HAULAB lightness L^*_{80} normalized to the background lightness $L^*_{80,u}$

$\log\,(L^*_{80}/L^*_{80,u})$

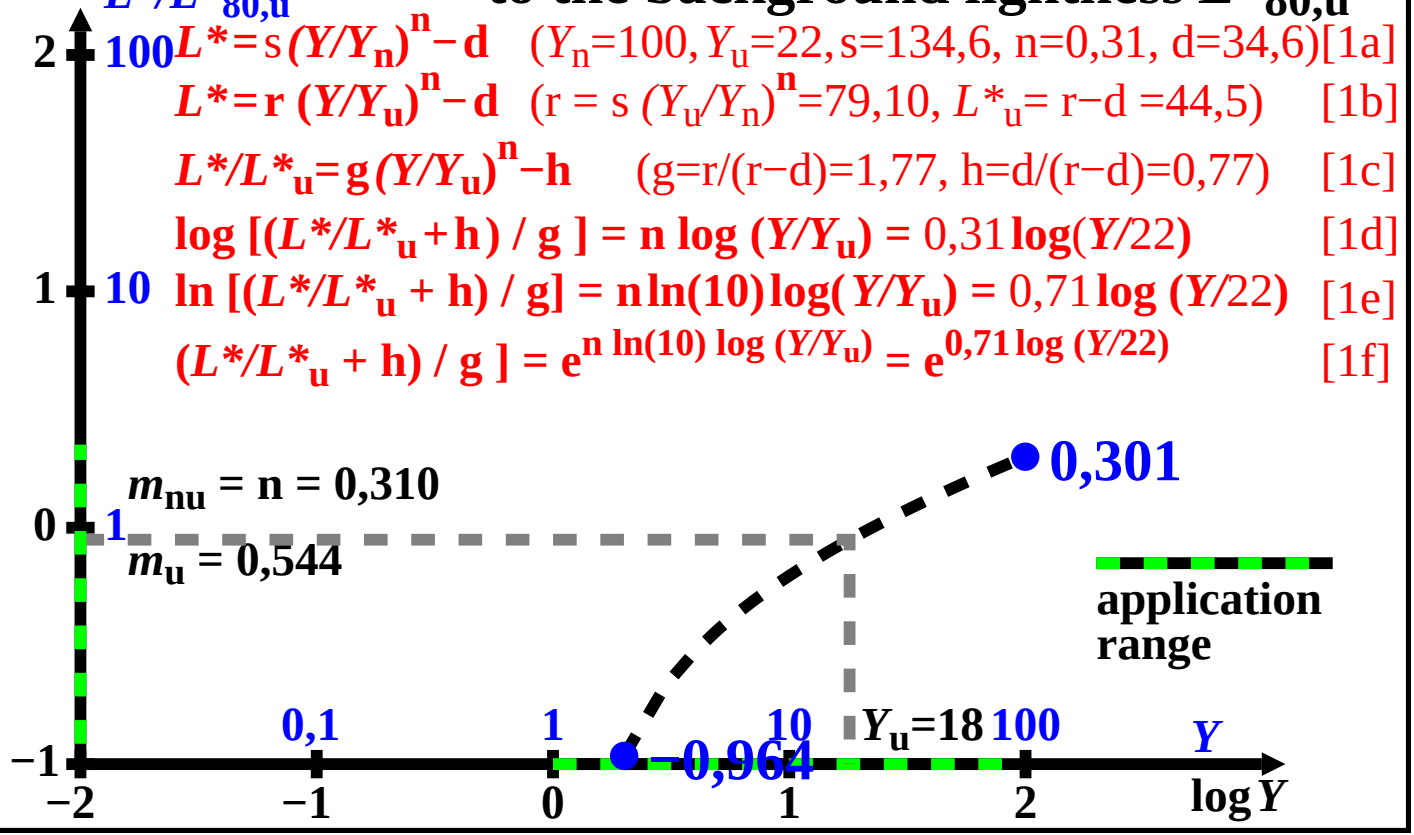
$L^*/L^*_{80,u}$

$L^* = s\,(Y/Y_n)^n - d$ (Y_n=100, Y_u=22, s=134,6, n=0,31, d=34,6) [1a]

$L^* = r\,(Y/Y_u)^n - d$ (r = s $(Y_u/Y_n)^n$=79,10, L^*_u= r−d =44,5) [1b]

$L^*/L^*_u = g\,(Y/Y_u)^n - h$ (g=r/(r−d)=1,77, h=d/(r−d)=0,77) [1c]

$\log\,[(L^*/L^*_u + h)\,/\,g\,] = n\,\log\,(Y/Y_u) = 0{,}31\,\log(Y/22)$ [1d]

$\ln\,[(L^*/L^*_u + h)\,/\,g] = n\,\ln(10)\,\log(Y/Y_u) = 0{,}71\,\log\,(Y/22)$ [1e]

$(L^*/L^*_u + h)\,/\,g\,] = e^{n\,\ln(10)\,\log\,(Y/Y_u)} = e^{0{,}71\,\log\,(Y/22)}$ [1f]