

# Achromatic receptor-response function

$$Q_{ab}[x_r/a]$$

with  $x_r = \log [L/L_u]$  ( $L$ =test luminance)

$L_u$ =surround luminance

$$Q_{ab}[x_r/a] = \frac{b}{\ln \sqrt{2}} \ln \left[ \frac{1}{1 + \sqrt{2} e^{(x_r/a)}} \right] - b$$

**function values for  $b=1$  and  $a>0$  :**

$$Q_{a1}[x_r/a \rightarrow -\infty] = -1 \quad x = \log L, \quad u = \log L_u$$

$$Q_{a1}[x_r/a = 0] = 0 \quad x_r = \log [L/L_u]$$

$$Q_{a1}[x_r/a \rightarrow +\infty] = +1 \quad = x - u$$