Automatic White Balance White Priority

This information is about required white and neutral backgrounds in passport photographs to be taken with Canon EOS cameras from a D1300 and up.

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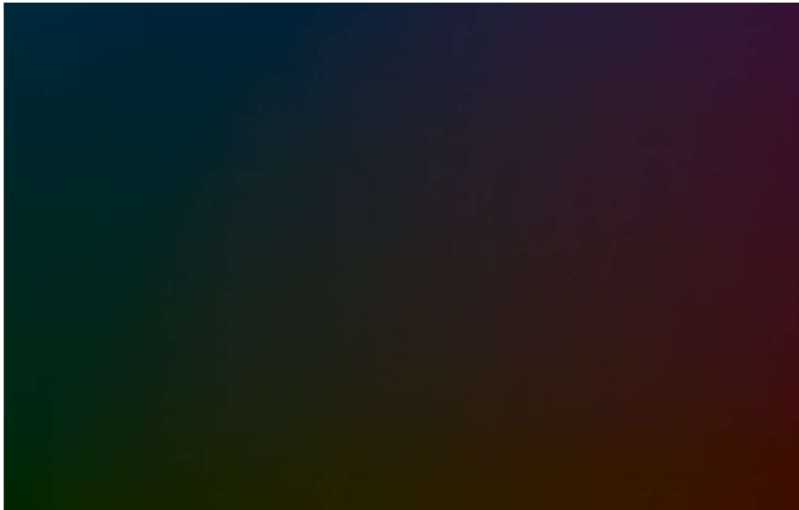| Historie		
Versie 1.0	10 januari 2023	first version
Versie 1.1	16 januari 2023	second version
Versie 1.2	24 januari 2023	third version

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One of the requirements of passport photos is the specified hue of the background. For most countries, this is white, a neutral gray or with a mild variation/bandwidth on this. Photomatic will check that background for you. The definition of Neutral black, gray or white, in short, is where all three primary colors of a monitor; red, green and blue, are measurably equal to each other.

There is a white balance function on a camera.
A white balance is the starting point from which a camera interprets white, gray, black and color. With a white balance, the software in a camera calculates when white is white and black is black, in between are all shades of gray and everything beyond that gets a color component.
Seeing neutral white but especially dark shades of gray is more difficult than you initially think. This is because we can distinguish fewer colors in the dark. On the image below, can you indicate to the nearest pixel which are neutral and which are not? Both images are the same in terms of color value, only the light value differs.

In addition, colors present also influence the surrounding colors. For example, if someone wears a bright red sweater, the reflecting (flash) light makes the surroundings a little redder, not much, but by a camera measurable and visible. However, the automatic white balance function on a Canon EOS camera is not strong enough for this. The gray in the photo can still tend towards a color cast. This is due to various causes such as artificial lighting from the store, colors of clothing, skin tone or incident sunlight from outside. This in turn can result in photos like the one below. Note that the person with dark clothing and gray hair has the most neutral background, but the Asian skin tone dominates, causing the background to be interpreted as yellowish by the default auto white balance.

From a Canon EOS D1300 on there is an extra function on the automatic white balance that also counts artificial light (tungsten) to neutral light but you have to activate it separately. This is done by selecting the WB button on the camera and selecting AWB (automatic white balance), then in that menu press the disp button and select AWB W, see image below.

 w : Auto: White priority

As of now, more colors in the light yellow region are seen as less saturated colors, and the risk of color swirls in a gray background is reduced.

And in Photomatic