



The guidelines and information contained in this section remove the mystery about technical issues associated with taking photos for panoramas.

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## **Ideal Camera Settings** [Top](#)

### **Set Exposure Manually\***

Meter the scene in Aperture-priority or Shutter-priority mode, read your meter in the brightest section to avoid overexposure, and manually lock the Aperture and Shutter Speed for the entire set of shots.

Why: When the camera automatically adjusts the exposure for each shot, seemingly subtle changes in light can make the corresponding areas of two overlapping photos look totally different. When this happens, the final panorama can have big bands of light and dark.

### **Turn Auto Focus off\***

Turn off Auto Focus. Use the same focal length for all photos in the panorama sequence.

Why: Using different focal lengths can present inconsistencies that cannot be overcome during the stitching process.

### **Turn Auto White Balance Off\***

Turn the camera's auto white balance feature OFF. Manually set the most appropriate white balance and use that same setting for all of the shots in the panorama.

Why: When the auto white balance setting is on, slight changes in lighting conditions can cause the colors in one photo to differ greatly from the colors in the next.

### **Use One Exposure Setting\***

Before you begin shooting, use the camera's light meter to find an exposure that works well for the entire range of shots. Use it. If it's absolutely necessary to shoot some shots using other exposures (because of dramatic changes in light) keep the other exposure settings as near as possible to the first.

Why: In general, panorama images stitch better in more even light. Changes in exposure setting can make the same exact (overlapping) areas of two photos look totally different. When this happens, the final panorama can show banding.

### **Turn Off the Flash**

Do not use a flash. Turn off the camera's auto-flash feature if it has one.

Why: A camera's flash has a limited range and a limited field of coverage and can create shadows that change shape and position from shot to shot. These inconsistencies make it difficult for the software to recognize corresponding parts of adjacent photos.

### **Do Not Change Size or Quality Setting**

Use the same photo size (resolution) and photo quality (i.e. fine) for all shots.

Why: Photos of different sizes cannot be stitched.

\* Your camera model may not include this feature or option.

## Using a Tripod [Top](#)

### Use a Tripod Whenever Possible

When shooting photos for a panorama, it's critical to keep the camera on the same plane throughout all of the shots. The easiest way to do this is to use a tripod.

When shooting for 360 degrees panoramas, a level tripod ensures that the first and the last shots line up with each other.

If your tripod does not have a built-in level, you can buy a spirit level at your local camera shop that fits in your camera's hot shoe.\*

### Go Without a Tripod, Only If You Must

If a tripod is not available, act as one yourself by locking your elbows into your body and pivoting on one foot to turn in place. Pay close attention to the framing of each shot (horizon line) - keeping the camera level as you turn.

If you cannot find a level spot for your tripod, collapse the legs to create a monopod so you can steady the camera to take pictures.

Use the camera's viewfinder (instead of the LCD) to frame and shoot your photos.

\* Your camera model may not include this feature or option.

## Photo Overlap [Top](#)

### Use 25% to 50% overlap

Shoot the photos using between 25% and 50% overlap. You do not need the same amount of overlap for each shot – estimating the amount of overlap is fine.

For wide angle lenses use more overlap (50%).

## Creating Photo Groups [Top](#)

By using one or both of the following methods to create photo groups, building a panorama in the software will be a little easier.

### Shoot Sequential Photos in Less than 40 Seconds Time

The program has a unique feature that, with just one click, intelligently selects all of the photos that belong to the same panorama sequence. Because panorama photos are usually shot in quick order (less than 40 seconds apart), the program uses shot times (EXIF data) to create groups. By selecting one photo in a group, the entire group is selected.\*

\*This feature can be disabled by un-checking the Auto-Select by Group option.

### Insert Divider Shots Manually

A simple way to divide one sequence of panorama photos from another is to insert (shoot) a black photo between them. Before beginning a new sequence, use the lens cap or a piece of cardboard to cover the camera...and take a shot. After you transfer the photos to your computer, it will be easy to see where one sequence ends and the next begins.

## General Tips [Top](#)

When stitching photos that have obvious value differences, noticeable banding effects may appear in the stitched result. If you have this problem, use a photo editing application such as ArcSoft PhotoStudio to adjust the brightness and contrast of the photos before they're stitched.

Do not use extreme wide-angle lenses (i.e. fisheye) when taking panoramic shots. Extreme wide-angle lenses create distortion at the edges of each photo - making them difficult to stitch.

When shooting horizontal-style panorama photos, make sure the tallest object in the scene fits into the picture at the current zoom level. It's wise to leave extra space for cropping the panorama after it has been stitched.

When shooting photos for horizontal panoramas, take an extra shot on each end (far left and far right), so you'll have more room from which to crop.

To create taller horizontal-style panoramic images, shoot the entire sequence with the camera turned 90-degrees (portrait).

Panorama Maker 4 turns your ordinary camera lens into a super-resolution, wide-angle lens. Simply capture 2 to 4 photos and stitch.

Turn your camera's Grid Display feature on. Showing grid lines in the viewfinder makes it easier for you to keep your camera level as you shoot a series of panorama shots – especially if you are not using a tripod. Grid Display is also useful for determining the correct amount of overlap.

50% overlap usually works best for stitching. If you need help determining the proper amount of overlap, turn your camera's Grid Display feature on.

To avoid object duplication in the panorama, do not use more than 80% overlap. Turn your camera's Grid Display feature on, if you need help determining the proper amount of overlap.

Make people magically appear in the same panorama several times by shooting them in different areas of the shot and a different distance.

Check to see if your printer supports banner paper. If so, try printing your panoramic creations on long sheets of photo banner paper – great for framing.