

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

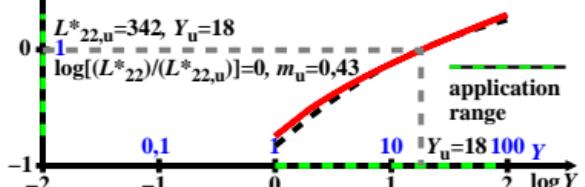
normalized TUBJ22 lightness
 $\log(L^*_{22} / L^*_{22,u})$

TUBJ22 and CIELAB lightness
 $\log(L^*/L^*_u)$

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

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

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



cew71-5a

$$\log[(Y/\Delta Y) / (Y/\Delta Y)_u]$$

CIE Y contrast
 normalized to $(Y/\Delta Y)_u$
TUBJ22 & CIELAB

$$C_r/C_{ru} = (Y/\Delta Y)/(Y/\Delta Y)_u \quad A_1=0,0170, A_2=0,3343$$

$$\text{normalized TUBJ22 contrast} \quad A_{2u}=5,391, Y_u=18$$

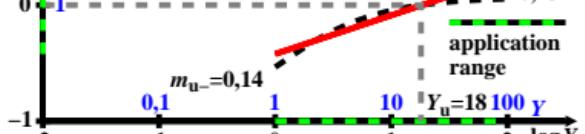
$$\log[(Y/dY)/(Y/dY)_u] = [(1+A_{2u})(Y/Y_u)] / [1+A_{2u}(Y/Y_u)]$$

normalized CIELAB contrast

$$\log[(Y/dY)/(Y/dY)_u] = (1/3) \log [(Y/dY_u)]$$

$$L^*_{u+}=50, Y_u=18, dY_u=0,83, (Y/dY_u)=22$$

$$\log[(Y/dY_u)/(Y/dY)_u]=0, m_u=0,33$$



cew71-7a

cew71-7n

$$\log(L^*_{23}/L^*_{23,u})$$

normalized TUBJ23 lightness
 $\log(L^*_{23} / L^*_{23,u})$

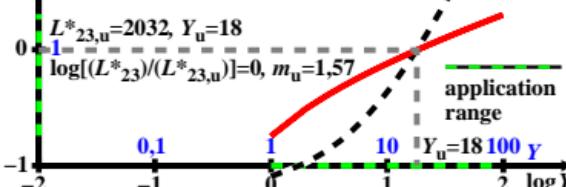
normalized CIELAB lightness
 $\log(L^*/L^*_u)$

TUBJ23 and CIELAB lightness

$$L^*_{23} = \frac{[1+A_2 Y](A_3+1)}{A_1 A_2 (A_3+1)} = \frac{[1+A_{2u}(Y/Y_u)](A_3+1)}{A_1 A_{2u} (A_3+1)}$$

$$A_1=0,0251, A_2=0,1566, A_3=1,1070, Y_u=18$$

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



cew70-6a

$$\log[(Y/\Delta Y) / (Y/\Delta Y)_u]$$

CIE Y contrast
 normalized to $(Y/\Delta Y)_u$
TUBJ23 & CIELAB

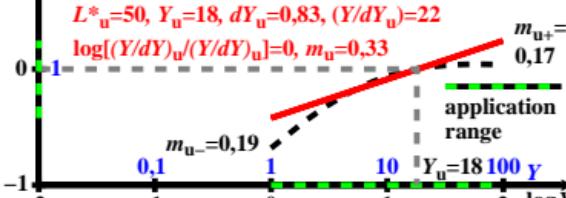
$$C_r/C_{ru} = (Y/\Delta Y)/(Y/\Delta Y)_u \quad A_2=0,1566, A_{2u}=2,778$$

$$\text{normalized TUBJ23 contrast} \quad A_3=1,107, Y_u=18$$

$$[(Y/dY)/(Y/dY)_u] = [(Y/Y_u)[1+A_{2u}]^{A_3}] / [(1+A_2 Y)^{A_3}]$$

normalized CIELAB contrast

$$\log[(Y/dY)/(Y/dY)_u] = (1/3) \log [(Y/dY_u)]$$



cew70-6a

cew71-7n