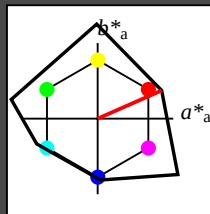


Input: Colorimetric Reflective System NCS11

for hue $h^* = lab^*h = 24/360 = 0.066$

lab^*tch and lab^*nch

D65: hue R
LCH*Ma: 47 92 24
rgb*Ma: 1.0 0.0 0.0
triangle lightness



NCS11; adapted (a) CIELAB data					
	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	47.15	84.64	37.25	92.48	24
JMa	91.37	-1.27	125.03	125.03	91
GMa	63.07	-114.28	25.35	117.06	167
G50B _{Ma}	59.47	-80.6	-33.45	87.28	203
B _{Ma}	49.01	3.65	-81.19	81.28	273
B50R _{Ma}	44.06	106.09	-73.93	129.32	325
N _{Ma}	10.99	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.69	27.98	65.01	25
JCIE	81.26	-2.9	71.56	71.62	92
GCIE	52.23	-42.45	13.59	44.59	162
BCIE	30.57	1.35	-46.48	46.51	272

%Regularity

$g^*_{H,rel} = 46$

$g^*_{C,rel} = 65$

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

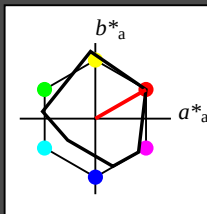
chromaticness c^*

Output: Colorimetric Reflective System MRS18

for hue $h^* = lab^*h = 30/360 = 0.083$

lab^*tch and lab^*nch

D65: hue R
LCH*Ma: 50 77 30
rgb*Ma: 1.0 0.0 0.0
triangle lightness



MRS18; adapted (a) CIELAB data					
	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	49.63	66.96	38.37	77.18	30
JMa	90.7	-6.36	88.75	88.98	94
GMa	52.11	-69.73	9.44	70.37	172
G50B _{Ma}	45.03	-36.57	-28.47	46.36	218
B _{Ma}	36.65	23.19	-63.05	67.18	290
B50R _{Ma}	34.94	57.17	-44.26	72.31	322
N _{Ma}	18.01	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.66	26.98	64.56	25
JCIE	81.26	-2.17	67.76	67.79	92
GCIE	52.23	-42.26	11.75	43.87	164
BCIE	30.57	1.15	-46.84	46.87	271

%Regularity

$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

chromaticness c^*

UE480-7, 5 step scales for constant CIELAB hue 24/360 = 0.066 (left)

5 step scales for constant CIELAB hue 30/360 = 0.083 (right)

BAM-test chart UE48; Colorimetric systems NCS11a & MRS18 input: *cmY0* setcmykcolor*

D65: 5 step colour scales and coordinate data for 10 hues

output: *olv* setrgbcolor / w* setgray*

Input: Colorimetric Reflective System NCS11

for hue $h^* = lab^*h = 91/360 = 0.252$

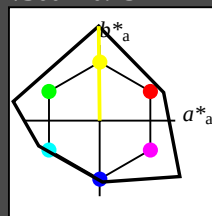
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 91 125 91

rgb*Ma: 1.0 1.0 0.0

triangle lightness

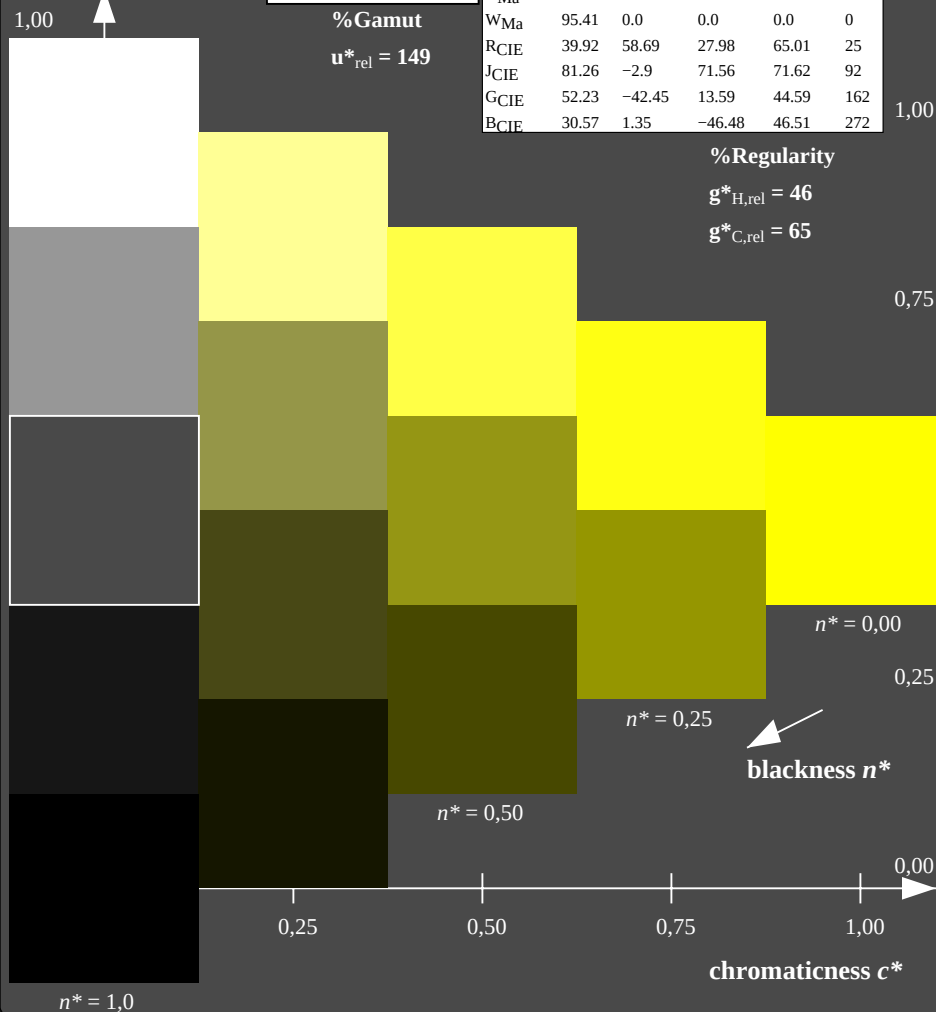


NCS11; adapted (a) CIELAB data					
	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	47.15	84.64	37.25	92.48	24
JMa	91.37	-1.27	125.03	125.03	91
GMa	63.07	-114.28	25.35	117.06	167
G50B _{Ma}	59.47	-80.6	-33.45	87.28	203
B _{Ma}	49.01	3.65	-81.19	81.28	273
B50R _{Ma}	44.06	106.09	-73.93	129.32	325
N _{Ma}	10.99	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.69	27.98	65.01	25
JCIE	81.26	-2.9	71.56	71.62	92
GCIE	52.23	-42.45	13.59	44.59	162
BCIE	30.57	1.35	-46.48	46.51	272

%Regularity

$g^*_{H,rel} = 46$

$g^*_{C,rel} = 65$



UE480-7, 5 step scales for constant CIELAB hue 91/360 = 0.252 (left)

BAM-test chart UE48; Colorimetric systems NCS11a & MRS18 input: *cmY0* setcmykcolor*

D65: 5 step colour scales and coordinate data for 10 hues

Output: Colorimetric Reflective System MRS18

for hue $h^* = lab^*h = 94/360 = 0.261$

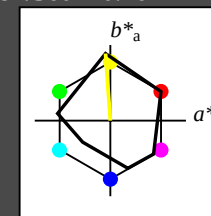
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 91 89 94

rgb*Ma: 1.0 1.0 0.0

triangle lightness

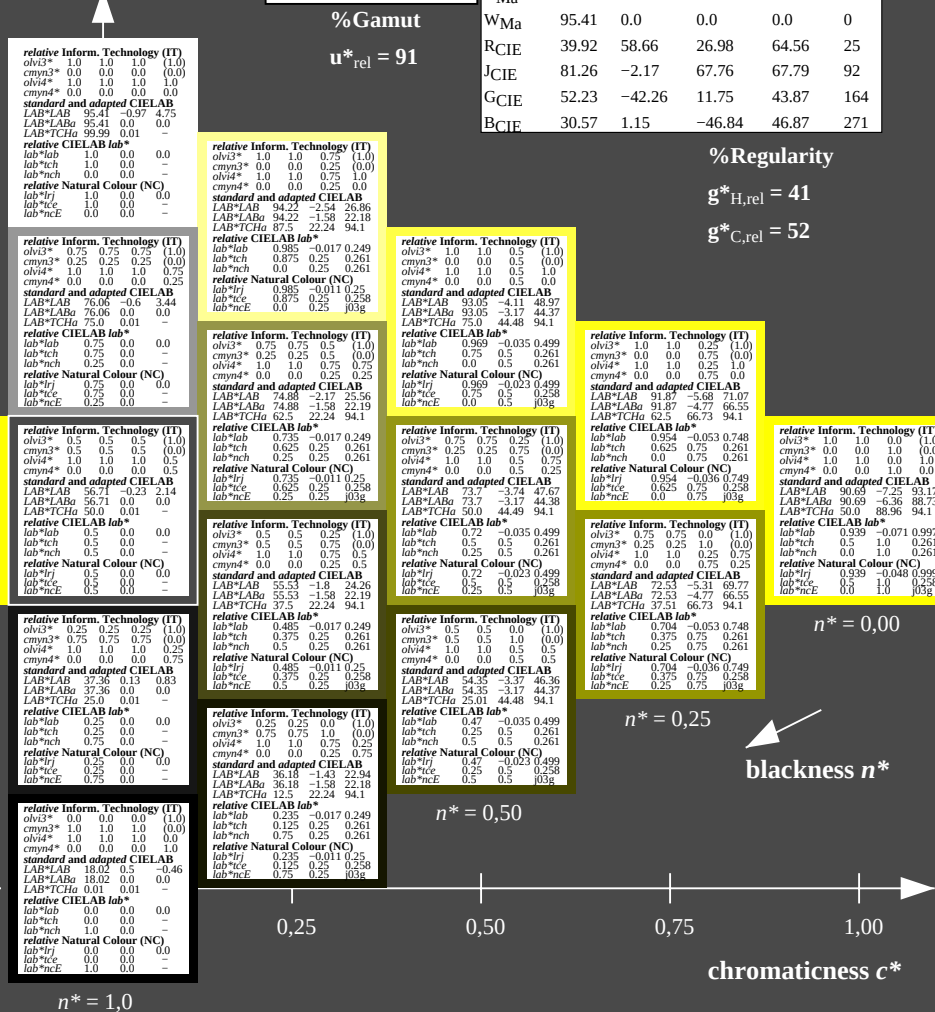


MRS18; adapted (a) CIELAB data					
	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	49.63	66.96	38.37	77.18	30
JMa	90.7	-6.36	88.75	88.98	94
GMa	52.11	-69.73	9.44	70.37	172
G50B _{Ma}	45.03	-36.57	-28.47	46.36	218
B _{Ma}	36.65	23.19	-63.05	67.18	290
B50R _{Ma}	34.94	57.17	-44.26	72.31	322
N _{Ma}	18.01	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.66	26.98	64.56	25
JCIE	81.26	-2.17	67.76	67.79	92
GCIE	52.23	-42.26	11.75	43.87	164
BCIE	30.57	1.15	-46.84	46.87	271

%Regularity

$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$



5 step scales for constant CIELAB hue 94/360 = 0.261 (right)

output: *olv* setrgbcolor / w* setgray*

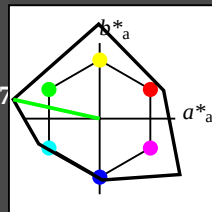
Input: Colorimetric Reflective System NCS11

for hue $h^* = lab \cdot h = 167/360 = 0.465$

$lab \cdot tch$ and $lab \cdot nch$

D65: hue G
LCH*Ma: 63 117 167
rgb*Ma: 0.0 1.0 0.0

triangle lightness



NCS11; adapted (a) CIELAB data					
	$L^* = L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	47.15	84.64	37.25	92.48	24
JMa	91.37	-1.27	125.03	125.03	91
GMa	63.07	-114.28	25.35	117.06	167
G50B _{Ma}	59.47	-80.6	-33.45	87.28	203
B _{Ma}	49.01	3.65	-81.19	81.28	273
B50R _{Ma}	44.06	106.09	-73.93	129.32	325
N _{Ma}	10.99	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.69	27.98	65.01	25
JCIE	81.26	-2.9	71.56	71.62	92
GCIE	52.23	-42.45	13.59	44.59	162
BCIE	30.57	1.35	-46.48	46.51	272

%Regularity

$g^*_{H,rel} = 46$

$g^*_{C,rel} = 65$

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

blackness n^*

chromaticness c^*

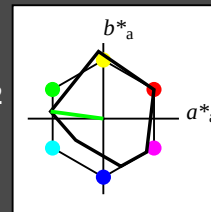
Output: Colorimetric Reflective System MRS18

for hue $h^* = lab \cdot h = 172/360 = 0.479$

$lab \cdot tch$ and $lab \cdot nch$

D65: hue G
LCH*Ma: 52 70 172
rgb*Ma: 0.0 1.0 0.0

triangle lightness



MRS18; adapted (a) CIELAB data					
	$L^* = L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	49.63	66.96	38.37	77.18	30
JMa	90.7	-6.36	88.75	88.98	94
GMa	52.11	-69.73	9.44	70.37	172
G50B _{Ma}	45.03	-36.57	-28.47	46.36	218
B _{Ma}	36.65	23.19	-63.05	67.18	290
B50R _{Ma}	34.94	57.17	-44.26	72.31	322
N _{Ma}	18.01	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.66	26.98	64.56	25
JCIE	81.26	-2.17	67.76	67.79	92
GCIE	52.23	-42.26	11.75	43.87	164
BCIE	30.57	1.15	-46.84	46.87	271

%Regularity

$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$

$n^* = 0,00$

0,25

$n^* = 0,25$

blackness n^*

chromaticness c^*

UE480-7, 5 step scales for constant CIELAB hue 167/360 = 0.465 (left)

5 step scales for constant CIELAB hue 172/360 = 0.479 (right)

BAM-test chart UE48; Colorimetric systems NCS11a & MRS18 input: *cmY0* setcmykcolor*

D65: 5 step colour scales and coordinate data for 10 hues

output: *olv* setrgbcolor / w* setgray*

BAM registration: 20060101-UE48/10S/S48E03FP.PS/.PDF BAM material: code=rha4ta
application for evaluation and measurement of printer or monitor systems, Yr=2.5, XYZ
/UE48/ Pbm: 4/10, Serie: 1/1, Page: 4 Page: count 4

Input: Colorimetric Reflective System NCS11

for hue $h^* = \text{lab}^*h = 273/360 = 0.757$

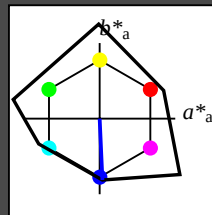
lab^*tch and lab^*nch

D65: hue B

LCH*Ma: 49 81 273

rgb*Ma: 0.0 0.0 1.0

triangle lightness



1,00

% Gamut

$u^*_{\text{rel}} = 149$

NCS11; adapted (a) CIELAB data					
	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	47.15	84.64	37.25	92.48	24
JMa	91.37	-1.27	125.03	125.03	91
GMa	63.07	-114.28	25.35	117.06	167
G50B _{Ma}	59.47	-80.6	-33.45	87.28	203
B _{Ma}	49.01	3.65	-81.19	81.28	273
B50R _{Ma}	44.06	106.09	-73.93	129.32	325
N _{Ma}	10.99	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.69	27.98	65.01	25
JCIE	81.26	-2.9	71.56	71.62	92
GCIE	52.23	-42.45	13.59	44.59	162
BCIE	30.57	1.35	-46.48	46.51	272

% Regularity

$g^*_{H,\text{rel}} = 46$

$g^*_{C,\text{rel}} = 65$

1,00

relative Inform. Technology (IT)					
olvi3*	1.0	1.0	1.0	1.0	(1.0)
cmyn3*	0.0	0.0	0.0	0.0	(0.0)
olvi4*	1.0	1.0	1.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	95.41	-0.97	4.75		
LAB*Lab	95.41	0.0	0.0		
LAB*TCha	98.99	0.01	0.0		
relative CIELAB lab*					
lab*lab	1.0	0.0	0.0		
lab*tch	1.0	0.0	0.0		
lab*nch	0.0	0.0	0.0		
relative Natural Colour (NC)					
lab*lrj	1.0	0.0	0.0		
lab*tce	1.0	0.0	0.0		
lab*nce	0.0	0.0	0.0		

relative Inform. Technology (IT)					
olvi3*	0.75	0.75	0.75	0.75	(1.0)
cmyn3*	0.25	0.25	0.25	0.25	(0.0)
olvi4*	1.0	1.0	1.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	76.06	-0.6	3.44		
LAB*Lab	76.06	0.0	0.0		
LAB*TCha	75.0	0.01	0.0		
relative CIELAB lab*					
lab*lab	0.75	0.0	0.0		
lab*tch	0.75	0.0	0.0		
lab*nch	0.25	0.0	0.0		
relative Natural Colour (NC)					
lab*lrj	0.75	0.0	0.0		
lab*tce	0.75	0.0	0.0		
lab*nce	0.25	0.0	0.0		

relative Inform. Technology (IT)					
olvi3*	0.5	0.5	0.5	0.5	(1.0)
cmyn3*	0.5	0.5	0.5	0.5	(0.0)
olvi4*	1.0	1.0	1.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	56.71	0.23	2.14		
LAB*Lab	56.71	0.0	0.0		
LAB*TCha	50.0	0.01	0.0		
relative CIELAB lab*					
lab*lab	0.5	0.0	0.0		
lab*tch	0.5	0.0	0.0		
lab*nch	0.5	0.0	0.0		
relative Natural Colour (NC)					
lab*lrj	0.5	0.0	0.0		
lab*tce	0.5	0.0	0.0		
lab*nce	0.5	0.0	0.0		

relative Inform. Technology (IT)					
olvi3*	0.25	0.25	0.25	0.25	(1.0)
cmyn3*	0.75	0.75	0.75	0.75	(0.0)
olvi4*	1.0	1.0	1.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	37.36	0.13	0.83		
LAB*Lab	37.36	0.0	0.0		
LAB*TCha	25.0	0.01	0.0		
relative CIELAB lab*					
lab*lab	0.25	0.0	0.0		
lab*tch	0.25	0.0	0.0		
lab*nch	0.75	0.0	0.0		
relative Natural Colour (NC)					
lab*lrj	0.25	0.0	0.0		
lab*tce	0.25	0.0	0.0		
lab*nce	0.75	0.0	0.0		

relative Inform. Technology (IT)					
olvi3*	0.0	0.0	0.0	0.0	(1.0)
cmyn3*	1.0	1.0	1.0	1.0	(0.0)
olvi4*	1.0	1.0	1.0	1.0	(0.0)
cmyn4*	0.0	0.0	0.0	0.0	(1.0)
standard and adapted CIELAB					
LAB*LAB	18.02	0.5	-0.46		
LAB*Lab	18.02	0.0	0.0		
LAB*TCha	0.01	0.0	0.0		
relative CIELAB lab*					
lab*lab	0.0	0.0	0.0		
lab*tch	0.0	0.0	0.0		
lab*nch	1.0	0.0	0.0		
relative Natural Colour (NC)					
lab*lrj	0.0	0.0	0.0		
lab*tce	0.0	0.0	0.0		
lab*nce	1.0	0.0	0.0		

$n^* = 1,0$

chromaticness c^*

Output: Colorimetric Reflective System MRS18

for hue $h^* = \text{lab}^*h = 290/360 = 0.806$

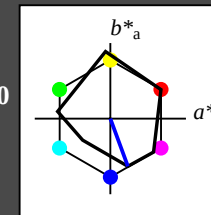
lab^*tch and lab^*nch

D65: hue B

LCH*Ma: 37 67 290

rgb*Ma: 0.0 0.0 1.0

triangle lightness



% Gamut

$u^*_{\text{rel}} = 91$

MRS18; adapted (a) CIELAB data					
	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	49.63	66.96	38.37	77.18	30
JMa	90.7	-6.36	88.75	88.98	94
GMa	52.11	-69.73	9.44	70.37	172
G50B _{Ma}	45.03	-36.57	-28.47	46.36	218
B _{Ma}	36.65	23.19	-63.05	67.18	290
B50R _{Ma}	34.94	57.17	-44.26	72.31	322
N _{Ma}	18.01	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.66	26.98	64.56	25
JCIE	81.26	-2.17	67.76	67.79	92
GCIE	52.23	-42.26	11.75	43.87	164
BCIE	30.57	1.15	-46.84	46.87	271

% Regularity

$g^*_{H,\text{rel}} = 41$

$g^*_{C,\text{rel}} = 52$

relative Inform. Technology (IT)					
olvi3*	0.75	0.75	0.75	0.75	(1.0)
cmyn3*	0.25	0.25	0.25	0.25	(0.0)
olvi4*	1.0	1.0	1.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	66.03	11.17	-28.74		
LAB*Lab	66.03	11.59	-31.51		
LAB*TCha	75.0	33.59	290.19		
relative CIELAB lab*					
lab*lab	0.62	0.173	-0.234		
lab*tch	0.75	0.25	0.806		
lab*nch	0.0	0.25	0.806		
relative Natural Colour (NC)					
lab*lrj	0.62	0.129	-0.482		
lab*tce	0.75	0.25	0.791		
lab*nce	0.0	0.25	0.806		

relative Inform. Technology (IT)					
olvi3*	0.5	0.5	0.5	0.5	(1.0)
cmyn3*	0.5	0.5	0.5	0.5	(0.0)
olvi4*	1.0	1.0	1.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	46.68	11.55	-30.05		
LAB*Lab	46.68	11.59	-31.52		
LAB*TCha	50.0	33.59	290.19		
relative CIELAB lab*					
lab*lab	0.5	0.0	0.0		
lab*tch	0.5	0.0	0.0		
lab*nch	0.5	0.0	0.0		
relative Natural Colour (NC)					
lab*lrj	0.5	0.0	0.0		
lab*tce	0.5	0.0	0.0		
lab*nce	0.5	0.0	0.0		

relative Inform. Technology (IT)					
olvi3*	0.25	0.25	0.25	0.25	(1.0)
cmyn3*	0.75	0.75	0.75	0.75	(0.0)
olvi4*	1.0	1.0	1.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	32.0	17.62	-46.8		
LAB*Lab	32.0	17.39	-47.28		
LAB*TCha	37.51	50.38	290.19		
relative CIELAB lab*					
lab*lab	0.431	0.259	-0.703		
lab*tch	0.625	0.75	0.806		
lab*nch	0.0	0.75	0.806		
relative Natural Colour (NC)					
lab*lrj	0.431	0.193	-0.724		
lab*tce	0.625	0.75	0.791		
lab*nce	0.0	0.75	0.806		

relative Inform. Technology (IT)					
olvi3*	0.0	0.0	0.0	0.0	(1.0)
cmyn3*	1.0	1.0	1.0	1.0	(0.0)
olvi4*	1.0	1.0	1.0	1.0	(0.0)
cmyn4*	0.0	0.0	0.0	0.0	(1.0)
standard and adapted CIELAB					
LAB*LAB	18.02	0.5	-0.46		
LAB*Lab	18.02	0.0	0.0		
LAB*TCha	0.01	0.0	0.0		
relative CIELAB lab*					
lab*lab	0.0	0.0	0.0		
lab*tch	0.0	0.0	0.0		
lab*nch	1.0	0.0	0.0		
relative Natural Colour (NC)					
lab*lrj	0.0	0.0	0.0		
lab*tce	0.0	0.0	0.0		
lab*nce	1.0	0.0	0.0		

relative Inform. Technology (IT)					
olvi3*	0.0	0.0	0.0	0.0	(1.0)
cmyn3*	1.0	1.0	1.0	1.0	(0.0)
olvi4*	1.0	1.0	1.0	1.0	(0.0)
cmyn4*	0.0	0.0	0.0	0.0	(1.0)
standard and adapted CIELAB					
LAB*LAB	18.02	0.5	-0.46		
LAB*Lab	18.02	0.0	0.0		
LAB*TCha	0.01	0.0	0.0		
relative CIELAB lab*					
lab*lab	0.0	0.0	0.0		
lab*tch	0.0	0.0	0.0		
lab*nch	1.0	0.0	0.0		
relative Natural Colour (NC)					
lab*lrj	0.0	0.0	0.0		
lab*tce	0.0	0.0	0.0		
lab*nce	1.0	0.0	0.0		

$n^* = 0,00$

chromaticness c^*

UE480-7, 5 step scales for constant CIELAB hue 273/360 = 0.757 (left)



BAM-test chart UE48; Colorimetric systems NCS11a & MRS18 input: <

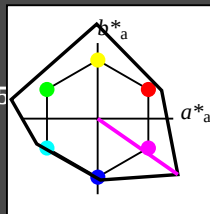
Input: Colorimetric Reflective System NCS11

for hue $h^* = lab^*h = 325/360 = 0.903$

lab^*tch and lab^*nch

D65: hue B50R
LCH*Ma: 44 129 325
rgb*Ma: 1.0 0.0 1.0

triangle lightness



% Gamut
 $u^*_{rel} = 149$

NCS11; adapted (a) CIELAB data					
	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	47.15	84.64	37.25	92.48	24
JMa	91.37	-1.27	125.03	125.03	91
GMa	63.07	-114.28	25.35	117.06	167
G50B _{Ma}	59.47	-80.6	-33.45	87.28	203
B _{Ma}	49.01	3.65	-81.19	81.28	273
B50R _{Ma}	44.06	106.09	-73.93	129.32	325
N _{Ma}	10.99	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.69	27.98	65.01	25
JCIE	81.26	-2.9	71.56	71.62	92
GCIE	52.23	-42.45	13.59	44.59	162
BCIE	30.57	1.35	-46.48	46.51	272

% Regularity

$g^*_{H,rel} = 46$

$g^*_{C,rel} = 65$

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

0,00

$n^* = 1,0$

chromaticness c^*

UE480-7, 5 step scales for constant CIELAB hue 325/360 = 0.903 (left)



BAM-test chart UE48; Colorimetric systems NCS11a & MRS18 input: *cmv0* setcmvcolor*

D65: 5 step colour scales and coordinate data for 10 hues

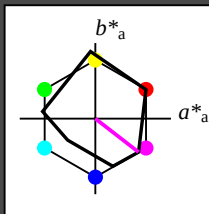
Output: Colorimetric Reflective System MRS18

for hue $h^* = lab^*h = 322/360 = 0.895$

lab^*tch and lab^*nch

D65: hue B50R
LCH*Ma: 35 72 322
rgb*Ma: 1.0 0.0 1.0

triangle lightness



% Gamut
 $u^*_{rel} = 91$

MRS18; adapted (a) CIELAB data					
	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	49.63	66.96	38.37	77.18	30
JMa	90.7	-6.36	88.75	88.98	94
GMa	52.11	-69.73	9.44	70.37	172
G50B _{Ma}	45.03	-36.57	-28.47	46.36	218
B _{Ma}	36.65	23.19	-63.05	67.18	290
B50R _{Ma}	34.94	57.17	-44.26	72.31	322
N _{Ma}	18.01	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.66	26.98	64.56	25
JCIE	81.26	-2.17	67.76	67.79	92
GCIE	52.23	-42.26	11.75	43.87	164
BCIE	30.57	1.15	-46.84	46.87	271

% Regularity

$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$

0,75

0,50

0,25

0,00

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

0,75

1,00

0,00

$n^* = 1,0$

chromaticness c^*

5 step scales for constant CIELAB hue 322/360 = 0.895 (right)

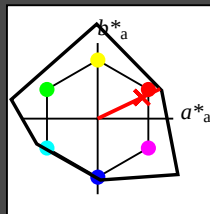
output: *olv* setrgbcolor* / *w* setgray*

Input: Colorimetric Reflective System NCS11

for hue $h^* = lab^*h = 25/360 = 0.071$

lab^*tch and lab^*nch

D65: hue R
LCH*Ma: 48 91 25
rgb*Ma: 1.0 0.02 0.0
triangle lightness



NCS11; adapted (a) CIELAB data					
	$L^* = L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	47.15	84.64	37.25	92.48	24
JMa	91.37	-1.27	125.03	125.03	91
GMa	63.07	-114.28	25.35	117.06	167
G50B _{Ma}	59.47	-80.6	-33.45	87.28	203
B _{Ma}	49.01	3.65	-81.19	81.28	273
B50R _{Ma}	44.06	106.09	-73.93	129.32	325
N _{Ma}	10.99	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.69	27.98	65.01	25
JCIE	81.26	-2.9	71.56	71.62	92
GCIE	52.23	-42.45	13.59	44.59	162
BCIE	30.57	1.35	-46.48	46.51	272

%Regularity

$g^*_{H,rel} = 46$

$g^*_{C,rel} = 65$

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

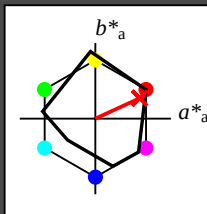
chromaticness c^*

Output: Colorimetric Reflective System MRS18

for hue $h^* = lab^*h = 25/360 = 0.069$

lab^*tch and lab^*nch

D65: hue R
LCH*Ma: 48 73 25
rgb*Ma: 1.0 0.0 0.1
triangle lightness



MRS18; adapted (a) CIELAB data					
	$L^* = L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	49.63	66.96	38.37	77.18	30
JMa	90.7	-6.36	88.75	88.98	94
GMa	52.11	-69.73	9.44	70.37	172
G50B _{Ma}	45.03	-36.57	-28.47	46.36	218
B _{Ma}	36.65	23.19	-63.05	67.18	290
B50R _{Ma}	34.94	57.17	-44.26	72.31	322
N _{Ma}	18.01	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.66	26.98	64.56	25
JCIE	81.26	-2.17	67.76	67.79	92
GCIE	52.23	-42.26	11.75	43.87	164
BCIE	30.57	1.15	-46.84	46.87	271

%Regularity

$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$

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Input: Colorimetric Reflective System NCS11

for hue $h^* = lab^*h = 92/360 = 0.256$

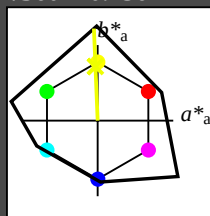
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 90 122 92

rgb*Ma: 0.97 1.0 0.0

triangle lightness



NCS11; adapted (a) CIELAB data					
	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	47.15	84.64	37.25	92.48	24
JMa	91.37	-1.27	125.03	125.03	91
GMa	63.07	-114.28	25.35	117.06	167
G50B _{Ma}	59.47	-80.6	-33.45	87.28	203
B _{Ma}	49.01	3.65	-81.19	81.28	273
B50R _{Ma}	44.06	106.09	-73.93	129.32	325
N _{Ma}	10.99	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.69	27.98	65.01	25
JCIE	81.26	-2.9	71.56	71.62	92
GCIE	52.23	-42.45	13.59	44.59	162
BCIE	30.57	1.35	-46.48	46.51	272

%Regularity

$g^*_{H,rel} = 46$

$g^*_{C,rel} = 65$

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

chromaticness c^*

$n^* = 1,0$

UE480-7, 5 step scales for constant CIELAB hue 92/360 = 0.256 (left)



BAM-test chart UE48; Colorimetric systems NCS11a & MRS18 input: *cmY0* setcmykcolor*

D65: 5 step colour scales and coordinate data for 10 hues

Output: Colorimetric Reflective System MRS18

for hue $h^* = lab^*h = 92/360 = 0.255$

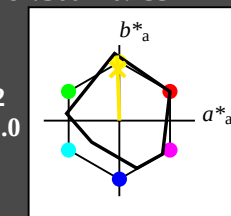
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 89 86 92

rgb*Ma: 1.0 0.95 0.0

triangle lightness



MRS18; adapted (a) CIELAB data					
	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	49.63	66.96	38.37	77.18	30
JMa	90.7	-6.36	88.75	88.98	94
GMa	52.11	-69.73	9.44	70.37	172
G50B _{Ma}	45.03	-36.57	-28.47	46.36	218
B _{Ma}	36.65	23.19	-63.05	67.18	290
B50R _{Ma}	34.94	57.17	-44.26	72.31	322
N _{Ma}	18.01	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.66	26.98	64.56	25
JCIE	81.26	-2.17	67.76	67.79	92
GCIE	52.23	-42.26	11.75	43.87	164
BCIE	30.57	1.15	-46.84	46.87	271

%Regularity

$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$

$n^* = 0,00$

0,25

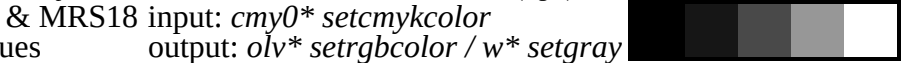
$n^* = 0,25$

$n^* = 0,50$

chromaticness c^*

$n^* = 1,0$

5 step scales for constant CIELAB hue 92/360 = 0.255 (right)



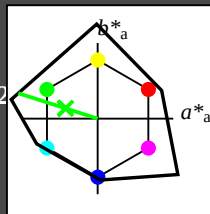
output: *olv* setrgbcolor / w* setgray*

Input: Colorimetric Reflective System NCS11

for hue $h^* = lab \cdot h = 162/360 = 0.451$

$lab \cdot tch$ and $lab \cdot nch$

D65: hue G
LCH*Ma: 65 110 162
rgb*Ma: 0.08 1.0 0.0
triangle lightness



1,00
%Gamut
 $u^*_{rel} = 149$

NCS11; adapted (a) CIELAB data					
	$L^* = L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	47.15	84.64	37.25	92.48	24
JMa	91.37	-1.27	125.03	125.03	91
GMa	63.07	-114.28	25.35	117.06	167
G50B _{Ma}	59.47	-80.6	-33.45	87.28	203
B _{Ma}	49.01	3.65	-81.19	81.28	273
B50R _{Ma}	44.06	106.09	-73.93	129.32	325
N _{Ma}	10.99	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.69	27.98	65.01	25
JCIE	81.26	-2.9	71.56	71.62	92
GCIE	52.23	-42.45	13.59	44.59	162
BCIE	30.57	1.35	-46.48	46.51	272

%Regularity

$g^*_{H,rel} = 46$

$g^*_{C,rel} = 65$

1,00

0,75

0,25

0,00

0,25

0,50

0,75

1,00

blackness n^*

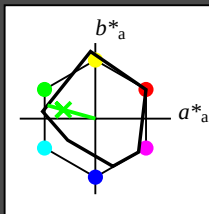
chromaticness c^*

Output: Colorimetric Reflective System MRS18

for hue $h^* = lab \cdot h = 164/360 = 0.457$

$lab \cdot tch$ and $lab \cdot nch$

D65: hue G
LCH*Ma: 56 66 164
rgb*Ma: 0.1 1.0 0.0
triangle lightness



1,00
%Gamut
 $u^*_{rel} = 91$

MRS18; adapted (a) CIELAB data					
	$L^* = L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	49.63	66.96	38.37	77.18	30
JMa	90.7	-6.36	88.75	88.98	94
GMa	52.11	-69.73	9.44	70.37	172
G50B _{Ma}	45.03	-36.57	-28.47	46.36	218
B _{Ma}	36.65	23.19	-63.05	67.18	290
B50R _{Ma}	34.94	57.17	-44.26	72.31	322
N _{Ma}	18.01	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.66	26.98	64.56	25
JCIE	81.26	-2.17	67.76	67.79	92
GCIE	52.23	-42.26	11.75	43.87	164
BCIE	30.57	1.15	-46.84	46.87	271

%Regularity

$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$

1,00

0,75

0,25

0,00

0,25

0,50

0,75

1,00

blackness n^*

chromaticness c^*

UE480-7, 5 step scales for constant CIELAB hue 162/360 = 0.451 (left)

5 step scales for constant CIELAB hue 164/360 = 0.457 (right)

BAM-test chart UE48; Colorimetric systems NCS11a & MRS18 input: *cmY0* setcmykcolor*

D65: 5 step colour scales and coordinate data for 10 hues

output: *olv* setrgbcolor / w* setgray*

Input: Colorimetric Reflective System NCS11

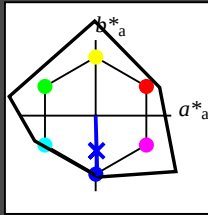
for hue $h^* = lab \cdot h = 272/360 = 0.755$

$lab \cdot tch$ and $lab \cdot nch$

D65: hue B
 LCH*Ma: 49 80 272
 rgb*Ma: 0.0 0.02 1.0

triangle lightness

1,00



% Gamut

$u^*_{rel} = 149$

NCS11; adapted (a) CIELAB data					
	$L^* = L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	47.15	84.64	37.25	92.48	24
JMa	91.37	-1.27	125.03	125.03	91
GMa	63.07	-114.28	25.35	117.06	167
G50B _{Ma}	59.47	-80.6	-33.45	87.28	203
B _{Ma}	49.01	3.65	-81.19	81.28	273
B50R _{Ma}	44.06	106.09	-73.93	129.32	325
N _{Ma}	10.99	0.0	0.0	0.0	0
W _{Ma}	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.69	27.98	65.01	25
JCIE	81.26	-2.9	71.56	71.62	92
GCIE	52.23	-42.45	13.59	44.59	162
BCIE	30.57	1.35	-46.48	46.51	272

% Regularity

$g^*_{H,rel} = 46$

$g^*_{C,rel} = 65$

1,00

relative Inform. Technology (IT)					
olvi3*	1.0	1.0	1.0	1.0	(1.0)
cmyn3*	0.25	0.138	0.0	0.0	(0.0)
olvi4*	1.0	1.0	1.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	95.41	-0.97	4.75		
LAB*LABa	95.41	0.0	0.0		
LAB*LABb	95.41	0.0	0.0		
LAB*LABc	95.41	0.0	0.0		
relative CIELAB lab*					
lab*lab	1.0	0.0	0.0		
lab*tch	1.0	0.0	0.0		
lab*nch	0.0	0.0	0.0		
relative Natural Colour (NC)					
lab*trj	1.0	0.0	0.0		
lab*trc	1.0	0.0	0.0		
lab*ncc	0.0	0.0	0.0		

relative Inform. Technology (IT)					
olvi3*	0.75	0.842	1.0	1.0	(1.0)
cmyn3*	0.25	0.138	0.0	0.0	(0.0)
olvi4*	0.75	0.842	1.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	81.49	-0.4	-8.75		
LAB*LABa	81.49	0.31	12.57		
LAB*LABb	81.49	0.31	12.57		
LAB*LABc	81.49	0.31	12.57		
relative CIELAB lab*					
lab*lab	0.82	0.0	0.249		
lab*tch	0.82	0.0	0.249		
lab*nch	0.0	0.0	0.249		
relative Natural Colour (NC)					
lab*trj	0.82	0.0	0.249		
lab*trc	0.82	0.0	0.249		
lab*ncc	0.0	0.0	0.249		

relative Inform. Technology (IT)					
olvi3*	0.5	0.532	0.75	1.0	(1.0)
cmyn3*	0.25	0.138	0.0	0.0	(0.0)
olvi4*	0.5	0.532	0.75	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	67.57	0.17	-22.28		
LAB*LABa	67.57	0.61	25.16		
LAB*LABb	67.57	0.61	25.16		
LAB*LABc	67.57	0.61	25.16		
relative CIELAB lab*					
lab*lab	0.64	0.012	-0.499		
lab*tch	0.64	0.012	-0.499		
lab*nch	0.0	0.0	-0.499		
relative Natural Colour (NC)					
lab*trj	0.64	0.012	-0.499		
lab*trc	0.64	0.012	-0.499		
lab*ncc	0.0	0.0	-0.499		

relative Inform. Technology (IT)					
olvi3*	0.25	0.434	0.75	1.0	(1.0)
cmyn3*	0.25	0.138	0.0	0.0	(0.0)
olvi4*	0.25	0.434	0.75	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	48.22	0.54	-23.59		
LAB*LABa	48.22	0.62	25.17		
LAB*LABb	48.22	0.62	25.17		
LAB*LABc	48.22	0.62	25.17		
relative CIELAB lab*					
lab*lab	0.39	0.0	-0.499		
lab*tch	0.39	0.0	-0.499		
lab*nch	0.0	0.0	-0.499		
relative Natural Colour (NC)					
lab*trj	0.39	0.0	-0.499		
lab*trc	0.39	0.0	-0.499		
lab*ncc	0.0	0.0	-0.499		

relative Inform. Technology (IT)					
olvi3*	0.0	0.184	0.5	1.0	(1.0)
cmyn3*	0.25	0.138	0.0	0.0	(0.0)
olvi4*	0.0	0.184	0.5	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	37.51	0.112	-37.12		
LAB*LABa	37.51	0.112	-37.12		
LAB*LABb	37.51	0.112	-37.12		
LAB*LABc	37.51	0.112	-37.12		
relative CIELAB lab*					
lab*lab	0.211	0.018	-0.749		
lab*tch	0.211	0.018	-0.749		
lab*nch	0.0	0.0	-0.749		
relative Natural Colour (NC)					
lab*trj	0.211	0.018	-0.749		
lab*trc	0.211	0.018	-0.749		
lab*ncc	0.0	0.0	-0.749		

relative Inform. Technology (IT)					
olvi3*	0.0	0.092	0.25	1.0	(1.0)
cmyn3*	0.25	0.138	0.0	0.0	(0.0)
olvi4*	0.0	0.092	0.25	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	23.44	0.31	12.58		
LAB*LABa	23.44	0.31	12.58		
LAB*LABb	23.44	0.31	12.58		
LAB*LABc	23.44	0.31	12.58		
relative CIELAB lab*					
lab*lab	0.07	0.006	-0.249		
lab*tch	0.07	0.006	-0.249		
lab*nch	0.0	0.0	-0.249		
relative Natural Colour (NC)					
lab*trj	0.07	0.006	-0.249		
lab*trc	0.07	0.006	-0.249		
lab*ncc	0.0	0.0	-0.249		

relative Inform. Technology (IT)					
olvi3*	0.0	0.0	0.0	1.0	(1.0)
cmyn3*	0.25	0.138	0.0	0.0	(0.0)
olvi4*	0.0	0.0	0.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	18.02	0.5	-46.6		
LAB*LABa	18.02	0.5	-46.6		
LAB*LABb	18.02	0.5	-46.6		
LAB*LABc	18.02	0.5	-46.6		
relative CIELAB lab*					
lab*lab	0.0	0.0	0.0		
lab*tch	0.0	0.0	0.0		
lab*nch	0.0	0.0	0.0		
relative Natural Colour (NC)					
lab*trj	0.0	0.0	0.0		
lab*trc	0.0	0.0	0.0		
lab*ncc	0.0	0.0	0.0		

relative Inform. Technology (IT)					
olvi3*	0.0	0.0	0.0	1.0	(1.0)
cmyn3*	0.25	0.138	0.0	0.0	(0.0)
olvi4*	0.0	0.0	0.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	18.02	0.5	-46.6		
LAB*LABa	18.02	0.5	-46.6		
LAB*LABb	18.02	0.5	-46.6		
LAB*LABc	18.02	0.5	-46.6		
relative CIELAB lab*					
lab*lab	0.0	0.0	0.0		
lab*tch	0.0	0.0	0.0		
lab*nch	0.0	0.0	0.0		
relative Natural Colour (NC)					
lab*trj	0.0	0.0	0.0		
lab*trc	0.0	0.0	0.0		
lab*ncc	0.0	0.0	0.0		

relative Inform. Technology (IT)					
olvi3*	0.0	0.0	0.0	1.0	(1.0)
cmyn3*	0.25	0.138	0.0	0.0	(0.0)
olvi4*	0.0	0.0	0.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	18.02	0.5	-46.6		
LAB*LABa	18.02	0.5	-46.6		
LAB*LABb	18.02	0.5	-46.6		
LAB*LABc	18.02	0.5	-46.6		
relative CIELAB lab*					
lab*lab	0.0	0.0	0.0		
lab*tch	0.0	0.0	0.0		
lab*nch	0.0	0.0	0.0		
relative Natural Colour (NC)					
lab*trj	0.0	0.0	0.0		
lab*trc	0.0	0.0	0.0		
lab*ncc	0.0	0.0	0.0		

relative Inform. Technology (IT)					
olvi3*	0.0	0.0	0.0	1.0	(1.0)
cmyn3*	0.25	0.138	0.0	0.0	(0.0)
olvi4*	0.0	0.0	0.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	18.02	0.5	-46.6		
LAB*LABa	18.02	0.5	-46.6		
LAB*LABb	18.02	0.5	-46.6		
LAB*LABc	18.02	0.5	-46.6		
relative CIELAB lab*					
lab*lab	0.0	0.0	0.0		
lab*tch	0.0	0.0	0.0		
lab*nch	0.0	0.0	0.0		
relative Natural Colour (NC)					
lab*trj	0.0	0.0	0.0		
lab*trc	0.0	0.0	0.0		
lab*ncc	0.0	0.0	0.0		

relative Inform. Technology (IT)					
olvi3*	0.0	0.0	0.0	1.0	(1.0)
cmyn3*	0.25	0.138	0.0	0.0	(0.0)
olvi4*	0.0	0.0	0.0	1.0	(1.0)
cmyn4*	0.0	0.0	0.0	0.0	(0.0)
standard and adapted CIELAB					
LAB*LAB	18.02	0.5	-46.6		
LAB*LABa	18.02	0.5	-46.6		
LAB*LABb	18.02	0.5	-46.6		
LAB*LABc	18.02	0.5	-46.6		
relative CIELAB lab*					
lab*lab	0.0	0.0	0.0		
lab*tch	0.0	0.0	0.0		
lab*nch	0.0	0.0	0.0		
relative Natural Colour (NC)					
lab*trj	0.0	0.0	0.0		
lab*trc	0.0	0.0	0.0		
lab*ncc	0.0	0.0	0.0		

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