3DLensProZipper

A Professional Solutions Suite for

3D Lenticular Print Photography

Operating Guide

Rev. D

3Dependable 3DLensProZipper Operating Guide
Rev. A

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS.
WARNING – TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK CAREFULLY FOLLOW THESE INSTRUCTIONS.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this equipment near water.
- Clean only with dry cloth.
- Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Unplug this equipment during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the equipment has been damaged in any way; such as power-supply cord or plug damage, liquid spilled or objects fallen into the equipment, exposed to rain or moisture, or dropped.
- If the shape of the plug does not fit the power outlet, use an attachment plug adaptor of the proper configuration for the power outlet.

READ THIS FIRST

Before operating 3Dependable Dolly, please read this manual thoroughly and retain it for future reference.

Caution

BATTERY PACK

If the battery pack is mishandled, the battery pack can burst, cause a fire or even chemical burns. Observe the following cautions.

- Do not disassemble.
- Do not crush and do not expose the battery pack to any shock or force such as hammering, dropping or stepping on it.
- Do not short circuit and do not allow metal objects to come into contact with the battery terminals.
- Do not expose to high temperature above 60°C (140°F) such as in direct sunlight or in a car parked in the sun.
- Dispose of batteries at a Hazardous Waste disposal site.
- Do not incinerate or dispose of in fire.
- Do not handle damaged or leaking lithium ion batteries.
- Be sure to charge the battery pack using the charger supplied by 3Dependable.
- Keep the battery pack out of the reach of small children.
- Keep the battery pack dry.
- In case the battery pack needs to be replaced, use only battery with the same rating as labeled on the old battery pack. Make sure the outer body of the cylindrical plug is the negative side of the power supply.

AC ADAPTOR

When using an AC Adaptor, use it along an open wall, not in a narrow space, such as between a wall and furniture.

Disconnect the AC Adaptor from the wall outlet immediately if any malfunction occurs while using your slider track.

SHARP EDGES

3Dependable Dolly slider track is made from aluminum. The inside edges of the slider track channel may be sharp. Please use care and hand protection when touching the inside edges of the slider track.

FIGURE 1 CAUTION - SHARP EDGES

TABLE OF CONTENTS

1.0 INTRODUCING 3DLENSPROZIPPER

3DLensProZipper Operating Guide is divided into two sections:

Section 1. The Hardware - describes how the ***3Dependable Dolly*** takes a series of pictures along a straight line with equal displacement between neighboring picture

Section 2. The Software - describes how the ***3Dependable Portrait Producer*** converts your 3Dependable Dolly images into 3D Lenticular Print.

1.1 PRINCIPLES OF 3D LENTICULAR PRINTING

You don't need to be an expert in optics to create beautiful 3D lenticular prints. However, a basic understanding of the physics of 3D lenticular prints will help you make better judgments when designing a 3D photo shoot. A summary of key points is given here. For a more detail description on the principles of 3D lenticular printing, please visit the tutorial section of our website at www.3dependable.com.

Humans see the world in 3D because of a phenomenon called binocular disparity. In essence, our left eye and our right eye are seeing things at a slightly different angle, thus the relative positions among the objects we see are different from the perspectives of our left and right eyes. A very simple experiment will illustrate this point. Put your finger at a distance about 1-ft from your nose and then close your left eye and observe the relative position of your finger with a clearly identifiable object in the background, say a window frame. Repeat the same exercise with your right eye closed this time and make another observation. From this experiment, you can see that your finger will shift to the left when your left eye is closed; and it will shift to right when your right eye is closed. This binocular disparity gives us a 3D world view with depth perception.

3D lenticular printing simulates binocular disparity by intentionally directing one image to the left eye and another image to the right eye; images received by the brain will process the information to render a 3D sensation. 3Dependable Dolly is designed to capture scenes in an alternate manner. As the camera travels from right to left, the first image taken is for the left eye and the second image is for the right eye, alternating left to right as it proceeds along the slider track. The 3Dependable 3D Portrait Producer software takes these images and arranges them in a special way to coordinate with a lenticular lens creating 'pseudo binocular disparity' to fool our brain and giving us an impression of 3D.

1.2 MATERIAL NEEDED FOR A TYPICAL 3D LENTICULAR PRINTING PROJECT

A typical lenticular printing project requires the following materials:

- A digital camera
- A lenticular sheet
- An inkjet printer
- A computer with at least 16GB of memory
- A cold laminator

1.2.1 Digital Camera requirements

The most critical requirement is to ensure that the camera has a high write speed and it accepts high write speed memory cards.

1.2.2 About the lenticular sheet

3Dependable Inc. sells 3D effect lenticular sheets with adhesive backing in both portrait and landscape orientations in different sizes and line densities (DPI). You can also purchase lenticular lenses from other companies such as Microlens (www.microlens.com). When you buy lenses from third parties other than 3Dependable, make sure to study the lenticular sheet specifications carefully as not all lenses are created equally; some lenses are meant for other lenticular effects, such as flip. When the wrong type of lenticular lens is used, the quality of the 3D effect will be greatly marked down.

1.2.2 About the inkjet printer

Use high quality inkjet printers, good for typical letter size printing, such as Epson, HP, and Canon. If you need to print wider than letter size, you will need a wide format printer, for example, Epson Artisan 1430.

No matter what printer you are going to use, you will need to know the horizontal resolution of the printer. For example, Epson is 720 dpi; HP and Canon are 600 dpi. This resolution number is crucial for the pitch test and interlacing stage when using the 3Dependable 3D Portrait Producer software.

1.2.3 About your computer

Graphic imaging processing is a CPU hog process and does require a better equipped computer. Besides the CPU, memory also plays an important role, especially when you have a large number of pictures to be processed. We recommend an Intel based computer with a least 16GB internal memory. Please refer to the systems requirements section of the 3Dependable 3D Portrait Producer for details.

1.2.4 About the cold laminator

FIGURE 2 COLD LAMINATOR

There are many cold laminators that serve the purpose as long as the pressure control is adjustable between the base support and the soft roller. The example on the left is a manually operated cold laminator with adjustable knobs on both ends to add pressure. On eBay, this kind of laminator sells for about $80. There is no need to buy the expensive ones with an electric feeder as we found most of them are not as sturdy as the manual one shown here.

If you intend to do wide-format lenticular prints, you will need to buy a larger laminator.

2.0 INTRODUCTION TO 3DEPENDABLE DOLLY

3Dependable Dolly is the hardware portion of **3DLensProZipper** Professional Solutions Suite for 3D Lenticular Printing. 3Dependable Dolly makes it possible for your camera to take a series of pictures along a straight line with equal displacement between neighboring pictures. Two adjustable parameters on the Dolly vary the speed of the camera across the Dolly and the number of pictures to be taken. Speed and quantity determine the 3D depth of your lenticular print.

2.1 SETTING UP 3DEPENABLE DOLLY FOR THE FIRST TIME

FIGURE 3 - V-CLAMP FOR HOLDING THE DOLLY

Step One: Firmly tighten the V-Clamp to the top of the tripod, using the Allen wrench supplied, if necessary. The V Clamp will hold the 3Dependable Dolly chassis in position on the tripod.

Step Two: Loosen the knob at the side of the V-Clamp and slide 3Dependable Dolly slider track into the V-Clamp. Alternatively, you can push the wedge against the far end of the V-Clamp and then push the track against the V-Clamp with the knob to snap the track. Once the wedge is inside the V-Clamp, turn the knob clockwise to tighten the V-clamp.

FIGURE 4 - ATTACH DOLLY TO TRIPOD

Step Three: Attach the Turning Rod to the quick-release platform

FIGURE 5 ATTACH THE TURNING ROD (CORRECT SPELLING OF ATTACH ABOVE)

Step Four: Tighten the Quick Release Platform Turning Knob

FIGURE 6 TIGHTEN THE QUICK RELEASE PLATFORM TURNING KNOB

Step Five: Attach the quick-release platform to the screw on the dolly by turning the platform clockwise.

FIGURE 7 – ATTACH QUICK-RELEASE PLATFORM TO DOLLY

FIGURE 8 – 3DEPENDABLE DOLLY COMPLETE ASSEMBLY

2.2 3DEPENDABLE DOLLY CONTROL PANEL

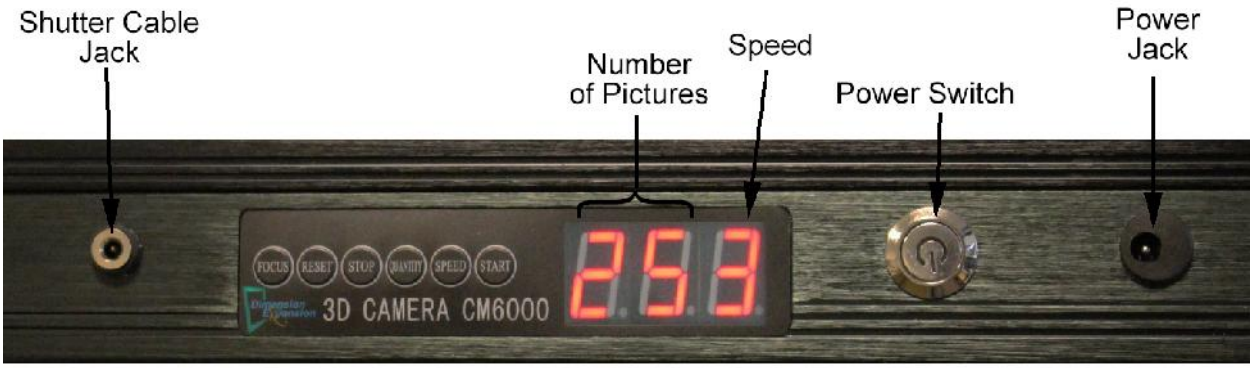


FIGURE 9 THE CONTROL PANEL

The Control panel on the 3Dependable Dolly slider track has six control buttons; their functions are described below.

2.2.1 THE [FOCUS] BUTTON

Pressing the [FOCUS] button moves the camera to the center of the track where you can focus your camera for the photo shoot.

2.2.2 THE [RESET] BUTTON

Pressing the [RESET] button moves your camera to the far right side of the slider track where every shooting session starts. If you press the [START] button and the camera does not move, press the [RESET] button.

2.2.3 THE [STOP] BUTTON

At any time when the camera is moving, you can stop it by pressing the [STOP] button.

2.2.4 THE [QUANTITY] BUTTON

Use the Quantity button to set the number of pictures to be taken; 15, 25, 30, 40, 50, 60, 70, 80, 90, and 99. After 99 you will see '- - ', which disables the shutter synchronization, allowing you to manually activate the shutter at any other interval you prefer.

2.2.5 THE [SPEED] BUTTON

Use the [Speed]button to set the speed/duration, in seconds, that the camera will travel along the slider track; 1 for 5 seconds, 2 for 7 seconds, 3 for 9 seconds, 4 for 11 seconds, 5 for 18 seconds, and 6 for 25 seconds, the slowest journey across the slider track.

2.2.6 THE [START] BUTTON

Pressing the [START] button initiates the picture taking process; however, utilizing a shutter cable from camera to slider track will insure maximum image stability.

2.2.7 HALF LENGTH SHOOTING

When the inherent depth of the scene is shallow for example when the distance is short between the object and the camera, the camera may only need to travel half the length of the slider track.
For half length shooting, you will use the Focus Button to limit the camera's movement across the slider track. First, press the [FOCUS] button to conduct the camera focusing. Then press the [FOCUS] button again and the camera will move just a quarter positions to the right instead of going all the way to the far right of the slider track. During picture taking, the camera will stop at the ¾ position left instead of traveling all the way to the far left.

2.2.8 USING THE REMOTE CONTROL

The [FOCUS], [RESET], [STOP], and [START] buttons can be initiated from the remote control:

A – [STOP]

B – [FOCUS]

C – [START]

D – [RESET]

FIGURE 8 REMOTE CONTROL

2.3 ACCESSORIES LIST

FIGURE 10 THE CARRYING CASE

FIGURE 11 THE TRAVELING CASE 1

FIGURE 13 BATTERY CHARGER

FIGURE 12 SHUTTER CABLE

FIGURE 14 LITHIUM BATTERY AND CABLE

FIGURE 15 SOFTWARE DONGLE

FIGURE 16 - QUICK-RELEASE PLATFORM

FIGURE 17 - QUICK-RELEASE PLATE

2.4 OPERATING 3DEPENDABLE DOLLY

FIGURE 16 CAMERA MOUNTED ON 3DEPENDABLE DOLLY

Please follow these steps to configure 3Dependaable Dolly in preparation for a 3D picture taking session.

2.4.1 CONNECT THE BATTERY TO THE POWER JACK

Whether you are shooting indoors or outdoors, it is always good idea to use the battery instead of the charger/adaptor directly because the battery tends to supply a more constant current. Make sure your battery is fully charged before going to an outdoor setting where electricity may not be available.

2.4.2 PRESS THE POWER SWITCH

The blue LED inside the power switch should light up indicating that the power is on.

2.4.3 Connect the shutter cable

FIGURE 17 SHUTTER CABLES

CHOOSE AN APPROPRIATE SHUTTER CABLE THAT WORKS ON YOUR CAMERA TO CONNECT YOUR CAMERA TO THE SLIDER TRACK.

2.4.4 ENGAGE THE SHUTTER CABLE SWITCH

Turn on the shutter cable switch by pressing the button on the switch and push it upward. You should see the orange color band when the switch is on.

Now you can test whether the shuttle is working by firing a test run. Press the [RESET] button on the track panel and then the [START] button. As the camera is moving, you should hear the clicks from the track and the shutter of the camera should open and close successively.

If this does not happen, check the wire connection and the switch to make sure they are setup correctly.

FIGURE 18 SHUTTLE CABLE SWITCH

2.4.5 LEVEL THE TRIPOD

Adjust the legs of the tripod so that the bubble of the level is in the middle.

FIGURE 19 LEVEL

2.4.6 SET THE DOLLY SPEED

Set the Dolly speed by pressing the [SPEED] button on the control panel. Two things to remember when choosing the speed at which the camera will traverse the Dolly; first, the smaller the number the faster the speed. The allowed settings are 1 for 5 seconds, 2 for 7 seconds, 3 for 9 seconds, 4 for 11 seconds, 5 for 18 seconds, and 6 for 25 seconds. Second, your camera has to be able to match the speed of the Dolly. For instance, if you set the speed of 1 and number of pictures at 40, then in 5 seconds your camera has to capture 40 pictures or 8 pictures per second. Unless you have a very expensive camera otherwise that seems to be impossible. Meanwhile, you do want the speed to be fast; especially when shooting a person you do not want the subject being shot to be in still for too long. Experiment few times with your camera to find out what Dolly speed the camera can handle.

2.4.7 SET THE NUMBER OF PICTURES

In an ideal situation, the more pictures, the better the final print in terms of clarity and smoothness. But with the same argument as above in setting the speed, we are constrained by a number of factors such as the camera speed, the computer memory for later processing, etc. The minimum for an acceptable 3D lenticular print is about 6 pictures. From our experience, 15 to 25 photos will suffice in most cases. If your camera supports continuous shooting, you can set the number of pictures at '--', the setting after 99. In that case, the camera will shoot as many pictures as it can automatically.

2.4. 8 Reset the Camera to start position

Before pressing the [START] button you should always reset the position of the camera to the far left by pressing the [RESET] button or the [D] button on the remote control. If you only need to do half-length shooting then you should press the [FOCUS] button or the [B] button on the remote control twice. In the latter case the camera will move to the ¼ of the track length position.

2.4.9 Press the [START] button or the [C] button on remote control

With all the settings properly set, you are ready to start the shooting. At this point you should instruct your subject to stare at a fix point and not to follow the movement of the camera. Press the [START] button and give it a go! If the subject turns his or her head or eyes you should press the [STOP] > {RESET} ([A] > [D] on the remote control) buttons and try again.

THE 3DEPENDABLE 3D PORTRAIT PRODUCER

3.0 INTRODUCTION TO 3DEPENDABLE 3D PORTRAIT PRODUCER

3Dependable 3D Portrait Producer is integrated development environment software for making 3D lenticular prints. It combines several versatile functions such as picture alignment, pitch test, and interlacing. With this software, making a true 3D lenticular printing is truly a matter of few mouse clicks. The whole process, from importing the pictures taken from the 3Dependable Dolly to creating the interlaced image, takes as little as 15 minutes.

3.1 BEFORE YOU BEGIN

This chapter provides information about system requirements and the pre-installation tasks to perform before installing the 3D Portrait Producer.

3.1.1 SYSTEM REQUIREMENTS

3Dependable 3D Portrait Producer is a Windows based program and will run on Microsoft Windows operating systems such as Windows XP, Windows Vista, Windows 7, and Windows 8. It should also run, although we do not recommend, on Intel based Apple computers with boot camp installed.

For optimum performance, we recommend a computer system with the following minimum requirements:

OPERATING SYSTEM

- Microsoft® Windows XP Professional
- Microsoft® Windows XP Home
- Microsoft® Windows 7 Enterprise
- Microsoft® Windows 7 Ultimate
- Microsoft® Windows 7 Professional
- Microsoft® Windows 7 Home Premium
- Microsoft® Windows 8
- Microsoft® Windows 8 Pro
- Microsoft® Windows 8 Enterprise

CPU TYPE

- AMD Athlon™64
- Intel® Core Duo

MEMORY

- At least 16GB of RAM

HARD DRIVE

- At least 100 GB of free space on the hard drive

USB PORTS

- At least two USB 2.0 ports, one for the software dongle (**which can only be recognized by this software to serve as a key point for copy protection. In other words, your PC will NOT recognize it when you plug in to USB port**.) and one for reading pictures on SD cards. If you only have one USB port, try to extend it with a multi-port hub extension. Otherwise it will be very inconvenient to have to plug and un-plug the software dongle multiple times.

PRINTERS

- An inkjet printer capable of printing at least 600 dpi horizontally.

DISPLAY RESOLUTIONS

- 1024 x 768 or higher with True Color

3.2 SOFTWARE INSTALLATION

Please log in as an Admin to install and operate 3Dependable 3D Portrait Producer!!!

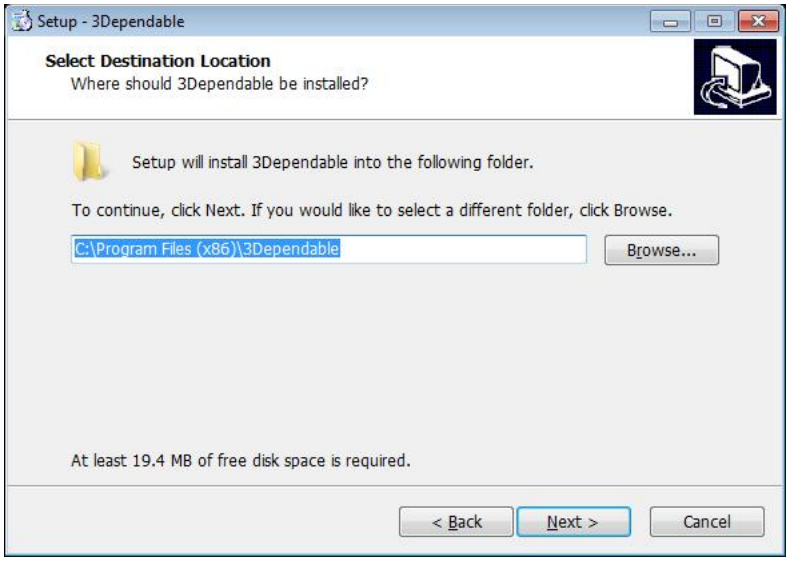
1. Copy 3Dependable 3D Portrait Producer - 3Dependable 3D Portrait Producer may come from various sources, for example from an email, or FTP site. Please copy it to a USB Flash Drive or USB Memory Stick first..

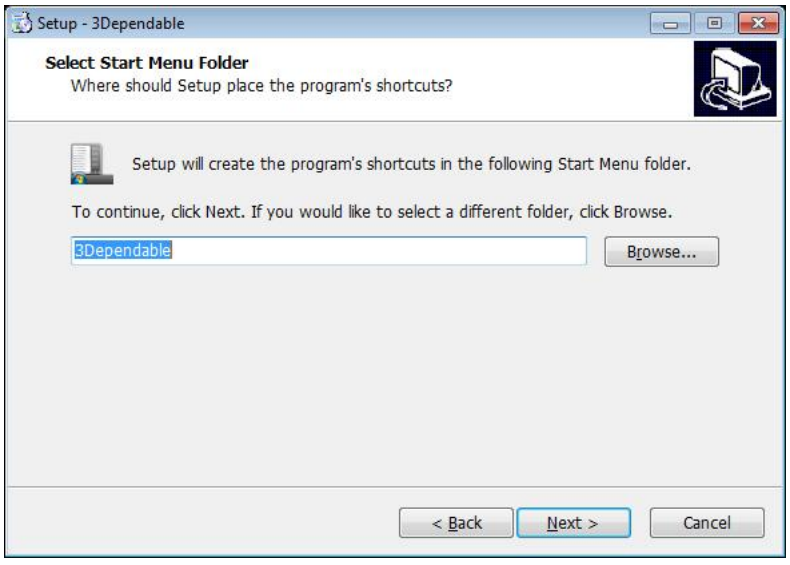
2. Install 3Dependable 3D Portrait Producer - After finishing copying 3Dependable 3D Portrait Producer to a USB Flash Drive or USB Memory Stick, please go to this drive then double click the Setup file with a name similar to:

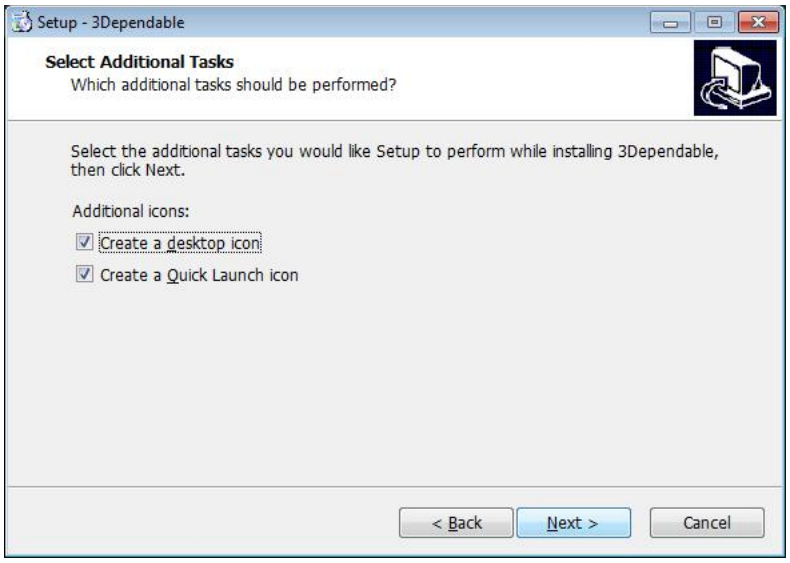
3DependableBulit16Setup-En.exe

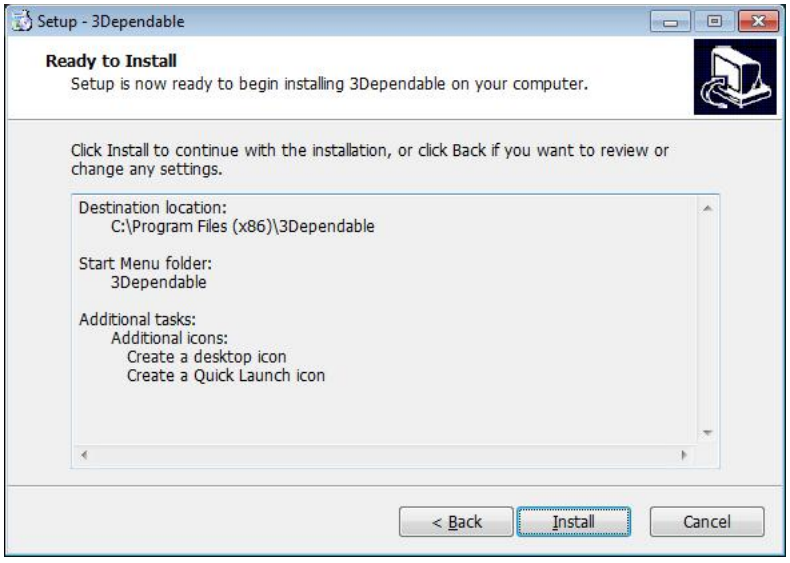
The installation should be self-explanatory with the following screens. We recommend accepting all the default settings unless it is absolutely necessary. If you are familiar with the standard setup procedures on Windows platforms, skip reading this section and jump right into the next section after installing the software.

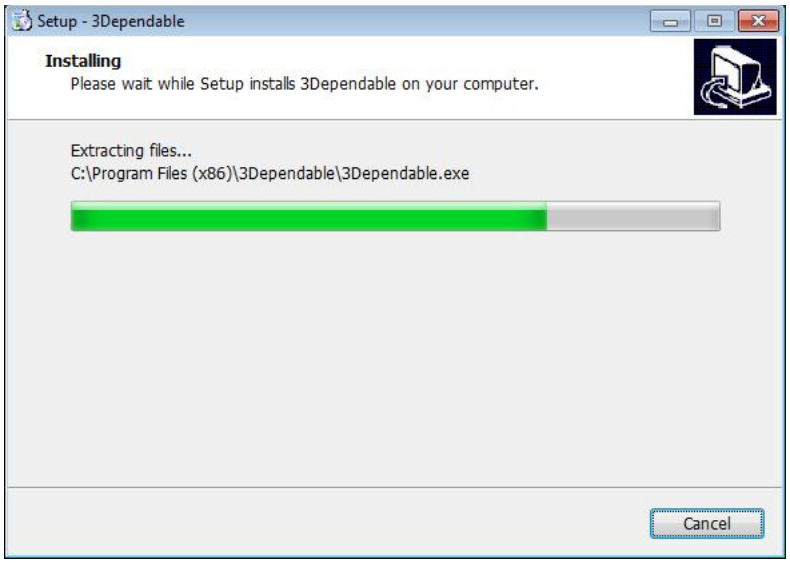

Setup - 3Dependable
Welcome to the 3Dependable Setup Wizard
This will install 3Dependable 3.1.9.0 on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
©2013 3Dependable
Next >
Cancel


Setup - 3Dependable
Select Destination Location
Where should 3Dependable be installed?
Setup will install 3Dependable into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Program Files (x86)\3Dependable
Browse...
At least 19.4 MB of free disk space is required.
< Back
Next >
Cancel


Setup - 3Dependable
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
3Dependable
Browse...
< Back
Next >
Cancel


Setup - 3Dependable
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing 3Dependable, then click Next.
Additional icons:
Create a desktop icon
Create a Quick Launch icon
< Back
Next >
Cancel

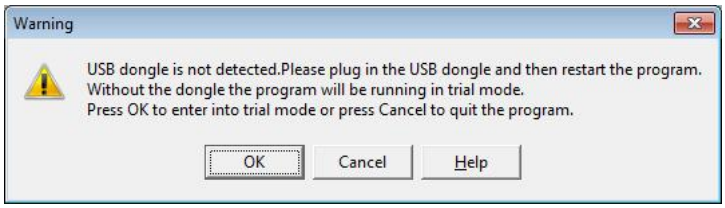

Setup - 3Dependable
Ready to Install
Setup is now ready to begin installing 3Dependable on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\Program Files (x86)\3Dependable
Start Menu folder:
3Dependable
Additional tasks:
Additional icons:
Create a desktop icon
Create a Quick Launch icon
< Back
Install
Cancel

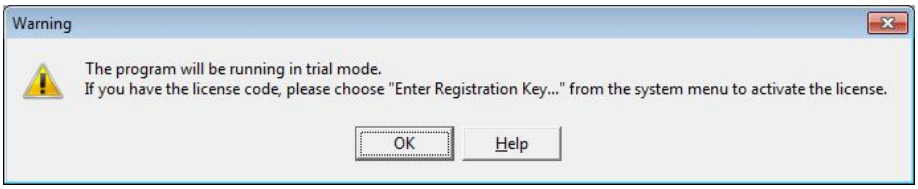

Setup - 3Dependable
Installing
Please wait while Setup installs 3Dependable on your computer.
Extracting files...
C:\Program Files (x86)\3Dependable\3Dependable.exe
Cancel

3.3 USING 3DEPENDABLE PORTRAIT PRODUCER SOFTWARE THE FIRST TIME

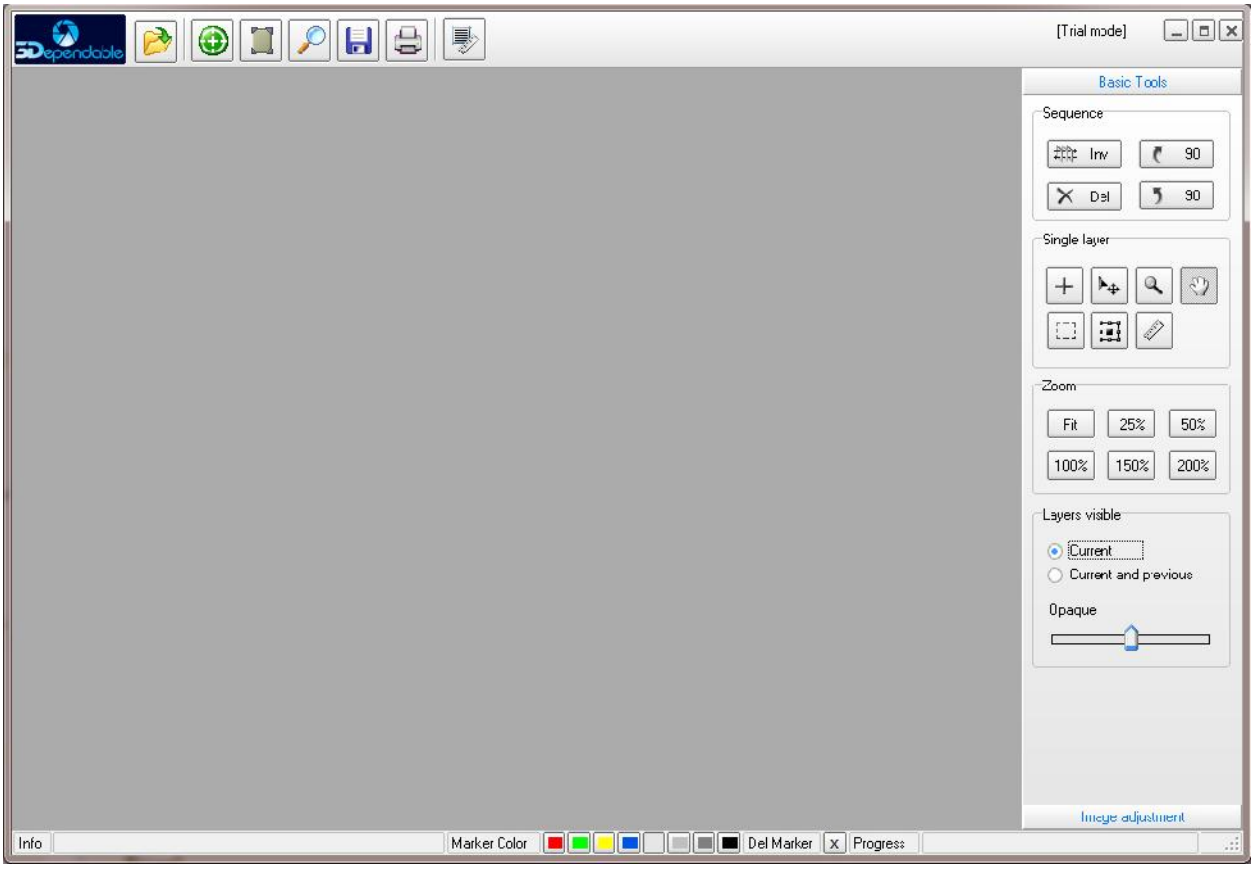
Even with the software dongle plugged into one of the UBS ports, you will see the following dialogs the first time you run the software.

In trial mode, the software is still fully functional, except that the final size of the interlaced image will not be of high resolution for printing.

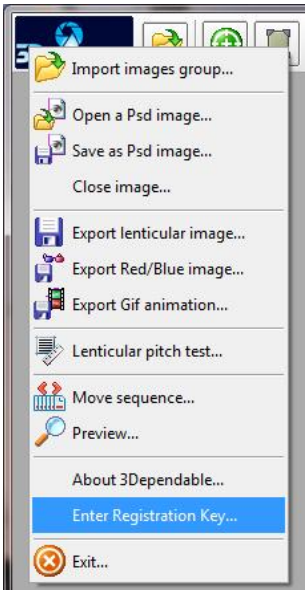




Press [OK] on both dialogs to enter into the program.

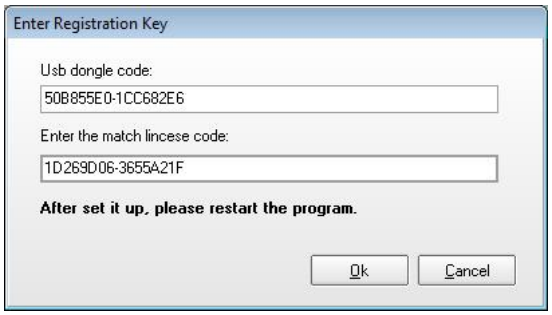

[Trial mode]
Basic Tools
Sequence
Inv
90
Del
90
Single layer
Zoom
Fit
25%
50%
100%
150%
200%
Layers visible
Current
Current and previous
Opaque
Image adjustment
Info
Marker Color
Del Marker
X
Progress

3.4 REGISTERING 3DEPENDABLE PORTRAIT PRODUCTION SOFTWARE

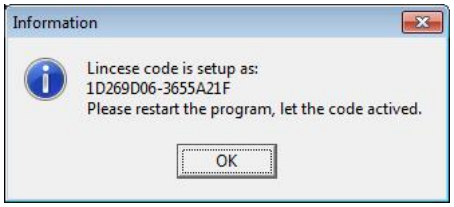


Once inside the program, choose [Enter Registration Key] from the system menu (the 3Dependable icon on the top left corner of the screen).

Enter the key exactly as it is shown on the software dongle. For example,



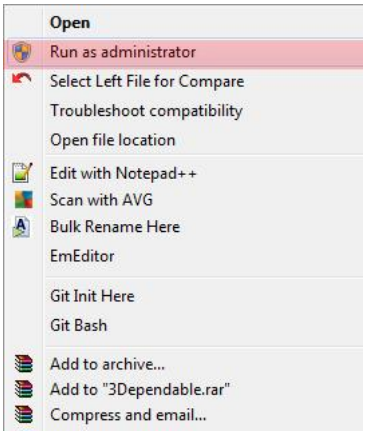
Once you press the [Ok] button, the following confirmation dialog will be shown to acknowledge the license code has been registered. You can click [OK] to dismiss the dialog.



Now you can quit the program and re-start it again to activate the registration.

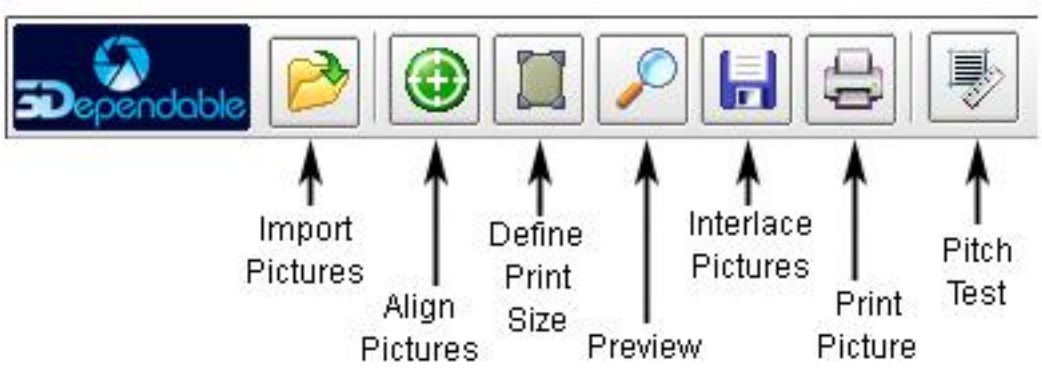
Note:

In the event that the same warning dialogs appear again even if you have the dongle plugged in, please quit the program and re-start it by right-clicking the program icon and choose [Run as administrator] from the context menu as shown below.



3.5 USING 3DEPENDABLE PORTRAIT PRODUCTION SOFTWARE

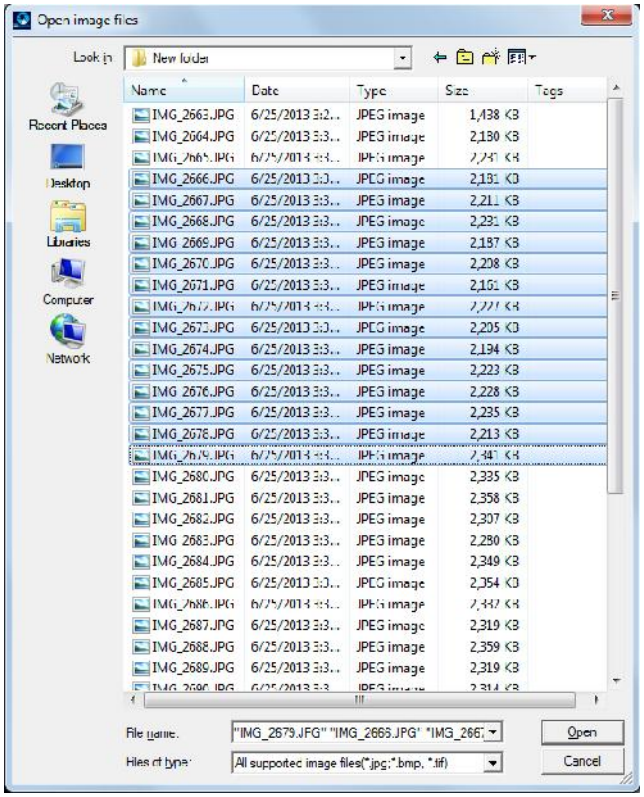
3.5.1 THE TOOLBAR



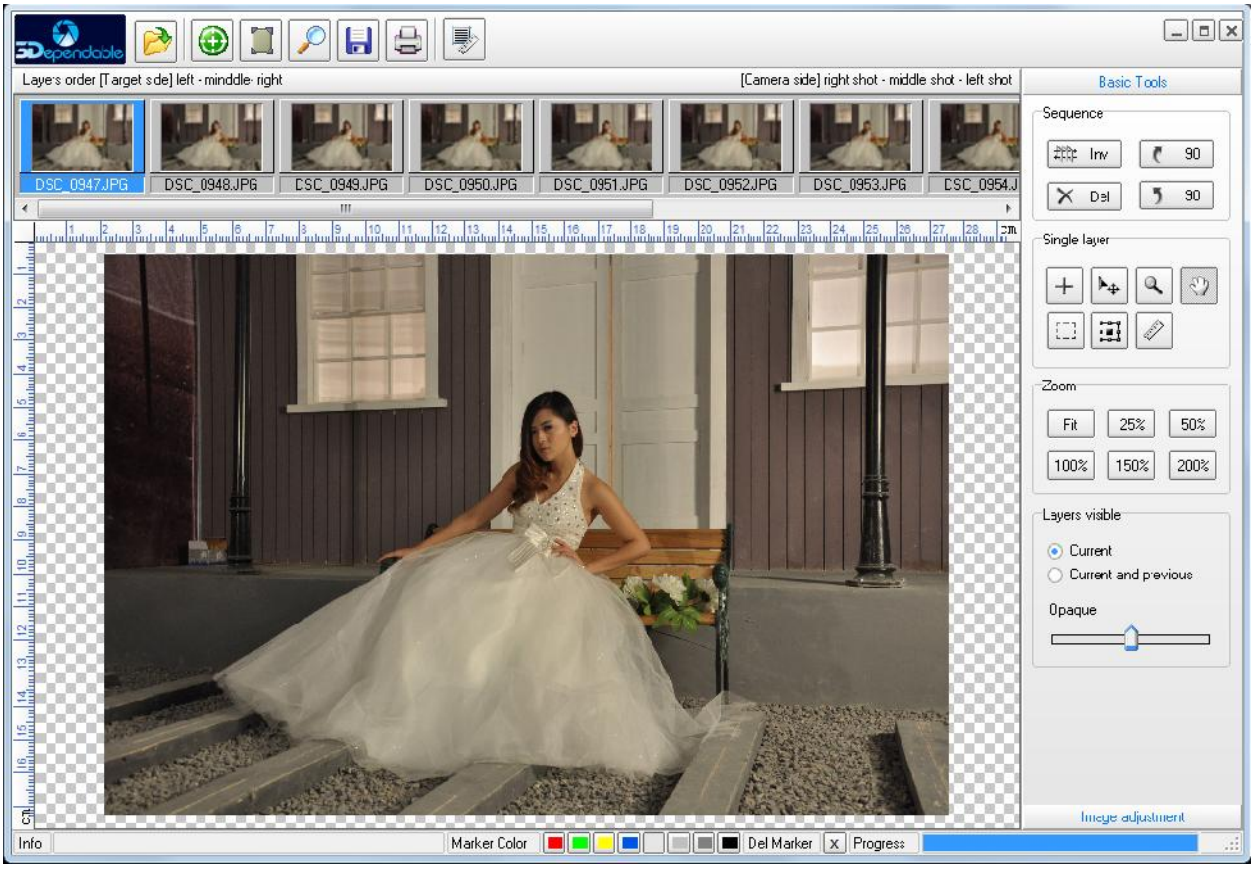
Except for the Pitch Test, which should be done before interlacing, the toolbar pretty much represents the workflow of a typical 3D printing session. Following the icons on the toolbar from left to right we will accomplish a specific task. Let us elaborate them one by one.

3.5.1.1 OPEN AN IMAGE GROUP ICON

Unless you have already saved a PSD file from the previous session, importing pictures taken from the 3Dependable Dolly will most likely be the first step on a 3D lenticular printing project. Clicking on this icon will bring up the dialog that allows you to choose the pictures.



You can press [Ctrl-A] to select all the files, or press the [Shift] key and the arrow keys simultaneously to select multiple files. Press the [Open] button to accept the selections. On opening, the program will list the iconized pictures at the top of the main area as shown below.



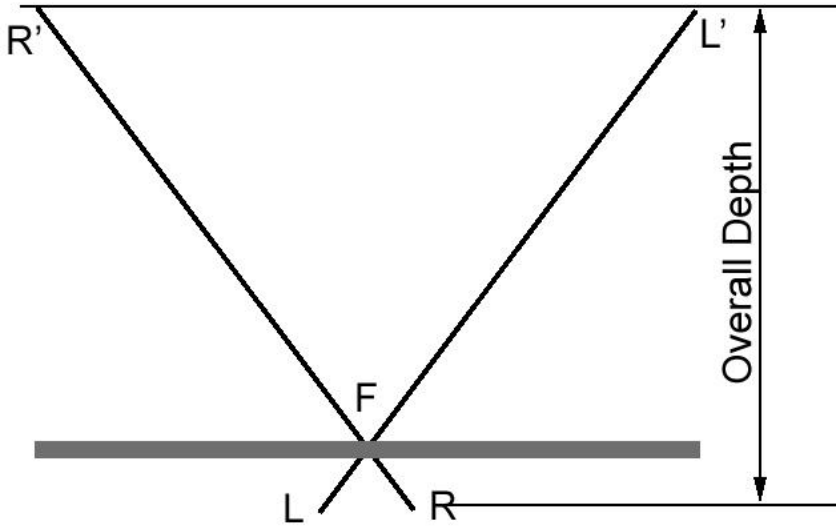
At this point you can highlight the first iconized picture on the left and use the right arrow key to scroll each picture individually to spot any one that is either out of sync or has an abrupt change of positions with its neighbor pictures. If found, you can use the 

button to delete the already highlighted picture or pictures. Pressing the [Shift] key and the arrow key will enable you to multi-select pictures.

3.5.1.2 Focus Icon (aka Align Pictures Icon)

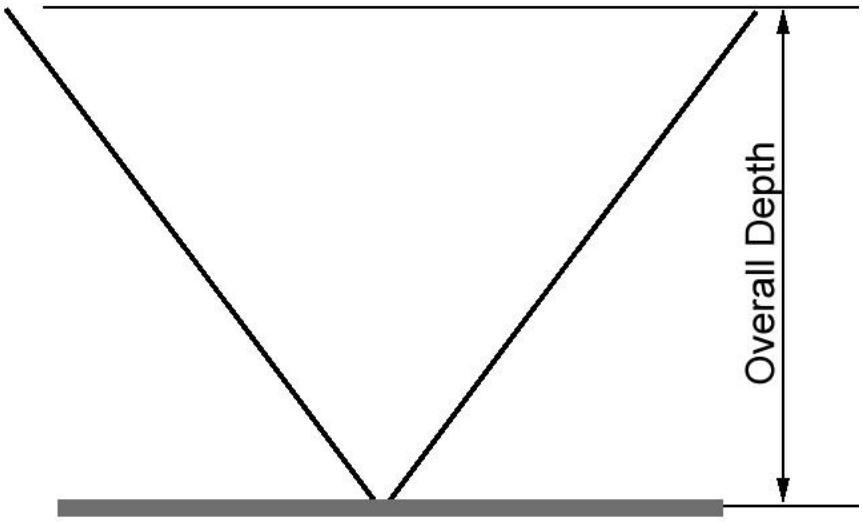
With the pictures imported, the next step is to align them to a common focal point. Choosing a focal point is the most important step in the whole process. If you visualize the lenticular lens as a piece of transparent glass put on the scene, then every point on this imaginary plane can be a focal point. Usually we will find an easily identifiable object on this imaginary plane; a button on a shirt, a beauty spot on the face, etc. Since this imaginary plane is also the plane of the lenticular lens, everything in front of the focal plane will come out of the picture and everything behind the focal plane will seem to be inside the picture.

The following diagrams show different scenarios resulting from various focal points, hence adjusting the focal plane. Please note. The farther away from the focal plane, the more blurry the objects will become. For this reason, it is always a good idea to set the focal point on the subject of the photo, such as the face of the person.



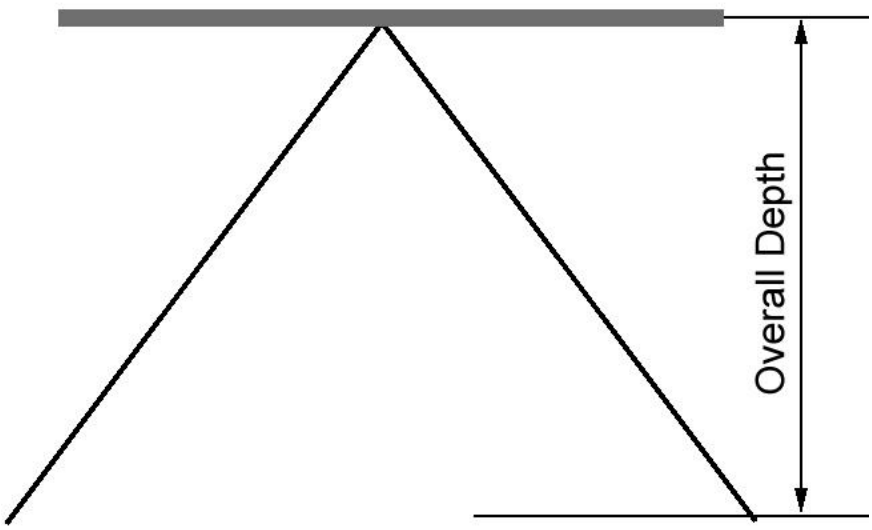
Scenario 1: Focal plane set at a slight distance from the nearest front objects

In Scenario 1, the focal plane is set at a comfortable distance behind the objects that are nearest to the front (F). This way the objects outside of the lenticular lens will not be too fuzzy. When you do the shooting you should always have a mental picture of the triangles LRF and L'R'F. The bigger the triangle, the fuzzier the image will be. For example, objects lie on plane LR will be sharper than objects on plane R'L'. In general, setting up a scene that has something not too far away in front of the focused objects will be the best scene construction. Please REWRITE



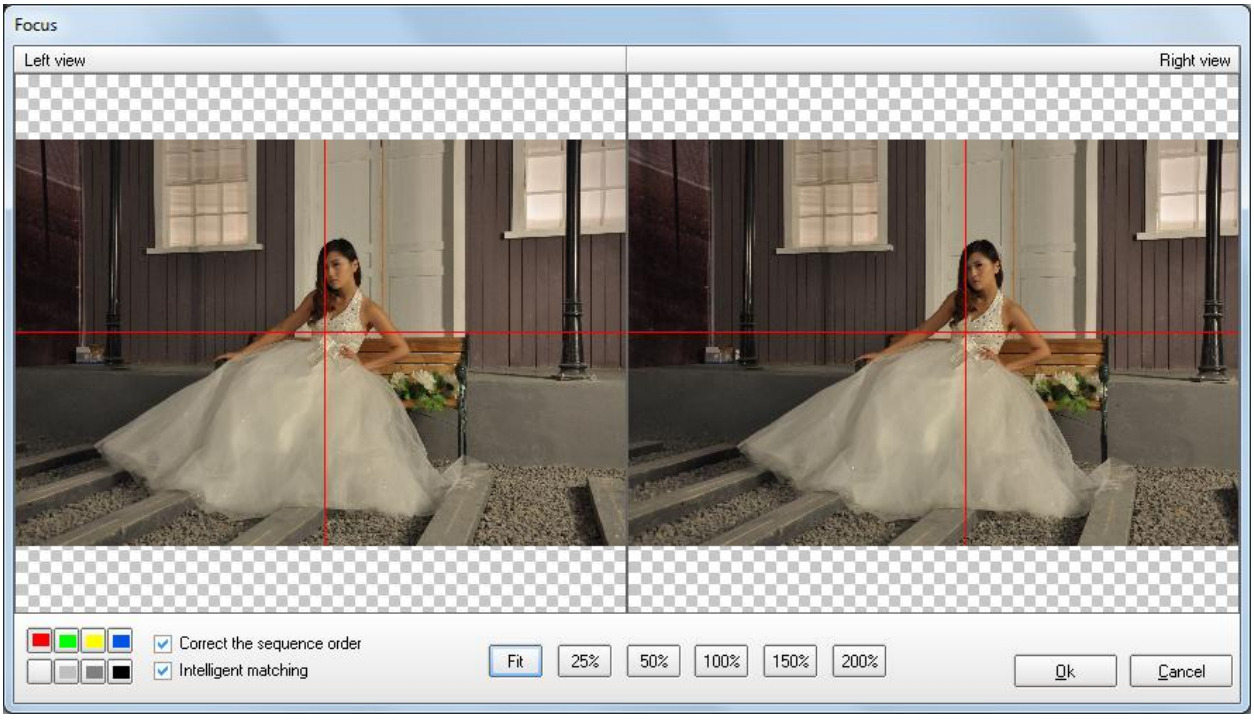
Scenario 2: Focal plane set at the nearest front

In Scenario 2, the focal plane is set at the nearest front; everything will go inside the picture.

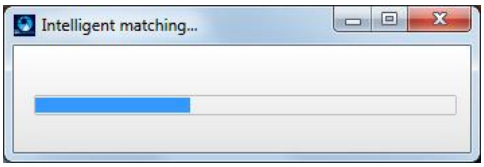


Scenario 3: Focal plane set at the farthest end

In Scenario 2, the focal plane is set at the farthest to the end of the overall depth; everything will seem to come out of the lenticular lens. You should only do that when the overall depth is not too big; for example the thickness of a human body plus a little space as background then it will be ok. Otherwise the objects protruding out of the lens will be very fuzzy, albeit the great sense of depth.

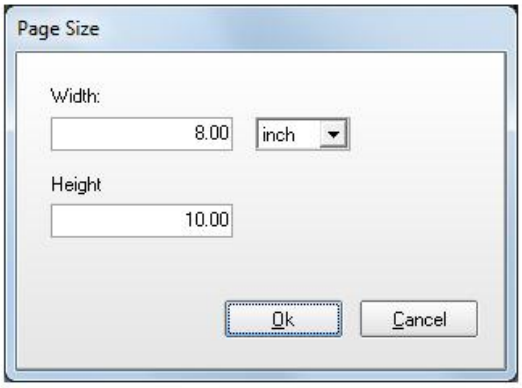


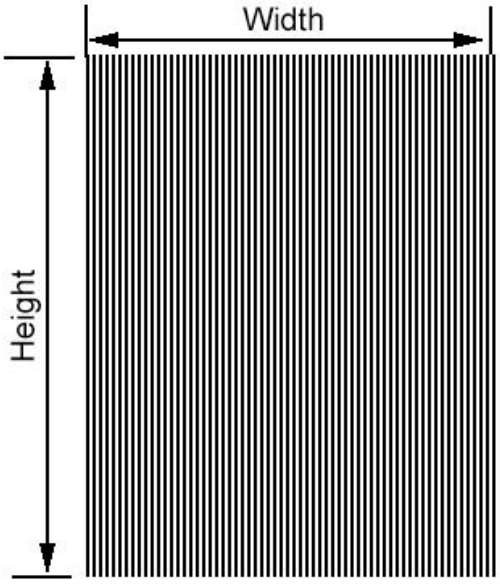
Pressing the Focus Icon will bring up the above dialog which displays the first and last pictures side-by-side. As mentioned above, you need to choose a common point on these pictures as focal point. Press [Ok] and the program will automatically align the in-between pictures for you.



3.5.1.3 Select Print Size Icon

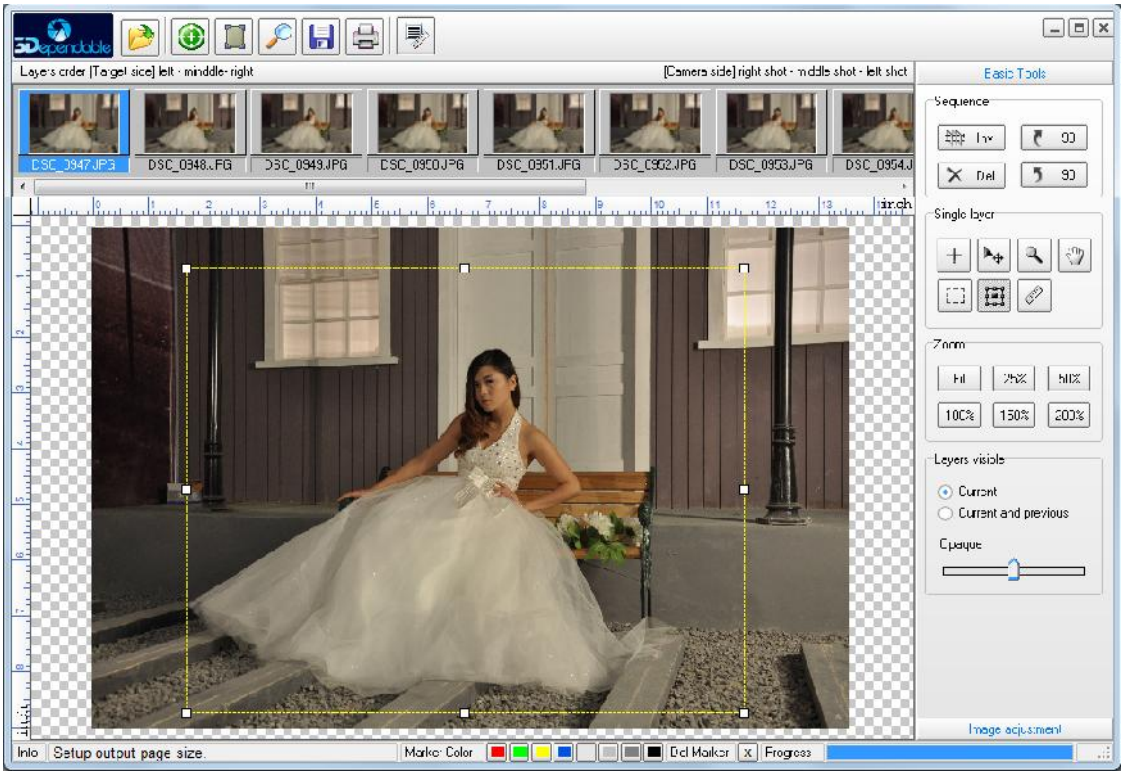
Pressing this icon will bring up the [Page Size] dialog which allows you to set the final print size. The print size is usually the same size as your lenticular sheet. Note that for 3D, the width should always be perpendicular to the lines of the lenticules as shown below



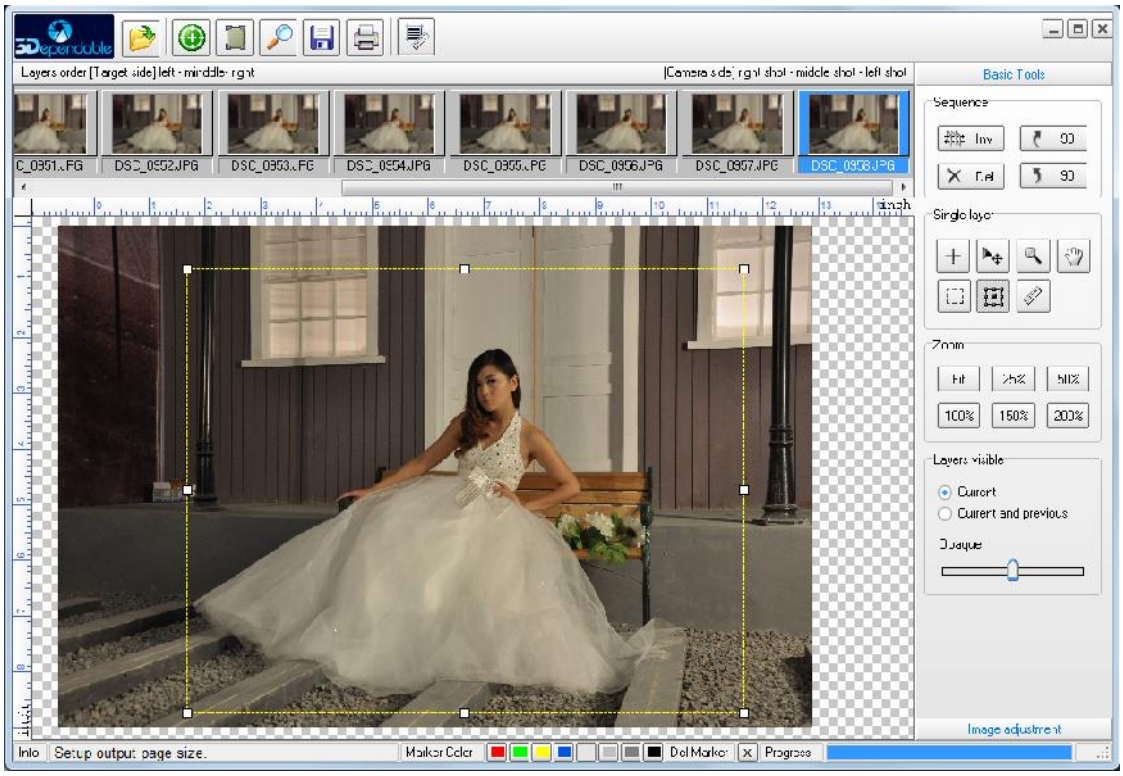


Press [Ok] and the cursor will turn into a crop pointer for you to mark the print size frame on the main area. Now you can draw the size frame by pressing the mouse button and dragging the mouse diagonally from the top left corner to the bottom right corner. The initial size frame will only be an approximation. Once the size frame is drawn, the cursor will turn into a move pointer for you to move the frame around to the best position. You can also re-size the frame by using the square dots on the middle of the edges and the four corners. When you re-size, the frame will automatically adjust the height and width proportionally.

At this point, you should highlight the first picture and the last picture to make sure they are both within the boundary of the frame size.



First picture is inside of the frame.



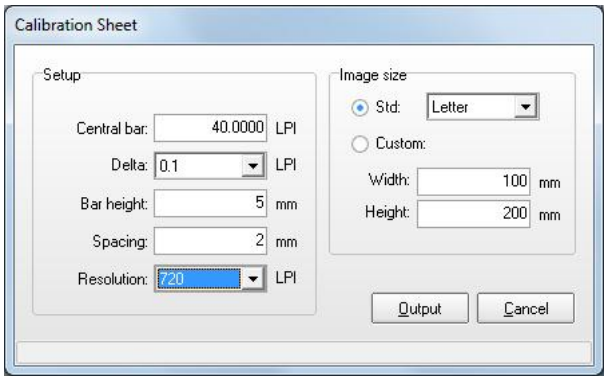
Last picture is inside the frame.

3.5.1.4 PITCH TEST ICON

Pitch Test is an essential step ensuring that the line density of the lenticular sheet and the resolutions of the printer are in sync. In the real world, either the printer or the lens or both can be slightly off the values the product makers have advertised. By performing a pitch test, exact measurements are achieved so the software can offset any discrepancies that exist.

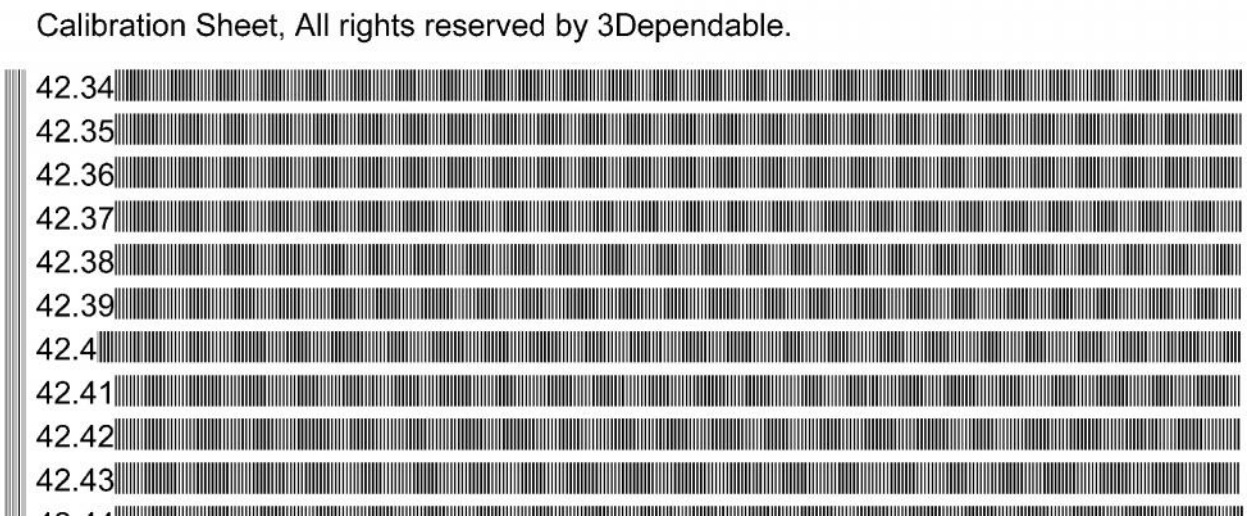
For example, a lenticular sheet with a published specification of 40 LPI may in fact be 40.1 LPI. The extra 0.1 LPI will be a catastrophe if it is not accounted for. A printer printing at the published 720 DPI (Dot per Inch) may also deviate from the specification and prints at a slightly higher or lower resolution. The purpose of pitch test is to identify such deviations so that miss-alignment can be avoided.

Press the [Pitch Test] icon will bring up the [Calibration Sheet] dialog for you to specify the settings. A precise pitch test should be conduct successively to increase the precision. For example, if the advertised lens density is 42 LPI then you can start with 42 LPI as the first run and 0.1 as the delta. After the first run, say you have identified 42.15 LPI as the best value, conduct another run with 42.15 LPI as the initial value with higher precision by choosing the delta to 0.01.

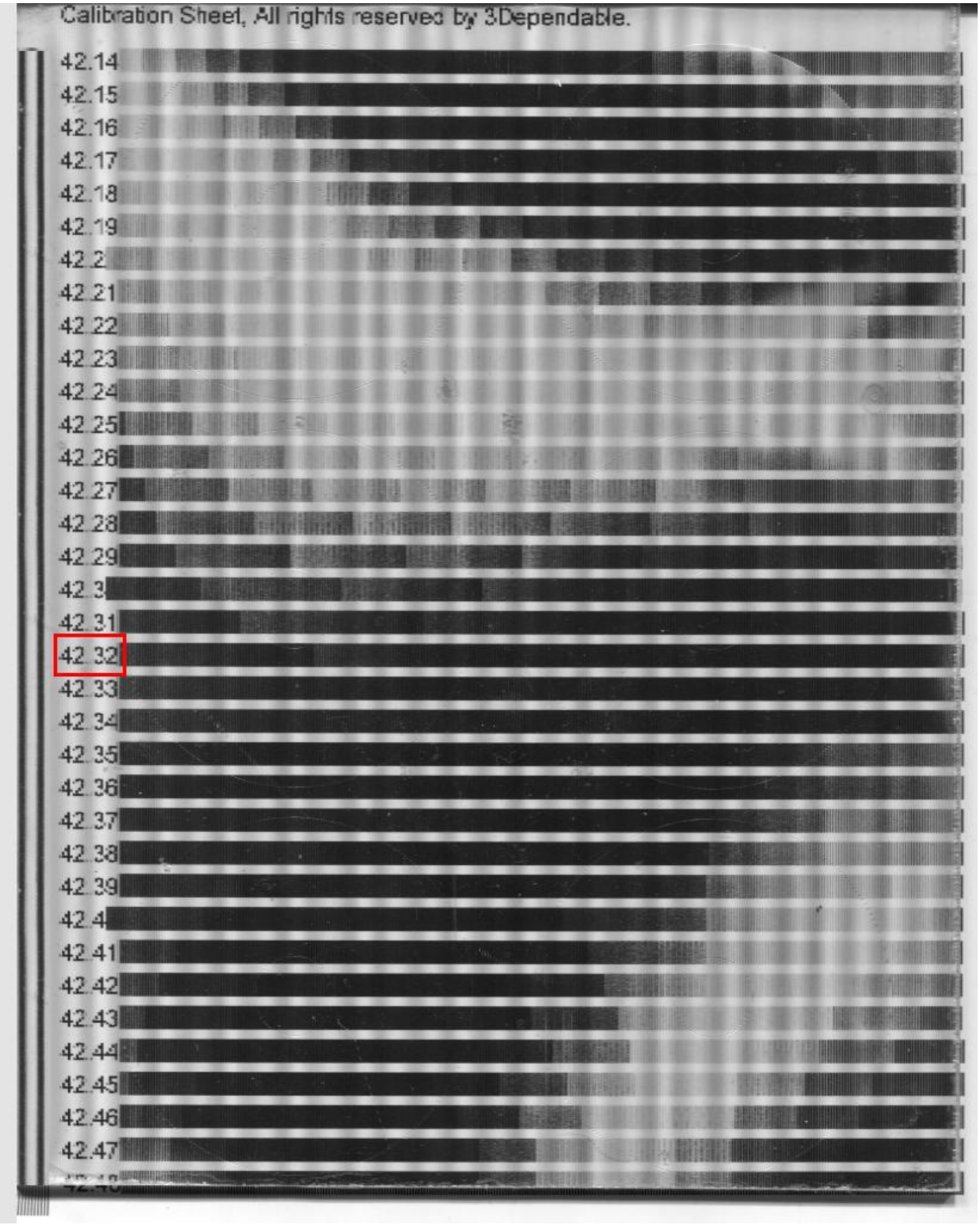


For the [Resolution] drop down menu you should choose the setting that matches your printer. For example, 720 or 1440 for Epson printers, and 600 or 1200 for HP or Canon printers.

Press [Output] to create the calibration sheet and save it as a TIF file as shown.



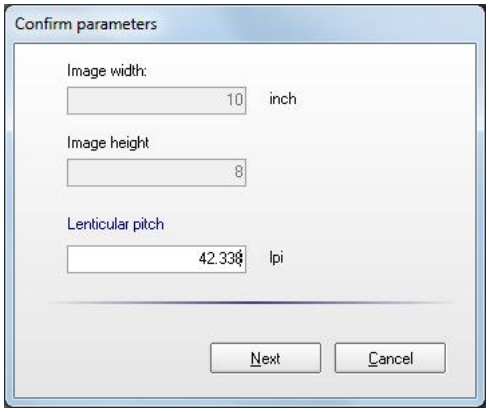
Once the calibration sheet is printed, you can overlay a piece of lenticular lens on top of it. The strip the gives either a solid black or a solid white will be the best value.



You should use the vertical bars on the left hand side of the calibration sheet to help you align the lenticular sheet. From the above diagram 42.32, 42.33, and 42.34 are all good candidates. If you want to be super precise you can conduct another run with 42.33 as the initial value and 0.001 as the delta.

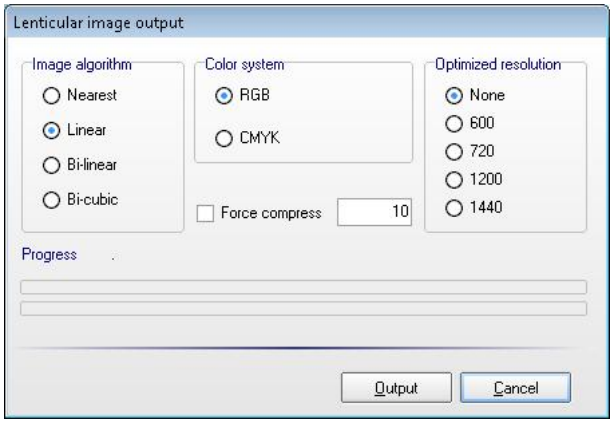
3.5.1.5 Output lenticular image Icon (Interlacing and merge the pictures)

Equipped with the true lens density for a specific printer, we can now render the final interlaced image. Press this icon will bring up the dialog for you to specify the lens density.



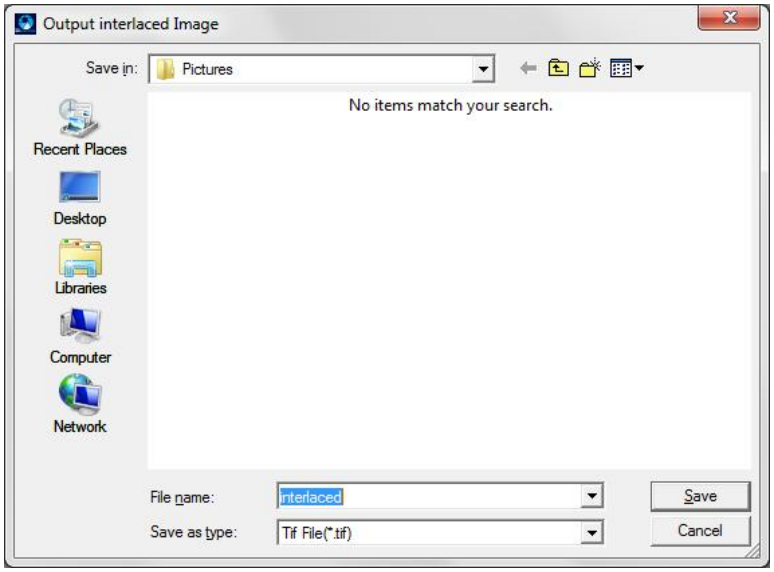
Press [Next] to advance to the next dialog which allows you add a logo.

If you do not have a logo to add, continue by pressing the [Next] button.

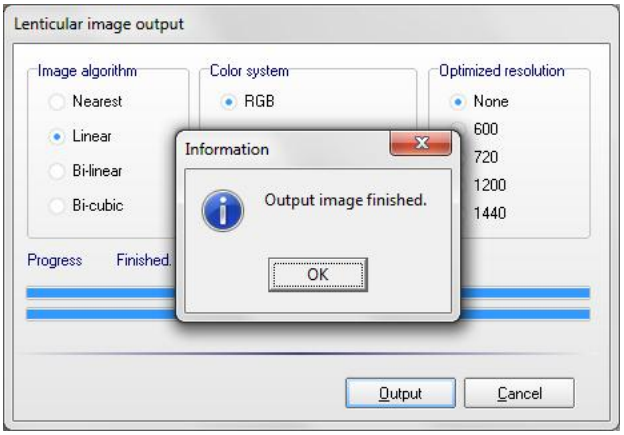


The options on the [Lenticular image output] dialog deserve some explanation. You can use the default [Linear] option on the [Image algorithm] section unless you are knowledgeable about these algorithms in Photoshop. For [Color system] you can use [RGB] when you intend to print on inkjet printers. [CMYK] is meant for offset printing for large volume production. For the [Optimized resolution], [None] is the default and the final resolution of the interlaced image will be number of pictures times the line density of the lenticular lens. For example, if you have imported 15 pictures and the line density from pitch test is 42.51, then the final resolution of the interlaced image without any optimization will be (15 x 42.51) = 637.65 dpi. In general there is no need to use any optimization unless the number of pictures used and the line density are small. As an example, if there were only 6 pictures and the line density is 15, then according to the calculation above the final resolution is only 90 dpi which will be too coarse for a quality print. In that case, choose 720 or 1440 for Epson printer, and 600 or 1200 for HP or Canon will enhance the picture quality substantially.

Press [Output] to advance to the next dialog to specify a file name for the rendered interlaced TIF file which can be printed later.

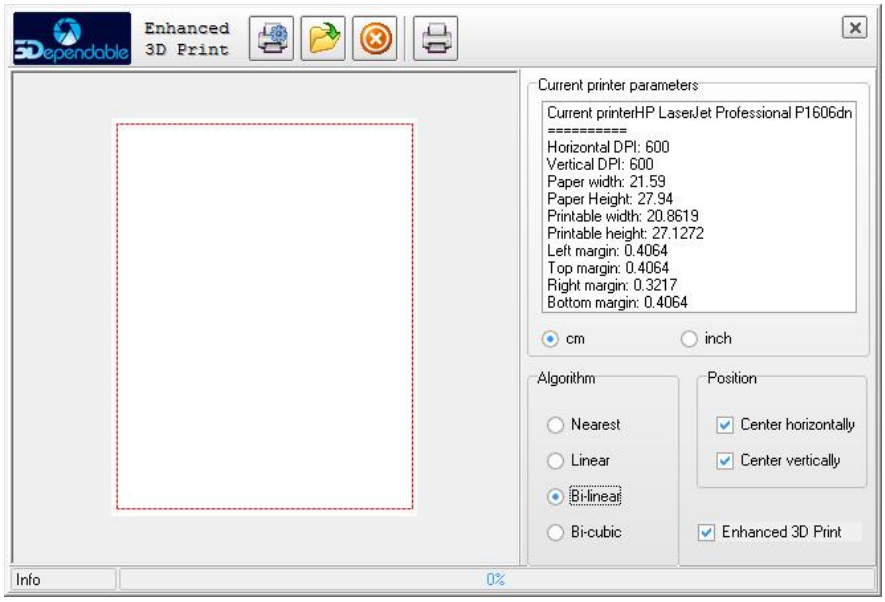


After pressing the [Save] button the program will start the interlacing process. The progress bar will run back and forth depends on the number of pictures that have been imported. Press [OK] to dismiss the confirmation dialog when the process is done. Now you have an image that is ready to be printed.



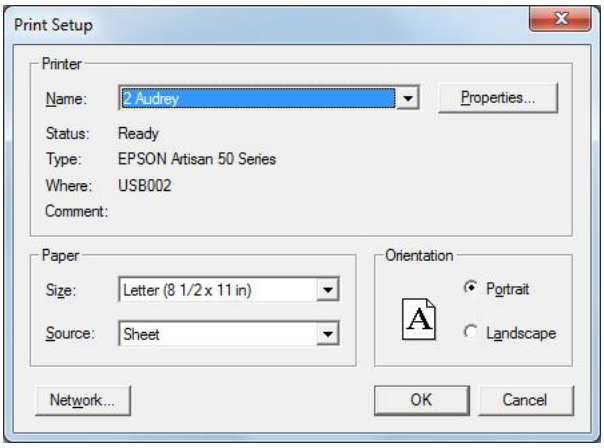
3.5.1.6 PRINT LENTICULAR IMAGE ICON

Now that we have the interlaced image created, we can print it on the printer we have used to conduct the pitch test. Click on the [Print lenticular image] icon will bring up the dialog for you to locate the image you have just created.

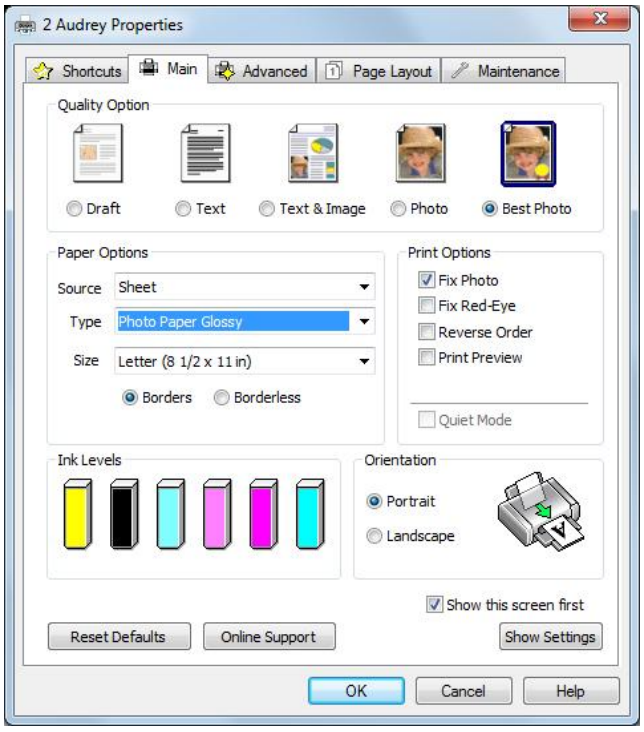


The first icon  allows you to configure the printer to the correct settings. Clicking it will bring up the [Print setup] dialog for you to choose the printer and set the properties.

Choose the printer that you intend to use from the [Name:] pull-down menu. Click on the [Properties] will allow you to select the printer settings.

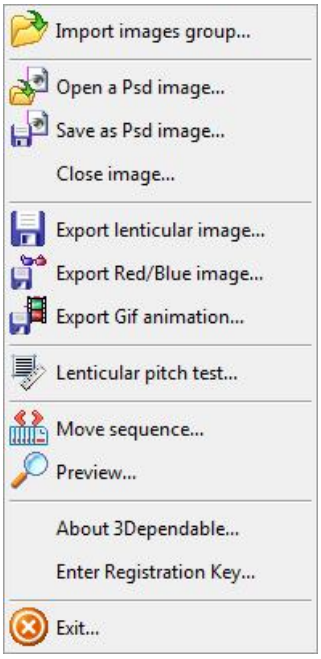


For example, the diagram below shows the settings for an Epson Artisan 50. If you use HP or Canon printer the dialog will be different from the one shown below.



Once the printer has been properly configured, you can press the  icon to select the interlaced files you have just saved. Press the  icon to send the file to the printer.

3.5.2 The 3Dependable System Icon



Behind the 3Dependable system icon on the top left corner are some features of the software that are not included in the toolbar; albeit some are. Let us go through each icon one by one.

3.5.2.1 Import images group ...

This functions the same as the one on the toolbar and it is just duplicated here for convenience.

3.5.2.2 Open a Psd image...

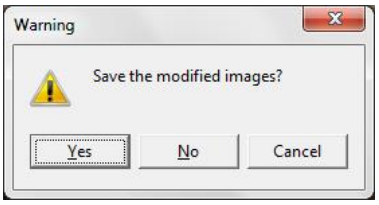
Use this icon to open a PSD file that is saved by the next icon, i.e. Save as Psd image ...

3.5.2.3 Save as Psd Image ...

Use this icon to save a project that can be re-opened later using the [Open a Psd image ...] icon above. The settings that are saved included the position of each picture after automatic or manual alignment and hence the focal point, the image adjustment to each picture if there is any. The print size will not be saved and needs to be re-defined.

3.5.2.3 Close image ...

Choose this will flush all the pictures imported and the software will reset itself as if it has just been started. You will be prompted if you want to save the current session.



If your answer is [Yes], the result will be same as choosing the [Save as Psd image ...] icon above.

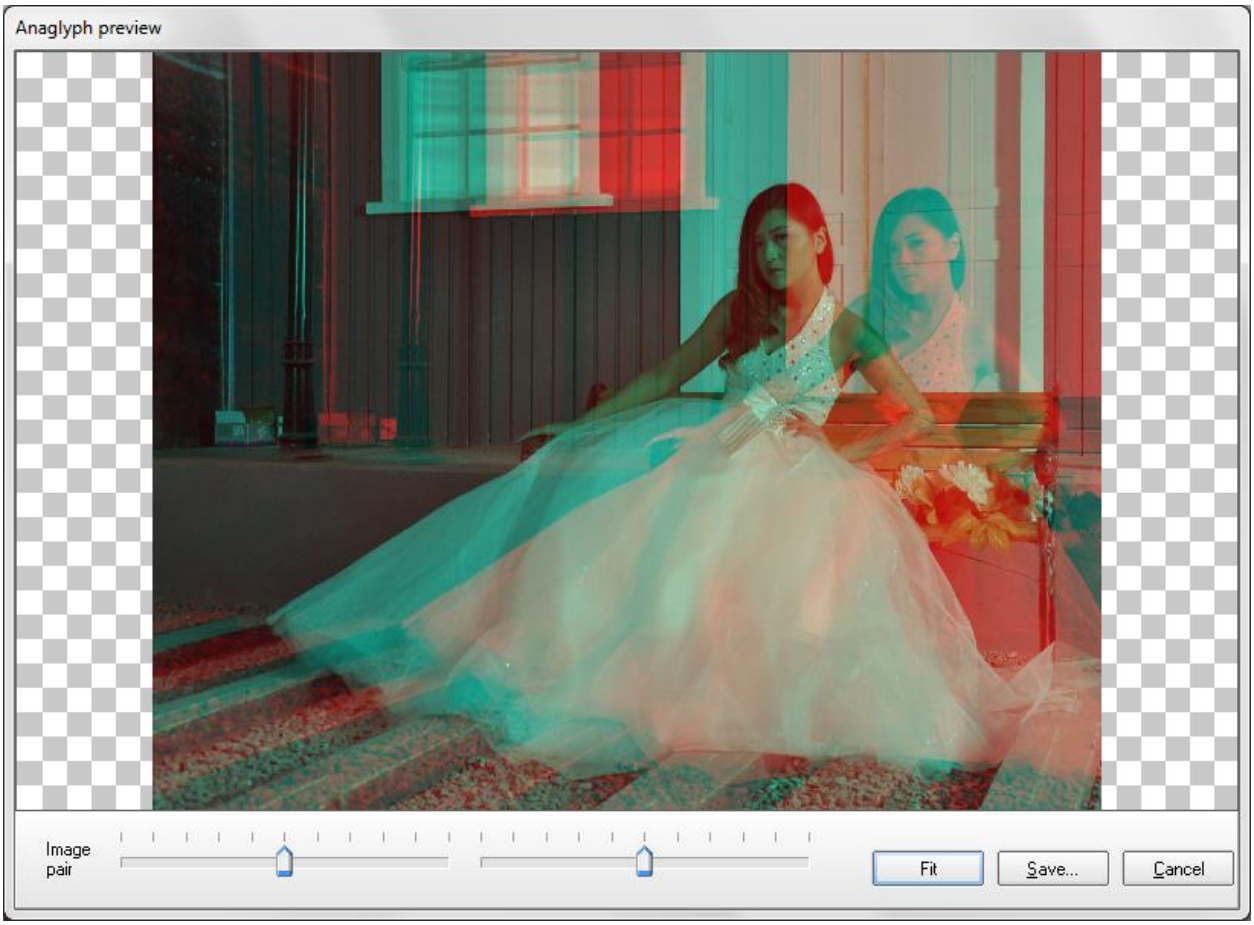
3.5.2.4 Export lenticular image ...

This icon is the same as the [Output lenticular image] icon on the toolbar. It is duplicated here for convenience.

3.5.2.5 Export Red/Blue image ...

Use this icon to preview the 3D depth by creating an anaglyphic image. This function only works if you have defined the print size.

An anaglyph 3D image contains two differently filtered colored images, one for each eye. When viewed through the "color-coded" "anaglyph glasses", each of the two images reaches one eye, creating a pseudo binocular disparity. The visual cortex of the brain fuses this into perception of a three dimensional scene or composition.



Press the [Fit] button if the anaglyphic image does not fit the window. You can also resize the window to make it bigger or smaller. Double-clicking the title of the window will put the window in full-screen mode. Every time you change the window size it is always good idea to press the [Fit] button.

Below the anaglyphic image there are two slider bars for you to choose which two pictures are used to construct the anaglyphic image. Basically the program will divide all the imported images into two groups; the first group from the first half and the other group from the rest. If the number of imported images is an odd number, the last one will not be included.

In the above example there are 23 imported pictures. 23 minus 1 and divided by 2 equal 11. For this reason there are 11 ticks on each slider bar. You can see the image changes when you move the pointers of the slider bars.

Note:

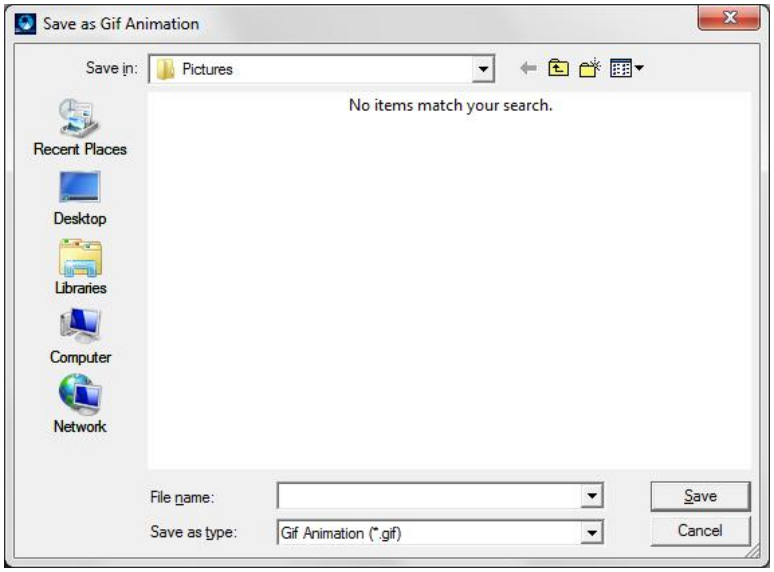
The depth shown on the anaglyphic image does not represent the depth you will get on the final lenticular print. The purpose of having the anaglyphic image is for you to get the sense of whether the overall depth is too big. When the depth is too deep the objects in front of and behind the focal point will become blurry.

3.5.2.6 EXPORT GIF ANIMATION …

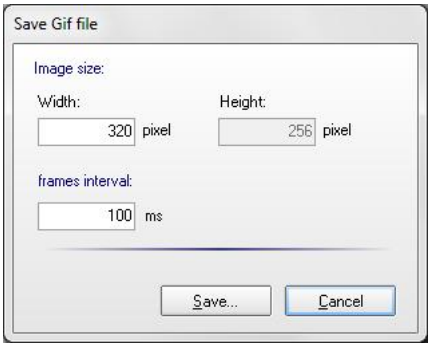
Animation GIF is another way to preview a 3D composition. By showing each imported picture successively to reveal the relative positions of the objects, our brain will perceive a sense of 3D; another way to fake a binocular disparity.

Animated GIF is usually used on web sites for communicating 3D. You can also send an animated GIF to your client if sending a physical copy becomes too expensive.

Pressing this icon will bring up the dialog for the filename of the animation GIF.



Click the [Save] button on the above dialog.



On the [Save Gif file] dialog you can specify the width of the animation GIF. The height will be automatically adjusted proportionally based on the print size you have defined. You can also set the speed of the animation in one thousandth of one second.

3.5.2.7 LENTICULAR PITCH TEST

This icon is the same as the [Pitch Test] icon on the toolbar. It is duplicated here for convenience.

4.0 Frequently Asked Questions