

Operational Instruction for the ISG-Z100 HD

The ISG-Z100 HD is a high-quality camera designed specifically for Photo ID applications. This document details operational controls to achieve the highest captured image quality.



Z100 HD Features

- Highest quality images even in dark rooms
- High powered flash provided crystal clear image at subject distances of 10 feet, even in completely dark rooms
- Automatic Face finding and cropping
- Simple user controls allow adjustments for fine tuning and optimization
- TWAIN interface to allow integration to photo-Id applications
- Application for standalone operation
- SDK available for custom integration
- Responsive tech support via phone and email

All users are encouraged to call Video Associates Labs for any camera or image quality issues. Also users are encouraged to call with any suggestions. Customer feedback is invaluable for improving the quality of the product. You can reach us at **800-331 0547** or **support@val-cam.com**

The following discussion overviews all adjustments to achieve the highest image quality. It's recommended that all following procedures are practiced when first using the camera to gain familiarity with its operation.

It is assumed that the camera is installed and working. Refer to the ISG-Z100 manual if this has not been done. If the camera is not operational call or email Video Associates asap.

Step One – Start the Camera Standalone Application.

- Click the “Start” button in the lower left hand corner of Windows
- Locate the **ISG Z100HD** folder and start the ISG Z100HD application



Step Two – Set the Live (not flash) Brightness or Exposure Level

- Proper Brightness or Exposure levels are necessary for best image quality
- Verify that the “Use Flash” radio button is set to “Flash Off”
- Adjust the “Brighter” and “Darker” buttons for optimal brightness level each click of the Brightness buttons will incrementally increase or decrease the live Brightness.



Flash intensity/brightness will be described later.

Step Three – Setting Proper Zoom

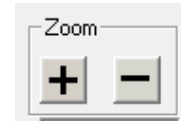
The camera has a 25 x 1 optical (Not digital) zoom lens. There is no loss of image quality when zooming in or out.

For high quality photo ID prints the zoom must be set properly. If the zoom is not set properly the image on the screen may appear fine but the printed image quality on the photo ID badge will suffer. The camera system will automatically test for proper zoom setting when capturing a face and will notify the user if the zoom setting needs to be adjusted.

Manual Zoom Setting

The zoom can be set manually by the following methods

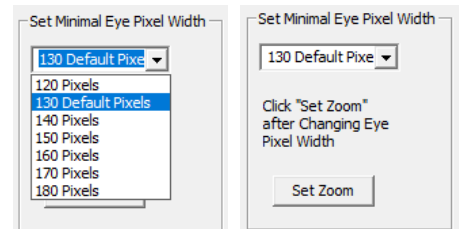
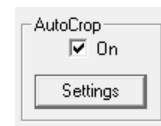
- Left mouse click on the + or – buttons on the user interface.
- Use the + and – keys next to the numeric board
- Zoom action can be increased or decreased by using the Shift(slower) or the Ctrl(faster) buttons on the keyboard when zooming



Note: Zoom control can be locked so that the Zoom setting cannot be changed in the user interface. Locking Controls is discussed later in this document

Automatic Zoom Setting

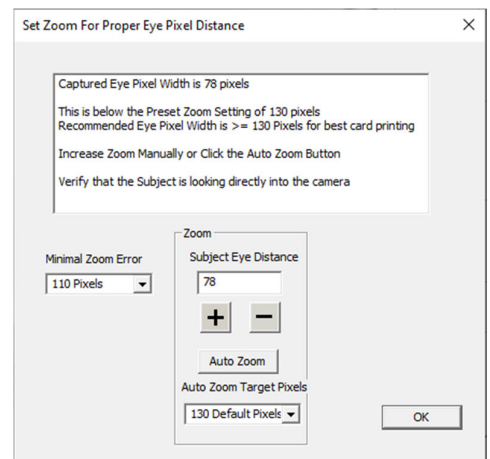
- The zoom setting can be set automatically before taking a subject capture
- Have the subject look directly at the camera
- Click "Settings" under the AutoCrop section of the user interface
- Using the drop-down box select the desired eye pixel distance (>140) (Higher eye pixel widths will result in better print quality)
- With subject looking the camera click the "Set Zoom" button
- The camera will zoom in automatically to the desired eye pixel distance.



Camera Auto Detect improper zoom setting

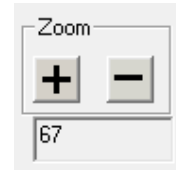
When taking a capture, the camera will automatically detect if the zoom is not set tight enough to meet minimal selected requirements. A dialog box will be shown indicating the current zoom setting in eye pixel distance. The zoom can be corrected in the displayed dialog box by selecting the desired eye pixel width, having the subject look at the camera and clicking the "AutoZoom" button.

- If you take a capture of a subject and the zoom is not set for the proper eye distance, a dialog box will be displayed
- Make sure proper zoom pixel eye distance is selected
- Have subject look at camera and click the Auto Zoom button
- Camera will set zoom automatically. Make sure the subject looks at camera until zoom is set
- The Zoom can also be adjusted manually with the mouse or keyboard



Setting Zoom by Numerical Input

Below the manual zoom controls in the user interface is a text box that indicates the current zoom setting. Values ranges from 0 – 300. The operator can manually enter a number between 0-300 and the camera will zoom to that exact setting. The last zoom setting is always remembered.



The operator can note the zoom setting number and can restore immediately if the zoom setting is changed.

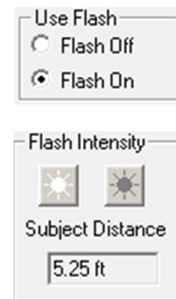
Also, the operator can modify this number to slightly increase or decrease the zoom settings.

Using this setting can quickly change the zoom faster than the auto zoom methods.

Setting Flash Intensity

Using the Flash will generally result in high quality captures. For proper captures the correct Flash Intensity setting must be used. If the Flash Intensity is not set properly the capture will be over/under exposed.


- Set Flash On/Off radio button to “On”.
- Estimate subject distance from the camera.
Use the Brighter /Darker buttons to set the approximate distance
- Take a capture. Flash will fire.
Note: If camera zoom is not set properly the zoom error dialog might appear.
If needed set zoom as described under zoom settings.
- If image is too dark, increase with the “Brighter” button
If image is too bright, decrease with the “Darker” button

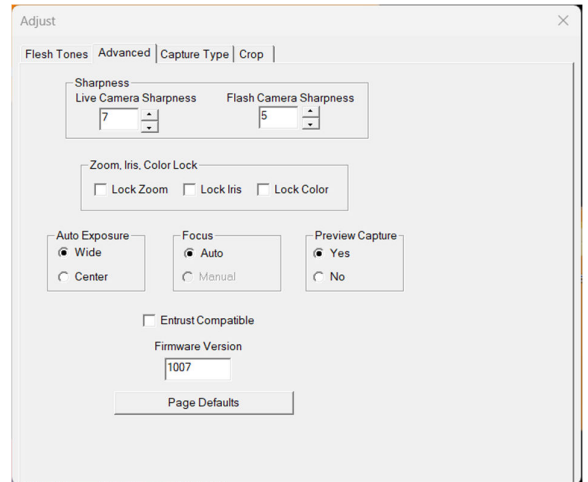


These adjustments should be fine-tuned with several captures until the capture is optimized for the best image quality. Once the proper flash distance setting is found it should work for all subjects without being changed.

Sharpness Control

Sharpness or the clarity of detail in a photo is important for capturing texture and definition. Higher or lower values might be warranted in different circumstances. If the values are too high the image will look edgy and noisy. If the value is too low the image will look soft or out of focus.

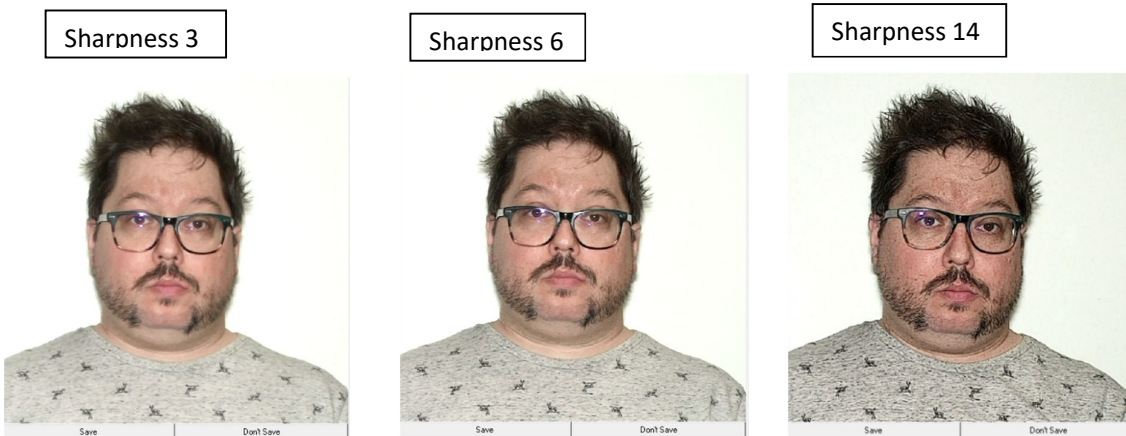
- Click on the “Adjust” button 
- Select the “Advanced” tab
- There are separate controls for Live (non-flash) mode and Flash Capture mode. Each control adjusts the sharpness for its own capture type.
 - For Live Capture- Adjust the Sharpness setting and the results will be immediately viewable in the Live Preview Window
 - For Flash Capture- Adjust the Sharpness Setting and take a capture the Capture Preview will reflect the settings. Adjust and retake captures as needed to fine tune.



The end user should take captures at various Sharpness settings and view the results on printed cards. The Sharpness setting that is best for one users application/setup may be different from the image quality depicted on screen.

Sharpness Examples

In the below images you can see the effect that the Sharpness controls have on the captured images. The lower the Sharpness is set the smoother the capture appears, the higher that Sharpness is set more individual detail is given to things like hairs and wrinkles. High Sharpness settings may introduce noise into the image as demonstrated by the shirt in the examples below.



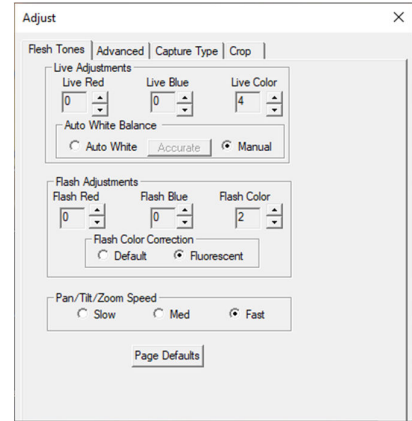
Fine tuning the color balance of a Captured Image

The color balance of the captured image can be easily adjusted in real time if needed. Any color changes will be applied to additional captures without further adjustment. These changes are remembered between sessions and applied after the PC is rebooted.

Pre-Capture Color Adjustments

Color adjustments are available from the “Flesh Tone” tab of the “Adjust” dialogue box.

Keep in mind when adjusting Flash captures that these adjustments are not visible in the live preview window and will only be seen after the capture is taken and displayed.

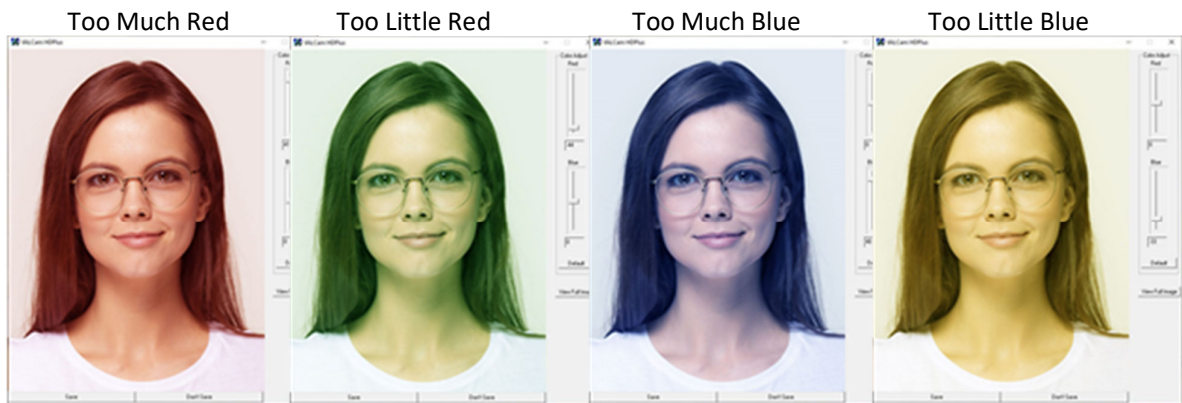


- Click the “Adjust” button.
- The Flash and Live Red and Blue controls can be adjusted up and down to either add or subtract the colors saturation, but it is highly recommended to use the red and blue sliders discussed in the previous section
- Live and Flash Color up and down buttons will adjust the color intensity or color saturation of the image. Often card printers might have issues if color intensity is too great. This control is useful for lowering color intensity to compensate for printer irregularities

Note: When changing Flash Adjustments, a new capture must be taken to view changes made.

Immediate Color Adjustment

- Quick color adjustments are available to easily control the color balance of the captured image in real time
- After the capture, the image is displayed with the “Save” and “Don’t Save” buttons
- Red and Blue sliders appear next to the captured image
- To adjust the image, increase the “Red” slider until the image appears too Red. Then decrease “Red” until the image appears to be lacking in Red, then place the slider in the middle of that range
- Repeat this procedure with the “Blue” slider
- Iterate this procedure between both color bars until you have optimized the image

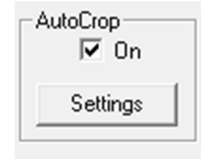


Note: Yellow skin tones indicates too little blue, so add blue to correct

- When finished, click the “Save” button
- Color adjustment is complete, and the settings will be saved and remembered in between captures and sessions

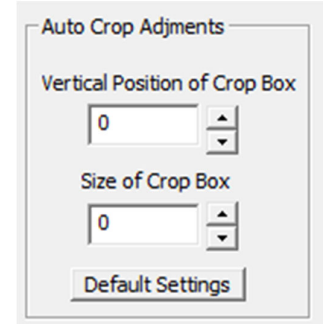
Adjusting the AutoCrop Settings

The AutoCrop feature uses face finding technology to center subjects and automatically provide a head and shoulders crop. Our defaults are set for general purpose use but may need to be adjusted for your application. Use the following steps to make changes to the settings.



- Click on the “Settings” button in the AutoCrop box of the main user interface
- On the right side of the window that pops up you will see the “Auto Crop Adjustments” box

There are two controls

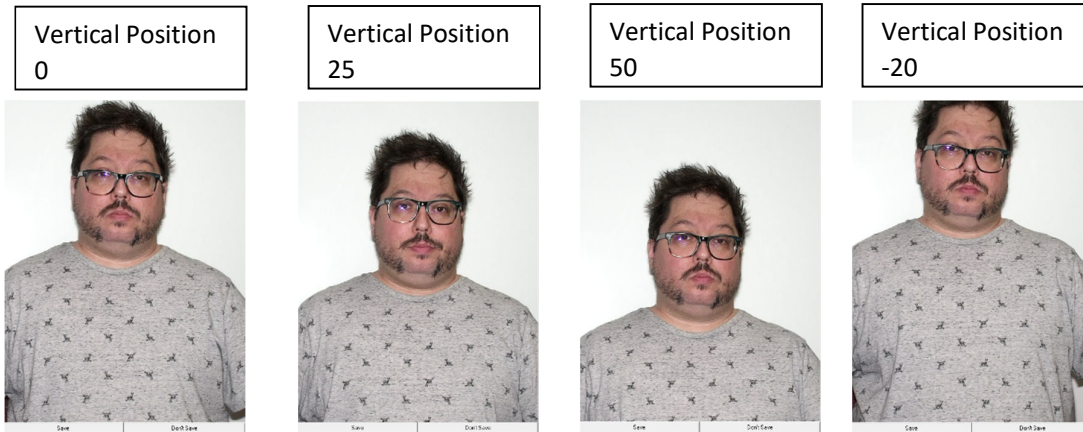


Vertical Position of the Crop Box – controls the amount of vertical space between the top of the subjects head and the top of the background. Settings can be from -50 to +50. Larger numbers position the subject lower in the image. Smaller numbers raise the subject. See examples below.

Size of Crop Box – controls the width and length of the cropped image. It does not change the position of the top of the head. 0 is the maximum crop box size -50 is the smallest crop box size. See examples below.

Auto Crop Adjustment Examples

The first series of examples shows you what adjusting the “Vertical Position of Crop Box” can do to a capture. Higher numbers push the subject down while lower numbers will move the subject up in the crop box. Note negative numbers can result in the top of people’s heads exceeding the bounds of the cropped image.




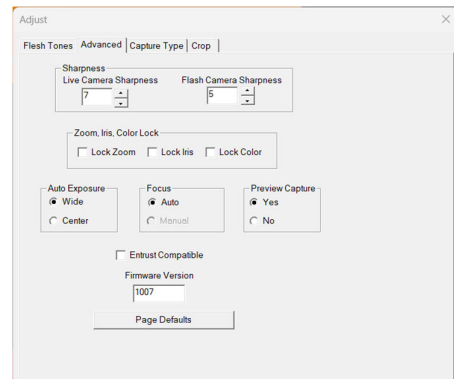
The second control is “Size of Crop Box” and this is how it affects a capture. In the following captures I have set the “Vertical Position” to 20 for all of the captures and the only adjustments made were with the “Size of Crop Box” control.



Preview Capture Setting

Previewing a capture allows you to view a capture before you decide to save or discard it.


- Click on the “Adjust” button 
- Click on the “Advanced” tab
- There are radio buttons to select if you “Yes” want the feature active or “No” if you do not wish to preview your captures before saving them



Saving Captures

There are three formats supported Clip Board (TWAIN), JPG, and BMP.

To choose between the three.

- Click on the “Adjust” button 
- Select the “Capture Type” tab
- Use the radio buttons to select the format you wish to use
- More info about them can be found in the manual

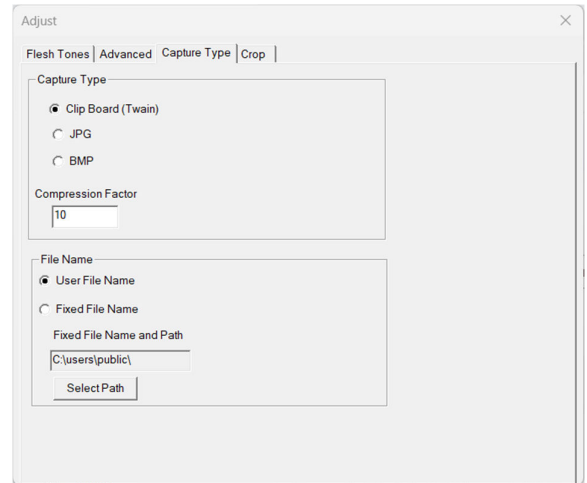
Clip Board – the image is saved in temporary memory and can be pasted (Ctrl + v) into any program that allows it. The image will be saved over in the temporary memory if another capture is taken.

JPG – a common compressed image file type.

BMP – or Bitmap is a large uncompressed image format.

User File Name- This setting allows you to name each image as you save it. You can use the “Select Path” button in the File Name section of this tab to select where on your PC you are saving captures to.

Make sure you have either the “JPG” or “BMP” Capture Type radio buttons selected before you click on “Select Path”, or you will not be able to choose a save location.

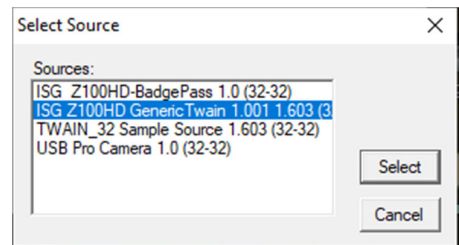
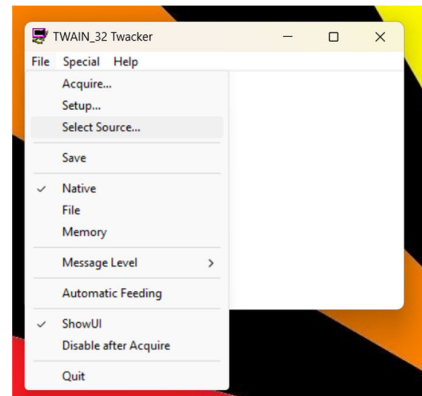


Using the ISG-Z100 HD TWAIN drivers

Most software programs will use the TWAIN drivers to interface with the camera. These drivers are installed alongside the stand-alone application when the camera was installed. Consult the software manuals or help menus for directions on selecting the VALCam drivers as a TWAIN source. We do include a TWAIN testing program to check if the drivers are working.

To use the Twain Tester

- Click the “Start” button in the lower left hand corner of Windows
- Locate the **ISG Z100HD** folder and start the **Twain Tester** program
- Click on “File” and then “Select Source” that will bring up a window with all TWAIN sources loaded on your PC
- Select the **ISG Z100HD TWAIN** driver
- Click on the “Select” Button
- Click on “File” again and now select “Acquire” this should bring up our standard user interface
- Click “Capture” and then “Save” (if using the Preview Capture Setting) and the capture should be displayed in the **Twain Tester** app

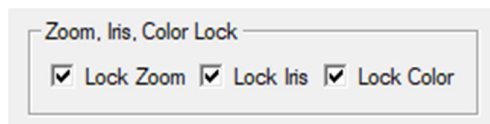
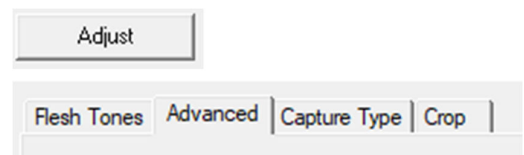


Locking Camera Settings

It is possible to lock the Zoom, Iris (Brightness), and immediate color adjustments from being changed in the main user interface. This is to keep users from altering settings if a setup has been optimized.

To do this

- Click on the “Adjust” button on the lower right of the stand-alone application
- Click on the “Advanced” tab
- Locate the “Zoom, Iris, Color Lock” box
- Each individual control has a checkbox to lock that control



- **Lock Zoom** prevents the Zoom setting from being manually changed in the main application window
- **Lock Iris** prevents both Live Brightness and Flash Intensity from being altered
- **Lock Color** disables the color sliders discussed previously in “Immediate Color Adjustments”

