# Digital camera testing group

The aim of this group is to assess support for the use of a new camera quality metric, called the optimum print width (OPW), that could be measured by most camera users. This would be of assistance in optimizing camera controls and, if adopted by reviewers, provide new customers with more meaningful information. Data provided is presented in good faith and no responsibility is accepted for its accuracy. Welcome to our group!
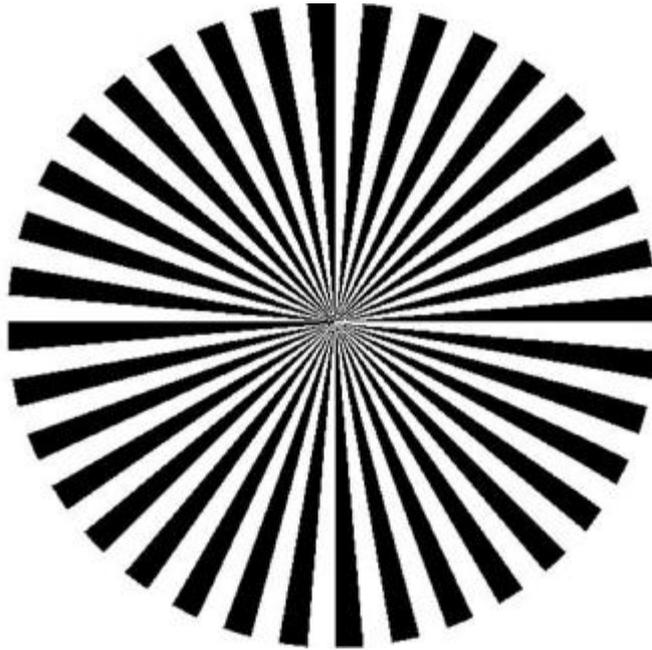
Instructions

1. Print these instructions and display an image of the above test pattern on a laptop at maximum size filling the screen and then record it with your camera at a range of say 1000 times the focal length of your camera lens eg.1000x7mm. Smaller magnifications eg x500 can be used if short of space or a print of the pattern can be used outside.

2. Load the recorded image into your laptop using Photoshop or equivalent software.

3. Measure the full width of the image D of which the test pattern forms a very small part using the scale in Photoshop.

4. Zoom up the image so that the test pattern occupies most of the screen and measure the diameter, d, of the central unresolved circular grey area using the same Photoshop scale. This area should include all signs of aliasing where the lines may no longer be straight.

5. The optimum print width (OPW), where the camera resolution is matched to that of the eye (5 c/mm) when the print is viewed at arm's length, is given by: **OPW = 2.3D/d mm**.

6. The spatial frequency bandwidth (SFB), or resolution, is given by: **SFB = 5(OPW)/D c/mm**

7. The OPW is a useful parameter to adjust settings and compare the performance of different cameras since it takes into account lens and sensor quality as well as the number of pixels. The larger the OPW the better the camera performance.

8. A value index (VI) is the price of the camera/OPW measured in £/mm. This is just for fun!

9. Use a tripod and self-timer and avoid stray reflections from the display/print surface.

10. Please email camera details including, Model, No. of pixels, price, zoom range and full digital image recorded (of which the test pattern is but a small part) and I will return to you your OPW value and the latest data available on other cameras. There is no need for you to carry out the above calculation- just send me your complete image without cropping and I will do the calculation.

11. If you wish to apply the same test to a film camera you may need a microscope or eyepiece to examine the negative to determine d. If in difficulties email: lionelbaker@ntlworld.com or telephone me on 01689 815863.

Many thanks.   Lionel Baker 19/09/04