

Mysteries of Photography #3: White Balance, a.k.a. Colour Temperature

With a modern digital camera, we have several variables that can be set. However, you can always cheat and run it on Auto. Why not?

One of our former Prime Ministers, the late Malcom Fraser once said that, quote: “Life wasn’t meant to be easy.” Well, the camera manufacturers are all trying to prove him wrong, at least in relation to using their products. However, Auto settings are not always foolproof.

One of those that, when it goes astray, has to be corrected in postproduction is White Balance which is also called the somewhat inscrutable name of Colour Temperature.

The classic example of this is where you are shooting under warm incandescent lights. Whites tend to come out with a yellowish tinge. Take this example below of the bride and groom dancing (somewhat unconventionally) at their wedding.



The original shot using auto white balance appears OK until you correct for the white of the groom’s shirt. In this instance, I used the auto correction colour balance tool.

While in practice, you might like to make the corrected image a bit warmer than with the auto correction, you can see that the yellow tinge as shot is simply not good enough.

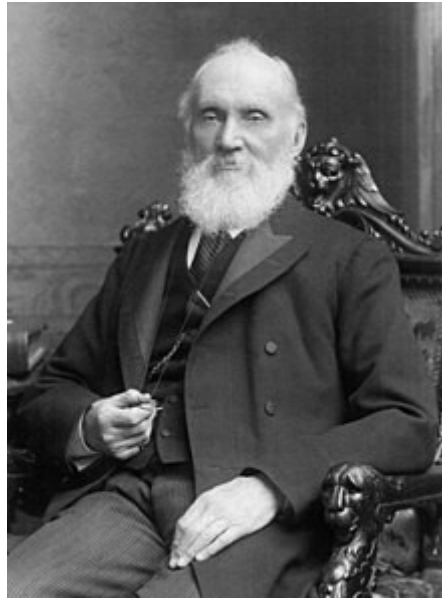
Well, what is White Balance and why is it also called Colour Temperature with inscrutable measurements like D55 and D65 associated with it?

Well, I think you can say it started with the village blacksmith’s forge.

The blacksmith takes an iron rod and sticks it into this charcoal fuelled fire. As it heats up, it first starts to glow red and then, as it gets hotter, it goes, as the saying goes, “white hot”.

Now you understand colour temperature. Cooler emitting light sources give a red colour output and, as you go to higher temperatures, it goes to white and then even takes on a blue tinge.

Now what is the Colour Temperature of normal daylight and, when you calibrate your screen, the default is usually something called D65. So where does come from then? Well it is due this guy.



Born William Tomson he was later Lord Kelvin. Remember the “K” in his name. He defined the now canonical temperature scale used in science where temperature is defined in degrees Kelvin (or K for short). For example, if you heat a black body in a vacuum (so it does burn!) to 6500°K , it glows with white light just like the sun at midday. (Hint: that’s the temperature of the surface of the sun!)

So “normal” white light is designed as 6500K or D65 for short.

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