

Potential response function of achromatic vision space T^*_{POT3}

nonlinear color terms	name and relationship with test field luminance L	notes
threshold sum T^*_{POT3}	$T^*_{POT3} = A_1 \cdot [(1 + A_3 \cdot L)^t - 1]; X = 1 + A_3 \cdot L$ $= A_1 \cdot [X^t - 1]; dX/dL = A_3$ $= ??$	<i>K. Richter</i> 1988: exponent: $t = -0,25$ for presentation time: $t_p = 0,1s$ (<i>Lingelbach</i> experiments 1977)
CIE luminance contrast sensitivity threshold L / dL	$dT^*_{POT3} / dX = A_1 \cdot t \cdot X^{t-1}$ $dT^*_{POT3} / dL = dT^*_{POT3} / dX \cdot dX / dL$ $dT^*_{POT3} / dL = A_1 \cdot t \cdot X^{t-1} \cdot A_3$ for $dT^*_{POT3}=1$, and multiplication with L: $L / dL = A_1 \cdot L \cdot t \cdot A_3 \cdot X^{t-1}$ $= A_1 \cdot L \cdot t \cdot A_3 \cdot [1 + A_3 L]^{t-1}$	for large L : $T^*_{POT3} = A_1 \cdot A_3 \cdot L^t$ for least square fit:
CIE luminance difference threshold dL	$dL = 1 / (A_1 \cdot t \cdot A_3 \cdot X^{t-1})$ $= 1 / (A_1 \cdot t \cdot A_3 \cdot [1 + A_3 \cdot L]^{t-1})$	$dX/dA_3 = 1$ $dX/dL = A_3$