DE* Total Color Difference without the lightness contribution?

FAQ: “Is there a metric similar to a DE* but without lightness contribution? So considering change in a* and b* only?”

DE* is a single-number, total color difference based on CIE L*, a* b* for any illuminant/observer combination.

Total Color Difference **dE*** = SQRT((dL*)^2 + (da*)^2 + (db*)^2) where dL*, da*, db* differences are calculated as product sample - standard values.

Sometimes, there is a need for an overall color difference without the lightness contribution. This is particularly the case when the color is light (high L* values and significant dL* differences) and low chroma (low a* and b* values).

In this case, dC* might be a more appropriate metric.

C* = SQRT(a* + b*) indicative of the amount of chroma or color would be calculated for both the product standard and lot color.

DC* = (C*std = C*sam) indicative of the overall chroma difference without L* contribution.

In the Hunter L, a, b color scale, dC, total chroma difference, can substitute for dE, total color difference.