Introduction to Photography

Topic 4 - The SLR

Learning Outcomes

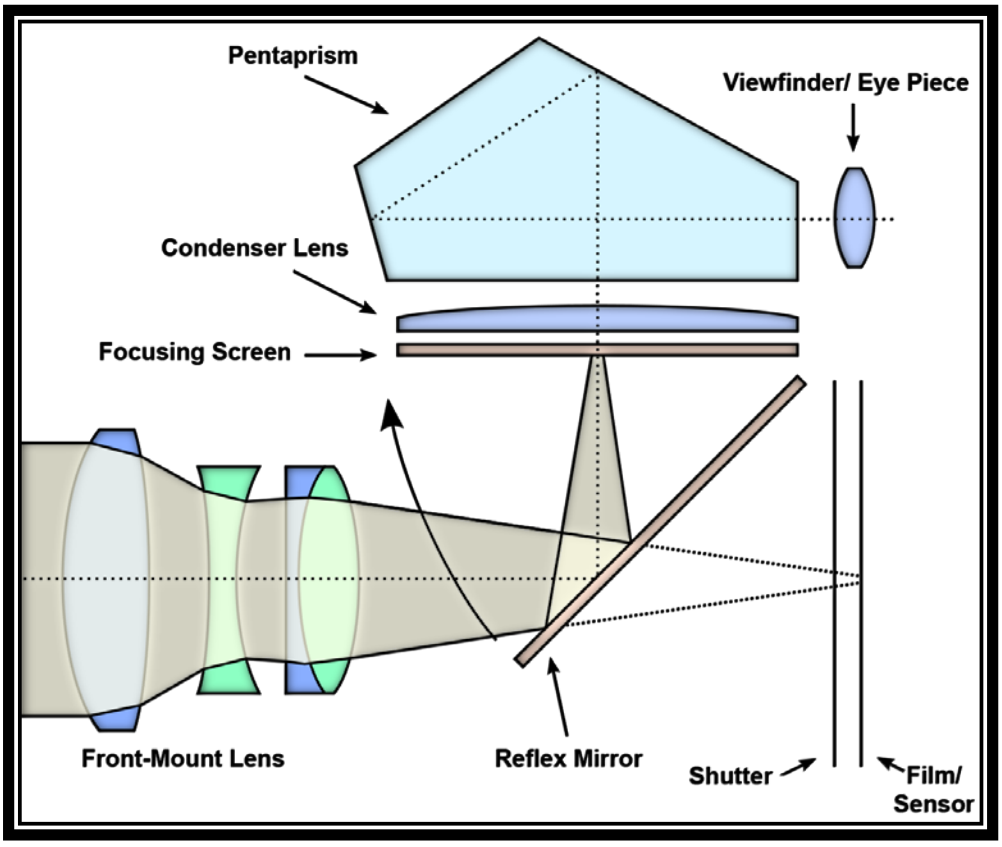
We will be going through an overview of what happens within an SLR and comparing it to other types of cameras. By the end of this video you will have a better understanding of the inner workings of an SLR and be able to label a diagram of the various parts within a camera.

The SLR

SLR stands for Single Lens Reflex. Let us begin by taking a detailed look at the structure of an SLR.

An SLR is made up of the following components:

1. **Lens elements**
2. **Reflex Mirror**
3. **Shutter**
4. **Film/ sensor**
5. **Focusing screen**
6. **Condenser lens**
7. **Pentaprism**
8. **Eye Piece**

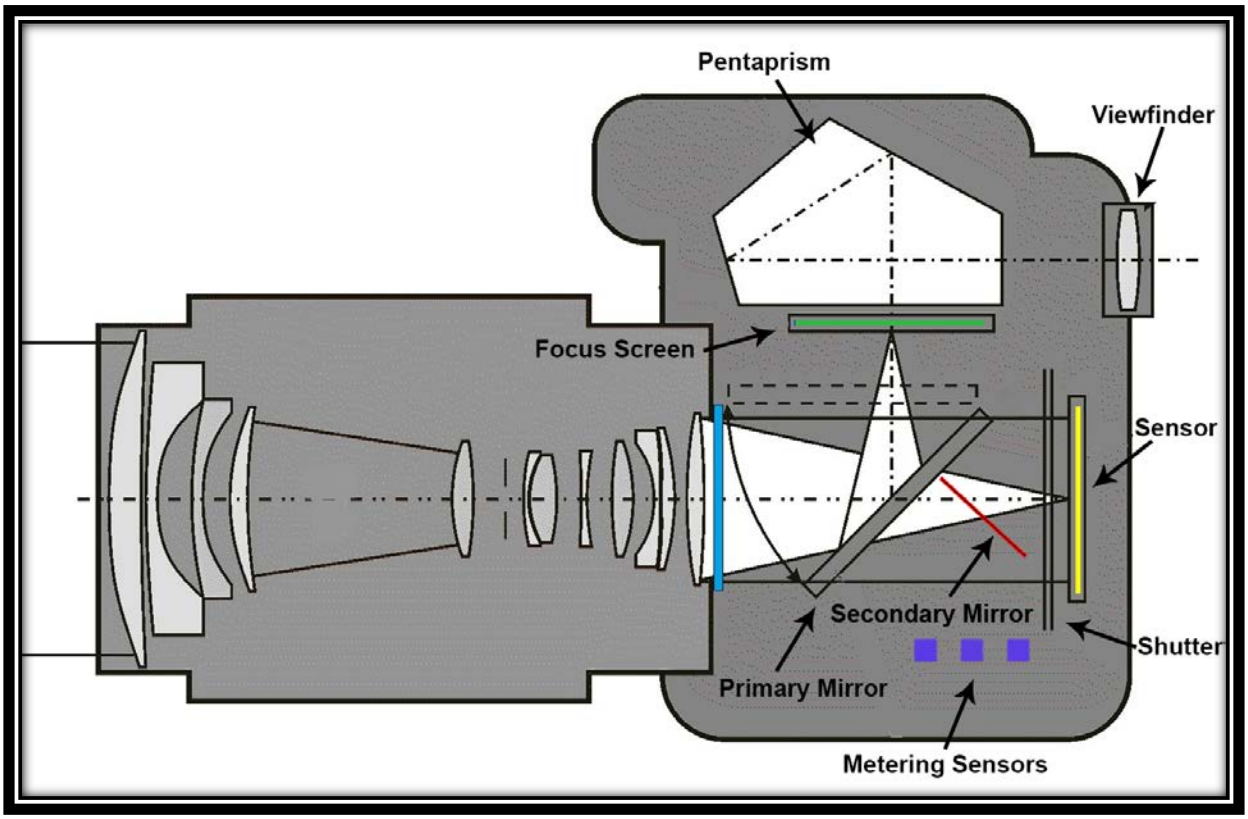


There is a special icon on SLR cameras (film and digital) which is a circle with a line through it which indicates the location of film plane, or the sensor of the body.

One of the problems with an SLR, a problem that doesn't really happen with a compound camera, is that it is not a closed system. It is indirectly exposed to the outside world when changing the lens. Dust can get on the sensor which can cause problems. Maintenance involves cleaning the sensor of dust if you purchase an SLR. Dust will accumulate but it can be cleaned, to some extent, using software.

The Mirrors Within

Let us look at the mirrors within the camera:



The mirror in front of the sensor needs to move up and out of the way to expose the sensor. There is also a secondary mirror behind the primary mirror.

The Primary Mirror is responsible for sending light to the pentaprism and into the viewfinder. It is slightly transparent, meaning that light goes through.

The Secondary Mirror reflects light down which allows us to get exposure or to do autofocus.

Below this box of mirrors are sensors that the camera uses to determine metering to properly capture exposure and autofocus.

The DSLR

DSLR stands for Digital Single Lens Reflex.

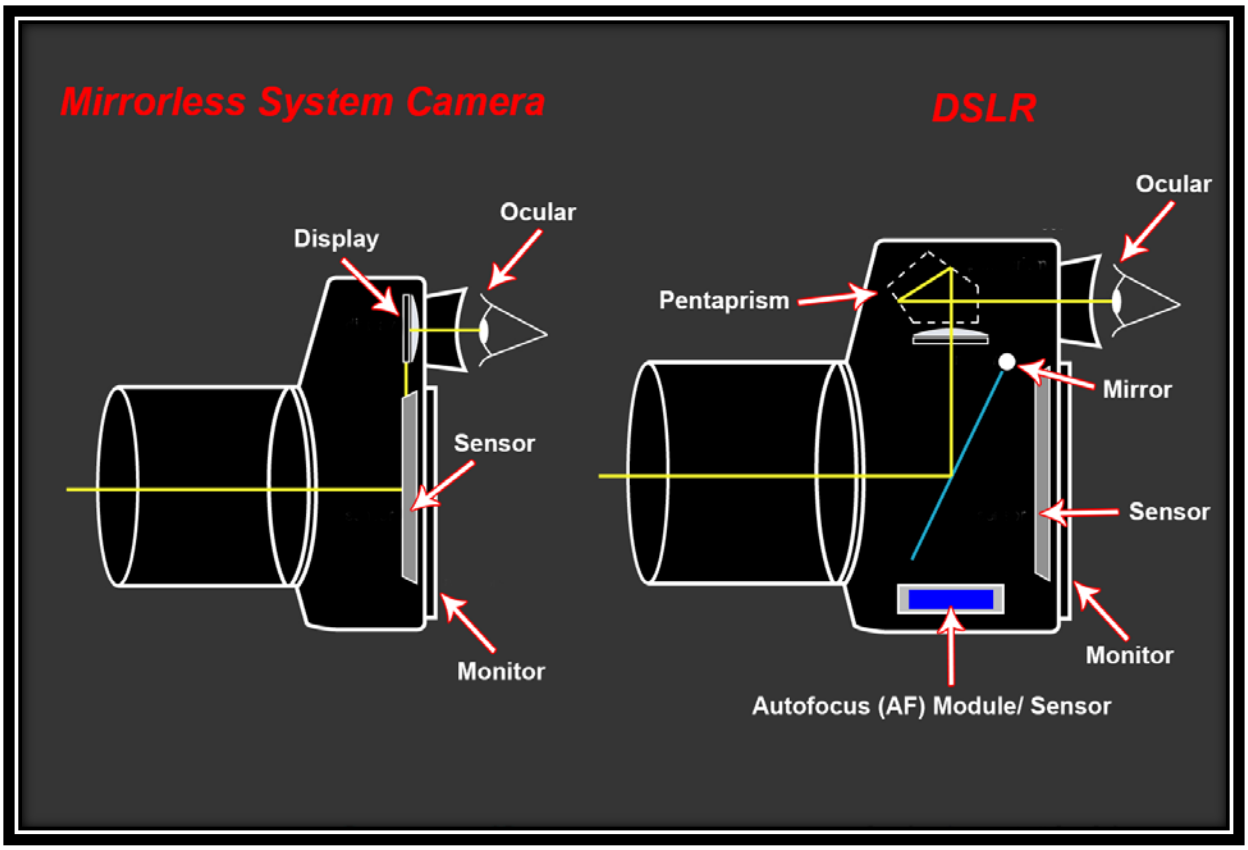
These DSLR cameras will always have a viewfinder or a Liquid Crystal Display, which is also called a LCD screen. Sometimes these cameras have both a viewfinder and a LCD screen.

They will also have a Shutter Button which is used to take the photograph. This is also called the Exposure Button.

Some cameras will have a Hot Shoe which is useful when adding an external flash.

The single lens refers to the fact that the lenses are interchangeable.

The Reflex aspect refers to when we take the photograph. When we take the shot, the mirror opens up, light passes through it and reaches the camera's sensor.



Mirrorless and Bridge cameras do not have mirrors inside them. Instead, they have an Electronic Viewfinder (EVF). When light passes through the lens of these cameras, it goes straight to the imaging sensor. The sensor sends a signal to the viewfinder and we can see the image through this.

What have we learned today? A Summary

We have learned what the main components are within a DSLR camera.

We've also learned about mirrorless and bridge cameras and the difference between these types of camera and DSLRs.