
Witbalans / White balance
24 Februarie 2009

Witbalans – Wat & Hoekom

- Foto's het soms 'n blou of gelerige skynsel wat nie lyk soos wat die werklike beeld gelyk het toe die foto geneem is nie.
- Dis die gevolg van die lig se kleurtemperatuur.
- Lae kleurtemperatuur veroorsaak dat die foto 'n rooierige skynsel vertoon.
- Hoë kleurtemperatuur veroorsaak dat die foto 'n blouerig skynsel vertoon.
- Verskillende ligbronne straal lig teen verskillende kleurtemperature uit – vandaar hierdie skynsels.
- Deur 'n 'filter' (of sagteware) te gebruik kan hierdie balans reggestel word.

Witbalans – Wat & Hoekom (2)

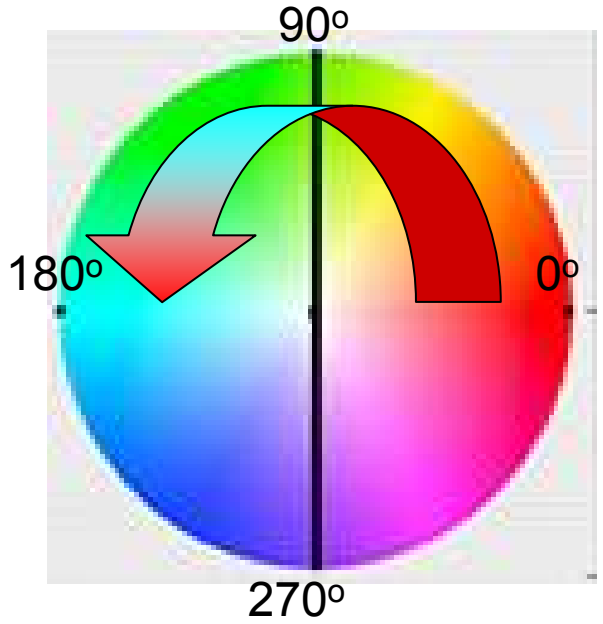
- Witbalans is die proses waardeur digitale kameras hierdie regstelling doen.
- Mense se oë maak vanself die aanpassing – ‘n wit voorwerk sal wit voorkom in helder sonskyn sowel as in die skaduwee.
- Kamera’s is nie mense nie!
- Vir koeler lig moet die kamera aanpassings maak om die foto warmer te laat lyk en omgekeerd.
- Witbalans is die konsep wat gebruik word om kleure so akkuraat as moontlik weer te gee.
  - Soms is dit nodig
  - Soms nie

Watter een is korrek?

Lig: Kleur en temperatuur

- Die kleur van lig
- Die temperatuur van kleure lig

Warm en koue kleure



- 0 red
- 30 orange
- 60 yellow
- 90 yellow green
- 120 green
- 150 blue green
- 180 cyan
- 210 green blue
- 240 blue
- 270 purple
- 300 magenta
- 330 blue red

Regs van die vertikale lyn is die **warm** kleure. Die **koel** kleure is aan die linkerkant. Heel regs op die horisontale lyn is die absolute **warm kleure (0°)** en heel links die absolute **koel kleure (180°)**

Temperatuur van kleur

- Kleur temperatuur is die term wat gebruik word om die kleur van lig the kwantifiseer.
- Kleur temperatuur word gemeet in (grade) Kelvin.
- Normale daglig se kleurtemperatuur is ongeveer 6,500K.
- Warmer (rooi/geel) lig het ‘n laer kleurtemperatuur (bv. Kerslig).
- Koeler (blou/groen)lig het ‘n hoër kleurtemperatuur (bv. Sonsopkoms).

Temperatuur van lig Voorbeelde (1)

Warm colour = lower colour temperature

1000-2000 K Candlelight

2500-3500 K Tungsten Bulb (household variety)

3000-4000 K Sunrise/Sunset (clear sky)

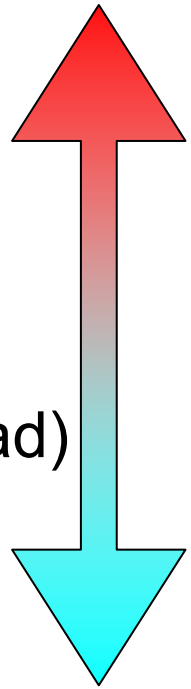
4000-5000 K Fluorescent Lamps

5000-5500 K Electronic Flash

5000-6500 K Daylight with Clear Sky (sun overhead)

6500-8000 K Moderately Overcast Sky

9000-10000 K Shade or Heavily Overcast Sky

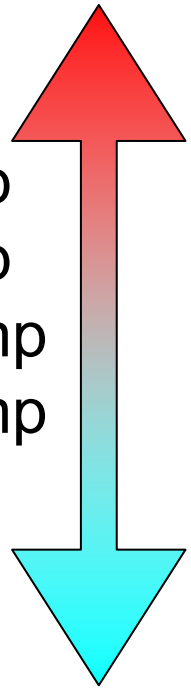


Cool colour = higher colour temperature

Temperatuur van lig Voorbeelde (2)

Warm colour = lower colour temperature

1700	Match Flame
1850	Candle Flame
2650	40-Watt Incandescent Tungsten Lamp
2820	75-Watt Incandescent Tungsten Lamp
2865	100-Watt Incandescent Tungsten Lamp
2960	500-Watt Incandescent Tungsten Lamp
3200	Professional Tungsten Photo Lamp
4800	Daylight Blue Photoflood Lamp

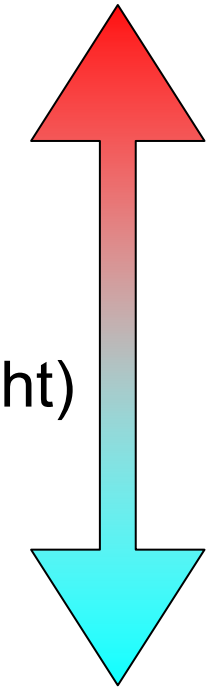


Cool colour = higher colour temperature

Temperatuur van lig
Daglig variasies

2000	Sunlight: Sunrise of Sunset
3500	Sunlight: One Hour After Sunrise
4300	Sunlight: Early Morning or Late Afternoon
5400	Average Summer Sunlight at Noon
5800	Direct Mid-Summer Sunlight
6000	Overcast Sky
6300	Daylight Fluorescent Lamp
6500	Average Summer Sunlight (plus blue skylight)
7100	Light Summer Shade
8000	Average Summer Shade
9500 - 30000	Summer Skylight (varies)

Warm colour = lower colour temperature

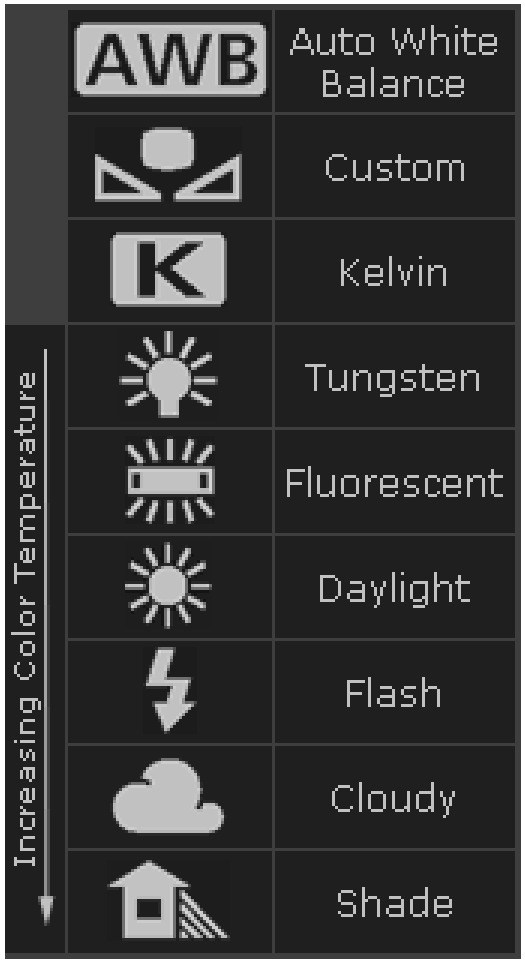


Cool colour = higher colour temperature

Toe en Nou

- Film - Filters
- Digitaal - Witbalans (W/B)

Ken jou kamera



Tipiese Witbalans opsies

- **Auto** - this is where the camera makes a best guess on a shot by shot basis. You'll find it works in many situations but it's worth venturing out of it for trickier lighting.
- **Tungsten** - this mode is usually symbolized with a little bulb and is for shooting indoors, especially under tungsten (incandescent) lighting (such as bulb lighting). It generally cools down the colours in photos.
- **Fluorescent** - this compensates for the 'cool' light of fluorescent light and will warm up your shots.
- **Daylight/Sunny** - not all cameras have this setting because it sets things as fairly 'normal' white balance settings.
- **Cloudy** - this setting generally warms things up a touch more than 'daylight' mode.
- **Flash** - the flash of a camera can be quite a cool light so in Flash WB mode you'll find it warms up your shots a touch.
- **Shade** - the light in shade is generally cooler (bluer) than shooting in direct sunlight so this mode will warm things up a little.

Manual White Balance

- By pointing the camera at a white or grey card (angled so that it is reflecting light from the room) as a neutral reference, filling the screen completely with it, then pressing the White Balance button (or set it in the menu), the camera does its WB calculation.
- From then on, any picture taken will have its colour temperature shifted appropriately.
- “Neutral" grey is 18% grey and will reflect all colours equally.

Watter een is die beste?

TIPS

- Gebruik WB vir effek (mood)!
- WB moet akkuraat wees in bv. modefotografie.
- Oppas vir voorwerpe met geen neutrale kleure, of ondergeskikte item wat kamera verwar.
- Gebruik ‘Cloudy’ vir meer ‘saturated’ kleure.
- Skiet in RAW en stel dan WB in Photoshop.
- Oppas vir voorwerpe wat bv. Net warm kleure het – soos rooi/pers blomme sonder neutrale kleure.
- Stel ‘Custom’ white balance.

TIPS (2)

- If your digital camera does not allow custom WB, then post processing can be as effective. In Photoshop Elements you can use Enhance - Color - Color Cast... to specify changes.
- Photoshop: Use Adjustments → Match Color to fix WB
- Also see http://www.free-photshop-plugins.com/download-filters/white-balance-plug-in.htm
- Advanced cameras such as the Canon EOS 20D allows you to shoot at any Kelvin rating between 2800k - 10000k (in increments of 100K).
- Some more advanced digital cameras also have White Balance Bracketing.

Using White Balance as a Creative Tool

Using White Balance as a Creative Tool (AWB)

This shot was taken with Automatic White Balance mode (AWB) selected. The camera took a guess at what the colours were and it got it pretty much spot on.

Using White Balance as a Creative Tool (cooler)

This shot was taken with exactly the same settings as the first except that the White Balance mode was changed so that the Colour Temperature was 2800k (2800 Kelvin). This cooled the colours down and the result was a much bluer (or cooler) shot than the first.

Using White Balance as a Creative Tool (warmer)

This shot was shot at the same settings as the first two except that the colours were warmed to the maximum by changing the temperature to 10000k. The result is an image with an orange cast over it - much warmer tones.

Auto White Balance Strengths and Weaknesses

Strengths	Fast and easy to use. Provides reasonable colour accuracy under many conditions.
Weaknesses	Does not provide maximum colour accuracy. Can be fooled when a scene has a preponderance of one colour. Poor choice when the colour of the light is an integral part of the image.
Works Best	Best for scenes that do not require maximum colour accuracy, do not have a preponderance of one colour, and where the colour of the light is not an integral part of the scene. Is a good option for situations where the light changes over time and speed is an issue (e.g., animal photography).

Preset White Balance Strengths and Weaknesses

Strengths	Fast and easy to use. Provides reasonable colour accuracy when the light source matches one of the preset white balance options. Is not fooled if there is a lot of one colour in the scene. Can be used when the photographer doesn't want automatic adjustments made for the temperature of the light.
Weaknesses	Does not provide maximum colour accuracy. Can not be used when the light source doesn't match one of the preset white balance options.
Works Best	Best for scenes that do not require maximum colour accuracy and the light source is a reasonable match for one of the preset white balance options. Is often a good solution when there is a lot of one colour in the scene or the photographer does not want the camera to automatically make adjustments for the colour of the light.

Custom White Balance Strengths and Weaknesses

Strengths	Very accurately determines the colour temperature of the light and very accurately sets the white balance.
Weaknesses	Poor choice when the colour of the light is an integral part of the image. Requires more time and effort than auto white balance or preset white balance.
Works Best	Best for scenes that require an accurate rendering of colours as they would appear if the objects were photographed in neutral light.

Manual White Balance Strengths and Weaknesses

Strengths	Can be used when the other white balance options fail.
Weaknesses	Time consuming and can lead to inaccuracies unless the photographer can remember exactly how the scene looked at the time it was taken.
Works Best	Best for scenes with mixed or complicated light sources.

AWB

Cloudy

Shade (ISO 100)

Shade (ISO 200)

Bronne

- Apple (South Africa) - Pro - Insights and Ideas - Color - Tools Caponigro on Color.htm
- Wikipedia – Color temperature
- Scott Kelby - www_ausphotography_net_au.htm
- http://www.cambridgeincolour.com/tutorials/white-balance.htm
- http://www.photoxels.com/tutorial_white-balance.html
- *www.ronbigelow.com*