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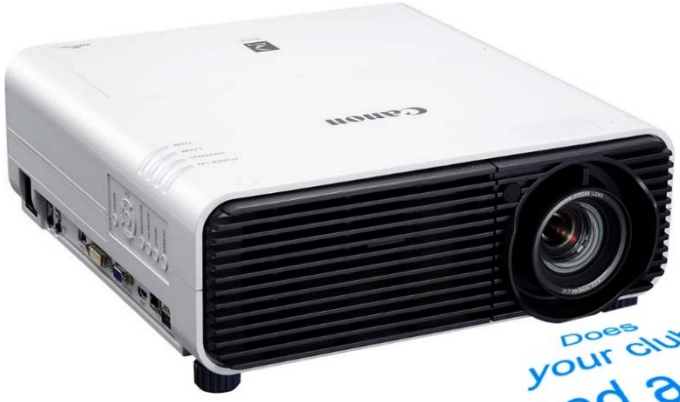

Illustrated is the Canon XEED WUA500 which the PAGB has purchased for use at all their events.

The PAGB is unable to recommend any particular projector or laptop for your Club but perhaps this article by our projection expert, Libby Smith, may be of some assistance.

Does your club need a new projector?

See the Special PAGB Offer from ProjectorPoint.co.uk on Page 5

Notes on projectors and laptops for photography

Libby Smith MPAGB EFIAP APAGB HonSPF

I do the setting up and technical bits of the projection side of PAGB Awards for Photographic Merit, Print Championship & GB Cup judging weekend, as well as all Scottish Photographic Federation events. The PAGB cannot recommend a particular make or brand, but I am happy to pass on details of what we have used in the past, and other relevant information, which I hope help will help with your deliberations.

Summary. The PAGB and SPF 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 and the projector combination was subsequently calibrated using an x-rite i1 Display Pro calibration kit.

I have had cause to do some research for the PAGB, the SPF and my own Club, re up to date models etc. I have participated in a live comparison of several projectors after the Warwick event and, subsequently, the PAGB borrowed a Canon projector which I set up and used at the PAGB Inter-Club Championships.

This was a Canon XEED WUX500 (this supersedes the WUX450 which is also worth considering) which has 1920x1200 (1600x1200) resolution capabilities, as well as supporting our current standard of 1400x1050. Both organisations will be switching to this projector very soon. http://www.projectorpoint.co.uk/projectoradvice.htm is a good website to visit for advice on projectors and terminology. For a full range of resolutions and their acronyms (XGA) try www.wikipedia.org

Resolution - It is generally accepted that 1400 x 1050 (SXGA+) has become the standard, certainly for the PAGB and Federations, as well as for most Clubs.

1400x1050 keeps the traditional photographic 4:3 format, and, despite what home movie enthusiasts think, the 4:3 format is likely to stay because we use both landscape and portrait format images - think how small an area, a portrait image would take up on your wide screen/HD television!

Recent releases of new projectors at 1920x1200(WUXGA) give us the capabilities for the 4:3 resolution to become 1600x1200 (UXGA) in the future. This has not as yet been discussed and I'm sure the PAGB will give early notice of any change. The SPF and other Federations, have already decided to go 1600x1200 in 2017. This was thought to be fairer for both Landscape and Portrait format images than going to widescreen.

Graphics Card/Laptop – It would be wise to ensure that any laptop you have, or intend to purchase, has a graphics card capable of producing the higher resolution.

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 have 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, then you will not be running the profile for your projector, you will be running it on the laptop instead and your projector will be running without a profile.

The cheapest way to do this, if you cannot afford a high resolution screen on your laptop, is to run on the 'projector only' setting (laptop is blank) you then only require a graphics card capable of running 1920x1200/1600x1200

ATI Radeon Graphics Cards are usually better for this level of control than NVidia Ge-Force, which are usually difficult to set up to give priority to anything other than the laptop screen, however newer cards are better. (nVidia cards are more popular at the moment due to better gaming performance for the money)

It is also worthwhile noting that you can't necessarily get all of the resolution options or settings on all of the connections and you will need to check what resolution each port on your projector and your laptop/graphics card will support hdmi/vga/dvi/mini display port. This information can be obtained by downloading a manual from the manufacturer's website before you buy.

Projectors capable of 1920x1200 (WUXGA) / 1600x1200 (UXGA) need a more powerful laptop. These are available but are predominantly gaming laptops, or are capable of running the new 4K (3840 X 2160). These are

currently more expensive, but as more 4K products become available, the price is likely to fall.

Unless you need to replace your laptop now, you would be advised to wait until you actually need the higher resolution.

http://4k.com/laptop/ for 4K info and reviews. Many Apple Macs also support these higher resolutions – again dependent on the type of connection you use to connect to the projector.

Projector Technology LCD, DLP or alternative. Most projectors are either LCD or DLP technologies they both have advantages and disadvantages.

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 pixelation) 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 about these at http://www.projectorpoint.co.uk/ProjectorLCDvsDLP.htm

Canon XEED projectors are neither LCD nor DLP but an amalgamation of both called LCoS, 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 (although the new range are impressively sharp). They have very accurate colour and very good contrast, black blacks, but not at the expense of burnt out whites, and loads of control for both colour and contrast.

The main downside is that LCoS technology is more expensive, and mainly only available from Canon in their XEED range - probably because it is a more specialist requirement.

Projector Specifics. The PAGB, and many Federations, currently have Canon XEED SX6 or SX7Mk2 Projectors, which have the bigger Adobe RGB colour space and are designed for slightly bigger rooms.

Often these are out of the budget for clubs, even with a grant. Most Clubs went for the SX80 (or equivalent) range. These have all been superseded by the new range of projectors and the PAGB have decided to purchase the XEED WUX500 for its events.

The **Canon XEED WUX500** (and the superseded WUX450) have, quality wise, moved on considerably since even the more expensive SX7 Canon range and 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 1920 x1200 (1600x1200), 1400x1050 is **still** supported by this projector. The WUX500 (& WUX450) have tilt shift lenses which almost negates the requirement for keystoning. This new lens technology makes these projectors considerably sharper than all of their predecessors.

See Page 5 for a very special PAGB discount on the Canon Xeed WUX500 from **ProjectorPoint.co.uk.**

Full details of the newest Canons can be found here at http://www.canon.co.uk/for_home/product_finder/multimedia_projectors/xeed/xeed_wux500/

Even if the WUX500 is out of your budget, this information should help you narrow down the choices. Optima and Epson appear popular alternatives, but vary greatly model to model, and don't have the LCoS technology.

Canon WUX450 and 500 Compared *- Both models have DVI-I, HDMI, mini D-sub and USB connections and 1.8x zoom tilt and shift lens with manual focus. Both screen size 40" to 300"*
WUX500 - 5000 lumens (3800 Eco); Noise 37 / 30dB (Full/Power save) and Wi-Fi.
WUX450 - 4500 lumens (3460 Eco); Noise 38 / 32dB (Full/Power save).

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 then calibrate it on this lower setting. This may be referred to as 'quiet' or 'power saving' mode but most of the time a reduced lumens is also quoted.

Remember to check that the connections you will need to use give you the flexibility to alter these settings and allow a variation in resolution settings e.g. Displayport/VGA/HDMI (HDMI particularly reduces the options available to you on some projectors.

Some ports do not support projection in a darkened room e.g. Presentation mode, which is mainly for office environments, which will be overly bright when used in a dark room). Check what each port on your projector and your laptop/graphics card will support – this can be found by downloading a copy of the manuals for the equipment you intend to purchase. Consider buying a new cable to allow you most flexibility (www.lindy.co.uk has a number of options available)

You may find a few reviews online, but unfortunately many of the magazine reviews are of limited use as they are not assessing for photography but more for movies, gaming or office presentations.

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.

See the next page for a Very Special PAGB Discount from CANON through ProjectorPoint.co.uk

Prices and availability of laptops change daily.
The following are supplied as a starting point only.

https://www.overclockers.co.uk/acer-aspire-e5-552g-15.6-fhd-amd-fx-8800p-amd-r7-m360-2gb-gddr3-gaming-laptop-lt-171-ac.html HD 1920x1080 screen and AMD Graphics Card – This Company is helpful on technical specs if you need advice

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 but with AMD graphics card (This card supports up to 3840x2160)

https://www.overclockers.co.uk/gigabyte-p35w-v4-cf2-15.6-fhd-ips-intel-core-i7-5700hq-nvidia-gtx970m-6gb-gddr5-gaming-laptop-lt-051-gi.html 3K WQHD+ IPS screen, nVidia Graphics & UHD / 4K Ready: Mini Display Port Out

http://shop.lenovo.com/gb/en/laptops/thinkpad/t-series/t540p/?cid=gb:sem|se|google|77145569237|uk_T540p_en|UK+IIP+ThinkPad+T+Series_Direct|109957727&s_kwcid=AL!4309!3!72933550847!b!!g!!%2Bthink%20%2Bpad%20%2Bt540p&ef_id=VRVPqwAABMBQeweH:20151202175928:s
3K Lenovo (2880x1620) nvidia graphics card

http://www.laptopsdirect.co.uk/toshiba-p50t-c-109-intel-core-i5-5200u-12gb-1tb-sshd-nvidia-geforce-gtx-950-psptue-00h005en/version.asp 4K Toshiba Laptop nvidia graphics card

https://www.overclockers.co.uk/msi-gs60-2qe-668uk-15.6-uhd-4k-intel-i7-5700hq-nvidia-gtx970m-3gb-gddr5-gaming-laptop-lt-207-ms.html 4K UHD, nVidia Graphics & - HDMI Multiple Ports: 1x (1.4) Support 4Kx2K Output - Mini Display Port(s): 2x 4Kx2K Output

http://www.acer.co.uk/ac/en/GB/content/model/NX.MUYEK.043 4K Acer UHD (3840x2160) nvidia graphics card - also at Laptops Direct

http://www.dell.com/uk/p/xps-15-9550-laptop/pd?ref=PD_OC 4K UHD 3840x2160 – with nvidia graphic cards

http://www.apple.com/uk/macbook-pro/specs-retina/ 15" Macbook Pro – Option available with AMD Graphics Card

I bet by now, if you're still reading, you wish you'd never started, but I hope this article has helped!

The PAGB, the SPF and Libby Smith have no connection with any of the companies mentioned in this article and no responsibility can be taken for any inaccuracies.

Canon XEED WUX500
Brighter thinking

A compact, high-performance WUXGA installation projector with versatile connections and a huge 1.8x Zoom lens.

The LCOS panel and AISYS technology provide unrivalled colour reproduction and when combined with Canon lens technology, the WUX500 offers a superior image quality.

A comprehensive 3 year hardware & 3 year lamp warranty gives you complete piece of mind (T&C's apply).

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http://www.canon.co.uk/for_home/product_finder/multimedia_projectors/xeed/xeed_wux5000/