

# LABJND colour-difference formula of CIE 230:2019

## Modifications with normalization to $Y_u$ of surround

$$dY = A_1 + A_2 Y^{A_3} \quad \text{error } 0,0019 \quad A_1 = 0,0258, A_2 = 0,0036, A_3 = 1,087 \quad [3d]$$

$$= A_1 + A_{2u} (Y/Y_u)^{A_3} \quad A_1 = 0,0258, A_{2u} = 0,0823, A_3 = 1,087 \quad [4d]$$

$$\int \frac{dY_r}{A_1 + A_{2u} [Y_r]^{A_3}} = A_1 Y_r + \frac{A_{2u} [Y_r]^{(A_3+1)}}{A_3+1} = F^*(Y_r) \quad (A_3 \neq 1) \quad [4i]$$

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

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

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