

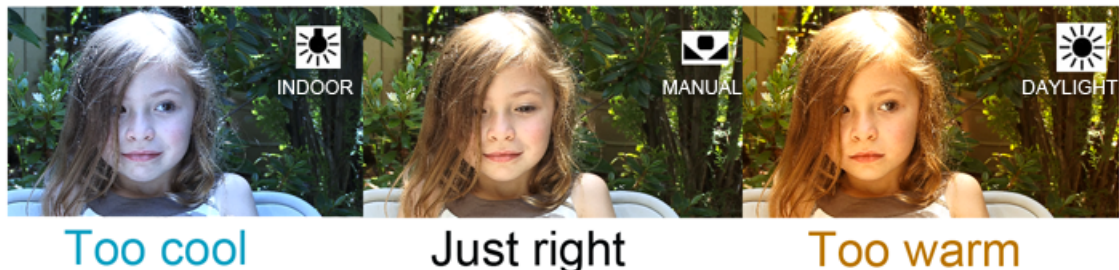
WHITE BALANCE

Proper camera white balance has to take into account the "color temperature" of a light source, which refers to the relative warmth or coolness of white light. Our eyes are very good at judging what is white under different light sources, but digital cameras often have great difficulty with auto white balance (AWB) — and can create unsightly blue, yellow, or even green color casts. Understanding digital white balance can help you avoid these colorcasts, thereby improving your video images under a wide range of lighting conditions.

White balance basically means color balance. It is a camera setting and function, which gives the camera a reference to "true white" — it tells the camera what the color white looks like under the current lighting conditions, so the camera will record color and white correctly. Since white light is the sum of all other colors in the visual light spectrum, the camera will then display all colors correctly.

Examples

Incorrect white balance shows up as pictures with orange or blue tints, as demonstrated by the following examples:



Terminology

Most consumer-level video cameras have an "auto-white balance" feature, and this is how most amateurs operate. The camera performs its own white balance without any input from the operator. In fact, very few home-video users are aware of the existence of a white balance setting function. Unfortunately, the auto-white balance is not particularly reliable and therefore, it is usually necessary to perform a manual white balance calibration.

The terminology commonly used in video productions are as follows:

"Auto-white" means the completely automatic function (no user input at all).

"Manual-white" means the operation described below.

"Color correction" means any other method of adjusting colors.

How to Perform a Manual White Balance

You should perform this procedure at the beginning of every shoot, and every time the lighting conditions change. It is especially important to re-white balance when moving between indoors and outdoors, and between rooms lit by different kinds of lights. During early morning and late evening, the daylight color changes quickly and significantly (although your eyes don't notice, your camera will). Do regular white balances during these periods.

You will need:

- A video camera with a manual white-balance function. There should be a "white balance" button or switch on your camera.

1. Point your camera to a pure white subject, so that most of what you're seeing in the viewfinder is white. Opinions vary on just how much white needs to be in the frame - but we've found that about 50-80% of the frame should be fine (Sony recommends 80% of frame width). The white balance calibration card or object subject should be fairly matte, that is, non-reflective.

2. Set your exposure and focus.

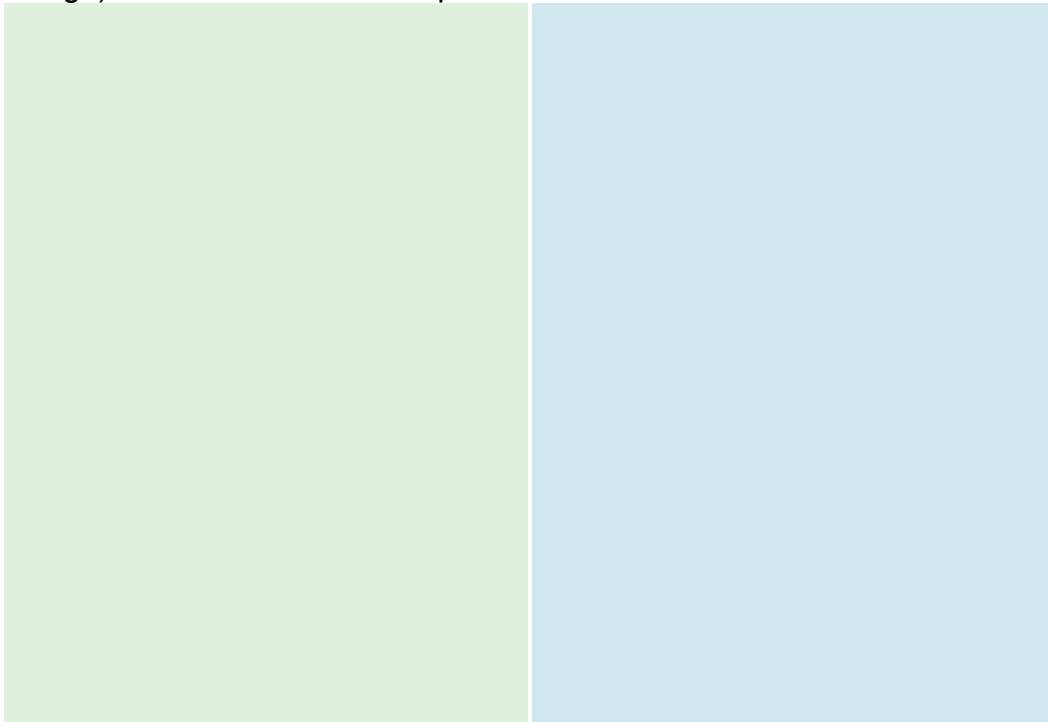
3. Activate the white balance by pressing the button or throwing the switch. The camera may take a few seconds to complete the operation, after which you should get a message (or icon) in the viewfinder. Hopefully this will be telling you that the white balance has succeeded - in most cases, the camera will retain it's current color balance until another white balance is performed.



Manually Setting the White Balance

Advanced White Balancing

Advanced camera operators occasionally trick the camera into reading an inaccurate white balance, in order to make the pictures appear warmer (more orange). Calibration card examples below:



Green Warm Card

Blue Warm Card



WhiBal G7 Pocket Card

Regular Calibration Card