

THE

GREAT



PAPER CHASE

PermaJet Mercury Ultra White Matt Canvas

PermaJet have upgraded and rationalised their canvas range and in doing so have added the brand new media which is the subject of this review. The range is now named after the planets and fittingly the first one we come to after leaving the Sun is Mercury.

Mercury Ultra White Matt Canvas has a brightened coating, dropped onto a 405gsm Oxford Twill backing (ie a twinned warp with a thicker single weft in the canvas weave). As well as the new canvas, PermaJet also launched a new varnish at photokina and so this is tested alongside the canvas. The varnish is called PermaPROtect and is available in three finishes: gloss, satin and matt. They are aqueous varnishes, intended for brush and roller application (but roller is preferred).

We explored the use of both Epson Photo Black ink and the preferred Matt Black ink. These tests should have allowed us to measure the gamut volumes and the effect of the varnish on gamut volume. Unfortunately the i1 Pro spectro does not take kindly to measuring varnished targets from the profiler software and our efforts in this department were thwarted once again! We did get one gamut measurement that we were confident with and this indicated a gamut volume in the unvarnished state using PK ink as 612,407 which is a high value by any standard.

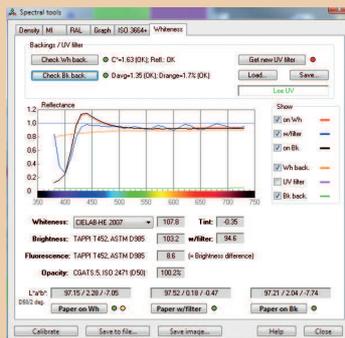
Testing

Testing was carried out using PermaJet's profile (from their website) along with an Epson 4900 using matt black ink. The audit target was measured before and after a single coat of varnish for all the relevant parameters. Varnishing improved the statistics considerably (as was expected) and extremely pleasing data were obtained after a single coating of gloss.

Base White Measurements

The base coating is very bright (hence the 'ultra' tag) indeed it placed tenth in the database on both Fluorescence and Brightness readings. The varnish had a small influence on the whiteness parameters and did not kill off any brightness enhancement from the OBAs. This is desirable, there is no point in selecting a brightened media for the extra punch and then killing it with a UV rejecting varnish. The absence of any effect was detected both from the spectral data and also by examining the coated/uncoated material in the UV booth.

In summary then this is an ultra bright media and one of the brightest around, canvas or otherwise.



Base Colour (D50/2)

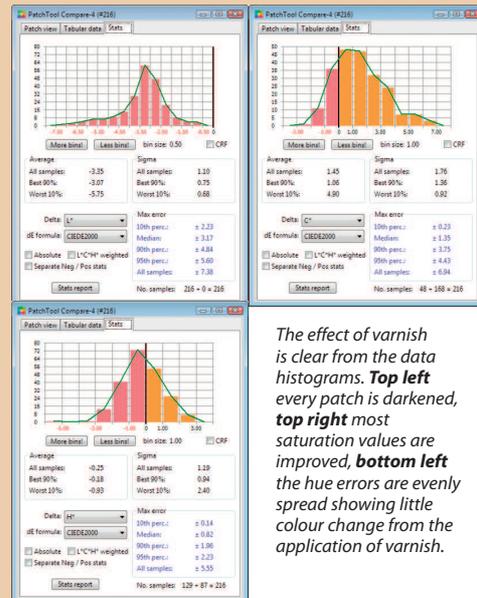
Paper Whiteness	Whiteness	Tint	Fluorescence	Brightness	Base Colour (D50/2)		
					L	a	b
Varnished	107.6	-0.28	11	103	97	2.22	-6.98
Unvarnished	108.9	-0.2	10.4	104	97.4	2.25	-7.41

Whiteness Report21.xlsx

PermaPROtect Varnish

We tested the gloss variant which came in a 2.5l tin. The claimed coverage is about 40 square metres. Application was trivially simple. We dribbled three tablespoons of the well-stirred varnish into the middle of an A3 print and then gently pushed it about the surface using no downward pressure at all. We used the PermaJet High Density foam roller; do not be tempted to use anything else, the quality of the foam is important to prevent 'foaming' of the varnish. We started with a dry roller and so much of the 30ml of varnish was 'lost' into the roller. A second 30ml was enough to cover an A2 print with the pre-wet roller. The moral is obvious, if you coat one print at a sitting the usage will be higher than if you are coating numbers of prints. A single A3 would thus cost about 60p for varnish but this would fall perhaps to as low as 20p for more efficient use. This estimate is in accord with the PermaJet claim of 40m² which would equate to about 17p for an A3.

Overall we liked the varnish a lot, very simple to use and it left us with a very pleasing gloss to the finished print (an attribute we understand many others have also commented favourably on). The water-base made for very easy cleaning of the rollers afterwards and no unpleasant smells. We understand that PermaJet has concluded longevity testing of the varnish via an outside, UK laboratory and no degradation was measured after an equivalent of 85 years of exposure.



The effect of varnish is clear from the data histograms. **Top left** every patch is darkened, **top right** most saturation values are improved, **bottom left** the hue errors are evenly spread showing little colour change from the application of varnish.



Colour Audit

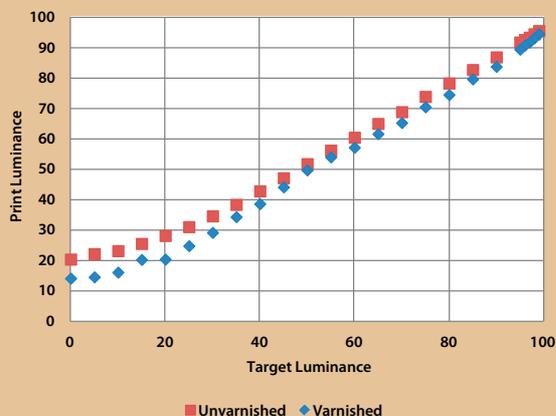
The audit statistics are tabulated. The varnish changes the quality of the data from rather ordinary to extremely good; few canvas media achieve this level of reproduction accuracy especially when OBAs are involved. Even the OBA-vulnerable skin tones held up. The only patch values that fell back from the overall very high standard were the deep black and darkest tones, like all matt substrates they cannot hold the high Dmax values obtainable with a glossy paper media. For all that an average of around 3.5 is very good for the unvarnished state and outstandingly so at 2.55 for the varnished product (anything below 3.0 we regard as a bonus!). As you would expect the HiGAM patches suffered the most, the matt surface cannot quite reach so far out into the gamut and it was the chroma (saturation) component which dragged the average down.

We also made some real prints which were also varnished. They looked very rich indeed and would stand alongside the best. We particularly like the effect of the varnish coating; it brightened the image, increased the depth of the blacks but retained the essential structure of the canvas weave and did not make it over-glossy or plastic they way that some varnishes can.

Monochrome

We extracted separate monochrome data from prints made using the PermaJet profile. The Dmax was a moderate 1.73 after varnishing, not among the top fliers but more than adequate in a print. The metamerism as measured by Colour Inconstancy Index was very low at 0.8. The PermaJet profile mapped the greys a little closer to neutral than the white point and everything was pretty tidy and correct. The maximum black that remained detectable in a print was 20 RGB points in the unvarnished state and this drifted to 25 points after varnishing. The highlights were unchanged by the varnish at 249 points – about normal for a canvas, the surface structure always 'loses' some detail at the high end. The shadows flattened out coming into 20% luminance for unvarnished and 14% after varnishing. The mid grey was placed within 0.3% of the 50% mark with varnish applied. Overall then these were near flawless data for monochrome and the media could be used with complete confidence for your black and white work.

Greyscale Response



Statistics			Weighted Component Errors			
Patch Set	Avg ΔE_{00}	MEDIAN	$\Delta L/w$	$\Delta C/w$	$\Delta H/w$	
All 216	3.86	3.40	2.19	-1.23	0.22	
Fogra V3	3.57	3.38	2.78	-0.53	0.49	
CC 24	3.58	3.40	1.68	-1.01	-0.25	
HiGAM	4.97	3.93	2.34	-3.03	-0.27	
Skin Tones	3.30	3.17	0.87	-2.29	-1.57	
Greys	4.01	3.34	1.72	1.84	1.19	
APJ_OEM4900MK_MercuryCanvas_WCRW_novarnish SDA.xlsx						
Dmax	CII	Gamut Volume				
1.53	0.66	NA				
Whiteness	Tint	Fluorescence	Brightness	L	a	b
108.9	-0.2	10.4	104	97.4	2.25	-7.41

Statistics			Weighted Component Errors			
Patch Set	Avg ΔE_{00}	MEDIAN	$\Delta L/w$	$\Delta C/w$	$\Delta H/w$	
All 216	2.80	2.58	-0.56	-0.70	0.04	
Fogra V3	2.05	1.83	0.26	0.27	0.28	
CC 24	2.62	2.65	-1.01	-0.73	-0.22	
HiGAM	3.87	2.81	0.04	-2.43	-0.79	
Skin Tones	3.15	3.14	-2.22	-1.61	-0.95	
Greys	3.44	3.12	-0.94	1.61	1.09	
APJ_OEM4900MK_MercuryCanvas_WCRWvarnished SDA.xlsx						
Dmax	CII	Gamut Volume				
1.73	0.8	NA				
Whiteness	Tint	Fluorescence	Brightness	L	a	b
107.6	-0.28	11	103	97	2.22	-6.98

Good statistics for a matt media are obtained (top table) but they are much improved by the application of a coat of varnish with almost an extra stop being added to the Dmax. For a brightened media the skin tone accuracy is notably good. The metamerism is particularly low, a bonus for the monochrome specialist.

Visit the website for prices, sizes and the archival certification reports:

www.permajet.com

OVERALL

A good set of data all round, a nice new media with especially bright characteristics and a varnish that matches anything we have tested to date – buy it and try it!