

L^* CIELABu4 standard lightness L^*

$$Y_{nc} = L^*_{wRGBnc} = 100, 52, 87, 31$$

 L^*
 4
 10000

$$L^*_{CIELABu4} = 37(Y/Y_u)^{1/1,5} + 13 \quad (Y_u = 18, Y_{nc}/100 < Y \leq Y_{nc})$$

$$L^*_{N(3,6)} = 26, L^*_u(18) = 50, L^*_{W(90)} = 121$$

3
10002
100

$$\log[L^*/L^*_u] = 0, m_u = 0,49$$

$$L^*_u = 49, L^*_u = 50$$

application range

 1
 -2 -1 0 1 10 100 Y
 $Y_N = 3,6$ $Y_u = 18$ $Y_W = 90$ 2 $\log(Y)$