

Back to Back Trial - Results

Trial Set-up:

A “Back to Back” trial was conducted in the Gallery Room at The Tythings on Thursday 13th December, prior to the monthly Focus Group meeting.

In attendance were Phil Morley, Steve Banks, Steve Carpenter, Rick Roberts, Matt Colclough and Keith Newton, all members of the Projector Sub-Committee.

Roger Hoyle from Windlesham & Camberley Camera Club attended, having brought their Canon XEED WUX500 projector to use in the trial. Apart from setting that projector up, he took no further part in the trial.

Keith Taylor loaned his Epson EB-990U projector, which Steve Banks setup for the trial.

Keith Taylor also loaned a Double Projector Stand that enabled the projectors to be positioned on a common horizontal axis and project the images to be viewed one above the other on to the clubs projector screen.

A set of 7 Test Cards and 15 Test Images provided by Keith Newton were loaded onto the club’s Laptop by Steve Banks who also provided a HDMI splitter to feed the Test Card and Test Image to both projectors simultaneously.

Photographs of the projected images were captured by Keith Newton using a tripod mounted Canon EOS 5D Mk 3 fitted with a EF 24-105mm lens. This was positioned to the left and slightly behind the projector stand, which resulted in the captured images having a minor parallax error. The camera was setup to save both RAW and JPEG files.

Sub-Committee members independently assessed the two projected images against each other as well as the image on the laptop, recording their observations on a record sheet. Scoring was out of 5, with provision to score higher if the projected image was considered to be better than that displayed on the Laptop.

The opportunity was also taken to briefly compare our current projector against the Epson EB-990U, but apart from photographing the projected images, no specific results were recorded.

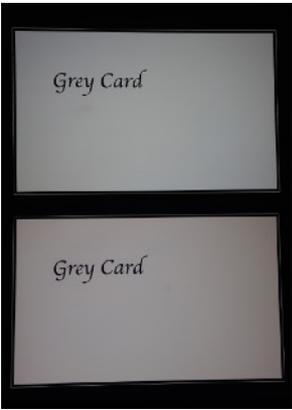
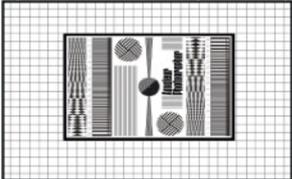
Trial Results:

The trial results are documented in the table below. The Epson EB-990U suffered a noticeable drift in black density during the trial.

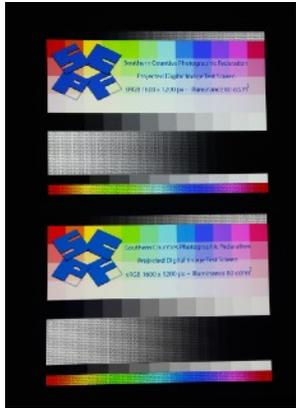
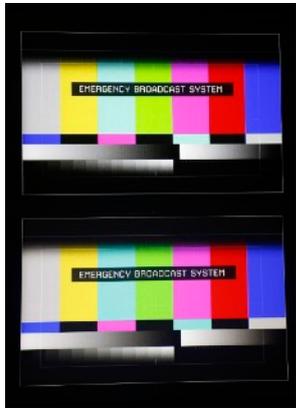
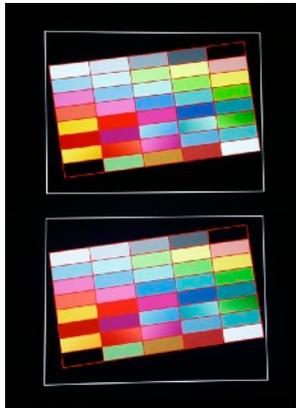
As shown in the table, the Canon XEED WUX500 significantly out performed the Epson EB-990U, being noticeably crisper, sharper, offers better blacks, excellent colour rendition and contrast range. The difference between the two projectors was significantly greater than expected

Total score for the Canon XEED WUX500 was 609 as against 451 for the Epson EB-990U out of a potential maximum of 660.

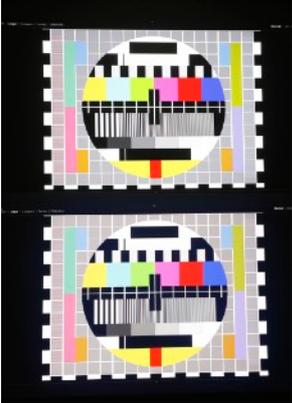
Back to Back Trial - Results

Top Projector Canon XEED WUX500		Test Card	Bottom Projector Epson EB-990U	
Individual Scores and Comments	Score	Image	Score	Individual Scores and Comments
<ul style="list-style-type: none"> - [5] Canon matches closer to the Laptop. - [5] Image looks pure grey and bright. - [4] Canon sharper and brighter; possibly a little too bright. - [4] Crisp, neutral, possibly cool. Good dark background. High contrast text. Grey is too bright. - [4] Verticals slightly less clean. - [3] Lighter & brighter than Laptop. 	25	<p>Test Card No 1</p> 	20	<ul style="list-style-type: none"> - [3] Cooler yet brighter in look. - [3] Image warmer, but looks very similar to Laptop. - [3] Colour balance to the Red, slightly fuzzy. - [4] Better rendering of Laptop, but not quite as crisp. Good uniformity. - [4] Grey looks very beige. - [3] Whiter than Laptop. Slightly less grey than the Canon.
<ul style="list-style-type: none"> - [5] Canon matches closer to the Laptop. - [5] Strong Blacks and Whites, very sharp. - [4] Canon sharper and brighter; possibly a little too bright. - [4] Sharp. - [5] Verticals fine now, very sharp overall. - [4] Much sharper Epson. Grid OK. Slightly stronger blacks. 	27	<p>Test Card No 2 (No Photo Comparison)</p> 	19	<ul style="list-style-type: none"> - [3] Cooler yet brighter in look. - [3] Washy image. Looks brighter than Laptop. Not as crisp as the Canon. - [3] Slightly fuzzy. - [4] Good sharpness and geometry. - [3] White conspicuously not white - [3] Grid OK. Blacks not as strong as Laptop.
<ul style="list-style-type: none"> - [5] Canon is sharper in words. Colours are stronger. - [5] Reds a bit more saturated. - [4] Colour and B&W brighter. No Bias. Too bright. - [5] Greyscale and colour rendering excellent. - [5] <i>no comments offered</i> - [4] Much sharper than the Epson. Reds not so vivid as Laptop. 	28	<p>Test Card No 3</p> 	18	<ul style="list-style-type: none"> - [2] Not as sharp as the Canon. Colours are weaker. - [3] Flesh tones look OK. - [3] Colour balance to the red. Only shadow is in the B&W. - [4] 98+100 on greyscale, possibly a calibration issue. Colours look fine. - [3] Reds lack impact. - [3] Acceptable sharpness from a distance, but quite fuzzy close up.

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Top Projector Canon XEED WUX500		Test Card	Bottom Projector Epson EB-990U	
Individual Scores and Comments	Score	Image	Score	Individual Scores and Comments
<ul style="list-style-type: none"> - [5] Good colours. Letters sharper. - [5] Looks Good. - [4] Sharper, no bias. - [5] Good rendering, sharper of course. - [5] <i>no comments offered</i> - [3] Strong blacks but colours lighter than laptop. 	27	<p>Test Card No 4</p> 	22	<ul style="list-style-type: none"> - [4] Not as good as Canon in colour and sharpens, but not far off. - [4] Better definition between black ends of the scale. - [3] Colour fine if slightly warm. B&W has red bias. - [5] Good rendering. Already commented on poorer sharpness than Canon. - [4] <i>no comments offered</i> - [2] Blacks not good and writing very fuzzy.
<ul style="list-style-type: none"> - [5] Good Blacks - [5] Good. - [4] Too bright. Sharper. - [5] Good rendering, sharper of course. - [5] White text on dark back ground shows very clearly. - [4] Reds a bit washed out. Strong black. Good contrast. Brighter than Laptop. 	28	<p>Test Card No 5</p> 	22	<ul style="list-style-type: none"> - [3] Blacks not as strong. - [4] Blocks of colour look very similar to Canon. - [3] Colour OK but too bright. - [5] Good rendering. Already commented on poorer sharpens than Canon. - [4] <i>no comments offered</i> - [3] Red a bit washed out. Other colours slightly more puncher, but blacks are poor.
<ul style="list-style-type: none"> - [5] Good colours and black throughout. - [5] Good. - [4] Colour too bright, B&W too bright. - [5] Nice black background. Colours good. - [6] Plus points for colour rendition. - [4] An acceptable projected image. Clean sloping grid lines. 	29	<p>Test Card No 6</p> 	25	<ul style="list-style-type: none"> - [4] Colours and blacks are weaker. - [5] Projected images very similar. - [4] Colour too bright just. B&W too bright just. - [4] Background not quite so black, Colours good. - [5] <i>no comments offered</i> - [3] Background more grey than Canon. Colours weaker.

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Top Projector Canon XEED WUX500		Test Card	Bottom Projector Epson EB-990U	
Individual Scores and Comments	Score	Image	Score	Individual Scores and Comments
<ul style="list-style-type: none"> - [5] Fair match to Laptop. Good colour range. Horizontal lines match Laptop. - [5] Good. - [3] Brighter, but Epson ahead here on colour. - [5] Crisper. Adjacent colours good. Geometry good. - [5] Definitely sharper of the two. - [5] Very close to laptop. 	28	Test Card No 7 	25	<ul style="list-style-type: none"> - [3] Slightly weaker colours. Horizontal lines not as sharp. - [5] Very similar. Better projected images. Slightly brighter than Laptop. - [4] Nearer to Laptop in colour than Canon. Slightly fuzzy. - [5] Adjacent colours good. Geometry good. - [4] <i>no comments offered</i> - [4] Not quite as punchy as Canon. Inside horizontals not so sharp.

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Top Projector Canon XEED WUX500		Test Image	Bottom Projector Epson EB-990U	
Individual Scores and Comments	Score	Image	Score	Individual Scores and Comments
<ul style="list-style-type: none"> - [5] Good blacks that match Laptop. - [5] Good sharpness. Contrast appears better. - [3] Brighter and cooler than laptop. Sharper than Epson - [5] Crisper. - [6] Shows detail on the pier fence better than Laptop. - [4] Lighter than Laptop, but acceptable greys. 	28	<p>Test Image 1</p> 	20	<ul style="list-style-type: none"> - [2] Light areas are too bright. - [3] B&W image shows a slightly warm cast. - [3] Nearer the laptop for neutrality. Not as sharp. - [4] Still good rendering of detail but not as crisp as Canon. - [5] <i>no comments offered</i> - [3] Even lighter than the Canon, especially in the sea wall.
<ul style="list-style-type: none"> - [5] Good tonal range, good blacks and sharp throughout. - [5] Good. - [4] Brighter and cooler than laptop. Sharper than Epson - [5] Crisper. - [4] Keyline slightly blobby up the sides. - [4] Blacks weaker than Laptop. 	27	<p>Test Image 2</p> 	21	<ul style="list-style-type: none"> - [3] Soft blacks. not sharp in some areas. - [4] Very similar. - [3] Nearer the laptop for neutrality. Not as sharp. - [4] Still good rendering of detail but not as crisp as Canon. - [4] <i>no comments offered</i> - [3] Blacks weaker than Canon. Figures not totally sharp.
<ul style="list-style-type: none"> - [4] Blacks not as good as Laptop, but B&Ws are good. - [5] Image crisper. - [4] Brighter and cooler than laptop. Sharper than Epson - [5] Full of high frequency detail, beautifully rendered. - [6] Superior on both sharpness and contrast. - [4] Crisp image. Clean B&Ws. 	28	<p>Test Image 3</p> 	20	<ul style="list-style-type: none"> - [3] Weaker B&Ws. - [3] Warm. - [3] Nearer the laptop for neutrality. Not as sharp. - [4] Poorer clarity quite obvious. - [4] <i>no comments offered</i> - [3] Not so crisp as Canon. Note: Laptop quite dark.

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Top Projector Canon XEED WUX500		Test Image	Bottom Projector Epson EB-990U	
Individual Scores and Comments	Score	Image	Score	Individual Scores and Comments
<ul style="list-style-type: none"> - [5] Colour match the same as Laptop. - [5] Good. - [4] Same as Epson. - [5] Full of high frequency detail, beautifully rendered. - [5] <i>no comments offered</i> - [4] Nice rendition. A little lighter than Laptop. 	28	<p>Test Image 4</p> 	22	<ul style="list-style-type: none"> - [2] Softer than Laptop. - [5] Very similar. - [4] Same as Canon. - [4] Poorer clarity quite obvious. - [5] <i>no comments offered</i> - [2] Quite fuzzy, especially in lower vegetation.
<ul style="list-style-type: none"> - [5] Good match and sharp. - [5] Good. - [4] Laptop darker, but sharp. - [5] Textures more apparent because of sharpness. - [5] <i>no comments offered</i> - [4] Acceptable, but lighter than laptop. 	28	<p>Test Image 5</p> 	21	<ul style="list-style-type: none"> - [4] Not as sharp and weaker colours. - [4] Very similar. - [3] Laptop darker. Slightly fuzzy. - [4] Poorer clarity quite obvious. - [4] A bit lacking in contrast. - [2] Not so warm. Details fuzzy.
<ul style="list-style-type: none"> - [5] Good tonal range and sharp. Good match to Laptop. - [4] Whites close to burnout in places. - [4] Brighter than Laptop. - [5] All good. Whites properly rendered. Crisp. - [5] Hair detail shows up better, especially beard. - [4] Brighter and crisper than Epson. 	27	<p>Test Image 6</p> 	22	<ul style="list-style-type: none"> - [3] Not as strong in tonal range. - [5] Good. - [3] Slightly fuzzy. Reds less saturated. - [4] Good whites and colours. Not quite so crisp. - [4] <i>no comments offered</i> - [3] White framing line quite grey.

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Top Projector Canon XEED WUX500		Test Image	Bottom Projector Epson EB-990U	
Individual Scores and Comments	Score	Image	Score	Individual Scores and Comments
<ul style="list-style-type: none"> - [4] Good tonal range. - [5] Good. - [3] Brighter than Laptop. - [5] Very sharp, especially on edges of saturated areas. - [5] <i>no comments offered</i> - [4] Quite good compared to Laptop. 	26	<p>Test Image 7</p> 	20	<ul style="list-style-type: none"> - [3] Brightly in the highlights. - [4] OK. - [3] Brighter than Laptop. Almost identical to Canon. - [4] <i>no comments offered</i> - [4] Water highlights lack impact. - [2] Less distinct than Canon. Washy!
<ul style="list-style-type: none"> - [4] More detail. Good highlights. - [5] Sharpness and contrast excellent. - [3] Too bright, too cool. Sharp. - [5] Excellent high frequency rendering. - [5] Sharpness is everything. - [4] Good rendition. Details sharp. 	26	<p>Test Image 8</p> 	19	<ul style="list-style-type: none"> - [3] Too bright in the highlights. - [4] Not quite as good. Detail on Laptop better. - [2] Brightness not as bad as Canon, but fuzzy. - [4] <i>no comments offered</i> - [4] <i>no comments offered</i> - [2] Quite light - much lighter than laptop. Details fuzzy.
<ul style="list-style-type: none"> - [5] Good tonal range. Good Blacks and highlights. Sharp. - [4] Whites close to burnout. - [4] Too bright, too cool. Sharp. - [5] Excellent. Great contrast. - [4] Far purer greyscale. - [4] Strong B&Ws. Quite crisp. Note: Laptop a bit dark. 	26	<p>Test Image 9</p> 	18	<ul style="list-style-type: none"> - [3] Weaker tonal range in B&Ws. Not as sharp in rail tracks. - [4] OK. - [2] Fuzzy. Red bias. - [4] Good overall. Contrast sufficient but less than Canon. - [3] Neither projector shows track ballast detail as well as Laptop. - [2] B&Ws not crisp. Detail in bush by building poor. Note: Laptop a bit dark.

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Top Projector Canon XEED WUX500		Test Image	Bottom Projector Epson EB-990U	
Individual Scores and Comments	Score	Image	Score	Individual Scores and Comments
<ul style="list-style-type: none"> - [4] Much nearer to laptop. Detail in blacks. - [5] Contrast better. - [4] Similar to Epson. More contrast though too bright. - [5] Excellent. Great contrast. - [5] <i>no comments offered</i> - [4] Leaf colours are good. 	27	<p>Test Image 10</p> 	21	<ul style="list-style-type: none"> - [2] A lot brighter in highlights. - [4] OK. - [4] Fuzzy, but not a problem with this one. - [4] Good overall. Contrast sufficient but less than Canon. - [5] <i>no comments offered</i> - [2] Leaf colours not so strong.
<ul style="list-style-type: none"> - [5] Good match. Sharp. - [5] Good. - [3] Too bright. - [5] Excellent. Better sharpness and contrast. - [5] <i>no comments offered</i> - [5] Very close to laptop. 	28	<p>Test Image 11</p> 	24	<ul style="list-style-type: none"> - [3] Weaker colours. Sharpness soft. - [4] OK. - [4] Better than Canon in colour. Not in sharpness. - [4] Good overall. Contrast sufficient but less than Canon. - [5] <i>no comments offered</i> - [4] Blacks not so strong.
<ul style="list-style-type: none"> - [5] Good match. Burnin at corners noticeably sharper. - [5] Good. - [3] Possibly too sharp and contrasty. - [5] Excellent. Better sharpness and contrast. - [5] <i>no comments offered</i> - [5] Very close to laptop. Good vignette. 	28	<p>Test Image 12</p> 	21	<ul style="list-style-type: none"> - [2] Softer colours. Not as sharp. - [5] Good. Less noticeable warm cast. - [4] Better than Canon all round. - [4] Good overall. Contrast sufficient but less than Canon. <i>Note: Black background getting lighter?</i> - [3] Feels washed out overall. - [3] Poor colour. Vignette a lot weaker.

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Top Projector Canon XEED WUX500		Test Image	Bottom Projector Epson EB-990U	
Individual Scores and Comments	Score	Image	Score	Individual Scores and Comments
<ul style="list-style-type: none"> - [5] Good match to laptop. Contrast good, Words sharper. Good blacks. - [5] Good. - [5] OK all round. - [5] Better contrast. - [5] <i>no comments offered</i> - [5] Close to Laptop. 	30	<p>Test Image 13</p> 	18	<ul style="list-style-type: none"> - [2] Soft image. Flatter image. Too light. No highlights. - [4] <i>Image getting lighter now.</i> Losing contrast. - [3] Very fuzzy close up. Lacks contrast. - [4] <i>Black level getting lighter?</i> - [3] Generally murky. - [2] Very washy compared to Canon.
<ul style="list-style-type: none"> - [5] Good match. Good blacks. Good contrast. Good everything. - [5] Good. - [6] Spot on. Better than the Laptop. - [5] Sharper, higher contrast. A lot blacker. - [5] <i>no comments offered</i> - [5] Good rendition. 	31	<p>Test Image 14</p> 	13	<ul style="list-style-type: none"> - [1] Poor - [3] B&W definitely showing lack of black now. - [3] Bit flat. Lacks contrast. - [3] Black seems to be going grey. - [2] Very pale. <i>General black levels have drifted since start of evening.</i> - [1] Blacks not at all acceptable! <i>Projector appears to have got lighter, lost blacks during the latter part of the trial.</i>
<ul style="list-style-type: none"> - [5] Good match. Good highlights. Sharp. - [5] Good. - [4] Not much twixt the two. - [5] Sharper, higher contrast. A lot blacker. - [5] <i>no comments offered</i> - [5] Good rendition. Slightly lighter than Laptop. 	29	<p>Test Image 15</p> 	20	<ul style="list-style-type: none"> - [3] Not bad, but blacks are weaker. Highlights are lighter. - [3] Black border <u>not</u> black anymore. - [4] Not much twixt the two. - [4] Smaller areas of black so deficiency not so obvious. - [4] <i>no comments offered</i> - [2] A bit muddy!!