

Topic no 39**Comparative Imaging**

Comparative imaging can be better understood with the perfect knowledge of lenses and their function and usage. There are different types of lenses.

Types of lenses**1. Fixed Focal Lens/ Prime lens**

Also referred to as a "**prime lens**," the fixed focal length lens (FFL) has a focal length that is not adjustable. Photographers are unable to zoom in and out on a particular subject when using a prime lens. Often used as a term opposite of zoom, prime lenses have only one focal length, with fewer moving parts and a simpler lens formula. A fixed focal length lens is less likely to produce images with chromatic aberrations (fringes of color along boundaries of dark and light parts of an image). FFL lenses come in all focal lengths, from a wide-angle lens to the longer telephoto lenses.

2. Zoom lens

Zoom lenses have variable focal lengths, and are extremely useful. Some can range between a wide-angle and a telephoto (i.e. 24 to 300mm) so you have extensive versatility for composition. The trade off with zoom lenses is the aperture. Because of the number of elements required in constructing these lenses, they have a limited ability to open up and allow in light. So unless you're prepared to outlay a lot of money, you will give up lens speed.

3. Wide angle lens

A wide-angle has a shorter focal length (10 thru 42mm) when compared to a standard lens. This enables you to capture a comparatively wider angle of view. A wide-angle lens is a natural choice for capturing outdoor landscapes and group portraits. In fact, wide angle can be the only way to capture the complete setting without omitting any important

elements in the image. In this manner, you can use wide-angle lenses to capture a deep DOF.

4. Tele-photo lens

Telephoto lenses (100mm - 800mm) can provide you with a narrow field of view. These long lenses enable you to compress a distance (and compress the sense of depth, as well) and pick out specific objects from far off. They have a strong resolving power and an inherent shallow DOF, where the slightest lateral moment can take a subject out of view. Telephoto lenses are great for wildlife, portrait, sports, and documentary types of photography. They enable you to capture subjects from hundreds of feet away.

5. Macro/Micro photography lens

Macro lenses are used for close-up or “macro” photography. They range in focal lengths of between 50-200mm. These lenses obtain razor-sharp focus for subjects within the macro focus distance, but lose their ability for sharp focus at other distances. These lenses enable the photographer to obtain life-size or larger images of subjects like wasps, butterflies, and flowers.

6. Process lens

Process lenses are lenses which are primarily designed for the graphics industry. They are flat field lenses which are optimized for 1-1 reproduction. That being said, many of the process lenses are excellent large format landscape lenses if stopped down. Normally a process lens will be mounted in a barrel.