

# Equipment for Photographers

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The Basics

# Cameras

## DSLR Camera Bodies

- what do all the numbers mean?
- megapixels
- fps
- iso
- focusing points/auto focus modes
- video
- mic jack
- touch screen
- bluetooth, GPS, wi-fi, etc

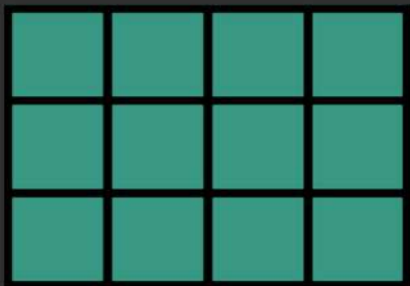
We will discuss full frame vs crop camera bodies after looking at lenses.



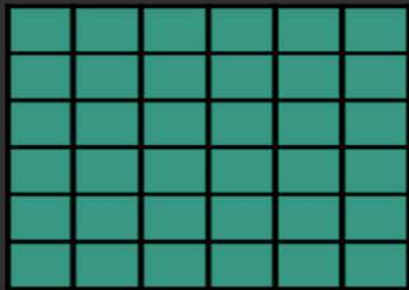
-pixels are those blocks of colors that you can see when you zoom in in Photoshop.

-you can have fewer but larger pixels, or more but smaller pixels. The more but smaller version allows you to blow up the image to a larger print size and still get good detail.

-higher megapixels also allows you to crop more of the image and still have good quality



## 36 Pixels



		Print Size								
		8x12	11x14	16x20	16x24	20x30	24x36	30x45	40x60	50x75
Camera Resolution	<b>2MP</b> 1600 x 1200 pixels	133	114	80	67	60	50	40	30	24
	<b>3MP</b> 2048 x 1536 pixels	192	146	102	96	77	64	51	38	31
	<b>4MP</b> 2464 x 1632 pixels	205	176	126	103	82	68	55	41	33
	<b>5MP</b> 2592 x 1944 pixels	243	185	130	121	97	81	65	49	39
	<b>6MP</b> 3008 x 2000 pixels	250	215	150	125	100	83	67	50	40
	<b>7MP</b> 3072 x 2304 pixels	288	219	154	144	115	96	77	58	46
	<b>8MP</b> 3504 x 2336 pixels	292	250	175	146	117	97	78	58	47
	<b>9MP</b> 3488 x 2616 pixels	327	249	174	164	131	109	87	65	52
	<b>10MP</b> 3872 x 2592 pixels	323	277	194	161	130	108	86	65	52
	<b>11MP</b> 4064 x 2704 pixels	339	290	203	169	135	113	90	68	54
	<b>12.7MP</b> 4368 x 2912 pixels	364	312	218	182	146	121	97	73	58
	<b>16.6MP</b> 4992 x 3328 pixels	416	357	250	208	166	139	111	83	67
	<b>18MP</b> 4904 x 3678 pixels	460	350	245	230	184	153	123	92	74
	<b>22MP</b> 5488 x 4145 pixels	518	392	274	259	207	173	138	104	83
	<b>31MP</b> 6496 x 4872 pixels	609	464	325	305	244	203	162	121	97
<b>39MP</b> 7216 x 5412 pixels	677	515	361	338	271	226	180	135	108	
		Resolution in dpi								

# FPS

Frames per second in Burst Mode

Examples:

Canon SL2 = 5 fps

Canon 5D mark iv = 7 fps

EOS-1D X Mark II = 14 fps



# ISO

ISO helps you to shoot better photos in low light situations (that is a simplified statement, but it is ok for now)

Cameras offering higher ISOs will give you better quality images with less noise and/or let you use faster shutter speeds in lower light situations.

Sometimes these better cameras will also have less noise at the same ISO setting as a cheaper camera.



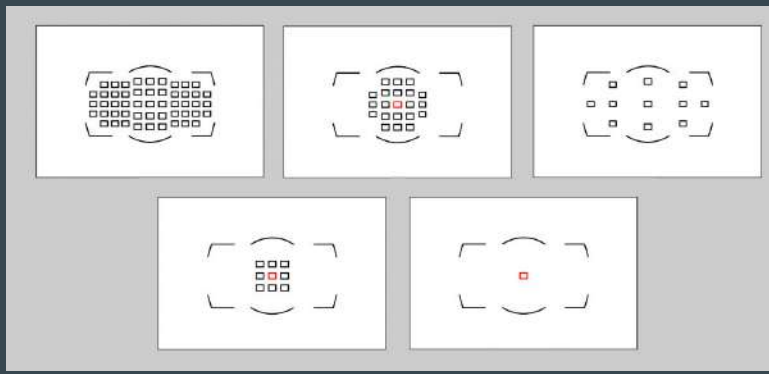


# Focusing points & Auto Focus Modes

Cameras have different amount of focusing points.

They also have different ways of implementing autofocus.

Generally, more advanced (expensive) cameras will have more options



AF MODE	SINGLE	CONTINUOUS	AUTOMATIC
Canon	ONE SHOT	AI SERVO	AI FOCUS
Nikon	AF-S	AF-C	AF-A

**AF**

AF1: AF config. tool

Case 5

For erratic subjects moving quickly in any direction

Tracking sensitivity

Accel./decel. tracking

AF pt auto switching

Help Detail set.

# Video & Mic Jacks

Some camera bodies do not shoot video.

Some only shoot a lower HD video.

Some shoot higher HD or even 4k video.

If you are really serious about video, you may want a camera body that has a mic jack so that you can use external microphones for interviews or better capturing sound.



# Touch & Articulating screens

Some camera models have touch screens now. They can be very convenient.

An articulating screen can be great for shooting selfies or recording videos of yourself. They are also more convenient for very high or very low angle shots.





# Bluetooth, WIFI, GPS

It is becoming more common to have these additional options on camera bodies.



# Lenses

A review of focal length:

The lower the number, the wider the scope of image.

The higher the number, the more the lens zooms in.



# The numbers on a lens

Focal Length

Aperture

L (for Canon)

USM or SWM

IS

## Canon EF 24-70mm f/2.8L II USM Lens

B&H # CA247028LII • MFR # 5175B002



The image shows a Canon EF 24-70mm f/2.8L II USM lens, a professional-grade zoom lens. It is black with a red ring near the front element. The lens has a wide aperture range from f/2.8 to f/22 and a focal length range from 24mm to 70mm. The front element is protected by a clear lens cap. The lens is shown from a front-three-quarter view, highlighting its textured grip and various control rings.

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# Focal Length

What do you want to shoot and what is the best lens for it?





# Aperture

Do you need a “fast” lens that has a more open aperture? Remember that is a lower fstop number, such as f1.4, f2, or f3.5. It will let in more light through the lens, so that you can use a faster shutter speed to freeze action.

Generally, zoom lenses with low apertures are more expensive.



**Canon EF 70-200mm f/4L USM Telephoto Zoom Lens for Canon SLR Cameras**  
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Product f  
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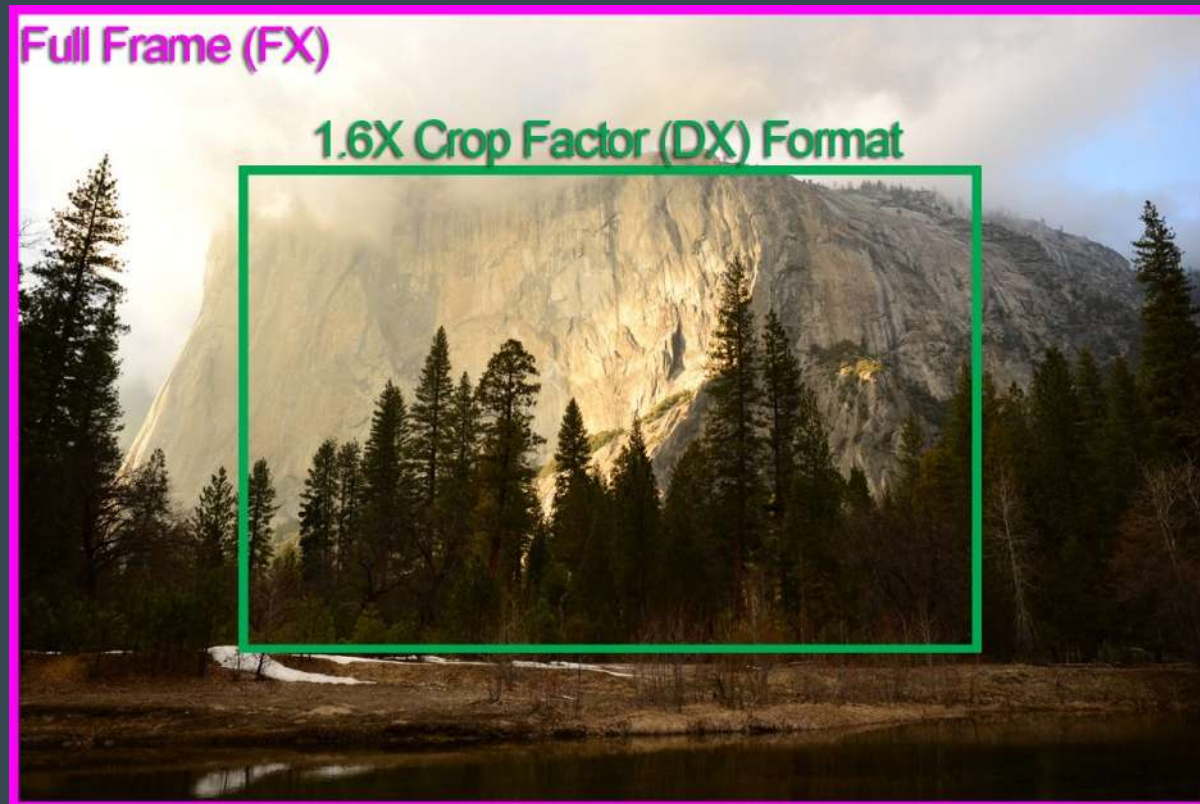
Product f  
The Cano  
Cameras.



# Full Frame vs Crop Camera Bodies

Full Frame sensors cover a larger area. They are generally much more expensive. They are true to a lens' focal length. Therefore, a 50mm lens will look like a 50mm lens.

A cropped sensor shows less of a scene. Also, it multiplies the focal length of the lens you are using by 1.5 or 1.6. Therefore, a 50mm lens will actually act like a 75mm lens. This can be great if you want to have a longer focal length, but bad if you want very wide angle shots, as you must buy a VERY wide angle (and usually more expensive) lens.



# Lights & Light Modifiers

LED stand lights are more common because they are cooler and you can choose the color temperature.



External flashes attach to the camera body's hot shoe or some camera bodies have built in flashes.

Just as clouds soften and even out the light from the sun, there are light modifiers that you can put on photo light sources that help even out the light as well.



# Other Accessories

Tripod

Monopod

Lens Toys

Bags

