ISO – Sensor Sensitivity

"The eye should learn to listen before it looks"

— Robert Frank

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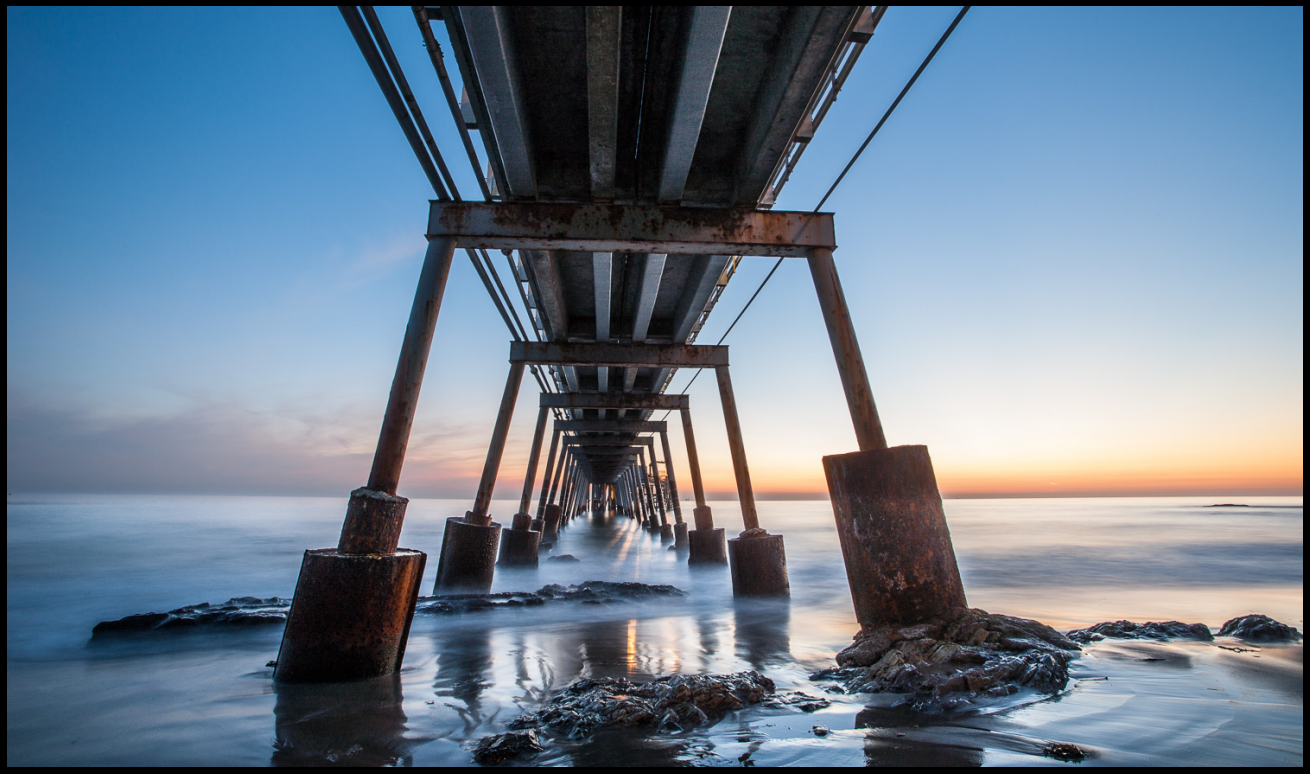
ISO – Sensor Sensitivity



ISO 100

The ISO in photography refers to the sensitivity of a digital camera's sensor to light.

ISO – Sensor Sensitivity

ISO 100

The lower the ISO the more light required for proper exposure.

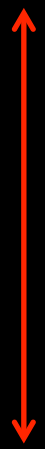
ISO – Sensor Sensitivity

ISO 200

The lower the ISO the lower the level of electronic noise.

ISO – Sensor Sensitivity

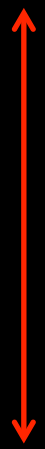
ISO 100	normal	less noise
ISO 200	normal	
ISO 400	normal	
ISO 800	normal	
ISO 1600	normal	
ISO 3200	high	
ISO 6400	high	
ISO 12800	high	
ISO 25600	high	
ISO 51200	high	more noise



Digital cameras have far surpassed traditional film sensitivity to light.
Some cameras can go as high as ISO 204,800.

ISO – Sensor Sensitivity

ISO 100	normal	less noise	requires more light
ISO 200	normal		
ISO 400	normal		
ISO 800	normal		
ISO 1600	normal		
ISO 3200	high		
ISO 6400	high		
ISO 12800	high		
ISO 25600	high		
ISO 51200	high	more noise	requires less light



Doubling the ISO doubles the sensor sensitivity to light and requires ½ the amount of light but because of the increased sensor gain digital noise increases.

ISO – Sensor Sensitivity

ISO 200

Higher ISO is often useful when photographing in lower light situations.

ISO – Sensor Sensitivity

ISO 800

Higher ISO is often useful after the sunset.

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ISO – Sensor Sensitivity

ISO 800

Higher ISO is often useful indoors where tripods are not allowed.

ISO – Sensor Sensitivity

ISO 800

Higher ISO is helpful when trying to freeze action with a fast shutter speed in low light situations.

ISO – Sensor Sensitivity

ISO 40 100% crop from iPhone 5s

Smaller sensors produce more digital noise compared to larger sensors.

ISO – Sensor Sensitivity

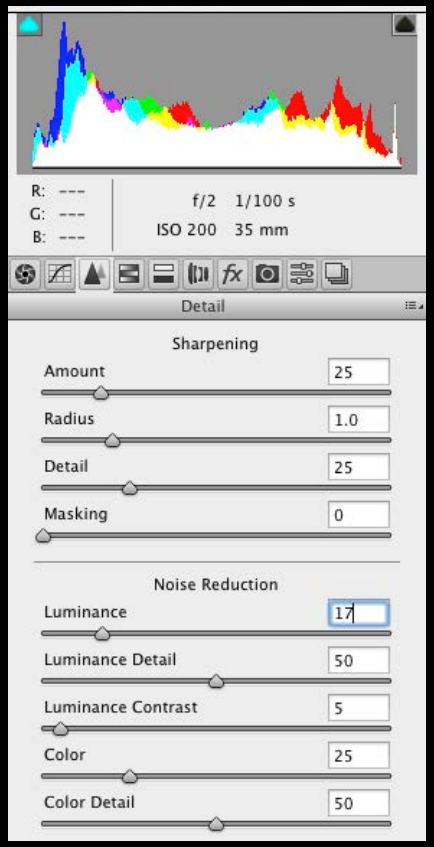
ISO 800

ISO 800

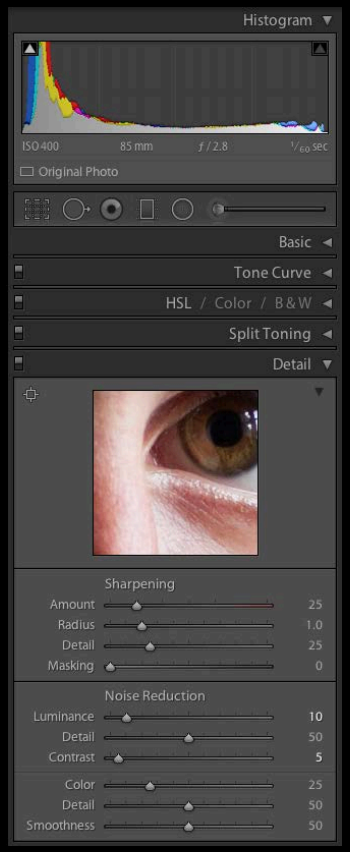
ISO 51200

The higher the ISO setting the higher electronic noise.

ISO – Sensor Sensitivity



Camera Raw

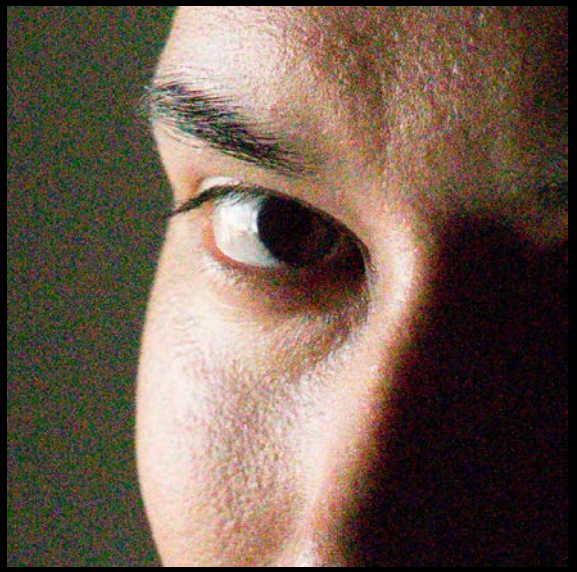


Lightroom

Noise reduction software can be useful in reducing noise.

ISO – Sensor Sensitivity

ISO 6400



Chroma noise

Luminance noise

Chroma (color) noise appears as colored artifacts in the image.
Luminance noise makes the image look grainy.

ISO – Sensor Sensitivity

ISO 100

3 stops under exposed

Correct exposure is crucial to avoid amplifying shadow noise.

ISO – Sensor Sensitivity

ISO 100

Corrected +3 EV in Camera Raw

-3 EV

Correcting underexposure in post processing increases shadow noise.

ISO – Sensor Sensitivity

ISO 800

Shutter speed, aperture and sensor sensitivity (ISO) all need to be considered when creating a photograph.

ISO – Sensor Sensitivity

ISO 1600

Your ISO can be adjusted for every situation and based upon your needs.

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ISO – Sensor Sensitivity

ISO 100

Understanding the relationship between ISO, image quality, and noise gives the photographer more control over their final image.

ISO – Sensor Sensitivity

Review – ISO

ISO controls your sensor's sensitivity to light
Low ISO requires more light but has lower noise
High ISO allows photography under reduced light but has higher noise
Digital Noise increases as you increase your ISO
Luminance noise appears as grain
Chroma (color) noise appears as colored artifacts

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ISO – Sensor Sensitivity

Vocabulary Study Words

ISO
Sensor sensitivity
Chroma noise
Luminance noise
Noise reduction

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ISO – Sensor Sensitivity

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