What is White Balance?

When we look at a white object our eyes will automatically adjust to the lighting conditions, so that the object appears perfectly white to us whether we are indoors under a tungsten bulb or out in the bright sunlight.

While our eyes are excellent at making this adjustment, digital cameras aren't, and the same object will appear different depending on the colour of light in the scene (something known as the "colour temperature"). This can leave our photos with a blue (cool) or orange (warm) tint.

White balance is the process of giving our camera a helping hand, so that it can reproduce the whites in our photo as they should be. Once it gets the white right, all the other colours in the scene fall into place, and we're left with an image that perfectly reproduces what our eyes saw.

Using White Balance Camera Presets

Camera manufacturers know that their Automatic White Balance (AWB) setting doesn't always get it right, so they also include several white balance presets for us to choose from.

Typical white balance presets include Daylight, Shade, Cloudy, Tungsten, Fluorescent, and Flash. These work exactly as you'd expect - you simply choose the appropriate setting for your shooting conditions and the camera will do the hard work of making white objects appear white.

Custom White Balance

For situations where the white balance presets won't do, most cameras also come with a Custom White Balance setting. In this mode you begin by taking a photo of a white object (a sheet of white paper or a professional white balance card) under the lighting conditions of your scene. Then you just tell your camera to use that image as its white balance reference, and then all photos taken under those conditions will come out correctly balanced.

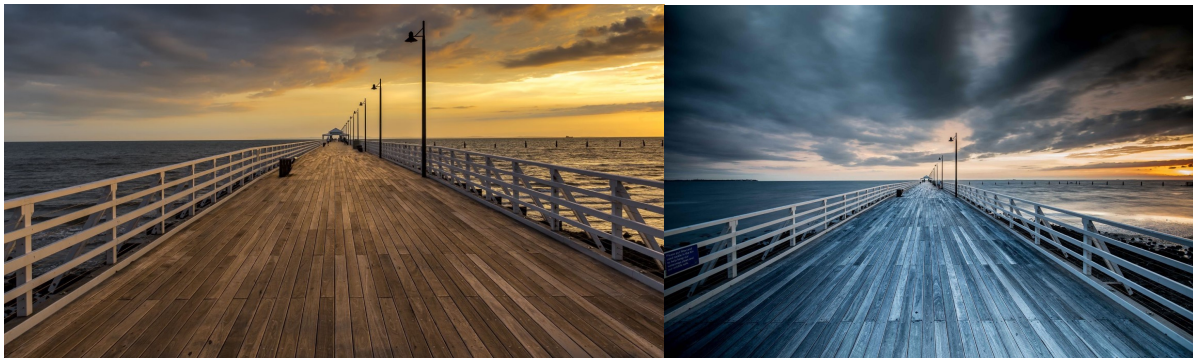
Another way to create a custom white balance is using camera Pre- WB input and using an EXPO disc. This prismatic disc breaks the scene lighting into a flatly lit input signal for your camera to register. After inputting the shot, your camera will signal whether it has registered with the word GOOD.

Deliberately Using the Wrong White Balance

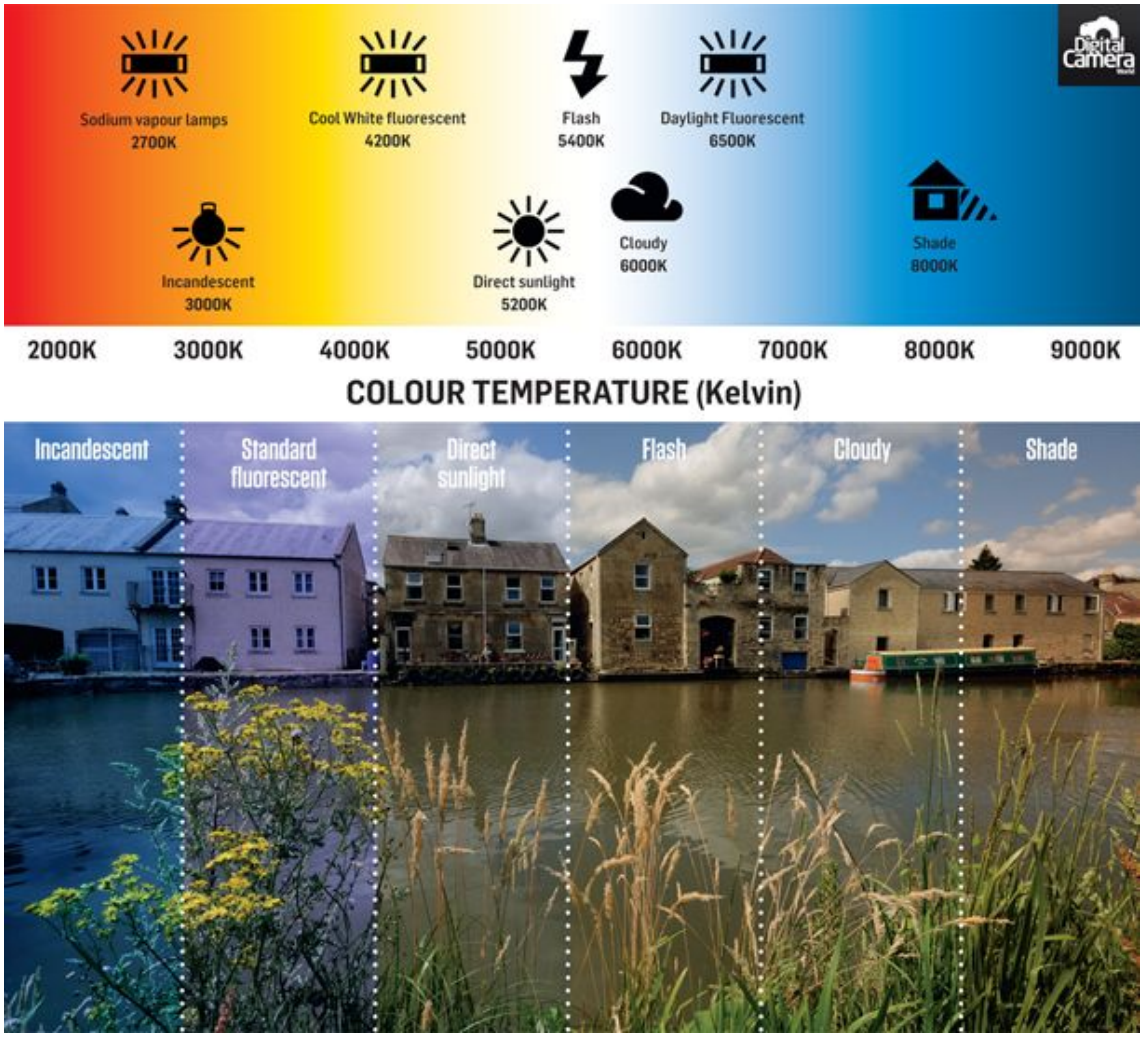
Most of the time you'll want the colours of your scene to be rendered as accurately as possible, but sometimes you will get a more impressive image by artificially warming up or cooling down your scene.

Sunsets are a prime example - your camera's Auto White Balance will often "correct" the rich, warm colours of the scene, leaving you with a photo which is cold and uninspiring.

To artificially warm up a sunset, you can select one of the "cooler" white balance presets, such as Cloudy or Shade. This will enhance the warm reds and oranges in the photo and subdue the cold blues and greens, leaving you with a much more pleasing image. Or you can use these to ensure a colder look, depending on the mood you are after.



Kelvin = Colour



How to Get Perfect Colour Reproduction

Custom and temperature create the most accurate camera white balance photography. First though, you need to learn about grey cards.

Grey cards determine which white balance settings your camera should use. They are 18% grey; a neutral hue.

To use grey cards, take a photo of the card so that it fills the whole frame of your camera. Then set this as the white balance inside your camera.

The camera sees the difference between the result and the neutral hue. It determines the balance from that.

The reason you'd use a grey card and not a white one is simple. If you overexpose any colour enough, it'll come out as white. WB is about colour, not brightness.

You took the grey photo in the same lighting environment as the rest of your photos. So, the camera knows exactly how much to adjust the balance.

Custom: This is where you would take the photo of the grey card and set it in your white balance settings. All cameras are different, so I recommend looking in your manual to check how to do this.

This is the most accurate way possible to capture colour on the cheap and I fully recommend it.

Colour Temperature / Kelvin: This is for professional photographers setting the WB value themselves. The value is in Kelvin (K) – named after the man who created the scale.

For example, sunlight is approximately 5200 K. Tungsten is approximately 3200 K.

Use White Balance Photo Presets

All modern digital cameras not only have Auto White Balance settings but also have a number of presets. They include Tungsten lights, Fluorescent lights, Daylight, Shade, Cloudy and Flash.

If you find that a deep, overcast day gives you too much blue, switch to 'Shade' or 'Cloudy'. These should warm your image up.

If you are shooting under tungsten light using AWB, switch to 'Tungsten'. This will balance out your colour temperature.

You don't have to use a specific preset for a specific light. A classic way to maintain the saturation of sunsets is to set the Shade or Cloudy preset. This adds extra warmth to the image and keeps that sunset looking real.

Presets are a quick and simple solution to getting good white balance photography. But they are not always perfect.

Creating Your Own White Balance Settings

The colour sensors in our cameras read the light reflected back from our scene. But it can get confused by large blocks of colour.

There is a technique that can give us perfect white balance photography. You just have to carry a piece of white card.

By placing the white card in front of your camera you are reflecting back the pure untainted light.

This light information can be stored as a preset. As long as the light source does not change too much. Then it will give you correct and consistent white balance.

Which Setting Is Best for Me?

You have 5 options:

1 – Spend all your time shooting on auto mode and hope for the best. This is alright if you're still trying to get to grips with exposure but after that I recommend you move on.

2 – Try to produce accurate results using the preset modes inside of your camera. This is a step in the right direction. But they're still ballpark figures and won't always produce 100% correct results.

3 – Shoot in custom white balance mode. This is the most popular choice by professional photographers. It can have a learning curve and requires carrying around a grey card.

4 – Use a light temperature meter (Colourimeter). This is a very accurate solution but can cost a lot of money ($1500-2000). It's not a realistic option for most.

5 – Shoot in RAW. For those of you who don't know, RAW is an uncompressed file format. It allows you to change things on a computer after you've taken a photo.

Some of these sliders in post-production are the white balance eye dropper tool and tint control.

Shooting RAW

Many of you already shoot RAW. One of the reasons that you do so is because you can manually set white balance in post-production.

When you shoot a RAW file, white balance is measured and applied as a reference. But you can change this in Adobe RAW, Lightroom or any other RAW processing software.

There is an issue here though. If you shoot only RAW, you have no real reference how the light was in the original scene. You only see the camera's interpretation of it.

A better option is to use one of the techniques above when shooting RAW. Presets, manual white balance or creating your own white balance settings.

You give yourself a more accurate base white balance reading to use in your post production.