



“We all had that one great inspiring teacher”

Yet, here is my view. Coen Cramer Winter 2024

Light=photography

- **Photo =
Light**
- **Graph =
Drawing, displaying,
painting**

Become a poet and you have,

- **“Painting with Light.”**



Light is a medium

why?

- **Eyes**
observing the idea
or finding the topic
- **DSLR - Camera**
is our canvas (sensor)
(technically and etch plate)
- **Lens**
is our **Brush** it puts something on the canvas

Light

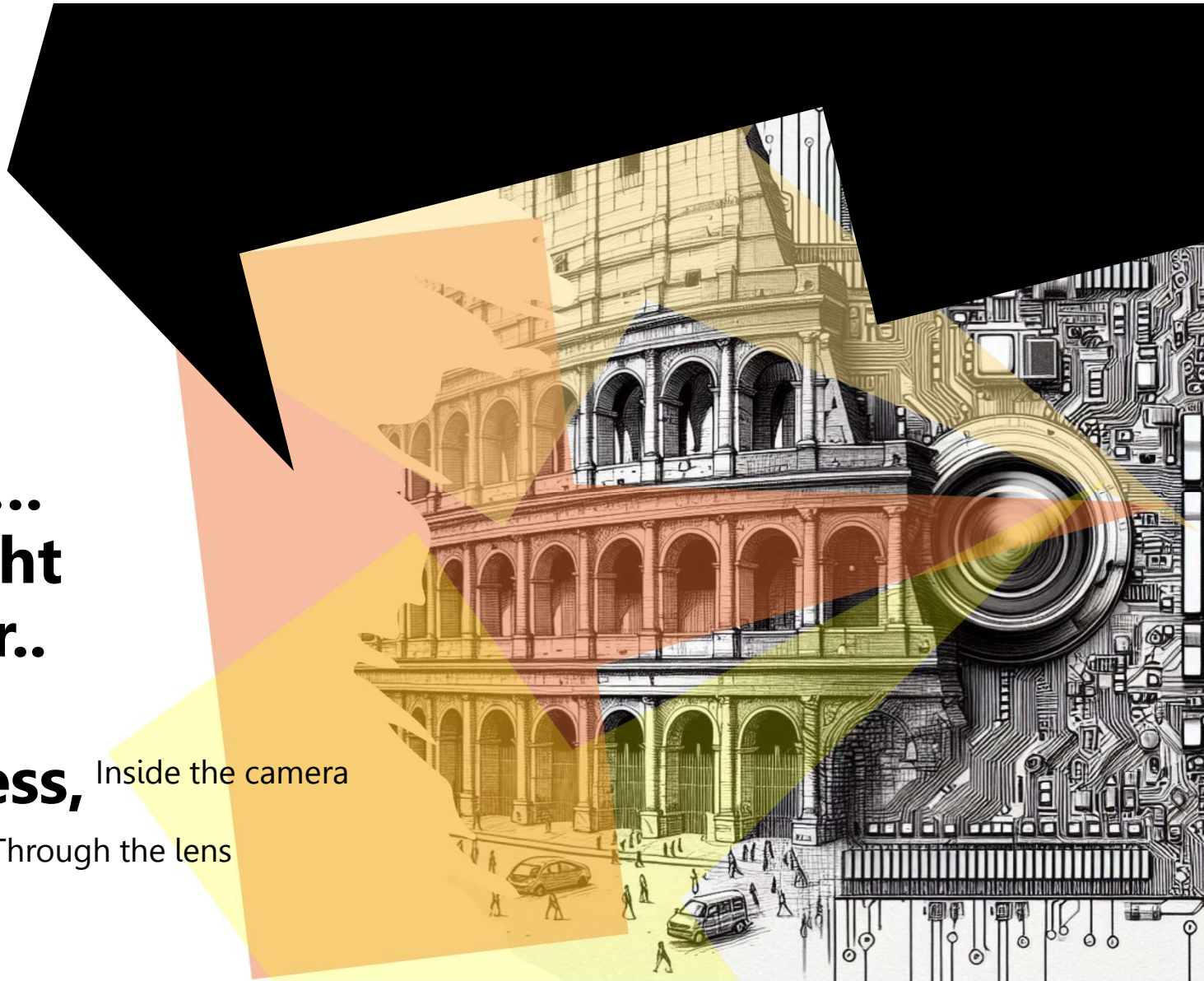
is our paint / ink
is our color
is the "wow!"



Aka Exposure

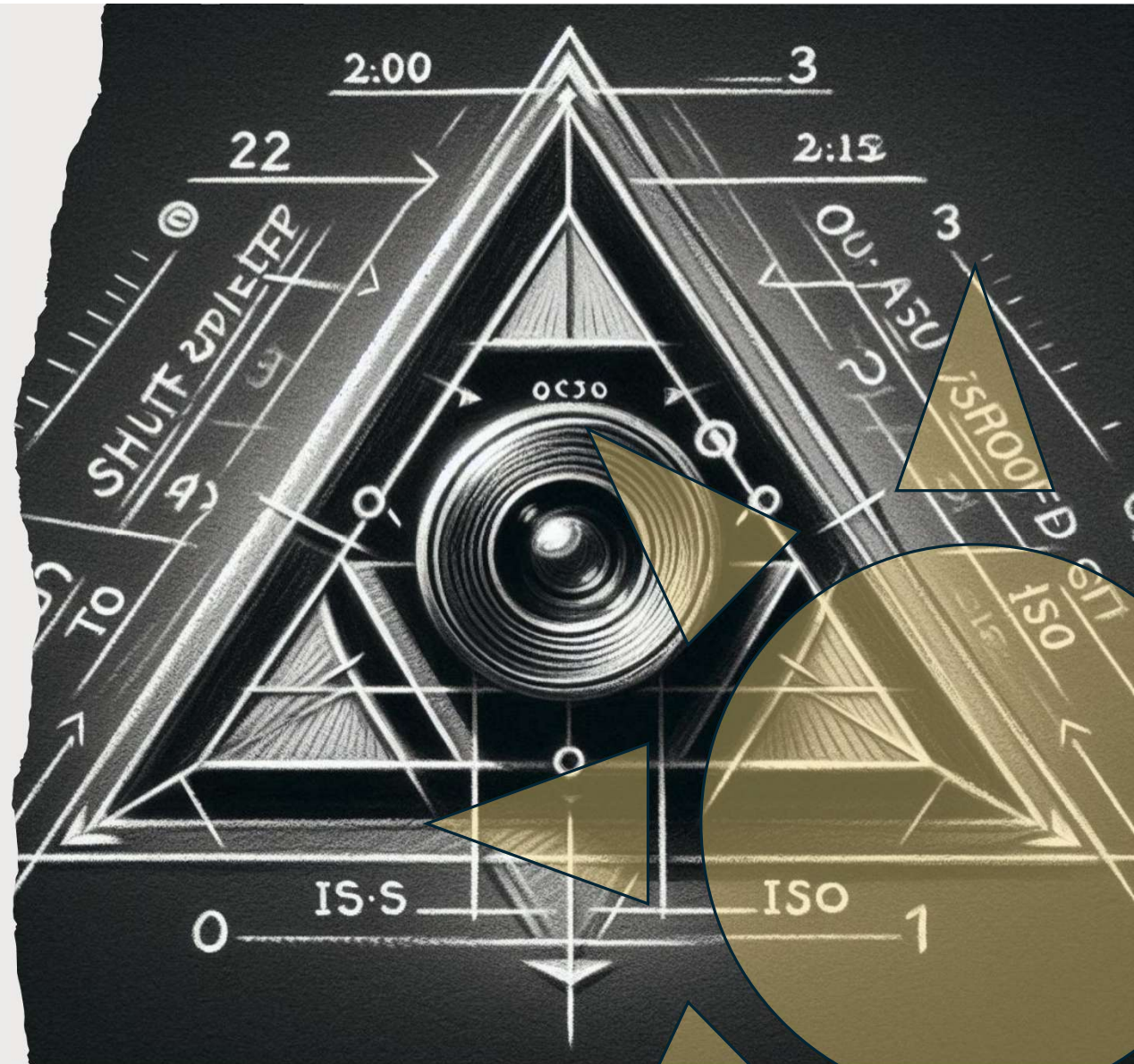
- Light
is our paint / ink
is our color
is the "wow!"
- Enough light....
- How much light
→ remember..

"We have darkness, Inside the camera
We give it light" Through the lens



Technology to ART

- Admire
 - We capture the light we admire from our subject
- Reveal
 - Light on the Sensor becomes a digital line of "Zero's and One's" or exposed molecules on Film
- Transform
 - The light form the 3D to a new 2D.



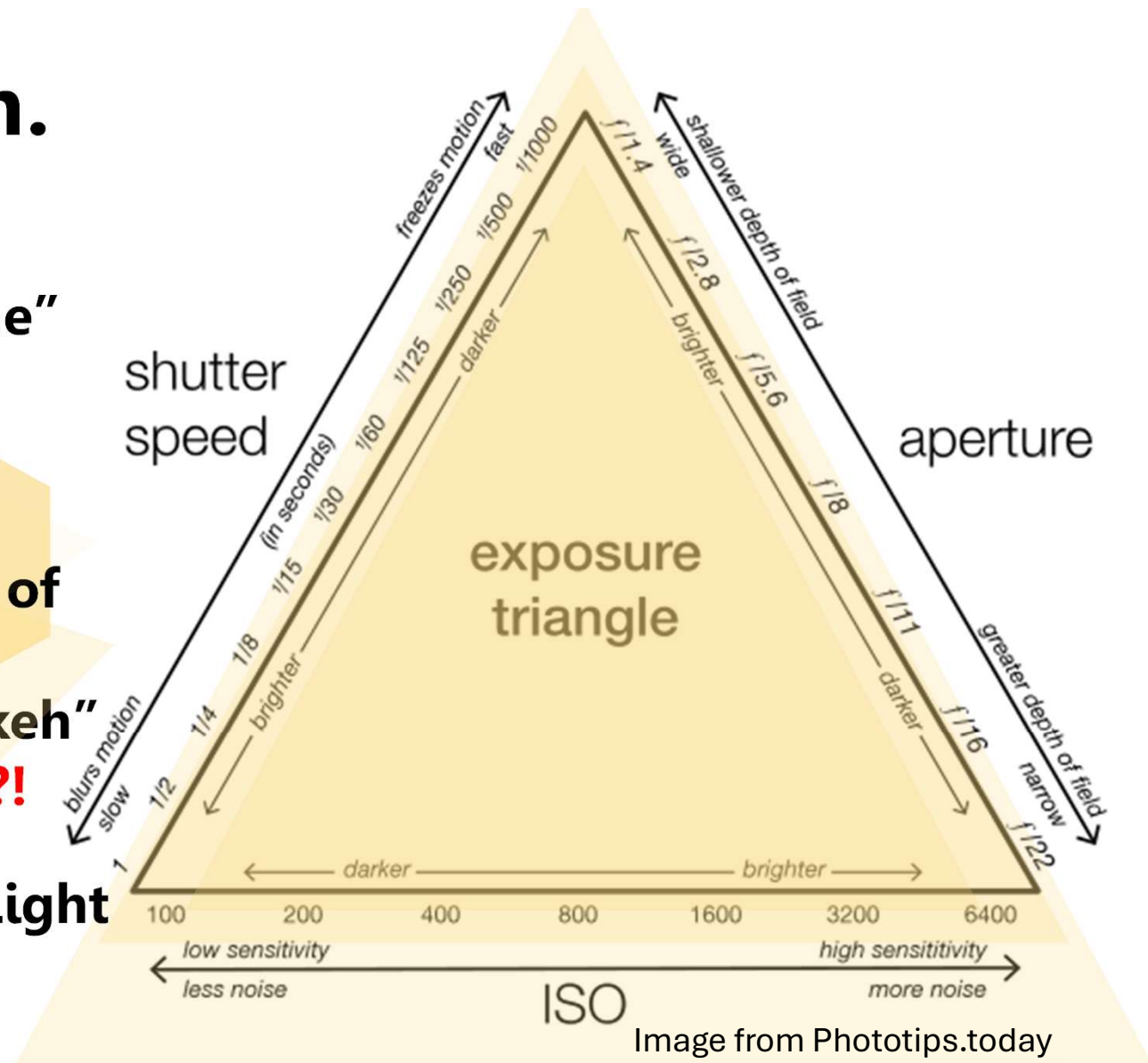
Triangle of doom...

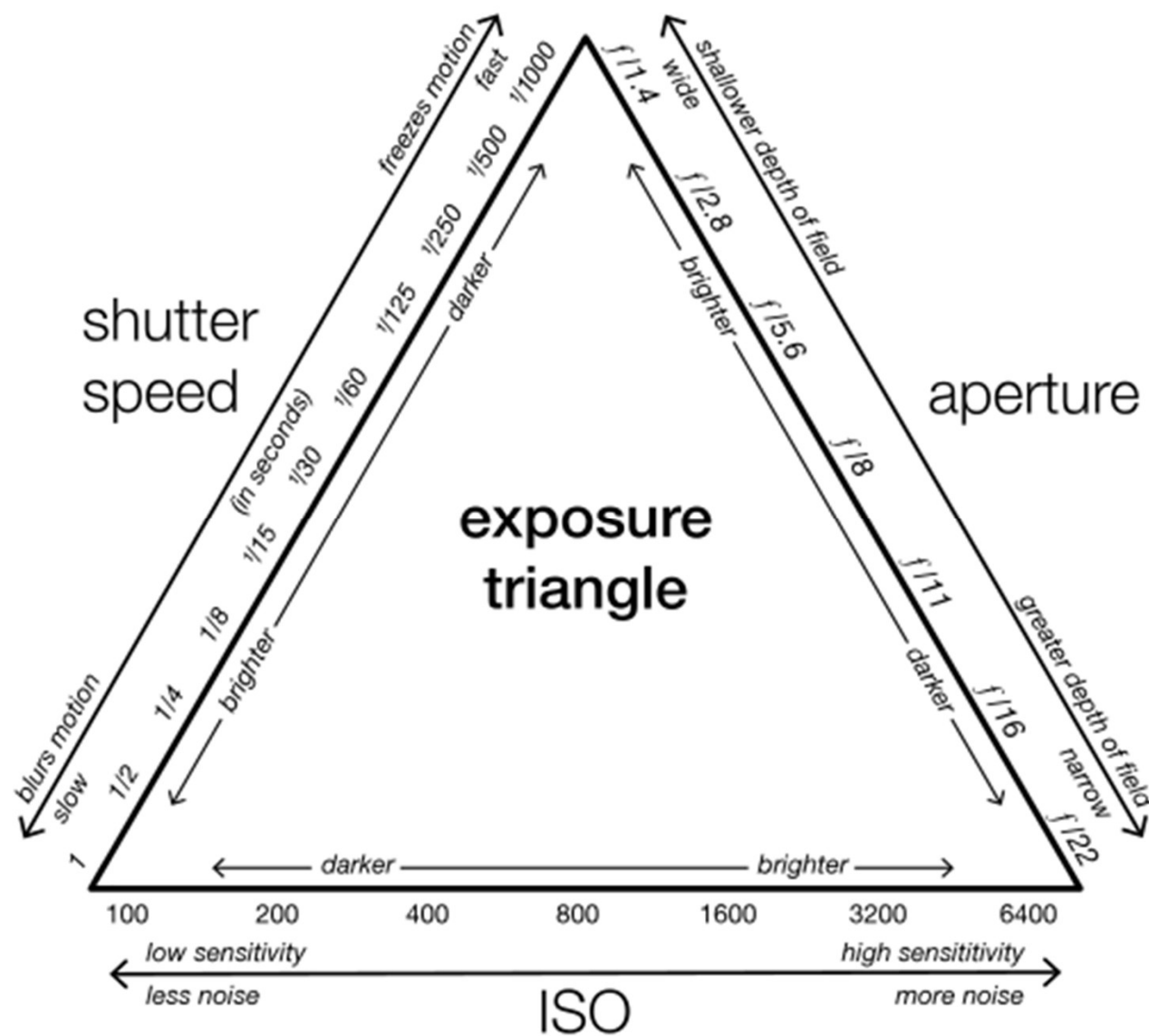
- Let's put all three settings of our camera in one place
- Aperture
 - "hole" in the lens
- Speed
 - How fast the lens "opens"
- ISO
 - How sensitive the Sensor is



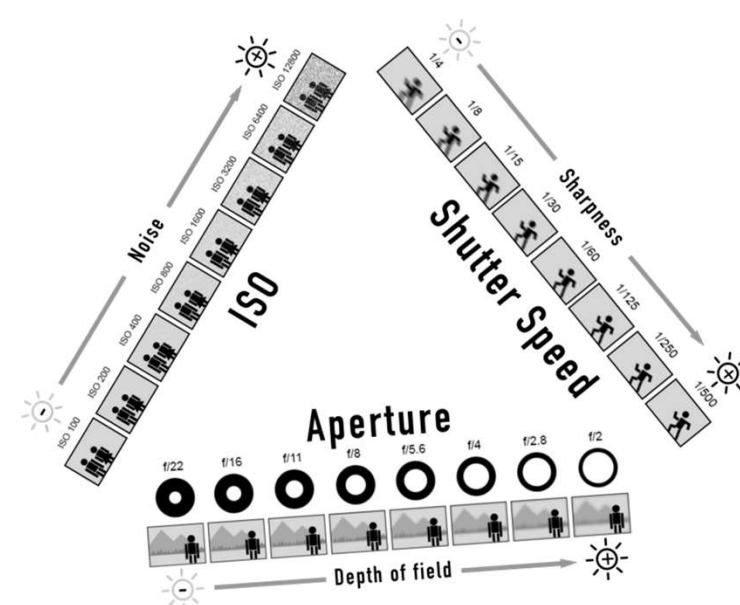
Triangle of doom.

- Fast is sharp, "freeze time"
- "pinhole" lens is sharp
- Low "grain" is sharp
- Slow is "Dreamy", "flow of time", waterfall, sea..
- "wide open" lens is "Bokeh"
- **Low "grain" is sharp..?!??!**
- High "grain" is ... More Light





Shh... no distraction.....



Images from Phototips.today

Triangle of ~~dark~~

Light

- In the last model: All corners have Light and Dark
- "triangles with one corner all light but one side still a light / dark split.
- **But we can re-arrange**
- Now we see light at top and dark at bottom, and

"Let's Pretend it's still an 'exposure' triangle."

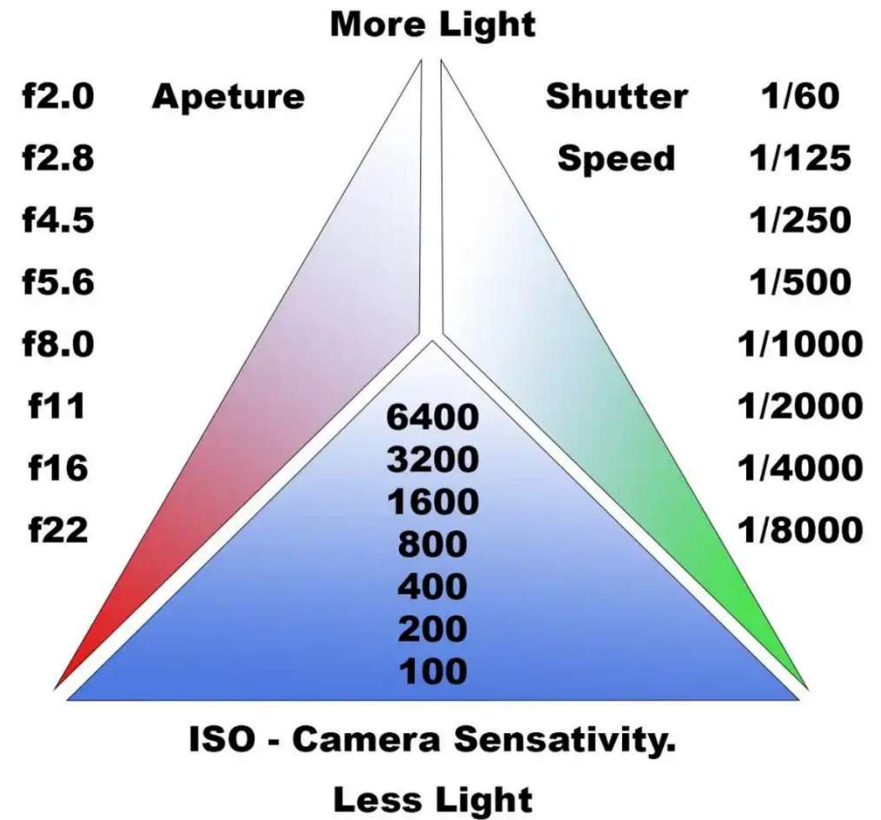
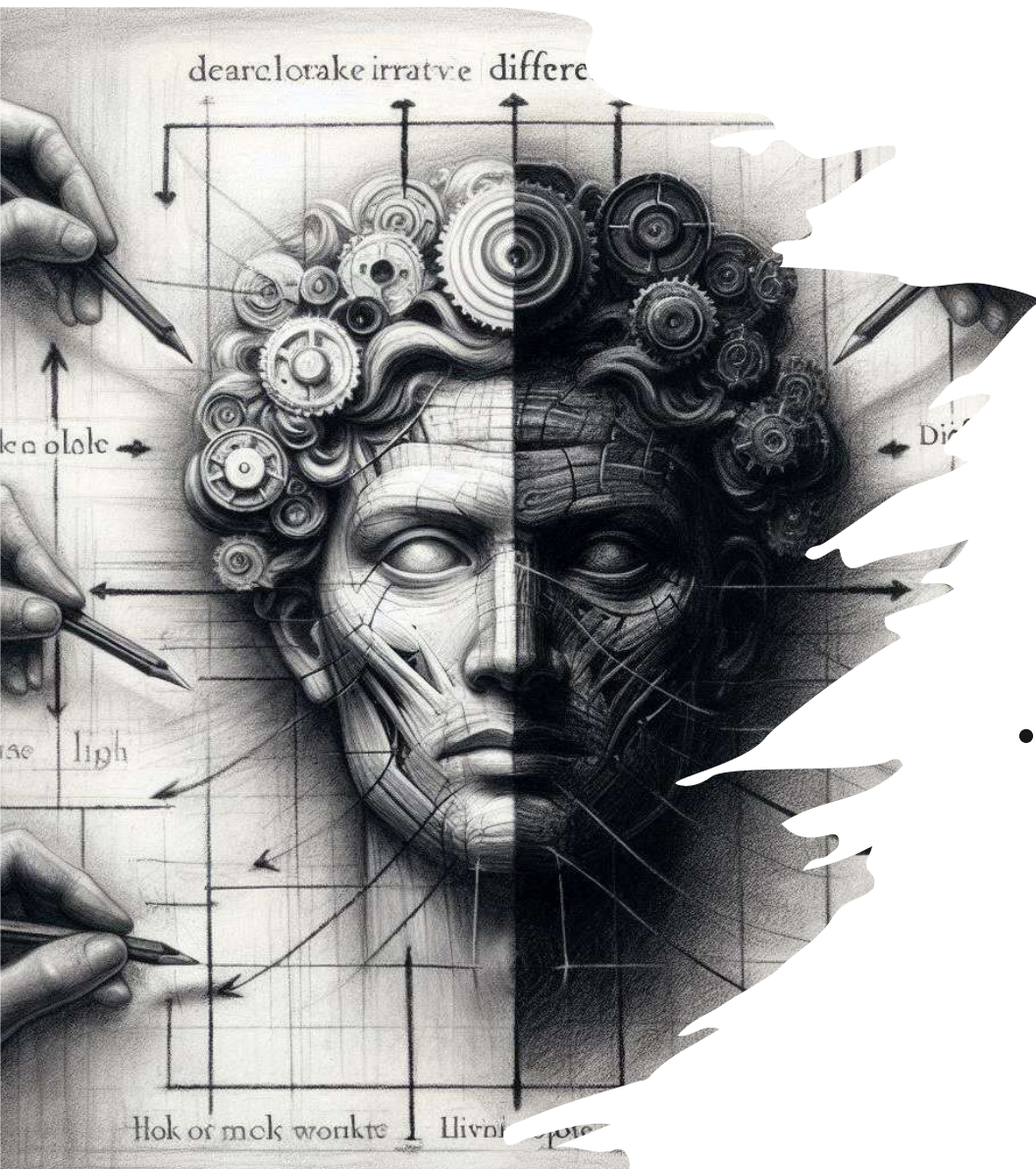


Image from Phototips.today



Exposure 2

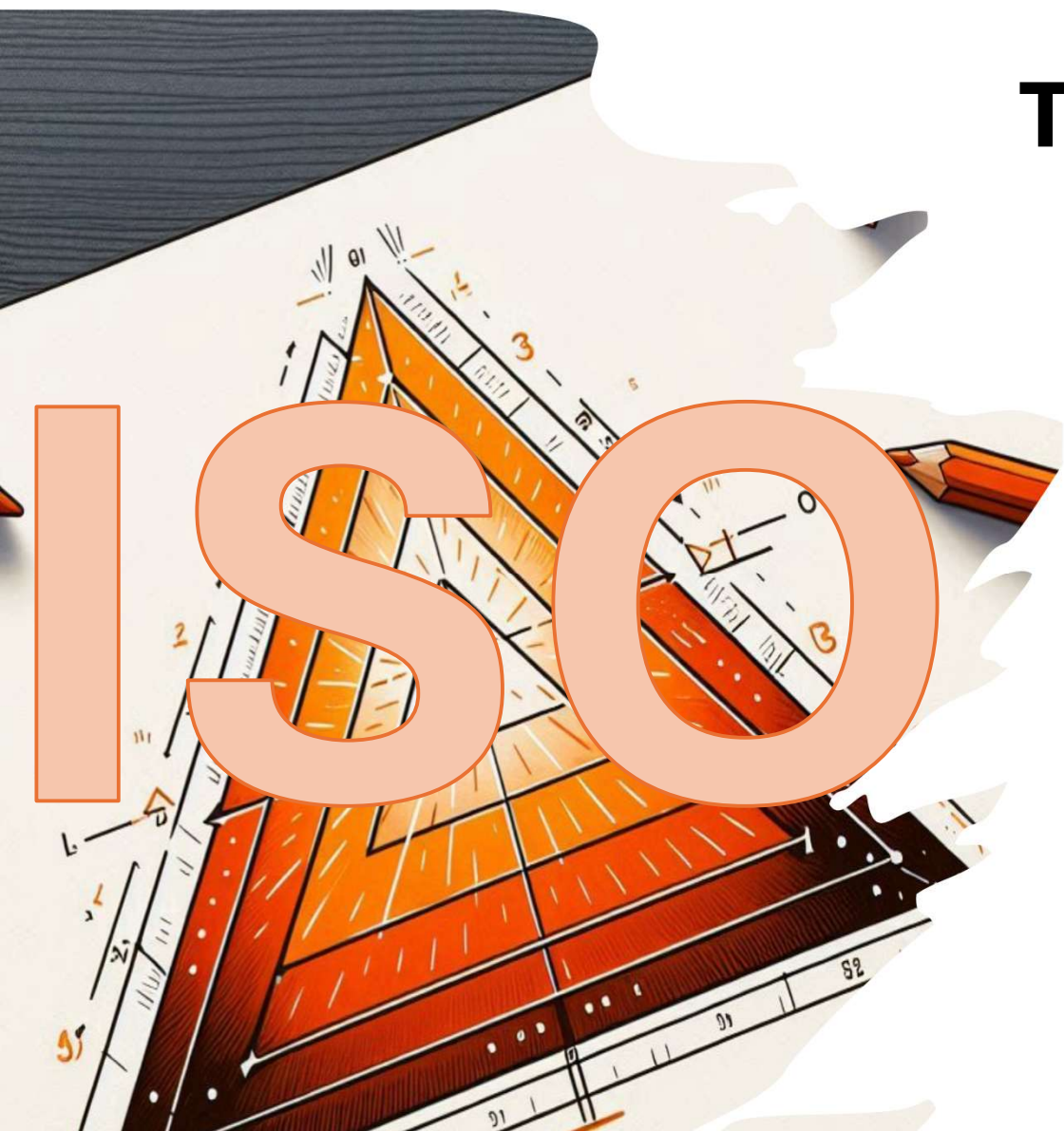
- **Low ISO is Less Grain**
 - **Less ISO is Less Grain**
- **High Iso is More Grain**
 - **More ISO is More grain**
- **More Iso, High Iso, Big Iso, Large ISO**

however you want to call it

Is a more sensitive Sensor.

Absorbs light faster

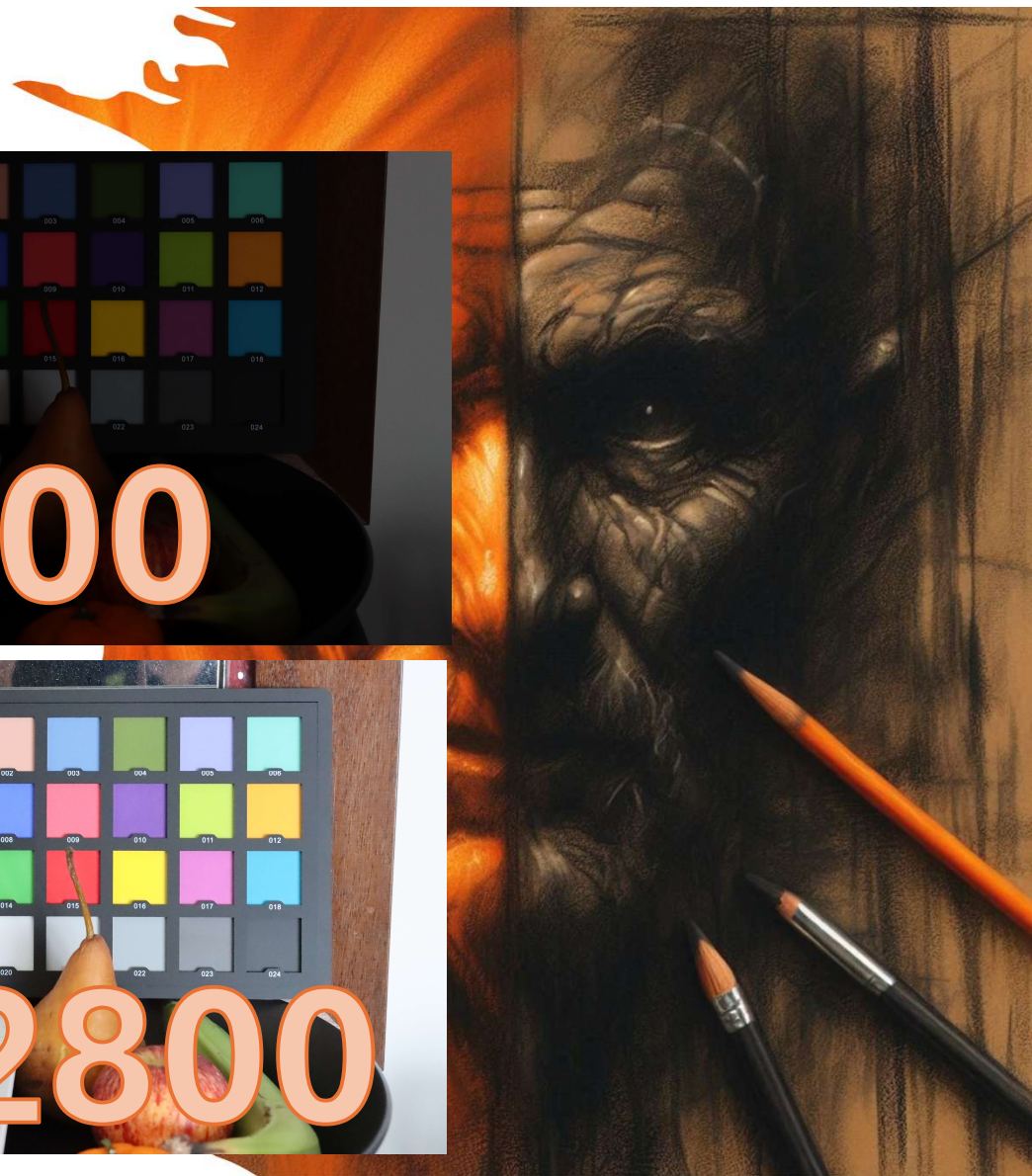
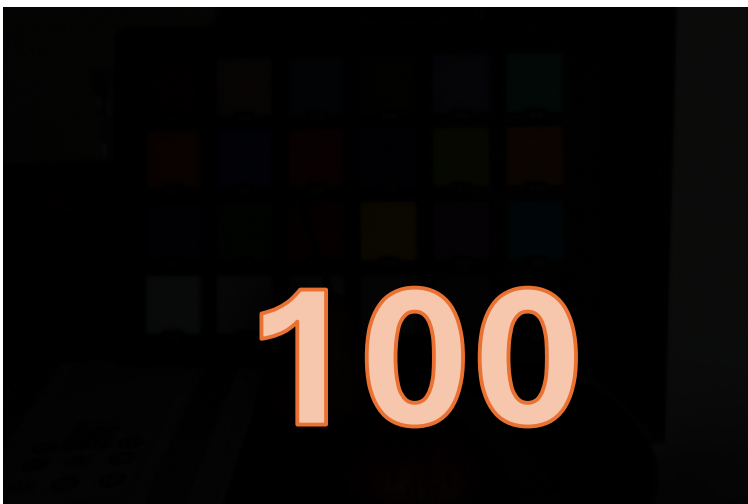
 - **More ISO, More light absorbed**
 - **So, you use high Iso in the dark.....**



Take 4 shot's

- Camera on M (manual)
- Aperture on F8
 - "F8, don't be late"
- Speed on 1/250
 - "one over two five "O", ready to go"
- ISO
 - 100 (or 50 if you have a "fancy" camera)
 - 800
 - 3200
 - (highest possible)

Results



Dark

- **100 Iso**
 - **Low sensitivity of Sensor**
 - **Light did not trigger pixels**
-
- **Why did I even try 100....**



We have light!

- **800 iso**
- **If you look closely**
- **RAW can fix underexposed**
- **No mistakes, but to many black pixels**
- **Walking from a light room into the darkness**



Exposed

- **3200 iso**
- **Indoors**
- **No sun**
- **No flash**
- **No direct light**
- **No Neon**
- **Triggered all pixels almost correctly**



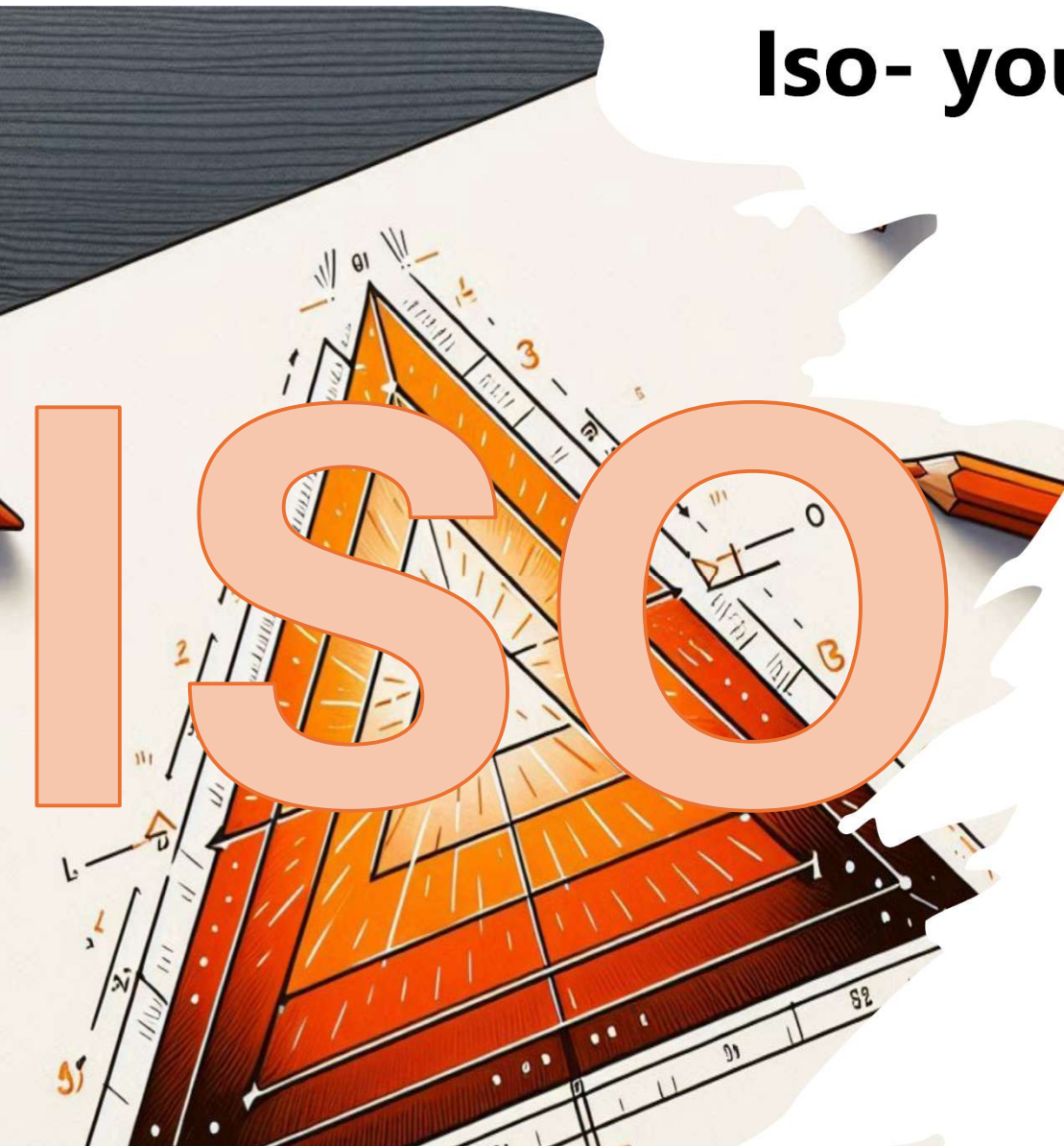
Over Exposed

- 12800 iso
- Low light
- Supper sensitive
- Makes errors, we call "Noise"
- Dull, speckled, grainy, rough or pixel-split
- Topaz (Ai), DeNoise (Ai+camera settings), Photoshop, Filters, Color noise vs cross noise..
- Raw don't fix it....
 Computer making up pixels..



Iso- your first choice

- Sun 50 (mobile)
 - 100 to 800 100
- Shadow (indirect light) 200
 - 200 to 1600 400
- Shadow (Indoor) 800
 - 400 to 3200 1600
- Dark no light 3200
 - 1600 to 12800 6400
- 12800 25600
- Subject dependent H
 - Streetlights
 - Reduce shadows
 - Purposely over or under exposed





Not sure

- Auto.....
- Settings that your manufacturer chooses.
- Can set boundaries
- 100 to 6400.
- But need to look at exposure meter all the time....
- In-camera noise reduction.
Low effect on RAW.



Speed

Take 4 shot's

- Camera on M (manual)
- ISO
 - What ever was your best last shot setting. (4000?)
- Aperture on F8
 - "F8, don't be late"
- Speed
 - 1/60
 - 1/200
 - 1/800
 - 1/3200

•

Results





Speed

Be on time!

- Speed is a whole new topic
- ICM
- Panning
- Catching the moment...
- Slower is more time for light to get into lens and on sensor.
- Faster is less light.



Let the light in

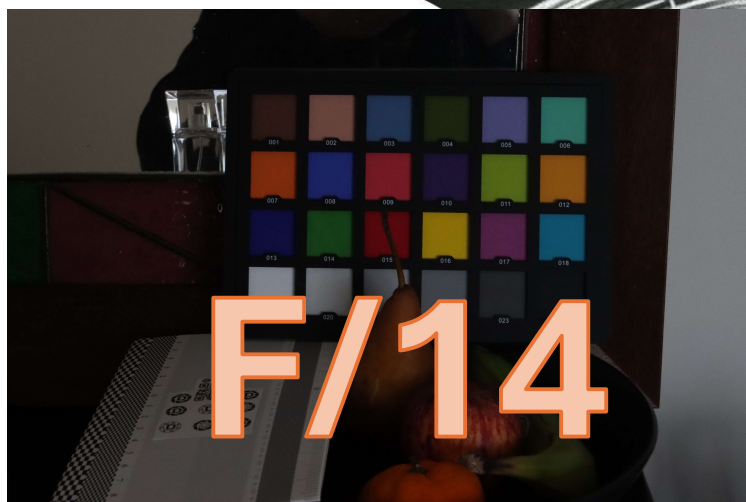
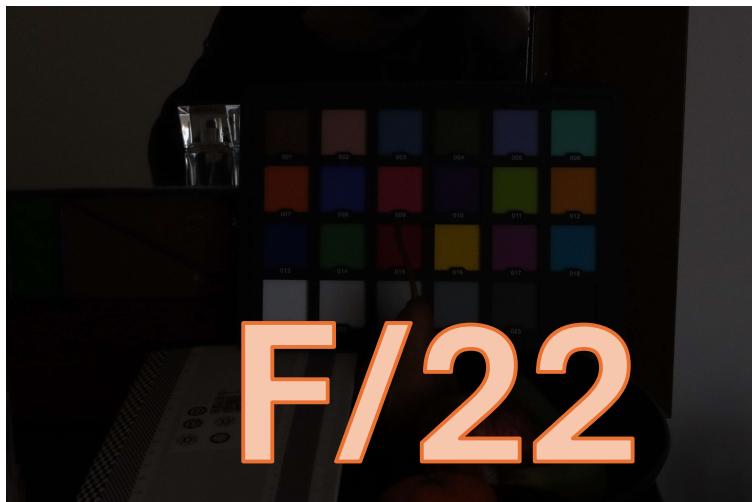
- **“BULB”** has a meaning
 - Stars,
- **1/4th** has a meaning
 - Waterfalls
- **1/60th** has a meaning
 - handheld
- **1/250th** has a meaning
 - Flash
- **1/8000** has a meaning
 - You have an expansive camera



Take 4 shot's

- Camera on M (manual)
- ISO
 - What ever was your best last shot setting. (4000?)
- Speed on 1/250
 - "one over two five "O", ready to go"
- Aperture
 - F/4, Or lower if you have it
 - F/8
 - F/14
 - F/22 or the highest it goes

Results





Under exposed

- F/22
- $1/22^{\text{th}}$ of the lens light is let in through the diaphragm
- A lot of the lens is covered
- Small hole
- Less light got in
- All light rays are straight...
- All light falls sharp on sensor



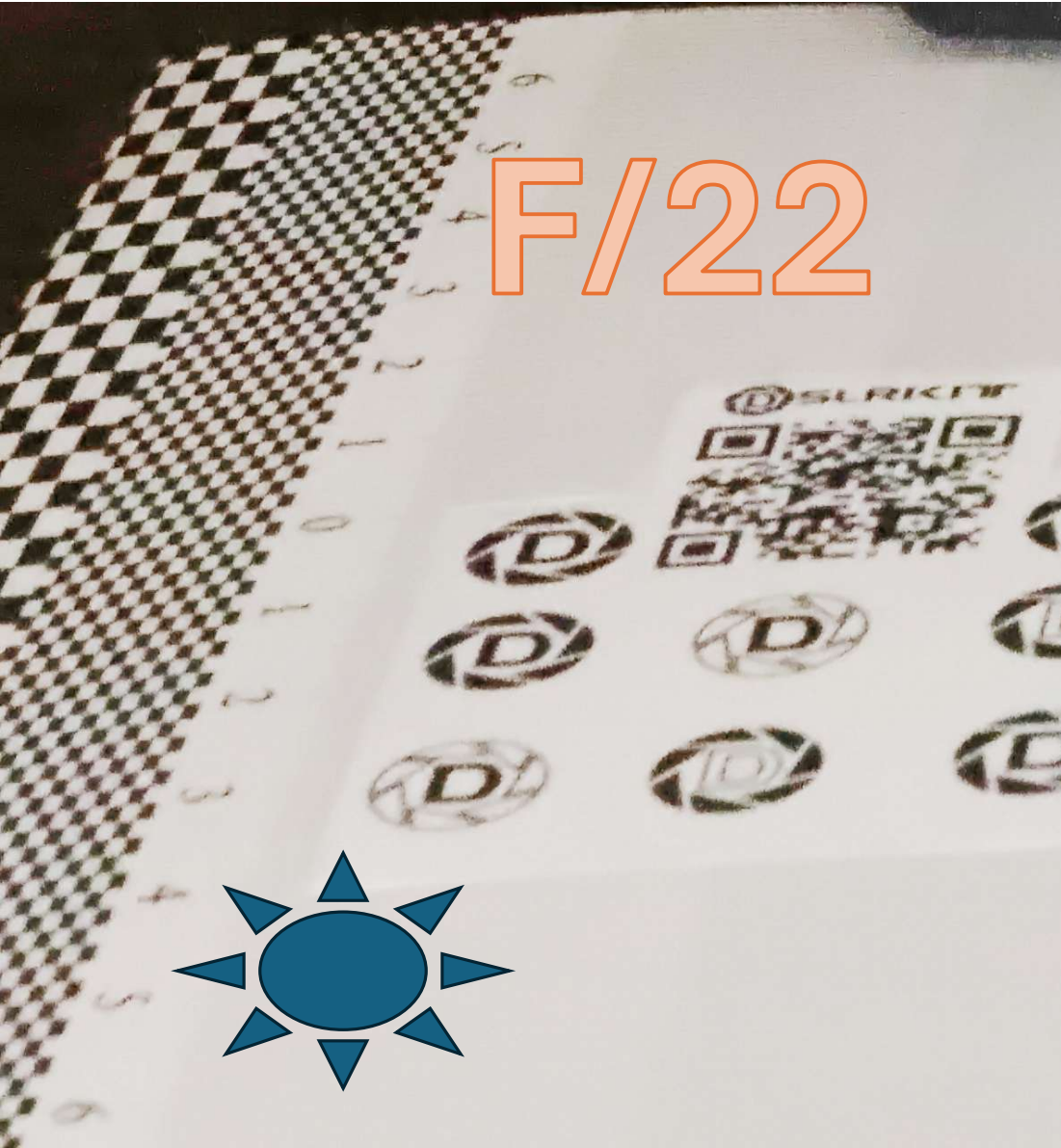
exposed

- F8, Don't be late...
 - Good depth of field
 - Diaphragm let mostly straight rays in.
 - Only some light blocked
-
- Most boring but most useful F/stop

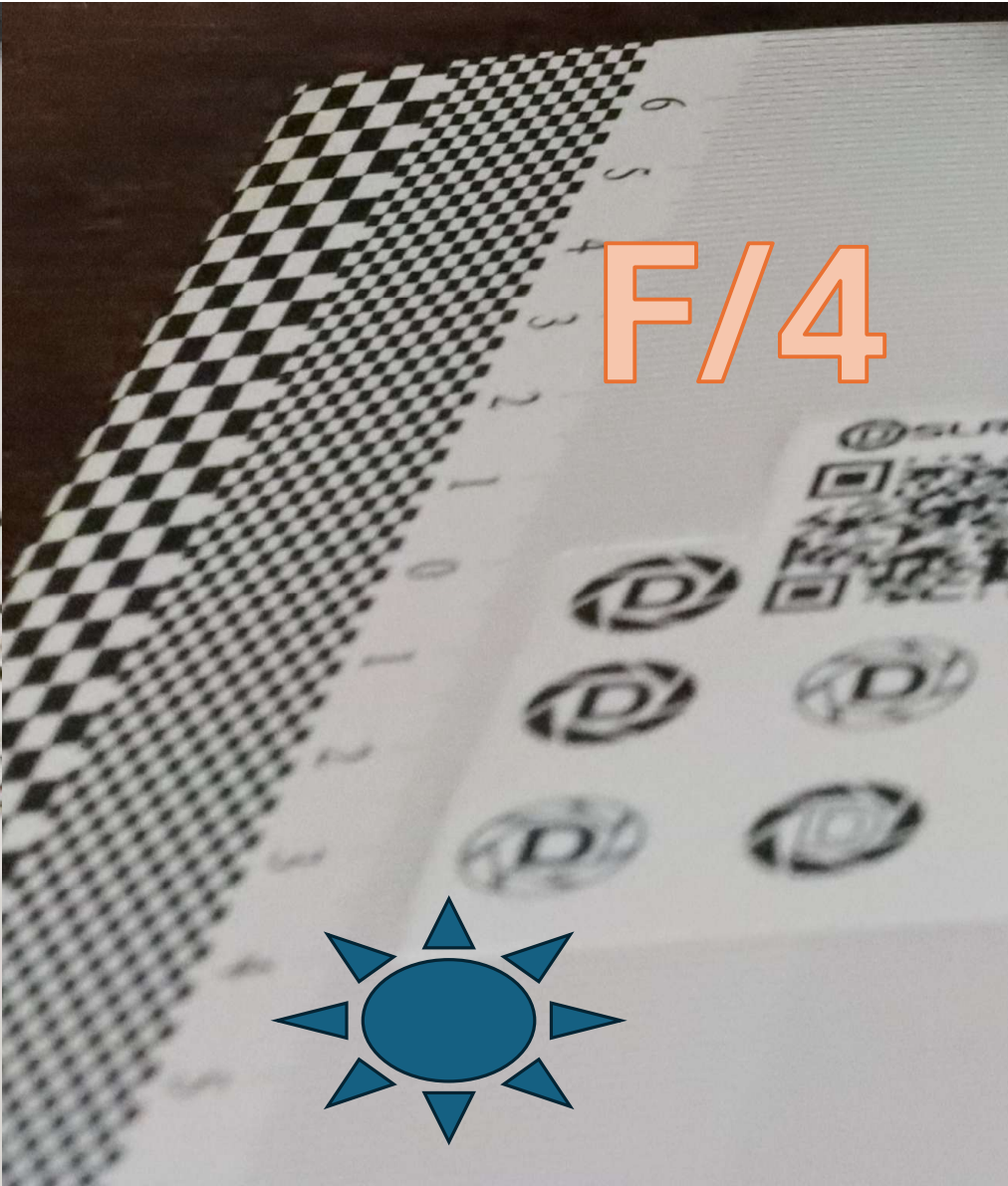


More light when you open the curtains...

- F/4
- No diaphragm...
 - Not F/0, as your lens has still blocked some light.
 - $\leq F/4$ is often considered a good lens, blocking least light possible.
 - $< F/1$, Mirror is used, think James Webb Telescope.
- Bokeh.....
- Stacking..... (hours of training to be inserted here)
- But if we only look at light in camera then small number = more light.....



F/22



F/4

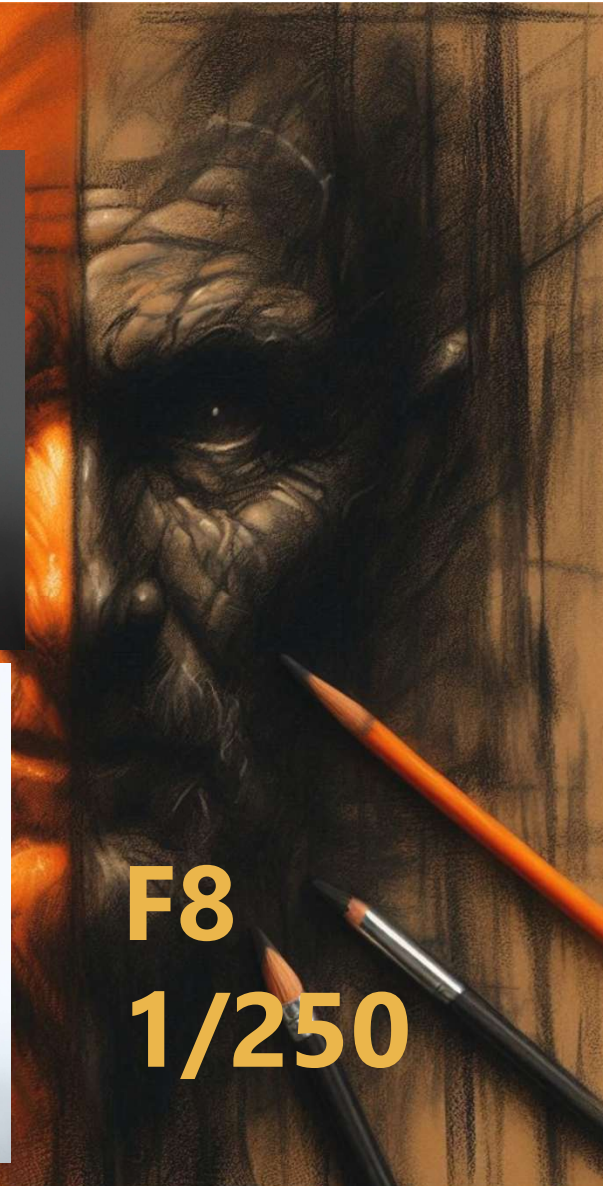
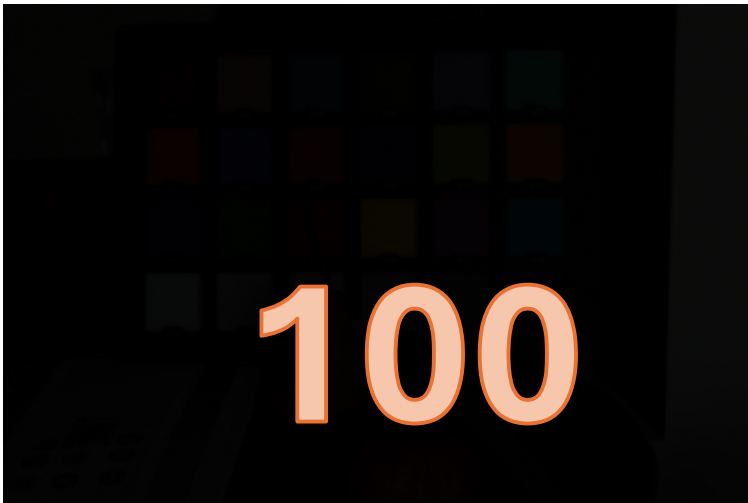


f/Bokeh (insert drooling emoji here)

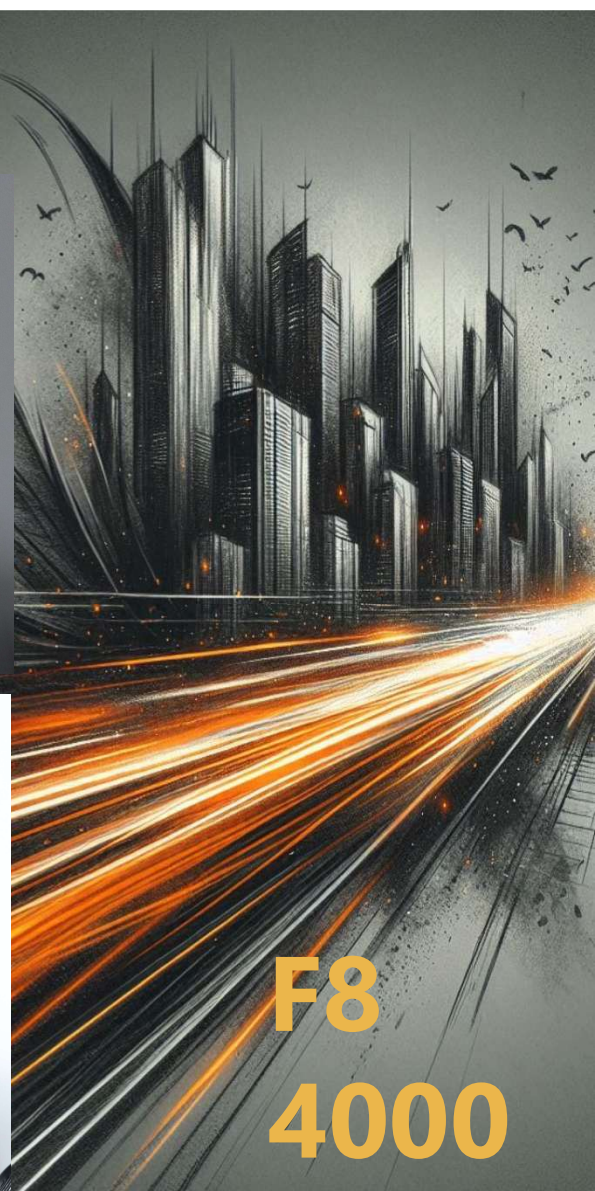
- **F(low)** is most light in, is low depth of field.
 - **Shallow depth of field (DOF)**
 - **Small part is sharp**
 - **F/2.4, F/4 (professional lenses)**
 - **> F/5.6 tele lenses...**

 - **F(high)** is the tiny pinhole letting less light in.
 - **Large DOF**
 - **All is sharp**
 - **F/22, F/36, some tele**
- F means**
- **1/over the opening, 1/4th 1/32th ...**

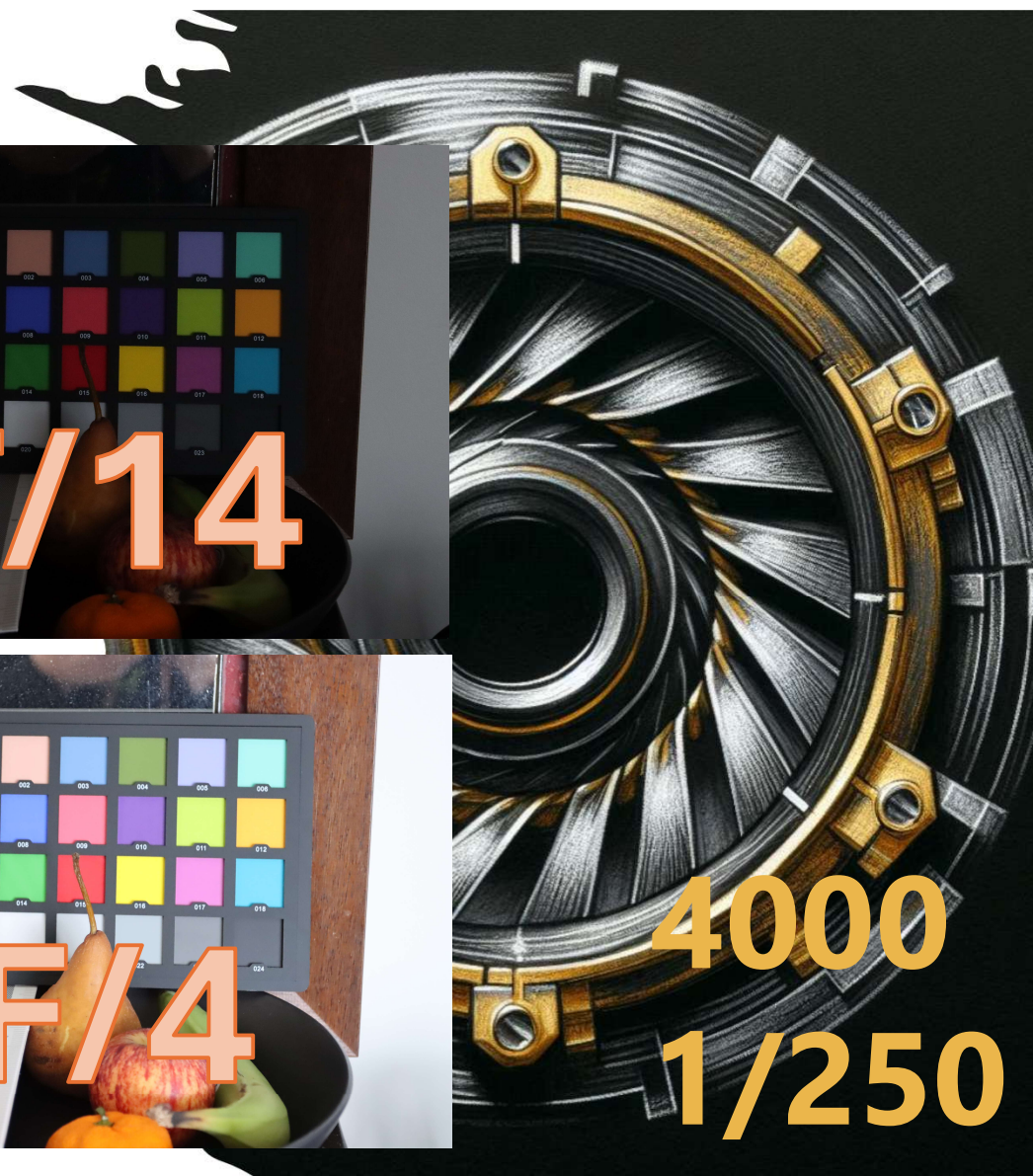
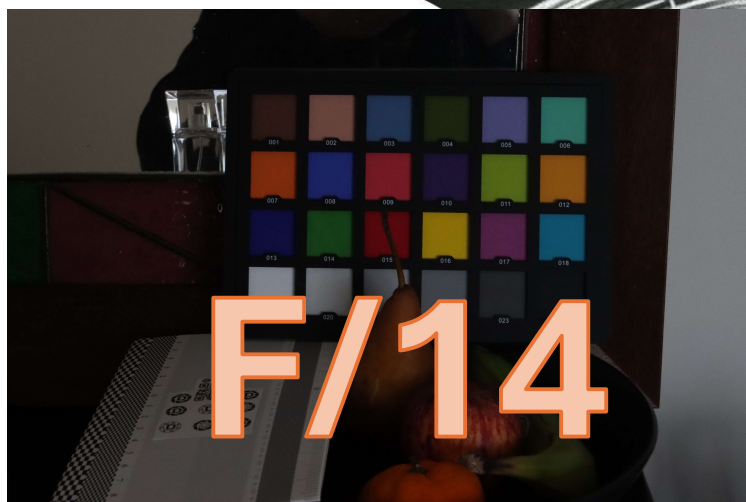
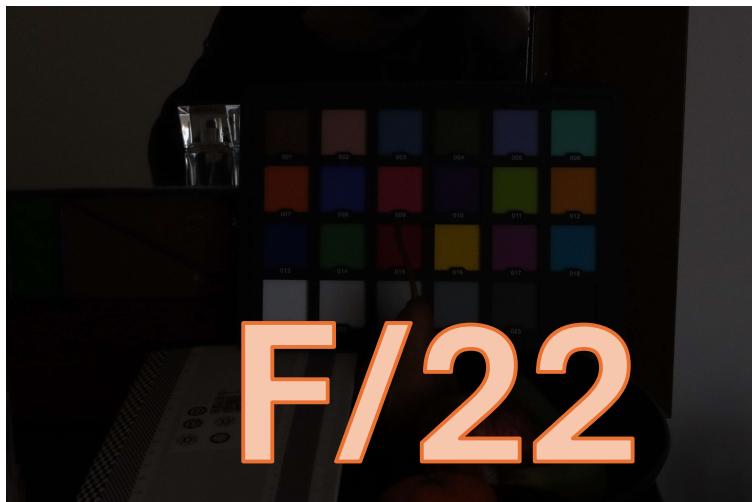
Results



Results



Results



I just want.....

- Fast sharp image 1/16000th
- Stable images at 1/20th as I forget my tripod
- Low iso, 50,,, 25 if they please invent it
- High iso with zero noise. 3Milion?
- Smallest diaphragm F/45.... I like detail
- Largest lens opening, F/2.4, (Leika F/0,9 Fuji F/1 or F/0.85 mirror) Bokeh is my life...(\$10.000)
- To know all the 6 lotto numbers

Get on to Manual.....

- Spot your target.
- Have you got light?
- Set iso for the light you have.
- Is the subject still or at speed.
- Freeze time or create flow.
- What needs to be sharp.
- What needs to be blurred.
- Go around the triangle more then once.....

Correct / improve your last shot....

- "Painting with Light."
- "wow! Factor is light"
- "We have darkness, We give the light"
- "Let's Pretend it's still an exposure triangle."
- "F8, don't be late"
- "one over two five "O", ready to go"
- "walk the line, know what gives more light, but know what you sacrifice"
- **Don't be affright of ISO, editing or auto-setting is not cheating** That was my fear....

Last Call

- We are indoor, with low light, at night.....
- But, we don't want to edit this picture and don't trust Ai...
 - What ISO.....
- Still object but we hold camera in hand.....
 - What Speed.....
- Our subject is not far from lens, and we want to see most of the object sharp, but don't fall over some blur...
 - What F/Stop.....

• **SHOOT!!!!**

Last Call

1600,

- We are indoor, with low ambient light.
- But, we don't want to edit the picture and don't trust Ai...
 - What ISO.....

- Still object but we hold camera in hand....
 - What Speed.....

- Our subject is not far from lens, we want to stop motion of object sharp, but don't fill over some blur
 - What Stop.....

1/60, F8

• **SHOOT!!!!**