

Input: Colorimetric Reflective System MRS18

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

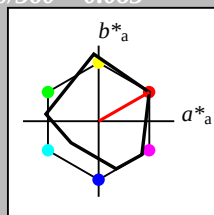
lab^*tch and lab^*nch

D65: hue R

LCH*Ma: 50 77 30

olv*Ma: 1.0 0.0 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 91$

%Regularity

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

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

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
G50BMa	45.03	-36.57	-28.47	46.36	218
BMa	36.65	23.19	-63.05	67.18	290
B50RMa	34.94	57.17	-44.26	72.31	322
NMa	18.01	0.0	0.0	0.0	0
WMa	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

Output: Colorimetric Reflective System NCS11

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

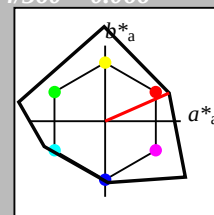
lab^*tch and lab^*nch

D65: hue R

LCH*Ma: 47 92 24

olv*Ma: 1.0 0.0 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 149$

%Regularity

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

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

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
G50BMa	59.47	-80.6	-33.45	87.28	203
BMa	49.01	3.65	-81.19	81.28	273
B50RMa	44.06	106.09	-73.93	129.32	325
NMa	10.99	0.0	0.0	0.0	0
WMa	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

relative Inform. Technology (IT)
olvi3* 1.0 1.0 1.0 (1.0)
cmyn3* 0.0 0.0 0.0 (0.0)
olvi4* 1.0 1.0 1.0 1.0
cmyn4* 0.0 0.0 0.0 0.0

standard and adapted CIELAB
LAB*LAB 95.41 0.0 -0.01
LAB*LABa 95.41 0.0 0.0
LAB*TCHa 99.99 0.01 -

relative CIELAB lab*
lab*lab 1.0 0.0 0.0
lab*tch 1.0 0.0 -
lab*nch 0.0 0.0 -

relative Natural Colour (NC)
lab*lrj 1.0 0.0 0.0
lab*tce 1.0 0.0 -
lab*nce 0.0 0.0 -

relative Inform. Technology (IT)
olvi3* 0.5 0.5 0.5 (1.0)
cmyn3* 0.5 0.5 0.5 (0.0)
olvi4* 1.0 1.0 1.0 0.5
cmyn4* 0.0 0.0 0.0 0.5

standard and adapted CIELAB
LAB*LAB 53.21 0.04 0.0
LAB*LABa 53.21 0.0 0.0
LAB*TCHa 50.0 0.01 -

relative CIELAB lab*
lab*lab 0.5 0.0 0.0
lab*tch 0.5 0.0 -
lab*nch 0.5 0.0 -

relative Natural Colour (NC)
lab*lrj 0.5 0.0 0.0
lab*tce 0.5 0.0 -
lab*nce 0.5 0.0 -

relative Inform. Technology (IT)
olvi3* 0.0 0.0 0.0 (1.0)
cmyn3* 1.0 1.0 1.0 (0.0)
olvi4* 1.0 1.0 1.0 0.0
cmyn4* 0.0 0.0 0.0 1.0

standard and adapted CIELAB
LAB*LAB 11.01 0.07 0.01
LAB*LABa 11.01 0.0 0.0
LAB*TCHa 0.01 0.01 -

relative CIELAB lab*
lab*lab 0.0 0.0 0.0
lab*tch 0.0 0.0 -
lab*nch 1.0 0.0 -

relative Natural Colour (NC)
lab*lrj 0.0 0.0 0.0
lab*tce 0.0 0.0 -
lab*nce 1.0 0.0 -

relative Inform. Technology (IT)
olvi3* 1.0 0.5 0.5 (1.0)
cmyn3* 0.0 0.5 0.5 (0.0)
olvi4* 1.0 0.5 0.5 1.0
cmyn4* 0.0 0.5 0.5 0.0

standard and adapted CIELAB
LAB*LAB 71.27 42.34 18.63
LAB*LABa 71.27 42.31 18.62
LAB*TCHa 75.0 46.23 23.75

relative CIELAB lab*
lab*lab 0.714 0.458 0.201
lab*tch 0.75 0.5 0.066
lab*nch 0.0 0.5 0.066

relative Natural Colour (NC)
lab*lrj 0.714 0.5 -0.011
lab*tce 0.75 0.5 0.996
lab*nce 0.0 0.5 b98r

relative Inform. Technology (IT)
olvi3* 0.5 0.0 0.0 (1.0)
cmyn3* 0.5 1.0 1.0 (0.0)
olvi4* 1.0 0.5 0.5 0.5
cmyn4* 0.0 0.5 0.5 0.5

standard and adapted CIELAB
LAB*LAB 29.07 42.38 18.64
LAB*LABa 29.07 42.31 18.62
LAB*TCHa 25.01 46.23 23.75

relative CIELAB lab*
lab*lab 0.214 0.458 0.201
lab*tch 0.25 0.5 0.066
lab*nch 0.5 0.5 0.066

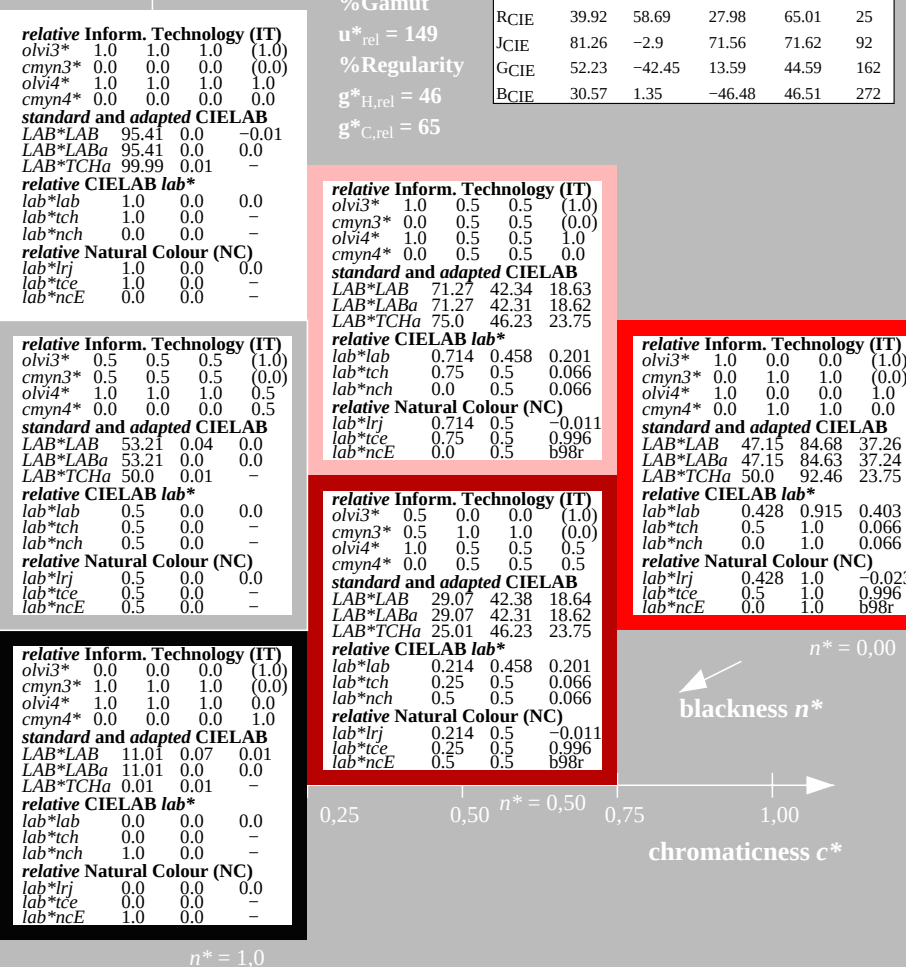
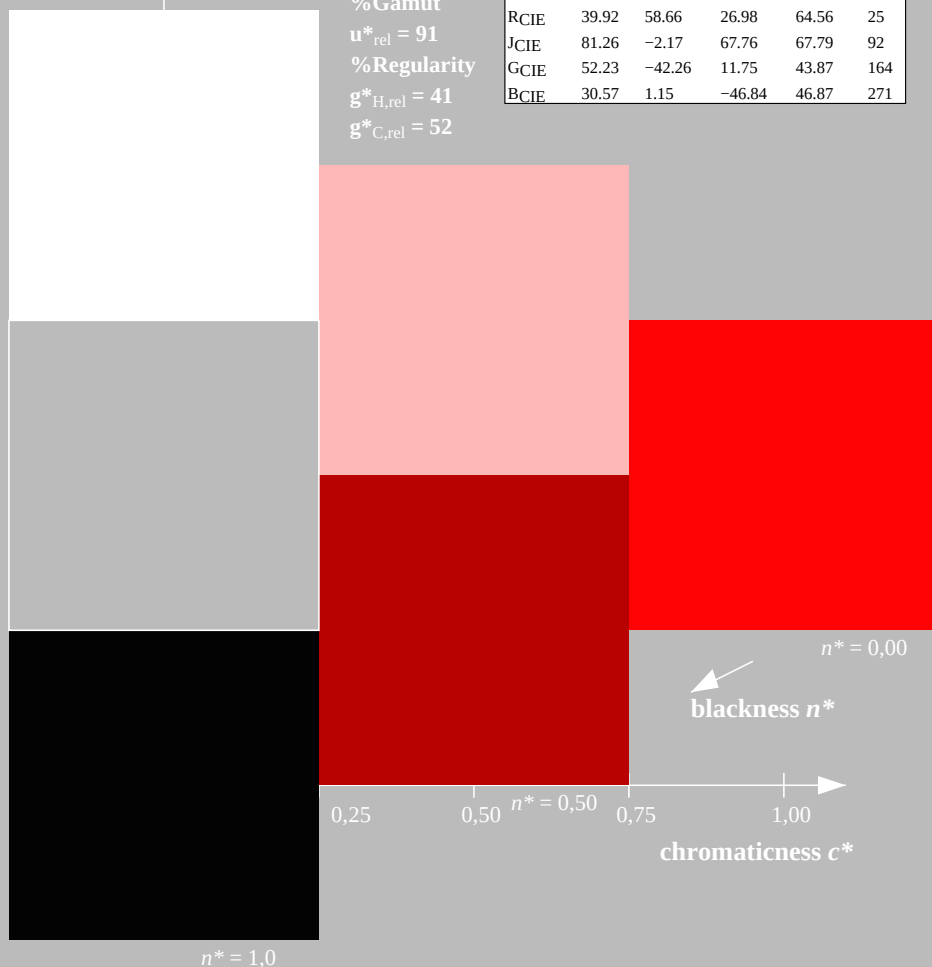
relative Natural Colour (NC)
lab*lrj 0.214 0.5 -0.011
lab*tce 0.25 0.5 0.996
lab*nce 0.5 0.5 b98r

relative Inform. Technology (IT)
olvi3* 1.0 0.0 0.0 (1.0)
cmyn3* 0.0 1.0 1.0 (0.0)
olvi4* 1.0 0.0 0.0 1.0
cmyn4* 0.0 1.0 1.0 0.0

standard and adapted CIELAB
LAB*LAB 47.15 84.68 37.26
LAB*LABa 47.15 84.63 37.24
LAB*TCHa 50.0 92.46 23.75

relative CIELAB lab*
lab*lab 0.428 0.915 0.403
lab*tch 0.5 1.0 0.066
lab*nch 0.0 1.0 0.066

relative Natural Colour (NC)
lab*lrj 0.428 1.0 -0.023
lab*tce 0.5 1.0 0.996
lab*nce 0.0 1.0 b98r



UE030-7, 3 step scales for constant CIELAB hue 30/360 = 0.083 (left)

3 step scales for constant CIELAB hue 24/360 = 0.066 (right)

BAM-test chart UE03; Colorimetric systems MRS18 & NCS11a input: $cmY0^* setcmykcolor$

D65: 3 step colour scales and coordinate data for 10 hues

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

Input: Colorimetric Reflective System MRS18

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

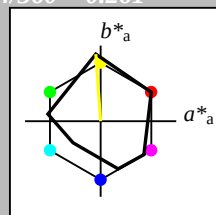
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 91 89 94

olv*Ma: 1.0 1.0 0.0

triangle lightness t^*



% Gamut

$u^*_{rel} = 91$

% Regularity

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

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

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
G50BMa	45.03	-36.57	-28.47	46.36	218
BMa	36.65	23.19	-63.05	67.18	290
B50RMa	34.94	57.17	-44.26	72.31	322
NMa	18.01	0.0	0.0	0.0	0
WMa	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

Output: Colorimetric Reflective System NCS11

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

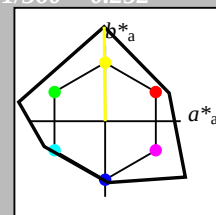
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 91 125 91

olv*Ma: 1.0 1.0 0.0

triangle lightness t^*



% Gamut

$u^*_{rel} = 149$

% Regularity

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

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

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
G50BMa	59.47	-80.6	-33.45	87.28	203
BMa	49.01	3.65	-81.19	81.28	273
B50RMa	44.06	106.09	-73.93	129.32	325
NMa	10.99	0.0	0.0	0.0	0
WMa	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

relative Inform. Technology (IT)
 $olvi3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$
 $cmyn3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 95.41 \ 0.0 \ -0.01$
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

relative CIELAB lab*
 $lab^*lab = 1.0 \ 0.0 \ 0.0$
 $lab^*tch = 1.0 \ 0.0 \ -$
 $lab^*nch = 0.0 \ 0.0 \ -$

relative Natural Colour (NC)
 $lab^*lrj = 1.0 \ 0.0 \ 0.0$
 $lab^*tce = 1.0 \ 0.0 \ -$
 $lab^*nce = 0.0 \ 0.0 \ -$

relative Inform. Technology (IT)
 $olvi3^* = 0.5 \ 0.5 \ 0.5 \ (1.0)$
 $cmyn3^* = 0.5 \ 0.5 \ 0.5 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 1.0 \ 0.5$
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 0.5$

standard and adapted CIELAB
 $LAB^*LAB = 53.21 \ 0.04 \ 0.0$
 $LAB^*LABa = 53.21 \ 0.0 \ 0.0$
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

relative CIELAB lab*
 $lab^*lab = 0.5 \ 0.0 \ 0.0$
 $lab^*tch = 0.5 \ 0.0 \ -$
 $lab^*nch = 0.5 \ 0.0 \ -$

relative Natural Colour (NC)
 $lab^*lrj = 0.5 \ 0.0 \ 0.0$
 $lab^*tce = 0.5 \ 0.0 \ -$
 $lab^*nce = 0.5 \ 0.0 \ -$

relative Inform. Technology (IT)
 $olvi3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$
 $cmyn3^* = 1.0 \ 1.0 \ 1.0 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 1.0$

standard and adapted CIELAB
 $LAB^*LAB = 11.01 \ 0.07 \ 0.01$
 $LAB^*LABa = 11.01 \ 0.0 \ 0.0$
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

relative CIELAB lab*
 $lab^*lab = 0.0 \ 0.0 \ 0.0$
 $lab^*tch = 0.0 \ 0.0 \ -$
 $lab^*nch = 1.0 \ 0.0 \ -$

relative Natural Colour (NC)
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$
 $lab^*tce = 0.0 \ 0.0 \ -$
 $lab^*nce = 1.0 \ 0.0 \ -$

relative Inform. Technology (IT)
 $olvi3^* = 1.0 \ 1.0 \ 0.5 \ (1.0)$
 $cmyn3^* = 0.0 \ 0.0 \ 0.5 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 0.5 \ 1.0$
 $cmyn4^* = 0.0 \ 0.0 \ 0.5 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 93.38 \ -0.62 \ 62.5$
 $LAB^*LABa = 93.38 \ -0.63 \ 62.5$
 $LAB^*TCHa = 75.0 \ 62.5 \ 90.59$

relative CIELAB lab*
 $lab^*lab = 0.976 \ -0.004 \ 0.5$
 $lab^*tch = 0.75 \ 0.5 \ 0.252$
 $lab^*nch = 0.0 \ 0.5 \ 0.252$

relative Natural Colour (NC)
 $lab^*lrj = 0.976 \ 0.02 \ 0.499$
 $lab^*tce = 0.75 \ 0.5 \ 0.243$
 $lab^*nce = 0.0 \ 0.5 \ r97j$

relative Inform. Technology (IT)
 $olvi3^* = 0.5 \ 0.5 \ 0.0 \ (1.0)$
 $cmyn3^* = 0.5 \ 0.5 \ 1.0 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 0.5 \ 0.5$
 $cmyn4^* = 0.0 \ 0.0 \ 0.5 \ 0.5$

standard and adapted CIELAB
 $LAB^*LAB = 51.18 \ -0.59 \ 62.51$
 $LAB^*LABa = 51.18 \ -0.63 \ 62.5$
 $LAB^*TCHa = 25.01 \ 62.5 \ 90.59$

relative CIELAB lab*
 $lab^*lab = 0.476 \ -0.004 \ 0.5$
 $lab^*tch = 0.25 \ 0.5 \ 0.252$
 $lab^*nch = 0.5 \ 0.5 \ 0.252$

relative Natural Colour (NC)
 $lab^*lrj = 0.476 \ 0.02 \ 0.499$
 $lab^*tce = 0.25 \ 0.5 \ 0.243$
 $lab^*nce = 0.5 \ 0.5 \ r97j$

relative Inform. Technology (IT)
 $olvi3^* = 1.0 \ 1.0 \ 0.0 \ (1.0)$
 $cmyn3^* = 0.0 \ 0.0 \ 1.0 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 0.0 \ 1.0$
 $cmyn4^* = 0.0 \ 0.0 \ 1.0 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 91.36 \ -1.26 \ 125.0$
 $LAB^*LABa = 91.36 \ -1.27 \ 125.0$
 $LAB^*TCHa = 50.0 \ 125.01 \ 90.59$

relative CIELAB lab*
 $lab^*lab = 0.952 \ -0.009 \ 1.0$
 $lab^*tch = 0.5 \ 1.0 \ 0.252$
 $lab^*nch = 0.0 \ 1.0 \ 0.252$

relative Natural Colour (NC)
 $lab^*lrj = 0.952 \ 0.041 \ 0.999$
 $lab^*tce = 0.5 \ 1.0 \ 0.243$
 $lab^*nce = 0.0 \ 1.0 \ r97j$

3 step scales for constant CIELAB hue 91/360 = 0.252 (right)

UE030-7, 3 step scales for constant CIELAB hue 94/360 = 0.261 (left)

BAM-test chart UE03; Colorimetric systems MRS18 & NCS11a input: $cmv0^* setcmykcolor$

D65: 3 step colour scales and coordinate data for 10 hues

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

Input: Colorimetric Reflective System MRS18

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

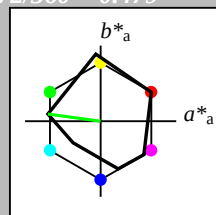
lab^*tch and lab^*nch

D65: hue G

LCH*Ma: 52 70 172

olv*Ma: 0.0 1.0 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 91$

%Regularity

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

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

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
G50BMa	45.03	-36.57	-28.47	46.36	218
BMa	36.65	23.19	-63.05	67.18	290
B50RMa	34.94	57.17	-44.26	72.31	322
NMa	18.01	0.0	0.0	0.0	0
WMa	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

Output: Colorimetric Reflective System NCS11

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

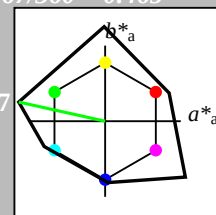
lab^*tch and lab^*nch

D65: hue G

LCH*Ma: 63 117 167

olv*Ma: 0.0 1.0 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 149$

%Regularity

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

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

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
G50BMa	59.47	-80.6	-33.45	87.28	203
BMa	49.01	3.65	-81.19	81.28	273
B50RMa	44.06	106.09	-73.93	129.32	325
NMa	10.99	0.0	0.0	0.0	0
WMa	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

relative Inform. Technology (IT)
 $olvi3^* = 1.0$ 1.0 1.0 (1.0)
 $cmyn3^* = 0.0$ 0.0 0.0 (0.0)
 $olvi4^* = 1.0$ 1.0 1.0 1.0
 $cmyn4^* = 0.0$ 0.0 0.0 0.0

standard and adapted CIELAB
 $LAB^*LAB = 95.41$ 0.0 -0.01
 $LAB^*LABa = 95.41$ 0.0 0.0
 $LAB^*TCHa = 99.99$ 0.01 -

relative CIELAB lab^*
 $lab^*lab = 1.0$ 0.0 0.0
 $lab^*tch = 1.0$ 0.0 -
 $lab^*nch = 0.0$ 0.0 -

relative Natural Colour (NC)
 $lab^*lrj = 1.0$ 0.0 0.0
 $lab^*tce = 1.0$ 0.0 -
 $lab^*nce = 0.0$ 0.0 -

relative Inform. Technology (IT)
 $olvi3^* = 0.5$ 0.5 0.5 (1.0)
 $cmyn3^* = 0.5$ 0.5 0.5 (0.0)
 $olvi4^* = 1.0$ 1.0 1.0 0.5
 $cmyn4^* = 0.0$ 0.0 0.0 0.5

standard and adapted CIELAB
 $LAB^*LAB = 53.21$ 0.04 0.0
 $LAB^*LABa = 53.21$ 0.0 0.0
 $LAB^*TCHa = 50.0$ 0.01 -

relative CIELAB lab^*
 $lab^*lab = 0.5$ 0.0 0.0
 $lab^*tch = 0.5$ 0.0 -
 $lab^*nch = 0.5$ 0.0 -

relative Natural Colour (NC)
 $lab^*lrj = 0.5$ 0.0 0.0
 $lab^*tce = 0.5$ 0.0 -
 $lab^*nce = 0.5$ 0.0 -

relative Inform. Technology (IT)
 $olvi3^* = 0.0$ 0.0 0.0 (1.0)
 $cmyn3^* = 1.0$ 1.0 1.0 (0.0)
 $olvi4^* = 1.0$ 1.0 1.0 0.0
 $cmyn4^* = 0.0$ 0.0 0.0 1.0

standard and adapted CIELAB
 $LAB^*LAB = 11.01$ 0.07 0.01
 $LAB^*LABa = 11.01$ 0.0 0.0
 $LAB^*TCHa = 0.01$ 0.01 -

relative CIELAB lab^*
 $lab^*lab = 0.0$ 0.0 0.0
 $lab^*tch = 0.0$ 0.0 -
 $lab^*nch = 1.0$ 0.0 -

relative Natural Colour (NC)
 $lab^*lrj = 0.0$ 0.0 0.0
 $lab^*tce = 0.0$ 0.0 -
 $lab^*nce = 1.0$ 0.0 -

relative Inform. Technology (IT)
 $olvi3^* = 0.5$ 1.0 0.5 (1.0)
 $cmyn3^* = 0.5$ 0.0 0.5 (0.0)
 $olvi4^* = 0.5$ 1.0 0.5 1.0
 $cmyn4^* = 0.5$ 0.0 0.5 0.0

standard and adapted CIELAB
 $LAB^*LAB = 79.24$ -57.1 12.67
 $LAB^*LABa = 79.24$ -57.12 12.67
 $LAB^*TCHa = 75.0$ 58.52 167.5

relative CIELAB lab^*
 $lab^*lab = 0.808$ -0.487 0.108
 $lab^*tch = 0.75$ 0.5 0.465
 $lab^*nch = 0.0$ 0.5 0.465

relative Natural Colour (NC)
 $lab^*lrj = 0.808$ -0.497 -0.037
 $lab^*tce = 0.75$ 0.5 0.512
 $lab^*nce = 0.0$ 0.5 g04b

relative Inform. Technology (IT)
 $olvi3^* = 0.0$ 0.5 0.0 (1.0)
 $cmyn3^* = 1.0$ 0.5 1.0 (0.0)
 $olvi4^* = 0.5$ 1.0 0.5 0.5
 $cmyn4^* = 0.5$ 0.0 0.5 0.5

standard and adapted CIELAB
 $LAB^*LAB = 37.04$ -57.07 12.69
 $LAB^*LABa = 37.04$ -57.12 12.67
 $LAB^*TCHa = 25.01$ 58.52 167.5

relative CIELAB lab^*
 $lab^*lab = 0.309$ -0.487 0.108
 $lab^*tch = 0.25$ 0.5 0.465
 $lab^*nch = 0.5$ 0.5 0.465

relative Natural Colour (NC)
 $lab^*lrj = 0.309$ -0.497 -0.037
 $lab^*tce = 0.25$ 0.5 0.512
 $lab^*nce = 0.5$ 0.5 g04b

relative Inform. Technology (IT)
 $olvi3^* = 0.0$ 1.0 0.0 (1.0)
 $cmyn3^* = 1.0$ 0.0 1.0 (0.0)
 $olvi4^* = 0.0$ 1.0 0.0 1.0
 $cmyn4^* = 1.0$ 0.0 1.0 0.0

standard and adapted CIELAB
 $LAB^*LAB = 63.07$ -114.225.35
 $LAB^*LABa = 63.07$ -114.225.34
 $LAB^*TCHa = 50.0$ 117.04 167.5

relative CIELAB lab^*
 $lab^*lab = 0.617$ -0.975 0.216
 $lab^*tch = 0.5$ 1.0 0.465
 $lab^*nch = 0.0$ 1.0 0.465

relative Natural Colour (NC)
 $lab^*lrj = 0.617$ -0.996 -0.074
 $lab^*tce = 0.5$ 1.0 0.512
 $lab^*nce = 0.0$ 1.0 g04b

blackness n^*
chromaticness c^*

0.25 0.50 0.75 1.00

$n^* = 1.0$

blackness n^*
chromaticness c^*

0.25 0.50 0.75 1.00

$n^* = 1.0$

3 step scales for constant CIELAB hue 167/360 = 0.465 (right)

BAM-test chart UE03; Colorimetric systems MRS18 & NCS11a input: $cmv0^* setcmykcolor$

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

D65: 3 step colour scales and coordinate data for 10 hues

Input: Colorimetric Reflective System MRS18

for hue $h^* = lab^*h = 218/360 = 0.605$

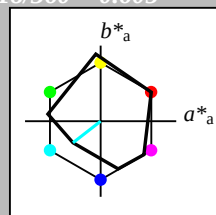
lab^*tch and lab^*nch

D65: hue G50B

LCH*Ma: 45 46 218

olv*Ma: 0.0 1.0 1.0

triangle lightness t^*



% Gamut

$u^*_{rel} = 91$

% Regularity

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

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

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

Output: Colorimetric Reflective System NCS11

for hue $h^* = lab^*h = 203/360 = 0.563$

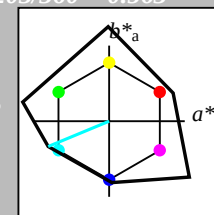
lab^*tch and lab^*nch

D65: hue G50B

LCH*Ma: 59 87 203

olv*Ma: 0.0 1.0 1.0

triangle lightness t^*



% Gamut

$u^*_{rel} = 149$

% Regularity

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

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

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

relative Inform. Technology (IT)
olvi3* 1.0 1.0 1.0 (1.0)
cmyn3* 0.0 0.0 0.0 (0.0)
olvi4* 1.0 1.0 1.0 1.0
cmyn4* 0.0 0.0 0.0 0.0

standard and adapted CIELAB
LAB*LAB 95.41 0.0 -0.01
LAB*LABa 95.41 0.0 0.0
LAB*TCa 99.99 0.01 -

relative CIELAB lab*
lab*lab 1.0 0.0 0.0
lab*tch 1.0 0.0 -
lab*nch 0.0 0.0 -

relative Natural Colour (NC)
lab*lrj 1.0 0.0 0.0
lab*tce 1.0 0.0 -
lab*nce 0.0 0.0 -

relative Inform. Technology (IT)
olvi3* 0.5 0.5 0.5 (1.0)
cmyn3* 0.5 0.5 0.5 (0.0)
olvi4* 1.0 1.0 1.0 0.5
cmyn4* 0.0 0.0 0.0 0.5

standard and adapted CIELAB
LAB*LAB 53.21 0.04 0.0
LAB*LABa 53.21 0.0 0.0
LAB*TCa 50.0 0.01 -

relative CIELAB lab*
lab*lab 0.5 0.0 0.0
lab*tch 0.5 0.0 -
lab*nch 0.5 0.0 -

relative Natural Colour (NC)
lab*lrj 0.5 0.0 0.0
lab*tce 0.5 0.0 -
lab*nce 0.5 0.0 -

relative Inform. Technology (IT)
olvi3* 0.0 0.0 0.0 (1.0)
cmyn3* 1.0 1.0 1.0 (0.0)
olvi4* 1.0 1.0 1.0 0.0
cmyn4* 0.0 0.0 0.0 1.0

standard and adapted CIELAB
LAB*LAB 11.01 0.07 0.01
LAB*LABa 11.01 0.0 0.0
LAB*TCa 0.01 0.01 -

relative CIELAB lab*
lab*lab 0.0 0.0 0.0
lab*tch 0.0 0.0 -
lab*nch 1.0 0.0 -

relative Natural Colour (NC)
lab*lrj 0.0 0.0 0.0
lab*tce 0.0 0.0 -
lab*nce 1.0 0.0 -

relative Inform. Technology (IT)
olvi3* 0.5 1.0 1.0 (1.0)
cmyn3* 0.5 0.0 0.0 (0.0)
olvi4* 0.5 1.0 1.0 1.0
cmyn4* 0.5 0.0 0.0 0.0

standard and adapted CIELAB
LAB*LAB 77.43 -40.26 -16.71
LAB*LABa 77.43 -40.29 -16.72
LAB*TCa 75.0 43.63 202.54

relative CIELAB lab*
lab*lab 0.787 -0.461 -0.191
lab*tch 0.75 0.5 0.563
lab*nch 0.0 0.5 0.563

relative Natural Colour (NC)
lab*lrj 0.787 -0.418 -0.272
lab*tce 0.75 0.5 0.592
lab*nce 0.0 0.5 g36b

relative Inform. Technology (IT)
olvi3* 0.0 0.5 0.5 (1.0)
cmyn3* 1.0 0.5 0.5 (0.0)
olvi4* 0.5 1.0 1.0 0.5
cmyn4* 0.5 0.0 0.0 0.5

standard and adapted CIELAB
LAB*LAB 35.23 -40.23 -16.7
LAB*LABa 35.23 -40.29 -16.72
LAB*TCa 25.01 43.63 202.54

relative CIELAB lab*
lab*lab 0.287 -0.461 -0.191
lab*tch 0.25 0.5 0.563
lab*nch 0.5 0.5 0.563

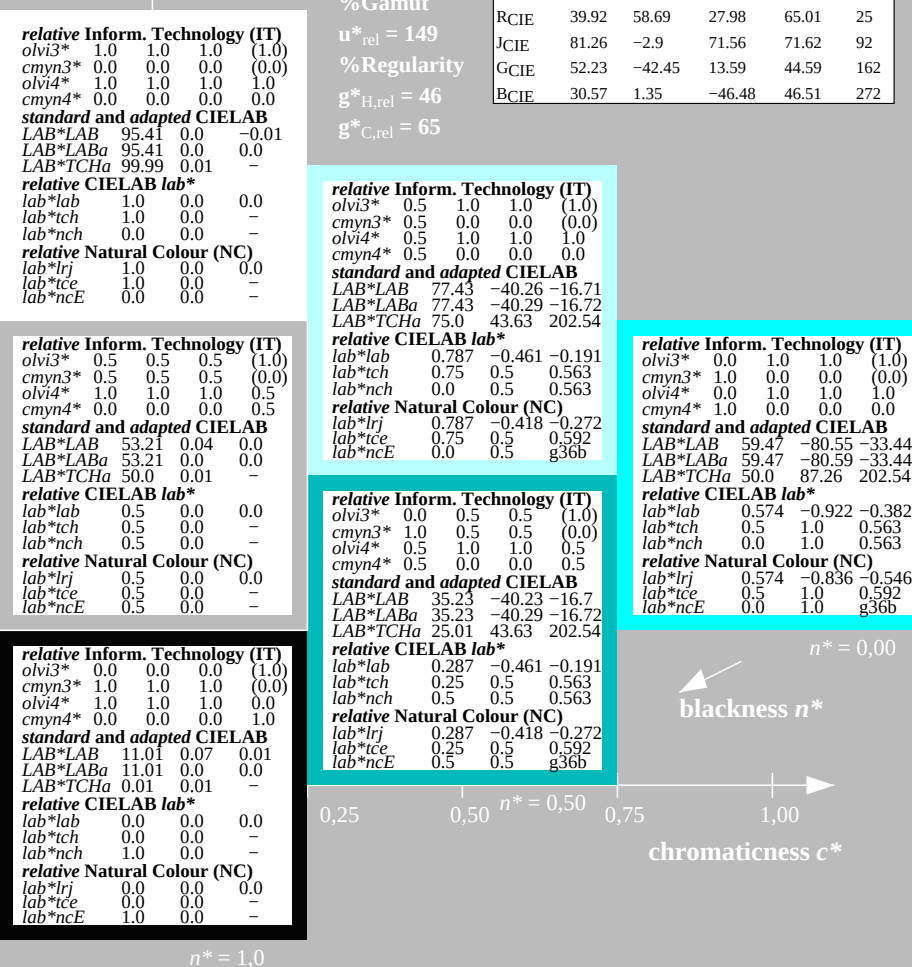
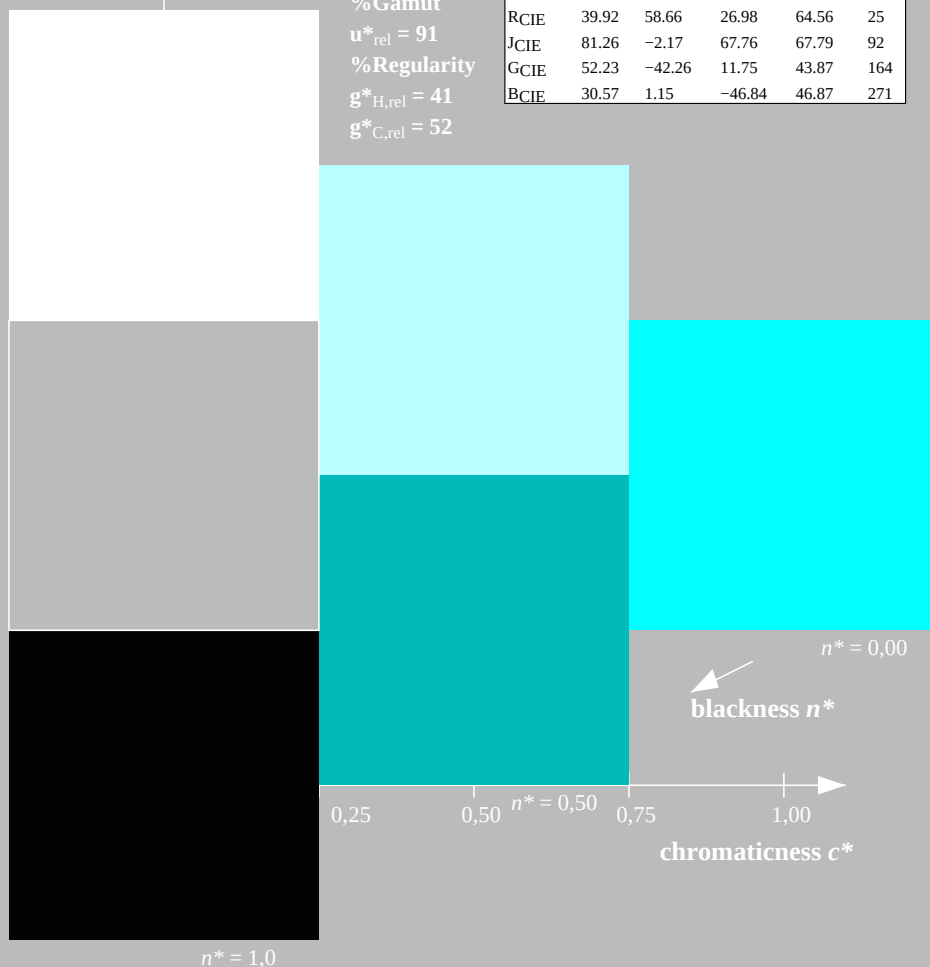
relative Natural Colour (NC)
lab*lrj 0.287 -0.418 -0.272
lab*tce 0.25 0.5 0.592
lab*nce 0.5 0.5 g36b

relative Inform. Technology (IT)
olvi3* 0.0 1.0 1.0 (1.0)
cmyn3* 1.0 0.0 0.0 (0.0)
olvi4* 0.0 1.0 1.0 1.0
cmyn4* 1.0 0.0 0.0 0.0

standard and adapted CIELAB
LAB*LAB 59.47 -80.55 -33.44
LAB*LABa 59.47 -80.59 -33.44
LAB*TCa 50.0 87.26 202.54

relative CIELAB lab*
lab*lab 0.574 -0.922 -0.382
lab*tch 0.5 1.0 0.563
lab*nch 0.0 1.0 0.563

relative Natural Colour (NC)
lab*lrj 0.574 -0.836 -0.546
lab*tce 0.5 1.0 0.592
lab*nce 0.0 1.0 g36b



UE030-7, 3 step scales for constant CIELAB hue 218/360 = 0.605 (left)

3 step scales for constant CIELAB hue 203/360 = 0.563 (right)

BAM-test chart UE03; Colorimetric systems MRS18 & NCS11a input: *cmv0* setcmvcolor*

D65: 3 step colour scales and coordinate data for 10 hues

output: *olv* setrgbcolor / w* setgray*

Input: Colorimetric Reflective System MRS18

for hue $h^* = lab^*h = 290/360 = 0.806$

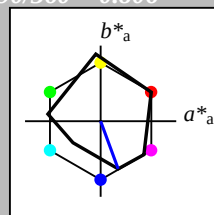
lab^*tch and lab^*nch

D65: hue B

LCH*Ma: 37 67 290

olv*Ma: 0.0 0.0 1.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 91$

%Regularity

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

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

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
G50BMa	45.03	-36.57	-28.47	46.36	218
BMa	36.65	23.19	-63.05	67.18	290
B50RMa	34.94	57.17	-44.26	72.31	322
NMa	18.01	0.0	0.0	0.0	0
WMa	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

Output: Colorimetric Reflective System NCS11

for hue $h^* = lab^*h = 273/360 = 0.757$

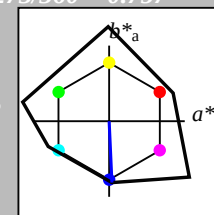
lab^*tch and lab^*nch

D65: hue B

LCH*Ma: 49 81 273

olv*Ma: 0.0 0.0 1.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 149$

%Regularity

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

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

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
G50BMa	59.47	-80.6	-33.45	87.28	203
BMa	49.01	3.65	-81.19	81.28	273
B50RMa	44.06	106.09	-73.93	129.32	325
NMa	10.99	0.0	0.0	0.0	0
WMa	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

relative Inform. Technology (IT)
olvi3* 1.0 1.0 1.0 (1.0)
cmyn3* 0.0 0.0 0.0 (0.0)
olvi4* 1.0 1.0 1.0 1.0
cmyn4* 0.0 0.0 0.0 0.0

standard and adapted CIELAB
LAB*LAB 95.41 0.0 -0.01
LAB*LABa 95.41 0.0 0.0
LAB*TCHa 99.99 0.01 -

relative CIELAB lab*
lab*lab 1.0 0.0 0.0
lab*tch 1.0 0.0 -
lab*nch 0.0 0.0 -

relative Natural Colour (NC)
lab*lrj 1.0 0.0 0.0
lab*tce 1.0 0.0 -
lab*nce 0.0 0.0 -

relative Inform. Technology (IT)
olvi3* 0.5 0.5 0.5 (1.0)
cmyn3* 0.5 0.5 0.5 (0.0)
olvi4* 1.0 1.0 1.0 0.5
cmyn4* 0.0 0.0 0.0 0.5

standard and adapted CIELAB
LAB*LAB 53.21 0.04 0.0
LAB*LABa 53.21 0.0 0.0
LAB*TCHa 50.0 0.01 -

relative CIELAB lab*
lab*lab 0.5 0.0 0.0
lab*tch 0.5 0.0 -
lab*nch 0.5 0.0 -

relative Natural Colour (NC)
lab*lrj 0.5 0.0 0.0
lab*tce 0.5 0.0 -
lab*nce 0.5 0.0 -

relative Inform. Technology (IT)
olvi3* 0.0 0.0 0.0 (1.0)
cmyn3* 1.0 1.0 1.0 (0.0)
olvi4* 1.0 1.0 1.0 0.0
cmyn4* 0.0 0.0 0.0 1.0

standard and adapted CIELAB
LAB*LAB 11.01 0.07 0.01
LAB*LABa 11.01 0.0 0.0
LAB*TCHa 0.01 0.01 -

relative CIELAB lab*
lab*lab 0.0 0.0 0.0
lab*tch 0.0 0.0 -
lab*nch 1.0 0.0 -

relative Natural Colour (NC)
lab*lrj 0.0 0.0 0.0
lab*tce 0.0 0.0 -
lab*nce 1.0 0.0 -

relative Inform. Technology (IT)
olvi3* 0.5 0.5 1.0 (1.0)
cmyn3* 0.5 0.5 0.0 (0.0)
olvi4* 0.5 0.5 1.0 1.0
cmyn4* 0.5 0.5 0.0 0.0

standard and adapted CIELAB
LAB*LAB 72.21 1.85 -40.58
LAB*LABa 72.21 1.82 -40.58
LAB*TCHa 75.0 40.63 272.57

relative CIELAB lab*
lab*lab 0.725 0.022 -0.498
lab*tch 0.75 0.5 0.757
lab*nch 0.0 0.5 0.757

relative Natural Colour (NC)
lab*lrj 0.725 0.006 -0.499
lab*tce 0.75 0.5 0.752
lab*nce 0.0 0.5 0.00r

relative Inform. Technology (IT)
olvi3* 0.0 0.0 0.5 (1.0)
cmyn3* 1.0 1.0 0.5 (0.0)
olvi4* 0.5 0.5 1.0 0.5
cmyn4* 0.5 0.5 0.0 0.5

standard and adapted CIELAB
LAB*LAB 30.01 1.89 -40.56
LAB*LABa 30.01 1.82 -40.58
LAB*TCHa 25.01 40.63 272.57

relative CIELAB lab*
lab*lab 0.225 0.022 -0.498
lab*tch 0.25 0.5 0.757
lab*nch 0.5 0.5 0.757

relative Natural Colour (NC)
lab*lrj 0.225 0.006 -0.499
lab*tce 0.25 0.5 0.752
lab*nce 0.5 0.5 0.00r

relative Inform. Technology (IT)
olvi3* 0.0 0.0 1.0 (1.0)
cmyn3* 1.0 1.0 0.0 (0.0)
olvi4* 0.0 0.0 1.0 1.0
cmyn4* 1.0 1.0 0.0 0.0

standard and adapted CIELAB
LAB*LAB 49.02 3.7 -81.16
LAB*LABa 49.02 3.65 -81.18
LAB*TCHa 50.0 81.27 272.57

relative CIELAB lab*
lab*lab 0.45 0.045 -0.998
lab*tch 0.5 1.0 0.757
lab*nch 0.0 1.0 0.757

relative Natural Colour (NC)
lab*lrj 0.45 0.013 -0.999
lab*tce 0.5 1.0 0.752
lab*nce 0.0 1.0 0.00r

relative Inform. Technology (IT)
olvi3* 0.0 0.0 0.5 (1.0)
cmyn3* 1.0 1.0 0.5 (0.0)
olvi4* 0.5 0.5 1.0 0.5
cmyn4* 0.5 0.5 0.0 0.5

standard and adapted CIELAB
LAB*LAB 30.01 1.89 -40.56
LAB*LABa 30.01 1.82 -40.58
LAB*TCHa 25.01 40.63 272.57

relative CIELAB lab*
lab*lab 0.225 0.022 -0.498
lab*tch 0.25 0.5 0.757
lab*nch 0.5 0.5 0.757

relative Natural Colour (NC)
lab*lrj 0.225 0.006 -0.499
lab*tce 0.25 0.5 0.752
lab*nce 0.5 0.5 0.00r

relative Inform. Technology (IT)
olvi3* 0.0 0.0 1.0 (1.0)
cmyn3* 1.0 1.0 0.0 (0.0)
olvi4* 0.0 0.0 1.0 1.0
cmyn4* 1.0 1.0 0.0 0.0

standard and adapted CIELAB
LAB*LAB 49.02 3.7 -81.16
LAB*LABa 49.02 3.65 -81.18
LAB*TCHa 50.0 81.27 272.57

relative CIELAB lab*
lab*lab 0.45 0.045 -0.998
lab*tch 0.5 1.0 0.757
lab*nch 0.0 1.0 0.757

relative Natural Colour (NC)
lab*lrj 0.45 0.013 -0.999
lab*tce 0.5 1.0 0.752
lab*nce 0.0 1.0 0.00r

BAM-test chart UE03; Colorimetric systems MRS18 & NCS11a input: $cmY0^* setcmykcolor$

D65: 3 step colour scales and coordinate data for 10 hues

3 step scales for constant CIELAB hue 273/360 = 0.757 (right)

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

Input: Colorimetric Reflective System MRS18

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

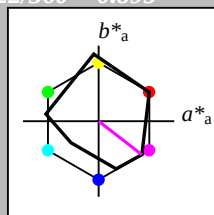
lab^*tch and lab^*nch

D65: hue B50R

LCH*Ma: 35 72 322

olv*Ma: 1.0 0.0 1.0

triangle lightness t^*



% Gamut

$u^*_{rel} = 91$

% Regularity

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

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

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
G50BMa	45.03	-36.57	-28.47	46.36	218
BMa	36.65	23.19	-63.05	67.18	290
B50RMa	34.94	57.17	-44.26	72.31	322
NMa	18.01	0.0	0.0	0.0	0
WMa	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

Output: Colorimetric Reflective System NCS11

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

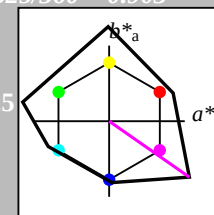
lab^*tch and lab^*nch

D65: hue B50R

LCH*Ma: 44 129 325

olv*Ma: 1.0 0.0 1.0

triangle lightness t^*



% Gamut

$u^*_{rel} = 149$

% Regularity

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

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

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
G50BMa	59.47	-80.6	-33.45	87.28	203
BMa	49.01	3.65	-81.19	81.28	273
B50RMa	44.06	106.09	-73.93	129.32	325
NMa	10.99	0.0	0.0	0.0	0
WMa	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

relative Inform. Technology (IT)
 $olvi3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$
 $cmyn3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 95.41 \ 0.0 \ -0.01$
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

relative CIELAB lab*
 $lab^*lab = 1.0 \ 0.0 \ 0.0$
 $lab^*tch = 1.0 \ 0.0 \ -$
 $lab^*nch = 0.0 \ 0.0 \ -$

relative Natural Colour (NC)
 $lab^*lrj = 1.0 \ 0.0 \ 0.0$
 $lab^*tce = 1.0 \ 0.0 \ -$
 $lab^*nce = 0.0 \ 0.0 \ -$

relative Inform. Technology (IT)
 $olvi3^* = 0.5 \ 0.5 \ 0.5 \ (1.0)$
 $cmyn3^* = 0.5 \ 0.5 \ 0.5 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 1.0 \ 0.5$
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 0.5$

standard and adapted CIELAB
 $LAB^*LAB = 53.21 \ 0.04 \ 0.0$
 $LAB^*LABa = 53.21 \ 0.0 \ 0.0$
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

relative CIELAB lab*
 $lab^*lab = 0.5 \ 0.0 \ 0.0$
 $lab^*tch = 0.5 \ 0.0 \ -$
 $lab^*nch = 0.5 \ 0.0 \ -$

relative Natural Colour (NC)
 $lab^*lrj = 0.5 \ 0.0 \ 0.0$
 $lab^*tce = 0.5 \ 0.0 \ -$
 $lab^*nce = 0.5 \ 0.0 \ -$

relative Inform. Technology (IT)
 $olvi3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$
 $cmyn3^* = 1.0 \ 1.0 \ 1.0 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 1.0$

standard and adapted CIELAB
 $LAB^*LAB = 11.01 \ 0.07 \ 0.01$
 $LAB^*LABa = 11.01 \ 0.0 \ 0.0$
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

relative CIELAB lab*
 $lab^*lab = 0.0 \ 0.0 \ 0.0$
 $lab^*tch = 0.0 \ 0.0 \ -$
 $lab^*nch = 1.0 \ 0.0 \ -$

relative Natural Colour (NC)
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$
 $lab^*tce = 0.0 \ 0.0 \ -$
 $lab^*nce = 1.0 \ 0.0 \ -$

relative Inform. Technology (IT)
 $olvi3^* = 1.0 \ 0.5 \ 1.0 \ (1.0)$
 $cmyn3^* = 0.0 \ 0.5 \ 0.0 \ (0.0)$
 $olvi4^* = 1.0 \ 0.5 \ 1.0 \ 1.0$
 $cmyn4^* = 0.0 \ 0.5 \ 0.0 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 69.73 \ 53.06 \ -36.95$
 $LAB^*LABa = 69.73 \ 53.03 \ -36.95$
 $LAB^*TCHa = 75.0 \ 64.65 \ 325.12$

relative CIELAB lab*
 $lab^*lab = 0.696 \ 0.41 \ -0.285$
 $lab^*tch = 0.75 \ 0.5 \ 0.903$
 $lab^*nch = 0.0 \ 0.5 \ 0.903$

relative Natural Colour (NC)
 $lab^*lrj = 0.696 \ 0.336 \ -0.369$
 $lab^*tce = 0.75 \ 0.5 \ 0.867$
 $lab^*nce = 0.0 \ 0.5 \ b46r$

relative Inform. Technology (IT)
 $olvi3^* = 0.5 \ 0.0 \ 0.5 \ (1.0)$
 $cmyn3^* = 0.5 \ 1.0 \ 0.5 \ (0.0)$
 $olvi4^* = 1.0 \ 0.5 \ 1.0 \ 0.5$
 $cmyn4^* = 0.0 \ 0.5 \ 0.0 \ 0.5$

standard and adapted CIELAB
 $LAB^*LAB = 27.53 \ 53.1 \ -36.94$
 $LAB^*LABa = 27.53 \ 53.03 \ -36.95$
 $LAB^*TCHa = 25.01 \ 64.65 \ 325.12$

relative CIELAB lab*
 $lab^*lab = 0.196 \ 0.41 \ -0.285$
 $lab^*tch = 0.25 \ 0.5 \ 0.903$
 $lab^*nch = 0.5 \ 0.5 \ 0.903$

relative Natural Colour (NC)
 $lab^*lrj = 0.196 \ 0.336 \ -0.369$
 $lab^*tce = 0.25 \ 0.5 \ 0.867$
 $lab^*nce = 0.5 \ 0.5 \ b46r$

relative Inform. Technology (IT)
 $olvi3^* = 1.0 \ 0.0 \ 1.0 \ (1.0)$
 $cmyn3^* = 0.0 \ 1.0 \ 0.0 \ (0.0)$
 $olvi4^* = 1.0 \ 0.0 \ 1.0 \ 1.0$
 $cmyn4^* = 0.0 \ 1.0 \ 0.0 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 44.06 \ 106.12 \ -73.91$
 $LAB^*LABa = 44.06 \ 106.07 \ -73.92$
 $LAB^*TCHa = 50.0 \ 129.29 \ 325.12$

relative CIELAB lab*
 $lab^*lab = 0.392 \ 0.82 \ -0.571$
 $lab^*tch = 0.5 \ 1.0 \ 0.903$
 $lab^*nch = 0.0 \ 1.0 \ 0.903$

relative Natural Colour (NC)
 $lab^*lrj = 0.392 \ 0.673 \ -0.739$
 $lab^*tce = 0.5 \ 1.0 \ 0.867$
 $lab^*nce = 0.0 \ 1.0 \ b46r$

3 step scales for constant CIELAB hue 325/360 = 0.903 (right)

UE030-7, 3 step scales for constant CIELAB hue 322/360 = 0.895 (left)

BAM-test chart UE03; Colorimetric systems MRS18 & NCS11a input: $cmv0^* \ setcmykcolor$

D65: 3 step colour scales and coordinate data for 10 hues

output: $olv^* \ setrgbcolor / w^* \ setgray$

Input: Colorimetric Reflective System MRS18

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

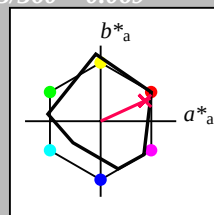
lab^*tch and lab^*nch

D65: hue R

LCH*Ma: 48 73 25

olv*Ma: 1.0 0.0 0.1

triangle lightness t^*



%Gamut

$u^*_{rel} = 91$

%Regularity

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

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

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
G50BMa	45.03	-36.57	-28.47	46.36	218
BMa	36.65	23.19	-63.05	67.18	290
B50RMa	34.94	57.17	-44.26	72.31	322
NMa	18.01	0.0	0.0	0.0	0
WMa	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

Output: Colorimetric Reflective System NCS11

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

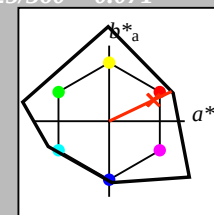
lab^*tch and lab^*nch

D65: hue R

LCH*Ma: 48 91 25

olv*Ma: 1.0 0.02 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 149$

%Regularity

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

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

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
G50BMa	59.47	-80.6	-33.45	87.28	203
BMa	49.01	3.65	-81.19	81.28	273
B50RMa	44.06	106.09	-73.93	129.32	325
NMa	10.99	0.0	0.0	0.0	0
WMa	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

relative Inform. Technology (IT)
olvi3* 1.0 0.512 0.5 (1.0)
cmyn3* 0.0 0.488 0.5 (0.0)
olvi4* 1.0 0.512 0.5 1.0
cmyn4* 0.0 0.488 0.5 0.0

standard and adapted CIELAB
LAB*LAB 71.81 41.31 19.68
LAB*LABa 71.81 41.28 19.68
LAB*TCHa 75.0 45.73 25.49

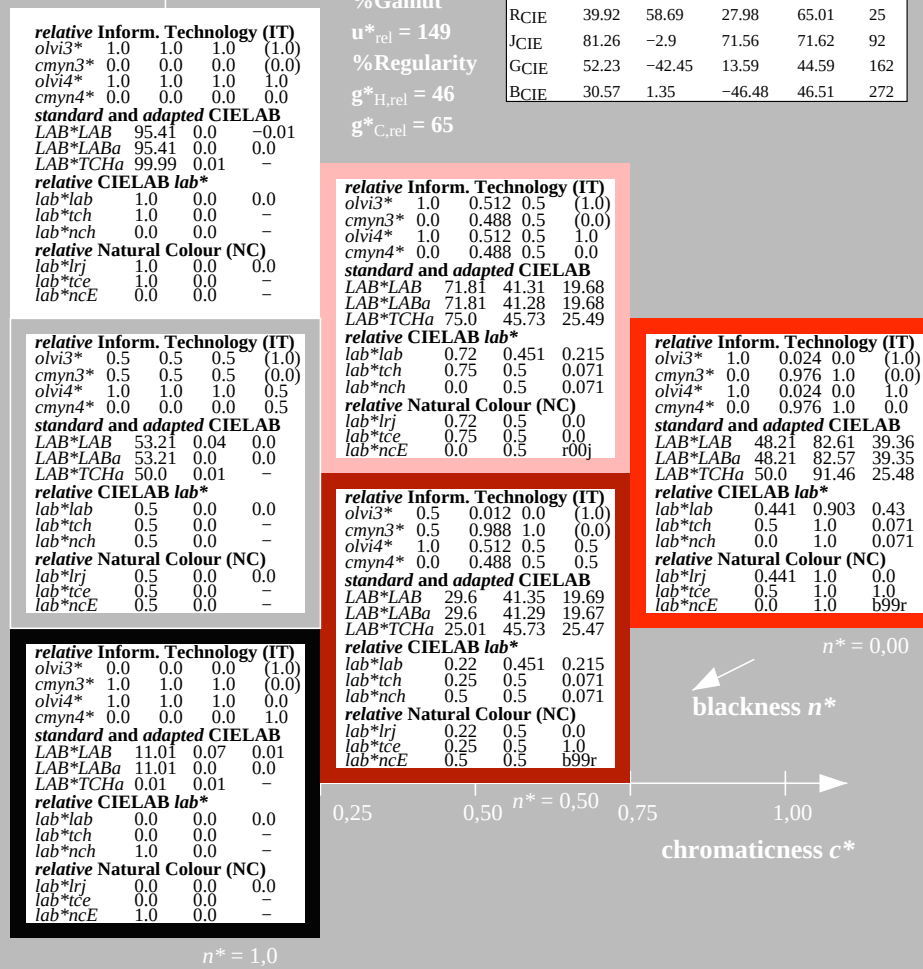
relative CIELAB lab*
lab*lab 0.72 0.451 0.215
lab*tch 0.75 0.5 0.071
lab*nch 0.0 0.5 0.071
relative Natural Colour (NC)
lab*lrj 0.72 0.5 0.0
lab*tce 0.75 0.5 0.0
lab*nce 0.0 0.5 r00j

relative Inform. Technology (IT)
olvi3* 0.5 0.012 0.0 (1.0)
cmyn3* 0.5 0.988 1.0 (0.0)
olvi4* 1.0 0.512 0.5 0.5
cmyn4* 0.0 0.488 0.5 0.5
standard and adapted CIELAB
LAB*LAB 29.6 41.35 19.69
LAB*LABa 29.6 41.29 19.67
LAB*TCHa 25.01 45.73 25.47

relative CIELAB lab*
lab*lab 0.22 0.451 0.215
lab*tch 0.25 0.5 0.071
lab*nch 0.5 0.5 0.071
relative Natural Colour (NC)
lab*lrj 0.22 0.5 0.0
lab*tce 0.25 0.5 1.0
lab*nce 0.5 0.5 b99r

relative Inform. Technology (IT)
olvi3* 1.0 0.024 0.0 (1.0)
cmyn3* 0.0 0.976 1.0 (0.0)
olvi4* 1.0 0.024 0.0 1.0
cmyn4* 0.0 0.976 1.0 0.0
standard and adapted CIELAB
LAB*LAB 48.21 82.61 39.36
LAB*LABa 48.21 82.57 39.35
LAB*TCHa 50.0 91.46 25.48

relative CIELAB lab*
lab*lab 0.441 0.903 0.43
lab*tch 0.5 1.0 0.071
lab*nch 0.0 1.0 0.071
relative Natural Colour (NC)
lab*lrj 0.441 1.0 0.0
lab*tce 0.5 1.0 1.0
lab*nce 0.0 1.0 b99r



UE030-7, 3 step scales for constant CIELAB hue 25/360 = 0.069 (left)

3 step scales for constant CIELAB hue 25/360 = 0.071 (right)

BAM-test chart UE03; Colorimetric systems MRS18 & NCS11a input: $cmY0^* setcmykcolor$

D65: 3 step colour scales and coordinate data for 10 hues

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

Input: Colorimetric Reflective System MRS18

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

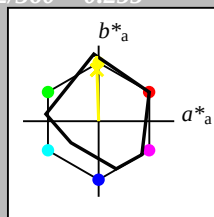
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 89 86 92

olv*Ma: 1.0 0.95 0.0

triangle lightness t^*



% Gamut

$u^*_{rel} = 91$

% Regularity

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

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

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
G50BMa	45.03	-36.57	-28.47	46.36	218
BMa	36.65	23.19	-63.05	67.18	290
B50RMa	34.94	57.17	-44.26	72.31	322
NMa	18.01	0.0	0.0	0.0	0
WMa	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

Output: Colorimetric Reflective System NCS11

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

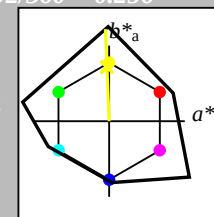
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 90 122 92

olv*Ma: 0.97 1.0 0.0

triangle lightness t^*



% Gamut

$u^*_{rel} = 149$

% Regularity

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

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

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
G50BMa	59.47	-80.6	-33.45	87.28	203
BMa	49.01	3.65	-81.19	81.28	273
B50RMa	44.06	106.09	-73.93	129.32	325
NMa	10.99	0.0	0.0	0.0	0
WMa	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

relative Inform. Technology (IT)
 $olvi3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$
 $cmyn3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 95.41 \ 0.0 \ -0.01$
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

relative CIELAB lab*
 $lab^*lab = 1.0 \ 0.0 \ 0.0$
 $lab^*tch = 1.0 \ 0.0 \ -$
 $lab^*nch = 0.0 \ 0.0 \ -$

relative Natural Colour (NC)
 $lab^*lrj = 1.0 \ 0.0 \ 0.0$
 $lab^*tce = 1.0 \ 0.0 \ -$
 $lab^*nce = 0.0 \ 0.0 \ -$

relative Inform. Technology (IT)
 $olvi3^* = 0.5 \ 0.5 \ 0.5 \ (1.0)$
 $cmyn3^* = 0.5 \ 0.5 \ 0.5 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 1.0 \ 0.5$
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 0.5$

standard and adapted CIELAB
 $LAB^*LAB = 53.21 \ 0.04 \ 0.0$
 $LAB^*LABa = 53.21 \ 0.0 \ 0.0$
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

relative CIELAB lab*
 $lab^*lab = 0.5 \ 0.0 \ 0.0$
 $lab^*tch = 0.5 \ 0.0 \ -$
 $lab^*nch = 0.5 \ 0.0 \ -$

relative Natural Colour (NC)
 $lab^*lrj = 0.5 \ 0.0 \ 0.0$
 $lab^*tce = 0.5 \ 0.0 \ -$
 $lab^*nce = 0.5 \ 0.0 \ -$

relative Inform. Technology (IT)
 $olvi3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$
 $cmyn3^* = 1.0 \ 1.0 \ 1.0 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 1.0$

standard and adapted CIELAB
 $LAB^*LAB = 11.01 \ 0.07 \ 0.01$
 $LAB^*LABa = 11.01 \ 0.0 \ 0.0$
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

relative CIELAB lab*
 $lab^*lab = 0.0 \ 0.0 \ 0.0$
 $lab^*tch = 0.0 \ 0.0 \ -$
 $lab^*nch = 1.0 \ 0.0 \ -$

relative Natural Colour (NC)
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$
 $lab^*tce = 0.0 \ 0.0 \ -$
 $lab^*nce = 1.0 \ 0.0 \ -$

relative Inform. Technology (IT)
 $olvi3^* = 0.984 \ 1.0 \ 0.5 \ (1.0)$
 $cmyn3^* = 0.016 \ 0.0 \ 0.5 \ (0.0)$
 $olvi4^* = 0.984 \ 1.0 \ 0.5 \ 1.0$
 $cmyn4^* = 0.016 \ 0.0 \ 0.5 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 92.92 \ -2.44 \ 60.89$
 $LAB^*LABa = 92.92 \ -2.46 \ 60.89$
 $LAB^*TCHa = 75.0 \ 60.94 \ 92.32$

relative CIELAB lab*
 $lab^*lab = 0.971 \ -0.019 \ 0.499$
 $lab^*tch = 0.75 \ 0.5 \ 0.256$
 $lab^*nch = 0.0 \ 0.5 \ 0.256$

relative Natural Colour (NC)
 $lab^*lrj = 0.971 \ 0.0 \ 0.5$
 $lab^*tce = 0.75 \ 0.5 \ 0.25$
 $lab^*nce = 0.0 \ 0.5 \ r99j$

relative Inform. Technology (IT)
 $olvi3^* = 0.484 \ 0.5 \ 0.0 \ (1.0)$
 $cmyn3^* = 0.516 \ 0.5 \ 1.0 \ (0.0)$
 $olvi4^* = 0.984 \ 1.0 \ 0.5 \ 0.5$
 $cmyn4^* = 0.016 \ 0.0 \ 0.5 \ 0.5$

standard and adapted CIELAB
 $LAB^*LAB = 50.72 \ -2.42 \ 60.89$
 $LAB^*LABa = 50.72 \ -2.47 \ 60.88$
 $LAB^*TCHa = 25.01 \ 60.93 \ 92.33$

relative CIELAB lab*
 $lab^*lab = 0.471 \ -0.019 \ 0.499$
 $lab^*tch = 0.25 \ 0.5 \ 0.256$
 $lab^*nch = 0.5 \ 0.5 \ 0.256$

relative Natural Colour (NC)
 $lab^*lrj = 0.471 \ 0.0 \ 0.5$
 $lab^*tce = 0.25 \ 0.5 \ 0.25$
 $lab^*nce = 0.5 \ 0.5 \ r00g$

relative Inform. Technology (IT)
 $olvi3^* = 0.967 \ 1.0 \ 0.0 \ (1.0)$
 $cmyn3^* = 0.033 \ 0.0 \ 1.0 \ (0.0)$
 $olvi4^* = 0.968 \ 1.0 \ 0.0 \ 1.0$
 $cmyn4^* = 0.032 \ 0.0 \ 1.0 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 90.45 \ -4.92 \ 121.77$
 $LAB^*LABa = 90.45 \ -4.93 \ 121.77$
 $LAB^*TCHa = 50.0 \ 121.87 \ 92.32$

relative CIELAB lab*
 $lab^*lab = 0.941 \ -0.04 \ 0.999$
 $lab^*tch = 0.5 \ 1.0 \ 0.256$
 $lab^*nch = 0.0 \ 1.0 \ 0.256$

relative Natural Colour (NC)
 $lab^*lrj = 0.941 \ 0.0 \ 1.0$
 $lab^*tce = 0.5 \ 1.0 \ 0.25$
 $lab^*nce = 0.0 \ 1.0 \ r99j$

BAM-test chart UE03; Colorimetric systems MRS18 & NCS11a input: $cmY0^* \ setcmykcolor$

D65: 3 step colour scales and coordinate data for 10 hues

output: $olv^* \ setrgbcolor / w^* \ setgray$

Input: Colorimetric Reflective System MRS18

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

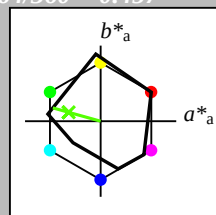
lab^*tch and lab^*nch

D65: hue G

LCH*Ma: 56 66 164

olv*Ma: 0.1 1.0 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 91$

%Regularity

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

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

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
G50BMa	45.03	-36.57	-28.47	46.36	218
BMa	36.65	23.19	-63.05	67.18	290
B50RMa	34.94	57.17	-44.26	72.31	322
NMa	18.01	0.0	0.0	0.0	0
WMa	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

Output: Colorimetric Reflective System NCS11

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

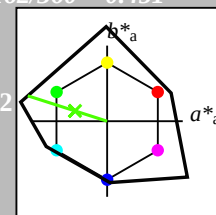
lab^*tch and lab^*nch

D65: hue G

LCH*Ma: 65 110 162

olv*Ma: 0.08 1.0 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 149$

%Regularity

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

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

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
G50BMa	59.47	-80.6	-33.45	87.28	203
BMa	49.01	3.65	-81.19	81.28	273
B50RMa	44.06	106.09	-73.93	129.32	325
NMa	10.99	0.0	0.0	0.0	0
WMa	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

relative Inform. Technology (IT)
 $olvi3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$
 $cmyn3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 95.41 \ 0.0 \ -0.01$
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

relative CIELAB lab*
 $lab^*lab = 1.0 \ 0.0 \ 0.0$
 $lab^*tch = 1.0 \ 0.0 \ -$
 $lab^*nch = 0.0 \ 0.0 \ -$

relative Natural Colour (NC)
 $lab^*lrj = 1.0 \ 0.0 \ 0.0$
 $lab^*tce = 1.0 \ 0.0 \ -$
 $lab^*nce = 0.0 \ 0.0 \ -$

relative Inform. Technology (IT)
 $olvi3^* = 0.5 \ 0.5 \ 0.5 \ (1.0)$
 $cmyn3^* = 0.5 \ 0.5 \ 0.5 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 1.0 \ 0.5$
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 0.5$

standard and adapted CIELAB
 $LAB^*LAB = 53.21 \ 0.04 \ 0.0$
 $LAB^*LABa = 53.21 \ 0.0 \ 0.0$
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

relative CIELAB lab*
 $lab^*lab = 0.5 \ 0.0 \ 0.0$
 $lab^*tch = 0.5 \ 0.0 \ -$
 $lab^*nch = 0.5 \ 0.0 \ -$

relative Natural Colour (NC)
 $lab^*lrj = 0.5 \ 0.0 \ 0.0$
 $lab^*tce = 0.5 \ 0.0 \ -$
 $lab^*nce = 0.5 \ 0.0 \ -$

relative Inform. Technology (IT)
 $olvi3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$
 $cmyn3^* = 1.0 \ 1.0 \ 1.0 \ (0.0)$
 $olvi4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 1.0$

standard and adapted CIELAB
 $LAB^*LAB = 11.01 \ 0.07 \ 0.01$
 $LAB^*LABa = 11.01 \ 0.0 \ 0.0$
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

relative CIELAB lab*
 $lab^*lab = 0.0 \ 0.0 \ 0.0$
 $lab^*tch = 0.0 \ 0.0 \ -$
 $lab^*nch = 1.0 \ 0.0 \ -$

relative Natural Colour (NC)
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$
 $lab^*tce = 0.0 \ 0.0 \ -$
 $lab^*nce = 1.0 \ 0.0 \ -$

relative Inform. Technology (IT)
 $olvi3^* = 0.541 \ 1.0 \ 0.5 \ (1.0)$
 $cmyn3^* = 0.459 \ 0.0 \ 0.5 \ (0.0)$
 $olvi4^* = 0.541 \ 1.0 \ 0.5 \ 1.0$
 $cmyn4^* = 0.459 \ 0.0 \ 0.5 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 80.4 \ -52.43 \ 16.79$
 $LAB^*LABa = 80.4 \ -52.45 \ 16.79$
 $LAB^*TCHa = 75.0 \ 55.08 \ 162.25$

relative CIELAB lab*
 $lab^*lab = 0.822 \ -0.475 \ 0.152$
 $lab^*tch = 0.75 \ 0.5 \ 0.451$
 $lab^*nch = 0.0 \ 0.5 \ 0.451$

relative Natural Colour (NC)
 $lab^*lrj = 0.822 \ -0.499 \ 0.0$
 $lab^*tce = 0.75 \ 0.5 \ 0.5$
 $lab^*nce = 0.0 \ 0.5 \ j99g$

relative Inform. Technology (IT)
 $olvi3^* = 0.041 \ 0.5 \ 0.0 \ (1.0)$
 $cmyn3^* = 0.959 \ 0.5 \ 1.0 \ (0.0)$
 $olvi4^* = 0.541 \ 1.0 \ 0.5 \ 0.5$
 $cmyn4^* = 0.459 \ 0.0 \ 0.5 \ 0.5$

standard and adapted CIELAB
 $LAB^*LAB = 38.2 \ -52.41 \ 16.8$
 $LAB^*LABa = 38.2 \ -52.46 \ 16.78$
 $LAB^*TCHa = 25.01 \ 55.09 \ 162.27$

relative CIELAB lab*
 $lab^*lab = 0.322 \ -0.475 \ 0.152$
 $lab^*tch = 0.25 \ 0.5 \ 0.451$
 $lab^*nch = 0.5 \ 0.5 \ 0.451$

relative Natural Colour (NC)
 $lab^*lrj = 0.322 \ -0.499 \ 0.0$
 $lab^*tce = 0.25 \ 0.5 \ 0.5$
 $lab^*nce = 0.5 \ 0.5 \ g00b$

relative Inform. Technology (IT)
 $olvi3^* = 0.083 \ 1.0 \ 0.0 \ (1.0)$
 $cmyn3^* = 0.917 \ 0.0 \ 1.0 \ (0.0)$
 $olvi4^* = 0.083 \ 1.0 \ 0.0 \ 1.0$
 $cmyn4^* = 0.917 \ 0.0 \ 1.0 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 65.41 \ -104.893 \ 58$
 $LAB^*LABa = 65.41 \ -104.923 \ 57$
 $LAB^*TCHa = 50.0 \ 110.17 \ 162.26$

relative CIELAB lab*
 $lab^*lab = 0.645 \ -0.951 \ 0.305$
 $lab^*tch = 0.5 \ 1.0 \ 0.451$
 $lab^*nch = 0.0 \ 1.0 \ 0.451$

relative Natural Colour (NC)
 $lab^*lrj = 0.645 \ -0.999 \ 0.0$
 $lab^*tce = 0.5 \ 1.0 \ 0.5$
 $lab^*nce = 0.0 \ 1.0 \ g00b$

Input: Colorimetric Reflective System MRS18

for hue $h^* = lab^*h = 271/360 = 0.754$

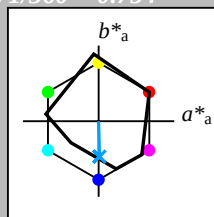
lab^*tch and lab^*nch

D65: hue B

LCH*Ma: 40 50 271

olv*Ma: 0.0 0.37 1.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 91$

%Regularity

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

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

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
G50BMa	45.03	-36.57	-28.47	46.36	218
BMa	36.65	23.19	-63.05	67.18	290
B50RMa	34.94	57.17	-44.26	72.31	322
NMa	18.01	0.0	0.0	0.0	0
WMa	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

Output: Colorimetric Reflective System NCS11

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

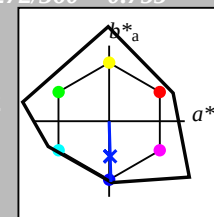
lab^*tch and lab^*nch

D65: hue B

LCH*Ma: 49 80 272

olv*Ma: 0.0 0.02 1.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 149$

%Regularity

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

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

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
G50BMa	59.47	-80.6	-33.45	87.28	203
BMa	49.01	3.65	-81.19	81.28	273
B50RMa	44.06	106.09	-73.93	129.32	325
NMa	10.99	0.0	0.0	0.0	0
WMa	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

relative Inform. Technology (IT)
olvi3* 1.0 1.0 1.0 (1.0)
cmyn3* 0.0 0.0 0.0 (0.0)
olvi4* 1.0 1.0 1.0 1.0
cmyn4* 0.0 0.0 0.0 0.0

standard and adapted CIELAB
LAB*LAB 95.41 0.0 -0.01
LAB*LABa 95.41 0.0 0.0
LAB*TCHa 99.99 0.01 -

relative CIELAB lab*
lab*lab 1.0 0.0 0.0
lab*tch 1.0 0.0 -
lab*nch 0.0 0.0 -

relative Natural Colour (NC)
lab*lrj 1.0 0.0 0.0
lab*tce 1.0 0.0 -
lab*nce 0.0 0.0 -

relative Inform. Technology (IT)
olvi3* 0.5 0.5 0.5 (1.0)
cmyn3* 0.5 0.5 0.5 (0.0)
olvi4* 1.0 1.0 1.0 0.5
cmyn4* 0.0 0.0 0.0 0.5

standard and adapted CIELAB
LAB*LAB 53.21 0.04 0.0
LAB*LABa 53.21 0.0 0.0
LAB*TCHa 50.0 0.01 -

relative CIELAB lab*
lab*lab 0.5 0.0 0.0
lab*tch 0.5 0.0 -
lab*nch 0.5 0.0 -

relative Natural Colour (NC)
lab*lrj 0.5 0.0 0.0
lab*tce 0.5 0.0 -
lab*nce 0.5 0.0 -

relative Inform. Technology (IT)
olvi3* 0.0 0.0 0.0 (1.0)
cmyn3* 1.0 1.0 1.0 (0.0)
olvi4* 1.0 1.0 1.0 0.0
cmyn4* 0.0 0.0 0.0 1.0

standard and adapted CIELAB
LAB*LAB 11.01 0.07 0.01
LAB*LABa 11.01 0.0 0.0
LAB*TCHa 0.01 0.01 -

relative CIELAB lab*
lab*lab 0.0 0.0 0.0
lab*tch 0.0 0.0 -
lab*nch 1.0 0.0 -

relative Natural Colour (NC)
lab*lrj 0.0 0.0 0.0
lab*tce 0.0 0.0 -
lab*nce 1.0 0.0 -

relative Inform. Technology (IT)
olvi3* 0.5 0.508 1.0 (1.0)
cmyn3* 0.5 0.492 0.0 (0.0)
olvi4* 0.5 0.508 1.0 1.0
cmyn4* 0.5 0.492 0.0 0.0

standard and adapted CIELAB
LAB*LAB 72.29 1.2 -40.21
LAB*LABa 72.29 1.17 -40.21
LAB*TCHa 75.0 40.24 271.66

relative CIELAB lab*
lab*lab 0.726 0.014 -0.499
lab*tch 0.75 0.5 0.755
lab*nch 0.0 0.5 0.755

relative Natural Colour (NC)
lab*lrj 0.726 0.0 -0.499
lab*tce 0.75 0.5 0.75
lab*nce 0.0 0.5 0.755

relative Inform. Technology (IT)
olvi3* 0.0 0.008 0.5 (1.0)
cmyn3* 1.0 0.992 0.5 (0.0)
olvi4* 0.5 0.508 1.0 0.5
cmyn4* 0.5 0.492 0.0 0.5

standard and adapted CIELAB
LAB*LAB 30.09 1.24 -40.2
LAB*LABa 30.09 1.18 -40.21
LAB*TCHa 25.01 40.24 271.67

relative CIELAB lab*
lab*lab 0.226 0.015 -0.499
lab*tch 0.25 0.5 0.755
lab*nch 0.5 0.5 0.755

relative Natural Colour (NC)
lab*lrj 0.226 0.0 -0.499
lab*tce 0.25 0.5 0.75
lab*nce 0.5 0.5 0.755

relative Inform. Technology (IT)
olvi3* 0.0 0.016 1.0 (1.0)
cmyn3* 1.0 0.984 0.0 (0.0)
olvi4* 0.0 0.016 1.0 1.0
cmyn4* 1.0 0.984 0.0 0.0

standard and adapted CIELAB
LAB*LAB 49.18 2.39 -80.42
LAB*LABa 49.18 2.34 -80.43
LAB*TCHa 50.0 80.48 271.67

relative CIELAB lab*
lab*lab 0.452 0.029 -0.998
lab*tch 0.5 1.0 0.755
lab*nch 0.0 1.0 0.755

relative Natural Colour (NC)
lab*lrj 0.452 0.0 -0.999
lab*tce 0.5 1.0 0.75
lab*nce 0.0 1.0 0.755

3 step scales for constant CIELAB hue 272/360 = 0.755 (right)

BAM-test chart UE03; Colorimetric systems MRS18 & NCS11a input: $cmv0^* setcmykcolor$

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

D65: 3 step colour scales and coordinate data for 10 hues