

L^* und
 L^*/L^*_u

**CIELAB-Helligkeit L^* normiert
für die Umgebungshelligkeit L^*_u**

text lightness

$$L^* = s (Y/Y_n)^n - d \quad (Y_n=100, Y_u=18, s=116, n=1/3, d=16) \quad [1a]$$

$$L^* = r (Y/Y_u)^n - d \quad (r = s (Y_u/Y_n)^n = 65,49, L^*_u = r - d) \quad [1b]$$

text relative lightness

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

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

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

text $\ln(L^*/L^*_u)$

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

text $L^*/L^*_u = e^{**x}$

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