Computer Science E-7
Exposing Digital Photography

Lecture 9: Digital Cameras
April 6, 2009

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Assignment 4 | Website Theme
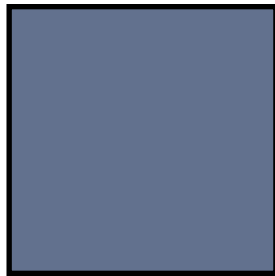
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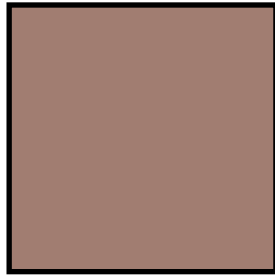
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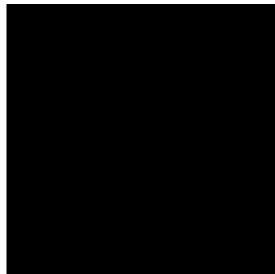
text: 000000

Assignment 4 | Color Scheme

Samples of Brochure Folds

There are many different types of folds that can be accomplished with modern printing. The samples shown are just some of the standardized folds available.
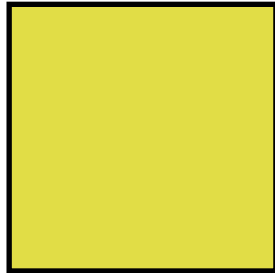
Brought to you by WhatsTheBigIdea.com, Inc. (845) 247-0909

Accordian

Gate

Tri-Fold

Map

Right Angle

Parallel

Half Page Letter

TOP: The Right Angle fold above is also known as French Fold. Pictured is an 8 page French Fold.

LEFT: The Half Page fold to the left is also known as Half Page Letter fold. Pictured is an 8 panel Half Page.

Final Project | Ideas

1/80s, ISO 400, f/10

Digital Cameras | Dynamic Range

Photons (Light)

Pixel ("Bucket")

Collected Light

Digital Cameras | Dynamic Range

1/2.7"

6.59mm 3.96mm
5.27mm

1/1.8"

8.93mm 5.32mm
7.18mm

2/3"
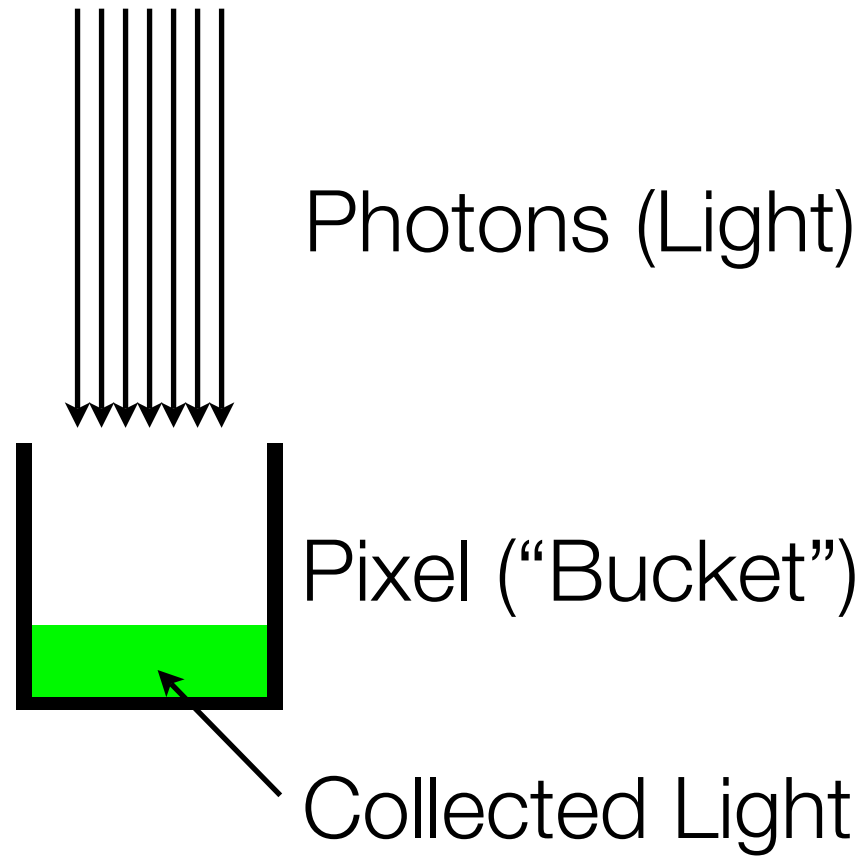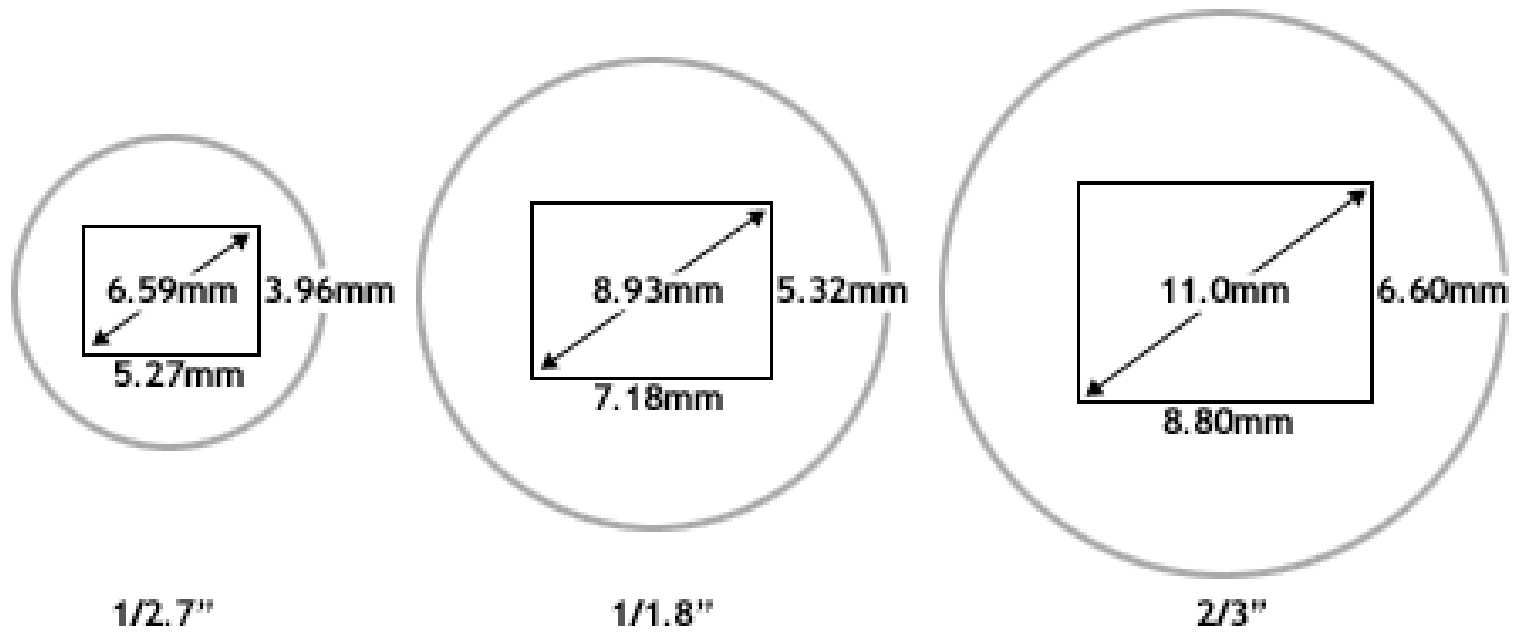
11.0mm 6.60mm
8.80mm
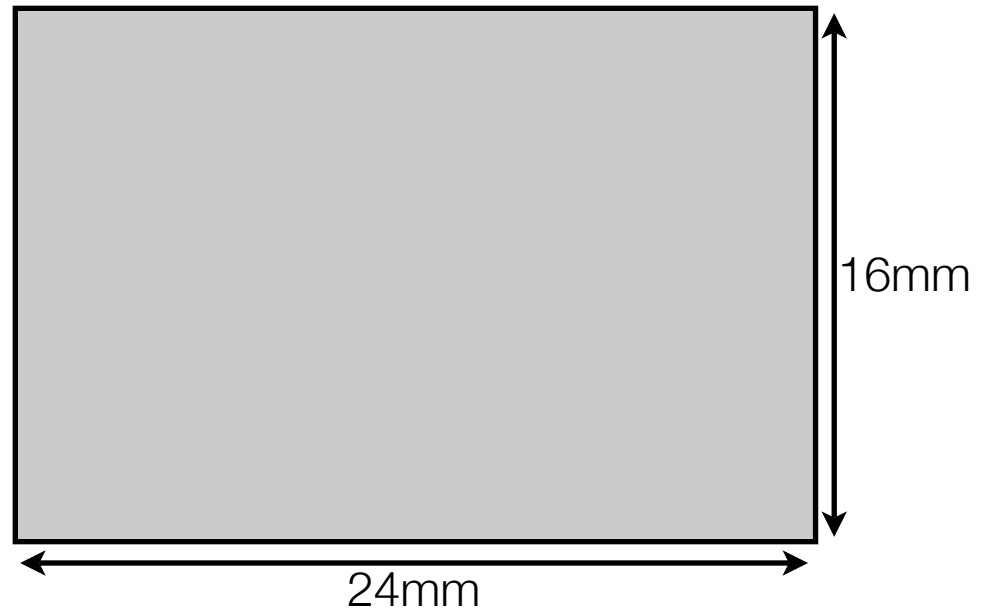
Digital Cameras | Sensor Sizes
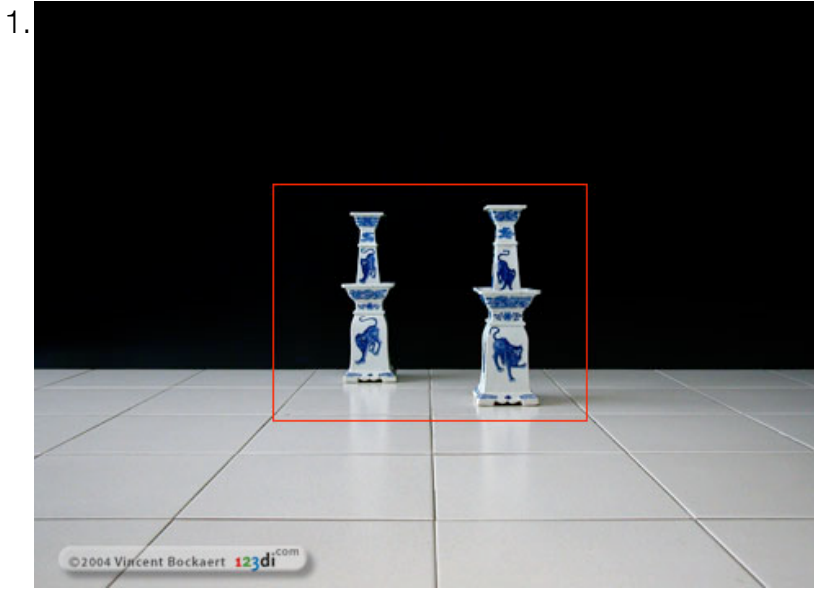
5mm

7mm

16mm

24mm
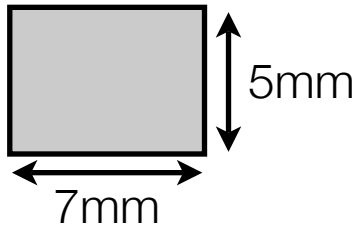
1/2.5"
6 MP

APS-C (SLR-sized)
6 MP

Sensor Sizes | Size of the pixels in each?

1. 33mm. 2. Crop of #1. 3. 80mm from same distance. 4. 33mm & closer

Images from http://www.dpreview.com/learn/?/Glossary/Optical/Perspective_01.htm

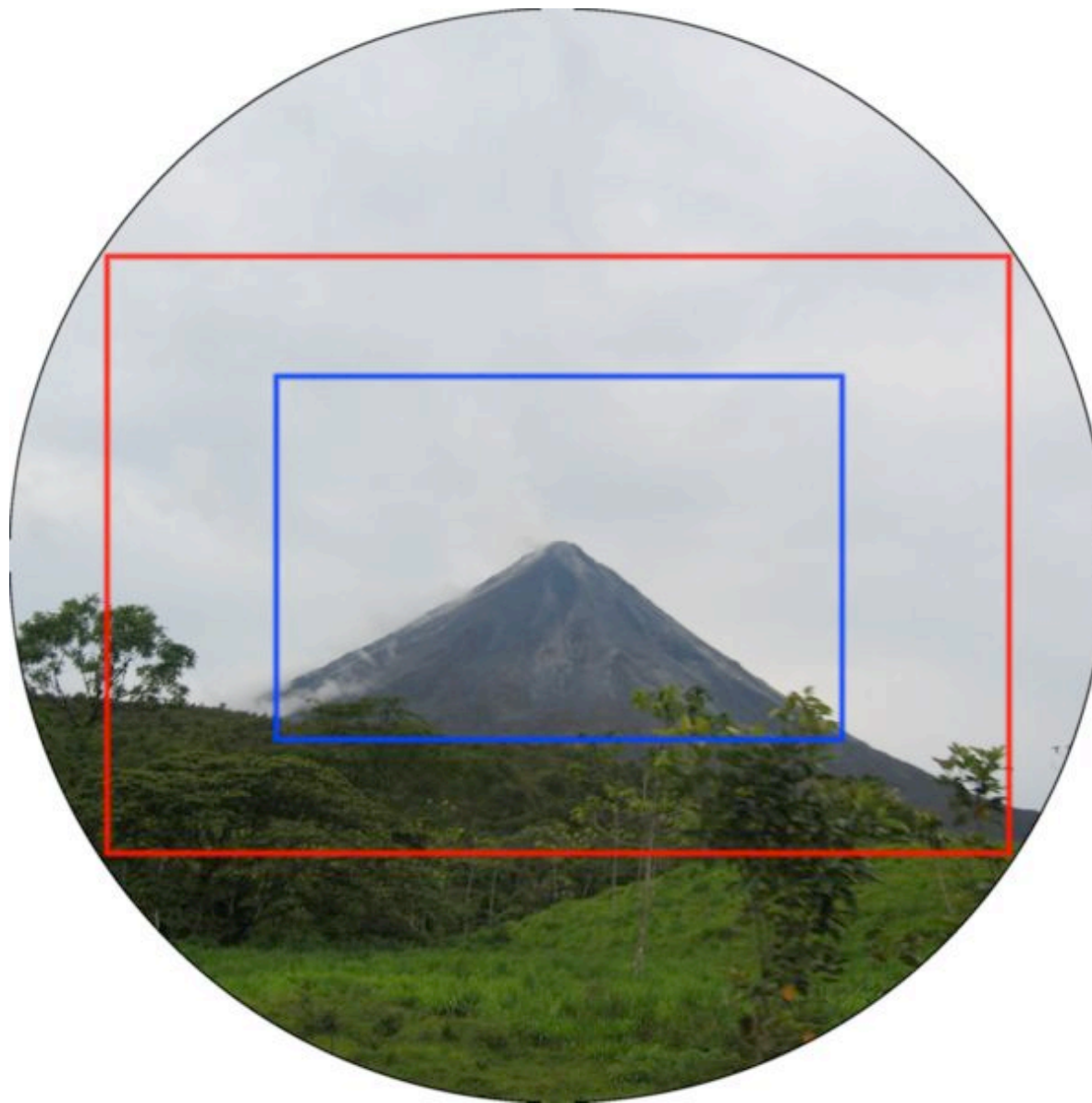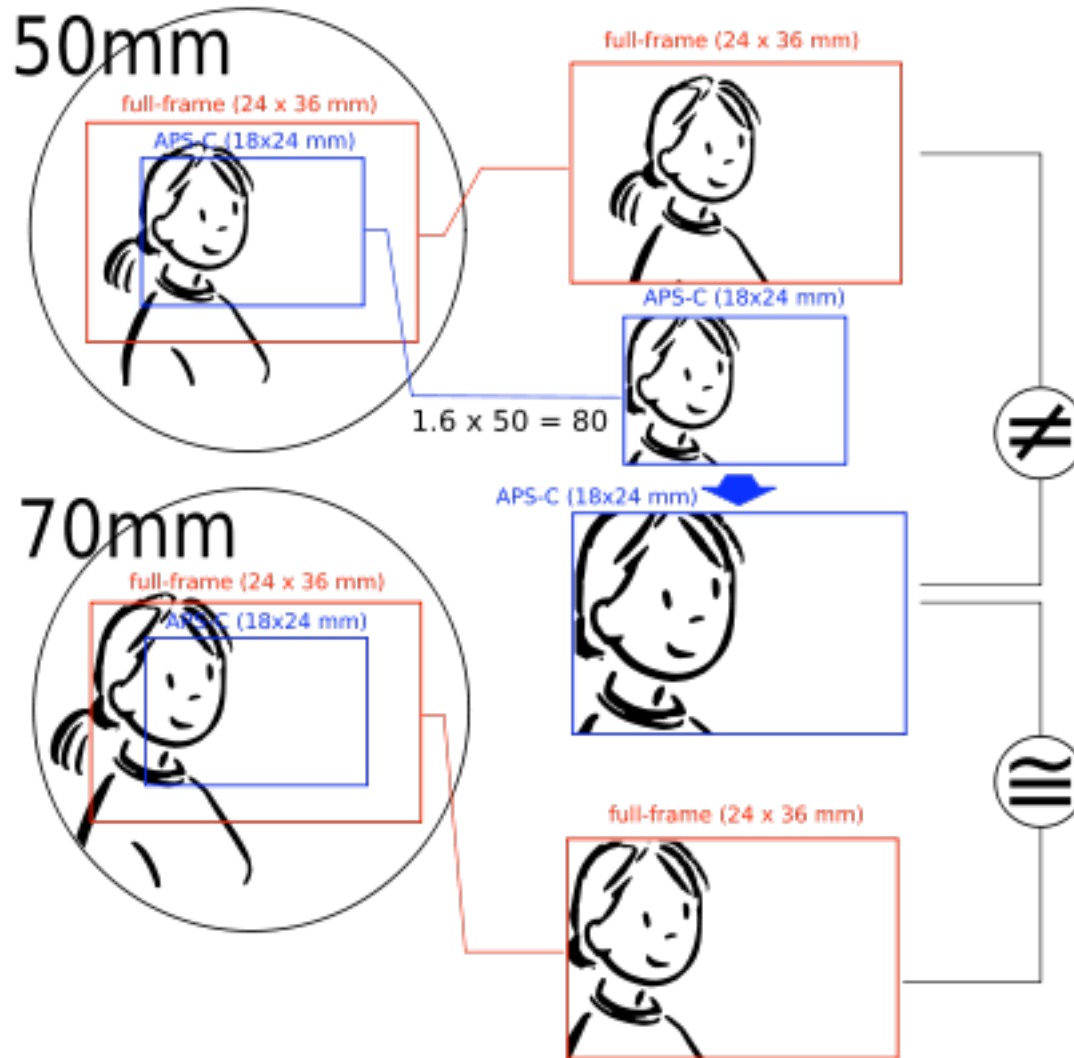# Sensor Sizes | Focal Length and Perspective

Image from http://en.wikipedia.org/wiki/Crop_factor

Sensor Sizes | Focal Length and Perspective

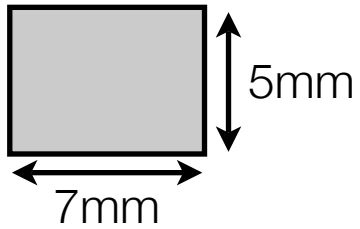Image from http://en.wikipedia.org/wiki/Crop_factor
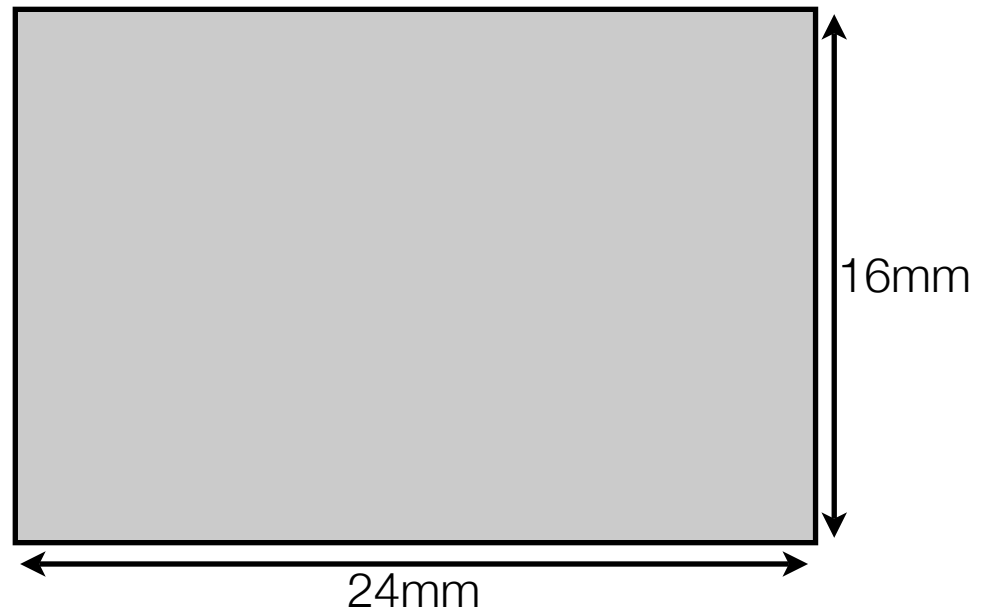
Sensor Sizes | Focal Length and Perspective

Image from http://en.wikipedia.org/wiki/Crop_factor

Sensor Sizes | Focal Length and Perspective

5mm

7mm

16mm

24mm

1/2.5"
0.5 MP

APS-C (SLR-sized)
6 MP

Sensor Sizes | Same size pixels.. still dark?

Canon 1D Mark II, 28mm f/13 1/8 sec, ISO 640
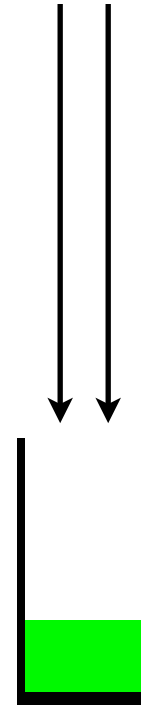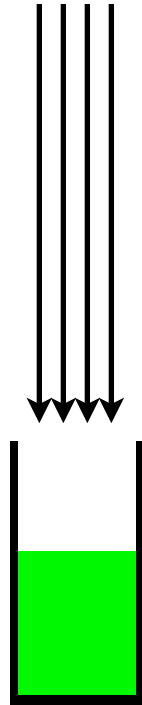
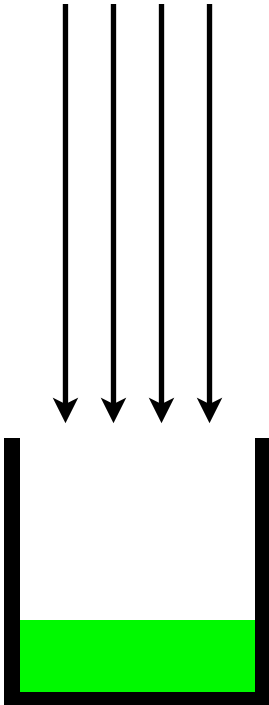Canon S70, 8mm f/3.5 1/8 sec, ISO 50

Canon 1D Mark II, 28 mm f/3.5 1/100 sec, ISO 640

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Image from http://www.clarkvision.com/photoinfo/dof_myth/

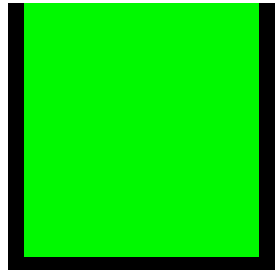# Sensor Sizes | Depth of Field
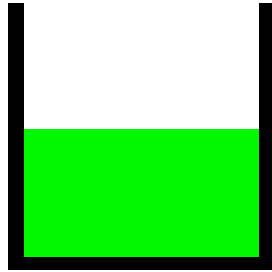
Sensor Sizes | Pixel Size

$$\text{Dynamic Range} = \frac{\text{Biggest Signal (full "bucket")}}{\text{Smallest detectable signal}}$$
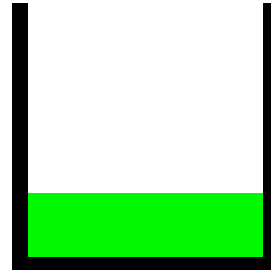
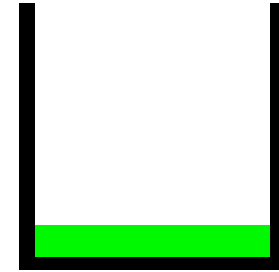Dynamic Range | Simplified Calculation
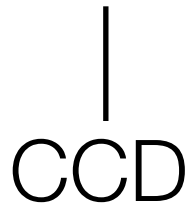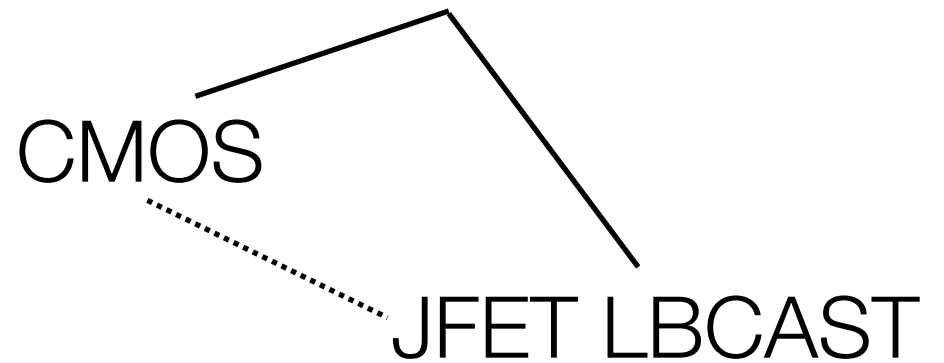
100   200   400   800

Dynamic Range | Full capacity of pixels at ISOs

Passive Pixel Sensors   Active Pixel Sensors

CCD   CMOS

JFET LBCAST

Digital Cameras | Sensors

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