

LABJND colour-difference formula of CIE 230:2019

Main integral equations with $Y_r = Y/Y_u$ of surround u

$$dY = A_1 [1 + A_2 Y] \quad \text{error } 0,0044 \quad A_1 = 0,0170, A_2 = 0,3343 \quad [5d]$$

$$dY_r = A_1 [1 + A_{2u} Y_r] \quad A_1 = 0,0170, A_{2u} = 5,931, Y_r = (Y/Y_u) \quad [6d]$$

$$\frac{1}{A_1} \int \frac{dY_r}{1 + A_{2u} Y_r} = \frac{1}{A_1 A_{2u}} \ln | 1 + A_{2u} Y_r | = F^*(Y_r) \quad (A_3 = 1) \quad [6i]$$

$$dY = A_1 [1 + A_2 Y]^{A_3} \quad \text{error } 0,0018 \quad A_1 = 0,0251, A_2 = 0,1566, A_3 = 1,107 \quad [7d]$$

$$dY_r = A_1 [1 + A_{2u} (Y_r)]^{A_3} \quad A_1 = 0,0251, A_{2u} = 2,778, A_3 = 1,107 \quad [8d]$$

$$\frac{1}{A_1} \int \frac{dY_r}{[1 + A_{2u} Y_r]^{A_3}} = \frac{1}{A_1} \frac{[1 + A_{2u} Y_r]^{(A_3 + 1)}}{A_{2u} (A_3 + 1)} = F^*(Y_r) \quad (A_3 \neq 1) \quad [8i]$$