

How were Tomato Tile values assigned

USDA/UC Davis for years provided actual Tomato Sauce and Tomato Paste standards in a can that had calibrated values. HunterLab would purchase this product then use it to assign Red Tiles for each of our instrument product lines. For example we would pour the standard Tomato Sauce product in a cup and measure it on our D25A, bi-directional 45/0 tungsten illumination colorimeter and hitch values to a "master HunterLab Red enamel tile". Then we would measure the same standard product in a cup on our LabScan XE 0/45 circumferential xenon illumination spectrophotometer and hitch values to the same "master HunterLab Red enamel tile". Then we would measure the same standard product in a cup on our ColorFlex 45/0 annular xenon illumination spectrophotometer and hitch values to the same "master HunterLab Red enamel tile". So the same master tile measured on the three different instruments would have three different sets of values. Values representing how a D25A or a LabScanXE or a ColorFlex would actually read a cup of tomato sauce. Enamelled steel tiles are opaque and have very uniform surfaces with 70% to 80% gloss. A cup of tomato sauce is a translucent liquid where light can enter the solution and may not exit due to lateral diffusion. This means that while a D25A might read a near perfect sample like a tile very near that same as a LabScanXE would read the tile, when dealing with the liquid there would be differences of up to several tenths or more. Since the true standard was the USDA/UC Davis Sauce and not the Tile we had to account for how the instrument geometry dealt with the liquid.

So if you order a HunterLab UC Davis Tomato Tile, you need to specify which sensor hitch you want assigned to the tile, but since the D25A and ColorFlex are now obsolete, by default the tile would come with LabScanXE hitch values. This is different from the BCR or current HunterLab Tomato tile which are device independent, meaning calibration of the tile is not dependent on which type of instrument is being used to measure the product.

That said, the concept of hitching is to provide common agreement between different instruments. In the end it is the customer who sets their own consensus methods that work for their particular application or use. In the most technical sense a HunterLab Red enameled Tomato tile should only be used with the specific HunterLab instrument for which it was calibrated. In reality hitching improves inter and intra instrument agreement even if the basis for the hitch targets is not exactly conforming to the original method set out by USDA/UC Davis. If it were vitally important that the hitch values absolutely be correct then one would expect USDA to still be in the business of supplying a standard. Since they don't, then your method of using these tiles even with non-HunterLab instruments is probably better than not using any tile at all.

As far as future availability of these tiles we have a problem with the EU and EPA and their desire to remove lead and other heavy metals from our existence. The pigments used to create the Red shade for the HunterLab USDA/UC Davis red tile and for the BCR Tomato tile are now banned and no longer available. That means once we run out of existing stock we can not make any more. The new HunterLab Tomato tile was specially formulated for HunterLab, and we are the sole worldwide providers of this tile, to be the closest environmentally friendly match to the no longer available BCR Tomato tile. So once we sell out of the USDA/UC Davis tiles your only option will be the HunterLab Tomato tile.