

DSLR Video

For MVPC

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Mark Naumann

DSLR Video

DSLR Camera Primary Video Settings:

1. Frame Rates:

- 24 frames per second (fps): Commonly used in cinema; produces best cinematic look.
 - Pro: Filmic look; requires less light.
 - Con: Some motion blur.
- 30 or 29.97 fps: Used in television. Classic “video” look. Sports, action.
 - Pro: Better with action / motion.
 - Con: “Video” look and requires more light.
- 60 fps: high-speed video, used to produce slow motion. When viewed at normal frame rate, subject moves slowly.
 - Pro: Slow motion footage.
 - Con: Requires more light; looks hyper-real at 60/59.94 fps. Video’s speed must be adjusted to view at slow motion.

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DSLR Camera Primary Video Settings:

2. Shutter Speed and Frame Rates:

- The shutter speed is normally twice (2x) the frame rate. For a frame rate of 24 fps, the recommended shutter speed is 1/48 sec. DSLR cameras are unable to set 1/48 sec shutter speed, but cameras can set 1/45 sec (if camera is set for ½-stop exposure increments) or 1/50 sec (if camera is set for 1/3-stop exposure increments).

3. Resolution / Aspect Ratio:

- 4K: 3840 x 2160 pixels
- Full HD (High Definition): 1920 x 1080 pixels.
 - Sometimes referenced as “1080”, referring to the vertical pixel dimension.
- 1280 x 720 pixels.
 - Referred to as “720”, referring the to the vertical pixel dimension.

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DSLR Camera Primary Video Settings:

4. File Types:

Low Compression (more detail, better quality, requires more space on card / hard drive):

- MOV
- XAVC

High Compression (less detail, lower quality, requires less space on card / hard drive):

- MP4
- AVCHD

5. Line Screen:

- Interlaced (i): Scans even, then odd lines of a frame.
 - Examples: 720i; 1080i
- Progressive (p): Scans all lines of a frame at once.
 - Examples: 720p; 1080p

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Other Camera Settings:

1. ISO: Lower ISO settings will produce video with less noise.
2. Aperture: An aperture of f/5.6 will provide the best compromise between focus and light.
 - A large aperture (such as f/2.8) will produce a small / shallow depth of field (DoF) and may make focusing difficult. A shallow DoF can also produce unique creative effects.
 - A small aperture (such as f/11 or f/16) will provide a large DoF, but will reduce light, requiring the use of high ISO settings or brighter lighting for the scene.
3. Video Resolution: HD (1920 x 1080) provides good quality video. If using an older, slower computer, or slower memory cards, recording at 1280 x 720 may be a better option.

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Operation:

1. Maintaining the Desired Shutter Speed While Adjusting Exposure:

Camera Exposure Modes:

- Aperture Priority
 - User sets the Aperture; the camera changes Shutter Speed to adjust exposure.
- Shutter Speed Priority
 - The user sets the Shutter Speed; the camera changes the Aperture to adjust exposure
- Manual
 - Allows setting correct shutter speed to correspond with frame rate
 - Achieve proper exposure by adjusting ISO (manually or via Auto ISO)
 - View histogram to adjust ISO for proper exposure

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Operation

Note:

To maintain the right cinematic look, we want to maintain the correct shutter speed for the selected frame rate. We want to control the aperture to control the depth of field for creative effect. So, the variable we have left to control exposure is ISO (or lighting).

- What if the scene is too bright? We may have to use ND filters.

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Tips

1. Use a tripod or monopod, or other stabilization device.
 - In a pinch, use the camera strap.
2. Use the fastest lens possible (having large aperture such as f/1.8, f/2).
3. Use short focal length lenses that have greater Depth of Field: 24mm; 35mm; 50mm.
4. Try not to record with an aperture larger than f/5.6 for critical focus situations.
5. Turn off IS (image stabilization) or VR (vibration reduction) if recording sound.
6. Use a loupe to view the back of the camera; or use the Electronic View Finder or a separate HDMI monitor.

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Workflow

1. Set desired settings on the camera.
 - Check the exposure. A technique is to shoot a still image and view its histogram.
 - Check White Balance. Correcting white balance in video editing is difficult.
2. Check the focus.
3. Do Nots:
 - Do not re-focus mid-stream unless doing so intentionally for creative effect.
 - Do not remove the lens while recording.
 - Do not bump the tripod.
4. Press “Record” to capture video.

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Recording Audio

Quality audio can greatly enhance the video. Viewers will tolerate poor-quality video, but will not tolerate poor-quality audio. Recording quality audio is dependent on a quality microphone.

Audio Recording Methods:

- Record with camera using camera's internal mic:
 - Pro: Convenient, easy to capture. Audio is already synched to video.
 - Con: Camera's internal mic captures low-quality sound and may record camera noise (auto focus, image stabilization).
- Record with camera using an external mic mounted on camera:
 - Pro: Captures better quality audio. Audio is synched to video.
 - Con: May still capture some camera noise
- Record with camera using an external mic off camera:
 - Pro: Better quality audio minus the camera noise.
 - Con: Audio recording is limited to length of cord connecting to camera.
- Record with external audio recorder and an external mic:
 - Pro: Provides high-quality audio. Can more easily position the mic to capture desired audio.
 - Con: Audio must be synched to video in editing.

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Camera Movement Techniques

Camera vs Subject Movement:

- Subject still; Camera still.
- Subject moves; Camera still.
- Subject still; Camera moves.
- Subject moves; Camera moves.

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Camera Movement Techniques

1. The Pan: Use a tripod and pan on the horizontal axis either a static scene or some sort of action.
2. The Tilt: Use a tripod or hand-held with a strap tight against your neck and pan up into the sky; or, start in the sky and pan down to your scene.
3. Close-Up: Frame in close on someone's face. Experiment with moving slowly in and out of focus on the subject's face.
4. Arc Shot: Walk in a semi-circle around someone acting heroic or in a heroic pose (have fun!).
5. Low Angle: Frame someone from a low angle to make them appear heroic or menacing.

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Camera Movement Techniques (cont)

6. High Angle: Frame someone from a higher angle looking down on them (if it can be done safely!).
7. Over the Shoulder: Frame an action over the subject's shoulder.
8. Two-Shot: Frame two people sitting together engaged in conversation.
9. Pedestal Shot: Raise or lower the camera on the vertical axis.

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Video Editing

Like still image editing, video editing converts your raw footage into a finished product.

- We may have to cover video editing in a separate class...