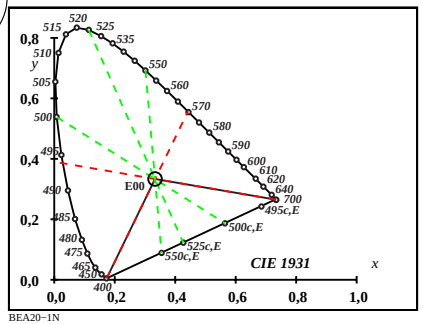
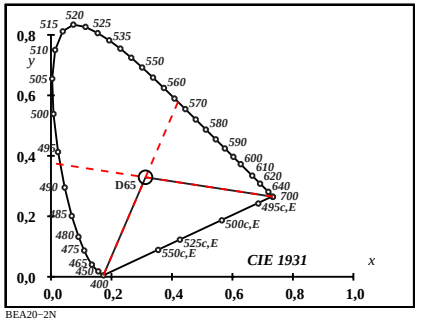
see similar files: http://farbe.li.tu-berlin.de/BEA2/BEA2.HTM
technical information: http://farbe.li.tu-berlin.de or http://color.li.tu-berlin.de

TUB registration: 20220301-BEA2/BEA2L0NA.TXT /.PS
application for evaluation and measurement of display or print output
TUB material: code=rha4ta

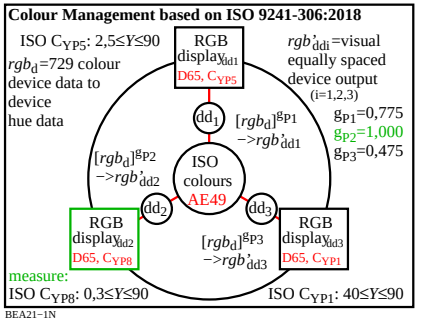


BEA20−1N



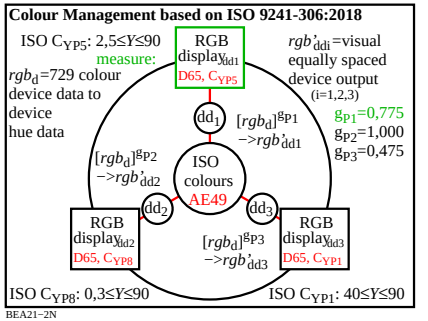
BEA20−2N

Colour Management based on ISO 9241-306:2018



BEA21−1N

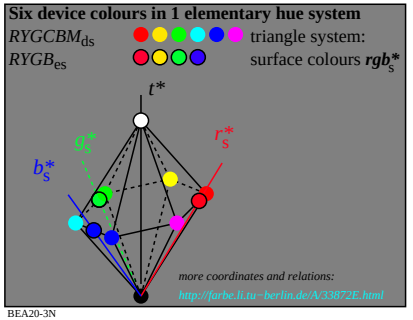
Colour Management based on ISO 9241-306:2018



BEA21−2N

Six device colours in 1 elementary hue system

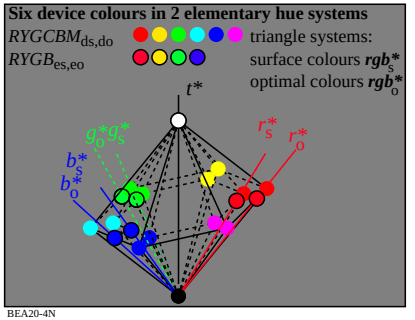
$RYGCBM_{ds}$ triangle system:
$RYGB_{es}$ surface colours rgb^*_s



BEA20−3N

Six device colours in 2 elementary hue systems

$RYGCBM_{ds,do}$ triangle systems:
$RYGB_{es,eo}$ surface colours rgb^*_s
optimal colours rgb^*_o



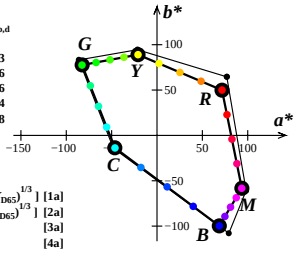
BEA20−4N

***sRGB* data *rgb**, *XYZxy*, and *LabC*h*$_{ab}$ in the CIELAB-colour space**

Tristimulus values of black and white: Y_{Nn}=2,5, Y_{Wn}=88,6, Y_{Wa}=88,6.

***LabC*h*$_{ab}$ data**

rgb^*_d	L^*_d	a^*_d	b^*_d	$C^*_{ab,d}$	$h_{ab,d}$
R_d 1 0 0	52	71	49	87	**34**
Y_d 1 1 0	97	−20	89	91	**103**
G_d 0 1 0	87	−82	77	113	**136**
C_d 0 1 1	91	−46	−13	48	**196**
B_d 0 0 1	36	68	−99	121	**304**
M_d 1 0 1	61	93	−58	110	**328**
N_d 0 0 0	18	0	0	0	**19**
W_d 1 1 1	95	0	0	0	**0**



$a^* = 500\,[(X/X_{D65})^{1/3} - (Y/Y_{D65})^{1/3}]$ **[1a]**
$b^* = 200\,[(Y/Y_{D65})^{1/3} - (Z/Z_{D65})^{1/3}]$ **[2a]**
$C^*_{ab} = [a^{*2} + b^{*2}]^{0,5}$ **[3a]**
$h_{ab} = \mathrm{atan}\,[b^*/a^*]$ **[4a]**

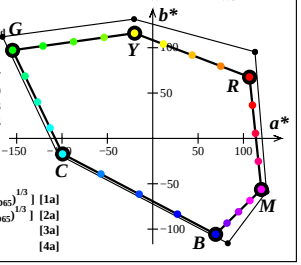
BEA21−3N

***WCGa* data *rgb**, *XYZxy*, and *LabC*h*$_{ab}$ in the CIELAB-colour space**

Tristimulus values of black and white: Y_{Nn}=2,5, Y_{Wn}=88,6, Y_{Wa}=88,6.

***LabC*h*$_{ab}$ data**

rgb^*_d	L^*_d	a^*_d	b^*_d	$C^*_{ab,d}$	$h_{ab,d}$
R_d 1 0 0	57	106	67	126	**32**
Y_d 1 1 0	93	−20	116	117	**99**
G_d 0 1 0	82	−154	97	182	**147**
C_d 0 1 1	85	−99	−17	100	**189**
B_d 0 0 1	33	69	−105	126	**303**
M_d 1 0 1	61	119	−56	132	**334**
N_d 0 0 0	18	0	0	0	**19**
W_d 1 1 1	95	0	0	0	**0**

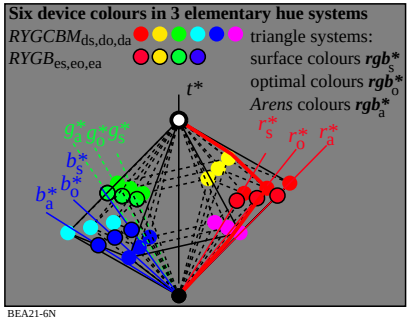


$a^* = 500\,[(X/X_{D65})^{1/3} - (Y/Y_{D65})^{1/3}]$ **[1a]**
$b^* = 200\,[(Y/Y_{D65})^{1/3} - (Z/Z_{D65})^{1/3}]$ **[2a]**
$C^*_{ab} = [a^{*2} + b^{*2}]^{0,5}$ **[3a]**
$h_{ab} = \mathrm{atan}\,[b^*/a^*]$ **[4a]**

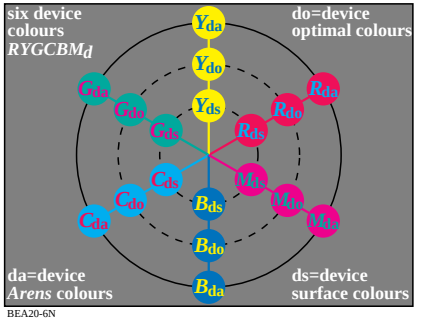
BEA21−4N

Six device colours in 3 elementary hue systems

$RYGCBM_{ds,do,da}$ triangle systems:
$RYGB_{es,eo,ea}$ surface colours rgb^*_s
optimal colours rgb^*_o
Arens colours rgb^*_a



BEA21-6N



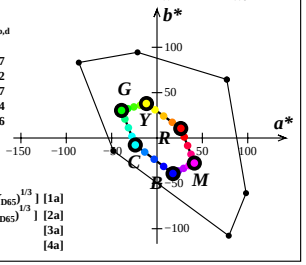
BEA20-6N

***sRGB* data *rgb**, *XYZxy*, and *LabC*h*$_{ab}$ in the CIELAB-colour space**

Tristimulus values of black and white: Y_{Nn}=40,3, Y_{Wn}=88,6, Y_{Wa}=88,6.

***LabC*h*$_{ab}$ data**

rgb^*_d	L^*_d	a^*_d	b^*_d	$C^*_{ab,d}$	$h_{ab,d}$
R_d 1 0 0	76	26	10	28	**21**
Y_d 1 1 0	96	−11	37	39	**107**
G_d 0 1 0	91	−39	30	49	**142**
C_d 0 1 1	93	−23	−7	25	**197**
B_d 0 0 1	72	17	−39	42	**294**
M_d 1 0 1	79	41	−27	49	**326**
N_d 0 0 0	69	0	0	0	**0**
W_d 1 1 1	95	0	0	0	**0**



$a^* = 500\,[(X/X_{D65})^{1/3} - (Y/Y_{D65})^{1/3}]$ **[1a]**
$b^* = 200\,[(Y/Y_{D65})^{1/3} - (Z/Z_{D65})^{1/3}]$ **[2a]**
$C^*_{ab} = [a^{*2} + b^{*2}]^{0,5}$ **[3a]**
$h_{ab} = \mathrm{atan}\,[b^*/a^*]$ **[4a]**

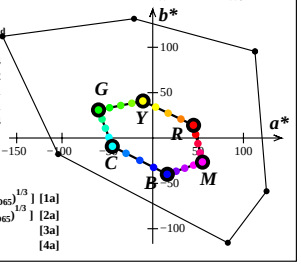
BEA21−5N

***WCGa* data *rgb**, *XYZxy*, and *LabC*h*$_{ab}$ in the CIELAB-colour space**

Tristimulus values of black and white: Y_{Nn}=40,3, Y_{Wn}=88,6, Y_{Wa}=88,6.

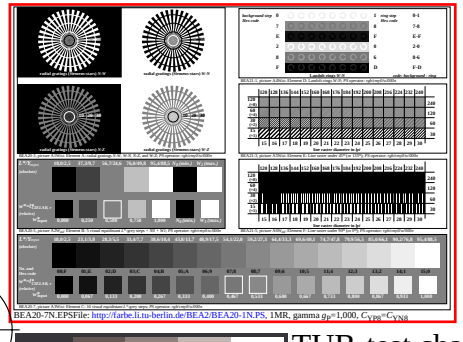
***LabC*h*$_{ab}$ data**

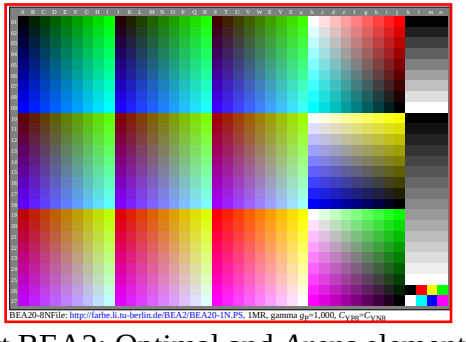
rgb^*_d	L^*_d	a^*_d	b^*_d	$C^*_{ab,d}$	$h_{ab,d}$
R_d 1 0 0	77	44	14	47	**17**
Y_d 1 1 0	94	−10	40	42	**104**
G_d 0 1 0	88	−59	30	67	**152**
C_d 0 1 1	90	−44	−9	45	**191**
B_d 0 0 1	71	15	−40	43	**291**
M_d 1 0 1	79	54	−26	60	**334**
N_d 0 0 0	69	0	0	0	**0**
W_d 1 1 1	95	0	0	0	**0**



$a^* = 500\,[(X/X_{D65})^{1/3} - (Y/Y_{D65})^{1/3}]$ **[1a]**
$b^* = 200\,[(Y/Y_{D65})^{1/3} - (Z/Z_{D65})^{1/3}]$ **[2a]**
$C^*_{ab} = [a^{*2} + b^{*2}]^{0,5}$ **[3a]**
$h_{ab} = \mathrm{atan}\,[b^*/a^*]$ **[4a]**

BEA21−6N


BEA20-7N.EPSFile: http://farbe.li.tu-berlin.de/BEA2/BEA20-1N.PS, 1MR, gamma g_P=1,000, C_{YP8}=C_{YN8}

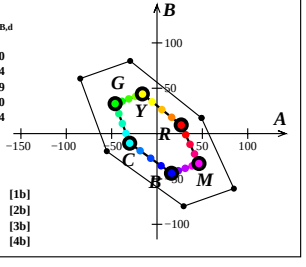

BEA20-8NFile: http://farbe.li.tu-berlin.de/BEA2/BEA20-1N.PS, 1MR, gamma g_P=1,000, C_{YP8}=C_{YN8}

***sRGB* data *rgb**, *XYZxy*, and *L*ABCh*$_{AB}$ in L*ABJND-colour space**

Tristimulus values of black and white: Y_{Nn}=40,3, Y_{Wn}=88,6, Y_{Wa}=88,6.

***L*ABCh*$_{AB}$ data**

rgb^*_d	L^*_d	A_d	B_d	$C_{AB,d}$	$h_{AB,d}$
R_d 1 0 0	76	26	9	28	**19**
Y_d 1 1 0	96	−16	43	46	**110**
G_d 0 1 0	91	−46	33	56	**144**
C_d 0 1 1	93	−30	−10	31	**199**
B_d 0 0 1	72	16	−43	46	**290**
M_d 1 0 1	79	46	−33	56	**324**
N_d 0 0 0	69	0	0	0	**0**
W_d 1 1 1	95	0	0	0	**0**



$A = 250\,[X/X_{D65} - Y/Y_{D65}]$ **[1b]**
$B = 100\,[Y/Y_{D65} - Z/Z_{D65}]$ **[2b]**
$C_{AB} = [A^2 + B^2]^{0,5}$ **[3b]**
$h_{AB} = \mathrm{atan}\,[B/A]$ **[4b]**

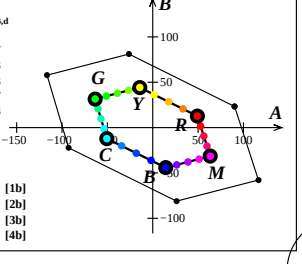
BEA21−7N

***WCGa* data *rgb**, *XYZxy*, and *L*ABCh*$_{AB}$ in L*ABJND-colour space**

Tristimulus values of black and white: Y_{Nn}=40,3, Y_{Wn}=88,6, Y_{Wa}=88,6.

***L*ABCh*$_{AB}$ data**

rgb^*_d	L^*_d	A_d	B_d	$C_{AB,d}$	$h_{AB,d}$
R_d 1 0 0	77	49	12	50	**14**
Y_d 1 1 0	94	−14	44	46	**107**
G_d 0 1 0	88	−63	31	70	**153**
C_d 0 1 1	90	−50	−12	51	**193**
B_d 0 0 1	71	14	−44	46	**287**
M_d 1 0 1	79	63	−31	70	**333**
N_d 0 0 0	69	0	0	0	**0**
W_d 1 1 1	95	0	0	0	**0**



$A = 250\,[X/X_{D65} - Y/Y_{D65}]$ **[1b]**
$B = 100\,[Y/Y_{D65} - Z/Z_{D65}]$ **[2b]**
$C_{AB} = [A^2 + B^2]^{0,5}$ **[3b]**
$h_{AB} = \mathrm{atan}\,[B/A]$ **[4b]**

BEA21−8N

TUB-test chart BEA2; Optimal and *Arens* elementary colours — input: *rgb/cmy0/000k/n*
colour management for the devices *sRGB & WCGa (Wide Colour Gamut)* with *rgb** data