Fotospeed's Art of Printing

From capture to output.



Using this eBook

This eBook is jam-packed with useful information and resources that are available at the click of a button.

Take a look at the guide below to better understand how to make use of all the features to ensure that you get the most out of your experience.

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Additional Useful Content Resource List Glossary

Fotospeed Signature Paper Range Fotospeed Paper Size Grid

Versions of This eBook

The eBook is available for download as an interactive PDF as well as <u>previewed online</u> as a FlipBook. <u>Access them here</u>.

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An insight into a business that is more than 35 years in the making.

Introduction

Fotospeed began life over 35 years ago as a family-run darkroom chemistry manufacturer and fine art printmaking specialists. With the technological advancements in the photography and printing industry over the past few decades, Fotospeed has adapted to the needs and demands of photographers and artists to become a leading company within the printing and fine-art sector, acquiring a wealth of technical experience, along with a respected reputation for quality and service.

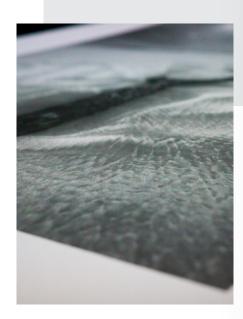


Charlie Waite

Today, Fotospeed has a comprehensive range of high quality digital inkjet papers, inks and accessories shipped globally. Fotospeed are also a key distributor of numerous market leading brands such as Hahnemühle fine art papers, Kaiser photographic equipment, Herma adhesives, Canson Infinity Papers, Dust-Off and Hoodman. Fotospeed are also gold partners for both Canon and Epson. As well as having an extensive range of products available from Fotospeed.com, at Fotospeed we pride ourselves on our passion and our dedication to our customers' needs, offering support throughout your process from purchase to print.

> - Toby Herlinger, Fotospeed Sales & Marketing Director - Co-Owner

Why Print and Capture?



Why Print?

With the vast array of editing apps and social media platforms at our fingertips, why are we still so passionate about print, and why do we feel it is such an important part of an image's journey?

Not only does a print give you a nostalgic memento to treasure and look back on for years to come, regardless of changes in technology, it also offers you a wholly personal experience. Charlie Waite, photographer and Fotospeed ambassador, explains his own personal experience of printing and nostalgia:

'My great grandparents made beautiful albums of my mother and my father as children, and I still have those today. I've got a little photograph of my mother at three years old. I wonder, if I worked digitally, whether they would mean so much.' The art of passing prints down generations is akin to passing down a family heirloom; it represents a moment in time that someone was not necessarily part of, but offers them a part of that history.

Fotospeed ambassador and landscape photographer, Paul Sanders adds that printing allows you to experience the image in a deeper way; 'Personally, printing for me is the best part of the process because it allows me to reconnect with the experience of being with nature and the moment the image came to me.' Looking at a printed photo is a much more intimate experience than looking at a photo on your phone; it allows you to completely immerse yourself in the image.



🖸 Charlie Waite

While social media can be a great tool for photographers, the ability to share an image at the click of a button makes it easy for images to get lost in the ether, only given a moment of time on a screen and never to be thought of again. We at Fotospeed believe that if you're only looking at your photos on your screen, you're not really seeing them in their full glory.

"A photograph is not a photograph until it is printed"

- Tim Jones, Fotospeed Technical Manager

Not only is printing at home a way of giving your photos longevity, it also allows you to review them more critically and feel more connected with your images. Plus, it offers the opportunity to share your images with loved ones as a physical and meaningful gift.

'The joy of printing is twofold. One is for the creator of the image, and two for the recipient of the image. Because the person who sees it in print form, enjoys a much more profound experience than they do when they see it on a screen.'

- Charlie Waite, Fotospeed Ambassador

Despite what you may think, you don't need to be a pro photographer to become a successful printer, in fact if anything, learning to print can help you learn more about photography. As people discover new hobbies and the (not so) hidden gem that is printing, print-enthusiasts have continued to grow post-pandemic.

How did print actually begin?





A Brief History of Print

Printing can be dated way back to the early 1800s. Interestingly, many of the techniques used in the early days of print are still widely used today.

Paper negatives, which first became popular in the 1840s and 50s, were made from cotton rag paper. The negative was then created by using salts to prepare the paper and silver nitrate to sensitise the paper; a technique still used by many modern photographers.

You can still create images using these early techniques with kits such as the Fotospeed <u>Salt Printing Kit</u>. <u>Cyanotype</u> contact printing, which was created by Sir John Herschel in 1842, is still incredibly popular with 21st century photographers. The blue finish to this process gave rise to the term blueprints. Herschel was actually a scientist, botanist and astronomer and created this method as a way of copying notes he had created and coined the terms 'negative' and 'positive'.

Cyanotype printing became incredibly popular in the Victorian era. If you're lucky enough to have any exceptionally old family photos stored away, chances are they used this method. Cyanotype printing is now used by many photographers to add flair and depth to an image, or to give it a vintage, nostalgic feel.

Print techniques which have stood the test of time

Many people still crave the vintage look in their photographs, which is why these techniques will continue to be used for years to come. Often these techniques are inexpensive and simple, making them ideal for both beginners and pros.







Cyanotype

Invented in 1842 by Sir John Herschell This technique adds a blue hue to prints as a result of UV exposure and oxidisation.



Van Dyke (Argyrotype)

Patented in 1895. This technique involves coating paper or canvas with particular, photosensitive, chemicals and exposing it

to UV light, resulting in a sepia or brown toned print. This was later changed to Argyrotype printing, which uses a silver based sensitising solution for which Fotospeed has a kit.

Fotospeed

RCYROT

Salt Printing

Invented by Henry Fox Talbot in the early 1830s. It involves immersing the paper in salt-water and then sensitising it with silver nitrate, creating sepia-toned prints.

Get the Fotospeed Salt Printing kit.



Image: Cyanotype print

Technology has rapidly advanced since the early days of photography which has made printing more accessible and sought-after, thanks to the wide range of printers, papers and cameras available on the market. With this came the rise in digital photos stored and displayed online.

We may be biased, but here at Fotospeed, we think there's something a little magical about being able to hold and display your photos — especially as we know how much thought photographers give to every captured image. Turn them into <u>photobooks</u> to display on your coffee table, proudly frame them on your wall, turn them into calendars and even Fotoblocks.

Or, you could merely start a new hobby with a friend or family member and pass down the memories through the generations. With printing, it's entirely in your hands, figuratively and literally.

Capture

Before you get into the nitty-gritty of home printing, it's important to get the basics right first; we're talking about the 'capture' stage.

Consider how you actually capture your image, as this can drastically change what kind of image you're printing and can also save you time and money down the line. We'd recommend getting things right in the camera from the outset. Getting the biggest file size possible from your camera is key and this typically means shooting with the RAW setting on your camera, rather than JPEG or any other setting.

JPEG files automatically process and save the image by using a predetermined set of parameters, which means when you come to edit your images, they will already have been altered. RAW files give more data to use when editing, and the more data you have, the larger and crisper the print you will be able to create.

We'd also suggest taking a look at the colour space you're using in the camera. It's important to note that when shooting in RAW, the colour space is not saved. Most cameras automatically default to sRGB, which is great for viewing pictures on the screen.

However, when printing, it's best practice to use Adobe RGB. Adobe RGB is the closest colour space found in printers. Meaning you have a wider range of colours available when you print. Using the sRGB setting means you run the risk of limiting the colours available when you print your images.

Aspect ratios also play a key role in the early stages of printing an image. You should, with any photograph, consider what you want to be the focus of the finished product. We'd recommend playing around with different aspect ratios (5*4, 16*9, 1:1), so you have plenty to experiment with when it comes to printing.

Ready to start experimenting? We've created this eBook to share some tricks of the trade, from us here at Fotospeed and some of our photographer friends so you can begin the exciting journey of printing at home!

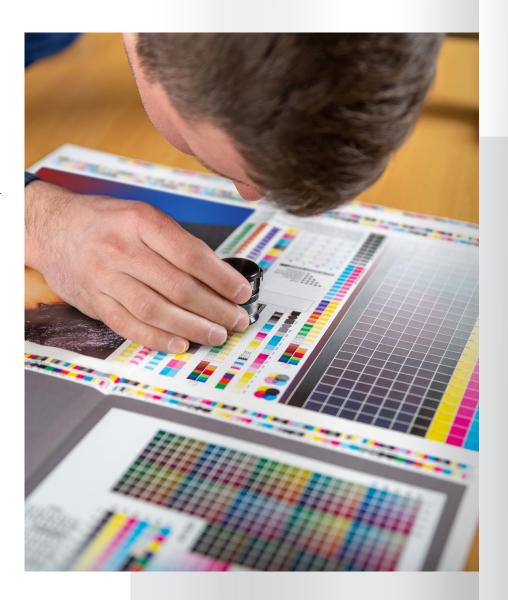
Pro Tip 🤞

"When you're capturing an image for print and looking through the camera, try and imagine it as a five foot print; something really big. So really invest possibly more time, more care, more love and nurture the image.

A printed image will be examined differently than it would on a monitor, as it will likely be looked at more and examined in more detail."

- Charlie Waite, Fotospeed Ambassador

Colour Management



The Process

The colour management process is referred to as profiling and/or calibration. Generally colour management of the printer is known as profiling whilst colour management of the screen is known as calibration. Both are essentially the same thing and are used to ensure colours are as accurate and consistent as possible when viewing images on screen and printing ensuring what you see on screen is what you get out of your printer.

It is important to know that the screen and print will never match 100% as you view the screen as projected light and the print is viewed as reflected light. Turning down the screen preset brightness is one of the most important factors in matching the two. Both screen calibration and printer profiling work using the same principals.

For screens you use a screen calibrator which hangs on the front of your screen and software runs a program which projects colours with predetermined values. The software then reads the values projected by the screen and makes a correction file to what the colours should be. This now sits in the monitor display making the output colours device independent.



For printers you print a test chart of predetermined colours which is then scanned through a spectrophotometer. This reads the colours the printer has output and makes a correction file to what the colours should be. You then apply this in your printing workflow making the output colour device independent.

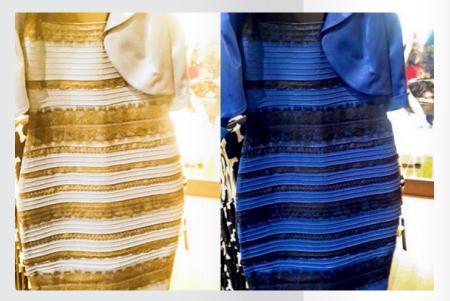


Image: The Dress Optical Illusion

So, why do you need this for printing and what is colour?

In 2015, the dress photograph became a viral phenomenon and caused viewers to question whether the dress depicted was in fact black and blue, or white and gold. Regardless of the colour you deem the dress to be, the fact of the matter is that we all see colour differently.

Understanding that each individual perceives colour differently is the first step to colour management and it is also crucial to know that your mind can play tricks on you.

Here are a couple of examples:

Example 1:

When you look at Image 1 you will see what looks like two grey rectangles with a gradient going in opposite directions. Now look at Image 2.

In fact it is a large grey rectangle with a gradient and a small solid grey rectangle. Your brain has added the gradient to the smaller rectangle.

Don't believe what you're seeing?

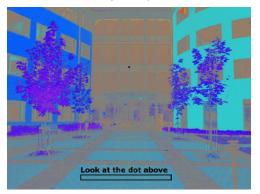
Download the image below and switch the PSD layers off yourself.



Example 2:

Secondly, stare at the dot in the middle of the image below. You should see the image turn into a colour image. Now look away and look back at the image.

Download the gif to try it out.

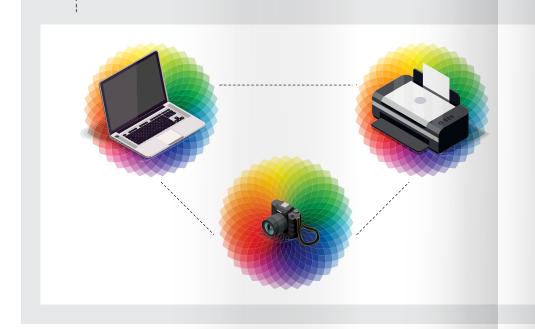


What do you see?

While colour can be deceiving and differ from person to person, there are methods to improve the correlation of the colours perceived on screen and the printed product. The same can be achieved for colour across multiple devices where every electrical device which outputs colour will interpret and output the same colour in its own way.

Think of a TV showroom. There are multiple TVs of the same make and model, all showing the same program in slightly different colours, contrast or brightness values. In order to get the colours the same across all of those TVs, you need colour management.

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What is an ICC Profile?

In 1993, 8 major companies including Epson, Adobe, and others came together and produced a set of colours with predetermined colour values, this group was called the International Colour Consortium or ICC for short. In the case of RGB each colour is a certain mix of each red, green & blue value. This allowed colour management to stop being device dependent and start, reliably, being device independent using these predetermined values.

Colour management ensures that the colours you see on your monitor are closer to the colours that come out in the print. Essentially, colour management has a few key jobs:

- To maintain consistent colours across various devices.
- To avoid colour cast (a tint of a particular colour, usually unwanted, that evenly affects a photographic image).
- To save money and waste.

Calibration of Printer via ICC Profiles

In terms of creating a profile for your printer, we offer a <u>free custom profiling service</u>.

To use this service, all you need to do is print off a test chart, following the simple step by step instructions, and send it to Fotospeed, who will read the chart using a spectrophotometer . Once completed, your custom profile will be generated and emailed back to you with installation instructions.



If using multiple monitors make sure you have profiled the screen separately as each screen will display colour slightly differently, even if they are the same make. To do this, calibrate both separately and save the profile (more on this below). You will also need to ensure lighting in the room is consistent in order to get an equal match, and that it's not too bright, as calibrators take this into account.

It is possible to calibrate your screen manually, but this is never as precise. It can also be a long-winded process, whereas specialised tools take a mere 10 minutes or so to make the calibration. Manually calibrating the screen can also create some differences between the screen view and your final print, the most common discrepancy being brightness.

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"The number one call I receive is people reporting that the print is coming out too dark.

In my experience the print is normally correct but the screen by comparison is too bright. Note; this is only relevant where the printer has been profiled. The screen calibrators do a great job when it comes to colour, but as every printer is slightly different in the way it prints, the brightness will need changing manually."

> - Tim Jones, Fotospeed Technical Manager

When profiling your printer, there are a few steps to follow:

- Print out the Fotospeed test chart (a series of colour patches) on the paper you want to profile. You will find this in the profiling pack located on the Fotospeed website.
- Allow the test print to dry for up to 24 hours for best result and post to Fotospeed.
- Fotospeed will scan the colour patches by placing the calibrator's measuring sensor over each individual colour patch.
- Once each patch has been processed a correction file, your profile will be created and emailed back to you with instructions on how to save and use it.

Bespoke versus Generic Profiles			
Generic	Bespoke		
 Made for your make and model of printer with the same ink and paper combination but not your exact printer 	 Made specifically with your printer, paper and ink combination 		
Available instantly online	 Available within 48 hours of Fotospeed receiving the charts 		
May not be 100% accurate	 100% accurate 		
Free of charge	Free of charge		

Calibration of your screen

Printer profiles are stored in your computer and are used by your preferred printing software, for example Adobe Photoshop or Lightroom. To ensure the colours you see on screen are consistent with the printer's profiled output, you need to calibrate your screen using a specialist calibration tool. Calibrating your monitor is essential because it will help avoid wasting quality printing paper.

The process of using a calibrator involves temporarily placing the device to your screen. The provided software will display colour patches the device then measures. The software then compares the colour being displayed through your screen with the standards set out by the ICC and makes adjustments where needed. We recommend you calibrate your screen at least once a month as screens tend to drift in colour more often than printers.

Fotospeed Recommends Here are two of our top choices for screen calibrators: <u>Calibrite i1 Display Pro</u> (formerly XRite)
 <u>SpyderX Pro</u>





Colour Space

In colour management, an ICC profile is a set of data that characterises a colour input or output device, or a colour space, according to standards widely conveyed by the International Colour Consortium (ICC). Whenever you're printing an image, you'll

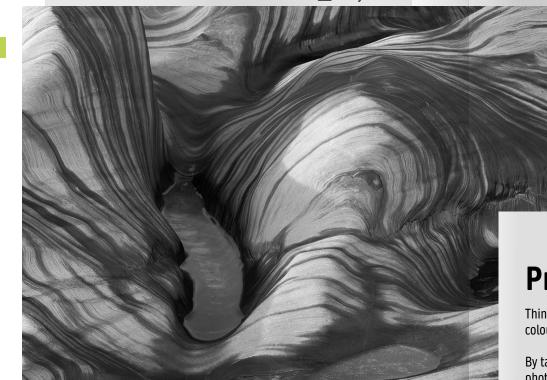
want the colours to stand out. Therefore, it's key to create or utilise ICC profiles. ICC profiles are responsible for providing consistent colour from one device to another, and also for ensuring the colours are displaying and printing correctly.

ICC profiles also affect the colour space in which an image is displayed. By colour space, we mean the range of colours which can be produced by your printer or screen. ICC profiles decide how these are shown, and work within the colour space to ensure the colour is displayed accurately and consistently. A profile allows the colour interpretation to be independent of the device, which in turn, allows consistent colour interpretation from capture to output.

There are three main types of colour space used in photography and printing:

- Pro Photo, which has the biggest colour space.
- Adobe RGB, which is the most commonly used and is the closest match to the colour space of printers.
- sRGB, which uses bright colours, and is used for photo paper, as well as web browsers and apps. Sometimes, it can show more detail when printing, as it has a larger colour space.

Tony Worobiec



We mentioned earlier the importance of shooting in RAW. If you shoot in this format initially, you will be able to alter and change which ICC profile you use when you export your image, which will in turn offer more flexibility with brightness, colour gamut and tonal values.

However, if you shoot in JPEG, you will be limited to using the same colour space in which you shoot. For instance, if you shoot in sRGB and try to export the image in Photoshop as an Adobe RGB (1998), the colours and brightness will change. This is because Photoshop would not know what to fill the extra colour space with, which would lead to colour shifts. Not only will the large space help maintain a more accurate colour both on screen and in print, but it will help when it comes to soft proofing. This is key within colour management, and essentially acts as a preview on your monitor of what the print will look like. It emulates not only the paper's white balance, but how the ink will react with the paper.

When looking at colour space in printing there are a lot of things which can be affected. The first step is deciding which setting on the computer to use - either sRGB, Adobe RGB or ProPhoto. From there the inks used, paper types and finish, can all affect the look of colours.

Printing of Black and White

Think colour management only applies to colourful photography? Think again!

By taking out the colour, black and white photography relies solely on highlight, shadow and tone, and often creates a far more evocative image in the process.

So, why is it important to manage colours for black and white photography?

Fotospeed Ambassador Paul Sanders says, 'Colour is so important in black and white work as each colour represents a tone. Understanding how that colour will translate is a key part of the B&W printing process.'

Furthermore, you could have the brightness way too high on your monitor which will cause shadows that don't exist to appear. This can be more difficult to navigate when it comes to black and white photography because shadows are much more apparent than they are in colour.

When it comes to calibrating your monitor for black and white printing, it's crucial to think about external factors which may affect the way your print looks. Screen calibrators also consider the ambient light in your surroundings; if you're working in a dim-lit room, the calibration of your monitor will be different to that of a bright room. It's important to either make sure you have the same lighting in your workspace, or to recalibrate if this changes.

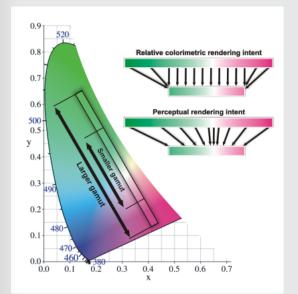
If you're serious about black and white printing, it's advisable to invest in an inkjet printer which has multiple grey inks because this will help to produce a natural black and white graduation & neutral tones.

Rendering Intents

Rendering intents describe how to adjust out-of-gamut colours (colours that cannot be printed by your printer). The colour gamut of your screen often exceeds the printer's own colour space, so saturated colours can become clipped and inaccurately represented.

This is the reason why digital photographs appear in vivid, saturated colours when viewed in the RGB colour space of a digital camera or a computer monitor and look dull in comparison when they are printed out using the smaller colour space of a CMYK printer.

There are in fact four types of rendering intent: perceptual, relative colour metric, saturated and absolute colour metric. As photographers and home printers, we are only really concerned with two of these four – perceptual and relative colour metric.





Perceptual vs Relative Rendering Intents

Perceptual (Suitable for photographs)

Perceptual rendering intent for colour space aims to preserve the visual relationship between colour so it's perceived as natural to the human eye, even though the colour values themselves may change. This is done by compressing the total gamut from one device's colour space into the gamut of another device's colour space when one or more colours in the original image is out of the gamut of the destination colour space.

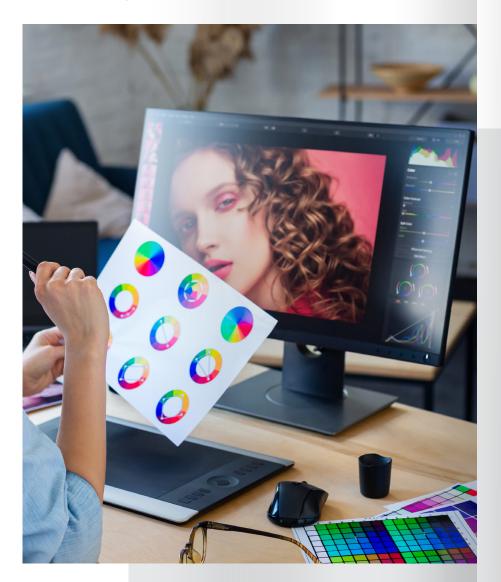
Relative

Relative rendering intent compares the white of the source colour space to that of the destination colour space and shifts all colour accordingly. When a colour in the current colour space is out of gamut in the target colour space, it is mapped to the closest possible colour within the gamut of the target colour space, while colours that are in gamut are not affected.

Only the colours that fall outside of the destination gamut are changed. This render intent can cause two colours, which appear different in the source colour space, to be the same in the target colour space. This is called "clipping."

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Editing Preparation and Screen



Now you have put your colour management in place, it is time to start the fun part of printing, making the prints. The first step is to edit your image in appropriate software. It is worth checking that your editing software has the options to apply ICC profiles and give you lots of printing options.

This will not only help you edit your images to exactly the specifications you want but it will also allow you to view your images on your screen as close to a match they will be when they're printing. In turn, this will save you time and money on numerous test prints!

Following on from our colour management tips, we'll take a look at preparing and editing your photos for print.





Which Screen?

Before you even begin to edit your images, it's important to consider how you view your images on your screen or monitor.

Ultimately, the monitor you choose needs to allow for maximum accuracy to ensure your photos come out exactly as you would expect. Calibrating your monitor regularly will allow for the colours in your prints to

be as accurate to what is seen on screen as possible, which will save you endless edits and additional prints.

It's also vital to consider what type of monitor you are using when editing your images, as you want them to be viewed as accurately as possible.

The following features can enhance your image guality when viewed on screen:

Colour Accuracy

This defines how well a monitor can produce tones, shadows and colours. Look for monitors which specify good colour accuracy in their tech specs.

Panel Technology Many photographers favour IPS (in-plane

switching panels) monitors due to the fact that they provide accurate colour and impressive depths and contrasts without distorting an image.

Which Software?

First things first; think about what kind of software you want to use to view, edit and resize your photos. Ultimately, this comes down to personal choice depending on what you're accustomed to, as well as your budget.

Adobe's Creative Suite is a popular choice, as it has various editing programmes, pricing options and packages depending on your needs. The Photographer Package provides you with all the necessary printing tools — even if you're not yet a professional photographer.

This package includes Photoshop and Lightroom. Both software provide a multitude of sophisticated editing options, however Lightroom is specifically geared towards photographers.



There are plenty of other software options with colour management capabilities, such as:

- Capture One
- Affinity
- ON1

Colour Space It is recommended that

your monitor should cover the industry standard colour spectrums - sRGB and RGB, at a minimum of 100% and 95%. Having these colour spaces will allow your images to utilise the full range of colours available from your printer.



"Once I have the image finalised I basically hit print in Lightroom, I let the software do all the sizing etc although I always print the same size 12"x12" on Fotospeed Platinum Cotton 305 paper, I love the slight warmth in the paper and the smooth texture really suits my images.

However your options aren't limited to Adobe: Epson and Canon also offer printing software. Their offerings allow you to size and frame your images ready for print and have various colour options including sRGB and Adobe RGB. Fotospeed's products are compatible with most programmes, no matter your software preference."

- Paul Sanders, Fotospeed Ambassador



Which File Size and Formatting?

As a general rule for printing you need to get the largest file size you can from your camera, using your camera's size settings. Digital cameras typically come set to medium, so make sure you check this. Larger file sizes are better in quality and are able to bring out the finer details of an image, such as those which may have been lost in shadows or highlights.

In order to get the largest file, shooting in RAW is recommended (you will find this in your camera's settings if available). Shooting in RAW means that no compression or processing is applied; essentially, you get the 'raw' image which leaves you with more colours and tones

than a reduced file size. On the flipside, if you shoot in JPEG, the camera will process the image to how it thinks it should look, which means it's compressed to a smaller file size and has less room for colours and tones. As a result, when it comes to editing, it's much more difficult to boost shadows or edit highlights without the quality of the image being diminished as the data won't be available.



"Today there are only two reasons for photographers to shoot a non-RAW format like JPEG. The first of these is time; RAW files take more time to process, so shooting JPEG will allow you to process second reason would be the file size and lack of computer/card/

HD memory. This is not so much of a reason in 2022. When I first swapped over to digital way back in 2004, I bought a 1GB memory card which at the time cost me £120 (I had to buy four). Now 64Gb of more images at the same time. The memory can be bought for as little as £10 on Amazon."

> Tim Jones - Fotospeed **Technical Manager**

File Types

RAW: RAW files are the unprocessed data from the camera sensor. With these files, there is no processing of the digital file that a computer, without the matching software, would be able to read. These files need processing through a RAW converter. Most editing software have this built in, but camera manufacturers do offer their own stand alone software for conversion.

TIFF: Created in 1980, these graphic files are seen as the gold standard for photographers looking for a universally usable file. While initially intended for the desktop publishing world only, TIFF files can get very large, especially if you are saving the very highest quality. TIFFs are scalable and have many settings that can be applied. If set correctly, they can hold many types of colour profiles, transparency and range of bit-rates. They will not degrade every time the file is accessed, and can use some very good compression rates if you want to digitally transmit them. Unlike the PSD file, the TIFF is an open source file. meaning it almost has a universal life span and everyone can open them.

PSD and PSB: PSD and PSB files are Adobe Photoshop's own type of complex lossless compression image files. These are the best way to save files for use in Photoshop but they can be difficult to share or archive due to their size. Some versions are so specific that you need a certain software to open them, however, there are some cross platform lossless file formats that have all the benefits with few of the drawbacks, most notable is the TIFF file.

JPEG: JPEG files are the most common image type and the most widely used across many different tasks and platforms. In 1992, the JPEG was designed for photographers to compress and easily share images via the web. The compression works to remove colours and transitions that the human eye might not see. You can highly compress a JPEG, so for quick reference they are ideal, but it should be remembered that JPEGs will degrade every time the file is opened and re-saved, making them a bad choice for archival purposes.

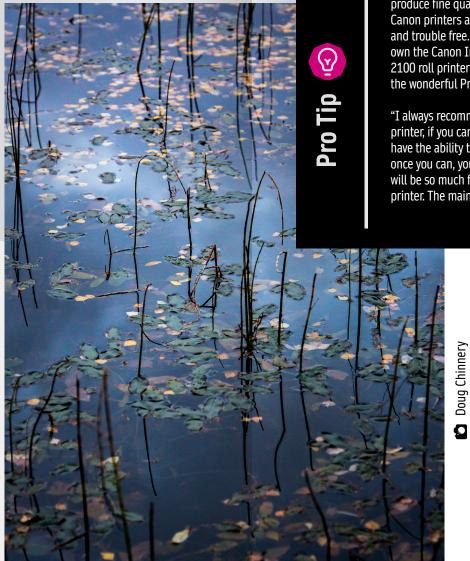
#PowerOfPrint

Which Resolution?

Resolution comes under two branches. pixels per inch (PPI) and dots per inch (DPI). PPI refers to the screen, whereas DPI refers to the printer resolution. By having a higher resolution, you will be able to print your images in a larger format without compromising quality.

Naturally, when printing your photos, you will want them to be the best quality possible. Photos printed at a higher DPI resolution will have a smoother appearance than those printed at a lower resolution, due to the increase in dots and therefore detail. When it comes to PPI the higher is normally better to a limit of 300 PPI or 360 PPI.

With a lower PPI setting the print will have more pixels visible. Every printer you will come across will have its own native resolution for instance, Canon generally uses 300 PPI while Epson generally uses 360 PPI.



"Having used other brands (which Canon printers are so user-friendly and trouble free. I am fortunate to own the Canon ImagePROGRAF Pro-2100 roll printer and have also used the wonderful Pro-1000.

"I always recommend buying an A2 printer, if you can. Not only will you have the ability to print to A2 (and once you can, you will, trust me!), it will be so much faster than an A3 printer. The main reason, however,

is the huge cost saving in ink. The produce fine quality prints too) I find cartridges are so much bigger in A2 printers, the cost per ml for the ink is dramatically lower. The extra cost in buying the printer is very quickly recouped in ink savings and before long the printer will have paid for itself, such are the economies of scale. Many think an A2 printer will take up much more desk space, but in reality, they are only a little larger. I'd recommend investigating the benefits before making your next printer purchase."

- Doug Chinnery, Fotospeed Ambassador

You may be eager to get stuck into the printing side of things straight away (and we don't blame you) but getting the editing and preparation side of things correct from the get-go will save you plenty of time (and paper) in the long run. When done correctly, these simple steps early on in the process can dramatically improve your print, whether the image is being framed on your wall or laid out in a photobook. Follow these tips and your print will certainly make an impact.

"For my post-processing, I often use the JPEG file, as this is quicker and easier. The JPEG file in the camera enables me to print directly from the camera if necessary, without processing the image on a computer."

- Paul Sanders, Fotospeed Ambassador

To Paper

"At Fotospeed, we consider the photographic process incomplete until a photograph is printed. Photographing your subject in a specific moment on your chosen device is only the beginning.

Capturing the fleeting moment through the lens transforms the physical elements into a digital image.

It is our belief that only when the digital version is printed and restored to a physical form is the photographic process complete."

- Tim Jones, Fotospeed Technical Manager



The Importance of Paper

Creating prints is an essential part of the creative process in photography. Seeing your work on paper is an entirely different experience to viewing your photography on a screen. Photographs when printed serve as a tangible, permanent representation of your work; monuments to the time and effort you put into creating them. There is just something about holding a finished print in your hands that is infinitely more satisfying.

The relationship between your image and the paper it's printed on can be quite complex. It is important to understand the effect your paper may have on your image before you start. Photographs will take on a different look and feel depending on the paper they're printed on. The colour, the sharpness or softness of the image, it can all change depending on what paper you decide to use. When it comes to printing your image, it's essential that you consider the paper that will bring out the best qualities of your image.

#PowerOfPrint

How do you know which paper is right for your photograph? And which finish will look best? It is important to know there are no definitive right or wrong answers to this but we will aim to steer you in the right direction.

The paper you select should reflect your desired aesthetic vision for the printed image. Like all art, photographic images speak to us in a deeply personal way and it is up to you to decide what works best for the photograph you have captured. As with many things, practice makes perfect. Chances are, you'll only know which paper is right for you and your photograph when it comes out of the printer. This is where paper test packs really make an impact on the process – take a look at our guide to choosing the papers which will help you on your printing journey.



Types of Paper

Choosing the correct paper type is vital if you want high-quality, durable prints. It's important to understand the differences between them because some perform better for particular prints than others. Reflecting on paper options and their qualities before making a purchase means that you're less likely to spend time, effort, and money creating prints that you're not happy with the results.

Ask yourself the following questions to determine what look you want from your print:

- 1. Which finish would suit the picture: gloss, semi-gloss/lustre/pearl or matt?
- 2. Which would work better: smooth or texture?
- 3. Which is the feel and tone of the picture?

The material of the paper refers to the substance of which it is actually made.

The most common paper types are:

Cotton rag,

which is made of cotton linters

Cotton rag, sometimes called cotton fibre, is considered a high-quality material, and prices can often reflect this. Cotton paper is often a wise choice as it is durable and has strong archival qualities. It is also less likely to discolour, which makes it ideal for gallery exhibitions.

Alpha cellulose,

which is made of wood fibres

Alpha cellulose offers high quality prints, often at a more affordable price. Papers that are 100% alpha-cellulose have been purified of acid and lignin (organic polymers present in the cell walls of plants, serving as a glue to hold the cellulose fibres together), which prevents yellowing over time.

Resin coated,

which are made up of wood fibres but have a resin coat on the reverse. Resin coated paper is made by sealing the base paper between two waterproofing layers (typically polyethylene) with an emulsion and a supercoating on top. As the paper is completely sealed, liquid cannot be absorbed which means that chemicals never permeate the paper itself. It is a high-quality paper that is a lot tougher and durable. It also dries very quickly and flat, which means it is less likely to damage during processing and makes it easier to work with.

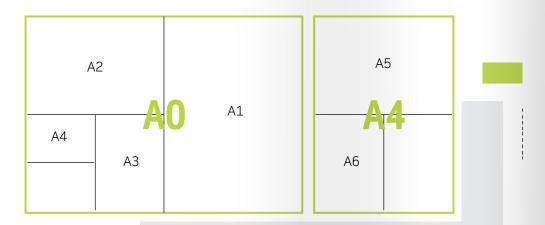


Acidic paper will turn yellow and brittle, and break down relatively quickly. It will also introduce acid to items stored with it potentially damaging them too. This is why acid free paper is safer to use when intending your print to last decades or even a lifetime. Acid-free archival photo paper can last more than a hundred years and undergoes testing by the Fine Art Trade Guild.

#PowerOfPrint

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Paper Characteristics & Terminology



Paper Sizes

Photographic papers tend to follow the internationally recognised ISO 216 standard paper sizes. The ISO 216 standard uses the letter A followed by a number to define the size of the paper. Fotospeed conforms to this standard, with the largest cut sheet paper on offer being A2 (420x594mm) and the smallest being A6 (105x148mm). Despite not being recognised as a standard size, A3+ (329x483mm) is widely used and supported by printers and manufacturers. Fotospeed is not restricted to these standard sizes and offers a wider range of alternative paper sizes to suit all photo printing purposes.

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Papers can also be supplied in rolls. Depending on the printer you are using and the image you are printing. You will also find paper sizes that are tailored for particular photography, such as panoramics (210mm x 594mm) where the paper is landscape in format and the width of the paper is much longer than the height. Another format is square, which is available in varying sizes and caters for photographers wishing to create a specific look and feel for their image.

- **Rectangular** paper formats lead the viewer's eye in a longitudinal fashion.
 - A portrait image will lead the eye vertically either up or down.
 - Whereas a landscape photograph will highlight the horizon or width of the image drawing your eye from the center of the image out to each side.
- A **panoramic** does this to a greater degree and accentuates the composition.
- A **square** image causes the viewer's eye to move around the image in a circular manner.

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Pro Tip

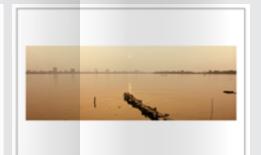




Do not crop your digital image to fit paper dimensions. If you need to crop your image, crop it to an aspect ratio that accentuates and enhances the image you've captured. For example, if you have captured a panoramic, do not crop the image to fit an A4 page. Rather print the panoramic image on a larger piece of paper and then trim the paper to suit.







The images above illustrate the same image with different proportions: Rectangle to fit the page, square and panoramic. The rectangle image has been cropped to fill the paper dimensions whereas the square and panoramic images have been printed to suit the aesthetics of the image. Which works best in your opinion?



Paper weight and thickness

Paper weight is most commonly measured in GSM which stands for 'grams per square meter' and also, less commonly, paper thickness (calliper) in mils or mm. Be aware that there is not an exact correlation between a paper's weight and its thickness.

The weight and thickness of the paper you choose is really down to the application of your print and your personal preference.

Photographers, however, generally prefer a thick, heavy paper as it offers rigidity and a substantial feel.

The exception is when working on projects that require a lighter paper that is more versatile for folding, as with the creation of a photobook.

Coating weight also plays a role in the paper weight and thickness. For papers which are coated there will be multiple layers that are added to the base material such as a primer, OBA and the coating which makes it a semi-gloss, gloss or lustre paper. Papers with a coating applied not only increase the thickness but also have a different texture.

A guide to GSM levels:

- **60-100gsm** is standard for most household copier paper. This is the weight you would expect to feel for a typical A4 piece of paper that you would use when printing documents not photographs.
- **110-140gsm** is the weight typical of most traditional poster papers. It's sturdy enough to withstand a little wear and tear but too thin for a fine art and photo quality print. Think flyers and posters.
- **170-200gsm** is a more weighty and sturdy paper. This is the minimum gsm we'd recommend using for a fine art and photo quality print. This range includes papers with coatings like lustre and gloss.
- **210-300gsm** is generally the weight for a more premium fine art and photo quality paper.
- **310-400gsm** is a much thicker, card-like paper. This is the weight you'd likely feel in greetings cards and wedding invitations. The highest gsm we offer across our photo and fine art paper is 315gsm. This is for a premium, heavyweight paper that offers the look and feel of original artwork.



Tony Worobiec

DMax

DMax is the measure of the deepest shade of black (black density) a paper is capable of rendering. It can be one of the most important considerations in choosing a paper type especially if you are printing black and white images. Images with poor DMax look pale and weak.

DMax = 1.7 is a good value for matt prints

DMax = 2.0

is a good value for glossy, semigloss, and lower spectrum lustre prints.

DMax = >2

are usually lustre papers, which makes them best suited to black and white photography.

Paper Whiteness

The paper whiteness or base whiteness refers to the white tone of the paper. Have you ever been to a paint store to select white paint? There are so many to choose from; pure snow white, eggshell, creamy, off-white, etc. Just as paints have different white points, papers too, exhibit a wide variety of white shades.

Consider the shade of the paper when making your selection and how it will affect the end result. Think about how the colours of your photograph will change from screen to a printed paper that has a tonal value. The brighter and whiter the paper, the brighter, lighter and more vibrant the image will appear when printed. Depending on your subject matter, your choice of white point will add warmth or coolness to your print.





"The white point of the paper can change the feel of a print dramatically. I normally say that if you have an image with bright and vibrant colours I'd recommend a higher white point paper as it will hold the vibrant colours better. This is the same when looking for a paper for black and white printing. A warmer paper works particularly well for more muted tones and subtle colours. But saying that everyone is different so run your own tests using test packs."

- Tim Jones, Fotospeed Technical Manager

A guide to the levels of paper whiteness you may encounter:

Higher or 'bright' white levels are known as cooler whites. These tones reflect blue light and tend to be more vibrant. The whiter the paper, the higher the contrast in colours and therefore the richer the resulting colour gamut. Colour gamut refers to the entire range of colours and tones achievable by an imaging system. Bright white papers tend to be favoured by photographers, as they will deliver deep blacks and a great dynamic range.

Lower or 'natural' white levels are more of a yellow/ creamy colour.

Lower or cream whites absorb the blue light. They tend to work better for warmer based and lighter toned images. Softer, lighter tones may be washed out by a highbrightness paper. Images of natural settings also tend to favour warmer paper because colours appear more natural.



OBAs (Optical Brightening Agents)

Optical Brightening Agents (or additives) are fluorescent chemical compounds used to increase paper whiteness and brightness (two different things – colour of white versus intensity). Since papers in their natural state are more off-white, creamy colored or warm, these agents trick the viewer's eyes into perceiving a brighter white by reflecting blue light off the paper.

This of course depends on the lighting conditions under which the print is viewed. OBAs accomplish this by absorbing invisible ultraviolet light and then releasing that energy over time as visible bluish light.

Surface Texture

Papers are available in an array of textures on the market today, ranging from ultra smooth, to extremely textured. Paper texture is a personal preference, determined by your subject matter and mood. For example, if you are printing a portrait, using a textured paper can often make the skin in portraits appear pocked, mottled or blotchy which isn't something you would necessarily like to convey.

If you are uncertain as to which is the best paper texture for your photograph, try printing an image on multiple papers and doing a direct comparison to clarify which paper works best.

Take a look at our test paper guide.

Bright white papers have long been favoured by photographers for their deep blacks and great dynamic range. However, the use of OBAs is highly controversial as these compounds break down over time, causing the paper to return to its original native white point. To be clear, OBAs do not degrade inks.

How can you tell if a paper has OBAs?

If a paper is described as Bright White or Natural, that tells the story. The natural paper is warmer and OBA-free. The bright white paper will have some OBAs present. Note that the use of OBAs is not limited to photo papers alone; even some cotton papers have them.



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Different Paper Finishes

Inkjet paper is available in a vast range of finishes. Two of the most common being matt and glossy. However, there are varieties of 'in-between' finishes, such as semi-gloss, lustre, and pearl. When choosing the right photo paper, it's worth considering how different coatings will affect the look and feel of your work. Read further to find out more about these finishes.

Take a look at this paper comparison video Fotospeed's Sam Gregory created to assist your paper choice:

Matt

Qualities

- Smooth natural finish, that feels luxurious and high quality.
- Matt photo papers are often coated to appear softer.
- No sheen or finish on the surface, with an extremely low reflection property.
- Can be viewed in almost any light condition without glare.
- Less likely to attract dust and fingerprints.
- Ideal for framing prints behind glass.
- Lower colour gamut or range of colours visible to the human eye which makes image slightly flatter
- Images will appear slightly unsaturated and will not shine in any way.



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Glossy

Qualities

- An ultra-smooth feel with no texture.
- Bright, shiny and reflective resin coating/emulsion.
- The colour in your images "pop" on the sheet showing off rich radiant colours and vibrant skin tones.
- Great for bringing out contrast.
- Pin-sharp detail, which means that it's less forgiving in terms of source image defects such as noise (luminance or colour), post-processing artefacts, neglected sensor dust spots, and pixelation resulting from low resolution.
- Wide colour gamut.
- More susceptible to fingerprints and scratches.
- In certain lighting conditions and framing, prints may reflect a light source and affect the viewing experience.
- Not ideal for framing prints behind glass as print may stick to glass.





Matt

Satin Lustre

Semi Gloss: Lustre, Satin & Pearl

Semi Gloss Papers

Pearl

There is a vast difference between matt and glossy papers, so naturally there are options which are available in between. Papers that tend to offer, to varying degrees, a perfect combination of the best qualities of the two spectrums are the semi-gloss papers. While semi gloss is the generic term for this type of paper finish, you may find that manufacturers often refer to them as lustre, pearl or satin finishes.

Qualities

- Produces rich colour and skin tones.
- Subtle texturing and fingerprint resistance.
- A deeper colour saturation than matt papers.
- Low glare which only allows subtle reflection.
- Creates the impression of richer contrast and emphasises details and sharpness.





Glossv

Other Finishes

Baryta

Baryta papers are luxurious thick cotton or alpha cellulose papers with a semi-gloss or matt surface. Baryta is a clay-like chemical compound, called barium sulphate, applied below the emulsion (coating) of traditional black-and-while fibre based photo paper. Originally the baryta layer was there to stop the fixer from attacking the fibre base of the paper and helps to make the paper whiter than it would otherwise be. Whilst in inkiet printing, the baryta layer is no longer needed to protect the base from the fixer it creates a look and feel of the traditional papers. The technical benefits of the baryta layer include greater detail and definition, extended tonal range and excellent archival properties.





Metallic

Metallic finish papers have a pearlescent effect embedded into the paper itself (a polyester film/plastic "Mylar" sheet between the paper part and the emulsion of the paper) which adds a luxurious brilliance to your images. It is unique in that it absorbs light instead of reflecting it. Therefore, if you place your metallic prints under direct light (preferably sunlight), the images will captivate and enchant any onlooker. Creating a 3D-like effect and giving your photos warmth and depth which no other paper can. Metallic photo paper is ideal for printing photos of metals, reflections, bright and vibrant colours, black and white images and landscapes. Ideally, it's best to choose pictures with lots of tones and details, as these look best with a metallic finish. It is also a really durable paper.

Case Studies

The paper selection process is quite subjective. But there are some things which will generally suit a specific style of photograph more than others. To finalise your preferences, look at the subject matter of your photos.

What's more important? Vibrant skin tones? Crisp details? Soft highlights?

Here is what the Fotospeed ambassadors had to say about their favourite paper and how it works best with their subject matter and style:



"I print most of my work on Fotospeed's beautiful <u>Signature Cotton Etching 305</u>. I love the way the matt surface accentuates fine detail in my work and how accurately it renders colours with little or no correction required. I have yet to find another matt paper which renders blacks as deep and richly as Cotton Etching. It's no wonder I was prepared to have my signature on the box."

- Doug Chinnery, Abstract Photography



"The reason why I am passionate about <u>Platinum Etching 285</u> is that it gives me the depth that I love so much. I have my favourite phrase 'the print is the photographer's rightful inheritance' and therefore it is absolutely pivotal for the print to have parity both aesthetically and emotionally with the experience that I had when I was there. The paper plays an immense role in that respect and looking through my Lupe at the way the inks have been laid down is of huge importance to me. Despite the texture, there is no 'ink migration' through the fibre of the paper."

> - Charlie Waite, Landscape Photography





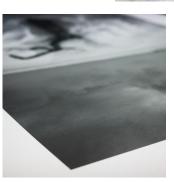
"Favourite paper at the moment is Fotospeed <u>Photo Smooth Pearl 290</u>. The paper is a beautiful clean white colour, and colours are clean and fresh with good black detail. The images I have printed on this paper all reproduce beautifully and I couldn't be happier with this paper choice."

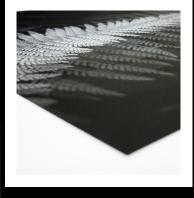
- Terry Donnelly, Portrait Photography

"My favourite Fotospeed paper is <u>Natural</u>

Soft Texture Bright White 315 and I use it for all of my black and white printing. I prefer a matt paper for black and white as I find the shine of glossy paper takes depth away from the blacks. I like the soft, natural texture because it supports the image rather than distracting from it. Also, the white base is perfect for black and white work - my photos are black and white, not black and cream!"

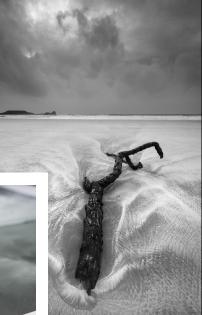
- Rachael Talibart, Black & White Photography





"I am a huge fan of the <u>Signature</u> <u>Cotton Etching 305</u>, for me the smooth Matt finish really brings out the subtle tonal values of my work. I also love the gentle warmth of the paper for my black and white images which adds another dimension to the photographs."

> - Paul Sanders, Black and White Photography











"I find that certain images suit certain papers. Here, the soft diffused light at dawn created a colour palette of cool tones in the sand and sky offset by the warm glow in the Marram Grasses. I didn't want a textured paper as the photo provides that in the grass and clouds, and I didn't want a gloss paper as the subtlety of the tones didn't seem right for a contrasty or reflective surface. Accordingly I chose the Platinum Matt 280. It's a smooth surfaced paper with a neutral white colour that was an ideal match for this particular image taken at Luskentyre Bay, Isle of Harris, during my workshop with fellow Fotospeed ambassador Lizzie Shepherd and our group of photographers."

- Alex Hare, Bookmaking







"Platinum Baryta 300 is my signature paper, most often chosen as it shows off my monochrome images to best advantage. I need for my lecture or exhibition prints the images to have, "impact" or "appeal", where appropriate to show a full "range of tones from white to black", show sharpness, be "tough" so as not to be easily scratched or scuffed and have a glossy/unglazed finish. The gloss is particularly good for seascapes monochrome or colour. A full range of colours, bright saturated or soft and gentle, all show up well on this paper.

Examples showing the full range of monochrome tones is the 'Osprey in Flight' and for an impactful image, 'Black and White Passing'. An example of an image with a wide range of bright saturated colours is 'Female Gods'.

When texture is important such as many nature subjects, landscape, illustrative or travel photography, sharpness, good colour, texture, my choice would be Platinum Baryta 300 or <u>Natural Soft</u> Textured Bright White 315."

> - Margaret Salisbury, Lecturer & Exhibition Photography

To Print

"Printing is the final act in the performance"

- Margaret Salisbury, Fotospeed Ambassador



Why Print at Home?

You may be tempted to avoid purchasing a printer and instead send your images off to be printed externally. Whilst there is nothing wrong with this, immersing yourself in the printing process will give you much more control over the outcome, creating more personal prints. Bringing your work to life in a physical form is almost the last step of the process.

While you have played an integral role in the capturing and post-processing of your photographs, why would you then complete the process by allowing someone else to experience the first moment your photograph appears in print? When you print your images at home, you can perform trial runs via contact sheets. You can test out different papers, play around with the contrast or brightness and print as many hard proofs as you like.

By skipping this step, you're relying on someone else to develop your own creative vision and often the desired outcome is not achieved. Not to mention the fact that engaging in the printing process allows you to instantly retrieve your photos, instead of waiting what can seem like an age to receive them in the post. Margaret Salisbury

You may already have a vested interest in printing, whether you're looking to pick up a new hobby or are a professional photographer wanting to expand your skill set, doing your own printing is another part of the process, so why would you want to miss out?

Benefits of printing your photographs:

- It gives you more control over the outcome of the image.
- It allows you learning opportunities to improve your photography skills.
- Prints make for more personalised, thoughtful gifts and momentos.
- Your prints can be used as decorative items such as framed images, but can also be transformed into pieces of art that are imbued with personality and originality.
- You can more critically examine your images and better understand your shooting style.
- It makes for a great hobby and inspires creativity!



one else's home, an exhibition space or photography club. Share it with others. The printing process involves a human element and brings people together."

- Alex Hare, Fotospeed Ambassador



Which Printer?

It's time to think about which printer you will need. As technology has advanced, naturally printer technology has progressed. There's a lot more choice today than there was 20 years ago.

Deciding which printer is best for your needs may feel a little overwhelming at first, but a little know-how can help you come to the right decision and ultimately allow you to achieve the best prints.

The most important things to consider are budget both purchase price and running cost, archival qualities, available space and what kind of prints you want to create. It's a misconception that printers need to be top of the range in order to produce good quality prints; there's a printer for every budget. However, it's important to think about the costs of the inks as well as the printer itself. In most cases the less expensive the printer, the more expensive the ink per ml.

Ink Selection

Your selection of printer is influenced by the type of ink you would like to use. The two inks that you can choose from are dye or pigment-based, both of which have differing archival qualities. Archival quality essentially refers to the lifespan of the print. Dye-based inks tend to fade more quickly, whereas pigment-based inks use minerals that are much more faderesistant, meaning the quality will last for years to come.

If that's the case, why would you pick dyebased inks over pigment? Again, this boils down to personal choice and budget.



	Pigment-based	Dye-based
Pros	 They have greater longevity and are resistant to fading 	 They produce vibrant prints on <u>semi gloss</u>,
	 They are water resistant 	<u>lustre</u> and <u>glossy</u> papers
	 They maintain colour, vibrancy and colour much 	 They are generally less expensive
	longer than dye-based inks	 They offer a wider colour
	 They give consistent results on all papers 	gamut for more colourful prints
Cons	 They tend to be more expensive 	 They don't have as much longevity / fade resistance
	 They tend to produce less 	as pigment-based inks
	vibrant colours	 The colours can wear down when in contact with water
Recommendations	• Epson SureColour P900	• Epson EcoTank ET-8550
	• <u>Epson P700</u>	<u>Canon PIXMA iP8750</u>
	 Canon Pro 1000 	Canon Pro 200
	 Canon Pro 300 	

#PowerOfPrint

As mentioned, pigment-based printers create longer lasting prints which tend to make them a little more expensive. However, if you are serious about printing and creating the best prints, the extra ink cost is worth it. Unlike most dye-based printers, pigment-based ink printers have dedicated grey inks, so they are ideal for creating high-quality neutral black and white prints. So, if monochromatic prints are in your repertoire, it may be worth considering a pigment-ink based printer.



Printer Colour Management and Profiles

Printer drivers often have their own builtin colour management and profiles, called 'generic profiles', which is not always as beneficial as it may seem. Every device outputs colour differently. For example, a profile created, for one Epson P700, may not be 100% accurate for another Epson P700. This means the results can be very hit and miss, and of course with printing, consistency is key.

A generic ICC profile is one that you did not create yourself and instead obtained from a third party, such as your printer, ink or media supplier. They are not a 'one size fits all' as they claim to be. This is because generic profiles don't take into account your specific environmental variables, such as temperature and humidity. Generic profiles may be a good starting point, however because all devices output colours differently, printers can be inconsistent and results drastically differ, meaning you're taking somewhat of a gamble on the outcome.

"I use a <u>Canon</u> printing. I like f feed enabling n needed and the is beautiful." - Paul Sanc

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Pro Tip

"I use a <u>Canon Pro-2100</u> for all my printing. I like the fact that it has a roll feed enabling me to do larger prints when needed and the quality it delivers is beautiful."

- Paul Sanders, Fotospeed Ambassador

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Paul Sanders

That being said, it's not all bad for generic profiles. The printer's black and white mode can often be a great way of creating monochrome prints and are, in many cases, better than a custom profile. Many printers today are specifically designed with black and white in mind, so if you're keen on creating emotive B&W images, the following printers might be a good option:

- Canon Pro300
- Epson SC-P700

Printer Profiles

Printer profiles are key to the printing process. With good custom printer profiles and a calibrated screen, you have most of the ingredients needed to make amazing prints.

We talked about calibration and profiling in the Colour Management section, but as a refresher, it is the process of ensuring consistent and accurate colour from capture to screen/monitor, through to print.

As all papers print in different ways, a different profile is needed for every type of paper you will use. Fotospeed has its own <u>free profiling service</u> that you can use to ensure the most accurate results.

#PowerOfPrint

Printer Maintenance

Maintenance is key to ensuring your printer lives out its full lifespan, especially when they can be somewhat of an investment. So, how do you make sure your printer is living up to its potential and consistently producing the best quality prints? We've created a simple checklist, so you can ensure your printer is always performing to the best of its ability:

1. Use your printer regularly

It may sound counterintuitive, but you need to use your printer regularly to ensure it continues to work properly. Think of it in a similar vein to a car. If you don't drive it regularly, the battery will die. Similarly, if you don't use your printer frequently you run a higher risk of the print head blocking.



Clean the print head

If your ink levels are normal but your printer begins printing blank pages, or the colours are washed-out or faded, you may assume it's time to replace the printer. It is likely that it will only need a clean of the print head. While cleaning the print head is important, it should only be done when necessary as it uses up a substantial amount of ink.

We recommend performing the print head cleaning through the menu on the printer itself. The head cleaning option is in most cases under the printer's maintenance menu. It is best to perform the cleans in batches of two, as the manufacturers recommend. If you have the option to perform a deep clean this process only requires one run through.

3. Replace the printer maintenance tank (where applicable)

The printer maintenance tank holds ink that gets flushed when you clean the print head. When this becomes full, it will need replacing. The replacement maintenance box or tank will be dependent on your printer manufacturer, and can be found on the Fotospeed website.

4. Keep on top of updates

Just like your phone, your printer will need to be updated to ensure it's running as efficiently as possible. If you're unsure whether your printer needs updating, you can check on the manufacturer's website.

5. Look after your printer and inks when it's not in use

Unless you're printing regularly, it's important to consider how to look after your printer and inks when you're not using them.

For your printer:

- Always leave your printer on in power save mode, as turning your printer on and off will use a large amount of ink.
- Remove all paper
- Keep it covered to minimise dust ingress

For your inks cartridges:

- Keep them in a cool, dark place when not in use
- Store them upright to prevent leaks
- Keep them sealed
- If they are pigment inks, give them a shake from time to time to mix the pigment up again

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Printer Troubleshooting

Sometimes, your print may not come out as expected. Unlike lab printing, printing at home allows you to perform as many test runs as you like. However, if there are issues with your printer you may find that your prints are not coming out as well as they could.

If you have selected the correct colour profile, follow printer maintenance and are using good quality inks but are still having issues with your printer, here are a few common issues:

Low ink/toner density

Some printers allow you to alter the ink density yourself, and sometimes it may be really low without you knowing! This can result in very faint images, but thankfully it's an easy fix. If your printer has ink density settings, you can find them by clicking on your printer under 'devices and printers' on your computer. Then simply increase the density.

Clogged print head

Over time, the print head (the part that transfers drops of ink onto the paper) can become clogged, resulting in faint prints or banding. This issue can in most cases easily be fixed by simply cleaning the printer from your computer, as mentioned above.

Using a Wi-Fi connection

Wi-Fi printers may seem like the easier, more advanced method of printing your images, but this method often means the images will take longer to transfer to the printer. It can also cause problems with the printer driver. The printer driver is essentially the software that translates instructions on how to print your image, sent from your computer to your printer. If you want high-quality prints, it's best practice to use a wired connection, especially if you're printing large images.

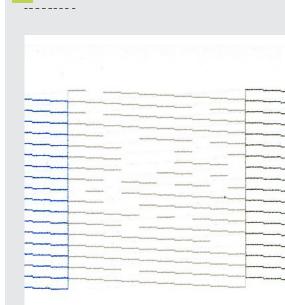
Using poor quality paper

Fotospeed provides only the <u>best quality</u> <u>papers</u> to ensure your images live up to your expectations. The materials within cheaper brands are different, which affects the way the ink attaches to the paper, as well as how long the print itself will last.



Other things to check if your photos aren't coming out as expected:

- Check the brightness on your monitor isn't too high as this can result in your prints looking darker than expected.
- If the colours look slightly off, ensure you've calibrated your monitor, or even calibrate it again.
- Make sure you are using a good editing software that can handle your images.
- Basic or simple editing software which may come pre-installed on your computer, is often unable to handle colour management, meaning your prints won't be accurate in colour.



LLK

Image: Patchy nozzle check

Printing at home gives you complete freedom over your prints; you can take time choosing what printer suits your needs, experiment with inks and trial out numerous different papers.

In fact, you can use <u>Fotospeed's test packs</u> to try out different papers and see which one works for your images, whereas if you send your photos off to a lab, you're limited to what they currently have available – which may not always suit your style. By printing at home and making decisions over your printer, ink and paper, you have much more assurance and control over the final product, not to mention achieving instant results by printing your images yourself!

But more than anything, one of the most exciting aspects of printing at home is that you are part of every step of your image – from capturing it, to editing it, to watching the final product come out the printer just as you had envisioned it.

Now, all that's left to do is decide on how you will display it...

For Ambassador Rachael Talibart the most satisfying part of the photography process is the moment the print comes out the printer. She will often stand and watch it emerge from the printer. Having a front row seat to something she has created and having the tangible artefact to review is so satisfying.

There's a moment of "You've done it, you've created something!".

Rachael's photography process includes living with her prints for a short while. She displays them in her studio, allowing herself to view them up close or from a distance, and in different lighting conditions. This allows her an opportunity to really scrutinise her prints, to look at the fine details that make up the whole. She will edit them, reprint and live with her reprints until she is completely satisfied she has printed the best version of her work.

Here's an insight into her process:



Fotospeed Paper Test Guide

Fotospeed recommends that you print the same image on a variety of papers to determine what looks and feels best to you. For a true reflection of paper preference you may want to consider purchasing a Test Pack that contains a number of sheets of the same paper. This will allow you an accurate comparison of papers.

1

Begin by selecting the images you would like to use for your test. Ideally, one colour photograph and one black and white photograph.

2.

In your Test Pack, you will have a minimum of two sheets of each photo paper. Each paper sheet in your Test Pack will have a label to identify which one it is on the reverse.

3.

You will print the colour photograph on one sheet and the black and white photograph on the other.



By doing this, you will have a good visual comparison of how each of the papers handle the same image and a true reflection of which paper best suits your print. Although each photograph is unique, you can refer back to these sample prints in future as reference when choosing papers for other photographs. Alternatively, repeat the process again with a new photograph.

- Fotospeed Photo Test Pack A4
- Fine Art Gloss Test Pack A4
- Fine Art Matt Textured Test Pack A4
- Fotospeed Fine Art Matt Smooth Test Pack A4
- <u>A3 Test Pack</u>
- Fotospeed Panoramic Test Pack
 210x594mm





If you are particularly concerned about protecting your print or are changing the mount or reframing it, the most common technique would be to a hinge-mount with acid-free tape. This will allow you to remove your print with the least amount of damage.

To Display

When considering how to display your digital prints, the traditional applications for photography come to mind; a photo album or book, a photo frame set neatly on a shelf, or a large format version hung on the wall either framed or as a stretched canvas. What do you do when the shelves are full? What if there isn't a place left on the wall? The point of printing is to have the tangible moment captured in time to enjoy and refer to when the occasion arises. So, how can you display your photographic prints to their full potential? There are so many display options available that aren't limited to an album or frame.

In this chapter we cover the various options available for whatever purpose you want your print to serve.



Displaying your Print

Mounting

Mounting is the process of using adhesive or photo corners to fix a photographic print onto a more rigid material. Mounting your photograph will provide stability and protection so that your print doesn't bend, wrinkle or warp easily, or get damaged at the corners. The mounting process will also protect prints especially when a print is being handled.

The mount is held as opposed to the print which reduces the likelihood of grease or dirt transfer. Mounting is most often used in cases where a print is being prepared for framing, as an exhibition piece, or if you are submitting your photograph for a competition. Your print is best protected when covered after mounting, ideally sealed behind glass in a frame. The material the print is fixed to is referred to as the 'substrate' and can be anything from a thick card to aluminium. Selecting the right substrate will depend on how your print will be used and how long you would like it to last. Take a look at the table below to give you an idea of the types of substrates you could use for mounting and their specifications.

There are four main techniques when mounting your prints:



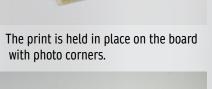
- 1. The dry-mount process where the print is completely adhered to the substrate.



3. The print is fixed to the substrate at points with hinge-mounts.

Materials you may need:







 The process of displaying a print so that it is visible through a window cut in a mount. Window mounting is most commonly used in framing for display purposes.



#PowerOfPrint

Lillian Balat			
Ultra-light	Poor	Poor	Can be
Light	Poor	Good	No
Ultra-light	ОК	Poor	No
Heavy	Excellent	Excellent	No
1edium Light	Good	Excellent	Yes
Light	Excellent	Excellent	Yes
	Light Ultra-light Heavy Iedium Light	LightPoorUltra-lightOKHeavyExcellentledium LightGood	LightPoorGoodUltra-lightOKPoorHeavyExcellentExcellentledium LightGoodExcellent

Pro Tip 👰

Buy paper that is a little bit larger than your intended print size. It gives you more space for framing and mounting your image.

Framing

Frames are quite versatile because you can have both small frame and large format frames that can dominate a room when hung on a feature wall. The right frame can offer a distinct feature to your print and can complement it perfectly when selected carefully. The right frame should also complement the photograph, not be the main event. Good framing will enhance your image and draw the viewer's eye to the photograph.

If you would like your print to look like a work of art, use a window mount or "mat" that surrounds the print and separates it from the border of the frame. When using a mat or mount, then don't print right up to the edge of the paper; instead, leave at least an inch of paper on each edge to give enough space for the print to be held in place, and a place to sign or potentially number the print if you are making a limited edition of the print. If you are using glass, then make sure that there is a slight air gap – this is where the mat or mount comes in useful. Inkjet prints outgas (the evaporation of solvents left behind after printing) for some time after printing, and deposits can build up on the back of the glass if encased too soon.

Choose your glass with care. Anti-reflection or non-glare glass and UV-filtering glass may be appropriate for some locations, like brightly lit spaces. Also note that if you are hanging a large framed photograph, you should ensure that the wall you are hanging it on can safely take its weight. Bear in mind that if you frame a gloss print, the glass may stick to the print which will affect the viewer's experience.

Materials you may need:

Ŷ

Pro Tip





How you store your prints will also affect how long they last. They can be affected by a number of elements depending on their display or storage. For framed prints, the materials that are used when framing your print play a big role, as well as the glass they're behind. We always recommend using acid-free materials when mounting and framing.

Canvas

Canvas prints can make a great impression. Though typically seen as larger pieces of artwork, canvas can also be used for smaller prints, as one of its main features is its ability to beautifully reflect light. It's an impressive way of showing off your photograph not behind glass.

It is worth mentioning that not all inkjet printers are able to print directly onto canvas and even if they do, the results aren't always good. The results differ from printer to printer, and depending on what type of canvas you are printing on. It is possible to do the entire process yourself, from printing to stretching your canvas across the frame.

If you are printing and making your canvas print at home you may need a <u>canvas stretcher bar</u> but you can make these yourself, which will require simple woodwork skills.

There are two things that you can look for to improve the lifespan of your canvas print:

Firstly, make sure that your print is coated or laminated with either a <u>protective spray</u> or <u>liquid laminate</u> to prevent fade.

Secondly, choose a canvas paper that has been tested for print longevity and remember that the combination of canvas and ink will always give you an indication of how long it will last.

Stick to a selection of standard frame ratios for your work. The frame size that you choose will affect the paper size, packaging and storage of your prints. Consider the source of your materials and what is available for each in the sizes that you have selected. Choosing standard frame sizes, that you can print and display prints in regularly, will also make it easier to swap out images.

Both assist in ensuring that there are no particles captured between the print and

the glass. Even something as simple as

hand moisturiser can affect your print

and its mounting, as there are acids in

hand cream that can affect your print

of framing your print in a controlled

environment only works if the materials used during the process are assured to

protect your print now and in the future.

after a period of time. Going to the trouble

- Rachael Talibart, Fotospeed Ambassador

Book Making

Making your own photo book allows you complete control over how you will present your work as you oversee each individual aspect of your printed work. It is so satisfying to be involved in the entire process. From capturing your images, narrating the flow of imagery, preparing the layout and look to the printing and transforming your prints into a book.

"For me, having something that showcases my work that I can physically hold is the best way to conclude the creative process."

> - Alex Hare, Fotospeed Ambassador

Easily transform your prints into greetings cards that can be shared with others. Print greetings cards from home using the <u>Fotospeed Fotocards</u> that are available in various sizes (5x5" / A6 / A5 / i3 Pano) and in a wide selection of paper types. Fotospeed also supplies pre-prepared Photoshop templates so you can easily drag, drop and print your favourite images onto quality cards at home.



🙆 Alex Hare

Fotospeed Ambassador Alex Hare is an expert in book making.

Below he has shared some of his knowledge for creating the perfect photo book:

1.

Before you start, sketch the dimensions and layout of your book including any design elements or colours that you may want to include.

2.

Print the photos you would like to use in your book as a contact sheet (small thumbnails of your images) so that you can position them on your layout and have a true sense of the flow of your images.

3.

Think about the order you would like your photos to appear. Is there a narrative or a particular sequence to your work? From that process identify the images you want to use and begin the digital process of setting up your book.

4

There are templates available on Lightroom that will help guide you with three to six different layouts if you would prefer an existing guide for your book to follow.



Materials you may need:

- Screw punch
 - Binding thread
- ✓ Clips
 - Binding needles
- V Paper scorer
- ✓ Ruler
- A sharp blade
- ✓ Glue
- _
- 🗸 Clamps
 - Cutting mat
- Paper for the pages

There is a level of investment required for these items but once you have them, all you will need to restock is the paper and glue.

Easybooks

For those who are interested in book making but don't have the time or the desire to learn the skills required, there are easier options. A really great alternative is easybooks, the name says it all. They are available in 6x4", 5x7", 8x6", 8x8", 8x10", 8x12", 12x12", 12x8", A4 and A3 portrait or landscape orientation.

They can be used to preserve your special occasions or create professional presentations and portfolios with a versatile and simple process. No additional equipment is required and since there is no glue involved in the process, easybooks can be reused, edited or updated at any time.

w ir s c is c a c F e

way of showing off your work if you're interested in selling your prints, or using them in a more professional setting. When self-publishing, you can create multiple copies to distribute, whereas book making is more of a personal memento. When curating a self-published photo book, think about which images you want to use and consider what theme or narrative you want. For self-publishing you'll need to consider everything from the layout, to which print partner you want to work with and any promotional activities you may need to do in order to get your book out into the world. Think about why you're making the book.



Calendar

Similar to a photobook, calendars allow you to enjoy your prints for an extended period, albeit only for the year. The only trouble is choosing the top twelve photos to go into the months! You may have a theme you would like to follow or have images that are associated with each month.

When you are ready to print, remember that your calendar is no ordinary print and the paper choice is vital. A smooth paper with a high white-point is usually a good choice, as it works well with a range of photography styles. If you decide otherwise, consider printing each photograph to see which paper suits it best.



Calendar setup can be done in many programs, even Photoshop, and as long as you have a cover, each month and a back page - you're sorted. After you have printed your calendar pages, laminate or bind your pages together. That's how simple it is and with your calendar complete, you will have a new photograph to enjoy each month.

Lighting

These days we regularly view images on screen whether it be a phone, tablet, computer or television. We are conditioned to experience imagery where light is transmitted and that is very different to how our eyes naturally register imagery that is printed. When viewing a printed image light is refracted off the surface and we process it much differently. Our experience is directly related to the viewing conditions, in a particular moment, environment and lighting. Colours of a print are determined by the light which falls on it and how our brain registers the specific make up of the colours. Every person registers colours differently, as discussed previously in the colour management section of this eBook. While we each see differently, the best experience for previewing a photographic print would be in natural daylight. This isn't always possible as we rely on artificial light in many aspects of our lives but we can prepare our prints to suit particular lighting or prepare our lighting to ensure our prints are viewed in the best circumstances possible. Consider this scenario as a representation of how lighting affects your print. When walking into an event with a presentation, the room is brightly lit, people are settling in and the presentation is vaguely visible on the screen. However, as soon as the attendees are seated and the lights are turned off, the presentation is suddenly bright, colourful and clearly visible. This is very true for a printed photograph too. If you don't view it in the best light then the colours will appear muted and dull or softer with less definition.





natural or artificial light risks the chance of fading. Ultraviolet (UV) light, which is present in sunlight and fluorescent light tends to bleach or fade the detail and colour out of prints. Ensure that your image isn't displayed in direct sunlight to prevent fading and if you are framing your prints, consider using UV-filtering glass or acrylic glazing which adds an additional layer of protection, even if you manage to avoid a lighting source. Alternatively, you could use daylight bulbs which will ensure that you have the most natural lighting experience while protecting your print from UV light.

Displaying your photographic prints under

#PowerOfPrint



Lizzie Shepherd

Consider the angle at which the lighting source faces the print, especially if framed behind glass. There is a reflective quality to glossy prints that will impact the viewer's experience. The reflection of light from the light source to the position of the print to the viewer's perspective. Most prints are therefore lit from above to avoid this reflection of light.



All of our fine art papers are archival and have been lab tested and approved by the Fine Art Trade Guild. This means that combined with the use of pigment based inks, all of our papers will last well over 100 years in the correct conditions.



Preservation and Aftercare

Technology progresses and evolves so quickly that it is possibly safer to have a printed photograph than storing your photographs on the latest gadget or cloud/ server hosted somewhere across the world. Advances in technology develop so quickly that we rarely use the good old USB, discs or even external hard drives anymore. Even the types of connections and cables for any given device change like the weather. The Cloud is the "goto" more recently but how can you count on the quality of your digital file being good enough to be viewed on screens of the future with improved resolution?

One thing is certain, once you have printed your photograph, it is a tangible permanent thing that you can hold onto, hang on a wall, or safely store away for any number of years. But how can you ensure that your photograph will stand the test of time, that the ink won't fade or the paper dissolve? How can you ensure the longest lifespan for your photograph in the printing process you use today and the way that you display it for every day after that?

The selection of paper for your print can make a huge difference in the permanence of your photographs. The biggest factor in achieving print longevity is ensuring that your paper is acid-free. So making sure that the whiteness of your paper is not achieved by bleaching the pulp in acid or with the use of optical brightening agents (OBAs) as is the norm with ordinary paper. Papers that have been through this process suffer embrittlement and turn yellow in time, especially when they come in contact with daylight. Image: Print protection spray

If you are printing with a particular purpose and already have an intended medium that you would like to display your photograph, you may want to consider the type of paper you select when you are printing to have the best possible output and display.



Image: Acid free tissue papers

Keep in mind the lighting conditions of your print and how that can affect your print. Think about the position and the care guidelines for your chosen medium to protect it. These tend to be the ideal lighting conditions or the materials that you use while creating your print. One thing is for sure, if you are conscious of the preservation qualities of your paper and inks, you are already a step in the right direction. Thereafter, the longevity of your print is affected by the products and methods you use to produce it in the medium or application you chose. Care should also be taken when handling your prints to prevent scruffing, scratches, tears and bends.

A lot of care goes into the capturing and preparation of your photographs in the chosen mediums. It would be a shame if all that time and energy went to waste by failing to look after them.

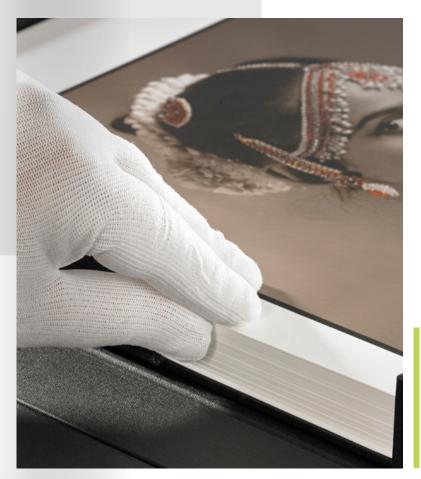


Image: Hahnemühle cotton gloves

Other products you can use to protect your photographic prints:







"At Fotospeed we are here to help. This book has hopefully given you the starting point to explore the rewarding world of printing your own images.

Never forget we are at the end of the phone or can be reached via email if you are running into any problems.

We look forward to meeting you, supporting your printing journey and seeing your amazing prints very soon.

Happy printing!"

- Tim Jones, Fotospeed Technical Manager

Now that you know the fundamentals of printing, the next and final step is the fun part — starting the printing process!

Before you begin your journey, let's look back at everything you need to consider when printing at home:

- What size prints do you want to create?
- What type of prints do you want to create?
- What colour prints do you want to create?
- What format do you want your prints to be in? For example, a photo book or wall mount?
- What paper will you be using?
- What printer will you be using?
- What editing software will you be using?

Printing your own photos is a great way to bring your images to life in a way that's completely different to viewing them on a small screen; just wait until your first image comes out of the printer -- it is truly satisfying! Photographic printing can be a great hobby whether you're a professional photographer or a complete novice. However, getting completely comfortable with printing might not happen instantly, so do not be discouraged if there are still some things you haven't quite mastered.

In fact, at Fotospeed, the service we have available is just as important as the products themselves. If you're in need of a little extra guidance, feel free to get in contact; Fotospeed even has a <u>specialist support</u> page where you can access free generic and custom profiles specific to the type of paper you want to use.

Printing at home is as much about the learning process as it is about the actual end result, and the only way you will master the art is through practice and experimentation! Luckily, with this eBook to hand, as well as the guidance of Fotospeed, you'll soon be proudly displaying your work.

Doug Chinnery

Resource List



Why Print and Capture?

Why Print ► Salt Printing Kit Alternative Process: Salt Printing ► Alternative Process: Cyanotype ► Platinum Paper Cyanotype Kit Photobooks & Easybooks Fotoblocks

Colour Management

P900 vs Pro300 Black and White mode ► Fotospeed's free custom profiling service Custom profiling pack Monitor Calibration with SpyderX Pro ► X-Rite i1 Display Pro SpyderX Pro

Editing Preparation and Screen

Adobe Cloud: Photographer Package Capture One Affinity ON1 Fotospeed Platinum cotton paper Epson SureColor SC-P5000 Canon PRO-1000 PROGRAF Printer Bigger Is Better ►

To Paper

Fotospeed Photo Test Pack Fine Art Gloss Test Pack Fine Art Matt Textured Test Pack Fotospeed Fine Art Matt Smooth Test Pack Fotospeed A3 Test Pack Fotospeed Panoramic Test Pack Hard Proofing ► Canon Pro 1000 Canon Pro 300 Epson EcoTank ET-8550 Canon PIXMA iP8750 Canon Pro 200 Free Profiling Service Video B&W Printing Showdown ► Canon Pro-2100 Fotospeed website (Printer Maintenance Tanks) Paper Range: best quality papers Fotospeed's Test Packs

To Display

Canon Professional Print and Layout ►

Choosing the Right Paper Playlist ►

Legacy Gloss vs NST Bright White Paper ►

Choosing The Right Paper ►

Matt Papers Are Rubbish ►

Platinum Etching 285

Platinum Baryta 300

Epson SureColour P900

#PowerOfPrint

Platinum Matt 280

To Print

Why Print ►

Semi-gloss

Lustre

Glossv

Photo Smooth Pearl 290

Signature Cotton Etching 305

Signature Cotton Etching 305

Natural Soft Textured Bright White 315

Epson P700

Canvas stretcher bar Fotospeed Fotocards Printing Your Own Greeting Cards ► Greeting Cards at Home ► Book making: Folding Photo Book ► 10 Tips for Self-Publishing a Photography Book ► Book Making: Saddle Stitch Zine ► Easy Cards Step By Step ► Easy Books Portfolio ► How to correctly view your prints ► Acid Free Tissue Papers Archival Print Boxes Print Protective Sprays Cotton Gloves

Conclusion

Specialist support

Glossary

Adhesive

Substance for bonding, sticking or holding things together.

Alpha cellulose

A form of cellulose derived from cotton. The presence of alpha cellulose in paper or board is one indication of its stability or longevity.

Anti-reflection

Being or coated with a transparent film that reduces the intensity of reflected light antireflective lenses.

Archival properties

Resistance to ageing, fading and weathering.

Aspect ratio

A ratio of one dimension to another. In photography aspect ratio describes the relationship of an image's width to its height. In other words, it describes the image's shape.

B Bit-data

The smallest measurement of data in a computer. **Brightness** How light or dark an image is.

Calibrating Matching device characteristics to a standard

Calliper

The thickness of a sheet of paper, in thousandths of an inch (points or mils).

Canned profiles

Pre-developed ICC profiles that are made by printer, media, and ink manu- factures, or by a commercial profiling company.

Capture

Recording a moment with your camera

Clipping

Clipping occurs when the dark parts of an image become pure black or the light parts become pure white, so that image detail is lost in these areas.

СМҮК

The CMYK colour model is a subtractive colour model, based on the CMY colour model, used in colour printing, and is also used to describe the printing process itself. CMYK refers to the four ink plates used in some colour printing: cyan, magenta, yellow, and key (black).

Colour accuracy

The accuracy with which a digital camera reproduces colours of the photographed subject in the digital image.

Colour cast

A visible colour tint to an image, usually referring to one that is unwanted.

Colour density The darkness of an image.

Color gamut

Range of colours in the colour space that can be produced.

Colour management

An overall system that tries to ensure that the colours of an image are displayed and output in exactly the same way, whatever the device being used.

Colour space

The theoretical definition of the range of colours that can be displayed by a device.

Colour patches

The coloured squares or projected colour used when profiling.

Colour output The way a device produces colour.

Compression

The process of reducing a file size without affecting image quality. #PowerOfPrint Contrast The difference between two colours or shades.

Cotton linters

The fibres that stick to the cottonseed after ginning. This is used as the raw material in cotton papers.

Cotton rag paper

Cotton rag, also known as rag paper, or simply "rag" is made using cotton linters or cotton from used cloth (rags) as the primary material. Cotton paper is superior in both strength and durability to wood pulp-based paper, which may contain high concentrations of acids, and also absorbs ink or toner better.

Cyanotype

A printing process in photography that produces cyan-blue prints.

D Dibond

Dibond is the brand name of brushed Aluminium composite sheeting.

DMax

The D-Max is a measure of the deepest black tone a display or printer/ink/paper combination can reproduce. It is an extremely important quality factor as images with poor D-Max can look pale and weak. High D-Max is therefore synonymous with the accolade of 'good blacks', allowing better definition in a print.

Dots per inch (DPI)

A measure of spatial printing, video, or image scanner dot density, in particular the number of individual dots that can be placed in a line within the span of 1 inch.

Dry-mount

A method of attaching photographic prints to a support by means of a thermoplastic tissue treated with shellac and the application of heat and pressure.

Dye-based inks

Dye-based inks use a colourant that is fully dissolved in a carrier liquid.

E Editing

Modifying, altering or enhancing an image digitally.

Emulsion

Any stable mixture of two liquids that naturally do not mix together or dissolve in each other (such as oil and water), where one liquid (in the form of fine droplets or globules) is dispersed in the other.

Evapouration

The physical process by which a liquid or solid is transformed to the gaseous state; the opposite of condensation.

F Fine-art Paper

Fine art printing is the term often used to refer to professional photographs being printed on very high quality paper.

Fine Art Trade Guild

The trade association for the art and framing industry.

Fluorescent light

95

The lighting produced by strip light tubes. The colour balance can vary enormously, depending on the type of tube, and manual white balance settings therefore often offer several fluorescent settings. Daylightbalanced fluorescent tubes are used in some studio lighting systems.

Foamboard

Rigid panels of insulation that are made of either polystyrene, polyisocyanurate, and polyurethane. Foam board is typically used for mounting prints and photographs and as a backing in picture frames.

Foamex

Foamex is a brand name for expanded vinyl material. Foamex sheeting is made when PVC foam is compressed to create a strong board. Rigid and hard wearing, Foamex sheeting is extremely lightweight so it is ideal for display purposes.

Framing

A technique for highlighting a subject and giving depth to an image by using another feature within the image to form a frame around it. Examples include shooting a church tower through an archway, or a portrait of someone looking through a window frame or standing under the bough of a tree.

G Gamma

Referring to the mid tone brightness of an image.

Gradients

Gradual transition from one colour to another.

GSM (Grams per Square Metre)

The measurement for the weight of paper. If you were to weigh a sheet of paper with a sheet size of 1-metre x 1-metre, no matter how thick it is, the total weight of that sheet in grams would equal the gsm value of that paper.

H Highlights

The brightest part of an image.

Hinge-mount

Mounting artwork by suspending it with tabs of tape.

Hues

Alternative name for colour or variety of colours. It tells you where a colour lies on the colour wheel without telling you how bright or dark it is.

ICC Profile

An ISO-approved colour management standard for specifying the attributes of imaging devices such as scanners, digital cameras, monitors and printers so that the colour of an image remains true from source to destination.

Inkjet paper

A special fine paper designed for inkjet printers, typically classified by its weight, brightness and smoothness, and sometimes by its opacity.

In-place switching panels (IPS)

A screen technology for liquid-crystal displays (LCDs). In IPS, a layer of liquid crystals is sandwiched between two glass surfaces. The liquid crystal molecules are aligned parallel to those surfaces in predetermined directions (in-plane). The molecules are reoriented by an applied electric field, whilst remaining essentially parallel to the surfaces to produce an image.

JPEG (Joint Photographic Experts Group)

A file format used for digital images. It's the standard format used by digital cameras (although raw or TIFF formats may also be options). It's a 'lossy' file format, which means it tends to degrade with each save.

Luminance

The intensity of light emitted.

MDF (Medium-density fibreboard) A wood-substitute material.

Monochrome

Although the term applies to images made using only one colour, or shades of one colour, in photography it usually refers to black-and-white images.

Mounting

Also called "mount board," the photograph is mounted, either "tipped," "dry mounted," "hinged" or "wet mounted" onto a paper, cotton, or foam core "board" that is stiff enough to support the print. Each method has its advantages and disadvantages.

Negative

An image made on a strip or sheet of film made of transparent plastic. Tones are reversed on black-and-white negative film, while on colour negative film, colours are recorded as their complementary colours. Negatives are converted to positive images when printed on photographic paper.

OBA (Optical Brightening Agents) Chemicals that are often added in the coating or even in some cases, in the base paper itself. They help provide a higher whiteness to the paper.

Outgas

The evaporation of solvents left behind after printing.

Oxidisation

A chemical reaction that takes place when a substance comes into contact with oxygen or another oxidising substance. Examples of oxidation are rust and the brown colour on a cut apple.

P Panoramic

An elongated image in which the width is at least twice the height. Panoramas are made by cropping one image, made using a specially designed panoramic camera, or by combining several images together using 'stitching software'. Aspect ratios for panoramic images can be 4:1 or higher.

Paper negatives

A negative print on paper.

Perspective

The spatial awareness between objects within the scene you are capturing.

Photo corners

Paper with adhesive on the back used to stick photographs to a page on the corners. Used to stick photos without applying adhesive directly to the photograph.

Pigment-based ink

Pigment-based ink is a type of ink used to colour paper and other surfaces. Pigments are tiny particles of solid matter suspended in a liquid or gas medium, such as water or air. In this case, the pigment is mixed with an oil-based carrier.

Pixels per inch (PPI)

A measure of the resolution (density of pixels) in a photo print or on-screen image.

Preservation

The process and practice of preventing or delaying the deterioration of objects through environmental monitoring, fabricating safe housing for objects, and preventive care of materials.

Primer

A type of coating; a coat that is applied to the bottom surface of a face material (the surface that receives the adhesive layer as opposed to the surface that is printed).

Printer profile

A Set of rules dictating the tone, brightness, sharpness and contrast of an image.

Proofing

Hard proofing A physical example of the photo or print Soft proofing A preview of the photo or print

on the monitor

PSB (Photoshop Big)

A file with the PSB file extension is an Adobe Photoshop Large Document file. The format is almost identical to Photoshop's more common PSD format, except that PSB supports significantly larger files, both in image dimension and overall size.

PSD

Photoshop's (and Photoshop Elements') own file format, which preserves components such as layers and transparency that aren't supported by some formats (including JPEG). It's worth saving an edited photo as a PSD if you might want the option to revisit layers or adjustment layers at a later time.

R RAW

A file format option provided by digital SLRs, mirrorless cameras and some other top-end digital cameras. Image data is stored in a semi-processed state and needs to be fully processed on a computer. Raw files enable exposure compensation, image contrast, colour balance and other settings to be altered after the initial exposure, while still retaining maximum image quality.

Rendering intents

Method or set of instructions for mapping or translating colour values from one colour space to another, generally when converting from a colour space with a larger gamut to one with a smaller gamut.

Resolution

A measure of the density of pixels in a printed or on-screen image, usually expressed in terms of pixels per inch (ppi).

RGB

Stands for red, green and blue. These are the three primary colours used by a digital camera to record a picture. Some tools can access and edit each of the three colour channels separately.

Adobe RGB

Adobe RGB is a Red-Green-Blue colour space developed to display on computer monitors most of the colours of CMYK colour printers.

sRGB

RGB colour space frequently used by digital cameras, but providing a narrower range of colours, or 'gamut', than the Adobe RGB space.

Resin coated paper

A laminate of plastic and paper used to make photographic prints; also called waterresistant paper.

S Sepia tone

A chemical treatment used in traditional photography that converts metallic silver in a black-and-white photograph to silver sulphide. It has the effect of changing shades of grey into shades of reddish-brown. The appearance can easily be created in digital images, either in-camera or using Photoshop.

Shadows

The darkest part of an image.

Sharpness

The clarity of detail within an image.

Solvents

Usually a liquid substance capable of dissolving or dispersing one or more other substances.

Spectrophotometer

A photometer for measuring the relative intensities of the light in different parts of a spectrum.

Substrate

The material the print is fixed to, such as aluminium or thick card.

T-square

A ruler with a crosspiece or head at one end used in making parallel lines.

TIFF (Tagged Image File Format)

Digital image format used to record files with maximum available detail. A file type typically used for storing raster graphic images (images that use tiny rectangular pixels) Files can be large, although this can be reduced using lossless compression.

Tone

The levels of brightness in an image.

White point

Defines how 'white' a paper or screen is. This is typically measured in Kelvins.

Fotospeed Signature Paper Range



PF Lustre 275

PF Lustre 275 is a flat, stiff, middle-weight paper with a lustre finish. The paper has a bright white base and an instant dry, micro-porous, coating. This multi award-winning paper's wide colour gamut and high D-MAX delivers beautiful images, both in colour and B&W. Compatible with both dye and pigment inks.

	THICKNESS MICROS			BRIGHT- NESS		BASE MATERIAL			
275	280	136	Yes		Lustre	Resin	5.1	6+	Yes



PF Lustre 190

Lustre 190 is a lightweight (190gsm) version of our award-winning PF Lustre 270 paper. With its instant dry, microporous coating and a high white point, it is perfect for making albums, books, portfolios, contact sheets, proofing or using as a paper in its own right. Its state of the art ink receiving layer performs perfectly with both black & white and colour images.

	THICKNESS MICROS		OBAs		COATING	BASE MATERIAL		LIGHT- FASTNESS	
190	200	156	Yes	-	Lustre	Resin	5.1	6+	No



PF Gloss 270

Pigment Friendly Gloss 270 is a flat, stiff, middle-weight paper with a high gloss finish. The paper has a bright white base and an instant dry, micro-porous, coating. Pigment Friendly Gloss' wide colour gamut and high D-MAX delivers beautiful images, both in colour and B&W. Compatible with both dye and pigment inks.

	THICKNESS MICROS		BRIGHT- NESS				LIGHT- FASTNESS		
270	275	-	-	Gloss	-	-	•	-	



PF Gloss 190

BRIGHT-

NESS

Gloss 190 is a lightweight (190gsm) version of our award-winning PF Gloss 270 paper. With its instant dry, microporous coating and a high white point, it is perfect for making albums, books, portfolios, contact sheets, proofing or using as a paper in its own right. Its state of the art ink receiving layer performs perfectly with both black & white and colour images.

DH

VALUE

FASTNESS

APPROVED

RASE

MATERIAL

WEIGHT	THICKNESS	WHITE	OB
GSM	MICROS	POINT	
190	205	-	

Photo Smooth	Pearl 290

Gloss

Photo Smooth Pearl 290 has a natural white base and an instant dry, micro-porous coating. The paper's wide colour gamut and high D-MAX delivers beautiful images, both in colour and B&W.







Matt Ultra 240

Matt Ultra 240 is a smooth, bright white, middleweight, all-purpose paper with a matt finish. This cost-effective paper is ideal for running proofs or printing final images. Matt Ultra's wide colour gamut reliably delivers beautiful images every time.

VALUE

FASTNESS

APPROVED Yes

WEIGHT	THICKNESS	WHITE	OBAs	BRIGHT
GSM	MICROS	POINT		NESS
240	200	150	Yes	-

-	Smooth Matt	-	

BASE

MATERIAL



Matt Proofing 170

COATING

Matt Proofing 170 is a smooth, bright white, lightweight, all-purpose paper with a matt finish. This highly cost-effective paper maintains the same ink receiving layer as our Matt Ultra 240 whilst at half the price is ideal for proofing, document printing, album pages, portfolio work and all your everyday studio needs. Compatible with both dye and pigment inks.

WEIGHT	THICKNESS	WHITE	OBAs	BRIGHT-	COATING	BASE	PH	LIGHT-	ART SURE
GSM	MICROS	POINT		NESS		MATERIAL	VALUE	FASTNESS	APPROVED
170	160	150	Yes	-	Smooth Matt		-	-	Yes



Matt Duo 240

Matt DUO 240 is a smooth, bright white, double-sided, all-purpose paper with a matt finish. The paper is ideal for running album proofs or printing final images. Matt DUO's wide colour gamut reliably delivers beautiful images every time.

WEIGHT GSM	THICKNESS MICROS	WHITE POINT	OBAs	BRIGHT- NESS	COATING	BASE MATERIAL		LIGHT- FASTNESS	ART SURE
240	287	150	Yes		Smooth Matt		-	•	Yes



Lustre Duo 280

PF Lustre DUO 280 is the double-sided version of our award-winning PF Lustre 275. It is a double sided, flat stiff heavyweight paper with a bright white base and a real photographic lustre finish, ideal for portfolios with no show through.

	THICKNESS MICROS		OBAs				LIGHT- FASTNESS	
275	280	145	Yes	-	Lustre	-		



Metallic Gloss 275

Metallic Gloss 275 is a flat, stiff, middle-weight paper with a metallic effect gloss finish. The paper has a neutral white base and an instant dry, microporous coating. This paper has a wide colour gamut and a high DMax which delivers beautiful images, both in colour and B&W.

	THICKNESS MICROS					BASE MATERIAL			
275	273	80	Yes	82	Gloss	-	-	-	



Metallic Lustre 275

Metallic Lustre 275 is a flat, stiff, middle weight paper with a metallic effect lustre finish. The paper has a neutral white base and an instant dry, microporous coating. This paper has a wide colour gamut and a high DMax which delivers beautiful images, both in colour and B&W.

	THICKNESS MICROS			BRIGHT- NESS		LIGHT- FASTNESS	
275	273	80	Yes	82	-		



Platinum Baryta 300

Platinum Baryta 300 is 100% acid-free, Fine Art paper with a smooth unglazed gloss surface. A natural white base and state of the art micro-porous ink receiving layer delivers a high DMax (2.99) and wide colour gamut. Platinum Baryta 300 reveals delicate highlights and smooth transitions to shadows for both colour and B&W printing. The paper is approved by the Fine Art Trade Guild and when used in conjunction with pigment inks will ensure a print life of more than 85 years.

	THICKNESS MICROS			BRIGHT- NESS			ART SURE APPROVED	
300	310	100	No	-	Somi-Gloce	-	Voc	



Platinum Gloss Art Fibre 300

Made from 100% alpha-cellulose pulp, Platinum Gloss Fibre 300 is a heavyweight exhibition quality paper, and is protected against environmental influence, so prints will last for decades. The paper's archival quality makes it ideal for professional or amateur photographers who want to create long-lasting images, while its glossy finish and tonal range makes it a good choice for those who don't want to lose detail when shooting in bright conditions.

WEIGHT	THICKNESS	WHITE	OBAs	BRIGHT-	COATING	BASE	PH	LIGHT-	ART SURE	
GSM	MICROS	POINT		NESS		MATERIAL	VALUE	FASTNESS	APPROVED	
300	440	104	Yes	-	Unglazed Gloss	-	8.4	-	Yes	



Legacy Gloss 325

Legacy Gloss 325 is 100% cotton Fine Art paper with an 'Unglazed' Gloss surface. It has been developed as a sister paper to Platinum Cotton and has NO OBA's meaning it offers the highest archival properties. The papers 'Unglazed' Gloss surface delivers a high DMax and wide colour gamut and is excellent for B&W & colour images. When used in conjunction with pigment inks the paper will ensure a print life of more than 85 years. Compatible with both dye and pigment inks.

VALUE

7.9

FASTNESS

6+

ART SURF

APPROVED

Yes

EIGHT	THICKNESS	WHITE
GSM	MICROS	POINT
325	390	75

OBAs

BRIGHT-

NESS

85



Smooth Cotton 300

COATING

Fotospeed Smooth Cotton 300 is 100% cotton, pH neutral, fine art paper with an ultra-smooth surface. The paper's white base and state of the art coating delivers the highest level of ink load of all the Fotospeed range.

BASE

Unglazed Gloss 100% Cotton

MATERIAL

WEIGHT GSM	THICKNESS MICROS	WHITE POINT	OBAs	BRIGHT- NESS				LIGHT- FASTNESS	ART SURE APPROVED	
300	480	94	Yes	84	Smooth Matt	100% Cotton	-	-	Yes	



Platinum Cotton 305

Platinum Cotton 305 is a 100% cotton, acid & OBA free Fine Art paper with a smooth natural white surface. Platinum Cotton 305 use the latest coating technology resulting in a wide colour gamut and pin sharp detail.

WEIGHT GSM	THICKNESS MICROS	WHITE POINT	OBAs	BRIGHT- NESS	COATING		PH VALUE	LIGHT- FASTNESS	ART SURE APPROVED	
300	310	109	No	99	Smooth Matt	100% Cotton			Yes	



NST Bright White 315

Natural Soft Textured Bright White 315 is 100% cotton, fine art paper with a very gentle texture. The paper's bright white base and gentle texture lends itself towards landscape and portrait subjects and delivers a high DMax and wide colour gamut. The paper is approved by the Fine Art Trade Guild and when used in conjunction with pigment inks will ensure a print life of more than 85 years.

	THICKNESS	WHITE	OBAs		COATING	BASE	PH		ART SURE
GSM	MICROS	POINT		NESS		MATERIAL	VALUE	FASTNESS	APPROVED
315	500	99.5	Yes	84	Smooth Matt	100% Cotton	8.2		Yes



Natural Soft Textured 315

Natural Soft Textured 315 is 100% acid free, fine art paper with a very gentle texture. The paper's natural white base and gentle texture lends itself towards landscape and portrait subjects and delivers a high DMax and wide colour gamut. The paper is approved by the Fine Art Trade Guild and when used in conjunction with pigment inks will ensure a print life of more than 85 years.

WEIGHT	THICKNESS	WHITE	OBAs	BRIGHT-	COATING	BASE	PH	LIGHT-	ART SURE
GSM	MICROS	POINT		NESS		MATERIAL	VALUE	FASTNESS	APPROVED
315	465	74	No	84	Smooth Matt	Cellurose	7.7		Yes



Natural Textured 315

Natural Textured 315 is 100% acid free paper with a full, rounded texture. The paper's natural white base adds a more traditional feel and is therefore especially suited to artistic images or watercolour reproductions. When used in conjunction with pigment inks, the paper will ensure a print life of more than 85 years.

	THICKNESS MICROS			BRIGHT- NESS	COATING			LIGHT- FASTNESS	
315	500	64	No	84	Textured Matt	Cellurose	-	•	Yes



NT Bright White 315

Natural Textured Bright White 315 is 100% acid free paper with a full, rounded texture. The paper's bright white base adds a more traditional feel and is therefore especially suited to artistic images or watercolour reproductions. When used in conjunction with pigment inks, the paper will ensure a print life of more than 85 years.

	THICKNESS			BRIGHT- NESS				LIGHT- FASTNESS		
315	435	127	Yes	85	Textured Matt	Cellurose	8.2	-	Yes	



Platinum Etching 285

Platinum Etching 285 is 100% acid free, fine art paper with a velvety, textured surface. A natural white base and state of the art ink-receiving layer, delivers a high DMax and wide colour gamut. Platinum Etching is 25% cotton and 75% alpha-cellulose. When used in conjunction with pigment inks, the paper will ensure a print life of more than 85 years.

WEIGHT	THICKNESS	WHITE	OBAs	BRIGHT-	COATING BASE	PH	LIGHT-	ART SURE
GSM	MICROS	POINT		NESS	MATERI	AL VALUE	FASTNESS	APPROVED
285	460	93	Yes	84	Textured Matt 50% / 50%	mix 8.4		Yes



Cotton Etching 305

Cotton Etching 305 is a 100% cotton acid free Fine Art paper with a white base. The surface has an etching texture which helps accentuate detail and gives a depth to you image. Using the latest coating technology resulting in a wide colour gamut and pin sharp detail. It sits alongside our popular Platinum Etching 285 as a more textured alternative. The surface texture is completely different to anything else we offer and helps complete our range.

WEIGHT GSM	THICKNESS MICROS	WHITE POINT	OBAs	BRIGHT- NESS	COATING		PH VALUE	LIGHT- FASTNESS	ART SURE APPROVED	
305	530	100	Yes	-	Textured Matt	100% cotton	8.3	-	Yes	



High White Smooth 315

High White Smooth 315 is 100% cotton and pH neutral, fine art paper with a smooth surface. A white base and state of the art ink-receiving layer, delivers a high DMax and wide colour gamut. This paper is highly recommended for Gicleé printing. The paper is approved by the Fine Art Trade Guild and when used in conjunction with pigment inks will ensure a print life of more than 85 years.

WEIGHT	THICKNESS	WHITE	OBAs	BRIGHT-	COATING	BASE	PH	LIGHT-	ART SURE
GSM	MICROS	POINT		NESS		MATERIAL	VALUE	FASTNESS	APPROVED
315	390	110	Yes	98	Smooth Matt	100% Cotton	7.5		Yes



High White Smooth Lite 215

High White Smooth Lite 215 is 100% cotton and pH neutral, fine art paper with a smooth surface. A white base and state of the art ink-receiving layer, delivers a high DMax and wide colour gamut. This paper is highly recommended for Gicleé printing. The paper is approved by the Fine Art Trade Guild and when used in conjunction with pigment inks will ensure a print life of more than 85 years. High White Smooth is where it all began and has been a firm favourite of photographers and artists the world over, ever since. Its 100% cotton base not only gives it its archival qualities but also a sense of unrivalled quality when you hold it in your hands.

WEIGHT	THICKNESS	WHITE	OBAs	BRIGHT-	COATING	BASE	PH	LIGHT-	ART SURE
GSM	MICROS	POINT		NESS		MATERIAL	VALUE	FASTNESS	APPROVED
215	290	110	-	98	Smooth Matt	100% Cotton	7.5		Yes



High White Smooth Duo 225

High White Smooth Lite DUO 225 is 100% cotton and pH neutral fine art paper, with a double-sided smooth surface. A white base and state of the art ink-receiving layer, delivers a high DMax and wide colour gamut.

WEIGHT GSM	THICKNESS MICROS	WHITE POINT	OBAs	BRIGHT- NESS	COATING	BASE MATERIAL	PH VALUE	LIGHT- FASTNESS	ART SURE APPROVED
225			-	-	Smooth Matt	100% Cotton			Yes



Platinum Matt 280

Platinum Matt 280 is 100% acid free, fine art paper. A natural white base and state of the art ink-receiving layer, delivers a high DMax and wide colour gamut. When used in conjunction with pigment inks, the paper will ensure a print life of more than 85 years.

WEIGHT GSM	THICKNESS MICROS	WHITE POINT		BRIGHT- NESS	COATING			LIGHT- FASTNESS	ART SURE APPROVED	
300	300	138	Yes	108	Smooth Matt	Cellurose	8		Yes	

Fotospeed Test Packs



Photo Quality Test Pack

7D130 A4 16

Pack contains 2 sheets each: PF Lustre 275gsm PF Gloss 270gsm Photo Smooth Pearl 290gsm Metallic Gloss 275gsm Metallic Lustre 275gsm Matt Ultra 240gsm Matt Proofing 170gsm Matt DUO 240gsm



Fine Art Glossy Test Pack CODE SIZE PACK 7E106 A4 9

Pack contains 3 sheets each: Platinum Baryta 300gsm Platinum Gloss Art Fibre 300gsm Platinum Lustre 270gsm



Fine Art Matt Smooth Test Pack

CODESIZEPACK7E107A418

Pack contains 3 sheets each: Signature Smooth Cotton 300gsm High White Smooth 315gsm Platinum Cotton 305gsm Platinum Matt 280gsm Signature Natural Soft Textured Bright White 315gsm Natural Soft Textured 315gsm



Fine Art Matt Textured Test Pack CODE SIZE PACK 7E108 A4 12

Pack contains 3 Sheets each: Signature Platinum Etching 285gsm Signature Cotton Etching 305gsm Natural Textured 315gsm Natural Textured Bright White 315gsm



Panoramic Test PackCODESIZEPACK7D609210x59424

The Panoramic test pack includes 4 sheets: PF Gloss 270gsm PF Lustre 275gsm Photo Smooth Pearl 290gsm Platinum Baryta 300gsm Smooth Cotton 300gsm Platinum Etching 285gsm Compatible with both Dye and Pigment Inks. Includes one A4 sheet for profiling.

Fotospeed Paper Size Grid

Paper	6x4	7x5	10x8	A4	A3	A3+	A2	12" Roll	13" Roll	17" Roll	24" Roll	36" Roll	44" Roll	50" Roll	60" Roll	Pan- oram- ic	Foto- card 5x5	Foto- card A6	Foto- card A5	Foto- card i3	8x8 Sq	12x12 Sq
PF Lustre 275	Х	Х	Х	Х	Х	х	Х		Х	Х	Х	Х	х		Х	Х					Х	Х
PF Lustre 190				х	х	х	Х			х	Х		х	Х	х							
PF Gloss 270	Х	х		х	х	х	Х			х	Х	х	х	Х	х	Х						
PF Gloss 190				х	х	х	X			х	х	х	х									
Photo Smooth Pearl 290	Х	х		х	х	х	х			х	х	х	x		х	х						
Matt Ultra 240	Х	х	Х	х	х	х	х			х	х	х	x		х	X	х	х	x	х		
Matt Proofing 170				х	x	х	х		Х	х	х	х	x									
Matt Duo 240				х	x	х	Х										х	х	x	Х		
Lustre Duo 275				Х	х		х															
Metallic Gloss 275				Х	x	Х	х			х	х		x									
Metallic Lustre 275				х	x	х	х			х	х		x									
Platinum Baryta 300				х	х	х	х			Х	х	х	х	х		Х					Х	Х
Platinum Gloss Art Fibre 300				х	Х	х	х				х	х	x				х	х	Х			
Legacy Gloss 325				Х	х	х	х			Х	х	х	x		х		х	х	X			
Smooth Cotton 300				х	х	х	х			Х	х	х	x			Х	х	х	X			
Platinum Cotton 315				Х	х	х	х			Х	х		x		х		х	х	X			
NST Bright White 315				Х	x	х	х			х	х		x				х	х	x			
Natural Soft Textured 315				х	х	х	х			х	х	х	x		х							
Natural Textured 315				Х	x	х	х			х	х	х	x		х							
NT Bright White 315				Х	x	Х	х			Х	х	х	x		х		х	х	X			
Platinum Etching 285				Х	х	х	х				х	Х	x			Х	х	х	x		х	Х
Cotton Etching 305				Х	х	х	х				Х		х									
High White Smooth 315				Х	х	х	х			Х	Х	Х	х		х							
HWS Lite 215				Х	х	х	х	Х		х	Х	Х	х		х							
HWS Duo 225				Х	х	х	х															
Platinum Matt 300				Х	x	х	х			х	х	х	x		х							



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