Farbenraum CIELAB 1976, Farbwerte, -merkmale und -arten *(a', b')*

Normfarbwerte *X, Y, Z* −> Farbmerkmale *L*, a*, b**

Helligkeit	$L^* = 116\,(Y/Y_n)^{1/3} - 16$
RG-Buntheit	$a^* = 500\,[\,(X/X_n)^{1/3} - (Y/Y_n)^{1/3}\,] = 500\,[\,a' - a'_n]\,Y^{1/3}$
JB-Buntheit	$b^* = 200\,[\,(Y/Y_n)^{1/3} - (Z/Z_n)^{1/3}\,] = 500\,[\,b' - b'_n]\,Y^{1/3}$

Farbmerkmale *L*, a*, b** −> Normfarbwerte *X, Y, Z*

Normfarbwerte	$X = X_n\,[\,(L^* + 16) / 116 + a^*/500\,]^3$
	$Y = Y_n\,[\,(L^* + 16) / 116\,]^3$
	$Z = Z_n\,[\,(L^* + 16) / 116 - b^*/200\,]^3$

Farbarten für CIELAB 1976, LABHNU 1977, LABHNUx 1979

CIELAB 1976, 2^o	$a' = 0{,}2191\,(x/y)^{1/3}$	$b' = -0{,}08376\,(z/y)^{1/3}$
LABHNU 1977	$a' = (x/y + 1/6)^{1/3} / 4$	$b' = -(z/y + 1/6)^{1/3} / 12$
LABHNU1 1979	$a' = (x/y + 1) / 15$ *linear!*	$b' = -(z/y + 1/6)^{1/3} / 12$
LABHNU2 1979	$a' = (x/y + 1/6)^{2/3} / 15$	$b' = -(z/y + 1/6)^{1/3} / 12$
CIELAB 1976, 10^o	$a' = 0{,}2193\,(x_{10} / y_{10})^{1/3}$	$b' = -0{,}08417\,(z_{10} / y_{10})^{1/3}$
Farbart-Konstanten	$a_2 = 500\,(1/X_n)^{1/3} = 0{,}2191$	$b_2 = -200\,(1/Z_n)^{1/3} = -0{,}08376$
CIELAB, 2^o,10^o	$a_{10} = 500\,(1/X_{n,10})^{1/3} = 0{,}2193$	$b_{10} = -200\,(1/Z_{n,10})^{1/3} = -0{,}08417$