

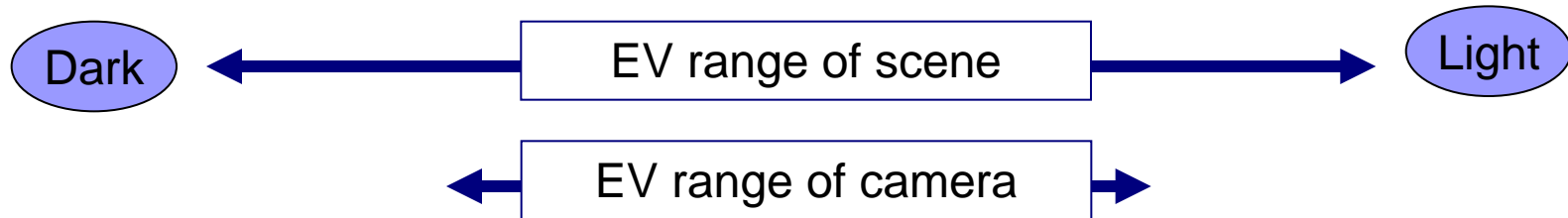
Dealing with high dynamic range (HDR) scenes (part 2)

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FORMAT FOR TONIGHT

- What is the problem
- Simple solutions
 - At image capture stage
 - At post production stage
- Sophisticated solutions- HDR software 2

WHAT IS THE PROBLEM?



- All cameras including digital have finite exposure range between dark and light areas of the picture
- Measured as exposure value (EV) or “stops”
- If the scene you are trying to photograph is outside this range the camera cannot cope
- Commonly occurs e.g. with bright skies or inside buildings
- The result: meter tries to work out an “average” exposure but can either blow highlights (pure white- no ink) or lose shadow detail (pure black)

DYNAMIC RANGE

Dynamic Range- the range of brightness that can be faithfully recorded

Dynamic Ranges of Common Devices

Device	Stops	Contrast
Computer LCD	9.5	700:1
DSLR camera (Canon EOS-1D Mark II)	11 ^[4]	2048:1
Print film	7 ^[4]	128:1
Human eye	10–14 ^[5]	1024:1 – 16384:1

Note : Lower end digital cameras will have lower EV range

USING THE HISTOGRAM



Note that sometimes you may wish to have pure blacks e.g. silhouette



The "ideal" exposure

Note that sometimes you may wish to have pure white e.g. high key



WHAT CAN BE DONE ABOUT THIS?

Image capture stage

- Recompose
 - Check histogram (many cameras have highlight warning) and recompose picture to minimise EV range (e.g. avoid bright sky)
- Use fill in flash- common for weddings/portraits in bright daylight
- Use graduated filters to balance exposure between dark and light areas- ideally needs tripod
- Take in raw to recover detail at conversion stage
- Bracket exposure and correct later (e.g. HDR)
- Some consumer/prosumer cameras now include HDR processing of images as part of in camera jpg conversion

WHAT CAN BE DONE ABOUT THIS?

Raw conversion stage (1)

- Check for highlights/loss of shadow details using warning tool
- Use recovery tools to reduce highlights and bring out shadow detail
- Can use raw conversion to produce bracketed images post capture for HDR programs

WHAT CAN BE DONE ABOUT THIS?


Raw conversion stage (2)

- Some raw software now has local adjustments or layers
 - Capture one
 - Nikon FX
 - Lightroom
- Use to make local adjustments of various parameters

WHAT CAN BE DONE ABOUT THIS?

Post production stage

- Layer masks
 - Open images with different exposures and blend together by use of layer masks and brush/eraser tool
- Layer blending
 - A tool within PS-CS that blends 2 images together to increase tonal range
- Digital grads
 - Effectively reproduces the effect of a grad filter
- Dodge and burn
- Image merge (HDR) - Later versions of PS elements (8+) and CS (2+)



But for maximum recovery of detail in both shadow and highlights- use specialist HDR software