TUB registration: 20230701-eer0/eer0l0n1.txt /.ps
application for evaluation and measurement of display or print output

TUB material: code=rha4ta

Achromatic colour vision with relative luminance
Mathematical equations with hyperbel functions

$$F_{ab}(x_r,a)=b\tanh(x_r/a)=b\frac{e^{x_r/a}-e^{-x_r/a}}{e^{x_r/a}+e^{-x_r/a}} \quad \begin{array}{l} x_r=\log(L_r) \\ L_r=L/L_n \\ x_r<=0 \end{array} [1]$$

$$\frac{dF_{ab}(x_r,a)}{dx_r}=\frac{4b}{a[e^{x_r/a}+e^{-x_r/a}]^2} \quad \begin{array}{l} x_r=\ln L_r/\ln(10) \\ dx_r/dL_r=1/\ln(10)L_r \\ m=1/\ln(10)c \end{array} [5]$$

$$\frac{dF_{ab}(x_r,a)}{dx_r}\frac{dx_r}{dL_r}=\frac{4bm}{L_r} \quad \begin{array}{l} L_r/dL_r=L/dL \\ dF_{ab}(x_r,0)=1 \end{array} [6]$$

$$\frac{L}{dL}=\frac{4bm}{[e^{x_r/a}+e^{-x_r/a}]^2} \quad dL=\frac{[e^{x_r/a}+e^{-x_r/a}]^2 L}{4bm} [7]$$

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TUB-test chart eer0; Model of normalized receptor-response functions $F_{ab}(x_r)$ and $F_{cb}(x_r)$
Calculation of derivations $F'_{ab}(x_r)$, $F'_{cb}(x_r)$, of contrasts $L/\Delta L$, and discriminations $(\Delta L)_{ab}$, $(\Delta L)_{cb}$