

CIELAB_v 2022 L^*v a^*v b^*v color space
definition and reversal ($X_v/X_n=Y_v/Y_n=Z_v/Z_n=0,1841$)

$$L^*v = 116 c_v (Y/Y_v)^{1/3} - 16 = L^*_{\text{CIELAB}}$$

$$a^*v = 500 c_v [(X/X_v)^{1/3} - (Y/Y_v)^{1/3}] = a^*_{\text{CIELAB}}$$

$$b^*v = 200 c_v [(Y/Y_v)^{1/3} - (Z/Z_v)^{1/3}] = b^*_{\text{CIELAB}}$$

$$X = X_v [(L^*v + 16) / (116c_v) + a^*v/(500c_v)]^3$$

$$Y = Y_v [(L^*v + 16) / (116c_v)]^3 \quad Y_v = 18,41$$

$$Z = Z_v [(L^*v + 16) / (116c_v) - b^*v/(200c_v)]^3$$

$$c_v = [Y_v/Y_n]^{1/3} = 0,1841^{1/3} = 0,5689, \text{ similar for } X, Z$$

$$v_L = 116c_v = 66, \quad v_a = 500c_v = 284,56, \quad v_b = 200c_v = 113,78$$