

PHOTOGRAPHER'S GUIDE TO THE NIKON COOLPIX P500

When you are setting shutter speed, the fractions of a second are easy to read because they are displayed as standard fractions, such as 1/5 or 1/200. Some of the longer times are a bit harder to read; the camera displays them using quotation marks. So, for example, 2 seconds is displayed as 2", and 1.3 second is displayed as 1.3."

One feature of the shutter speed display on the Coolpix P500 is a bit confusing, at least to me. Some of the camera's shutter speeds are displayed as fractions whose denominators are decimal numbers, such as 1/1.3. I would have trouble understanding that number without doing some arithmetic, so here is a brief chart that converts these few values into terms that may be easier to comprehend:

1/2.5	0.4 or 2/5 second
1/1.6	0.625 or 5/8 second
1/1.3	0.8 (actually 0.77) or 10/13 second

Aperture Priority Mode



Aperture Priority mode is the inverse of Shutter Priority. You activate it by turning the mode dial to the A setting. Before discussing the settings for this mode, let's talk about aperture and why you would want to control it. The camera's aperture is a measure of the current width of its opening that lets in light to create the image. This width is measured numerically in f-stops. For the Coolpix P500, the range of f-stops is from f/3.4 (wide open) to f/8.0 (most narrow). The amount of light that is let into the camera to create an image is controlled by the com-

bination of aperture (how wide open the lens is) and shutter speed (how long the shutter remains open to let in the light).

For some purposes, you may want to control how wide open the aperture is, but let the camera choose the corresponding shutter speed, so you can control the depth of field. Depth of field is a measure of how well a camera is able to keep multiple objects or subjects in focus at different distances (focal lengths). For example, say you have three friends lined up so you can see all of them, but they are standing at different distances—five, seven, and nine feet (1.5, 2.1, and 2.7 meters) from the camera. If the camera's depth of field is quite narrow at a particular focal length, such as five feet (1.5 meters), then, in this case, if you focus on the friend at that distance, the other two will be out of focus and blurry. But if the camera's depth of field when focused at five feet is broad, then it may be possible for all three friends to be in sharp focus in your photograph, even if the focus is set for the friend at five feet.

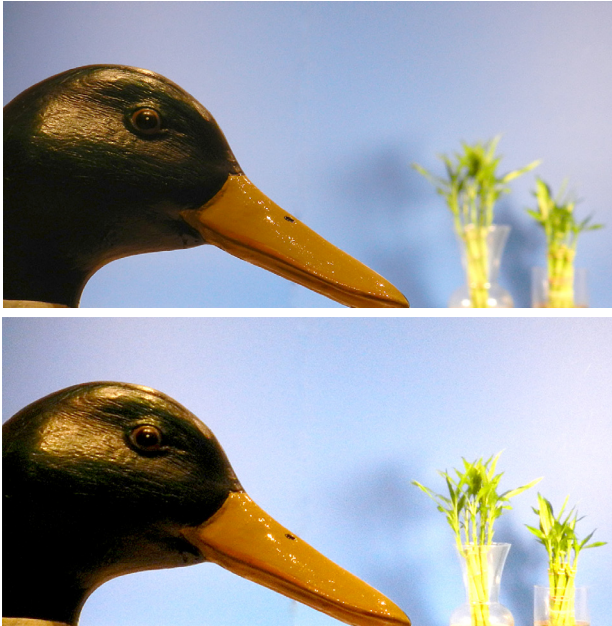
What does all of that have to do with aperture? One of the rules of photographic optics is that the wider the camera's aperture is, the smaller its depth of field is at a given focal length. So in our example above, if you have the camera's aperture set to its widest opening, $f/3.4$, the depth of field will be relatively small, and it will be possible to keep fewer items in focus at varying distances from the camera. If the aperture is set to the narrowest, $f/8.0$, the depth of field will be greater, and it will be possible to have more items in focus at varying distances.

It can be difficult to illustrate this effect with a camera like the Coolpix P500, for a couple of reasons. First, the image sensor, where the light is gathered to form the image, is relatively small, which results in the depth of field being quite wide. Second, the largest aperture available is $f/3.4$, whereas some compact cameras have lenses that open as wide as $f/2.0$, or even $f/1.8$. With such cameras it is easier to achieve a blurred background, because the depth of field can be quite narrow at such a wide aperture. With the P500, the widest aperture you can

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shoot with is $f/3.4$, and that aperture is available only when the lens is zoomed back to its extreme wide-angle setting, where depth of field is greater. If you zoom the lens in to a telephoto setting, the maximum aperture decreases steadily. At the maximum zoom range, the widest aperture available is only $f/5.7$, which is not far from the narrowest aperture of $f/8.0$.

However, by setting up a shot with fairly extreme conditions, I created the two images below to illustrate the different depths of field that are achieved with two different apertures. For both images, the camera was about 11 inches (28 cm) away from the wooden duck head, and the lucky bamboo plants were about 9 feet (2.75 m) further past the duck head. The lens was zoomed in slightly, to 46mm. I set the P500 to shoot in Aperture Priority mode. The top image was taken at $f/4.2$, the widest aperture available at that focal length; the bottom one was taken at $f/8.0$, closed all the way down. In both cases, I set the AF Area Mode to Manual and focused on the duck head by moving the focus brackets over the head.



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As you should be able to see, in the top image, with the wider aperture, the lucky bamboo plants appear quite blurred because the depth of field is relatively narrow at that setting. In the bottom image, on the other hand, the bamboo plants are in relatively sharp focus because the depth of field is greater at the narrower $f/8.0$ aperture.

If you want to have the sharpest picture possible, especially when you have subjects at varying distances from the lens and you want them to be in focus to the greatest extent possible, then you may want to control the aperture, and make sure it is set to the highest number (narrowest opening) possible.

On the other hand, there are occasions when photographers prize a narrow depth of field. This situation arises often in the case of outdoor portraits. For example, you may want to take a photo of a person standing outdoors with a background of trees and bushes, and possibly some other, more distracting objects, such as a swing set or a tool shed. If you can achieve a narrow depth of field, you can have the person's face in sharp focus, but leave the background quite blurry and indistinct. This effect is sometimes called "bokeh," a Japanese term describing an aesthetically pleasing blurriness of the background.



You have undoubtedly seen images using this effect. In this situation, the blurriness of the background can be a great as-

set, reducing the distraction factor of unwanted objects and highlighting the sharply focused portrait of your subject. The example on the previous page shows a flower on the left, in fairly sharp focus, with the background heavily defocused; this image was shot in close-up mode with the lens very close to the foreground, resulting in a very narrow depth of field.

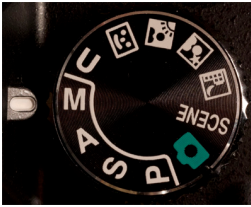
So with our awareness of the virtues of selecting an aperture, on to the technical steps involved. Once you have moved the mode dial to the A setting, the next step is quite simple. Aim the camera at your subject, and use the command dial (the ridged wheel below the power switch) to change the aperture. The number of the f-stop will appear inside a yellow rectangle at the bottom right of the screen. The shutter speed chosen by the camera will show up also, to the left of the aperture.



One more note on Aperture Priority mode that might not be immediately obvious and could easily lead to confusion: As I noted briefly above, not all apertures are available at all times. In particular, the widest-open aperture, $f/3.4$, is available only when the lens is zoomed out to its wide-angle setting (moved toward the letter W). At higher zoom levels, the widest aperture available is $f/5.7$. To see an illustration of this point, here is a quick test. Zoom the lens out by moving the zoom lever all the way to the left, toward the W setting. Then select Aperture Priority mode and select an aperture of 3.4 by turning the

command dial all the way to the left, the direction for lower f-numbers. Now zoom the lens in by moving the zoom lever to the right, toward the T setting. If you try to set the aperture to $f/3.4$ after the zoom action is finished, you will see that the lowest aperture number you can set is $f/5.7$, because $f/5.7$ is the widest aperture available on the P500 at the telephoto zoom level. (The aperture will change back to $f/3.4$ if you move the zoom back to the wide-angle setting.)

Manual Exposure Mode



The Coolpix P500 has a fully manual mode for control of exposure, which is one of the great features of this camera. Not all compact cameras have a manual exposure mode, which is a tremendous boon for photographers who want to exert full creative control over exposure decisions.

The technique for using this mode is not too far removed from what we discussed in connection with the Aperture Priority and Shutter Priority modes. To control exposure manually, set the mode dial to the M indicator. You now have to control both shutter speed and aperture by setting them yourself. This situation presents a small problem, in that there is only one control available—the command dial—for changing both of these values. The solution to this problem is that you can toggle the function of the command dial by pressing the exposure compensation button, which is the right direction button on the multi selector. (This button is available for this purpose because you cannot control exposure compensation in Manual exposure mode.)