



see similar files: <http://farbe.li.tu-berlin.de/ME96/ME96.HTM>  
<http://130.149.60.45/~farbmtrik> or <http://farbe.li.tu-berlin.de>



### perceived color terms (colorness: cube root coordinates)

perceived color terms	name and relationship with standard chromaticity values	notes:
<b>lightness</b>	$L^* = 116 (Y / 100)^{1/3} - 16$ Aproximation: $L^* = 100 (Y / 100)^{1/3}$	definition 1976 in: <i>CIELUV, CIELAB</i>
<b>chromaticness for linear chromatic value diagram (AT, B)</b>		
red-green	$a^* = 500 [ (X / X_n)^{1/3} - (Y / Y_n)^{1/3} ]$ $= 500 (a' - a'_n) Y^{1/3}$	definition 1976 in: <i>CIELAB</i>
yellow-blue	$b^* = 200 [ (Y / Y_n)^{1/3} - (Z / Z_n)^{1/3} ]$ $= 500 (b' - b'_n) Y^{1/3}$	$n=D65$ (surround)
radial	$C^* = [a^*^2 + b^*^2]^{1/2}$	
<b>saturation</b>	<b>= chromaticness / lightness</b>	definition for:
red-green	$S_a^* = a^* / [100 (Y / 100)^{1/3}]$ $= 21,6 (a' - a'_n)$	<i>CIELAB 1976</i>
yellow-blue	$S_b^* = b^* / [100 (Y / 100)^{1/3}]$ $= 21,6 (b' - b'_n)$	
radial	$S_c^* = C^* / [100 (Y / 100)^{1/3}]$ $= 21,6 [(a' - a'_n)^2 + (b' - b'_n)^2]^{1/2}$	
<b>chromaticity for nonlinear chromaticity diagram (<math>a'</math>, <math>b'</math>) definition</b>		
red-green	$a' = (1 / X_n)^{1/3} (x / y)^{1/3}$	opponent
yellow-blue	$= 0,2191 (x / y)^{1/3}$ for D65	color system
radial	$b' = -0,4 (1 / Z_n)^{1/3} (z / y)^{1/3}$ $= -0,08376 (z / y)^{1/3}$ for D65	
	$c' = [(a' - a'_n)^2 + (b' - b'_n)^2]^{1/2}$	

1-103000-L0

ME961-7N, BT9\_10

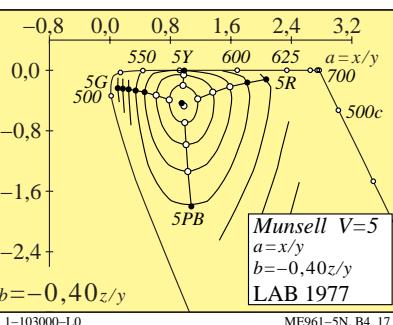
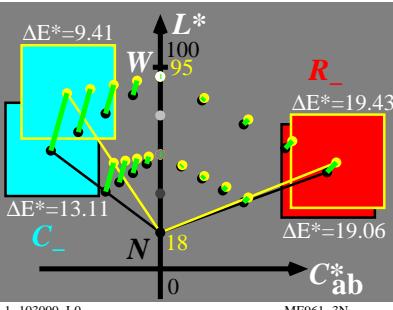


### three surface colours



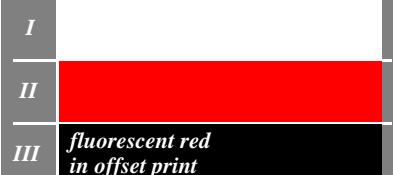
colours: white  $W_d$  (I), red  $R_d$  (II)  
and fluorescent red  $R_{df}$  (III)

1-103000-L0 ME961-1N, B2\_33



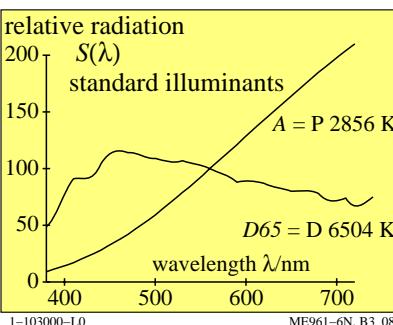
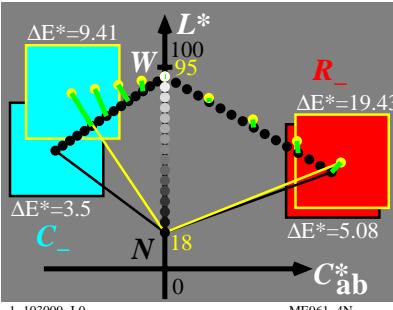
1-103000-L0 ME961-5N, B4\_17\_1

### three surface colours

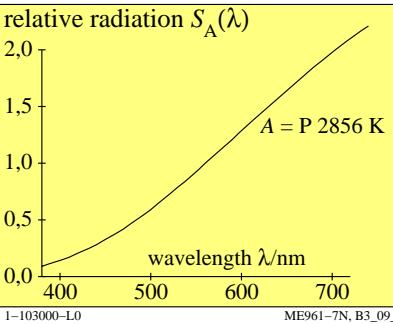


colours: white  $W_d$  (I), red  $R_d$  (II)  
and fluorescent red  $R_{df}$  (III)

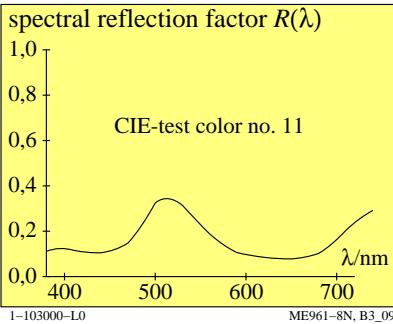
1-103000-L0 ME961-2N, B2\_33



1-103000-L0 ME961-6N, B3\_08

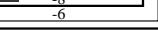
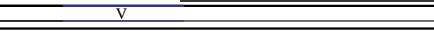
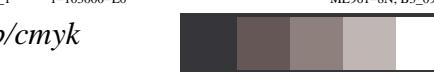
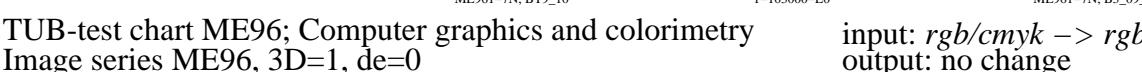
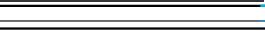


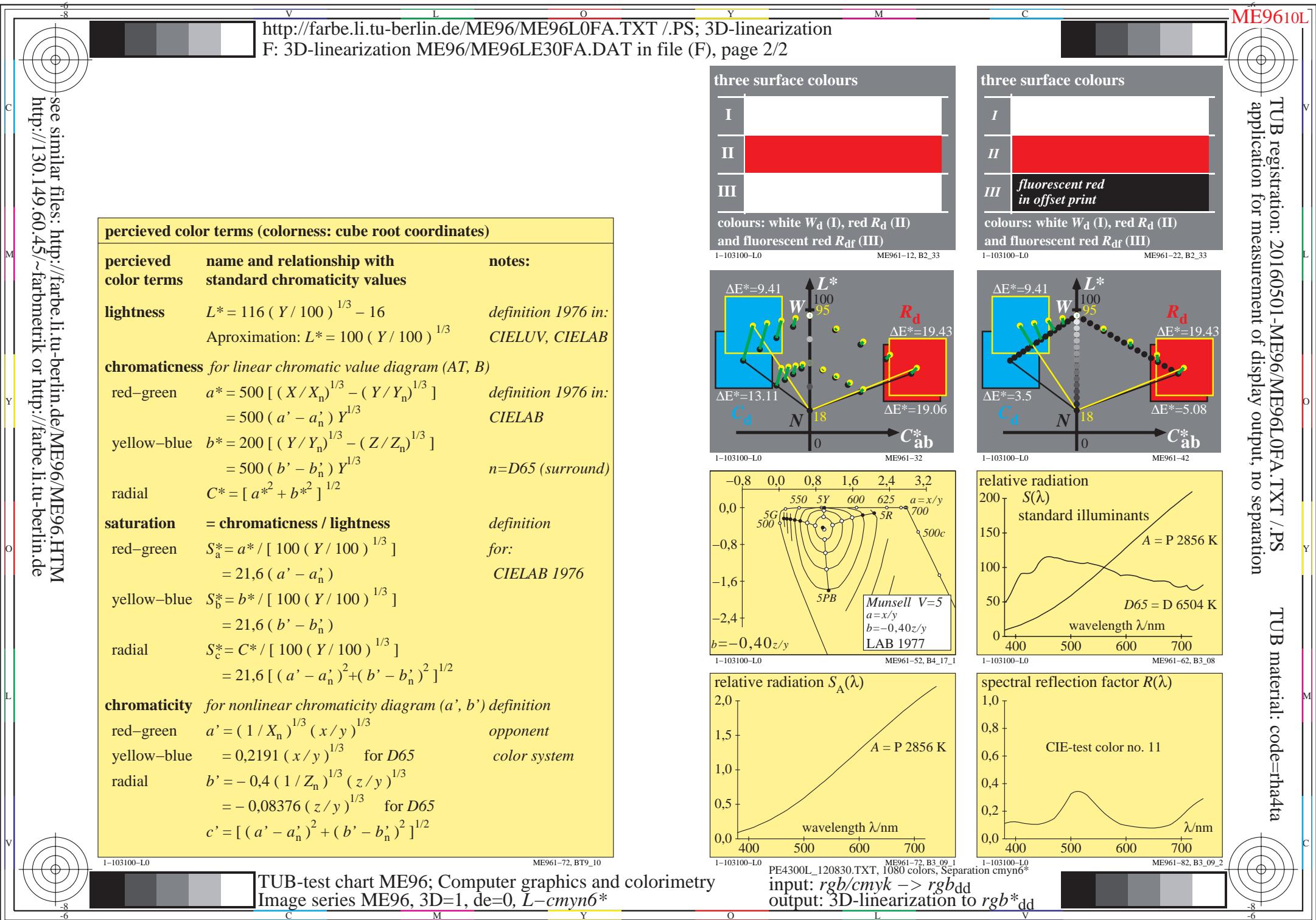
1-103000-L0 ME961-7N, B3\_09\_1



1-103000-L0 ME961-8N, B3\_09\_2

input:  $rgb/cmky \rightarrow rgb/cmky$   
output: no change





see similar files: <http://farbe.li.tu-berlin.de/ME96/ME96.HTM>  
<http://130.149.60.45/~farbmtrik> or <http://farbe.li.tu-berlin.de>



### perceived color terms (colorness: cube root coordinates)

perceived color terms	name and relationship with standard chromaticity values	notes:
<b>lightness</b>	$L^* = 116 (Y / 100)^{1/3} - 16$ Aproximation: $L^* = 100 (Y / 100)^{1/3}$	definition 1976 in: <i>CIELUV, CIELAB</i>
<b>chromaticness for linear chromatic value diagram (AT, B)</b>		
red-green	$a^* = 500 [(X / X_n)^{1/3} - (Y / Y_n)^{1/3}]$ $= 500 (a' - a'_n) Y^{1/3}$	definition 1976 in: <i>CIELAB</i>
yellow-blue	$b^* = 200 [(Y / Y_n)^{1/3} - (Z / Z_n)^{1/3}]$ $= 500 (b' - b'_n) Y^{1/3}$	$n=D65$ (surround)
radial	$C^* = [a^*^2 + b^*^2]^{1/2}$	
<b>saturation</b>	<b>= chromaticness / lightness</b>	definition for: <i>CIELAB 1976</i>
red-green	$S_a^* = a^* / [100 (Y / 100)^{1/3}]$ $= 21,6 (a' - a'_n)$	
yellow-blue	$S_b^* = b^* / [100 (Y / 100)^{1/3}]$ $= 21,6 (b' - b'_n)$	
radial	$S_c^* = C^* / [100 (Y / 100)^{1/3}]$ $= 21,6 [(a' - a'_n)^2 + (b' - b'_n)^2]^{1/2}$	
<b>chromaticity for nonlinear chromaticity diagram (<math>a'</math>, <math>b'</math>) definition</b>		
red-green	$a' = (1 / X_n)^{1/3} (x / y)^{1/3}$	opponent
yellow-blue	$= 0,2191 (x / y)^{1/3}$ for D65	color system
radial	$b' = -0,4 (1 / Z_n)^{1/3} (z / y)^{1/3}$ $= -0,08376 (z / y)^{1/3}$ for D65	
	$c' = [(a' - a'_n)^2 + (b' - b'_n)^2]^{1/2}$	

1-113000-L0

ME961-7N, BT9\_10

TUB-test chart ME96; Computer graphics and colorimetry  
 Image series ME96, 3D=1, de=1

### three surface colours

I

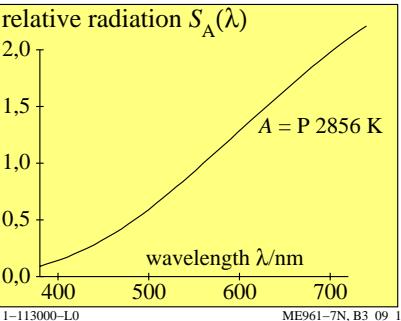
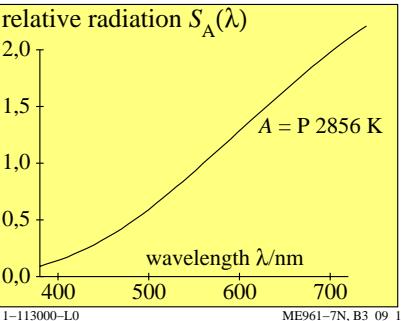
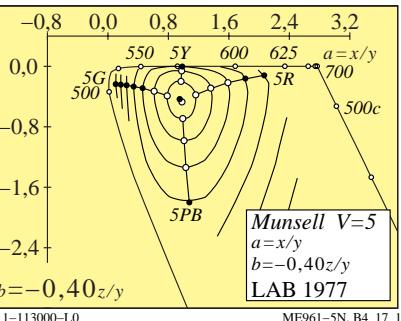
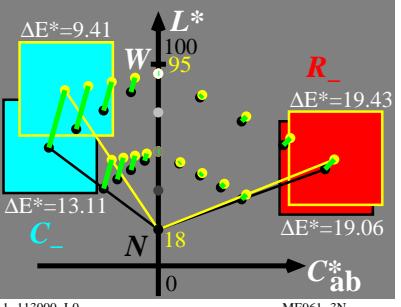
II

III

colours: white  $W_d$  (I), red  $R_d$  (II)  
 and fluorescent red  $R_{df}$  (III)

1-113000-L0

ME961-1N, B2\_33



input:  $rgb/cmky \rightarrow rgb/cmky$   
 output: no change

### three surface colours

I

II

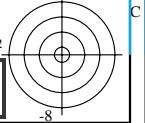
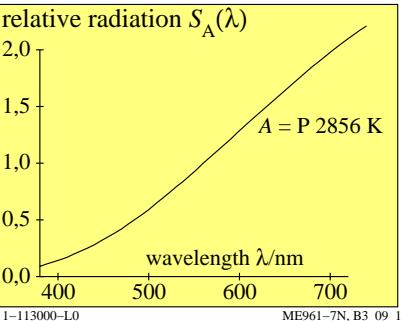
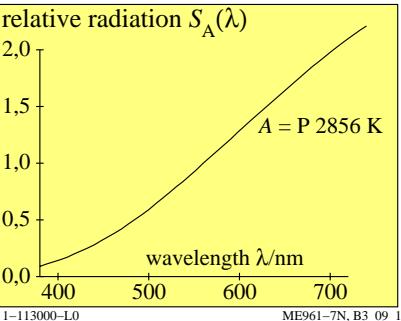
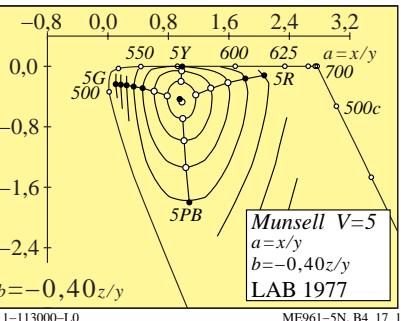
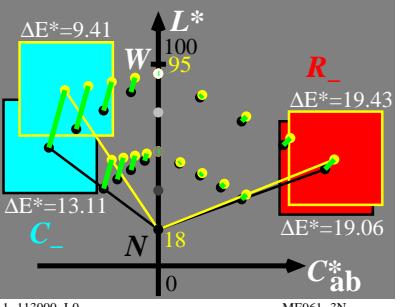
III

fluorescent red  
 in offset print

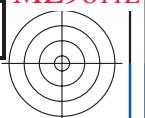
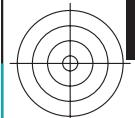
colours: white  $W_d$  (I), red  $R_d$  (II)  
 and fluorescent red  $R_{df}$  (III)

1-113000-L0

ME961-2N, B2\_33



see similar files: <http://farbe.li.tu-berlin.de/ME96/ME96L0FA.TXT /PS>  
<http://130.149.60.45/~farbmtrik> or <http://farbe.li.tu-berlin.de/ME96/ME96.HTML>



### perceived color terms (colorness: cube root coordinates)

perceived color terms	name and relationship with standard chromaticity values	notes:
<b>lightness</b>	$L^* = 116 (Y / 100)^{1/3} - 16$ Aproximation: $L^* = 100 (Y / 100)^{1/3}$	definition 1976 in: <i>CIELUV, CIELAB</i>
<b>chromaticness for linear chromatic value diagram (AT, B)</b>		
red-green	$a^* = 500 [(X / X_n)^{1/3} - (Y / Y_n)^{1/3}]$ $= 500 (a' - a'_n) Y^{1/3}$	definition 1976 in: <i>CIELAB</i>
yellow-blue	$b^* = 200 [(Y / Y_n)^{1/3} - (Z / Z_n)^{1/3}]$ $= 500 (b' - b'_n) Y^{1/3}$	$n=D65$ (surround)
radial	$C^* = [a^*^2 + b^*^2]^{1/2}$	
<b>saturation</b>	<b>= chromaticness / lightness</b>	definition for: <i>CIELAB 1976</i>
red-green	$S_a^* = a^* / [100 (Y / 100)^{1/3}]$ $= 21,6 (a' - a'_n)$	
yellow-blue	$S_b^* = b^* / [100 (Y / 100)^{1/3}]$ $= 21,6 (b' - b'_n)$	
radial	$S_c^* = C^* / [100 (Y / 100)^{1/3}]$ $= 21,6 [(a' - a'_n)^2 + (b' - b'_n)^2]^{1/2}$	
<b>chromaticity for nonlinear chromaticity diagram (<math>a'</math>, <math>b'</math>) definition</b>		
red-green	$a' = (1 / X_n)^{1/3} (x / y)^{1/3}$	opponent color system
yellow-blue	$= 0,2191 (x / y)^{1/3}$ for D65	
radial	$b' = -0,4 (1 / Z_n)^{1/3} (z / y)^{1/3}$ $= -0,08376 (z / y)^{1/3}$ for D65	
	$c' = [(a' - a'_n)^2 + (b' - b'_n)^2]^{1/2}$	

1-113100-L0

ME961-73, BT9\_10

TUB-test chart ME96; Computer graphics and colorimetry  
 Image series ME96, 3D=1, de=1,  $L-cmyn6^*$

### three surface colours

I

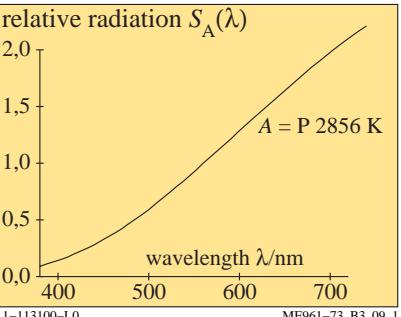
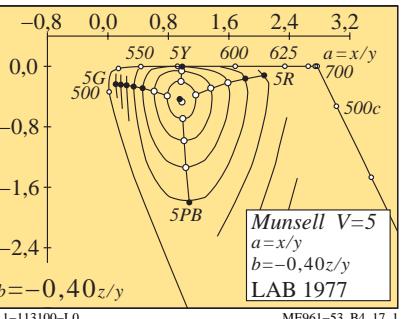
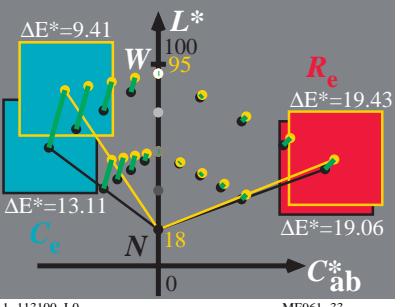
II

III

colours: white  $W_d$  (I), red  $R_d$  (II)  
 and fluorescent red  $R_{df}$  (III)

1-113100-L0

ME961-13, B2\_33



PE4300L\_120830.TXT, 1080 colors, Separation cmyn6\*  
 input:  $rgb/cmky \rightarrow rgb_{de}$   
 output: 3D-linearization to  $rgb^*_{de}$

### three surface colours

I

II

fluorescent red  
in offset print

colours: white  $W_d$  (I), red  $R_d$  (II)  
 and fluorescent red  $R_{df}$  (III)

1-113100-L0

ME961-23, B2\_33

