



What Entry-Level Camera to Use

to Photograph Paintings, Maps, Drawings, Posters
So You Can Print this Art as Giclee

Part I: Zoom-Lens and 35mm SLR Cameras





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Caption for cover page: Leica R9 Digital 35mm camera



Options for Photographing Paintings to reproduce as Giclee Prints

There are many ways to get your painting ready for a giclee printer.

1. you can photograph the painting with a traditional camera (Nikon, Leica, Hasselblad, or large format) and then scan the resulting transparency.
2. You can put the poster, map, drawing, painting, or other art directly onto a scanner.
3. (Especially if the art is too large for a normal scanner) you can photograph the painting (or map, poster, drawing or other art) directly with a digital camera.

This FLAAR Report covers option 3: digital photography. We have several reports that cover option 1. Option 2 is self-explanatory: you put the object on the scanner and press the “SCAN” button. But most art is too large for the average scanner, so option 1 or 3 are the most likely. There are, however, custom-made large format scanners. These are both sheet-fed (HP, Contex) or flatbed scanners (Screen and one or two other brands; we are speaking here of flatbeds considerably larger than the tabloid size of a Creo). You could consider the Cruse as a giant flatbed scanner in reverse (it scans from above, not from below, so you get much better results because you can modify the placement of the lighting and hence control the shadows to some degree).

Entry Level: 4, 5, 6, and 8 Megapixels

You can take a good photograph with any adequate digital camera of 3 megapixels or over. For point-and-shoot, we recommend no less than 5 megapixels. The downside is the lack of interchangeable lenses. Zoom lenses are not tack sharp. The Sony Cybershot F717, Nikon CoolPix 5400 and 5700, and the Minolta 7Hi series are otherwise all acceptable for entry level.

The 8 megapixel Sony F828 has an impressive pixel count but still has the disadvantages of being a point-and-shoot zoom-lens camera. The Sony F828 did poorly in our tests over several months and has fared well primarily in commercial reviews with paid sponsorship. In the FLAAR course on digital photography we explain the downsides of zoom-lens cameras.

Eight megapixels is eight million photo sites. That is too many; the individual sites are too small. The results include purple fringing and about every other digital defect that you can imagine.

The other downside of point-and-shoot cameras is not their quality (which is okay for small size enlargements), but the distortion of the perspective caused by their zoom lenses. If you photograph a small painting, you will likely get distortion of the edges of the painting. This is less likely with a 35mm SLR and even less likely with medium format or large format digital backs.

A further disadvantage of most point-and-shoot digital cameras is that they are made for snapshots, not for recording of precise colors. The camera’s software often exaggerates colors, distorts the color gamut, and over-saturates reds.



Because the average audience for these cameras are people using them for holidays, weekends, family, and hobby, everything is automatic, including sharpening. The result is that many features are overdone: the image is sharpened so excessively that the image looks cheap and poorly done when you compare it with a professional photograph.

The most obvious disadvantage of attempting to use a point and shoot camera to record a drawing or painting, to reproduce as a giclee print, is sheer lack of file size: you can't enlarge the prints much past tabloid size, and when you do, all the imperfections (listed previously) become all the more obvious.

We get asked every day by people who have just paid \$899 to \$1200 if their camera can start producing giclee printers. Let us close by reminding you of digital reality.



Point-and-shoot cameras

- have fuzzy electronic viewers;
 - o you can't see the true colors or the true focusing plane.
 - o The image may shimmer and be exaggerated in the LCD viewer.
- Zoom lenses distort, especially at the edges.
- Colors may not be true.
- You may be stuck with sRGB, a limited color gamut for desktop printers and the Internet
- You can't enlarge the prints, or if you do, the results will be marginal to poor.

Yet I am sure that a dedicated individual, with eternal patience, and a really excellent point-and-shoot camera (some of the Nikon models, at least one of the Fuji models, or the Sony F717) can achieve a giclee print, at tabloid size to 24", that would impress most viewers.

The first digital camera I ever used was about 4 megapixels. I learned year by year, and megapixel by megapixel. So if you are starting, use our warning simply as an incentive to do a careful job with your first digital camera. Practice, experiment, and soon you can move up to a better camera, a larger printer, and achieve giclee prints that look great.

35mm SLR Cameras

SLR does not just mean only single lens reflex; SLR means interchangeable lenses and a true optical viewfinder.

There are several kinds of digital SLR camera nowadays:

- General purpose digital cameras:
 - o Nikon D70, D100, Canon Digital Rebel,
- Intermediate cameras: general purpose but with lower-res setting for action (Nikon D2X)
- Cameras dedicated to shooting action and sports
- Full-frame digital cameras
 - o Kodak SLR/c,
 - o Kodak SLR/n,
 - o Canon EOS1Ds
 - o Canon EOS1Ds Mark II



Kodak SLR/n 35mm camera

You do not need a sports or action camera for shooting oil paintings.

For 35mm SLR, your choice is the Sigma SD9 or 10, Nikon D100 or D70, Canon EOS-20D, Fuji S2 or S3 pro. The Kodak 14n was distinctly unsuccessful except if you shoot with very bright lights (which may either melt your original painting or cause unacceptable highlight reflections on the ups and downs of the brushstrokes of oil paint).

Foveon makes the sensors for the Sigma digital cameras. Foveon made more PR than any other camera sensor in the history of digital photography. It was 90% fluff and puff (smoke and mirrors). The sensor is just 3.4 megapixels. Since they do capture 100% of the Red, 100% of the Blue, and 100% of the Green (in theory at least), they claim 10.2 megapixels. But in reality you do not get a true 10 megapixel result.



Fuji FinePix S3 Pro 35 mm camera



Sigma booth

I used the Sigma SD9 for a month, while teaching digital photography on the Island of Malta. It was a great camera; the body is the model for the Kodak SLR/c. But the green was weak; the blue was over exaggerated. The SD10 makes up for some of these problems, but introduces others. Compared with the Canon and Nikon cameras, the Sigma image quality can not compete unless you happen to like some particular feature of it.

The Canon EOS-1Ds is expensive and uses a CMOS sensor. The CMOS of both Canon and Kodak may give you digital noise in the shadows. If the photo is underexposed, it may show excessive noise when you correct the exposure in software.

The Canon EOS-1Ds Mark II offers useful file size, but is still too new to have feedback. 17 megapixels is stretching the limits of the 35mm size.

I have used both the Kodak SLR/c and then I tested the Kodak SLR/n. These are okay when color preciseness is not an issue (this is a polite way of saying that the Kodak pumps up the color saturation to make the resulting photo look "pretty.")



At Photokina trade show in Germany, Nicholas gets his hands on the Canon 1Ds Mark II.

The sensor of the Olympus 35mm SLR is too small; that camera is grossly overhyped, primarily by highly paid photographers (most of whom don't actually use the Olympus in their own work). Besides, the Nikon D100 (and D70) is a known entity as well as a great camera. The Leica R8/R9 digital hybrid, based on Imacon software, is still too new and not yet proven in the real-world experience. Indeed the Leica Digital Modul R has seemingly not yet appeared.



Nicholas keeps his eye on the slow progress of Imacon's attempt to make a retrofit digital module to the Leica R8 and Leica R9. So far no other film camera has successfully been retrofitted with a digital sensor. So it is little surprise that this camera is not yet available. We hope this works eventually, since a 10-megapixel CCD sensor would produce a good file size.

Full-frame digital cameras distort at the edges with ultra-wide lenses. But you will not use that kind of 14 to 15mm lens on a painting.

Aligning your CCD parallel to your painting

Whether you use a 4-megapixel zoom-lens camera, a 6 to 17 megapixel 35mm SLR, or a large format BetterLight, you still have the same problems of parallelism. Because of the way large format cameras are constructed it is a lot easier to align your large format camera precisely with the painting (using a Zig-Align system).

A giclee is a re-creation of a painting, a photograph, or any other design which you define as art. If the original is a painting or a large photograph, your camera has to be absolutely parallel (aligned) or your photo will be slightly out of focus on the side of the camera that is off a few millimeters. The higher the resolution the more likely you are to have the error of mis-alignment visible in the final result. At million-dollar art shows, such as the Atlanta Art Deco, an embarrassing number of the giclee prints were sadly out of focus or otherwise were poorly photographed before they had been printed.

This is partially a result on the exaggeration of interest in wide format printer resolution, dpi, and picoliter drop size. Not one of these specifications is meaningful if your photograph is poor to begin with. A higher resolution, a better picoliter size, will merely better reproduce the flaws that are inherent in your photograph.

You can jerry-rig a parallel alignment with a smaller simpler camera. This implies having a carpenter's level and a defined area to set the painting for photographing it. A good copy stand is better than trying to get a camera on a tripod parallel with a painting on a wall (walls are not necessarily plumb to the floor). I have seen some of the most amazing hand-made alignment systems (rigid parallel piping all the way from the camera to the area where the painting is hung). 99% of these home made systems will result in distortion (we see it at million dollar giclee and décor trade shows every year).



But with levels and plumb bobs, you can get your painting approximately parallel to your camera sensor. If you are using a 4 to 6 megapixel camera your sharpness and detail will be limited anyway, so you (and your clients) may never notice how fuzzy the image really is (until you see the same painting photographed with a BetterLight or Cruse).

Advantages of Entry Level Cameras

- You probably already have an entry-level camera, so you can get started with no extra expense.
- You hopefully know how to use your own camera, so you don't need to take lessons to get started.

Disadvantages of using Entry Level Cameras to Digitize your Paintings

- Small file size: you can't enlarge your giclee much
- May have poor gray balance or white balance
- May have too many features that are automatic (which you can't easily control)
- Viewing mechanism may not allow precise focus
- Alignment may be haphazard
- These are all 1-shot cameras; so everything is interpolated, especially the colors.
- Lenses are not specialized for flat-field subjects.

How to overcome Deficiencies of 35mm Cameras

You can mount certain models of 35mm digital camera bodies directly onto a 4x5 camera. The Cambo Ultima, Arca-Swiss and a few other comparable brands of large-format cameras accept the Canon EOS 1Ds, Kodak SLR/n, and a few other bodies. With this hybrid system you use the camera CCD or CMOS sensor but with Schneider or Rodenstock lenses. These lenses are far superior to even the best lenses for 35mm cameras, especially for photographing flat surfaces.

Once you have any 4x5 camera you can more easily use a Zig-align system, so you have many of the advantages of a 4x5 without the expense of a larger format camera back. However if you are a commercial lab or studio, your customers will expect you to be using a BetterLight or a Cruse.

Summary

Every artist, photographer and print shop owner asks what brand and model of printer will be used to render their fine art giclee. They discuss the ethereal benefits of piezo vs thermal printheads. They expound for hours on inks, media, and longevity.

But there are two voices calling out in the wilderness, that of Nicholas Hellmuth, and independently of Gary Kerr. Nicholas had his website on digital photography as many years as he has managed his website on giclee printing. Nicholas is probably the only giclee specialist in the world with both a BetterLight and a Cruse.

Gary is the foremost giclee photographer in the US. He is now even being hired to work in Europe because his techniques are the best that money can buy. Both Kerr and Hellmuth reached the same conclusion independently of each other:

- The digitization of the painting, poster, or historical map is more important than what printer, ink, or media it is printed on.
- Most digitization, whether scanning or direct digital photography, is done with equipment neither made to accomplish this task nor in a studio that is equipped to photograph paintings to reproduce as giclee.

The dpi of the printer is irrelevant in the face of having a typical digitized painting, which is guaranteed to have the following faults (in the words of Kerr):

- Blurry (poor focus, usually worse on one edge or corner than on the rest of the image)
- Specular highlights (gloss and glow where you don't want it)
- Light fall off

What both Kerr and Hellmuth stress is that you need (in the words of Kerr):

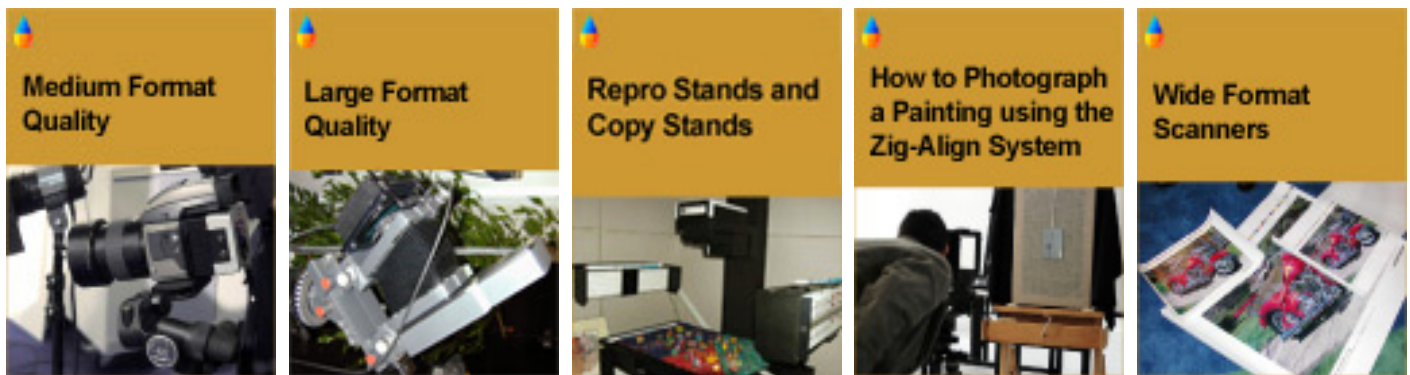
- Texture
- Detail
- Sharpness

And it is precisely here where large format has the advantage, with medium format very close. It is in these areas where 35mm is weakest (in comparison to medium and large format).

The Photo Equipment Segment of the FLAAR Series on Giclee

The present Part I covers basic entry level cameras to record paintings for subsequent giclee printing.

- Part II covers medium format cameras.
- Part III covers large format cameras.
- Part IV covers copy stands (for all sizes of camera)
- Part V covers the Zig-Align system for giclee photography with large format cameras.
- Part VI covers wide format scanners (which we do not recommend, but we added this report since full-page ads in trade magazines are showing this kind of scanner being used to produce giclee. We feel that people should be warned of the downsides).
- Part VII covers the dedicated (turnkey) Cruse reprographic camera, the professional system for a giclee atelier.



For further information

Once you have your camera, to learn what lighting, tripod, and accessories, FLAAR offers an entire course on digital photography, with over 30 comprehensive learning units. For people who only want to learn those aspects which pertain to digital capture of their oil paintings or watercolors, we have separate FLAAR Reports as part of **Options for Photographing Paintings to reproduce as Giclee Prints**



For the workflow we have an additional series within the Giclee Set to discuss primarily the step by step aspects, the sequence of work.

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