color valence metric (color data: linear relation to CIE 1931 data)

linear color terms	name and relationship to CIE tristimulues or chromaticity values	notes:
luminous value	$Y = y\,(\,X + Y + Z\,)$	
chromatic value	*for linear chromatic value diagram (A, B)*	
red−green	$A = [\,X / Y - X_n / Y_n\,]\,Y = [\,a - a_n\,]\,Y$	*n=D65 (backgr.)*
	$= [\,x / y - x_n / y_n\,]\,Y$	
yellow−blue	$B = -\,0{,}4\,[\,Z / Y - Z_n / Y_n\,]\,Y = [\,b - b_n\,]\,Y$	
	$= -\,0{,}4\,[\,z / y - z_n / y_n\,]\,Y$	
radial	$C_{ab} = [\,A^2 + B^2\,]^{1/2}$	
chromaticity	*for (linear) chromaticity diagram (a, b)*	*compare to linear*
red−green	$a = X / Y = x / y$	*cone excitation*
yellow−blue	$b = -\,0{,}4\,[Z / Y\,] = -\,0{,}4\,[z / y\,]$	***P/(P+D)=L/(L+M)***
radial	$c_{ab} = [\,(\,a - a_n\,)^2 + (\,b - b_n\,)^2\,]^{1/2}$	***T/(P+D)=S/(L+M)***