

Scaling an image – or artwork!

Do not guess! Width and Height are crucial for accurate costing. Having the wrong size for an exhibition display is to be avoided. Manual 'Trades' use the motto: 'Measure-twice-and-cut-once', which is another way of stating; to 'double check your measurements'. But under pressure, you may rely on digital read outs, which may not be as expected... and can lead to odd surprises!

And it can get a lot harder with all those 'digital measurements' - set to 'auto'!

Mistakes can be costly, and we all make mistakes as that is how we learn to avoid them in future. Scaling is one of the most common and easy mistakes to make. Many picture sizes are odd sizes, that are a custom fit. Print are standard sizes trimmed down to the nearest odd size. Picture frames can be any size and even though digital displays can (*almost*) be any size there are limits to width, depending on machine type. There are many types of imaging machines now from traditional photoprints to digital-print 'imaging' which falls into either traditional 'photographic film prints' and 'photo-imaging' to digital process - 'usually six colour inks' reproducing a wider spectrum of colour - more closely matching colour film prints. Its hard to tell the difference now in 2024, as digital exceeds the old film resolution, yet there is something quite intangible about the old photographic process which is still more memorable due to 'film type artifacts', such as 'textures' and overall warm or cool 'colour balance' which digital printing tries to recreate with filters and overlays, we may try to match the 'feel' and structure of old film or old film prints. Old photographs bring back memories beyond the limited process of the times they were taken. It is come back into fashion, for many Photographers. Industrial projects use the usual the default settings on standard profiling of each machine - usually just matching ink density for print stock which can be particular paper, plastics or other print surface.

So I only point this out that size is important when you have to alter the image as any effects may be not be scalable easily. Larger sizes can become pixilated or 'soft' and it is difficult to use very large image formats without 'descaling' to a working size. This is less of a worry than it was, but many images I worked on in publishing were far from ideal size and when upscaled became seriously out of focus (blurry). This is overcome by the simple fact that you will not notice from twenty feet away! And yet digital images can be scaled up using a number of techniques which can be called 'pin sharp' and yet are in so many ways are unappealing, as they look unnatural. Its all down to the Photographer who has an eye for a composition, lighting, 'f-stops', colour balances and an expected file size, it's step process.

Why is this important? Well most images are cropped and a commercial photographer usually gives 'full bleed' to offer either a 'landscape', or 'portrait' formats. Because, I do not usually know the finished display size or how the image will be used. It could be a small 'press Ad' or a 'giant out-door poster'. If the image is inspiring it may be printed 'full frame', - but this is rare, as we will at some point come up against the fact that it won't fit easily without 'cropping' the sides, top or bottom. In fact this is

a necessity to focus the '*central*' image and is essential for all sizes and formats. You never worry about things you do not see (*cropped off the image*).

So how big should you make the image?, well for photography it really does not matter that much now, as we can '*pro-up*' and resize almost any display size. In the past, I would ask for a 5"x 4" image as the benchmark. Live photography was often based on 2 1/4 inch film format which often (could) have a more composed and barely adequate film area. Now 35mm (*or the digital equivalent*), is the standard type to expect. But is it any better than the old photo formats? Well, yes and no! It is far more convenient, yes, but not always ideal or '*composed*' or focussed '*naturally*'. Mobile phones (*now replacing most digital cameras*), rely on multi-focus sharpening for their small screens and video options. Composition, colour balance and focus targets can be ignored or at best '*auto enhanced*' when really, its just a bad photograph, and over sharpened when enlarged.

Scaling is important. - and its not about huge file size!, as clearly the new mobile camera owner may be impressed with 4K or 8K resolution without realising that it makes-no-difference to the overall print quality. Its useful, for example, for VIDEO, as it can '*zoom*' focus sharply on a small detail of an image which can then be easily enlarged, but its a digital zoom and lacks lens quality. It does not take a 'better' image as such. Its a function useful for Video as this allows a '*zoom*' function without adding any extra lenses to the cost of the camera or mobile. Its not ideal.

Although the odd image is impressive when combined with traditional techniques, its not built-in. You still need an '*eye for composition*', cropping an image for impact and learning to hide that which does not. A favorite treatment for more '*pleasing photographs*' for both family and friends is the '*Velvia*' film look. Its based on of the 1970's film prints of holidays abroad and is far warmer in colour balance and so is forever popular for nostalgic photographs. Not suitable for other situations.

Each new photo capture device has a different '*capture*', one of my favorites is using an '*infra-red*' camera (*or filter*). the point is here is that any picture can be made from any device, (*as even a 'pin-hole camera works!*), the resolution may be poor but the image is perfect for what it shows. Sometimes the most crudest of image capture devices becomes something unique important and memorable because of its limit. A traditional drawn '*etch-print*' or a Victorian photo '*sepia print*' has added value.

Surprisingly, they do scale-up quite well, although I would hesitate to '*crop*' such an image as the size and '*artifacts*' are much more part of the image and should not be '*retouched*' and reproduced as a whole. That makes more memorable image in a Museum display, for example, where older images tend to be used.

Back to scaling. There is one way you can work this Scaling problem out. You can simply use the default '*auto-scale*' - but for all the reasons above, it is not the best option when considering all other factors and options.

At the most basic level you can use this tried and trusted option.

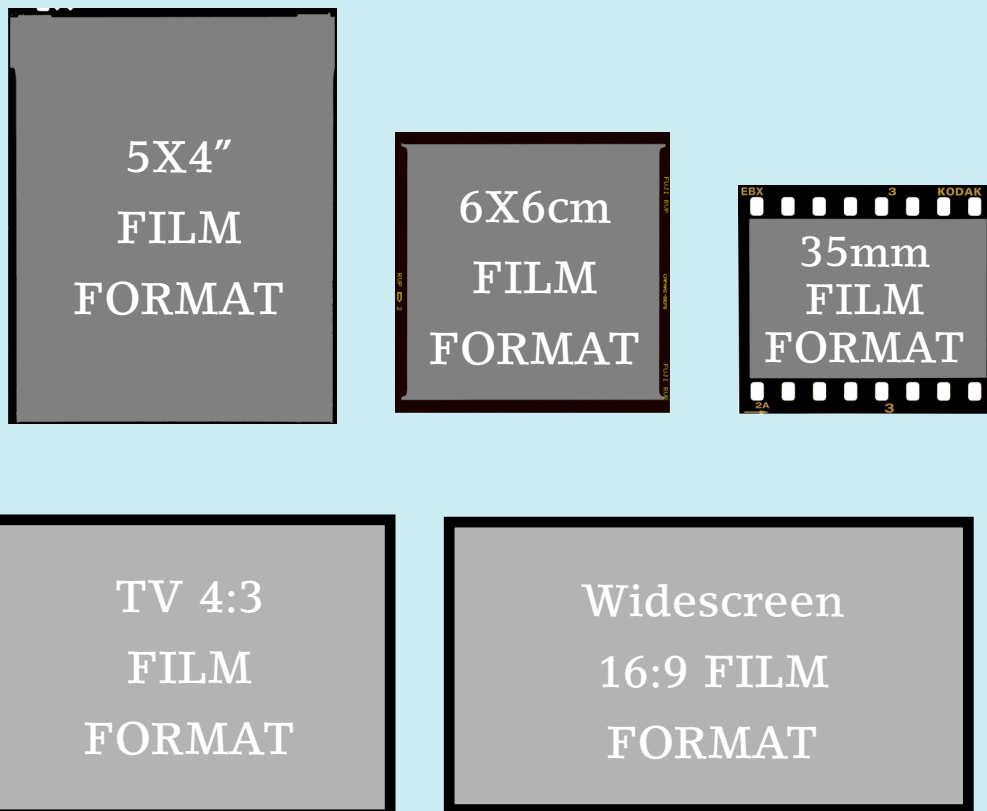
1. Measure a TARGET image area (*either width or height*) of final DISPLAY SIZE.

2. Take the measurement of the smaller image (*either width or height*) of image...

3. Divide the smaller into the larger to create a 'scale factor' - such as, say; (5.45). THAT IS YOUR SCALING FACTOR - UP or DOWN.

4. Using the '*scale-factor*' you can now enlarge the image more accurately for a final display sized print.

Standard Photo film formats:



Captions:

Top three are the main film formats (legacy files) but are still in use although inclined to be pre-scanned into digital formats (full frame) same size.

Bottom two are the TV and Video formats adopted by Mobile Phone camera types. This allows full frame (on a suitable TV) without any cropping.

Film Resolution!!!

I have forgotten to talk about photo resolution!. In the print industry images are scanned at high res of at least 300dpi up to 2400dpi or more... It all depends on what size you will need to be from the original size.

The digital camera can have a capability of saving to 600 or more but this is not the default of Mobile camera which is 72dpi (*screen resolution*) and a large size area to compensate. 72 to 92 is in use by Computers screens. Large, medium and small define how big that is using either 16:9 or 4:3 screen formats. Either way, I have to change this to 300dpi, scale and crop to either RGB, CMYK or Hex print formats in TIFF or JPEG which is now generally the normal practice. Tiff files are very large compared to jpeg.

This may be automatic, if you have 'auto scaling', turned-on, (*but you may be unaware that scaling an 'old image' x40 times may not be the best option as other factors come into the equation*). I use several enlargement techniques to make an image look 'correct' even when the image may of been thought unusable and rejected. Using modern photo techniques, almost all images can be scaled to very large sizes, but not all images should be!. Quality is not just how 'sharp' the image should be, but follow 'composition' of subject. Photo 'restorations' are built around not being able to spot that an old image has been 'restored' detrimentally. It is an Art form, for sure..

I hope you find this article interesting and helpful.

I write from my designers perspective on the use of image 'scaling' in the design process. I learn to double check my measurements, scaling down for a micro CAD project or up to large displays, is another scaling problem. I often have to scale an image plan up or down. Mistakes can be costly in production.

Philip Searle | Art Services

© features article on Scaling artworks

Title: Scaling an image!.

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