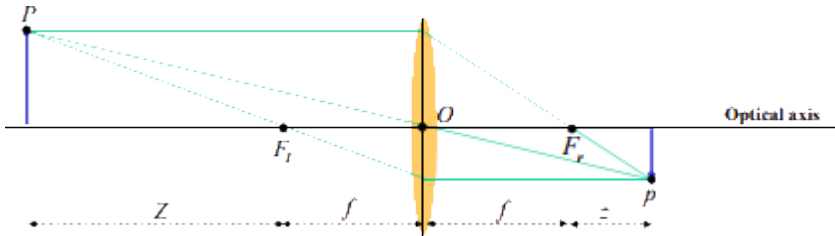


EECS4422

Image Acquisition Lab

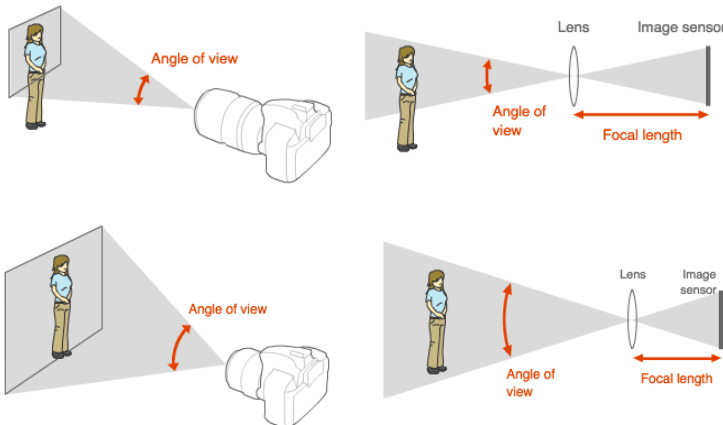
September 25, 2017

Focal Length



The distance between the lens and focus.

Image Formation Lecture – Thin Lens



Focal Length	Field of View	Apparent Size
Long	Small	Large
Short	Large	Small

<http://imaging.nikon.com/lineup/dslr/basics/19/01.htm>

Focal Length

Focal Length	Field of View	Apparent Size
Long	Small	Large
Short	Large	Small



16 mm



12 mm



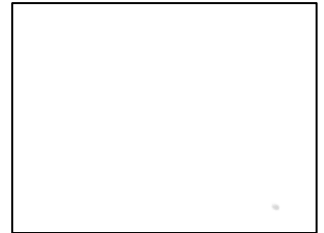
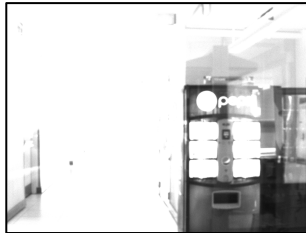
8 mm

Aperture

- Controls the amount of light that enters the camera sensors



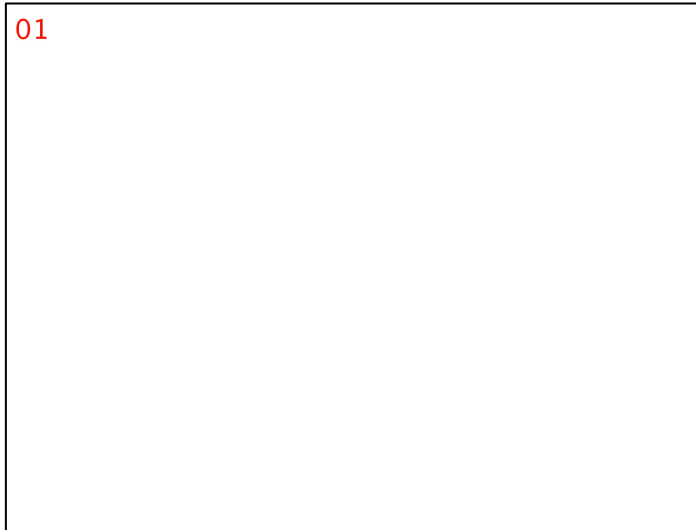
increase in diameter



increases the brightness of the image

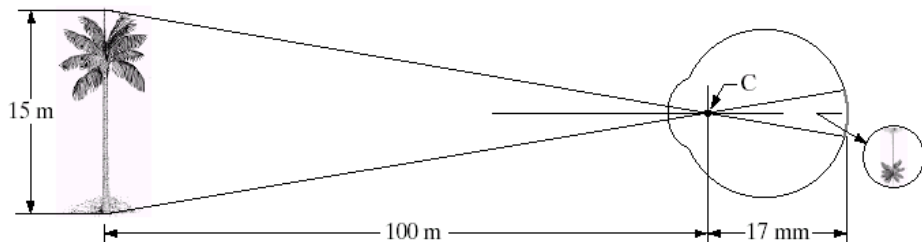
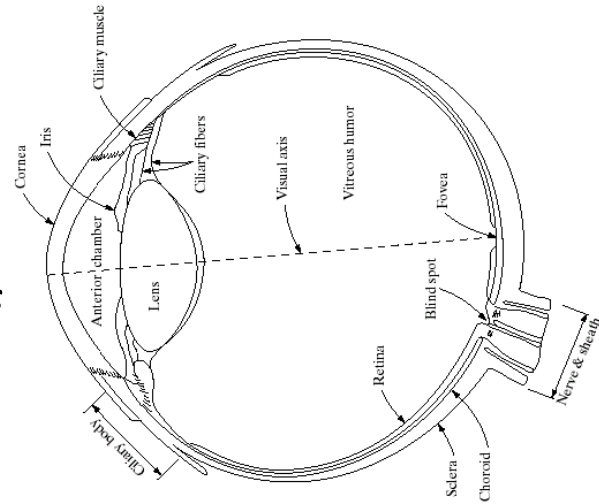
Aperture

- Controls the amount of light that enters the camera sensors



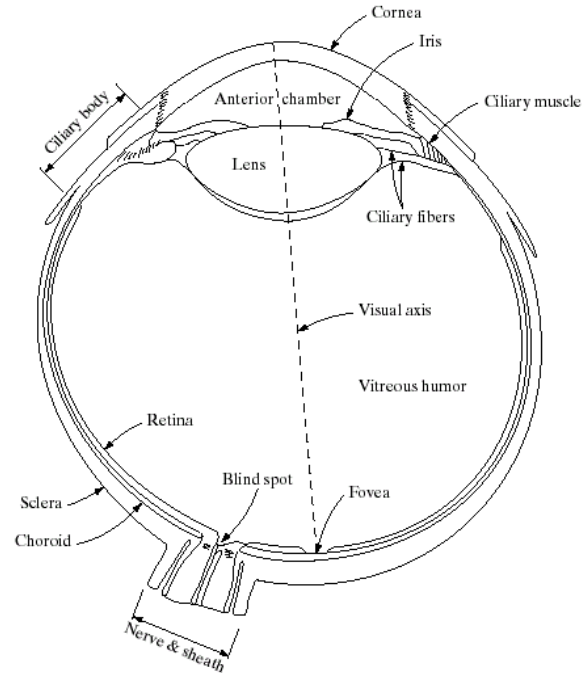
Human Visual System

- The lens focuses light from objects onto the retina.
- *Muscles within the eye* are used to change the shape of the lens.
- *Iris* controls the amount of the light enters the eye.



Structure of the Human Eye

- The retina is covered with light receptors called cones (6-7 million) and rods (75-150 million).
- Cones are concentrated around the fovea and are very sensitive to colour.
- Rods are more spread out and are sensitive to low levels of illumination.



- Cameras, tripods and lenses
 - available during non-lab hours
 - can be borrowed under your name from the lab monitor
- Make sure
 - 16 mm. lenses with caps are placed back on the cameras,
 - lenses are tightly secured on the camera, not loose,
 - borrowed equipment must be returned on the same day.