

RU
Highlanders

**The
Hybrid
Kit**



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The Hybrid Kit

Hybrid kits are the basic image and video gathering tools at the School of Communication at Radford University. A hybrid kit is based around a still camera with the added capability of shooting excellent video and recording audio of an acceptable quality. The kit can also be paired with an audio recorder to allow higher quality audio acquisition in a process called non/sync sound.

Hybrid kits have removable Micro Four-Thirds (MFT) lenses. The lens that is standard with your kit should be capable of a wide range of uses, but other lenses are available for your use in special circumstances.

Your hybrid kit also comes with a tripod and a set of support devices designed to allow you to carry the camera on your shoulder, or to mount accessories to the kit. Collectively this is called the rig.

The hybrid kit records to a very fast SDXC memory card rated as UHS-I U3 (Class 10). You will want to own at least one for any class you take that uses these cameras.

It is important that as soon as you receive permission from your professor that you take some time to get to know the hybrid kit. Before you take it out on your first shoot you should be able to set it up, record the right type of video, get the audio to work, and take it down.

Some Quick Facts

The current Hybrid kit costs around \$2,400.00 new and can be used to record still images, audio, and video. The kit is considered an intermediate level visual acquisition tool that can be used for prosumer, corporate, news, and creative productions.

Inventory

Your kit comes with these items. Make sure you have them in the bag before you leave and that they are in good condition. If they are damaged or missing you can still checkout the kit, but you must attach a missing or damaged items report to you checkout form to avoid being charged. If you do not plan to use some of the items included, do not take them from the bag.

QTY	Item Name	Description
1	Panasonic Lumix DMC-GH3 with battery grip	The camera head. It can record video and still images, and has an input to allow an external microphone to be added. The camera has a battery grip permanently mounted.
1	Olympus M. Zuiko Digital ED 12-40mm f2.8 PRO Lens	An professional quality MFT mid-range zoom lens. This lens is the equivalent of a 24-80mm zoom lens on an 35mm camera.
1	Revo SR-1500 Dual Grip Shoulder Support	A shoulder mount that we have adapted to attach to your tripod using a quick release plate.
1	Libec ALX tripod	A good solid tripod. The pod is heavier than the camera really needs, but that is on purpose to allow accessories to be mounted.
1	Panasonic Battery Charger	If you need to charge the batteries at home, just plug this in and put a battery on the charger.
2	DMW-BLF19 Batteries	Make sure you get the right batteries! There are several manufacturers of the BLF19. If the battery you get does not fit snugly in the camera, it is the wrong one.
1	Porta Brace Cargo Case	Keep everything in the bag it is designed to protect the camera. Do not carry water, food, or the like in the bag - that can be bad for the electronics in the battery.
1	Audio Kit	With two microphone cables, one stick microphone, one lavalier microphone, an audio converter



The Porta Brace Bag

The camera kit is packed in a strong, water resistant cordura nylon bag. The lower center pocket carries the camera, the upper pocket is used to hold tripod accessories, while the left and right pockets carry the batteries and charger.



Revo SR-1500 Dual Grip Shoulder Support Rig

This is a 15mm support rig that allows the camera to be carried on the shoulder. Note that the support rig and the camera both have adaptor plates on them. The rig may be placed on the tripod, or the camera may be placed on the tripod without the rig.



Libec ALX tripod

The kit's tripod is a 75mm ball-leveling tripod with a quick release plate, and is provided to you with a protective bag. The tripod comes with a mid-level spreader and a single pan-arm.

Power Supplies

The hybrid kit comes with two batteries and a charger. While we try to assure that the batteries you get are charged and in good condition, it is up to you to make sure your batteries are ready for a shoot. It is always a good idea to leave one battery in the camera while the other charges during a shoot. A battery takes around 2 hours to take a full charge, longer in cold weather.



The amount of time a battery lasts in use will vary wildly. In still photography the battery should be good for 500 shots - you will rarely need more than one on a shoot, with two being a good safety factor. In video a battery should last 1 hour of shooting - which is longer than your average SD card will hold out, but batteries can be spent in less than 20 minutes, while some last hours, depending on how you use them. Never forget to keep your spare battery charging.



The Camera

The physical controls on a modern camera can be daunting. There are nearly 40 switches, buttons, knobs, and wheels attached to the camera, each of which does something important. Your digital media professor will likely require you know what most of them do for class, but beyond that students who use this kit need to know their way around the camera in order to take the very best pictures and video possible.

Parts of the Camera

The camera is divided into three main parts. (A) is the camera body which contains all of the electronics needed to record images, as well as the Charged Couple Devices that actually turn light into digital numbers. (B) is the lens, a barrel-shaped device made up of a number of glass disks, each of which controls how light reaches the camera. (C) is the battery grip, a carrier that both allows a second battery to be installed to power the camera, as well as serve as a second gripping surface when using the camera as a still camera. The point where the camera attaches to the tripod is located on (C).

Rules on Caring for the Camera

A camera is an electronic device and as such requires special considerations for its use.

- Never allow moisture to come in contact with the camera.
- Do not leave the camera in very hot or very cold weather.
- Do not leave the camera unattended in public.
- The camera should always be carried with two hands.
- Never carry the camera while attached to its tripod.

The Camera Controls

To effectively use any camera the user should be familiar with all of the controls. These images have key controls marked (A) to (Z).





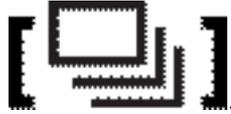






Parts of the Camera

- (A) Battery Port: This is where you put the battery.
- (B) Flash Syncro: This is where external flashes can be attached by a small cable for synchronized flashing.

- (C) Drive Mode: Sets the camera for single shots  or burst shots .

- (D) Hot Shoe: Attachment for a flash or other hot shoe devices.
- (E) Mode Dial: Allows setting of the camera for automatic iris and shutter [P] , aperture override [A], shutter override [S], manual shooting [M].
- (F) Front Control Dial: This dial sets the aperture in aperture override or manual mode.
- (G) Shutter Release: This is where you take a single picture or a picture burst. Pressing down the button lighting will activate the menu and take a light meter reading.
- (H) Camera Body: The camera body contains the recording device and the image sensors, and is the core of the camera.

- (I) Lens: The glass light gathering device that directs light onto the camera's CCD (charged coupling device). The GH3 has removable lenses that accept Micro Four Third lenses, and can accept other styles of lenses with an adaptor. When the GH3 has a Panasonic MFT lens attached then the lens has many automatic features available to it, otherwise it must be manually operated.
- (J) Battery Grip: The GH3 battery compartment is covered up when attached to a professional tripod, so our cameras have a battery grip attached to allow a battery to be introduced from the side. The grip holds one BLF-19 battery
- (K) Exposure Compensation: Used to modify the background and foreground exposure relationship to deal with excessively high contrast. Push the button and turn the rear knob to adjust the relationship.
- (L) Playback Button: Allows previously shot videos or still images to be played back to the small attached monitor, or through the HDMI digital video output.
- (M) Menu Screen / Monitor: The back screen is a video monitor and is where the menu is viewed. It is a touch screen that allows access to setup menus for the camera.
- (N) Viewfinder: A traditional video viewfinder, unlike DSLR cameras it does not allow views through the lens when the camera is turned off.
- (O) AF/AE Lock.

- (P) Video Trigger: This button is pushed to record video to disk.
- (Q) Menu Controls: The menu button turns on the menu, while the controls can be used to move through menu trees.
- (R) Rear Control Dial.
- (S) Microphone 1/8" Unbalanced Input: Accepts an unbalanced microphone input. If you are adapting a professional microphone to this input you have to use something to convert the balanced professional connector to the unbalanced input.
- (T) Headphone Monitor: Allows you to monitor the audio of your recording.
- (U) HDMI Video Output: A video output that allows the camera output to be viewed on a television monitor.
- (V) Flash Deploy: You can open the flash with this button.
- (W) White Balance: White balance works by pushing the button and using the rear wheel to raise and lower the color point.
- (X) ISO Sensitivity: You can raise and lower the ISO by pushing this button and turning the rear control knob.
- (Y) Power Activation: Turns on and off the camera power.

(Z) Memory Gate : Uses SD, SDHC and SDXC cards.

Steps to Use the Camera

To use this camera you will need either an SD or SDHC card, or preferably, an SDXC card. We strongly suggest that you get a Class 10 SDXC card before using this camera - that way you can record the highest quality video.

Putting in your SD Card

Looking at the back of the camera, the card goes in the right side. The card should easily slide in with the notched side up until it clicks. Always keep the card door closed. To remove simply push down on the card and it will pop out. If the card does not come out easily do not force it - you should take it to be looked at by the equipment checkout people.

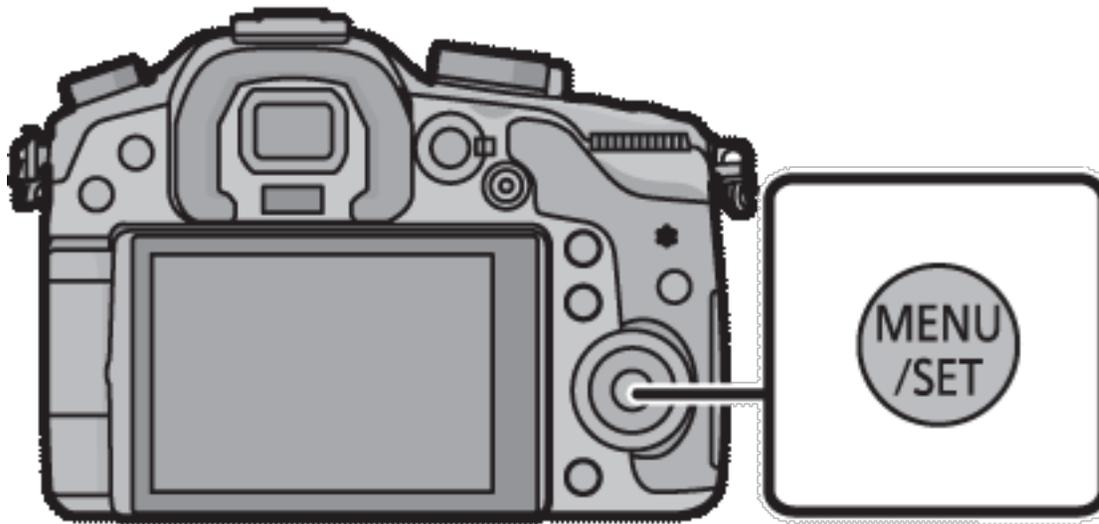


Install the Battery

Each camera is equipped with a battery handle that allows a battery to be inserted from the right of the camera. The camera also has an internal battery - do not try to remove this. The two batteries should be able to run the camera for several hours. In addition you have a charger and a spare battery in the kit. It is good practice to be charging the spare battery while the main one is in use. That way you will always have a fresh battery.

The Camera On/Off Switch

On the right side of the top of the camera is a switch under the camera setting knob. You can turn the camera on and off by changing the position of this switch. Make sure you keep the camera turned off when not in use to preserve your batteries.



Preparing for Still Photography

Setting up the camera for still photography is relatively easy. First you will want to set the size, aspect ratio, and quality of your pictures. To do this you will want to find the

Menu / Set button. Pushing this button activates the menu. The menu you want is the REC Menu.

The REC Menu

The REC Menu allows you to choose the quality of still images you will be taking. This menu has three important settings you need to set: Aspect Ratio, Picture Size, and Quality. Below is a chart of the suggested settings for you to use:

Mode	Aspect Ratio	Picture Size	Quality
Normal Photography	4:3	L (4608x3456)	RAW / High
Burst Photography	4:3	L (4608x3456)	JPEG / High
Photography for Video	16:9	S (1920x1080)	JPEG / High

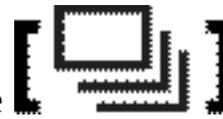
As a rule of thumb choose the largest and highest quality image you can capture. Lower quality images are mostly useful for saving disk space, which is not really a professional consideration if you plan ahead. Only in the video setting for HD standard video will you take smaller images, and even then it can be useful to choose larger images and resize them in post production.

A hint about your REC Menu settings. Do not assume the person who used the camera before you was thinking clearly or understood how to use the camera. If you do not change

the settings prior to shooting, you may come up with images that are not up to your standards or that of your teachers.

Drive Mode Dial

After making sure you are taking pictures in their highest quality, you want to choose the camera shoot style. You can do this by finding the drive mode dial on the upper left of portion of the camera. To shoot single images, turn the dial to

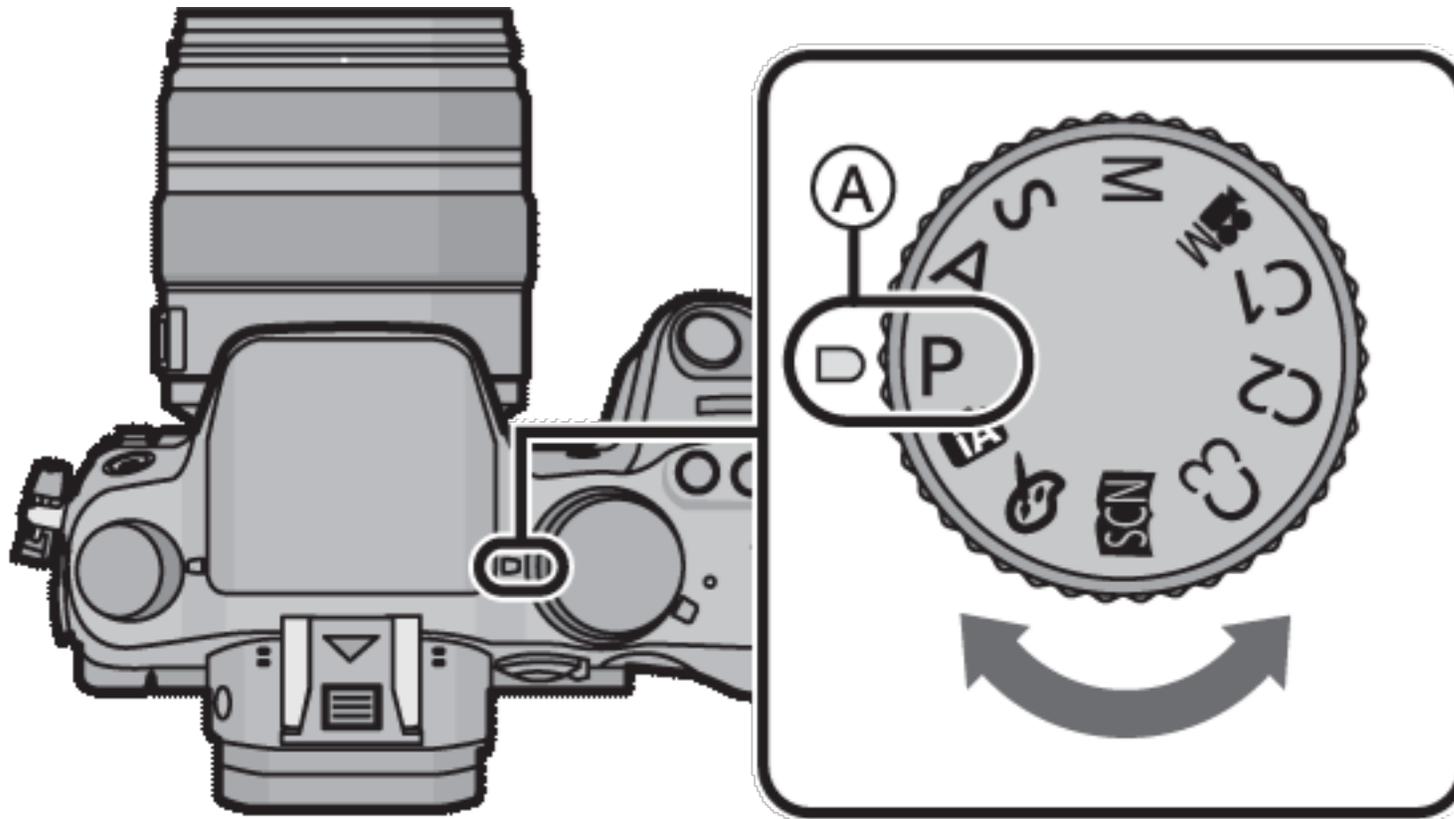


which allows the camera to shoot single images. The [single frame icon] position is for burst mode, discussed later. Most of the time you will shoot single images.

Selecting Metering Mode

Your camera has a built-in light meter and is capable of pretty much choosing a workable setting to get enough light into the camera if enough is to be had. This, however, ignores a whole wide area of artistic photography, and that is manipulation of shutter speed and depth of field. In Program mode (P) the camera makes all the choices; this is good for amateurs but not so good for professionals.

If you are taking pictures of fast events like sports where blurring is either desired or not wanted, then you can set the camera to (S), for shutter priority. In shutter priority the small notched dial at the front and the rear of the camera control shutter speed. The shutter speed you choose causes the aperture to automatically be adjusted to let in enough light to take the picture.



If you want to control the depth of field of images you are taking, choose (A) on the dial. The notched wheels now adjust the camera's iris, while the shutter speed is changed to allow enough light in.

You can take control of everything manually by choosing (M) on the dial. In this setting the front dial handles aperture and the rear dial handles shutter speed. In this mode you get

exposure assistance in the camera viewfinder in the form of a small scale, a plus/minus zero is appropriate light levels, otherwise you will get a scale set to -3 (for too little light) or +3 (for too much) that tells you where you need to go for lighting.

If you do not have enough light but are at the settings you desire, you can add more with the flash, modify the ISO, or add external lighting.

Camera sensitivity {ISO}

The normal ISO is 200. This produces the highest quality pictures. In low light you can increase ISO. On the right side of the camera is an ISO control button (the middle in a row of three). Push this button to increase the ISO for working in low light.

Using Burst Mode

Burst mode allows you to shoot from 2 pictures per second to 20 and has a wide range of uses. To choose burst mode first change the file-type in the REC menu from RAW to JPEG.

This allows you to keep shooting pictures with no limit. Then  under Burst Speed in the REC menu choose the speed you want, L for 2 pictures a second, M for 4 pictures a second, H for 6 pictures a second, and SH for 20 pictures a second.

Preparing for Video

Many of the settings used in still photography such as Metering Mode are useful for video, but video does do things different in some areas.

The Motion Picture Menu

You will want to set your recording quality for your video. Do not forget to do this since choosing the wrong mode can have a noticeable affect on quality. To set up your camera in the motion picture menu,

Under REC MODE choose MOV. When you choose MOV you will have a number of options. Unless you plan on shooting special effects choose FHD/30p/I - ALL-Intra. This setting is 1920x1080/30p at 72 Mbps.

Usually you will want to choose MF under the Continuous AF setting to turn off autofocus. This removes focus hunting during a shoot.

To manually change the aperture and shutter speed you will have to set the Mode Knob at

the top of the camera to  which is the manual movie setting. Then you can use the Motion Picture Menu Exposure Mode setting to change to [P],[A],[S], or [M].

It is usually best to set the Silent Operation feature of the Motion Picture Menu to On.

When you do this you can adjust aperture, shutter speed, and mic level using the touch screen on the camera. Despite the effectiveness of this feature it is still a better idea to input all settings ahead of time instead of risking jarring the camera during recording.

You can adjust the audio input level using the Motion Picture Menu Mic Level Adj selection. Level can be adjusted from 1 to 19. Higher levels are not advisable because they introduce noise.

What is a Digital Image?

A digital image is a computer file made up of **pixels**. A pixel is a single element of an

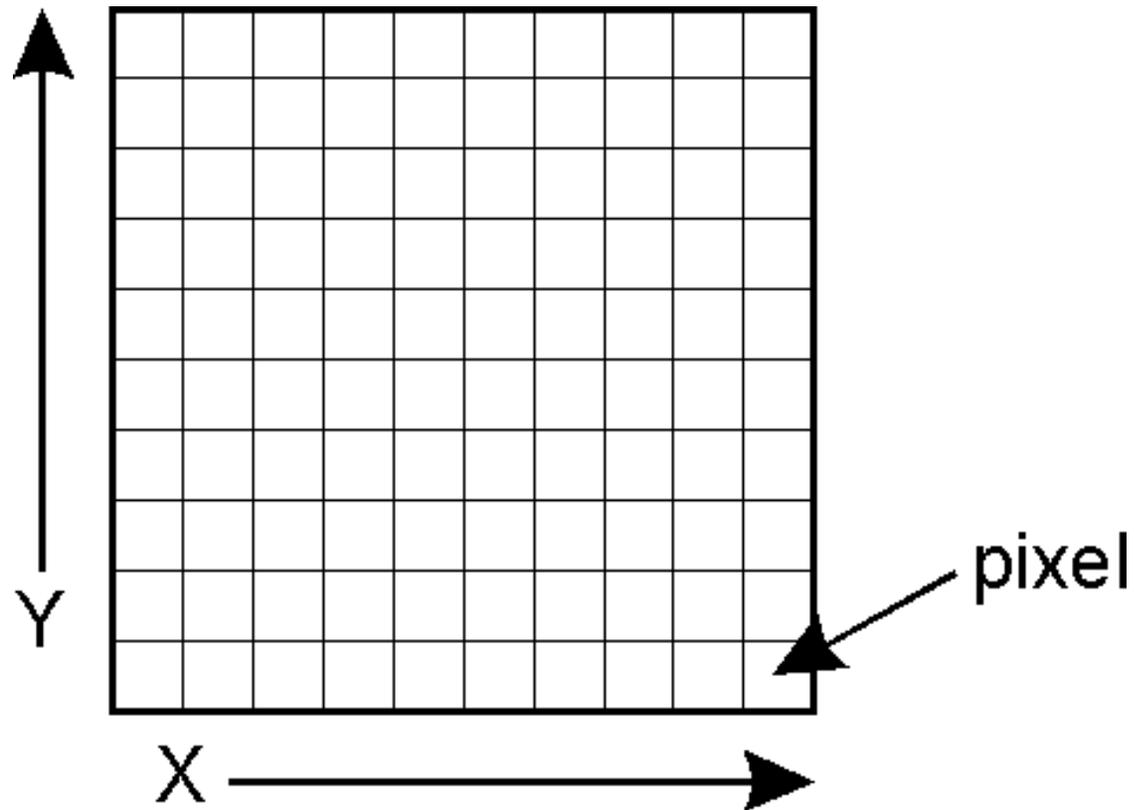
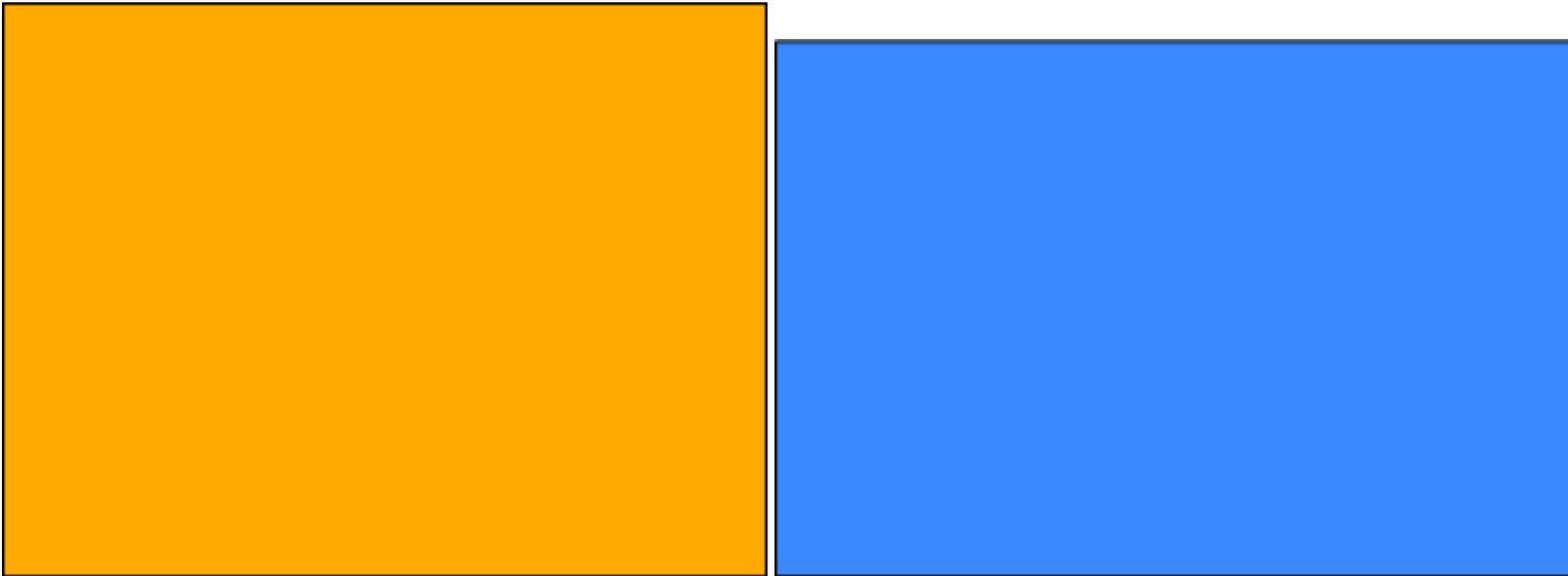


image that is one solid color. Pixels are lined up in **rows** and **columns**. The more pixels in an image, the higher the **resolution**. Resolution is a measure of how much detail an image holds. When an image is printed resolution is measured in how many pixels are found on a given amount of space on the paper. When images are used in the digital realm it is measured by the number of pixels in the image.

The ratio of the size of an image from left to right and up down is called the image's aspect ratio. An aspect ratio of 1:1 means that the image is a square. All other images are rectangles. Common aspect ratios for photography are 3:2 (photographic), 4:3 (SDTV),

and 16:9 (HDTV). With the Internet and web design images of a wide range of aspect ratios can be found as the images can be tailored to the space available to the website.



Standard Aspect Ratios

Video monitors display pixels by lighting up three elements, each of a different color. Traditional monitors use **red**, **green**, and **blue** elements to make nearly any color. The more variations of each color the better color is displayed on the screen. This is known as **color depth**. An image set up to display on a monitor is known as a **raster**, as opposed to

one setup to print. You can work in a fixed raster, for example one designed to be projected by a television set, or a variable raster, which is like one designed to be shown on the Internet.

Color

Color depth is traditionally measured by using the term bit depth. Digital images are recorded using **binary numbers**. A binary number is expressed by how many times two is multiplied by two. A 1 (one) bit number has two choices. A 2 (two) bit number is 2×2 or four choices. An eight bit number has 2^8 choices, which means:

$$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$$

That is 256 choices. In color digital image manipulation each color channel of the three available (red, green, and blue or **RGB**) has 8 bits assigned to it allowing for $256 \times 256 \times 256$ color differences in a single pixel. That is more than 16 million colors. In a digital image editing program we call this 8-bit color editing, or **photo-realistic**.

It is possible to edit images at higher color depth. The most common color depth after 8-bit is 16-bit. You won't need to edit 16-bit for most of your productions, but professionals use it to avoid apparent digital **stair-stepping**. Stair-stepping can be seen in digital images

that have been extensively modified because the grays and colors start to band, or have noticeable graduations that show up in the image raster.

RGB is not the only **color space** available to work in. Artists working in print will often choose the **CMYK** as a color space. While RGB is an additive color space most suitable for projection type images (such as those whose rasters appear on a television set) CMYK is a subtractive color space, which simulated how colored inks appear on a page of paper. CMYK stands for cyan, magenta, yellow, and key. Key is the black registration alignment that can also be used for pure black ink.

When in doubt, it is best to use the RGB color space format as your generic fallback since this is what your video screen is using. Select other color space formats only when you need to use them for specific tasks.

One area to note is that when taking images, many professional cameras allow you to choose two color spaces, **sRGB** and Adobe. Both are similar and are RGB images just with different ways of encoding the same thing. Many professional cameras also use a file format called **RAW** which is tagged by the company with its own proprietary file format, such as Nikon NEF. RAW files are taken off of the camera's charged couple devices before it has been processed into a file format. In fact, a RAW file is like a naked data stream. These files do not have a color space, and must be converted by the user before they can be of use.

File Formats

All digital images are essentially the same in terms of what they do, but over the years the industry has developed a wide range of **file formats**. A file format is essentially a wrapper that goes around the raw data of a digital asset like an image. Some file formats also give us a hint to some special things that have happened to the file - for example preparing it for use on the Internet.

File formats come in three basic types. The first is an **acquisition** format that is primarily used to capture images in cameras. The second is a **manipulation** format that is primarily used for editing an image. Finally there is a **distribution** format that is used for transmitting an image to an audience. Sometimes there have also been **archiving** formats, but in general an archiving format is usually the same as a acquisition or manipulation format. The differences in these type of format are how well they can handle editing, what color spaces they can encode, how small they are, and what sorts of compression and layering they accept. It is common for consumer applications to skip this complication all together and simply acquire, manipulate, and distribute images using the same format, but this is not an ideal for professional image processing.

	Compression	Acquire	Manipulate	Distribute	Color Space
GIF	Yes (Lookup Table)	No	No	Yes (Internet)	Indexed
JPEG	Yes (low to very high)	Yes (Consumer)	Yes (Consumer)	Yes (Internet)	RGB
PNG	Yes	No	No	Yes	RGB
PSD	No	No	Yes (Photoshop)	No	Any includes layers
RAW	No	Yes (Professional)	No	No	None
TIFF	Sometimes	No	Yes	Rarely (huge files)	Any

When you start you will likely be taking images as JPEGs (although many classes will require you to use RAW images), working with them as PSD, then sharing them again as JPEG. This is only a convenient starting point though and is not the best choice for professional image production.

You should always remember this saying: **quality once lost cannot be gained again**. It is always best to work in an uncompressed image format until the last step of the distribution process.

All of the file formats discussed above are **bit-maps**. As has been discussed, these images are built in the same way that television screens display images - by positioning dots of color on a raster. There is another form of image called a vector image. In a vector image lines are drawn by defining a starting point and an ending point mathematically. This has a significant advantage because the image can be resized perfectly by using mathematical formula. With bit-map resizing the raster can cause errors in how straight lines are viewed called stair stepping or jaggies. Early graphics programs were usually divided between **Draw** and **Paint** programs. Draw programs used vectors while paint programs used bit-maps. The most common vector image format is the **SVG** (scalable vector graphics) format. Another common format is the .ai format (Adobe Illustrator). Some graphics programs allow for both vector and bit-map information to be combined. Adobe Photoshop does this to allow text and other line drawing graphics to be superimposed onto the bit-map raster. The **PDF** file format used for document transmission is also equipped to handle both raster and vector elements. The main disadvantage of a vector is that not all types of images can be easily transformed into lines without creating files that are almost impossible to manipulate.

Finally, vector art is used exclusively in one area: 3d design. This art is known as a wire frame, which is an artistic frame work. It can be combined with a bit-map image, called a skin, to create a realistic looking 3d artifact.

Learning the basics in your image editor

Image editors allow you manipulate an image to make it better able to communicate your desired information, or to prepare it for use in another format of media. Most image editors use the following vocabulary to describe these functions.

Term	Effect
Contrast	Contrast is the difference between the light portions of an image and the dark part of an image.
Copy	Copying the selected portion of an image.
Cropping	Cutting out part of an image.
Cut	Copying and erasing the selected portion of an image.
Fill	Adding color or another image into an area of a selection.
Flatten	A process where layers are turned into a single layer. This is done often right before the image is made ready to convert from a format with layers (such as PSD) to one without (JPEG).

Layer	A method that allows part of an image to be superimposed on another part. Layer superimposition usually follows a set of rules that can be changed, for example one layer can dodge (brighten) the layer below, or can be only partially transparent.
Luminance	Luminance is a measure of brightness. Sn image can be made more or less bright.
Mode	Mode is a term for how the image understands and deals with the technical aspects of color reproduction. For example, most images are editing in RGB, but a GIF images uses Indexed color.
Rasterize	The process of turning a vector layer into a raster that can be edited in a paint program.
Resize	Changing the number of pixels in an image. This can be done in a way that either changes the aspect ratio, or allows it to remain the same (called constraining proportions).
Sample	A tool that samples the color of one part of an image so it may be used in another part.

Steps to Use the Camera

To use this camera you will need either an SD or SDHC card, or preferably, an SDXC card. We strongly suggest that you get a Class 10 SDXC card before using this camera - that way you can record the highest quality video.



Putting in your SD Card

Looking at the back of the camera, the card goes in the right side. The card should easily slide in with the notched side up until it clicks. Always keep the card door closed. To remove simply push down on the card and it will pop out. If the card does not come out

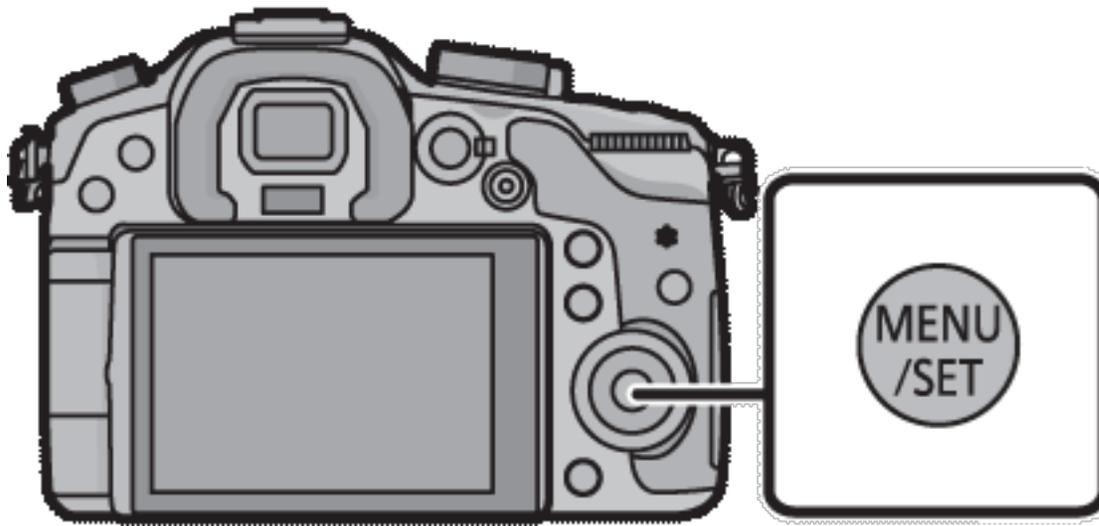
easily do not force it - you should take it to be looked at by the equipment checkout people.

Install the Battery

Each camera is equipped with a battery handle that allows a battery to be inserted from the right of the camera. The camera also has an internal battery - do not try to remove this. The two batteries should be able to run the camera for several hours. In addition you have a charger and a spare battery in the kit. It is good practice to be charging the space battery while the main one is in use. That way you will always have a fresh battery.

The Camera On/Off Switch

On the right side of the top of the camera is a switch under the camera setting knob. You can turn the camera on and off by changing the position of this switch. Make sure you keep the camera turned off when not in use to preserve your batteries.



Preparing for Still Photography

Setting up the camera for still photography is relatively easy.

First you will want to set the

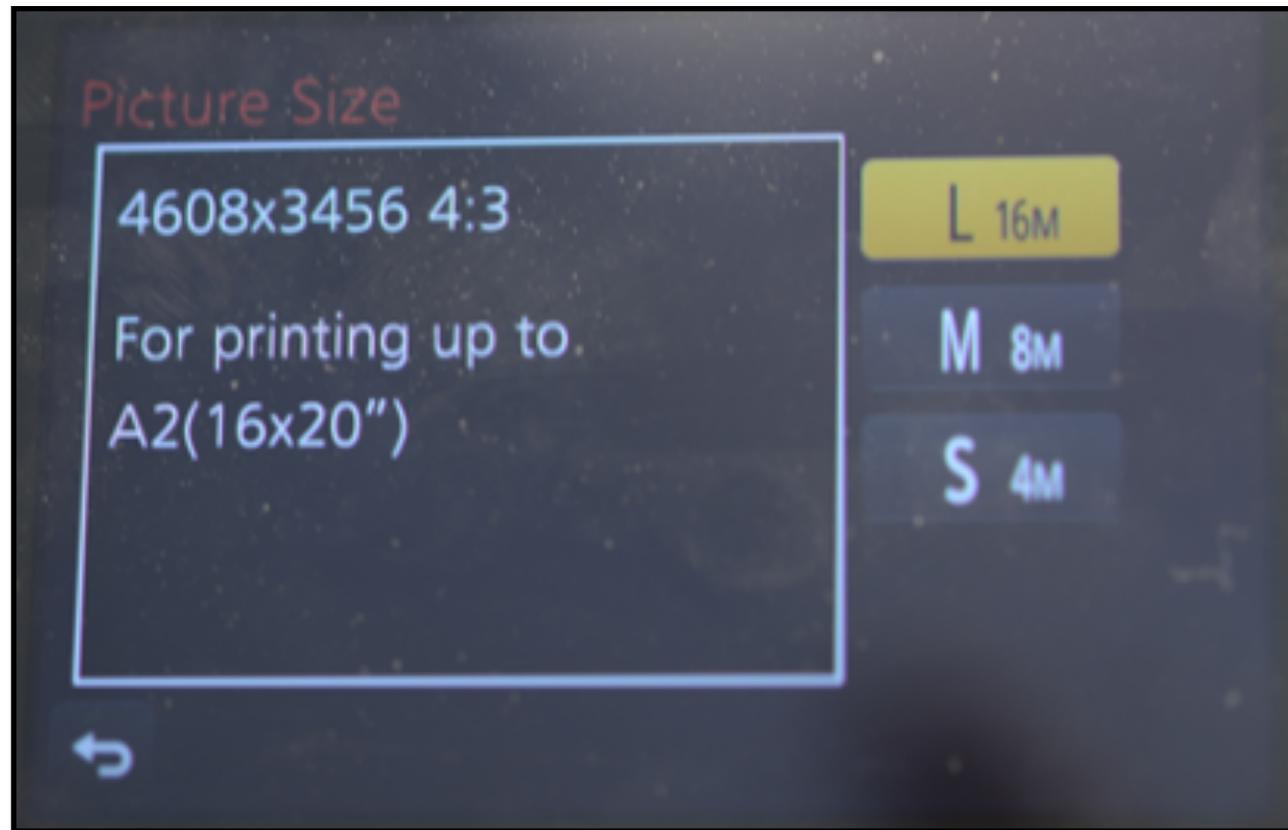
size, aspect ration, and quality of your pictures. To do this you will want to find the Menu / Set button. Pushing this button activates the menu. The menu you want is the REC Menu.

The REC Menu

The REC Menu allows you to choose the quality of still images you will be taking. This menu has three important submenus you need to set: Aspect Ratio, Picture Size, and Quality. Below is a chart of the suggested settings for you to use:

Mode	Aspect Ratio	Picture Size	Quality
Normal Photography	4:3	L (4608x3456)	RAW / High
Burst Photography	4:3	L (4608x3456)	JPEG / High
Photography for Video	16:9	S (1920x1080)	JPEG / High

As a rule of thumb choose the largest and highest quality image you can capture. Lower quality images are mostly useful for saving disk space, which is not really a professional consideration if you plan ahead. Only in the video setting for HD standard video will you take smaller images, and even then it can be useful to choose larger images and resize them in post production.



Picture Size for Image Photography

A hint about your REC Menu settings. Do not assume the person who used the camera before you was thinking clearly or understood how to use the camera. If you do not change



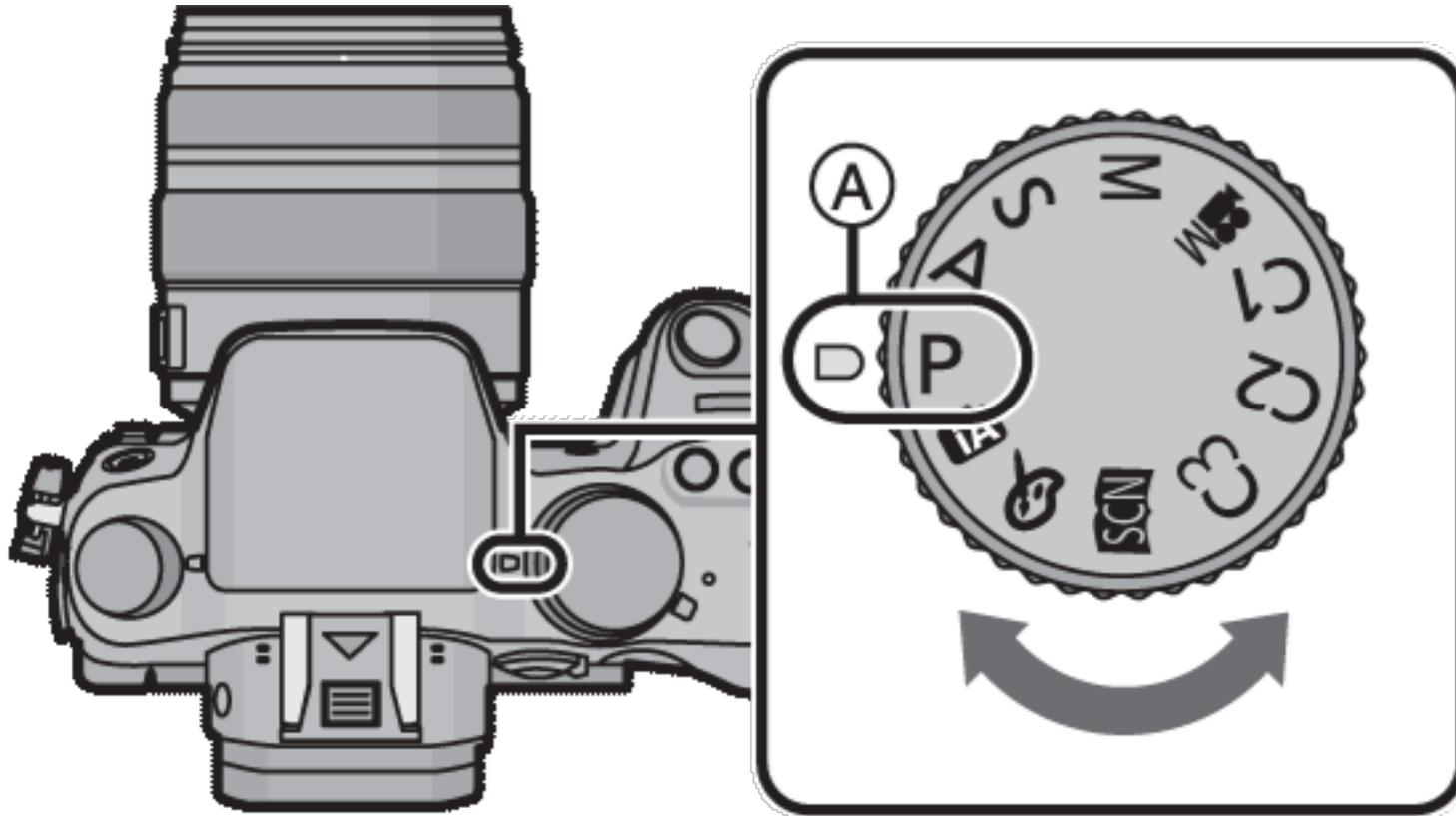
4:3 Aspect Ratio Settings



High Quality JPEG Picture Quality Setting



High Quality JPEG + RAW Picture Quality Setting



Drive Mode Dial

After making sure you are taking pictures in their highest quality, you want to choose the camera shoot style. You can do this by finding the drive mode dial on the upper left of portion of the camera. To shoot single images, turn the dial to which allows the camera to

shoot single images. The  position is for burst mode, discussed later. Most of the time you will shoot single images.

Selecting Metering Mode

Your camera has a built-in light meter and is capable of pretty much choosing a workable setting to get enough light into the camera if enough is to be had. This, however, ignores a whole wide area of artistic photography, and that is manipulation of shutter speed and depth of field. In Program mode (P) the camera makes all the choices; this is good for amateurs but not so good for professionals.

If you are taking pictures of fast events like sports where blurring is either desired or not wanted, then you can set the camera to (S), for shutter priority. In shutter priority the small notched dial at the front and the rear of the camera control shutter speed. The shutter speed you choose causes the aperture to automatically be adjusted to let in enough light to take the picture.

If you want to control the depth of field of images you are taking, choose (A) on the dial. The notched wheels now adjust the camera's iris, while the shutter speed is changed to allow enough light in.

You can take control of everything manually by choosing (M) on the dial. In this setting the front dial handles aperture and the rear dial handles shutter speed. In this mode you get exposure assistance in the camera viewfinder in the form of a small scale, a plus/minus zero is appropriate light levels, otherwise you will get a scale set to -3 (for too little light) or +3 (for too much) that tells you where you need to go for lighting.

If you do not have enough light but are at the settings you desire, you can add more with the flash, modify the ISO, or add external lighting.

Camera sensitivity [ISO]

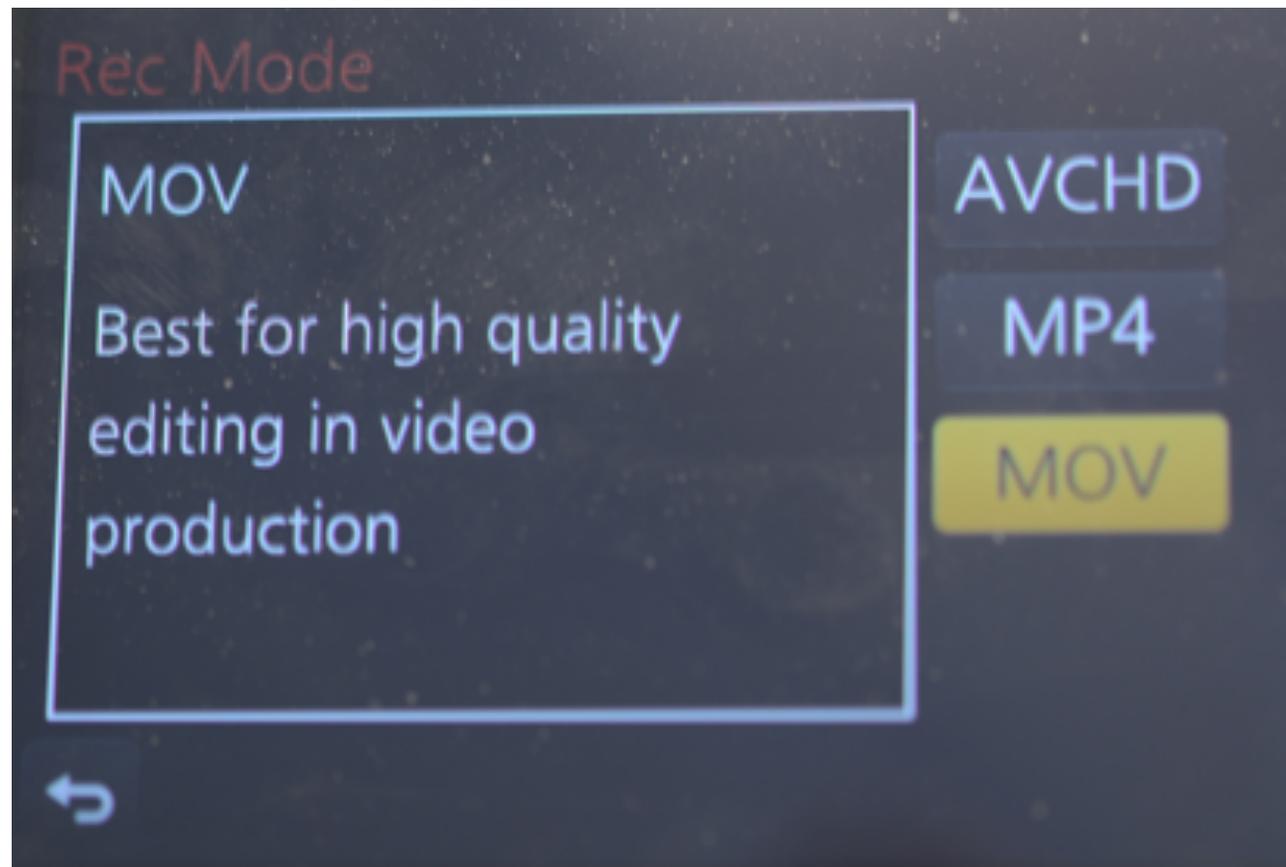
The normal ISO is 200. This produces the highest quality pictures. In low light you can increase ISO. On the right side of the camera is an ISO control button (the middle in a row of three). Push this button to increase the ISO for working in low light.

Using Burst Mode

Burst mode allows you to shoot from 2 pictures per second to 20 and has a wide range of uses. To choose burst mode first change the file-type in the REC menu from RAW to JPEG. This allows you to keep shooting pictures with no limit. Then  under Burst Speed in the REC menu choose the speed you want, L for 2 pictures a second, M for 4 pictures a second, H for 6 pictures a second, and SH for 20 pictures a second.

Preparing for Video

Many of the settings used in still photography such as Metering Mode are useful for video, but video does do thinks different in some areas.



MOV Video Setting

The Motion Picture Menu

You will want to set your recording quality for your video. Do not forget to do this since choosing the wrong mode can have a noticeable affect on quality. To set up your camera in the motion picture menu.

Under REC MODE choose MOV. When you choose MOV you will have a number of options. Unless you plan on shooting special effects choose FHD/30p/I - ALL-Intra. This setting is 1920x1080/30p at 72 Mbps. Usually you will want to choose MF under the Continuous AF setting to turn off autofocus. This removes focus hunting during a shoot. To manually change the aperture and shutter speed you will have to set the Mode Knob at the top of the camera to  which is the manual movie setting. Then you can use the Motion Picture Menu Exposure Mode setting to change to [P],[A],[S], or [M].



All Intra REC Quality Setting

It is usually best to set the Silent Operation feature of the Motion Picture Menu to On. When you do this you can adjust aperture, shutter speed, and mic level using the touch

screen on the camera. Despite the effectiveness of this feature it is still a better idea to input all settings ahead of time instead of risking jarring the camera during recording.

You can adjust the audio input level using the Motion Picture Menu Mic Level Adj selection. Level can be adjusted from 1 to 19. Higher levels are not advisable because they introduce noise.

Hybrid Kit Qualification Test

1. List the three types of media that the Hybrid kit was designed to collect.
2. Which two media types are not normally collected with the Hybrid kit.
3. Identify the three main parts of a camera.
4. What MODE setting on the camera allows the camera to make all of the choices for shot quality.
5. What MODE setting gives the user the ability to set the iris, while the camera controls the other settings.
6. List the three main settings that you can control when the MODE is set to (M) are?
7. What format video is suggested for most shooting?
8. What type of lens is one with a fixed focal length?
9. What type of lens is one with a variable focal length?
10. What type of camera uses a mirror to allow direct visual monitoring through the lens by the viewfinder?

11. What class of interchangeable lens does the GH3 use.
12. Draw an example of an aperture that is wide open, compared to one that is nearly closed.
13. When the aperture gets smaller, what happens to the depth of field?
14. When the aperture gets smaller, what happens to the amount of light that gets into the camera?
15. Which ISO setting allows for shooting darker scenes, one of 200, or one of 600?
16. Which ISO setting has more noise, one of 200, or one of 600?
17. What is the rectangular plate that connects the tripod to the Sony release called?
18. Does the Hybrid kit come with a prime or zoom lens?
19. If given the choice between using the camera on the shoulder, or on a tripod, which one is normally best?
20. What type of digital media is used to record images and video in the GH3?
21. What is the minimum class of digital media that should be used with the GH3?
22. What is the highest quality still-image format that can be selected in the camera?

23. What is the normal aspect ratio of digital video?
24. What is the normal aspect ratio for still images?
25. What is the standard audio connector used for the GH3?
26. Is the audio connector used in the GH3 professional?
27. What does DSLM stand for?
28. List the five rules for caring for the camera.
29. How much did this camera kit cost?
30. What type of tripod does the kit use?