

Notes on projectors and laptops for photography

I do the necessary setting up and technical bits of the projection side of all Scottish Photographic Federation events, as well as for the PAGB Awards for Photographic Merit, Print Championship & GB Cup judging weekend.

None of these organisations recommends a particular make or brand, but I am happy to pass on details of what they have used in the past, and other relevant information which I hope help will help with your deliberations.

These organisations currently use Canon XEED SX6 or SX7 projectors, and have done so since these models first came out. These are all 1400x1050 (SXGA+). These have all been used at their native resolution with an Acer or Sony laptop (with dedicated graphics card capable of handling 1400x1050 or more). The laptop/ projector combination was subsequently calibrated using an x-rite i1 Display Pro calibration kit.

I have had cause to do some recent research for my own Club, re up to date models etc., and have also been asked almost the same questions by a couple of Scottish Clubs. I have therefore copied an extract of my replies below as there are a few relevant points which might be of interest to you.

Both organisations have looked at upgrading recently and are likely to go for the Canon XEED WUX500 (this supersedes the WUX450 which is also worth considering) these have 1920x1200 (1600x1200) resolution capabilities, as well as supporting our current standard of 1400x1050.

Please feel free to come back to me if I can help further,

Kind Regards
Libby

Extract from Earlier Reply to a Scottish Club - This is kind of a big subject and things obviously change on a week to week basis. It's also difficult to know what to suggest, not knowing the amount of your budget. So I will tell you what the SPF, PAGB and my own Club (Carluke) have gone with, in the past, which is generally accepted as the standard to aim for if you can afford it, or if you are perhaps thinking of submitting a grant application, as many Clubs do.

General Info first - a good website to visit for advice on projectors and terminology - <http://www.projectorpoint.co.uk/projectoradvice.htm> For a full range of resolutions and their acronyms (XGA...) go to www.wikipedia.org

Resolution - It is generally accepted that 1400 x 1050 (SXGA+) has become the standard for the PAGB and the SPF, as well as many Clubs. Many authors now have monitors that do well above 1024x768, and this has also pushed up the expectations of a higher quality for projectors too. 1400x1050 keeps the traditional photographic 4:3 format, and despite what some home movie enthusiasts think, the 4:3 format is likely to stay due to us using both landscape and portrait format images (think how small an area, a portrait image would take up on your wide screen/HD television!)

The fairly recent releases of new projectors are now coming out as 1920x1200(WUXGA), giving us the capabilities for the 4:3 resolution to become 1600x1200 (UXGA) in the future. This is the most likely next step that the Scottish Federation/PAGB may go to, although this is only a guess at this stage – it has not as yet been discussed.

Graphics Card/Laptop -

You will also have to ensure that any laptop you have, or intend to purchase, has a graphics card capable of producing that resolution. e.g. If you have a widescreen laptop for example and it does 1600x900 that will not necessarily handle 1400x1050 - it is likely to only do 900 high not 1050. You have to check that the graphics card will specifically do e.g. SXGA+ if your projector is SXGA+ (1400x1050). (WXGA is only 1280x800)

You are looking for laptops that have better than average graphics cards, preferably a dedicated graphics card, although a number of integrated ones are now a good spec. The graphics card must allow you to easily set up the resolution of both the laptop screen and the projector independently, and it is key that you can set the projector as the 'primary' device easily on your laptop via the graphics card settings to ensure you can run the same view on both laptop and projector (known as 'clone' or 'mirror') – Be aware that if you cannot set your projector as the 'primary' device that you will not be running the correct profile for your projector.

ATI Radeon Graphics Cards are better for this level of control than NVidia Ge-Force, which are inherently difficult to set to give priority to anything other than the laptop screen.

(I have found that if you have a laptop with an ATI Radeon Graphics Card that will support the highest resolution you require, even if the laptop screen itself is a lower resolution than you require for your projector, you are more likely to get the projector to work at the desired resolution than with an NVidia card – unfortunately the Radeon cards are more expensive at the moment meaning manufacturers are fitting more NVidia ones)

It is also worthwhile noting that you can't necessarily get all of the resolution settings on all of the connections – you will need to check what each port on your projector and your laptop/graphics card will support – manufacturers should give you that info i.e. the max resolution for each of the various ports that are available - hdmi/vga/dvi/mini display port (To find this info for projectors download the full manual from the manufacturer's website)

All three organisations have used Acer laptops with ATI Radeon graphics cards in the past. As these are now very old models I have added some links at the bottom of this section for a few alternatives which should give you an idea of what to look for dependant on what resolution you are looking for now.

With many full HD laptops now available, getting 1050 high resolution is now easier (1080 high on HD), but you must check that the laptop will allow you to set the projector again as the 'primary' device, and has the option to select 1400x1050 projector resolution on the laptop, and then set the resolution for the 'secondary' laptop screen (or leave at 1400x1050), otherwise you may have to run with the laptop screen off.

With the advent of the new projectors capable of 1920x1200 (WUXGA) / 1600x1200 (UXGA) comes the need for more powerful laptops again. These are available but are predominantly gaming laptops, or are those capable of running the new 4K (3840 X 2160). These are currently more expensive given they are in short supply, but as more 4K products become available so the price is again likely to fall on these as it has on HD. Unless you need to replace your laptop now, you would be advised to wait until you need the higher resolution from an economic perspective. <http://4k.com/laptop/> for 4K info and reviews.

The following are Links to a variety of Laptop options to give you an idea of what to look for – <http://www.dell.com/uk/p/alienware-15/pd#overrides=n00aw555:6~AM295X> Will support up to 4K resolution 3840x2160 - (Available with choice of AMD or NVidia cards)

<http://www.johnlewis.com/toshiba-satellite-p50t-b-11d-laptop-intel-core-i7-16gb-ram-1tb-8gb-sshd-blu-ray-15-6-4k-ultra-hd-touch-screen-silver/p1877343> Will support up to 4K resolution 3840x2160 - (Available with AMD card)

<https://www.overclockers.co.uk/showproduct.php?prodid=LT-047-GI&groupid=959&catid=1828>
(Although NVidia and 1920x1080 – it specifically quotes you can use at the higher 4K resolution on external display via its mini display port – this firm are very helpful on the phone)

<http://www.laptopsdirect.co.uk/lenovo-thinkpad-e550-core-i7-5500u-8gb-1tb-amd-radeon-r7-m260dx-2gb-dvdrw-1-20df004uuk/version.asp> HD resolution screen with AMD graphics card

<http://www.laptopsdirect.co.uk/fujitsu-lifebook-a555g-15.6-inch-core-i5-5200u-8gb-128gb-ssd-dvd-rw-win-7pr-vfya5550m45bogb/version.asp> HD resolution with AMD graphics card

<https://www.overclockers.co.uk/showproduct.php?prodid=LT-061-GI&groupid=959&catid=1828>
HD resolution screen with NVidia graphics card

Many Apple Macs also support these higher resolutions – again varies dependant on type of connection you use.

Projector Technology LCD, DLP or alternative... –

Most projectors are either LCD or DLP technologies they both have advantages and disadvantages; in brief –

LCD - sharp but very 'pixelated' (chicken wire) appearance not photographic appearance (better over 1024x768 resolution), good accurate colour and saturation, higher overall brightness but difficult to control highlight details, blacks not very black,

DLP - smoother image (less pixilation) more photographic appearance but slightly softer, colour not so accurate but better contrast control, blacker blacks, not so burnt out whites.

You can read more here about how these technologies work on this website –

<http://www.projectorpoint.co.uk/ProjectorLCDvsDLP.htm>

LCoS - The SPF, PAGB and Carluke CC all use the Canon XEED range of projectors, this is what a number of Clubs have aimed for if the cost was 'do-able' for them.

These are neither LCD or DLP but an amalgamation of both called LCoS, thereby trying to give the best of both worlds. They have a photographic appearance (no chicken wires), not as sharp as LCD but better than DLP. They have very accurate colour and very good contrast, black blacks, and not at the expense of burnt out whites (and loads of control for both colour and contrast control) The main downside is this LCoS technology is more expensive, and mainly only available from Canon in their XEED range - probably because it is a more specialist requirement. When it was released originally it was recommended for high quality photographic display and cad or architectural drawings whereas many others are aimed at office presentation or home movie use.

Projector Specifics -

The SPF and the PAGB currently have Canon XEED SX6 or SX7Mk2 Projectors, which do the bigger Adobe RGB colour space and are designed for slightly bigger rooms - out of the budget of most clubs even with a grant. Most Clubs went for the SX80 (or equivalent) range. These have all been superseded by a new range of projectors.

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From the new range the **Canon WUX500** (and the superseded WUX450) quality wise have moved on considerably since even the more expensive SX7 Canon range (this marked quality improvement is noticeable even when run at 1400x1050). These new projectors are within the price range of the SX80 at approx. £2300 - £2500 Inc. VAT. As well as the higher resolutions of 1920x1200 (1600x1200), 1400x1050 is still supported by this projector. The WUX500 (& WUX450) have tilt shift lenses which almost negates the requirement for keystone-ing and gives more flexibility when setting up or ceiling mounting. This new lens technology also makes these projectors considerably sharper.

Full details of the newest Canons can be found here –

http://www.canon.co.uk/for_home/product_finder/multimedia_projectors/xeed/xeed_wux500/

If these are out of your budget, the above information should help you narrow down the choices that are out there in different makes, projector point would also be worth a call. Even if you cannot afford a Canon projector, or you are considering another manufacturer, it would be worthwhile to see if you can get tilt-shift lens facilities. Optima and Epson appear popular alternatives, but vary greatly model to model, and don't have the LCoS technology. They are mainly DLP.

One thing that will help you get the most out of any projector is to make sure it has enough controls on the projector itself to allow you to alter both the Contrast and the Brightness, as well as all three (RGB) colours independently. If you go onto the manufacturer's websites you can normally download a copy of the manual to check what controls are on the projector.

It is also useful to have the option to reduce the brightness of the lamp, and calibrate on this lower setting. (This may be referred to as 'quiet' or 'power saving' mode – most of the time a reduced lumens is also quoted) - This is because projectors are designed to be used with quite a bit of ambient light where we in Clubs use them mainly in almost dark. Also we are sometimes struggling for space, so the projector is fairly close to the screen meaning it may be a little bright for a correct calibration.

You may find a few reviews online, but unfortunately many of the magazine reviews are of limited use as they are not assessing for photographic uses, more for movies, gaming or office presentations who's requirements are different from ours, their 'scores' generally reflect this.

Cost!! - <http://www.projectorpoint.co.uk> This company is a good indicator pricewise, although not necessarily the cheapest - this obviously changes day to day, but it's a starting point for you.

I bet by now, if you're still reading, you wish you'd never asked!! - sorry..... hope this helps!

For the avoidance of doubt; neither myself nor the PAGB or SPF or Carluke CC have any connection with any of the companies mentioned in this article. Info has been sourced from websites purely to aid your deliberations.