

color valence metrics terms (color values: linear coordinates)

color valence metric terms	name and relationship with standard chromaticity values	notes:
luminous value	$Y = y (X + Y + Z)$	<i>definition in:</i> <i>CIEXYZ 1931</i>
chromatic value	<i>for linear chromatic value diagram (AT, B)</i>	
red–green	$A = [X / Y - X_n / Y_n] Y = [a - a_n] Y$ $= [x / y - x_n / y_n] Y$	<i>definition</i> <i>opponent</i>
yellow–blue	$B = - 0,4 [Z / Y - Z_n / Y_n] Y = [b - b_n] Y$ $= - 0,4 [z / y - z_n / y_n] Y$	<i>color system</i> <i>n=D65 (surround)</i>
radial	$C = [A^2 + B^2]^{1/2}$	
saturation value = chromatic value / luminous value	<i>definition</i>	
red–green	$S_a = A / Y = X / Y - X_n / Y_n$ $= x / y - x_n / y_n = a - a_n$	<i>opponent</i> <i>color system</i>
yellow–blue	$S_b = B / Y = - 0,4 [Z / Y - Z_n / Y_n]$ $= - 0,4 [z / y - z_n / y_n] = b - b_n$	
radial	$S_c = C / Y$ $= [(a - a_n)^2 + (b - b_n)^2]^{1/2}$	
chromaticity value	<i>for linear chromaticity diagram (a, b) definition</i>	
red–green	$a = X / Y = x / y$	<i>opponent</i>
yellow–blue	$b = - 0,4 [Z / Y] = - 0,4 [z / y]$	<i>color system</i>
radial	$c = [(a - a_n)^2 + (b - b_n)^2]^{1/2}$	