

L^*/L_u^* CIELAB & TUBJND

relative lightness L^*/L_u^*
normalized to the
background lightness L_u^*

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$$L^*_{\text{TUBJND}} = d \ln [1 + b \cdot (Y/Y_u)] \quad d=25,6 \quad b=6,141 \quad [2a]$$

$$L^*_{\text{CIELAB}} = 116 (Y/Y_u)^{1/3} - 16 \quad (Y_u=100, 0,89 \leq Y) \quad [2b]$$

regularity index: $g^*_5=99, g^*_9=99,$ [ISO 15775]

2

intended output:

equally spaced 9 steps in CIELAB
for contrast $C_Y=25:1$

1

$$L^*_{r,\text{CIELAB}} = 1, \quad m_u = 1,02$$

$$L^*_{u,\text{CIELAB}} = 49, \quad Y_u = 18$$

0

0,99

1,00

0,47

0,43

0,1

10

100

black

1000

1,93

1,75

white

application
range