

$\log(L^*_{22}/L^*_{22,u})$

normalized TUBJ22 lightness

$\log(L^*_{22} / L^*_{22,u})$

L^*/L^*_u

normalized CIELAB lightness

$\log(L^*/L^*_u)$

TUBJ22 and CIELAB lightness

$$L^*_{22} = \frac{\ln[1 + A_2 Y]}{A_1 A_2} = \frac{\ln[1 + A_{2u}(Y/Y_u)]}{A_1 A_{2u}}$$

10 $A_1=0,0170, A_2=0,3343, A_{2u}=5,391, Y_u=18$

$$L^* = 116 (Y/Y_u)^{1/3} - 16 \quad (Y_u=100, 1 \leq Y \leq 100)$$

$L^*_{22,u}=342, Y_u=18$

1 $\log[(L^*_{22})/(L^*_{22,u})]=0, m_u=0,43$

application range

-1 $0,1$ 1 10 $Y_u=18$ 100 Y
-2 -1 0 1 2 $\log Y$