

**White Balance**

by Phil Askey

White balance is a name given to a system of color correction to deal with differing lighting conditions. Normally our eyes compensate for different lighting conditions, but when taking a still with a digital camera the camera has to find the "white point" (the assumption that a white object must appear white) to correct other colors cast by the same light.

Most digital cameras feature automatic white balance, this means that the camera looks at the overall color of the image and calculates the best-fit white balance, however these systems are often fooled (especially if taking a photograph dominated by one color, say green). Most digicams also allow you to override the automatic white balance by choosing a white balance manually, typically sunlight, cloudy, fluorescent, incandescent etc.

Modern "prosumer" digital cameras also allow "white preset" which simply means measuring the white point from a white sheet of paper or card (or nearby wall), the camera will then record that temperature and use it to correct all images until you reset it.

**Color Temperature**

Each type of light can also be represented by a numerical color temperature, here are the (rough) color temperatures of typical lighting conditions:

Type of light	Color temperature
Incandescent	2500K - 3500K
Twilight	4000K
Fluorescent	4000K - 4800K
Sunlight	4800K - 5400K
Cloudy daylight	5400K - 6200K
Shade	6200K - 7800K

- 1) Choose a camera (USE A TRIPOD)
  - 2) Shoot a variety of scenes (-ISO 100 or 200 -high .jpg)
    - First shot using **auto** white balance
    - Second shot use the **manual** preset color corrections
    - Third shot **measuring** the white balance manually with a white card  
(You will need to read your manual to achieve correct results)
    - Fourth shot use the **RAW** setting
- set 1 - indoor available light  
tungsten light                      What were the lighting conditions the set was shot under.  
fluorescent light                      Take note
- set 2 - outdoor available light  
noon, dawn or dusk  
sun, shade

For each of the above situations you will have four exact shots, one with the white balance set on auto, another set manually to the color balance preset. The third you will use a white card to measure the white balance for a custom white balance setting and the fourth in Raw

- Use a tripod
  - No out of focus shots will be accepted
- 3) Download the images to the computer
  - 5) Open images, convert to adobe RGB 1998
    - Do no other image adjustments.
    - While processing the RAW file, take note of the white balance numbers write it down. Let the AUTO feature process the Raw File
  - 6) Image - Image size -adjust your Resolution to 240
    - Resample image on -create a 3x4.5 inch image (Remember this will take away pixels from your image. Is this good or bad? Can you see a difference?)
  - 7) File - New
    - 8.5 w x 11 h
    - Resolution 240
    - RGB
    - White Background
  - 9) Drop the resized images onto this new canvas
    - One set per page
  - 10) Type auto, manual, measure or RAW near the correct image  
black text only -arial or times font (simple easy to read font)
  - 11) Save new canvas  
(You will have 4 images per canvas)
  - 12) Print White Balance test
  - 13) Write a typed summary of your findings
    - Include camera type
    - Lighting condition
    - Can you see a difference from the resample?
    - Raw White Balance info

OBJECTIVE: To understand white balance and your camera.

**Turn in envelope containing images, summary and CD**

- Name, project, class day and time, date, email and phone# on envelope
- Printed images
- CD, on the CD create a folder for each lighting condition
- Typed summary