Achromatic colour vision with relative luminance
Mathematical hyperbel and potential functions

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

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

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[e^{x_r/c}+e^{-x_r/c}]^2} \; ; \; \frac{dL}{dL_u}=\frac{[e^{x_r/c}+e^{-x_r/c}]^2L}{4L_u} \quad [8]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[L_r^n+L_r^{-n}]^2} \; ; \; \frac{dL}{dL_u}=\frac{[L_r^n+L_r^{-n}]^2L}{4L_u} \quad [9]$$

hey11–6n eer11–6n