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# FINE ART PRINTING PAPER DATA

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## Basic Digital Paper Information and Comparison Data

This document contains information on a variety of digital fine-art printing papers. This is not a comprehensive list of all available papers but should provide you with an opportunity better select and compare papers as you begin your printing process. If you are unsure of what paper to select, most paper vendors offer sample packs of their various papers as a way to get started. These sample packs allow you to get a few sheets of the various papers so that you can judge the value and quality of the paper with your own image and printing process.

### Sort of where to start

#### **Portrait Photographs**

I recommend that you use a paper with a smoother surface or a very light texture if you are printing portraits. The heavy textured papers can often cause the skin tones to render with unintended artifacts. However, if you are working on a project about the textures of the skin or hair, it would make sense to try a more textured paper. Many of the baryta papers produce great results for portraits.

#### **Landscape Photographs**

For landscape photographs, it really can depend on the subject and the quality of the light and color. Brighter papers are normally more blueish and natural papers have a warmth to them which I try to use to my advantage in a print. I also look for papers with a little tooth or texture so they can help with the perceived sharpness in the image. If I have really smooth gradations in the image, I look for a really smooth surface. I tend to more matte papers, but luster and glossy can produce highly saturated and vibrant images.

#### **Black and White Photographs**

For black and white photographs, I look to use one of the baryta papers which are similar to traditional analog black and white papers. I also want a paper with a heavy weight, high D-Max and high contrast range. The paper base determines if the image is a cooler or warmer which is also important to the aesthetic of the print.

## Paper qualities

When I work with people who are getting started in printing, the first quality most think of is cost. And sure, cost is one factor, but it is not the only consideration. It's not uncommon to have a cheaper proofing paper that you can work out a lot of the details of the print with and then move to the higher-end papers for your final prints. I personally use an Epson and a Red River Luster paper for my proofing to help save on cost. But all my final prints are on my fine art papers.

When thinking about paper, there are many additional aspects to consider:

- **Texture.** What does the paper feel like? Some papers have more tooth and texture than other papers. This texture can shift how the eye experiences the edges, colors, and contrast of the image. A smoother texture can help hold subtle gradients versus a toothy paper. Does the texture enhance or detract from the viewing experience?
- **Archivability.** How long the paper will last is an important aspect of fine art prints. Most modern pigment-based printers have inks that will last 100 to 200 years when printed on archival papers. You want to make sure that your prints will last and not fade. You can learn about the archival quality of most papers from the manufacturer's website or from the [Wilhelm-Research](#) site.
- **Thickness.** Paper thickness is also an indicator of the quality of the paper. Matte and fine art papers will often be heavier than glossy papers. The construction of the paper and how the surfaces are prepared to accept the ink will determine the thickness. Most papers are measured in grams per square meter (GSM, also seen as g/m<sup>2</sup>) or bond weight. The larger the GSM or bond number, the heavier the paper. Most fine art papers are between 200 and 300 GSM. However, there are some beautiful art papers (Japanese rice paper, for example) that are extremely thin. So don't just use thickness as the sole indicator of quality. Thickness is also a key factor in opacity or how see-through the paper is.
- **Contrast.** The maximum black in a print is known as D-max and the brightest point is the D-min. The difference between these values is the contrast range. Most papers have a contrast range between 50:1 and 200:1.
- **Surface.** The surface of the paper is one of the more common options people consider. Do you want a glossy, luster, or matte surface? The glossier the surface, the deeper the blacks and the steeper the contrast curve. However, matte papers offer a richness that is different in quality and nuance from glossy. Most people end up with both a glossy and a matte paper or two. Being familiar with both gives you more options for what you ultimately want the print to look like.

- **Brightness.** How bright is the paper? Is it super white and bright or is it a little dull? Most good papers are +90 in their brightness values. You can also look for papers with and without optical brightener agents (OBAs). OBAs are added to papers to make them brighter than the paper base. Some people don't like them in their prints and express concern about the effect on the archival quality of the prints with OBAs. For others, the archivable testing results have made this a non-issue. OBAs tend to have a slight blue cast to them that can affect the quality of the cool and warm tones in the print.
- **Gamut.** Each paper has a particular gamut, or volume, of colors that it can represent. The gamut is unique to the paper and paper/ink combination. The gamut is represented by an International Color Consortium (ICC) printing profile. When you start to consider papers, understanding what papers offer in terms of color volume can be a very important consideration to get the look and feel of the colors and tones that you want in your print.
- **D-max.** D-max is the richness of the color black as measured with a reflective densitometer. It is a measured way to determine how pure a black any given paper can display. For practical purposes, we consider a D-max of 4.0 to be the highest. With modern papers and inks, it is possible to get a D-max of around 2.6. Which is amazing considering that analog silver gelatin prints are around 2.3 to 2.35.

Most prints will be in the range of 2.0 to 2.5. Most paper densities start on the low end around 1.8 and go up from there.

- **Size.** Papers come in a variety of sizes as well as sheet and rolls. Many papers are described using the A Series size model, which is slightly different from US paper sizes. It is important to check your paper sizes when loading your printer or you might have unexpected margins.

## Making the print

### Before you start

Before you start printing, there are number of things that you want to check before you click **Print**:

1. Do you have the correct paper to print with?
2. Do you have the latest version of the printer driver installed?
3. Do you have the correct ICC profile for your paper and printer installed?
4. Have you calibrated your monitor recently?
5. Print and image considerations:
  - a. Clean-up issues (dust spots, horizon line, etc.)
  - b. Crop is correct
  - c. Noise reduction and sharpening is done
  - d. Global, regional, and local adjustments have been made
  - e. Corrected luminosity first, followed by hue, and then saturation
  - f. Non-destructive layer setup is intact
  - g. Image resolution is acceptable
  - h. File is properly sized
  - i. Output sharpening is good
  - j. Soft proofing adjustment done and turned on
  - k. Completed final check of image to make sure nothing is missed and make sure that no artifacts have been introduced
6. Have you soft proofed the file?
7. Within the printer:
  - a. Proper ink type is set (matte or glossy)
  - b. Proper paper type is set (paper type and roll verse sheet)
  - c. Nozzles have been checked and are unclogged
  - d. Printer is connected to computer or network

## Finalizing the print

It is important to take care of your prints. Even proof prints should be carefully stored so they don't get damaged. I store all my loose prints in archival print storage boxes. You can get these boxes in a number of sizes and from a number of vendors. The key is to make sure that they are archival quality. I personally like the Century Boxes or the storage boxes from Archival Methods.

### Signing the print

It is important to sign your prints. Most collectors will expect that the print is signed. I don't sign inside the image but that is a personal choice. For my printing style and aesthetic, I like to have my signature not interrupt the frame or content of the photograph.

Your signature should be consistent from image to image, and it takes practice to get used to signing prints. Since you will be using both pens and pencils, it is worth practicing with both to get that signature down before you start to sign the final prints.

For signing matte or watercolor papers, I use a pencil. For other types of paper, the pencil won't properly adhere to the surface, so you need to use ink. I use the Sakura Micron pigment-based pens from Pigma. These pens are both permanent and archival. Not all pens are archival. Permanent is not archival. Since I have gone to all the trouble to make an archival print, I want to make sure that the signature is archival as well. I also make sure that I select a pen that won't bleed through the paper.

The most common place to sign a print is on the lower left or right corners of the front of print in the margin area (en recto); however, you can sign the back of the print (en verso) if you prefer.

Most images are also numbered indicating the number of times the print has been printed or sold. If they are limited editions, the number of that particular print appears above the number of prints in the edition.

I also find it important to include creation and meta information about the print. This includes the print date, image date, paper, printer, inkset, and other considerations for the print collector. This can help in the event that the print needs to be reprinted in the future or restored due to damage. I include this on the back of the print or mat board so that it doesn't distract from the print. If you frame the print, I also include this on the frame backing paper so they don't have to take the frame apart to find it.

### Matting and framing

Matting and framing really makes a photograph feel like something valuable. There is a completion and sense of accomplishment when you truly finish an image with a mat and frame.

There are a number of ways to mat and frame an image. If you are unsure about matting options and what you might want, find a local framing shop and spend some time with them to learn how to think about matting, mat colors, frames, and how they

I eventually purchased a mat cutter for the studio, and I cut a lot of my own mats these days, but most people prefer to purchase already cut mats. Either way, make sure that you are using archival products with the work. So make sure that you select mat boards that are archival and framing supplies that will also help maintain the quality of the image.

When matting, you want to have the bottom border of the mat a little wider than the top border. If you make the top and bottom even, we will perceive the image to be mounted lower in the frame. The offset at the bottom will help ensure that your image

Image Size	Border Size
6x9	1 $\frac{3}{4}$ "
11x14	2"
11x17	2 $\frac{1}{2}$ "
13x19	2 $\frac{3}{4}$ " - 3"
17x22	3" - 3 $\frac{1}{2}$ "

appears in the middle. On smaller images, a quarter of an inch is good. Increase the amount as the print size increases.

While there is no rule on how thick a mat should be, the following table can provide a starting point. The Logan company also has numerous guides on their site to help determine matting options.

## Spray coatings

There several products that you can spray on your images to help further protect them from UV damage and damage caused by oils from human hands. After you have completed the final print, signed the print, and made any annotations, then you can apply the spray to the print. Most of these products are a form of aerosol varnish. You want to sort of spray over the top of the print and let the varnish fall onto the print. It is better to make two or three very light coatings, allowing the coating to dry between coats, than to spray too thick of coating onto the print.

Hahnemule makes a nice spray, as does Moab. John Paul Caponigro uses Premier Print Shield, which is also a great product. I have tried all three, and other than the very strong smell, I felt they were all equally good, but the Premier and Hahnemule products did seem, to my eye, to have little impact on the paper quality and look.

# Canson

Paper Name	Base	Weight	Color Base	Optical Brighteners	Surface	Cost/page	Notes
<b>Aquarelle Rag (240)</b>	100% Cotton Rag	240 gsm	Natural White	No	Matte surface with considerable texture	\$\$\$\$	Watercolor paper with great gamut works well for images with lots of textures you want to emphasize
<b>Aquarelle Rag (310)</b>	100% Cotton Rag	320 gsm	Natural White	No	Matte surface with considerable texture	\$\$\$\$	Watercolor paper with great gamut works well for images with lots of textures you want to emphasize
<b>Baryta Photographique (310)</b>	Alpha Cellulose	310 gsm	Natural White	Baryta brighteners	Matte surface little to no texture	\$\$\$	Designed to mimic black and white silver gelatin print, great gamut and very light texture reduces glare.
<b>BFK Rives (310)</b>	100% Cotton Rag	310 gsm	Natural White	No	matte surface with noticeable texture	\$\$\$\$	One of the oldest papers available (500 years old) smooth yet soft texture, works well for some images but can leave others feeling less rich in color
<b>Platine Fibre Rag (310)</b>	100% Cotton Rag	310 gsm	White	No	Little texture and slight gloss to surface	\$\$\$	Classic paper base used in Platinum/Palladium printing, great d-max, gamut, texture for both black and white and color work
<b>Rag Photographique (210 or 310)</b>	100% Cotton Rag	210 or 310 gsm	Bright White	No	Very smooth matte surface	\$\$\$\$	Great preforming paper, gamut & texture both great.
<b>Infinity Baryta Prestige (340)</b>	Alpha Cellulose and 100% Cotton Rag	340 gsm	White	small amount	extra smooth matte surface	\$\$\$\$	Has the feel of traditional black and white darkroom paper, great for black and white, has high level of detail preservation, wide gamut for color reproduction
<b>Infinity Photo Satin Premium RC (270)</b>	Alpha Cellulose	310 gsm	Bright White	Moderate	extra smooth satin surface	\$\$\$	Glossy based surface with high archivability and minimal reflections, optimized for pigment inks

# Canon

Paper Name	Base	Weight	Color Base	Optical Brighteners	Surface	Cost/page	Notes
Premium Fine Art Smooth	100% Cotton Rag	310 gsm	Natural White		smooth matte	\$\$	Optimized for LUCIA PRO inkset, rich blacks, nice gradation of color tones and shadow density, soft feel to the paper
Premium Fine Art Bright White	100% Cotton Rag	305 gsm	Bright White	No	very smooth	\$\$	Very smooth surface and high gamut makes for nice all around fine art paper
Premium Polished Rag	100% Cotton Rag	205 gsm	White	No	textured paper	\$\$	Sharper image detail and really nice gradations within the color gamut



# Epson

Paper Name	Base	Weight	Color Base	Optical Brighteners	Surface	Cost/page	Notes
Hot Press Bright	100% Cotton Rag	330 gsm	Bright White	No	smooth matte	\$\$\$	Wide color gamut works well for color and black and white high D-Max great for portraits, landscapes
Hot Press Natural	100% Cotton Rag	330 gsm	Natural White	No	smooth matte	\$\$\$	High D-Max and wide color gamut for saturated images, works nicely for some portraits
Cold Press Bright	100% Cotton Rag	340 gsm	Bright White	No	textured matte	\$\$\$	Wonderful paper with a texture the can enhance edges, has wide gamut and works nicely for some portraits
Cold Press Natural	100% Cotton Rag	340 gsm	Natural White	No	textured matte	\$\$\$	Slightly warmer paper with good texture. creates a softer highlight. wide gamut
Legacy Baryta	Alpha Cellulose	314 gsm	White	small amount of baryta	stain surface smooth finish	\$\$\$\$	Newer paper <b>amazing</b> black and white prints love this paper
Legacy Platine	100% Cotton Rag	314 gsm	Natural White to White	No	satin surface smooth finish	\$\$\$\$	Newer paper wide gamut, color is amazing
Legacy Fibre	100% Cotton Rag	314 gsm	Bright White	No	matte surface with slight texture	\$\$\$\$	Newer paper, great all around printing paper, amazing love this paper
Exhibition Fiber	Fiber based	325 gsm	Bright White	Yes (minimal)	soft glossy surface slightest little texture	\$\$\$	Great for black and white, super D-Max, contact range and gamut. Color also renders well
Velvet Fine Art	100% Cotton Rag	260 gsm	Bright White	Yes	matte velvet soft texture	\$\$\$	Good for color reproduction with epson enhanced matte coating very ridge paper

# Hahnemule

Paper Name	Base	Weight	Color Base	Optical Brighteners	Surface	Cost/page	Notes
<b>Fine Art Baryta (300)</b>	100% Cotton Rag	300 gsm	White	Baryta	slight glossy surface with minimal texture	\$\$\$\$	Great black and white paper, good contrast and D-Max, nice color gamut
<b>Photo Rag (308) also come in 188 gsm and 500 gsm</b>	100% Cotton Rag	308 gsm	White	Yes	matte finish little to no texture	\$\$\$\$	Great all around paper for fine art prints, works well for both color and black and white, nice portrait paper, classic paper
<b>Photo Rag Ultra Smooth (305)</b>	100% Cotton Rag	305 gsm	Brighter White than Photo Rag	Yes	ultra smooth matte finish	\$\$\$\$	Has a brighter white than Photo Rag for more contrast, super gradient and tonal rendering of gradients. favorite of mine
<b>William Turner (190 and 310)</b>	100% Cotton Rag	190 and 310 gsm	Natural White (slight yellow)	No	Highly textured	\$\$\$\$	great for reproduction work of textured surfaces and creates interesting textured look of photographs
<b>Bamboo (290)</b>	Bamboo	290 gsm	natural white (cloudy yellow)	No	very slight texture on matte surface	\$\$\$\$	great paper for black and white image when a warm toned print is desired, very cool paper to play with
<b>FineArt Pearl (285)</b>	Alpha Cellulose	285 gsm	Bright White	Yes	smooth pearl. luster surface	\$\$\$\$	great gamut and color contrast, nice depth in images, classic paper great all around results

## Iford Galerie Prestige

Paper Name	Base	Weight	Color Base	Optical Brighteners	Surface	Cost/page	Notes
Gold Fibre Silk	Alpha Cellulose	310 gsm	Bright White	Baryta	light luster smooth surface	\$\$	Vivid colors, works well with digitally toned b&w images, nice for portrait work as well
Smooth Pearl	Alpha Cellulose	310 gsm	Bright White	Yes	Glossy	\$\$	Wide gamut, high contrast range, high level of sharpness, not much glare from surface
Smooth 100% Cotton Rag	100% Cotton Rag	310 gsm	Bright White	No	very smooth matte	\$\$	Nice gamut, very smooth surface works well for subtle tonal shifts, & portraits with a softness quality
Gold Mono Silk	Alpha Cellulose	270 gsm	Bright White	Yes	Very slight gloss	\$\$\$	Specifically formulated for black and white, nice D-Max and tonal shifts in mid-tones
Lustre	Alpha Cellulose	260 gsm	Bright White	Yes	Luster	\$	Good general paper works on a variety of subject matter
Fine Art Smooth	Alpha Cellulose	220 gsm	Bright White	Yes	Smooth Matte	\$\$\$	Warm tone surface with vivid colors, nice artistic look to images

# Innova

Paper Name	Base	Weight	Color Base	Optical Brighteners	Surface	Cost/page	Notes
<b>Cold Press Natural Rough Textured Natural White</b>	Alpha Cellulose Base	315 gsm	Natural White	No	high texture matte surface	\$\$	Texture makes for interesting images, with right textured image it can enhance the photograph, but can be distracting on wrong image. generates interesting depth and sharpness
<b>Fibaprint White Ultra Smooth Gloss</b>	Alpha Cellulose Base	285 gsm	Bright White	Yes	Glossy smooth surface	\$\$\$	Nice gamut and color rendering, very white paper base for contrast range
<b>Soft Textured Natural White 100% Cotton</b>	Alpha Cellulose Base	315 gsm	Natural White	No	Matte surface with little texture	\$\$\$	Nice for warmer tone images in black and white, texture can distract in the wrong image, but nice tonal range with the correct image. D-Max is good, gamut is normal

## Moab

Paper Name	Base	Weight	Color Base	Optical Brighteners	Surface	Cost/page	Notes
Juniper	100% Cotton Rag	305 gsm	Bright White	Baryta	slight glossy/luster	\$\$\$	Nice paper for deep shadow detail on black and white images
Entrada	100% Cotton Rag	190 and 300 gsm	Natural White	No	matte light texture	\$\$	Paper that put Moab on the map, warmer tones in images and soft white color image good contrast range for variety of subjects, nice gamut
Lasal Photo (300)	Alpha Cellulose	300 gsm	Natural White	Yes	Smooth Luster	\$\$	Good D-Max and nice color, good general paper & nice for portraits
Moenkopi Washi	Alpha Cellulose	110 gsm	Natural White	No	matte textured	\$\$	Made of mulberry and hemp fibers
Somerset	100% Cotton Rag	190, 255, 330 gsm	Bright White	Yes	matte light texture	\$\$	Comes in two version enhanced and museum. has a nice velvet texture along with good color gamut

# Museo

Paper Name	Base	Weight	Color Base	Optical Brighteners	Surface	Cost/page	Notes
<b>Silver Rag</b>	100% Cotton Rag	300 gsm	Natural White	No	sort of soft luster with some light watercolor texture	\$\$\$\$	Great paper originally developed for mimicking black and white analog paper work for color but shines with black and white images
<b>Textured Rag</b>	100% Cotton Rag	285 gsm	Natural White	No	textured matte surface	\$\$\$\$	Texture can really impact image, has an old world quality to the paper, works well for black and white, sepia and digitally toned images. color renders ok
<b>Portfolio Rag</b>	100% Cotton Rag	300 gsm	Natural White	No	very smooth matte surface	\$\$\$\$	Nice all around portrait paper, smooth surface, nice gamut works well with both black and white and color, color gamut not as wide as some other papers but beautiful rendering of colors
<b>Max Fine Art</b>	100% Cotton Rag	260gsm	Natural White	No	light texture	\$\$\$	Nicely balanced paper for variety of subjects
<b>Portrait</b>	Alpha Cellulose	290 gsm	White	Yes	luster or glossy	\$\$	Design for high volume portrait work

## Red River

Paper Name	Base	Weight	Color Base	Optical Brighteners	Surface	Cost/page	Notes
<b>Palo Duro Etching</b>	100% Cotton Rag	315 gsm	Natural White	No	light velvet texture similar to cold press	\$\$	Warmer paper with nice blacks, smooth gray tones, and holds saturation well
<b>San Gabriel Baryta SemiGloss</b>	Alpha Cellulose	315 gsm	Neutral White	Baryta	soft texture with slight reflection under certain lighting conditions	\$\$	Works well for black and white, deep black and nice rich color
<b>Aurora Art White</b>	100% Cotton Rag	250 gsm	Bright White	Yes	light texture	\$\$	Nice all around paper. works well for portraits, landscapes and other subjects. nice gamut, even tones
<b>Palo Duro SoftGloss Rag</b>	100% Cotton Rag	310 gsm	Natural White	No	light texture	\$\$	Deep rich blacks, nice color range, white point similar to platine papers

## Proofing Papers

Proof papers are used early in the printing process when you need to save on the cost from printing on one of the higher end papers. When selecting a proof paper, I recommend that you experiment with a few different paper types and try to find one that has a similar gamut, contrast and paper base color (warm or cool) to your final paper. If you find a paper that more closely matches the fine art paper of your final prints, you can then print with the less expensive paper until you feel like you are ready to use your more expensive paper.

In many cases, proofing papers can and do produce high-quality archival prints. The only real distinction I make on a proofing paper is cost. What might be a proofing paper for one person is a final production paper for another. Most of these papers are fine papers for printing your photographs, but if you are using some of the more expensive papers, using a cheaper but high-quality paper can make a difference in your back account.

Company	Paper Name	Cost/page
Canon	Photo Paper Pro Luster	\$
Canon	Matte Photo Paper	\$
Epson	Ultra Premium Luster	\$\$
Epson	Semi-matte proof paper	\$
Red River	Ultra Statin	\$
Red River	Polar Matte	\$