

Input: Colorimetric Reflective System NCS11

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

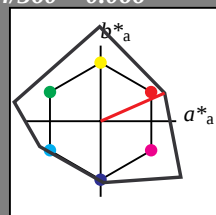
lab^*tch and lab^*nch

D65: hue R

LCH*Ma: 47 92 24

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

Output: Colorimetric Reflective System MRS18

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

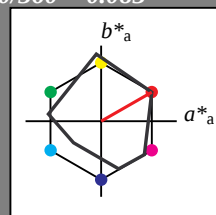
lab^*tch and lab^*nch

D65: hue R

LCH*Ma: 50 77 30

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

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
 $LAB^*LAB = 95.41$ -0.97 4.75
 $LAB^*LABa = 95.41$ 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
 $LAB^*LAB = 56.71$ -0.23 2.14
 $LAB^*LABa = 56.71$ 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
 $LAB^*LAB = 18.02$ 0.5 -0.46
 $LAB^*LABa = 18.02$ 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
 $LAB^*LAB = 72.52$ 32.93 22.4
 $LAB^*LABa = 72.52$ 33.47 19.18
 $LAB^*TCHa = 75.0$ 38.58 29.82

relative CIELAB lab*
 $lab^*lab = 0.704$ 0.434 0.249
 $lab^*tch = 0.75$ 0.5 0.083
 $lab^*nch = 0.0$ 0.5 0.083

relative Natural Colour (NC)
 $lab^*lrj = 0.704$ 0.496 0.06
 $lab^*tce = 0.75$ 0.5 0.019
 $lab^*nce = 0.0$ 0.5 0.07]

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
 $LAB^*LAB = 33.82$ 33.67 19.79
 $LAB^*LABa = 33.82$ 33.47 19.18
 $LAB^*TCHa = 25.01$ 38.58 29.82

relative CIELAB lab*
 $lab^*lab = 0.204$ 0.434 0.249
 $lab^*tch = 0.25$ 0.5 0.083
 $lab^*nch = 0.5$ 0.5 0.083

relative Natural Colour (NC)
 $lab^*lrj = 0.204$ 0.496 0.06
 $lab^*tce = 0.25$ 0.5 0.019
 $lab^*nce = 0.5$ 0.5 0.07]

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
 $LAB^*LAB = 49.63$ 66.84 40.03
 $LAB^*LABa = 49.63$ 66.95 38.36
 $LAB^*TCHa = 50.0$ 77.16 29.82

relative CIELAB lab*
 $lab^*lab = 0.409$ 0.867 0.497
 $lab^*tch = 0.5$ 1.0 0.083
 $lab^*nch = 0.0$ 1.0 0.083

relative Natural Colour (NC)
 $lab^*lrj = 0.409$ 0.993 0.119
 $lab^*tce = 0.5$ 1.0 0.019
 $lab^*nce = 0.0$ 1.0 0.07]

$n^* = 0.00$

blackness n^*

0,25 0,50 $n^* = 0.50$ 0,75 1,00
chromaticness c^*

$n^* = 1.0$

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

BAM-test chart UE08; Colorimetric systems NCS11a & MRS18 input: $cmv0^* setcmykcolor$

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

output: no change compared to input

Input: Colorimetric Reflective System NCS11

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

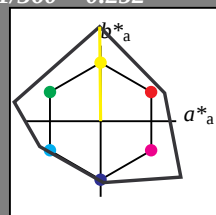
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 91 125 91

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

Output: Colorimetric Reflective System MRS18

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

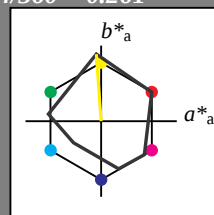
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 91 89 94

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

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
 $LAB^*LAB = 95.41 \ -0.97 \ 4.75$
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

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
 $LAB^*LAB = 56.71 \ -0.23 \ 2.14$
 $LAB^*LABa = 56.71 \ 0.0 \ 0.0$
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

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
 $LAB^*LAB = 18.02 \ 0.5 \ -0.46$
 $LAB^*LABa = 18.02 \ 0.0 \ 0.0$
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

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
 $LAB^*LAB = 93.05 \ -4.11 \ 48.97$
 $LAB^*LABa = 93.05 \ -3.17 \ 44.37$
 $LAB^*TCHa = 75.0 \ 44.48 \ 94.1$

relative CIELAB lab*
 $lab^*lab = 0.969 \ -0.035 \ 0.499$
 $lab^*tch = 0.75 \ 0.5 \ 0.261$
 $lab^*nch = 0.0 \ 0.5 \ 0.261$
relative Natural Colour (NC)
 $lab^*lrj = 0.969 \ -0.023 \ 0.499$
 $lab^*tce = 0.75 \ 0.5 \ 0.258$
 $lab^*nce = 0.0 \ 0.5 \ j03g$

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
 $LAB^*LAB = 54.35 \ -3.37 \ 46.36$
 $LAB^*LABa = 54.35 \ -3.17 \ 44.37$
 $LAB^*TCHa = 25.01 \ 44.48 \ 94.1$

relative CIELAB lab*
 $lab^*lab = 0.47 \ -0.035 \ 0.499$
 $lab^*tch = 0.25 \ 0.5 \ 0.261$
 $lab^*nch = 0.5 \ 0.5 \ 0.261$
relative Natural Colour (NC)
 $lab^*lrj = 0.47 \ -0.023 \ 0.499$
 $lab^*tce = 0.25 \ 0.5 \ 0.258$
 $lab^*nce = 0.5 \ 0.5 \ j03g$

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
 $LAB^*LAB = 90.69 \ -7.25 \ 93.17$
 $LAB^*LABa = 90.69 \ -6.36 \ 88.73$
 $LAB^*TCHa = 50.0 \ 88.96 \ 94.1$

relative CIELAB lab*
 $lab^*lab = 0.939 \ -0.071 \ 0.997$
 $lab^*tch = 0.5 \ 1.0 \ 0.261$
 $lab^*nch = 0.0 \ 1.0 \ 0.261$
relative Natural Colour (NC)
 $lab^*lrj = 0.939 \ -0.048 \ 0.999$
 $lab^*tce = 0.5 \ 1.0 \ 0.258$
 $lab^*nce = 0.0 \ 1.0 \ j03g$

Input: Colorimetric Reflective System NCS11

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

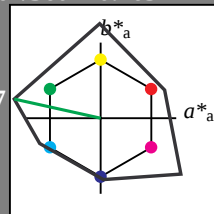
lab^*tch and lab^*nch

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

Output: Colorimetric Reflective System MRS18

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

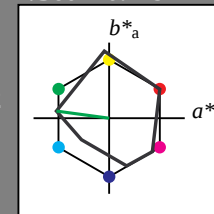
lab^*tch and lab^*nch

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

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
 $LAB^*LAB = 95.41$ -0.97 4.75
 $LAB^*LABa = 95.41$ 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
 $LAB^*LAB = 56.71$ -0.23 2.14
 $LAB^*LABa = 56.71$ 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
 $LAB^*LAB = 18.02$ 0.5 -0.46
 $LAB^*LABa = 18.02$ 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
 $LAB^*LAB = 73.75$ -35.42 8.02
 $LAB^*LABa = 73.75$ -34.85 4.72
 $LAB^*TCHa = 75.0$ 35.18 172.29

relative CIELAB lab^*
 $lab^*lab = 0.72$ -0.494 0.067
 $lab^*tch = 0.75$ 0.5 0.479
 $lab^*nch = 0.0$ 0.5 0.479

relative Natural Colour (NC)
 $lab^*lrj = 0.72$ -0.496 -0.056
 $lab^*tce = 0.75$ 0.5 0.518
 $lab^*nce = 0.0$ 0.5 g07b

relative Inform. Technology (IT)
 $olvi3^* = 0.0$ 0.5 0.0 (1.0)
 $cmyn3^* = 0.5$ 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
 $LAB^*LAB = 35.06$ -34.67 5.41
 $LAB^*LABa = 35.06$ -34.85 4.72
 $LAB^*TCHa = 25.01$ 35.18 172.29

relative CIELAB lab^*
 $lab^*lab = 0.22$ -0.494 0.067
 $lab^*tch = 0.25$ 0.5 0.479
 $lab^*nch = 0.5$ 0.5 0.479

relative Natural Colour (NC)
 $lab^*lrj = 0.22$ -0.496 -0.056
 $lab^*tce = 0.25$ 0.5 0.518
 $lab^*nce = 0.5$ 0.5 g07b

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
 $LAB^*LAB = 52.11$ -69.86 11.28
 $LAB^*LABa = 52.11$ -69.71 9.44
 $LAB^*TCHa = 50.0$ 70.36 172.29

relative CIELAB lab^*
 $lab^*lab = 0.441$ -0.99 0.134
 $lab^*tch = 0.5$ 1.0 0.479
 $lab^*nch = 0.0$ 1.0 0.479

relative Natural Colour (NC)
 $lab^*lrj = 0.441$ -0.992 -0.114
 $lab^*tce = 0.5$ 1.0 0.518
 $lab^*nce = 0.0$ 1.0 g07b

Input: Colorimetric Reflective System NCS11

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

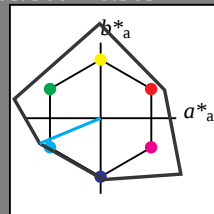
lab^*tch and lab^*nch

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	

Output: Colorimetric Reflective System MRS18

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

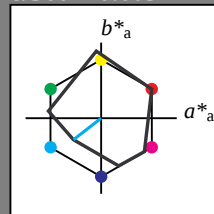
lab^*tch and lab^*nch

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	

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
 $LAB^*LAB = 95.41 \ -0.97 \ 4.75$
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

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
 $LAB^*LAB = 56.71 \ -0.23 \ 2.14$
 $LAB^*LABa = 56.71 \ 0.0 \ 0.0$
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

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
 $LAB^*LAB = 18.02 \ 0.5 \ -0.46$
 $LAB^*LABa = 18.02 \ 0.0 \ 0.0$
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

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)
 $olvi3^* = 0.5 \ 1.0 \ 1.0 \ (1.0)$
 $cmyn3^* = 0.5 \ 0.0 \ 0.0 \ (0.0)$
 $olvi4^* = 0.5 \ 1.0 \ 1.0 \ 1.0$
 $cmyn4^* = 0.5 \ 0.0 \ 0.0 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 70.21 \ -18.77 \ -11.17$
 $LAB^*LABa = 70.21 \ -18.27 \ -14.23$
 $LAB^*TCHa = 75.0 \ 23.17 \ 217.91$

relative CIELAB lab*
 $lab^*lab = 0.674 \ -0.393 \ -0.306$
 $lab^*tch = 0.75 \ 0.5 \ 0.605$
 $lab^*nch = 0.0 \ 0.5 \ 0.605$

relative Natural Colour (NC)
 $lab^*lrj = 0.674 \ -0.353 \ -0.352$
 $lab^*tce = 0.75 \ 0.5 \ 0.625$
 $lab^*nce = 0.0 \ 0.5 \ g49b$

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
 $LAB^*LAB = 31.52 \ -18.03 \ -13.78$
 $LAB^*LABa = 31.52 \ -18.27 \ -14.23$
 $LAB^*TCHa = 25.01 \ 23.17 \ 217.91$

relative CIELAB lab*
 $lab^*lab = 0.175 \ -0.393 \ -0.306$
 $lab^*tch = 0.25 \ 0.5 \ 0.605$
 $lab^*nch = 0.5 \ 0.5 \ 0.605$

relative Natural Colour (NC)
 $lab^*lrj = 0.175 \ -0.353 \ -0.352$
 $lab^*tce = 0.25 \ 0.5 \ 0.625$
 $lab^*nce = 0.5 \ 0.5 \ g49b$

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
 $LAB^*LAB = 45.03 \ -36.57 \ -27.11$
 $LAB^*LABa = 45.03 \ -36.56 \ -28.47$
 $LAB^*TCHa = 50.0 \ 46.35 \ 217.91$

relative CIELAB lab*
 $lab^*lab = 0.349 \ -0.788 \ -0.613$
 $lab^*tch = 0.5 \ 1.0 \ 0.605$
 $lab^*nch = 0.0 \ 1.0 \ 0.605$

relative Natural Colour (NC)
 $lab^*lrj = 0.349 \ -0.706 \ -0.706$
 $lab^*tce = 0.5 \ 1.0 \ 0.625$
 $lab^*nce = 0.0 \ 1.0 \ g49b$

See for similar files: <http://www.ps.bam.de/UE08/>
Technical information: <http://www.ps.bam.de> Version 2.1, io=0.0

BAM registration: 20060101-UE08/10Q/Q08E03NP.PS/.PDF BAM material: code=rh4ta
application for evaluation and measurement of printer or monitor systems
/UE08/ Form: 4/10, Serie: 1/1, Page: 4 Page count: 4

UE080-7, 3 step scales for constant CIELAB hue 203/360 = 0.563 (left)

3 step scales for constant CIELAB hue 218/360 = 0.605 (right)

BAM-test chart UE08; Colorimetric systems NCS11a & MRS18 input: $cmv0^* setcmykcolor$

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

output: no change compared to input

Input: Colorimetric Reflective System NCS11

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

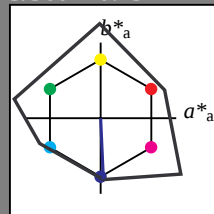
lab^*tch and lab^*nch

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

Output: Colorimetric Reflective System MRS18

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

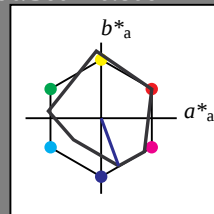
lab^*tch and lab^*nch

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

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
 $LAB^*LAB = 95.41 \ -0.97 \ 4.75$
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

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
 $LAB^*LAB = 56.71 \ -0.23 \ 2.14$
 $LAB^*LABa = 56.71 \ 0.0 \ 0.0$
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

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
 $LAB^*LAB = 18.02 \ 0.5 \ -0.46$
 $LAB^*LABa = 18.02 \ 0.0 \ 0.0$
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

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
 $LAB^*LAB = 66.03 \ 11.17 \ -28.74$
 $LAB^*LABa = 66.03 \ 11.59 \ -31.51$
 $LAB^*TCHa = 75.0 \ 33.59 \ 290.19$

relative CIELAB lab^*
 $lab^*lab = 0.62 \ 0.173 \ -0.468$
 $lab^*tch = 0.75 \ 0.5 \ 0.806$
 $lab^*nch = 0.0 \ 0.5 \ 0.806$

relative Natural Colour (NC)
 $lab^*lrj = 0.62 \ 0.129 \ -0.482$
 $lab^*tce = 0.75 \ 0.5 \ 0.791$
 $lab^*nce = 0.0 \ 0.5 \ b16r$

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
 $LAB^*LAB = 27.34 \ 11.92 \ -31.35$
 $LAB^*LABa = 27.34 \ 11.59 \ -31.51$
 $LAB^*TCHa = 25.01 \ 33.59 \ 290.19$

relative CIELAB lab^*
 $lab^*lab = 0.12 \ 0.173 \ -0.468$
 $lab^*tch = 0.25 \ 0.5 \ 0.806$
 $lab^*nch = 0.5 \ 0.5 \ 0.806$

relative Natural Colour (NC)
 $lab^*lrj = 0.12 \ 0.129 \ -0.482$
 $lab^*tce = 0.25 \ 0.5 \ 0.791$
 $lab^*nce = 0.5 \ 0.5 \ b16r$

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
 $LAB^*LAB = 36.65 \ 23.33 \ -62.24$
 $LAB^*LABa = 36.65 \ 23.18 \ -63.03$
 $LAB^*TCHa = 50.0 \ 67.17 \ 290.19$

relative CIELAB lab^*
 $lab^*lab = 0.241 \ 0.345 \ -0.937$
 $lab^*tch = 0.5 \ 1.0 \ 0.806$
 $lab^*nch = 0.0 \ 1.0 \ 0.806$

relative Natural Colour (NC)
 $lab^*lrj = 0.241 \ 0.257 \ -0.965$
 $lab^*tce = 0.5 \ 1.0 \ 0.791$
 $lab^*nce = 0.0 \ 1.0 \ b16r$

$n^* = 0.00$

blackness n^*

0.25 0.50 $n^* = 0.50$ 0.75 1.00

chromaticness c^*

$n^* = 1.0$

UE080-7, 3 step scales for constant CIELAB hue 273/360 = 0.757 (left)

3 step scales for constant CIELAB hue 290/360 = 0.806 (right)

BAM-test chart UE08; Colorimetric systems NCS11a & MRS18 input: $cmv0^* setcmykcolor$

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

output: no change compared to input

Input: Colorimetric Reflective System NCS11

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

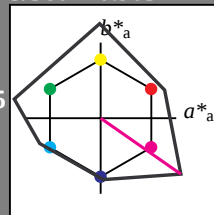
lab^*tch and lab^*nch

D65: hue B50R

LCH*Ma: 44 129 325

olv*Ma: 1.0 0.0 1.0

triangle lightness t^*



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

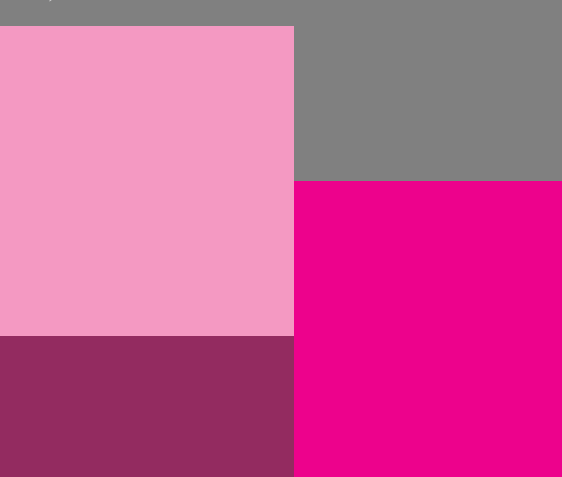
%Gamut

$u^*_{rel} = 149$

%Regularity

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

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



$n^* = 0,00$

blackness n^*

chromaticness c^*

$n^* = 1,0$

Output: Colorimetric Reflective System MRS18

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

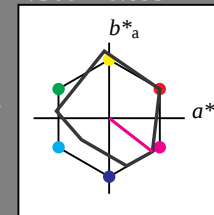
lab^*tch and lab^*nch

D65: hue B50R

LCH*Ma: 35 72 322

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

relative Inform. Technology (IT)	lab^*lab	lab^*tch	lab^*nch
olvi3*	1.0	0.5	1.0
cmyn3*	0.0	0.5	0.0
olvi4*	1.0	0.5	1.0
cmyn4*	0.0	0.5	0.0

standard and adapted CIELAB	LAB^*LAB	LAB^*LABa	LAB^*TCHa
LAB^*LAB	65.17	28.18	-19.4
LAB^*LABa	65.17	28.58	-22.12
LAB^*TCHa	75.0	36.15	322.25

relative Inform. Technology (IT)	lab^*lab	lab^*tch	lab^*nch
olvi3*	0.5	0.0	0.5
cmyn3*	0.5	1.0	0.5
olvi4*	1.0	0.5	1.0
cmyn4*	0.0	0.5	0.0

standard and adapted CIELAB	LAB^*LAB	LAB^*LABa	LAB^*TCHa
LAB^*LAB	26.48	28.92	-22.01
LAB^*LABa	26.48	28.58	-22.12
LAB^*TCHa	25.01	36.15	322.25

relative Inform. Technology (IT)	lab^*lab	lab^*tch	lab^*nch
olvi3*	0.5	0.0	0.5
cmyn3*	0.5	1.0	0.5
olvi4*	1.0	0.5	1.0
cmyn4*	0.0	0.5	0.0

standard and adapted CIELAB	LAB^*LAB	LAB^*LABa	LAB^*TCHa
LAB^*LAB	18.02	0.5	-0.46
LAB^*LABa	18.02	0.0	0.0
LAB^*TCHa	0.01	0.01	-

relative Inform. Technology (IT)	lab^*lab	lab^*tch	lab^*nch
olvi3*	1.0	0.0	1.0
cmyn3*	0.0	1.0	0.0
olvi4*	1.0	0.0	1.0
cmyn4*	0.0	1.0	0.0

standard and adapted CIELAB	LAB^*LAB	LAB^*LABa	LAB^*TCHa
LAB^*LAB	34.95	57.34	-43.57
LAB^*LABa	34.95	57.16	-44.25
LAB^*TCHa	50.0	72.29	322.25

relative Inform. Technology (IT)	lab^*lab	lab^*tch	lab^*nch
olvi3*	0.219	0.791	-0.611
cmyn3*	0.5	1.0	0.895
olvi4*	1.0	0.0	0.895
cmyn4*	0.0	1.0	0.0

standard and adapted CIELAB	LAB^*LAB	LAB^*LABa	LAB^*TCHa
LAB^*LAB	0.219	0.648	-0.76
LAB^*LABa	0.5	1.0	0.862
LAB^*TCHa	0.0	1.0	b44r

$n^* = 0,00$

blackness n^*

chromaticness c^*

$n^* = 1,0$

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

UE080-7, 3 step scales for constant CIELAB hue 325/360 = 0.903 (left)

BAM-test chart UE08; Colorimetric systems NCS11a & MRS18 input: $cmv0^* setcmykcolor$

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

output: no change compared to input

Input: Colorimetric Reflective System NCS11

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

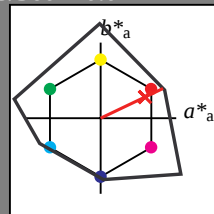
lab^*tch and lab^*nch

D65: hue R

LCH*Ma: 48 91 25

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

Output: Colorimetric Reflective System MRS18

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

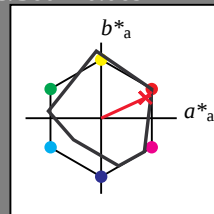
lab^*tch and lab^*nch

D65: hue R

LCH*Ma: 48 73 25

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

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
 $LAB^*LAB = 95.41 \ -0.97 \ 4.75$
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

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
 $LAB^*LAB = 56.71 \ -0.23 \ 2.14$
 $LAB^*LABa = 56.71 \ 0.0 \ 0.0$
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

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
 $LAB^*LAB = 18.02 \ 0.5 \ -0.46$
 $LAB^*LABa = 18.02 \ 0.0 \ 0.0$
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

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)
 $olvi3^* = 1.0 \ 0.5 \ 0.548 \ (1.0)$
 $cmyn3^* = 0.0 \ 0.5 \ 0.452 \ (0.0)$
 $olvi4^* = 1.0 \ 0.5 \ 0.549 \ 1.0$
 $cmyn4^* = 0.0 \ 0.5 \ 0.451 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 71.8 \ 32.47 \ 18.34$
 $LAB^*LABa = 71.8 \ 33.0 \ 15.17$
 $LAB^*TCHa = 75.0 \ 36.32 \ 24.7$

relative CIELAB lab*
 $lab^*lab = 0.695 \ 0.454 \ 0.209$
 $lab^*tch = 0.75 \ 0.5 \ 0.069$
 $lab^*nch = 0.0 \ 0.5 \ 0.069$

relative Natural Colour (NC)
 $lab^*lrj = 0.695 \ 0.5 \ 0.0$
 $lab^*tce = 0.75 \ 0.5 \ 1.0$
 $lab^*nce = 0.0 \ 0.5 \ 0.99r$

relative Inform. Technology (IT)
 $olvi3^* = 0.5 \ 0.0 \ 0.048 \ (1.0)$
 $cmyn3^* = 0.5 \ 1.0 \ 0.952 \ (0.0)$
 $olvi4^* = 1.0 \ 0.5 \ 0.548 \ 0.5$
 $cmyn4^* = 0.0 \ 0.5 \ 0.452 \ 0.5$

standard and adapted CIELAB
 $LAB^*LAB = 33.11 \ 33.21 \ 15.74$
 $LAB^*LABa = 33.11 \ 33.0 \ 15.18$
 $LAB^*TCHa = 25.01 \ 36.33 \ 24.71$

relative CIELAB lab*
 $lab^*lab = 0.195 \ 0.454 \ 0.209$
 $lab^*tch = 0.25 \ 0.5 \ 0.069$
 $lab^*nch = 0.5 \ 0.5 \ 0.069$

relative Natural Colour (NC)
 $lab^*lrj = 0.195 \ 0.5 \ 0.0$
 $lab^*tce = 0.25 \ 0.5 \ 0.0$
 $lab^*nce = 0.5 \ 0.5 \ 0.00j$

relative Inform. Technology (IT)
 $olvi3^* = 1.0 \ 0.0 \ 0.097 \ (1.0)$
 $cmyn3^* = 0.0 \ 1.0 \ 0.903 \ (0.0)$
 $olvi4^* = 1.0 \ 0.0 \ 0.097 \ 1.0$
 $cmyn4^* = 0.0 \ 1.0 \ 0.903 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 48.21 \ 65.92 \ 31.93$
 $LAB^*LABa = 48.21 \ 66.0 \ 30.36$
 $LAB^*TCHa = 50.0 \ 72.65 \ 24.7$

relative CIELAB lab*
 $lab^*lab = 0.39 \ 0.908 \ 0.418$
 $lab^*tch = 0.5 \ 1.0 \ 0.069$
 $lab^*nch = 0.0 \ 1.0 \ 0.069$

relative Natural Colour (NC)
 $lab^*lrj = 0.39 \ 1.0 \ 0.0$
 $lab^*tce = 0.5 \ 1.0 \ 0.0$
 $lab^*nce = 0.0 \ 1.0 \ 0.00j$

BAM-test chart UE08; Colorimetric systems NCS11a & MRS18 input: $cmv0^* setcmykcolor$

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

output: no change compared to input

Input: Colorimetric Reflective System NCS11

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

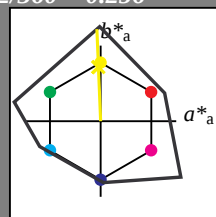
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 90 122 92

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

Output: Colorimetric Reflective System MRS18

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

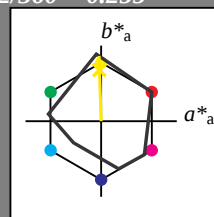
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 89 86 92

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

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
 $LAB^*LAB = 95.41 \ -0.97 \ 4.75$
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

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
 $LAB^*LAB = 56.71 \ -0.23 \ 2.14$
 $LAB^*LABa = 56.71 \ 0.0 \ 0.0$
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

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
 $LAB^*LAB = 18.02 \ 0.5 \ -0.46$
 $LAB^*LABa = 18.02 \ 0.0 \ 0.0$
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

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)
 $olvi3^* = 1.0 \ 0.976 \ 0.5 \ (1.0)$
 $cmyn3^* = 0.0 \ 0.024 \ 0.5 \ (0.0)$
 $olvi4^* = 1.0 \ 0.976 \ 0.5 \ 1.0$
 $cmyn4^* = 0.0 \ 0.024 \ 0.5 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 92.04 \ -2.3 \ 47.67$
 $LAB^*LABa = 92.04 \ -1.39 \ 43.14$
 $LAB^*TCHa = 75.0 \ 43.16 \ 91.85$

relative CIELAB lab*
 $lab^*lab = 0.957 \ -0.015 \ 0.5$
 $lab^*tch = 0.75 \ 0.5 \ 0.255$
 $lab^*nch = 0.0 \ 0.5 \ 0.255$

relative Natural Colour (NC)
 $lab^*lrj = 0.957 \ 0.0 \ 0.5$
 $lab^*tce = 0.75 \ 0.5 \ 0.25$
 $lab^*nce = 0.0 \ 0.5 \ j00g$

relative Inform. Technology (IT)
 $olvi3^* = 0.5 \ 0.476 \ 0.0 \ (1.0)$
 $cmyn3^* = 0.5 \ 0.524 \ 1.0 \ (0.0)$
 $olvi4^* = 1.0 \ 0.976 \ 0.5 \ 0.5$
 $cmyn4^* = 0.0 \ 0.024 \ 0.5 \ 0.5$

standard and adapted CIELAB
 $LAB^*LAB = 53.35 \ -1.55 \ 45.05$
 $LAB^*LABa = 53.35 \ -1.38 \ 43.13$
 $LAB^*TCHa = 25.01 \ 43.16 \ 91.84$

relative CIELAB lab*
 $lab^*lab = 0.457 \ -0.015 \ 0.5$
 $lab^*tch = 0.25 \ 0.5 \ 0.255$
 $lab^*nch = 0.5 \ 0.5 \ 0.255$

relative Natural Colour (NC)
 $lab^*lrj = 0.457 \ 0.0 \ 0.5$
 $lab^*tce = 0.25 \ 0.5 \ 0.25$
 $lab^*nce = 0.5 \ 0.5 \ j99j$

relative Inform. Technology (IT)
 $olvi3^* = 1.0 \ 0.951 \ 0.0 \ (1.0)$
 $cmyn3^* = 0.0 \ 0.049 \ 1.0 \ (0.0)$
 $olvi4^* = 1.0 \ 0.951 \ 0.0 \ 1.0$
 $cmyn4^* = 0.0 \ 0.049 \ 1.0 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 88.68 \ -3.62 \ 90.58$
 $LAB^*LABa = 88.68 \ -2.77 \ 86.27$
 $LAB^*TCHa = 50.0 \ 86.32 \ 91.85$

relative CIELAB lab*
 $lab^*lab = 0.913 \ -0.031 \ 0.999$
 $lab^*tch = 0.5 \ 1.0 \ 0.255$
 $lab^*nch = 0.0 \ 1.0 \ 0.255$

relative Natural Colour (NC)
 $lab^*lrj = 0.913 \ 0.0 \ 1.0$
 $lab^*tce = 0.5 \ 1.0 \ 0.25$
 $lab^*nce = 0.0 \ 1.0 \ j00g$

Input: Colorimetric Reflective System NCS11

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

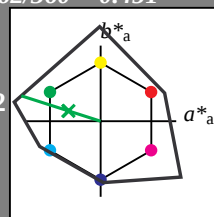
lab^*tch and lab^*nch

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

Output: Colorimetric Reflective System MRS18

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

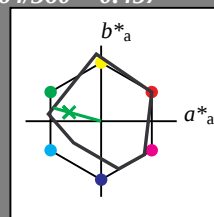
lab^*tch and lab^*nch

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

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
 $LAB^*LAB = 95.41 \ -0.97 \ 4.75$
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

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
 $LAB^*LAB = 56.71 \ -0.23 \ 2.14$
 $LAB^*LABa = 56.71 \ 0.0 \ 0.0$
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

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
 $LAB^*LAB = 18.02 \ 0.5 \ -0.46$
 $LAB^*LABa = 18.02 \ 0.0 \ 0.0$
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

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)
 $olvi3^* = 0.551 \ 1.0 \ 0.5 \ (1.0)$
 $cmyn3^* = 0.449 \ 0.0 \ 0.5 \ (0.0)$
 $olvi4^* = 0.551 \ 1.0 \ 0.5 \ 1.0$
 $cmyn4^* = 0.449 \ 0.0 \ 0.5 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 75.74 \ -32.2 \ 12.22$
 $LAB^*LABa = 75.74 \ -31.6 \ 8.79$
 $LAB^*TCHa = 75.0 \ 32.81 \ 164.46$

relative CIELAB lab*
 $lab^*lab = 0.746 \ -0.481 \ 0.134$
 $lab^*tch = 0.75 \ 0.5 \ 0.457$
 $lab^*nch = 0.0 \ 0.5 \ 0.457$

relative Natural Colour (NC)
 $lab^*lrj = 0.746 \ -0.499 \ 0.0$
 $lab^*tce = 0.75 \ 0.5 \ 0.5$
 $lab^*nce = 0.0 \ 0.5 \ 0.99g$

relative Inform. Technology (IT)
 $olvi3^* = 0.051 \ 0.5 \ 0.0 \ (1.0)$
 $cmyn3^* = 0.949 \ 0.5 \ 1.0 \ (0.0)$
 $olvi4^* = 0.551 \ 1.0 \ 0.5 \ 0.5$
 $cmyn4^* = 0.449 \ 0.0 \ 0.5 \ 0.5$

standard and adapted CIELAB
 $LAB^*LAB = 37.04 \ -31.47 \ 9.6$
 $LAB^*LABa = 37.04 \ -31.6 \ 8.78$
 $LAB^*TCHa = 25.01 \ 32.81 \ 164.47$

relative CIELAB lab*
 $lab^*lab = 0.246 \ -0.481 \ 0.134$
 $lab^*tch = 0.25 \ 0.5 \ 0.457$
 $lab^*nch = 0.5 \ 0.5 \ 0.457$

relative Natural Colour (NC)
 $lab^*lrj = 0.246 \ -0.499 \ 0.0$
 $lab^*tce = 0.25 \ 0.5 \ 0.5$
 $lab^*nce = 0.5 \ 0.5 \ g00b$

relative Inform. Technology (IT)
 $olvi3^* = 0.103 \ 1.0 \ 0.0 \ (1.0)$
 $cmyn3^* = 0.897 \ 0.0 \ 1.0 \ (0.0)$
 $olvi4^* = 0.103 \ 1.0 \ 0.0 \ 1.0$
 $cmyn4^* = 0.897 \ 0.0 \ 1.0 \ 0.0$

standard and adapted CIELAB
 $LAB^*LAB = 56.07 \ -63.44 \ 19.68$
 $LAB^*LABa = 56.07 \ -63.21 \ 17.58$
 $LAB^*TCHa = 50.0 \ 65.62 \ 164.46$

relative CIELAB lab*
 $lab^*lab = 0.492 \ -0.962 \ 0.268$
 $lab^*tch = 0.5 \ 1.0 \ 0.457$
 $lab^*nch = 0.0 \ 1.0 \ 0.457$

relative Natural Colour (NC)
 $lab^*lrj = 0.492 \ -0.999 \ 0.0$
 $lab^*tce = 0.5 \ 1.0 \ 0.5$
 $lab^*nce = 0.0 \ 1.0 \ g00b$

BAM-test chart UE08; Colorimetric systems NCS11a & MRS18 input: $cm y0^* setcmykcolor$

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

output: no change compared to input

Input: Colorimetric Reflective System NCS11

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

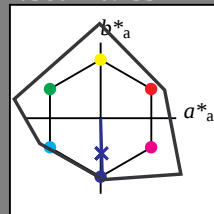
lab^*tch and lab^*nch

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

Output: Colorimetric Reflective System MRS18

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

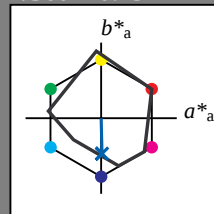
lab^*tch and lab^*nch

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

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
 $LAB^*LAB = 95.41$ -0.97 4.75
 $LAB^*LABa = 95.41$ 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
 $LAB^*LAB = 56.71$ -0.23 2.14
 $LAB^*LABa = 56.71$ 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
 $LAB^*LAB = 18.02$ 0.5 -0.46
 $LAB^*LABa = 18.02$ 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)
 $olvi3^* = 0.5$ 0.684 1.0 (1.0)
 $cmyn3^* = 0.5$ 0.316 0.0 (0.0)
 $olvi4^* = 0.5$ 0.684 1.0 1.0
 $cmyn4^* = 0.5$ 0.316 0.0 0.0

standard and adapted CIELAB
 $LAB^*LAB = 67.57$ 0.17 -22.28
 $LAB^*LABa = 67.57$ 0.61 -25.16
 $LAB^*TCHa = 75.0$ 25.18 271.4

relative CIELAB lab^*
 $lab^*lab = 0.64$ 0.012 -0.499
 $lab^*tch = 0.75$ 0.5 0.754
 $lab^*nch = 0.0$ 0.5 0.754

relative Natural Colour (NC)
 $lab^*lrj = 0.64$ 0.0 -0.499
 $lab^*tce = 0.75$ 0.5 0.75
 $lab^*nce = 0.0$ 0.5 g99b

relative Inform. Technology (IT)
 $olvi3^* = 0.0$ 0.184 0.5 (1.0)
 $cmyn3^* = 1.0$ 0.816 0.5 (0.0)
 $olvi4^* = 0.5$ 0.684 1.0 0.5
 $cmyn4^* = 0.5$ 0.316 0.0 0.5

standard and adapted CIELAB
 $LAB^*LAB = 28.87$ 0.92 -24.9
 $LAB^*LABa = 28.87$ 0.62 -25.16
 $LAB^*TCHa = 25.01$ 25.18 271.41

relative CIELAB lab^*
 $lab^*lab = 0.14$ 0.012 -0.499
 $lab^*tch = 0.25$ 0.5 0.754
 $lab^*nch = 0.5$ 0.5 0.754

relative Natural Colour (NC)
 $lab^*lrj = 0.14$ 0.0 -0.499
 $lab^*tce = 0.25$ 0.5 0.75
 $lab^*nce = 0.5$ 0.5 b00r

relative Inform. Technology (IT)
 $olvi3^* = 0.0$ 0.367 1.0 (1.0)
 $cmyn3^* = 1.0$ 0.633 0.0 (0.0)
 $olvi4^* = 0.0$ 0.367 1.0 1.0
 $cmyn4^* = 1.0$ 0.633 0.0 0.0

standard and adapted CIELAB
 $LAB^*LAB = 39.73$ 1.32 -49.33
 $LAB^*LABa = 39.73$ 1.23 -50.34
 $LAB^*TCHa = 50.0$ 50.36 271.41

relative CIELAB lab^*
 $lab^*lab = 0.281$ 0.025 -0.998
 $lab^*tch = 0.5$ 1.0 0.754
 $lab^*nch = 0.0$ 1.0 0.754

relative Natural Colour (NC)
 $lab^*lrj = 0.281$ 0.0 -0.999
 $lab^*tce = 0.5$ 1.0 0.75
 $lab^*nce = 0.0$ 1.0 b00r

BAM-test chart UE08; Colorimetric systems NCS11a & MRS18 input: $cmv0^* setcmykcolor$

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

output: no change compared to input