

High Dynamic Range (HDR) Seminar

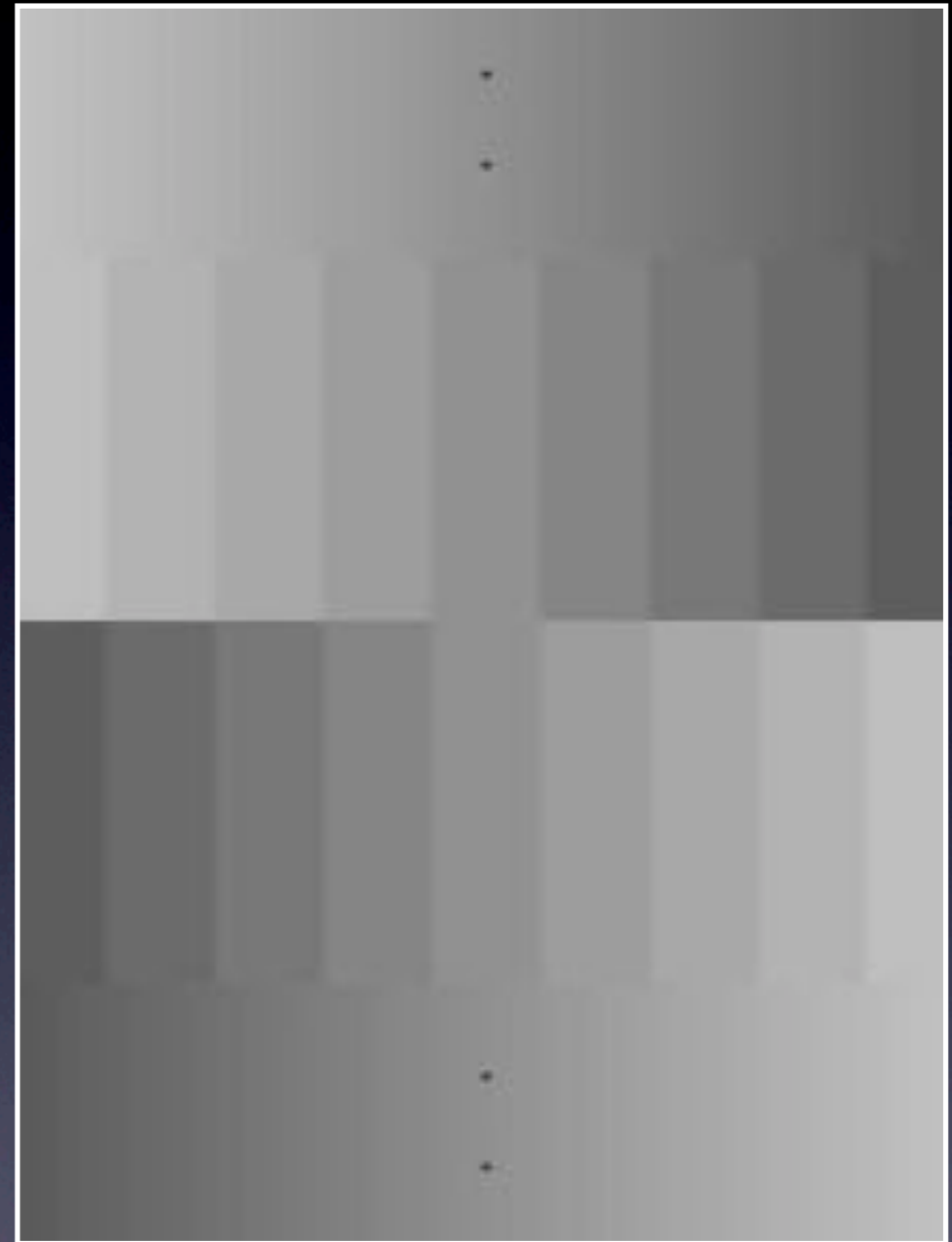
Wex Photographic

About HDR

- Used since circa 1850
- Used to create a higher dynamic range closer to what the human eye sees
- Used to more accurately reflect the intensity of light seen in real scenes

Contrast Ratio

The difference between the brightest color (white) to that of the darkest color (black)



High Dynamic Range Contrast Comparison

- Human Eye = 1,048,576:1 (20 EV)
- DSLR Sensor = 21618:1 (14.4 EV D800)
- Sunlight Scene = 131,072:1 (17 EV)
- Print = 256:1 (8 EV)
- HDR data = unlimited (unlimited)

Its not new, just new to digital

- El Greco's 1590 "*La Agoria en el Jardin*" used opposing hues to create a larger dynamic range





LDR (Single Exposure)



HDR

So what are we seeing?

- Multiple low dynamic range exposure
- Reduced contrast
- Tonemapping - increased local contrast

Low Dynamic Range

- An EV is exposure value, its the equivalent of 1 stop of light
- To capture 17 EV in a sunlight scene we would need to shoot a manual exposure bracket of x shots 1/2000, 1/1000, 1/500, 1/250, 1/125, 1/60, 1/30, 1/15, 1/8, 1/4, 1/2, 1, 2, 4, 8, 30, 60 - thats 17 shots at 1EV

Practical Application

- Meter for the deepest shadow
- Meter for the highest highlight
- Work out the EV difference
- Bracket the EV's

Example (Aperture mode f/8)

- Deepest shadow meter reading = 1/2
- Highest highlight = 1/250
- We need 7 EV LDR RAW to cover the dynamic range

-4EV



-3EV



-2EV



-1EV



0EV



9 EV Exposure



+1EV



+2EV



+3EV



+4EV













Commonly Used HDR Software

- HDRSoft Photomatix
- Niksoft HDR EFEX Pro 2
- Adobe Photoshop

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