

$\log(L^*_{80}/L^*_{80,u})$ HAULAB lightness L^*_{80} normalized to the background lightness $L^*_{80,u}$

$L^*/L^*_{80,u}$

2 $100 L^* = s(Y/Y_u)^n - d \quad (Y_n=100, Y_u=11, s=134,6, n=0,31, d=19,2)$ [1a]

$L^* = r (Y/Y_u)^n - d \quad (r = s (Y_u/Y_n)^n = 79,10, L^*_u = r - d = 59,8)$ [1b]

$L^*/L^*_u = g (Y/Y_u)^n - h \quad (g = r/(r-d) = 1,32, h = d/(r-d) = 0,32)$ [1c]

$\log [(L^*/L^*_u + h) / g] = n \log (Y/Y_u) = 0,31 \log (Y/11)$ [1d]

1 $10 \ln [(L^*/L^*_u + h) / g] = n \ln(10) \log (Y/Y_u) = 0,71 \log (Y/11)$ [1e]

$(L^*/L^*_u + h) / g = e^{n \ln(10) \log (Y/Y_u)} = e^{0,71 \log (Y/11)}$ [1f]

$m_{nu} = n = 0,310$

$m_u = 0,391$

$\phi = 120'$
 $L_{aw} = 40 \text{ cd/m}^2$

application range

0,1

1 -0,585

10 0,018
 $Y_u = 11$

100 $Y_u = 18$

0,362

-2 -1 0 1 2 $\log Y$