

Canon XA30 (Kinda) Quick Guide

Global Emergent Media Lab

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CAMERA INFORMATION

1080p Video Recording

20x Optical Zoom Range (28mm - 576mm Equivalent in 35mm)

Battery and AC Power (wall socket) options.

Max quality recording time of 4 hours/memory card.

Up to 2 hour of video recording on standard battery

Up to ? hour of video recording on extended battery

Full Automatic and Manual control modes.

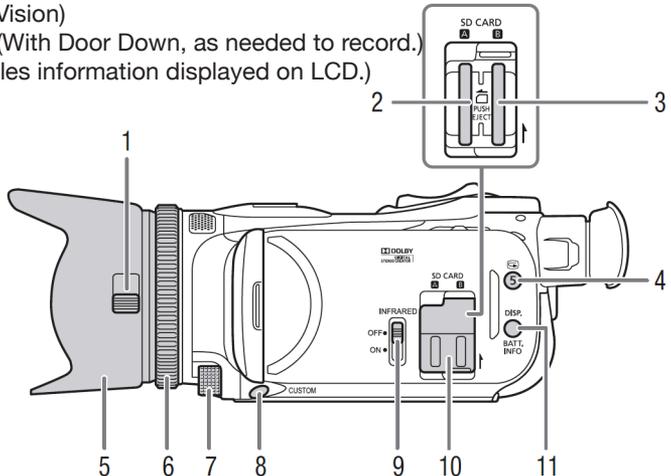
XLR Microphone Inputs

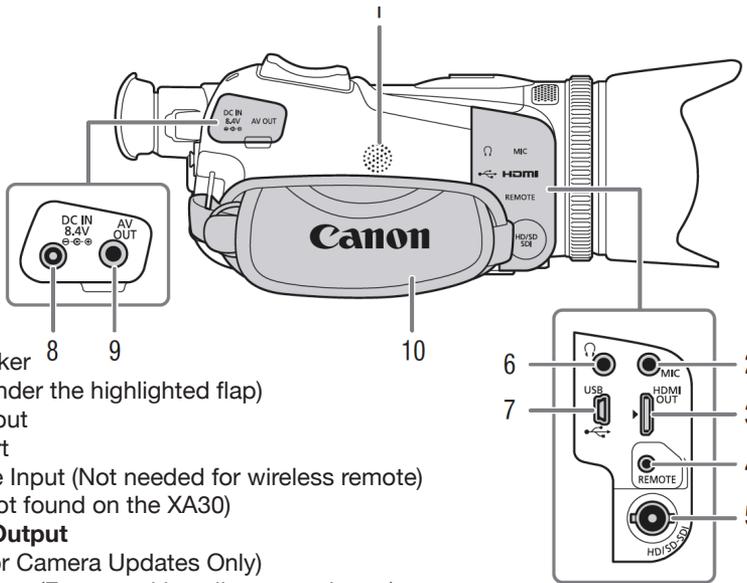
CAMERA BASICS

(Most important items in Bold)

Left Side View:

1. **Lens Cover Switch** (protects lens or opens for use) (assuming lens hood is on)
2. **Memory Card Slot A** (Primary) (Push in, Push out design)
3. **Memory Card Slot B** (Secondary) (Push in, Push out design)
4. **Custom Button (5) REC Programs Menu (Auto Exposure Modes)**
5. Lens Hood (Removable, but recommended, helps block flares)
6. **Focus / Zoom Ring** (Default is focus, can be set to Zoom, but not recommended)
7. **Custom Dial** (Set to exposure control in full manual)
8. **Custom Button** (Cycles through controllable selections for Custom Dial.)
9. Infrared Switch (Night Vision)
10. **Memory Card Slots** (With Door Down, as needed to record.)
11. **Display button** (Toggles information displayed on LCD.)



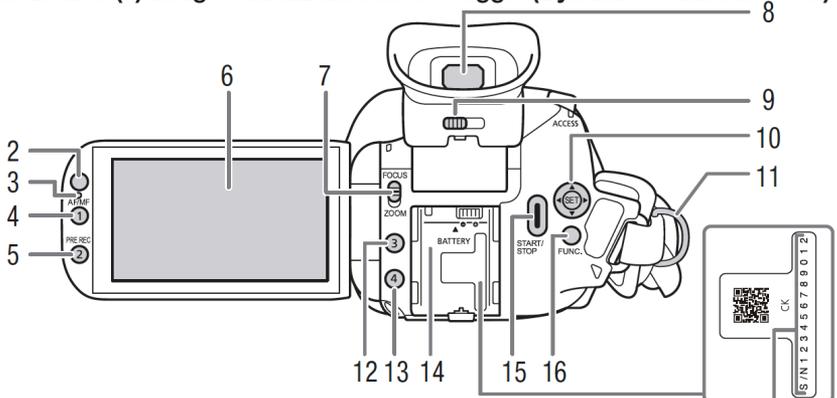


Right Side View:

1. Camera Speaker
- (2-7 are found under the highlighted flap)
2. Stereo Mic Input
3. HDMI Out Port
4. Wired Remote Input (Not needed for wireless remote)
5. (This port is not found on the XA30)
6. **Headphone Output**
7. USB Input (For Camera Updates Only)
8. **DC Power Input** (For use with wall power adapter)
9. AV Output (For Component/Composite Video Output)
10. Hand Grip

Back Side View:

2. Wireless Remote Sensor (another is found under the camera lens)
3. Illumination Sensor (controls screen brightness)
4. **Custom Button (1) Auto-Focus / Manual-Focus Button**
5. **Custom Button (2) Pre-Recording Toggle**
6. Camera Display / Touch Screen
7. **Focus/Zoom Switch** (changes whether the front ring focuses or zooms)
8. **Viewfinder** (must be pulled out in order for it's screen to be activated)
9. Diopter Adjustment (allows viewfinder to be adapted to different vision strengths)
10. Joystick and Set Button (alternative way of controlling menus to the touch screen)
11. Hand Strap Mount
12. **Custom Button (3) Image Stabilization Mode Toggle (Dynamic / Standard / Off)**



Back Side View: (CONT.)

13. **Custom Button (4) Backlight Compensation Mode On/Off**

14. **Battery Slot**

15. Start/Stop Record Button

16. Function Button (accesses the function menu, alternative to touch screen.)

Top View:

1. Onboard Stereo Microphone (default if audio handle is not equipped)

2. Cold Shoe (Front) and Audio handle data connection (handle attachment point)

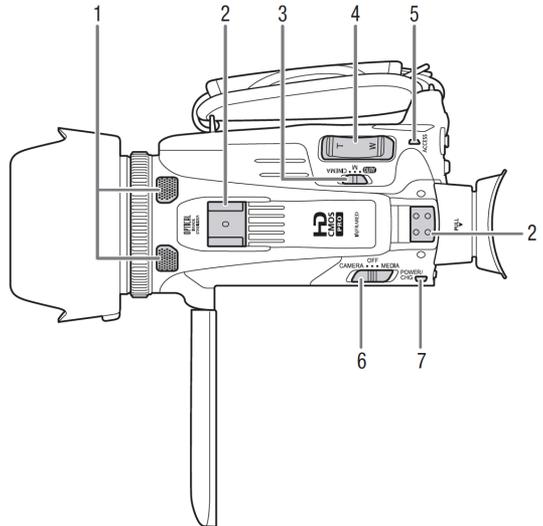
3. **Mode Switch** (Full Auto / Manual (Selective Auto Available) / Cinema Mode)

4. **Main Zoom Rocker** (this rocker is affected by “soft zoom” settings.)

5. Access Indicator (Memory Card Read/Write Indicator)

6. **Power Mode Switch** (Camera Mode / OFF / Media (Clip Review))

7. Power / Charging Indicator.

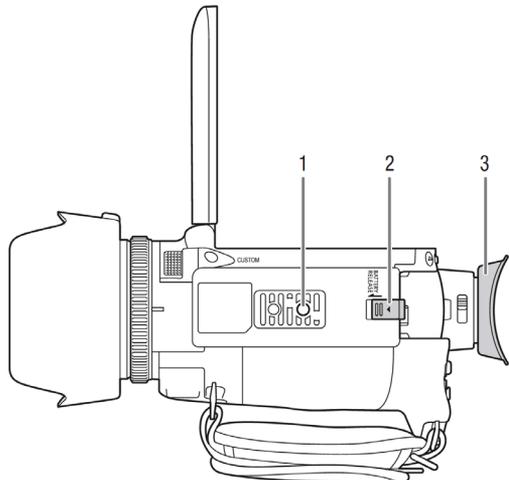


Bottom View:

1. Tripod Socket

2. **Battery Release Switch**

3. Eye Cup of Viewfinder



There are a few main steps you have to take before you start recording with this camera in order to assure a good filming experience.

INITIALIZE YOUR SD CARDS

Initializing is this camera's wording for Formatting, so essentially to wipe the card clean and prepare it for recording. This is important so you have the maximum space and as a minor security against the very rare occurrence of card corruption.

It is suggested you do this for all 3 memory cards in your kit at the beginning of your shoot.

To do this:

- a. On the touchscreen of the XA30 hit FUNC. (Top Left)
- b. Then hit Menu. (Top Left Again)
- c. Hit the Film Frame Menu. (Middle Tab)
- d. Scroll to the bottom of the Menu, and click Initialize SD.
- e. Select the card you wish to format.
- f. Select Initialize at the bottom of the page.
- g. You can either select:
Yes (Quicker)
or Complete Initialization (Which better protects against card corruption.)
- h. Wait for the Initialization to complete and you're good to go.

CHECK YOUR RECORDING SETTINGS

Before you start shooting you should start considering what format, frame rate, etc. you want to use. This should be based on your ideal distribution method for your research. Here are some suggested settings.

To access these settings

- a. On the touchscreen of the XA30 hit FUNC. (Top Left)
- b. The hit Menu. (Top Left Again.)
- c. Hit the Film Frame Menu. (Middle Tab)

Movie Format:

MP4 (Easier file format to edit, requires less computing power.)

Recording Mode:

24 Mbps (Best option for 23.98 or 29.97 fps)

35 Mbps (Only an option for 59.98 fps.)

Recording Media:

Memory Card A (To start)

Dual/Relay Recording:

Relay Recording (If Card A fills, it will seamlessly transfer to Card B)

Dual Recording (records the same footage to both cards for safety, if desired.)

Frame Rate:

23.98 (More "Cinematic Movement")

29.97 (Default for Broadcast Television, Slightly better for Motion Blur.)

59.98 (Best for High Speed Motion) (Look in Recording Mode Menu to enable)

File Numbering:

Before you start shooting hit Reset in this menu. It will restart your files at 001, instead of where the last shooter left off.

DUAL RECORDING SETTINGS

The following settings are most useful if shooting with two XA30s simultaneously, say in an interview, for Synchronization in post.

Time Code Running Mode:

Free Run (If shooting with more than one camera, it helps synch)

Initial Time Code:

Open this on both cameras, set the time code on both cameras to the same number, then hit Reset on both cameras at the same time. You will now have pretty well synched time code (+/- a frame or two.)

DECIDE ON YOUR AUDIO SET-UP

This camcorder has a number of possible audio inputs as well as an onboard microphone, before you start shooting you should decide on your means of audio capture.

Onboard Microphone: (Top View #1)

This microphone is only suggested to be used if you:

(A) Do not need to record dialogue or only need a “scratch track” for audio.

(B) Your main concern is blending in as much as possible when shooting.

This mic does not have the best quality and will pick-up your camera handling sounds and is not specifically front directional.

*Scratch track designates a reference track to rebuild a soundtrack later.

Stereo Microphone Input: (Right Side View #2)

If you happen to have a microphone that you wish to use that connects via a stereo 3.5mm jack (like most headphones) you can connect it to this input.

(Remember to check your settings to make sure it is engaged.) Also note that the camera does not have a dial from which to control the loudness of this input, it is all in menus.

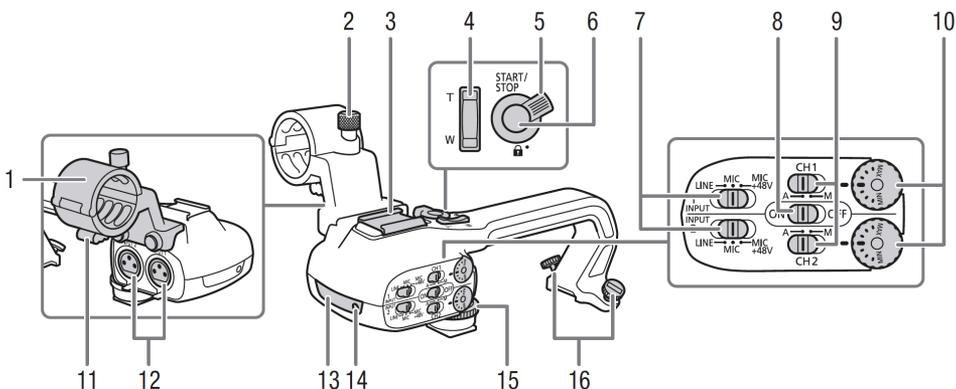
The Audio Top Handle: (Top View #2 for connection points)

The audio top handle is most likely the best means of capturing audio with this camera, assuming the source of the audio is an XLR style microphone. It has 2 XLR inputs and a Shotgun Mic Holder (to hold most shotgun microphones). The other main advantage to this way of recording audio is that it has physical controls (diagram on next page.)

It has two switches that allow you to set the sensitivity of your microphone (Line / Mic) as well as to provide it power from the camera if the microphone requires it (Mic +48v). It has one switch per input that allows you to set the loudness adjustment to auto or manual (CH1 and CH2). If set to manual there are two physical dials that allow you to control the audio (highly recommended.) Lastly there is the middle switch which allows you to turn the XLR inputs ON or OFF. (If set to off the camera will default to it's onboard microphone.)

The Audio Top Handle:

1. **Shotgun Microphone Holder** (*Some shotguns, including the lab's NTG-2 are slightly too skinny and will need to be "shimmed" for the holder to keep them in place. Wrapping rubber bands around the microphone can be a way to do this effectively.)
2. Shotgun Microphone Holder Securing Screw
3. Cold Shoe (mounting point for accessories)
4. Secondary Zoom Rocker (this rocker does not "soft zoom", not recommended)
5. **Lock Switch for Secondary Recording Start / Stop Button**
6. **Secondary Recording Start / Stop Button**
7. **XLR Input Sensitivity / Power Settings** (Line [Low] / Mic [High] / Mic +48v [Power])
8. **XLR Input On / Off Switch** (disables audio inputs if off and activate onboard mic)
9. **XLR Input Automatic or Manual Volume Adjustment**
10. **XLR Input Manual Volume Adjustment Dials** (recommended)
11. Microphone Cable Clamp
12. **XLR Inputs 1 and 2**
13. Infrared Light (can be used if in Infrared Mode)
14. Record Lamp (displays when camera is recording)
15. **Handle Unit Front Clamp** (screws down to hold handle in place in front shoe.)
16. **Handle Unit Rear Screws** (screws into corresponding holes on camera body.)



When using the manual controls on the Audio top handle, look at the LCD screen of the camera and locate the audio level indicators. In the case that you are recording a voice, set-up by having the subject stand the expected distance from you and speak at a normal volume. As they do this adjust the volume using the dials until it is sitting on the edge between the green and orange sections of the audio indicator, this should give you room should the volume jump due to a shout for example, while keeping dialogue audible.

WAYS OF OPERATING THE XA30

Operating the XA30 can be as simple or as complicated as the operator is comfortable with. From the start the camera has a fully automatic mode, which will have the camera managing all decisions for the operator. There is also a manual mode, in which there are also various automatic settings which can be enabled or disabled depending on your desired level of control.

FULL AUTOMATIC MODE

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The main thing to keep in mind about going fully automatic is that the camera doesn't necessarily know what it is that you are wanting it to do. So, for example, if you want it to expose for the darker interior of a place with bright windows it may do the opposite, or if you want to focus on a distant object and someone moves between the camera and that object, it may refocus. This is to say it has its limitations, but if you just need to get shooting and don't want to deal with a somewhat steep learning curve it will get you footage.

To access "Full Auto" mode move the "Mode Switch" on the top right of the camera to the "AUTO" position. (Next to the Zoom Rocker.)

This mode allows the camera to basically take over all tasks and options from the user except for enabling pre-record, initializing your SD cards, setting your file settings and zooming.

All focusing, exposure and sound control* is handled by the camera. (*The manual switch on the top handle still permits manual control of external microphones in this mode.)

SELECTIVE AUTOMATIC SETTINGS

The next option is to go to Manual mode and select what automatic options you would or would not like to use.

To do so move the "Mode Switch" on the top right of the camera to the "M" Position. (Next to the Zoom Rocker.)

In Manual Mode you can toggle a variety of settings to automatic or to manual depending on the level of control you want over the camera.

Below are the relevant settings, all of them can be accessed through the menu, when there are buttons to activate functions it will be noted. There will also be examples of good and bad situations to use certain functions.

AUTOFOCUS

Autofocus is a fairly common function in cameras. If your camera has an obvious point to focus on (i.e. a talking head interview or your subject is taking up the majority of your frame) it will work pretty well. If you are doing a wide shot and want to be focused on something specific in the distance with other moving objects involved, it will likely hunt and search for things to focus on, ruining your shot. This mode is to be used primarily when your subject takes up the center and/or majority of your frame.

Press the #1 Button on the left side of the screen. This toggles autofocus on and off.

Auto exposure is when the camera controls the brightness of your shot for you. It can be very useful as the camera lacks an easy physical control method for brightness.

To access the Auto exposure modes:

- A. Press FUNC (top left of touchscreen) or the #5 button next to the memory card door.
- B. Select Record Programs.
- C. Select from the following Auto Exposure Modes:

Select the mode that best suits the situation you are shooting in. Depending on which mode you choose the camera will prioritize different aspects of the lens and sensor chain in order to provide balanced exposure.

“P” - Programmed Auto Exposure

This is basic Auto Exposure, the camera will attempt to balance all aspects of the camera system (Gain, Iris and Shutter Speed) in order to achieve a compromise between brightness, reducing motion blur and providing a good depth of focus. This is generally the best setting in most situations.

“Tv” – Shutter Priority Auto Exposure

This allows you to select a desired Shutter Speed usually in order to prioritize the reduction of motion blur. This is the best setting if you are shooting fast moving subjects (bikes, cars, etc) or if you want to create motion blur for artistic reasons.

Selecting a lower number (i.e. 1/48th of a second) for your shutter speed will increase brightness without increasing noise, it will also increase motion blur. Selecting a higher speed (i.e. 1/250th of a second) will introduce more noise in order to keep the image bright while decreasing motion blur. (The amount of noise depends on how bright your environment is and thus how much the camera is trying to compensate.)

An average shutter speed is equal to double the frame rate you're shooting in. (ie. the shutter speed for 23.98fps = 1/48, 29.97fps = 1/60.) For fast moving human subjects you can go up to 1/100 to lessen blur, for fast moving subjects such as Cars 1/250 may be appropriate. If you are shooting a seated interview with limited lighting you can go to a shutter speed equal to your frame rate, thus a low shutter speed, but be aware of the possible blur if the subject starts to move quickly or consistently.

“Av” – Aperture Priority Auto Exposure

This allows you to select a desired Iris setting (aka. F-Stop in photography), this primarily affects how deep your focus is. (i.e. your depth of field.)

Selecting a small number Iris value will result in a smaller range of space in focus. A higher number setting will result in a longer range of space in focus.

To maintain brightness the camera will modify the Gain and Shutter speed. As a result, choosing a high number as an Iris setting in low light conditions will make you more prone to having motion blur and noise in your footage. When selecting an iris setting, the camera may “flash” the value you have selected, if it does this you have chosen a value too low for it to keep optimal brightness in your current environment.

Also note, another setting called “Auto ND” will affect the options you have in this menu. **10** (Auto ND will be discussed after this section.) If auto ND is set to “on”, when you try to lower the iris below 4.0 it will apply several levels of Neutral Density Analogue darkening before going to a lower actual iris setting. Meaning that it will darken the image without actually making the range in focus longer. Therefore it is suggested you disable Auto ND if you want to use this exposure mode.

“Various Images” - Scene Mode

This will engage a version of the Programmed Auto Exposure, thus balancing all aspects of the camera system equally, but while expecting certain situations. This mode will also modify the white balance of the camera. (In the sunlight mode it will adjust the color more orange to compensate for blue sunlight, the indoor mode will adjust the color more blue to compensate for orange indoor lighting.) You can experiment with these settings to see which one best suits your situation.

AUTO ND:

This setting is useful in shooting outdoors or in extremely bright conditions, it can also be somewhat useful if you are transitioning back and forth from bright to moderate environments. (Going outside and coming back inside to a well light location.)

It allows for the camera to use internal analogue lens filters to darken your image without introducing noise. It is only available in “Auto” or “Off” modes, no manual control is available.

- A. Press FUNC (top left of touchscreen) then MENU (same location).
- B. Select ND Filter from the Camera tab (leftmost tab).
- C. Select Automatic or Off.

AUTO WHITE BALANCE:

This allows your camera to change the color of your image to compensate for the color of the light sources around you, in order to aim for white objects to look white.

This is accessible by pressing FUNC (top left of touch screen) or the Function Button (next to record button.) then selecting White Balance.

There are many modes to this option, the most automatic are:

AWB – Automatic White Balance

The camera continuously attempts to keep an optimal white balance. This is best only if you do not understand white balance as like autofocus it has problematic practical limits. For example, moving past different colored light sources (like panning around a room with windows and regular lights) or moving from indoors to outdoors can cause it to shift somewhat randomly between color balances until it settles on a final setting. This can be difficult to repair in post..

Scene Settings - (Sun, House, Cloud, Fluorescent Tube, Lightbulb)

These settings are calibrated to common values for different lighting situations. “Sun” (aka Daylight) is set to natural light, “House” (aka Shade) is set to a warmer temperature, etc. The Fluorescent options are useful as such lights typically have a slight green cast that is hard to correct, but the options compensate for it in camera.

K - Kelvin Setting

If you are familiar with photography or cinematography you may just know how to set your white balance by number. If so this setting allows you to set your color temperature in Kelvin. (Tungsten Lights [Lightbulbs] typically fall between 3000-3400, Daylight is more variable, usually 6000 is close to midday sunlight color temperature with it becoming “colder” when overcast and “warmer” when nearing sunset.)

“Last two options in menu” - Custom White Balance 1 & 2

This is represented by two triangles with a square in the middle. This allows you to set a custom static white balance for the environment you are in..

To do this, select this option and then place something bright white (piece of paper, shirt, etc.) in front of the lens and in the light you will be shooting in. (ie. in front of your seated subject in an interview when all the lights are on and set-up.) Point the camera towards this white object and zoom till the object fills the frame. Select “Set WB”, the camera will adjust to set the appropriate white balance for this lighting and then keep it stored until you next reset it.

If you are moving between spaces with different lighting there are two of these custom settings so you can prepare both of them in advance and then switch between them as needed.

FULL MANUAL SETTINGS

If you want to have full manual control over the camera then you want to make sure to do the following.

MANUAL FOCUS

Turn the Autofocus off by hitting button #1 on the left of the touchscreen. The Display will show MF instead of I.AF. You can now control the camera via the focus ring just behind the lens.

In manual focus mode, the camera has a Focus Assist function that will punch-in* to the center of the image in order to help you ascertain that you have nailed your focus. After a few seconds it will return to the normal framing.

*Meaning the image on the touchscreen will zoom in by about 150%, this will not occur in the footage you are recording, it is just a function of the live view screen.

MANUAL EXPOSURE

Manual exposure on this camera is tricky, due to a lack of physical controls, but in a controlled environment it can be usefull.

To engage it either go to FUNC.> REC PROGRAMS or press the #5 custom button next to the memory card door. This will open the auto-exposure programs menu. In this menu press “M” for manual mode.

The first thing that will happen is it will open a manual exposure menu, you don't need to worry about using this, except that you can set your zebra settings using the wrench and button bellow it on the right side.

The zebra function is one that primarily helps you prevent over exposure. With the function engaged any part of the image that is exceeding the zebra setting will have white lines criss-crossing it on your screen or viewfinder.

This camera has 2 zebra settings 70 and 100, these settings mean “show Zebras for anything over 70% (or 100%) of total brightness the camera can record”. I would suggest using 100, as then you will know that whatever in your shot appears with zebras is too bright for the camera to record and will come out as pure white, this way you can adjust your settings appropriately.

Having set or left the zebra setting off, you can leave this menu. You will see on your screen display that there are now 3 settings above the indication for your focus type. (MF if you selected Manual Focus.)

These are:

F# - Iris (In F-Stop Values)
1/# - Shutter Speed
#dB - Gain Value

In order to engage them or change them you can use the custom button and wheel just below and in front of the touchscreen on the left side of the camera. (#7 & #8 on the Left Side View Diagram in the first section of this guide “Camera Basics”).

The button will turn on wheel control with a first push, illuminating whatever was the last setting changed in orange on your screen and allowing you to change it's value by turning the small wheel in front of the button. Pressing the button again will switch the setting you are currently affecting, changing it to orange cycling through them from top to bottom.

As a repeated note for those new to manual control, changing the values will have to following effects:

F# (Iris): A lower number will brighten the image but will shorten the depth of the area that the camera records as in focus (i.e. depth of field.) A higher number will make your focus deeper, extending the area in focus, but will darken the image.

1/# (Shutter Speed): A standard shutter speed will balance motion blur and exposure, this standard is twice your frame rate. (1/48 for 23.98P, 1/60 for 29.97P) A low shutter speed will brighten your exposure but will increase motion blur (1/24 or lower for 23.98P, 1/30 or lower for 29.97P.) A high shutter speed will lower your exposure but minimize motion blur (1/100+).

Usually shutter speed should be your last resort when it comes to exposure control and should be more a consideration if you have very fast moving subjects.

#dB (Gain): Gain is where digitally or through analog means the sensitivity of the sensor is being boosted to brighten your exposure. 0dB is no boosting anything over this will both brighten the image you capture and increase the noise in that image. (Which is generally seen as undesirable, so be careful.)