

basic and mixed colors of standard color television by DIN 6169					
basic color or mixed color and name	CIE standard chromaticity		CIE standard tristimulus value		Z
	x	y	X	Y	
three additive basic colors:					
O orangered	0,6400	0,3300	43,03	22,19	2,02
L leafgreen	0,2900	0,6000	34,16	70,68	12,96
V violetblue	0,1415	0,0482	17,82	7,13	93,87
three additive mixed colors:					
C cyanblue	0,2197	0,3288	51,98	77,81	106,83
M magentared	0,3270	0,1576	60,85	29,32	95,89
Y yellow	0,4172	0,5019	77,19	92,87	14,98
D65 (white)	0,3127	0,3291	95,01	100,00	108,85

SE240-1, B79_06

basic and mixed colors of a test offset color printing process					
basic color or mixed color and name	CIE standard chromaticity		CIE standard tristimulus value		Z
	x	y	X	Y	
three subtractive basic colors:					
C cyanblue	0,1776	0,2510	20,04	28,32	64,46
M magentared	0,4298	0,2320	29,94	16,17	23,56
Y yellow	0,4512	0,5000	62,08	68,74	6,75
three subtractive mixed colors:					
O orangered	0,6261	0,3368	21,57	11,60	1,28
L leafgreen	0,2416	0,5989	5,82	14,43	3,84
V violetblue	0,1890	0,1326	4,39	3,08	15,77
D65 (white paper, D65)	0,3173	0,3337	77,74	81,79	85,43
N (printing black)	0,3130	0,3258	4,12	4,29	4,75

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

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

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SE241-3N

higher colour metric (color data: nonlinear relation to CIE 1931 data)

nonlinear color terms	name and relationship with tristimulus or chromaticity values	notes
lightness	$L^* = 116 (Y/100)^{1/3} - 16 (Y > 0,8)$ approximation: $L^* = 100 (Y/100)^{1/2,4} (Y > 0)$	CIE LAB 1976
chroma	nonlinear transform chromatic values A, B	
red-green	$a^* = 500 [(X/X_n)^{1/3} - (Y/Y_n)^{1/3}]$ $= 500 (a' - a_n') Y^{1/3}$	CIE LAB 1976
yellow-blue	$b^* = 200 [(Y/Y_n)^{1/3} - (Z/Z_n)^{1/3}]$ $= 500 (b' - b_n') Y^{1/3}$	CIE LAB 1976
radial	$C^*_{ab} = [(a^*)^2 + (b^*)^2]^{1/2}$	$n = D65$ (background)
chromaticity	nonlinear transform chromaticities x/y, z/y	compare to log cone excitation
red-green	$a' = (1/X_n)^{1/3} (x/y)^{1/3}$ $= 0,2191 (x/y)^{1/3}$ for D65	$\log[L/(L+M)]$
yellow-blue	$b' = -0,4 (1/Z_n)^{1/3} (z/y)^{1/3}$ $= -0,08376 (z/y)^{1/3}$ for D65	$\log[P/(P+D)]$ $\log[S/(L+M)]$
radial	$c'_{ab} = [(a' - a_n')^2 + (b' - b_n')^2]^{1/2}$	$\log[T/(P+D)]$

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SE241-7N