

L^* CIELABn4 standard lightness L^*

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

 L^*

4 10000

$$L^*_{CIELABn4} = 87(Y/Y_n)^{1/1,5} + 13 \quad (Y_n = 100, Y_{nc}/100 < Y \leq Y_{nc})$$

$$L^*_{N(3,6)} = 22, L^*_{u(18)} = 41, L^*_{W(90)} = 94$$

3 1000

$$L^*_{90} = 94, 10, \gamma = 1,5, 1/\gamma = 1/1,5 = 0,66$$

$$L^*_{18} = 40,74, S_n = 86,98, D_n = 13,01$$

$$L^*_{3,6} = 22,48, L^*_n = 40,74, Y_n = 18$$

2 100

$$\log[L^*/L^*_{u}] = 0, m_u = 0,45$$

$$L^*_{u} = 49, L^*_{u} = 41$$

application range

1

0,1

-1

1

0

10

1

100

2

 $Y_u = 18$ $Y_w = 90$ Y $\log(Y)$