

Lens Sharpness Test Card

User guide

The best way to find the sharpest aperture of your lens or any chromatic aberrations is to use a **Lens Sharpness Test Card**.

Start by pinning the 'Lens Sharpness Test Card' to a flat wall or pin-board. Using a tri-pod, mount your camera parallel to the card. If using a zoom lens, zoom to the longest focal length and compose the card in the viewfinder to fill the screen with the centre of the lens aligned with the card's centre point.

For the best results the card should be evenly lit. Your camera should also be set to shoot RAW files with the lowest ISO setting. Set your camera to manual focus so that there is no danger of a focus shift between shots. You will need a shutter release cable to ensure there is no camera shake or use the camera's self-timer if you do not have one of these. If your camera is also fitted with an image stabilizer, this should be turned off.

Set your camera to 'Aperture Mode' and shoot the test card at each aperture setting for your lens. Use Photoshop or your preferred image editing software to compare the results. The most obvious differences will be at the edges, numbers and lettering so zoom in to 100% pixels and look closely at the detail resolution in this area. By checking each image you can determine your lens's best aperture for the sharpest results. This is handy to know when pin-point sharpness is crucial in your photography.

You can also check the amount of purple fringing visible at the edges of the star shapes and distortion of lines. These can be corrected using the Lens Correction options in Photoshop CS2 or later.

What results should you expect?

Most lenses are sharpest around their middle apertures, aberrations in lenses tend to show up at the widest apertures like f/4 and lenses lose sharpness at the smaller apertures due to diffraction (the bending of light rays as they pass through the small aperture opening).

Telephoto zoom lenses are usually sharper in the middle or the short end of their focal length range. For example, if you have a 80-200 zoom, it is likely to be sharpest at 80 and 135mm, and less sharp at 200mm. Wide angle zoom lenses are usually sharpest and the medium and long end of their focal length range. At 10-22mm zoom lens will probably be sharpest at 15 and 22mm and less sharp at 10mm. When it comes to ghosting/fringing, lenses will vary quite a bit. Zoom lenses are usually worse than prime lenses due to their complex designs.

Some lenses are the exception to the above rules. Using the 'Lens Sharpness Test Card' will help you to determine your lens's best properties to get the most out of your lens.

