Color threshold formula LABJNDS 1985 for *Ostwald* (o) colours

$$\Delta E^{*}_{JND,o} = Y_0 \left[(\Delta Y_o)^2 + (a_0 \Delta a_o \cdot Y_o)^2 + (b_0 \Delta b_o \cdot Y_o)^2 \right]^{1/2} / \ (s + q \cdot Y_o{}^t)$$

$$= Y_0 \left[(\Delta Y_o)^2 + (\Delta c_{ab,o} \cdot Y_o)^2 \right]^{1/2} / \ (s + q \cdot Y_o{}^t)$$

$a = x / y \qquad a_n = x_n / y_n \qquad b = -0{,}4\, z / y \qquad b_n = -0{,}4\, z_n / y_n$

$c_{ab} = [a_0{}^2 (a - a_n)^2 + b_0{}^2 (b - b_n)^2]^{1/2}$ n = D65 or A (surround)

$Y = (Y_1 + Y_2) / 2 \qquad \Delta Y = Y_1 - Y_2 \qquad \Delta a = a_1 - a_2 \qquad \Delta b = b_1 - b_2$

$p_{c,o} = c_{ab} / c_{ab,o}$ s = 0,0170 q = 0,0058 t = 1,0

$a_0 = 1{,}0 \qquad b_0 = 1{,}8 \qquad Y_0 = 1{,}5$ surround D65

$a_0 = 1{,}0 \qquad b_0 = 1{,}7 \qquad Y_0 = 1{,}0$ surround A

Just noticeable difference of complementary (c) *Ostwald* (o) colours with:

$(a_o - a_n)Y_o = (a_{oc} - a_n)Y_{oc}; \quad (b_o - b_n)Y_o = (b_{oc} - b_n)Y_{oc}; \quad c_{ab,o}Y_o = c_{ab,oc}Y_{oc}$

$\Delta Y_o = \text{const} \ (s + q \cdot Y_o{}^t) / Y_0$ in luminance direction *WN*

$\Delta c_{ab,o} \cdot Y_o = \text{const} \ (s + q \cdot Y_o{}^t) / Y_0$ in any chromaticity direction c_{ab}

$\Delta c_{ab,oc} \cdot Y_{oc} = \text{const} \ (s + q \cdot Y_{oc}{}^t) / Y_0$ and for the *Ostwald* purity $p_{c,o}$=1