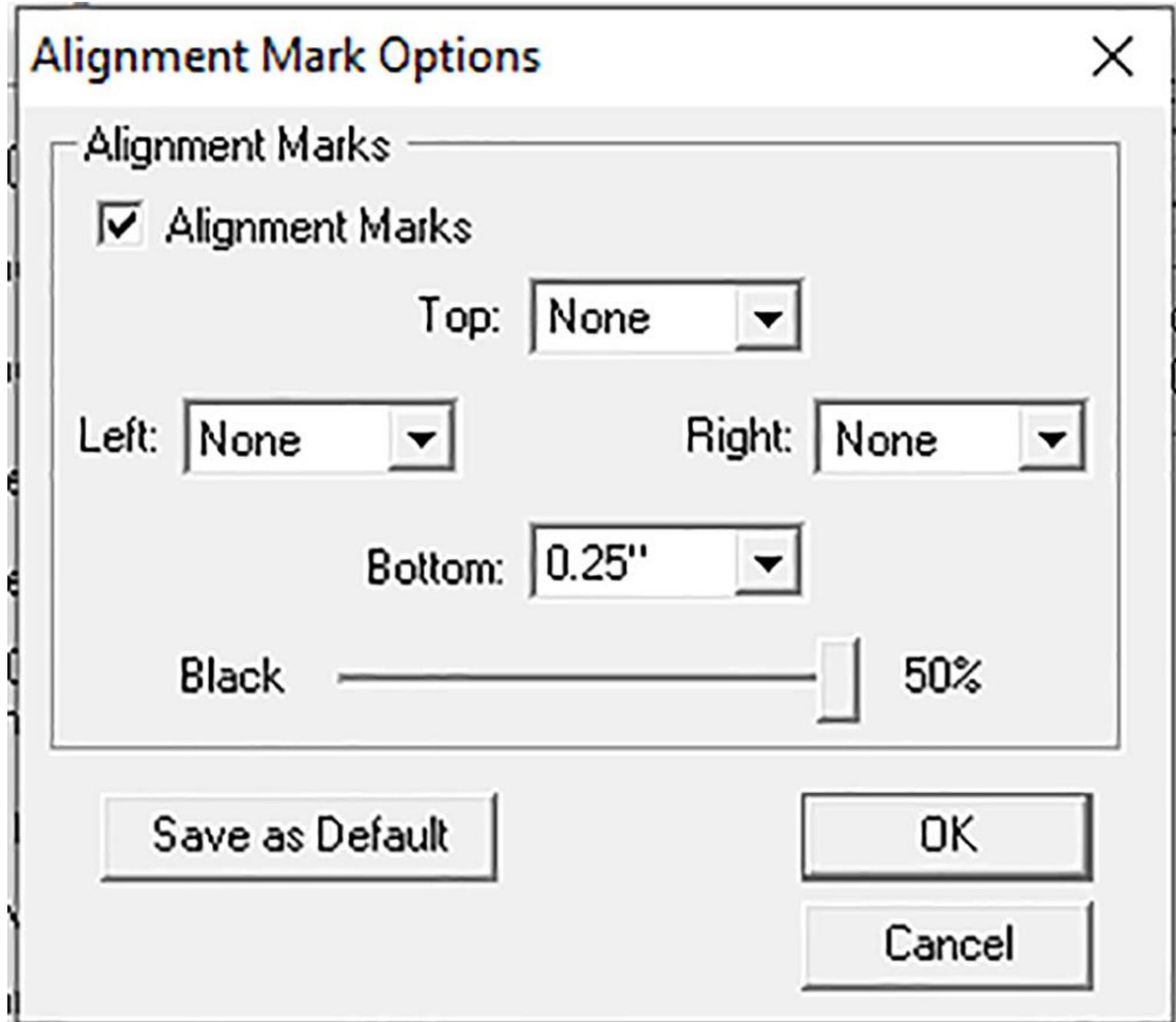
Click "Process"

Set all these parameters as shown: (LPI, Width, Preserve Aspect Ratio, Vertical Interlace Direction and Alignment Marks). You can choose various alignment marks if you want.

SuperFlip will process your image based on these parameters and save it for you.



I generally use the alignment marks just on the bottom



Set your printer to “Best Photo”, put some photo paper in the printer SuperFlip will then print your lenticular image.

My back yard
lenticular image with
alignment pattern on
the bottom.



Other comments

SuperFlip can handle more images. You can use SuperFlip to interlaced more images, however the printer will have to have a high enough DPI resolution to print such an image.

If you don't have a Photo quality Printer, you might try the print service at Walgreens. Walgreens could not print .TIFF images so I converted the SuperFlip's .TIFF images to .JPG when I used Walgreen's printing service. Walgreens have several other sizes of photo prints. I only tried the 8" X 10" and 6" X 4" sizes.

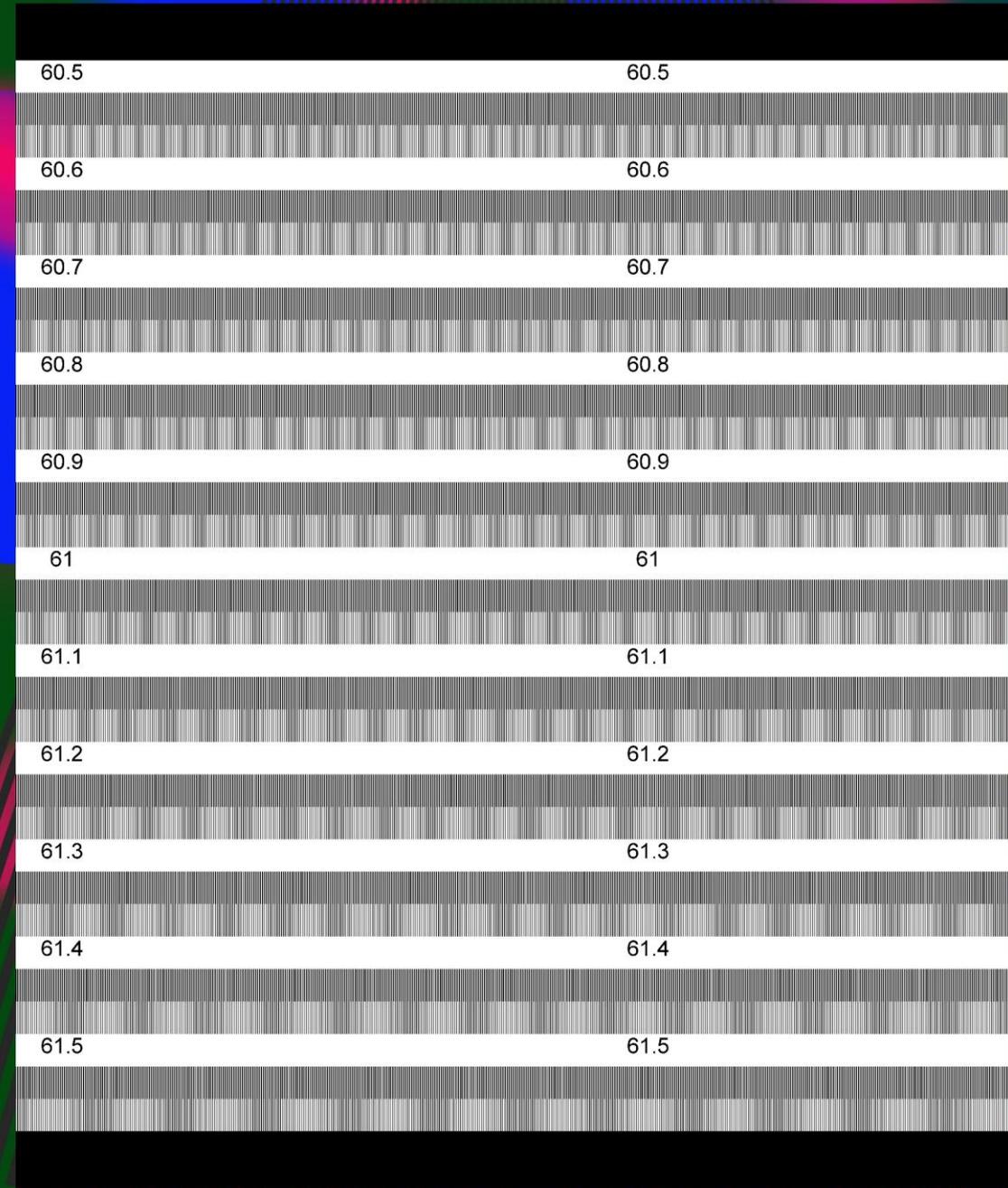
This is my 8" X 10" Walgreens portrait LPI test pattern.

To try Walgreens printing, I first printed an LPI test patterns at exactly 8" X 10" size using SuperFlip and in Photoshop, I put a darker border around the test patterns so I could make sure that Walgreens printed it at exactly 8" X 10" in size.

When I tested this test pattern, I found that with Walgreens printing, an LPI of 61.2 matched my 60 LPI lenticular sheet best.

When I printed a 6" X 4" image, 62 LPI matched the 60 LPI image best.

It seems that Walgreens crops their images just a little (thus 61.2/62 LPI to match a 60 LPI lenticular sheet)

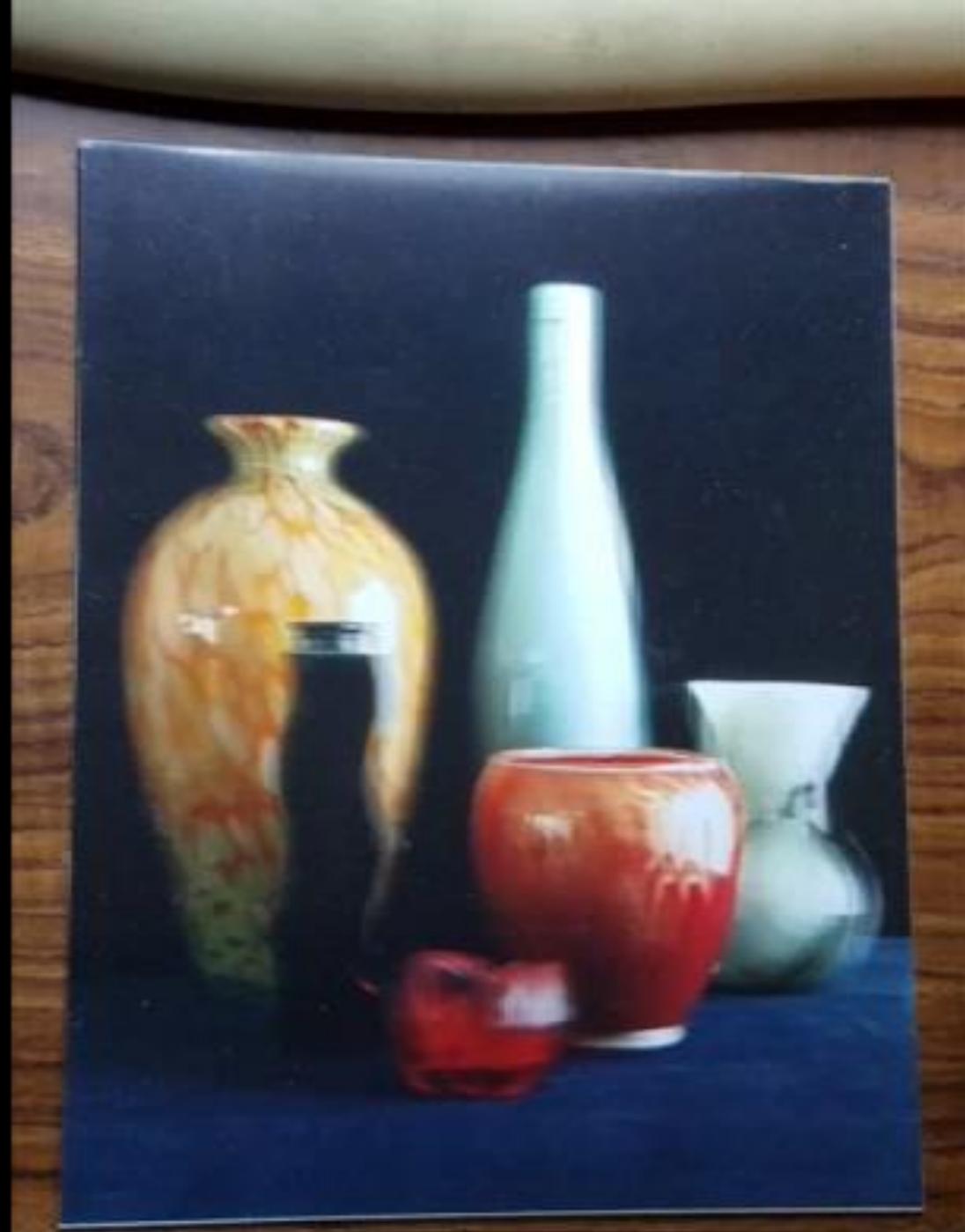


I processed this lenticular image using SuperFlip at 61.2 LPI and exactly 8" X 10" in size and it seemed to work OK with Walgreens printing.

To process a 6" X 4" lenticular image at Walgreens, I had to print with 62 LPI to match a 60LPI image.

I have only printed a few images using Walgreens printing and you might do a little experimenting to see what you can get.

(you will have to watch the 201 .mp4 video to see what this action looks like)



More notes on Lenticular printing

- 1) Lenticular sheets and printers are sometimes not exactly equal to each other in pitch. SPM will only do whole numbers of line pitch – it will truncate a decimal fraction to a whole number to do its processing. **Using SPM, if I put in “60.15” it truncates the decimal and does 60Lpi. The software “SuperFlip will do fractional values of LPI (it works with a number like 60.18)**
- 2) SPM seems to only print “point for point”. When you use a 720dpi printer and set SPM to 60LPI everything is just fine – you get exactly 12 images (points) for each lens. **See note above about decimal values with SPM.** I frequently use SPM at exactly 60.00LPI for a 720dpi printer and then use PhotoShop to change the LPI by printing the picture just a tad larger or smaller as needed for my particular lenticular sheet. PhotoShop will blend the adjacent pixels at the edges of each image strip of the lenticular images and it doesn’t show like SPM.
- 3) Lenticular images should be printed with the viewing distance in mind. A small image may be viewed at 10” to 18”. A larger image may be viewed at 30” to 40”. The angle that one’s eyes see through the lenticular lenses is different at 10” and at 40”. When you adjust the print LPI of your image for 3D affect over the whole image, make sure you test it at the distance you expect to be viewing it. Use only 1 eye to pick the proper alignment, because if you use both eyes, one eye sees one stripe and the other eye may see a different stripe 4 or 5 stripes away.
- 4) Some lenticular software automatically puts alignment strips on the top and sides of an image. (several black and white lines at the lenticular pitch) These are very useful when aligning the image to the lenticular sheet. If you don’t have such software, you can do the same thing by making the 4 middle images of your set of 12 images have a small black border and the rest of the images have the same size white border. When it is printed you will have the alignment strips all around your image.

1) The free program “SuperFlip” will only do up to 60Lpi. SPM will try to slice up an image at higher Lpi but it doesn’t really work very well. As stated above, I only use SPM at 60 Lpi and use PhotoShop to re-adjust the final printed (photoShop printed) image to get the lenticular pitch that will fit the sheets I have. It takes a few tries. If I use the SPM with the settings listed below and then print with SPM with a printer at 720ppi, I can fool the system and get an image printed at a decimal value of LPI shown by SuperFlip.

2) SPM cannot process decimal values of lens pitch. In SPM, if you set lens pitch to 61 and then set the SPM printer DPI to the following values and then print at 720DPI this fools SPM and gives you the actual LPI shown in the lists below. The second list is for a 600 DPI printer.

•					
•	With 61 lenticular LPI (720 Printer)		With 61 lenticular LPI (LPI 600DPI printer)		
•					
•	DPI in SPM	Actual LPI printed	DPI in SPM	Actual LPI printed	
•	740	59.35	616	59.41	
•	739	59.43	615	59.51	
•	738	59.51	614	59.61	
•	737	59.59	613	59.70	
•	736	59.67	612	59.80	
•	735	59.75	611	59.90	
•	734	59.84	610	60.00	
•	733	59.92	609	60.09	
•	732	60.00	608	60.19	
•	731	60.08	607	60.29	
•	730	60.16	606	60.39	
•	729	60.25	605	60.49	
•	728	60.33			
•	727	60.41			
•	726	60.50			
•					
•	Actual LPI printed = 61 X 720 / DPI in SPM	(= 61 X 600 / DPI in SPM)			
•					

1) Of the 2 programs listed, only SPM has a good auto alignment feature. If you use either SuperFlip or SPM to slice up your images, I would use SPM’s “X/Y adjustment and Cropping feature” and SPM’s “Auto Rotation and Adjustment feature” before trying to slice up and print your images. SuperFlip will also print a series of test patterns to check out your particular lenticular sheets. SuperFlip only saves in .TIFF format and not .JPG format. SPM can convert a .TIFF image to a .JPG image.

Other lenticular process videos to watch

- VueThru.com sells a lot of lenticular supplies and has several good videos that you can watch to get their suggested process to make lenticular images. They show Flip images but 3D images are done the same with the lenticular sheets with Vertical lenses. Go to <http://www.vuethru.com/videos.html> for the videos.

- Other possible Lenticular processing information

- dwa.stereo@gmail.com
- <https://stereo.jpn.org/eng/stphmkr/>
- <https://www.pop3dart.com/lenticular-software>
- <https://www.3DPDX.org>
- <https://www.3dpdx.org/lenticular-101-201-301.html>

