

# Phone Artistry 2012-1

## Art & Craft of iPhone Photography



**Bettina + Uwe Steinmueller**



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# Introduction

The iPhone is likely the most used camera of 2011. Today's smartphones are much more than just a phone. They are a main communication center and part of our lifestyle. Smartphones are increasing as a key media center for capturing photos/videos and sharing them with others in person or online. The iPhone 4/4S is one of the most advanced in its class if you look at complete iPhone ecosystem:

- Devices (iPod, iPhone, iPad)
- Apps
- Integrated Online Cloud Service (iCloud)
- PC/Mac integration (iTunes)
- Integration with your home TV (Apple TV)

Even if you use a different smartphone this book may be for you because many of the principles we talk about also apply to most other platforms.

We are photographers in our main job and we discuss the iPhone from a photographer's perspective. If we look at the iPhone we always have to balance the simplicity of the handling versus getting the results we want. There is also the "fun" factor when using the iPhone. Fun is a key motivation in taking photos in the first place. Making things too complicated can easily take the "fun" away. We show the iPhone in a way that lets you get the most out of it and still have fun. Keeping things as simple as possible is the best approach for the iPhone. At times we still find the iPhone camera too simple if your goal is attaining the best possible quality in your photos. We will cover such issues when we address them in more detail.

The iPhone is not only a phone with a camera. The iPhone's main power is based on all the apps that can enhance your photographic experience. Think of it as a camera with a very capable computer to allow custom applications to run on it. The iPhone supports a rich API (application program interface) that the app developers can tap into. In some way this makes the iPhone the first widely used programmable camera.

A common question is "What is the best camera?" Besides the fact that there is no simple answer, it is clear that the camera you have with you is the only one that counts. The iPhone will likely be with you more often than any other camera. The iPhone may often be the best camera you have available. Why not use it at its best? When we shoot with the iPhone we always treat it like any other camera we use. We try to make photos we can be proud of. Although this of course can be harder to accomplish than with our other dedicated cameras it often works.

iPhone photography is the early 21st century equivalent to Polaroid: instant, fun and expressive at times.

This book covers the iPhone 4 and 4S with iOS 5 installed. It is by no means an introduction to the iPhone itself but concentrates on the photographic and video features

only.

It is neither possible nor desired to feature all the possible apps for the iPhone. We cover only apps we use and like. This means leaving out many other apps. There are new and updated apps every day.

Here is a brief overview of this book's content:

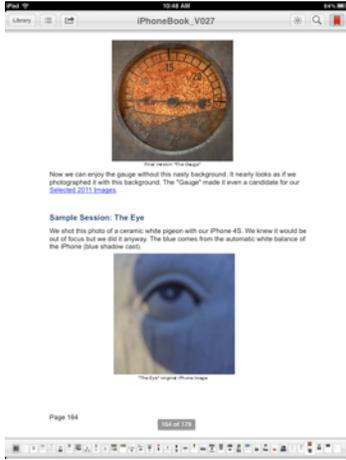
- Some important terminology
- The iPhone Camera
- Capturing photos with the iPhone native and 3rd party apps
- Capturing HDR (higher dynamic range) images
- Useful accessories
- Enhancing your images in post processing
- Working with layer on the iPhone
- Adding effects to your photos
- Sharing your photos
- Transferring your images to your iPad
- Transferring images to your desktop computer
- Some editing on the desktop computer
- Capturing videos with the iPhone
- Brief section about editing your videos on the iPhone

We do not link to the apps and products directly. These links change too often. Better you Google terms like in "xxxx app" and you will find their websites.

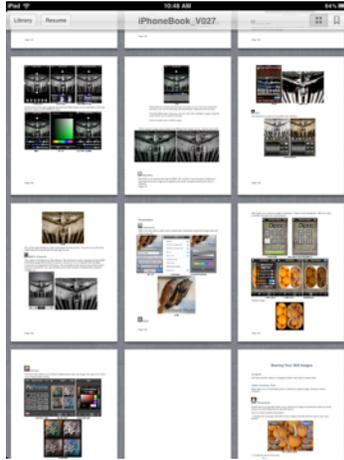
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- By double tapping on any image you zoom in to appreciate the images in more detail. Double tapping again puts the images back in place.



**Normal view**



**Zoomed in on a picture**

## Acknowledgements

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## The iPhone Camera

The iPhone 4/4S has a fixed focal length lens with a FOV that is about equivalent to a 34mm lens (iPhone 4S) and about 30mm (iPhone4) on a 35mm film camera. The sensor size for the iPhone 4S is 1/3.2" (4.58mm x 3.42mm). The iPhone 4S lens is reported to have a focal length of 4.28mm and a max aperture of f/2.4.



iPhone lens(left) and tiny LED (right)

It is quite amazing how small this lens is. The LED can be used as a very low powered flash for the iPhone camera app. We find the FOV a bit on the wide side for a single focal length camera but it also allows you to capture smaller groups of people more easily. On the other hand for a camera with only one focal length this may be the best compromise anyway.

The resolution is 5 MP for the iPhone 4 and 8 MP for the 4S at an aspect ratio of 4:3 for stills. Don't ever judge the image quality of any camera solely by the Mega Pixel count. In this case the lens and the sensor of the 4S are clearly improved. This means that the 4S may have even better quality on the pixel level. The 8MP image size allows you to crop your images more and still keep a good sized image.

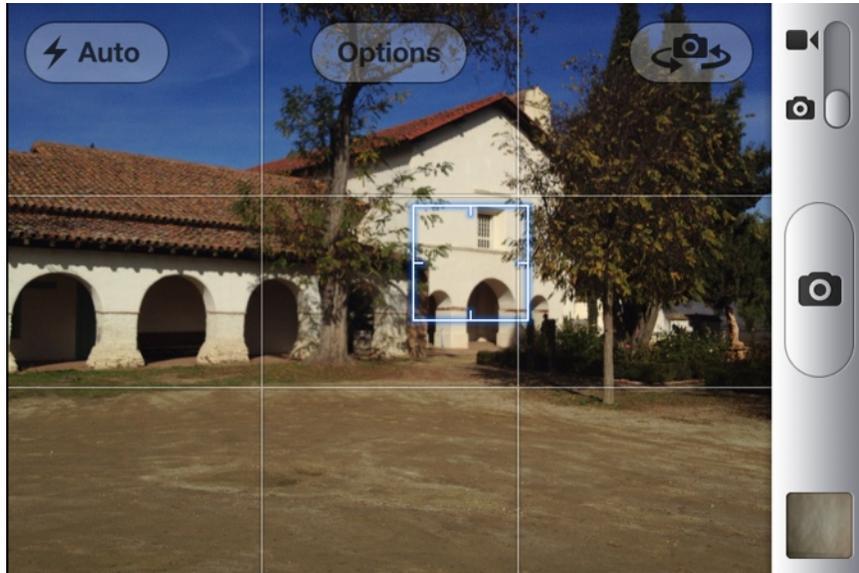
### **Note about Light and the iPhone 4/4S**

Strong sunlight with harsh shadows is never ideal for any photography. The small sensor in the iPhone captures less dynamic range than most other more advanced digital cameras. The best outdoors lighting is the light early in morning, late in the day or at overcast. In some situations HDR may allow you to capture more dynamic range (more later).



## iPhone Camera App

This is the standard camera app that comes with every iPhone.



iPhone Camera App UI

There are only very few elements that control the camera operation:



Action bar

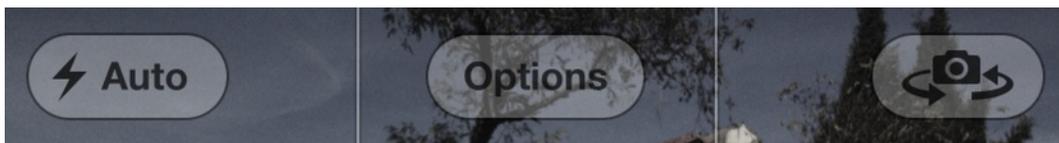
Left: Access to the camera roll to review images you've shot or stored there.

Middle: Shutter release. The actual release happens when you lift your finger. This can be utilized to avoid too much camera shake. Press the button. Hold the camera stable and then when you carefully lift the finger the shot is taken.

Right: The Camera App can shoot still images as well as video. Use this simple slider to switch the mode between stills and video. Make it a habit to check the right mode.



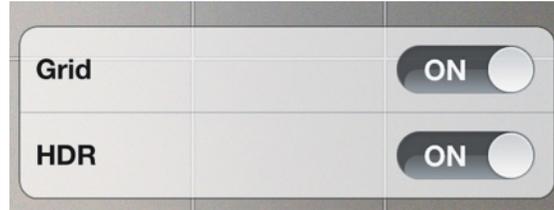
We talk about shooting video in a later chapter.



Other Options

Left: The "flash" which is a low powered LED can be set to auto, on or off. For close objects the flash may be too strong and harm the highlights. Just don't expect too much. We hardly ever use it. It is best to experiment to see what the "flash" can do for you.

Middle: these are the option you can set:



Grid: Helps to better frame the images. We have it on all the time.

HDR: We cover HDR later in more detail. We have it enabled most of the time.

Right: Back and front camera selection. The iPhone has both a front and a back camera. This book only talks about the back (main) camera. The front camera has a lower resolution and is mainly used for Face Time and some other fun apps.

### **Digital Zoom**

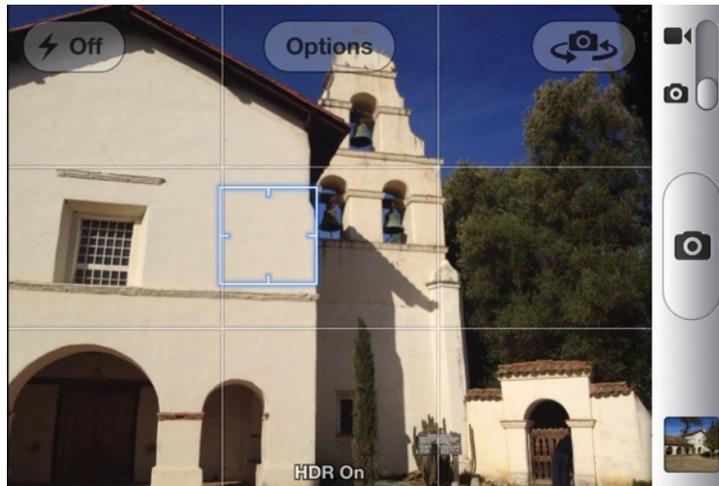
The Camera App allows the use of digital zoom. Please read our comments on digital zoom earlier. You control the digital zoom via the Pinch gesture. It is best to avoid digital zoom as much as possible.

We had situations when the digital zoom helped to frame our pictures better because we could not get closer.



At a Halloween Party

## Taking still photos with the iPhone Camera App



### What to watch for?

There are mainly these steps you have to look at (they become a second nature over time and are as old as photography itself):

- Frame the content
- Set the focus (think about DOF)
- Control the exposure
- Avoid shake (especially at lower light)

**Framing:** Here you compose the content. Normal rules of image composition apply. Because we deal with a pretty wide angle of view, buildings will show perspective distortions if you tilt the iPhone. Our image above is a good example. It is your decision to accept such a distortion or even not. Later we show an app that can help to reduce the perspective distortions.

**Focus:** If you don't do anything the Camera app will focus in the center of the frame, which shows as a blue square for some brief moment. If this is not where you want to focus on then just **tap** at the point on the screen where you want the focus to be. Again the blue square shows up for a moment and the camera acquires the focus. Keep in mind that the app also measures the exposure at the very same point. We talk about this in more detail later.



**Exposure:** Getting an optimal exposure is key to your image quality. Exposure is in general defined by three factors:

- Aperture or f-stop (fixed f-stop for the iPhone)
- Shutter speed
- ISO or gain

Most other cameras allow controlling these factors directly in manual mode. The iPhone and also the iOS API do not allow direct control over shutter speed and ISO. The aperture is fixed anyway.

Instead you provide the camera app with the point where it should derive the automatic exposure. Unfortunately this is as we said before identical to the focus point. In our example we have the Exposure/Focus point at the white wall and we are lucky that there is no conflict. In this case the point is good for exposure and focus. This is not true in many other cases. We selected a bright spot because it forces the camera to slightly under-expose. Why do we like that? For any printing blown out highlights are annoying, as they will print as paper white. The downside is darker shadows with potentially more noise. Noise can be reduced in post processing while missing highlights can never be recaptured.

**Avoiding Shake:** It is a general rule that to get perfect images you must avoid shaking your camera. Remember that many photographers use sturdy tripods to ensure a stable position. Because it adds too much bulk, we think the iPhone will be mostly used without a tripod. This means all the flexibility of the iPhone gets lost using a tripod. Unfortunately the usual holding position for the iPhone (or other point & shoot cameras with only a LCD) is not very stable by nature. It is worth to train yourself how to hold the iPhone as stable as possible. The lower the light level gets the more you need to be concerned about holding your camera very still.

We find that holding an iPhone that has no case is often too slippery. We suggest that you always use a protective case or skin (some more later).

Once you have framed and followed these general rules gently press (no shake please!) the exposure button and take the picture. Since iOS 5 you can alternatively use the volume+ button as your shutter release (this is not automatically true for all 3rd party camera apps).