

MOAB
BY LEGION PAPER

Evan Parker
Moab Paper
evan@legionpaper.com
www.moabpaper.com

THE DIGITAL DARKROOM



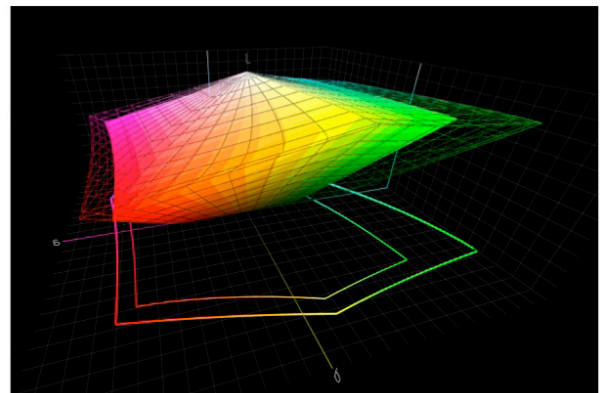
Today You Will:

- Master the Print Process
 - Befriend Your Printer
 - Evaluate Prints
 - Manage Your Color
 - Get to Know Papers
- Expand Your Creativity

In the days of film, we had to print a photograph to appreciate it. This still holds true: when we print our digital photos, it gives us a new perspective on the photograph, helps to evaluate technical aspects and artistic perspective, and creates a tangible relationship with the image. It is a picture in the digital form, it is a photograph when you commit it to paper. We take more photographs than ever before in the history of the medium, and printing allows us to appreciate and share what we create. Your printing skills will not develop overnight, plan to spend a few evenings getting to know your printer, and different papers. I think of it as dating your printer-buy it a set of ink, and get to know each other.

Start with the Best Image File

- Know your color space
- Shoot in RAW whenever possible
- Edit & Export in AdobeRGB or ProPhoto RGB
- sRGB is for the Web only



AdobeRGB=Wireframe sRGB=Solid

When converting from RAW in Photoshop, make sure you are opening/saving your images in either AdobeRGB or ProPhotoRGB, not sRGB. This allows for more colors in your image, also called a larger gamut. When working in Lightroom, this is only a consideration when exporting an image- the default for Lightroom is sRGB, so you'll want to change that unless you are saving an image for the web. Throughout the whole print process, remember to stop and take notes about anything that is new, or you want to remember the next time you print. After 12 years of digital printing, I still take copious notes.

There is no holy grail in printing- the most important question is this: Do your prints look good to you? You are the artist, and the print is the realization of your vision when you captured the image. What tools do you need to make sure your prints look their best? Here are my suggestions:

- Work in a room with neutral-colored walls
- Use a consistent light source for evaluating prints

With these two parameters, you can be confident that your prints will look their best when displayed by a friend or customer.



What really matters: Does the print look good to you?

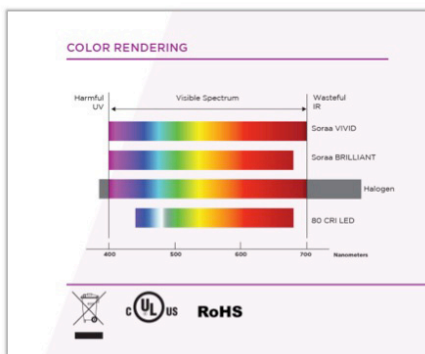


Working in a room with bright colors will cause your color perception to shift, so your images won't be neutral.



If possible, edit your pictures in a workspace that has neutral paint colors and indirect light.

CRI = Color Rendering Index



When selecting a light source to evaluate your prints, stick with a classic incandescent bulb, or an LED bulb with a CRI (color rendering index) in the 90s. Stay away from Compact Fluorescent bulbs, as their quality of light is poor, and produce a smaller portion of the visible spectrum. Incandescent or halogen bulbs generate a spectrum of light larger than our visible field, allowing us to see all the colors in a photographic print. Most LED bulbs sold today have a CRI number printed on the box. If you are looking for a high-quality LED bulb, check out Soraa at www.soraa.com

Now that your workspace is set up, let's move on to the more technical aspects of the print process.

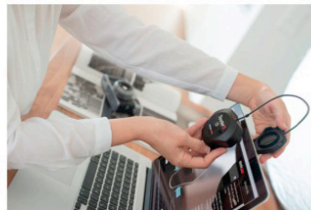
Color Management = Consistent Prints

- ✓ Evaluate Prints under consistent lighting
- Calibrate your display
- Use an ICC (color) profile when printing
- Set the correct paper type
- Make comparison prints
- Keep reference prints and make notes on your settings

Monitor calibration is the one part of the process that requires an additional piece of hardware; a colorimeter or spectrophotometer for measuring color. Purchase one that fits your budget, a more expensive device won't give you a better color. Once you have completed the monitor calibration, make a test print and see how the brightness compares to the monitor. Prints are reflective, while monitors are transmissive, so your prints will always appear slightly darker, but if the difference is significant, turn down the brightness on your monitor. If you work in a space that has very bright daylight, consider a monitor hood to block out highlights and reflections.

Calibrate your monitor (regularly)

This matches your monitor colors to your prints



When calibrating, check your brightness and match to a print.
Lots of options, choose what fits your budget

Calibrate your monitor (regularly)

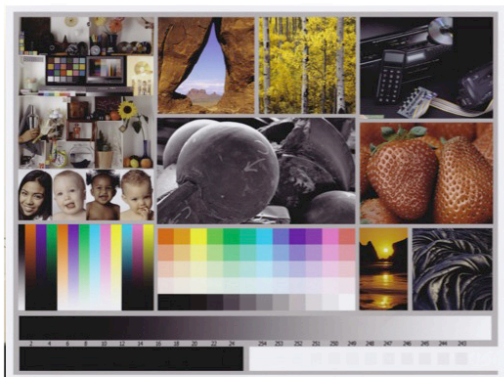
And consider a hood to minimize glare & reflections



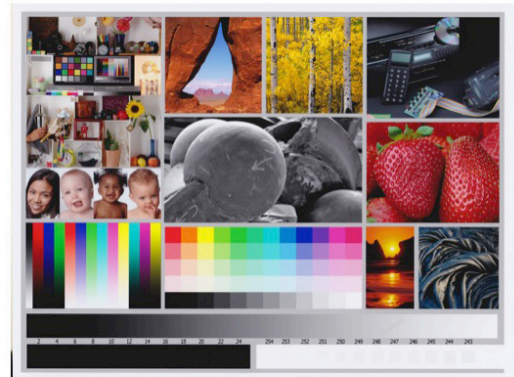
You can make your own with black foam core and black gaffers tape

The next step in your printing workflow is the color profile. Color profiles, or ICC profiles, are unique to every paper, on every printer. They are the 'secret sauce' of the print process, telling the printer how to mix colors and how much ink to use, so your prints come out looking like they do on screen. Every paper company supplies ICC profiles for their papers on all the major photo printers, visit www.moabpaper.com to find the Moab profiles for our papers. You only need to download and install a profile once, it is then available every time you print.

Print with no profile applied



Print with profile applied



When selecting a color profile in both Lightroom and Photoshop, you will also see an option for Rendering Intent. The Rendering Intent determines how out-of-gamut colors (those that the printer can't make) are mapped back into the printable color space. Start with Relative Colorimetric, and if you have an image with very vibrant and saturated colors, test Perceptual rendering. In the print preview window, you can check the box for 'Match Print Colors' and 'Gamut Warning' to see the parts of your photograph that are outside the printable color gamut.

Where do image colors exceed printer output?

- Soft Proof in PS or LR can show you gamut limits

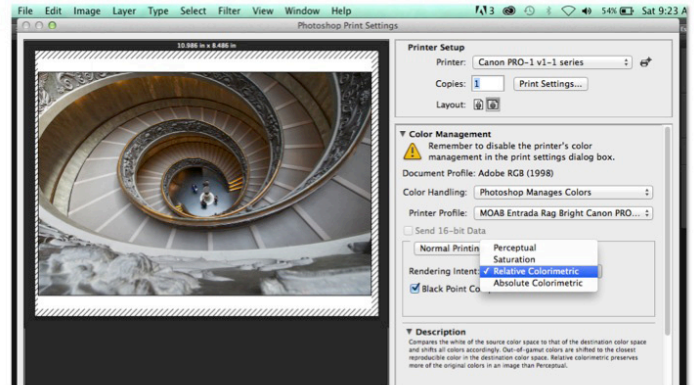


Original Image



Out-of-gamut colors highlighted in pink

Rendering intent guides the mapping of these colors into the printable space



In addition to the color profile, you will also need to select a paper type (or media type) when printing. The list of paper types is created by the printer manufacturer and cannot be changed, so we list a recommended paper type along side every profile. You will need to select the appropriate paper type when printing to get accurate color.

Paper Type (The Secret Handshake)

- As important as color profile
- Adjusts ink density, print head height (also known as platen gap), paper feed
- Matte Black (MK) or Photo Black (PK)
- Controls application of Gloss Optimizer
- Limited selection defined by printer manufacturer

Look for a paper type/media type with the color profile

Moab Paper	Media Type	Inkset	Profile
Anasazi Canvas Matte 350	Canvas	MK	Download Profile
Colorado Fiber Gloss 245	Photo Paper Pro Platinum	PK	Download Profile
Colorado Fiber Satine 245	Photo Paper Pro Platinum	PK	Download Profile
Entrada Rag Bright 190/300 (auto feeder)	Matte Photo Paper	MK	Download Profile
Entrada Rag Bright 190/300/290 (manual feeder)	Highest Density Fine Art Paper	MK	Download Profile
Entrada Rag Natural 190/300/290 (auto feeder)	Matte Photo Paper	MK	Download Profile
Entrada Rag Natural 190/300/290 (manual feeder)	Highest Density Fine Art Paper	MK	Download Profile
Juniper Beryta Rag 305	Photo Paper Pro Platinum	PK	Download Profile
Luxal Dual Semigloss 330	PhotoPaper Plus Semi-Gloss	PK	Download Profile
Luxal Exhibition Luster 300	Photo Paper Pro Luster	PK	Download Profile
Luxal Photo Matte 230/235	Matte Photo Paper	MK	Download Profile
Moonlight Kase 110	Matte Photo Paper	MK	Download Profile

Selecting Papers Many Types

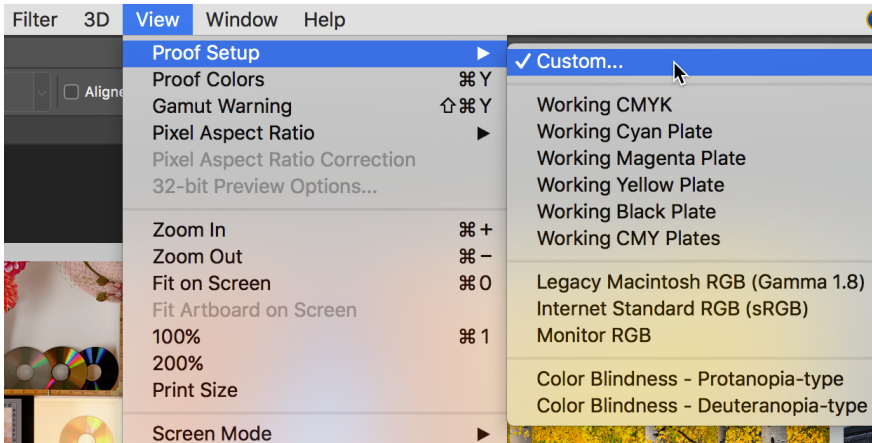
- Matte Paper – Alpha Cellulose
- Rag Papers (Fine Art) – Cotton
- RC (traditional surface) – Glossy, Luster
- Canvas
- Washi (Traditional Japanese Paper) – Mulberry fiber
- Specialty: Slickrock Metallic

Selecting Papers Things to Consider

- Tooth & Surface Texture
- Optical Brighteners (OBAs)
- Ink, detail, tone, saturation
- Cost
- What will you do with the print?
- Personal Preference
- How does the paper effect the image?
- Perception is often subconscious

Soft Proofing

A Soft Proof (or preview) allows you to see your photograph on screen viewed through the print profile. Soft Proofing is an excellent tool to check your work flow if prints aren't looking right, or if you want to see how a new paper may change the look of your image.



In Photoshop, soft proof is found in the View Menu:

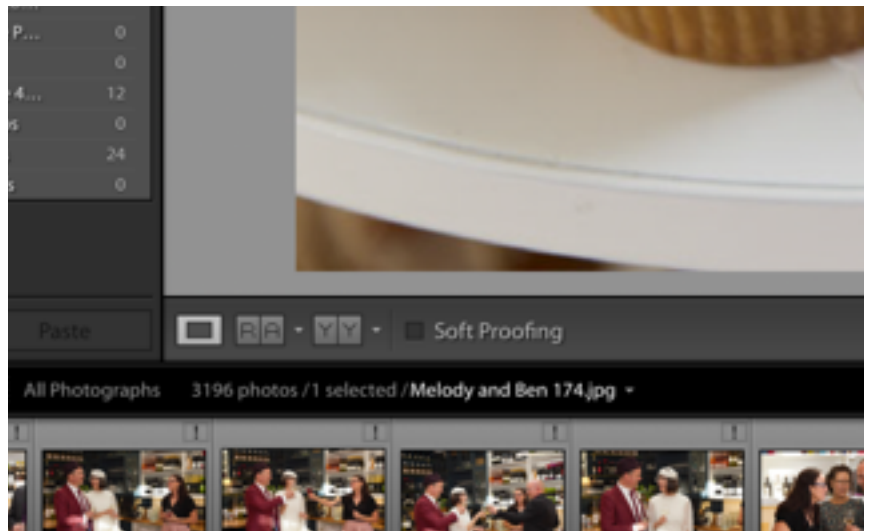
View > Proof Setup > Custom

In the Custom window, 'Device to Simulate' is where you select your print profile, and you can toggle between rendering intents.

In Lightroom, soft proof is found in the Develop Module:

Check the box to the bottom left of the photograph.

Your options will then appear at the top of the adjustment tools, where you can select your print profile and rendering intent.



With today's pigment inks, you can be confident your inkjet prints will last a long time, as long as they are stored or displayed properly, and with archival materials.

Factors Affecting Print Life

- Type of paper (base materials)
- Type of ink (dye, pigment)
- Exposure to UV (sunlight)
- Humidity
- Handling (cotton gloves recommended)
- Neutral pH framing materials
- Will you sell your prints?

Extending Print Life

- Frame with UV-filtering glass
- Store loose prints in an archival box
- Control humidity
- Allow for drying (off-gassing) before framing or storage
- Protectant sprays (Moab Desert Varnish)

Additional Resources

Recommended Reading:

The Art of Fine Art Digital Printing

- Lester Picker (free @ fineartprinttebook.com)

Fine Art Printing for Photographers

- Uwe Steinmueller

The Digital Print

- Jeff Schewe



Final Thoughts

- Take the time to understand your printer
- Test & evaluate different papers
- Know the printing process with color management
- Make & keep notes as you print
- Ask questions
- Make the digital darkroom part of your creative process

If You Have Questions

- Evan Parker
- evan@legionpaper.com
- www.moabpaper.com
- Moab support forums
- moabpaper.com/moab-support-forum/

Notes: