09 Photography 2:lenses

Monday, September 19, 2022   12:45 PM

Today:
- Admin
- Lenses
  - Typical lenses
  - Focal lengths
  - Focus and Lens laws
  - Aperture, depth of field

Reading Assignment:

Quick poll: Want a short demo of Minitool MovieMaker?
1 yes
2 no thanks

First poll: How are announcements in canvas working
1) You saw the one for this morning   87%
2) Every few days
3) Don't have notifications
4) What announcements?

Flow Vis Guidebook

Introduction to the Guidebook

Overview 1: Phenomena. Why Does It Look Like That?

Overview 2: Visualization Techniques

Overview 3: Lighting

Overview 4 - Photography A: Composition and Studio Workflow

Overview 4 - Photography B: Cameras

Overview 4 - Photography C: Lenses - Focal Length

Overview 4 - Photography C: Lenses - Aperture and DOF

Video Editing

Use iMovie if you have a Mac
PCs: "MiniTool MovieMaker | Easy-to-Use Free MovieMaker Software." Accessed August 26, 2020. https://moviemaker.minitool.com/.
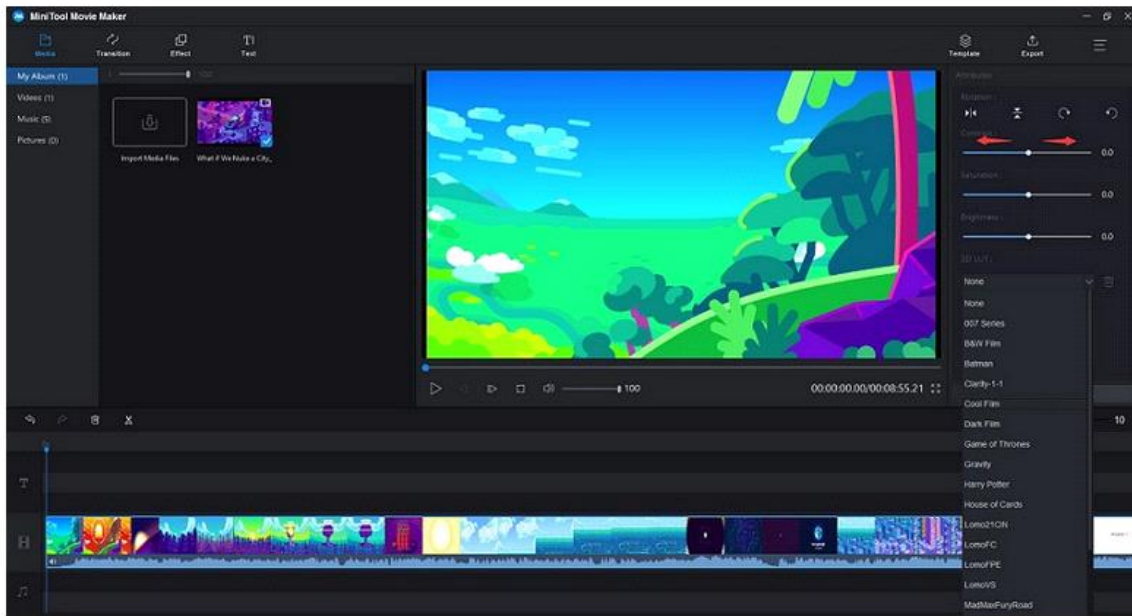Easy to use, requires little computer power. Options are limited. For example, can't crop, and lengths are limited to 2 minutes for free version.

Free Download

Step 1. After downloading and installing MiniTool Movie Maker, select **Full-Feature Mode** to enter the main interface and click **Import Media Files** to import your video.
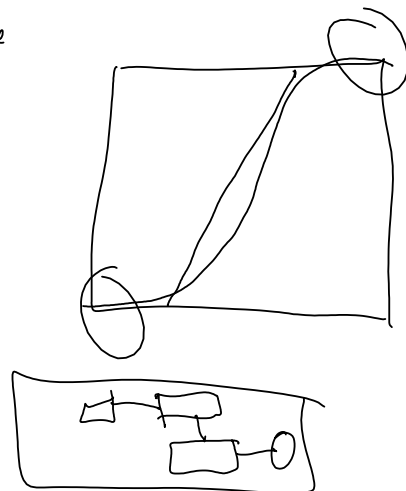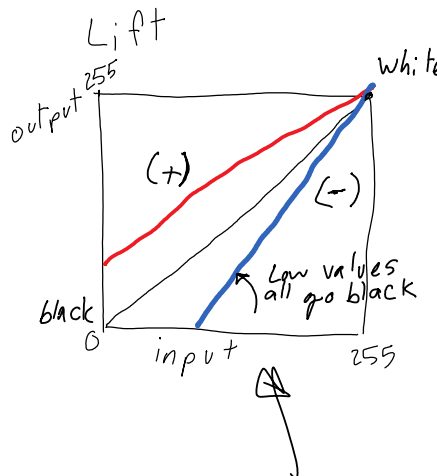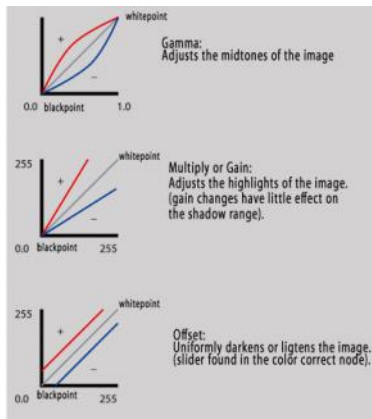
Step 2. Drag and drop the video to the timeline or click **+** to add it to the timeline.

Step 3. Double click the target video on the timeline and the video editing window will pop up. To change the color correction settings, just left-click the indicator and move it to the left or right along the slider. When releasing the mouse button, the respective value will be set.

Color 'grading', correction etc.: Double click the clip. Gets you contrast, brightness and saturation.
Increased contrast can be done several ways. Always includes steeper transfer function.

http://filmicworlds.com/blog/minimal-color-grading-tools/

Then go to Text tab to add title.
 If you don't want title animation, use Powerpoint to create a still image with your text and insert that.

Can trim time of clips, do cuts and transitions

1. LENSES

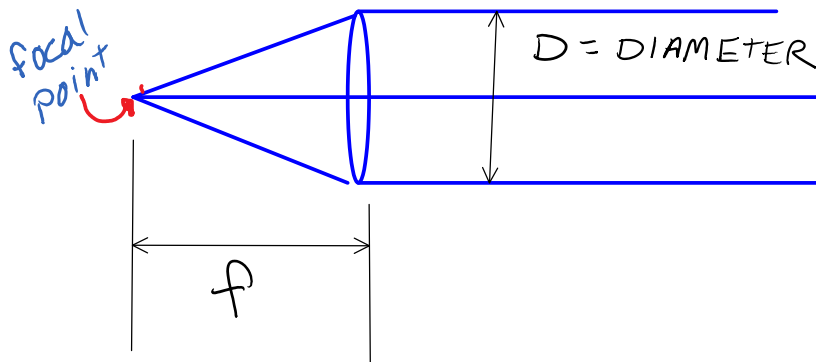Minute paper. Compare in your groups. What are the numbers on your lens? What do they mean?

$18 - 55\,mm$ $1 : 3.5 - 5.6$ ⑬ VR 2 DSLR

focal length
ZOOM

aperture
AKA
f stop

$\phi\,77\,mm$
Thread diameter

Lenses are defined by FOCAL LENGTH and APERTURE and Diameter

f = focal length = distance from center of lens system to sensor when focused at infinity
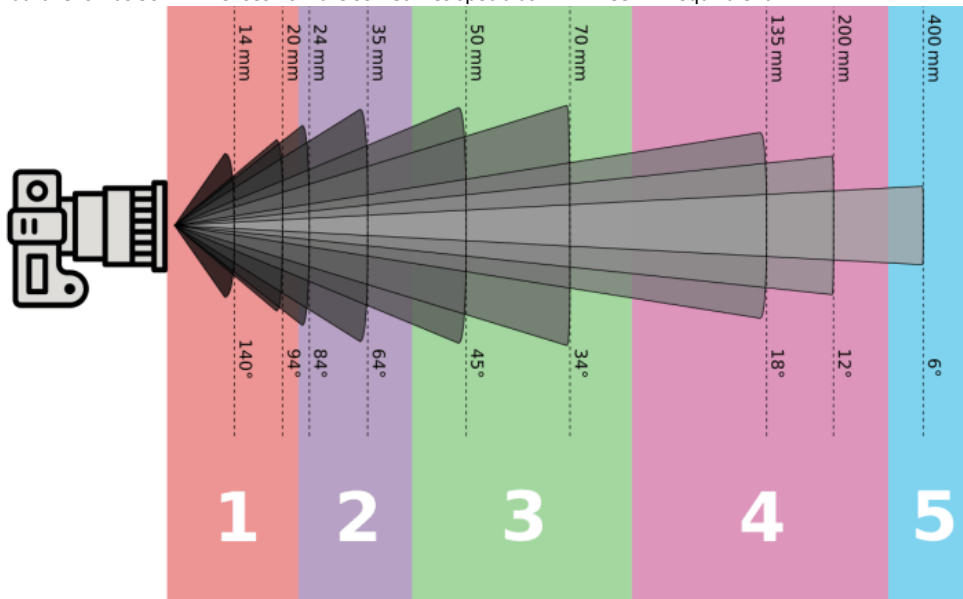
focal point

D = DIAMETER

f

Symbol for center of lens
Or sensor location

Ø Symbol for thread diameter, for attaching filters etc.

Variable focal length = ZOOM lens.
Now is default. Non-zoom are called 'prime' lenses.

10 years ago, 35 mm film cameras were standard, and the
standard lens was 50 mm. Lenses now are sometimes spec'd as 'XXmm 35 mm equivalent'

Lenses classified by 35 mm equivalent and FOV. 1= ultra wide, 2= wide angle, 3= normal, 4= short telephoto (70 -85mm) / medium telephoto (100-200mm), 5= super telephoto (300-400mm) / ultra telephoto (500-1200mm). MikeRun, CC BY-SA 4.0, via Wikimedia Commons.

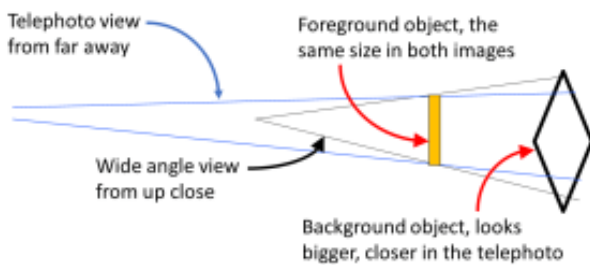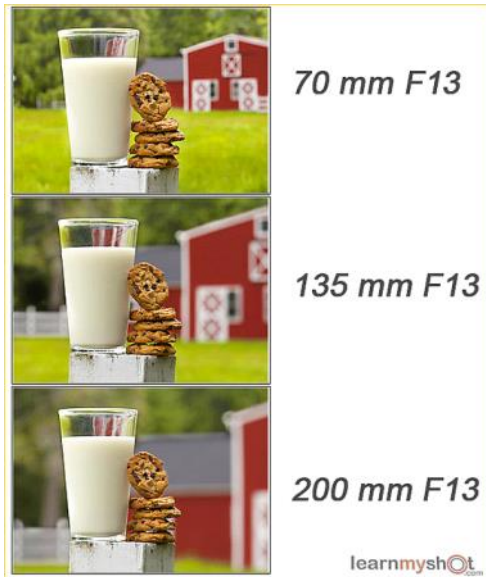From <https://www.flowvis.org/Flow%20Vis%20Guide/overview-4-photography-3-lenses/>

FOV = Field Of View

FOV is determined by focal length and sensor size. Cameras with smaller sensors will have shorter lenses than a 35mm camera for the same FOV. Online calculators will tell you equivalents.

Impact of focal length on framing:

https://youtu.be/H09LKsTsQ-s Lens Compression

70 mm F13

135 mm F13

200 mm F13

learnmyshot.com

Hands on! Do this now!

1. Pick up your camera and zoom in on an object in front of you.
2. Note the relative size of something beyond it, in the background.
3. Then walk in close, and zoom out until the foreground object is the same size in the viewfinder as it was in the previous image, and
4. notice how the size of the background object got smaller.

From <https://www.flowvis.org/Flow%20Vis%20Guide/overview-4-photography-3-lenses/>

https://www.youtube.com/watch?v=4yyFKNfRq_M