

How to Avoid Metamerism in Color-Coordinated Household Appliances

A few years ago, [an appliance manufacturer](#) sent out a shipment of color-coordinated washers and dryers to a major retailer. But when the shipment of products arrived, the retailer noticed a serious problem: the appliance pairs didn't appear to be the same color at all. This complaint puzzled the manufacturer; they had visually assessed their products carefully during manufacturing and found that each pair of appliances was perfectly color-coordinated. So why did the retailer see a clear difference in color between the washers and the dryers?

It turns out that neither the manufacturer nor the retailer was entirely wrong in their visual color assessments. The manufacturer was assessing the color of the washers and dryers under incandescent lighting, while the retailer was looking at the products under the store's fluorescent lighting. In incandescent lighting conditions, the products appeared perfectly matched, but under fluorescent lighting, they appeared to be two completely different colors. [This phenomenon is called metamerism](#), and it's a common challenge for appliance manufacturers.

Metamerism occurs when two different colors appear to be the same under certain lighting conditions and not the same in others. When you're trying to color-coordinate household appliances, metamerism can be frustrating and potentially costly; if you fail to identify the phenomenon during manufacturing, you may end up shipping mismatched products to your customers or having to repaint or recoat all of your products.

Thankfully, there is a simple solution to this problem. By using a spectrophotometer that is capable of measuring color reliably and accurately, you can easily detect metamerism before products reach customers and even before products enter mass manufacturing. Spectrophotometers use advanced spectral analysis to calculate the exact color of a product under different lighting conditions, offering you a truly accurate measurement for every color-coordinated appliance in your line.

The Importance of Color Coordination in Appliances

Most [homeowners and interior designers](#) prefer matching appliance sets because color coordination can make a room appear more cohesive and aesthetically pleasing. Jayme Neumann, an interior designer and promotions manager for Whirlpool, says that a room containing a matching set of appliances is almost always more visually appealing than ones that contain mismatched appliances.¹ She explains, "It might look funny to just have one appliance be stainless—it may look like it's an old [appliance], or [the homeowners are] replacing their appliances just one piece at a time." While overtly mismatched appliances can be an issue, even a very slight color mismatch between appliances can disrupt the visual cohesion of the room; an ivory-colored oven will likely clash when placed next to a microwave that is a slightly brighter shade of white. This is why many customers often buy appliance packages, expecting perfect color matches.

Because today's customers expect their kitchen and other household appliances to match perfectly, manufacturers must test their products thoroughly to ensure that each set truly matches. A slight variation in color between two appliances could be visually distracting, and this problem will be even more evident if the two appliances are installed right next to one another (like a washer and dryer set or a double oven).

The rise in [popularity of brightly-colored household appliances](#) also adds new impetus to think carefully about color coordination and metamerism. Decades ago, the most popular appliances were typically white, black, or stainless steel. Today, many homeowners and interior designers are choosing colorful appliances in unique shades like cherry red, dusty pink, fluorescent orange

or mint green.² In fact, one manufacturer offers more than 750 different finish options for their line of kitchen gadgets. However, these new color choices pose an interesting challenge for appliance manufacturers. Metamerism can cause these colors to appear dramatically different depending on whether they're viewed under natural light, incandescent light or fluorescent light. And, some colors are more prone to the metamerism phenomenon than others, which can be a challenge for manufacturers that make appliances in a wide range of different colors.

How Lighting Impacts Appliance Colors

Certain colors will be impacted by metamerism to a greater extent than others, depending on the lighting conditions.³ For example, appliances that are in muted shades like taupe, grey, light blue, tan or lilac are more likely to be impacted by the metamerism phenomenon compared to brighter, more saturated appliance colors like fluorescent orange or green. This is because it may be difficult to spot a color mismatch in muted shades using visual assessment alone. In certain lighting conditions (like incandescent), these subtle colors might appear to match, but in brighter lighting conditions (like fluorescent), the subtle differences in color could become more obvious to the naked eye. Halogen lighting and natural daylight are the only lighting conditions that provide the most accurate view of the appliance's color.

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