

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

TUBsRGB Helligkeit L^* normiert für die Umgebungshelligkeit L_u^*

$$\frac{L^*}{L_u^*}$$

$$100L^* = s(Y/Y_u)^n - t \quad (Y_u=100, s=100, n=(1/\ln(10)), t=0) \quad [1b]$$

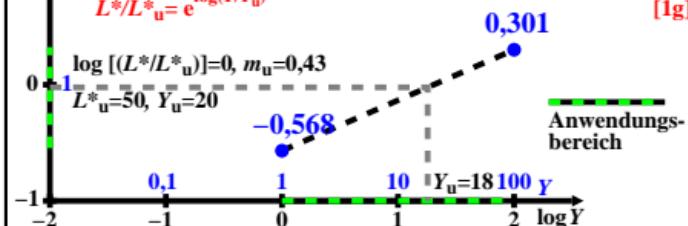
$$L^* = r(Y/Y_u)^n - t \quad (Y_u=18, r=s(Y_u/Y_u)^n = 47,45) \quad [1c]$$

$$L^*/L_u^* = (Y/Y_u)^{1/\ln(10)} \quad (\ln(x)=\ln(10) \log(x)) \quad [1d]$$

$$\log(L^*/L_u^*) = (1/\ln(10)) \log(Y/Y_u) \quad [1e]$$

$$L^*/L_u^* = e^{\log(Y/Y_u)} \quad [1f]$$

$$\log[(L^*/L_u^*)] = 0, m_u = 0,43 \quad [1g]$$



$\log(\Delta Y / \Delta Y_u)$

CIE-Normfarbwertdifferenz ΔY normiert für ΔY_u

$$\frac{\Delta Y}{\Delta Y_u}$$

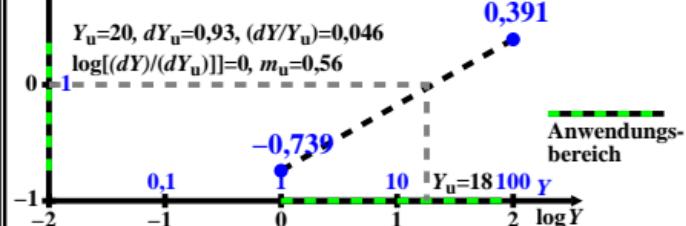
$$100L^* = 100(Y/Y_u)^{1/\ln(10)} \quad (Y_u=100, Y_u=18, 1 \leq Y \leq 100) \quad [1d]$$

$$dY = (2,4Y_u/100) \cdot (Y/Y_u)^{(\ln(10)-1)/\ln(10)} \quad [2d]$$

$$dY_u = \ln(10) \cdot (Y_u/Y_u)^{(\ln(10)-1)/\ln(10)} \quad [3d]$$

$$dY/dY_u = (Y/Y_u)^{(\ln(10)-1)/\ln(10)} \quad [4d]$$

$$\log(dY/dY_u) = \{(\ln(10)-1)/\ln(10)\} \log(Y/Y_u) \quad [5d]$$



$\log[(\Delta Y / Y) / (\Delta Y / Y_u)]$ CIE Y-Empfindlichkeit normiert für $\Delta Y_u / Y_u$

$$\frac{S_r/S_{ru}}{(\Delta Y / Y) / (\Delta Y / Y_u)}$$

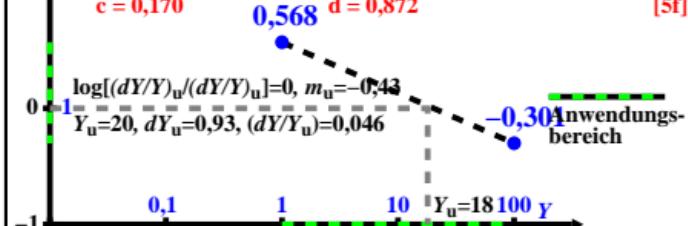
$$100L^* = 100(Y/Y_u)^{1/\ln(10)} \quad (Y_u=100, Y_u=18, 1 \leq Y \leq 100) \quad [1f]$$

$$dY/Y = (2,3/100) \cdot (Y/Y_u)^{1,3/2,3} \quad [2f]$$

$$dY/Y = c \cdot Y^{-1/2,3} \quad [3f]$$

$$dY/Y = d \cdot (Y/Y_u)^{-1/2,3} \quad [4f]$$

$$c = 0,170 \quad 0,568 \quad d = 0,872 \quad [5f]$$



$\log[(Y/\Delta Y) / (\Delta Y/\Delta Y_u)]$ CIE Y-Kontrast normiert für $Y_u / \Delta Y_u$

$$\frac{C_r/C_{ru}}{(Y/\Delta Y) / (\Delta Y/\Delta Y_u)}$$

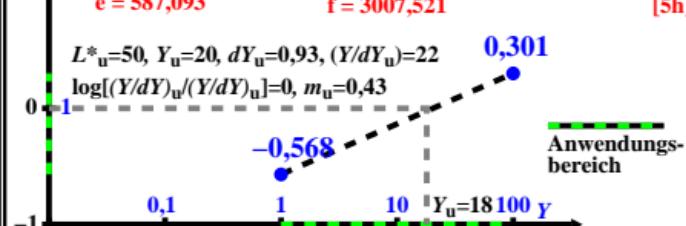
$$100L^* = 100(Y/Y_u)^{1/\ln(10)} \quad (Y_u=100, Y_u=18, 1 \leq Y \leq 100) \quad [1h]$$

$$Y/dY = (2,3/100) \cdot Y^{1,2,3} Y^{1,3/2,3} \quad [2h]$$

$$Y/dY = e \cdot (Y/Y_u)^{1,3/2,3} \quad [3h]$$

$$Y/dY = f \cdot (Y/Y_u)^{1,3/2,3} \quad [4h]$$

$$e = 587,093 \quad f = 3007,521 \quad [5h]$$



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