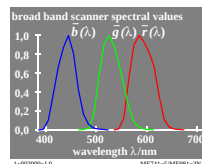
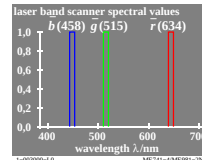
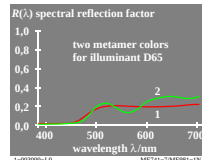
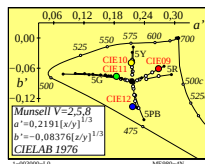
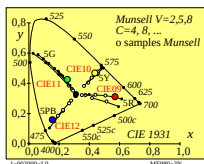


colour attributes of low and high colour metric	
low colour- or valence metric	
white value	W
black value	N
chromatic value	C
high colour- or sensation metric	
whiteness	W*
blackness	N*
chromaticness	C*

mode of colour mixture	
dichromatic	trichromatic
(for $Y_{-} \geq B_{-}$)	(for $R_{-} \geq G_{-} \geq B_{-}$)
B_{-}	B_{-}
$100 - Y_{-}$	$100 - R_{-}$
$Y_{-} - B_{-}$	$R_{-} - B_{-}$
(for $Y^{*}_{-} \geq B^{*}_{-}$)	(for $R^{*}_{-} \geq G^{*}_{-} \geq B^{*}_{-}$)
B^{*}_{-}	B^{*}_{-}
$100 - Y^{*}_{-}$	$100 - R^{*}_{-}$
$Y^{*}_{-} - B^{*}_{-}$	$R^{*}_{-} - B^{*}_{-}$



Colour rendering index R_i of two metameric BAM-scanner test colours			
scanner	TC colour rendering index	colour difference	
broad band	1 82	3	
	2 84		
laser	1 63	10	
	2 69		
ideal	1 100	0	
	2 100		

D65, colour adjustment with white paper

colour valence metric (color data: linear relation to CIE 1931 data)		
linear color terms	name and relationship to CIE tristimulus or chromaticity values	notes
tristimulus values	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	$a = X/Y = x/y$	
yellow-blue	$b = -0,4 [Z/Y] = -0,4 [z/y]$	
radial	$c_{ab} = [(a - a_n)^2 + (b - b_n)^2]^{1/2}$	$L/(L+M) = P/(P+D)$ $S/(S+M) = T/(P+D)$

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 transfer of 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 transfer of 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	$\log[L/(L+M)]$ $= \log[P/(P+D)]$
yellow-blue	$b' = -0,4 (1/Z_n)^{1/3} (z/y)^{1/3}$ $= -0,08376 (z/y)^{1/3}$ for D65	$\log[S/(S+M)]$ $= \log[T/(P+D)]$
radial	$c'_{ab} = [(a' - a'_n)^2 + (b' - b'_n)^2]^{1/2}$	