

Input: Colorimetric Reflective System ORS18

for hue $h^* = lab^*h = 38/360 = 0.105$

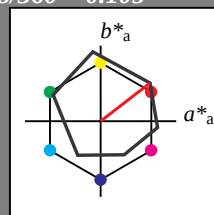
lab^*tch and lab^*nch

D65: hue O

LCH*Ma: 48 83 38

olv*Ma: 1.0 0.0 0.0

triangle lightness t^*



ORS18; adapted (a) CIELAB data	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.37	50.52	82.62	38
YMa	90.37	-10.27	91.77	92.34	96
LMa	50.9	-62.79	34.95	71.87	151
CMa	58.62	-30.35	-45.01	54.3	236
VMa	25.71	31.11	-44.42	54.24	305
MMa	48.13	75.27	-8.35	75.73	354
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

%Gamut

$u^*_{rel} = 93$

%Regularity

$g^*_{H,rel} = 57$

$g^*_{C,rel} = 59$

Output: Colorimetric Reflective System NRS11

for hue $h^* = lab^*h = 24/360 = 0.067$

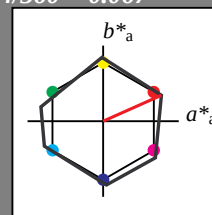
lab^*tch and lab^*nch

D65: hue R

LCH*Ma: 53 84 24

olv*Ma: 1.0 0.0 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 119$

%Regularity

$g^*_{H,rel} = 47$

$g^*_{C,rel} = 100$

NRS11; adapted (a) CIELAB data	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	53.2	77.06	34.32	84.36	24
JMa	53.2	-1.51	84.38	84.39	91
GMa	53.2	-82.27	18.98	84.44	167
G50BMa	53.2	-77.72	-32.98	84.44	203
BMa	53.2	4.37	-84.28	84.41	273
B50RMa	53.2	69.09	-48.41	84.37	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)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	1.0	0.5	0.5	(1.0)
	0.0	0.5	0.5	(0.0)
	1.0	0.5	0.5	1.0
	0.0	0.5	0.5	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)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	1.0	0.0	0.0	(1.0)
	0.0	1.0	1.0	(0.0)
	1.0	0.0	0.0	1.0
	0.0	1.0	1.0	0.0
standard and adapted CIELAB	LAB^*LAB	53.2	77.09	34.32
	LAB^*LABa	53.2	77.04	34.31
	LAB^*TCHa	50.0	84.34	24.01
relative CIELAB lab*	lab^*lab	0.5	0.913	0.407
	lab^*tch	0.5	1.0	0.067
	lab^*nch	0.0	1.0	0.067
relative Natural Colour (NC)	lab^*lrj	0.5	1.0	-0.019
	lab^*tce	0.5	1.0	0.997
	lab^*nce	0.0	1.0	b98r

relative Inform. Technology (IT)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	0.5	0.0	0.0	(1.0)
	0.5	1.0	1.0	(0.0)
	1.0	0.5	0.5	0.5
	0.0	0.5	0.5	0.5
standard and adapted CIELAB	LAB^*LAB	32.1	38.58	17.17
	LAB^*LABa	32.1	38.52	17.16
	LAB^*TCHa	25.01	42.17	24.01
relative CIELAB lab*	lab^*lab	0.25	0.457	0.203
	lab^*tch	0.25	0.5	0.067
	lab^*nch	0.5	0.5	0.067
relative Natural Colour (NC)	lab^*lrj	0.25	0.5	-0.009
	lab^*tce	0.25	0.5	0.997
	lab^*nce	0.5	0.5	b98r

relative Inform. Technology (IT)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	0.0	0.0	0.0	(1.0)
	1.0	1.0	1.0	(0.0)
	1.0	1.0	1.0	0.0
	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)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	0.25	0.5	0.5	(1.0)
	0.25	0.5	0.5	(0.0)
	0.5	0.5	0.5	0.5
	0.5	0.5	0.5	0.5
standard and adapted CIELAB	LAB^*LAB	32.1	38.52	17.16
	LAB^*LABa	32.1	38.52	17.16
	LAB^*TCHa	25.01	42.17	24.01
relative CIELAB lab*	lab^*lab	0.25	0.457	0.203
	lab^*tch	0.25	0.5	0.067
	lab^*nch	0.5	0.5	0.067
relative Natural Colour (NC)	lab^*lrj	0.25	0.5	-0.009
	lab^*tce	0.25	0.5	0.997
	lab^*nce	0.5	0.5	b98r

BAM-test chart UE02; Colorimetric systems ORS18 & NRS11
D65: 3 step colour scales and coordinate data for 10 hues

input: $cmv0^* setcmvcolor$
output: no change compared to input

Input: Colorimetric Reflective System ORS18

for hue $h^* = lab^*h = 96/360 = 0.268$

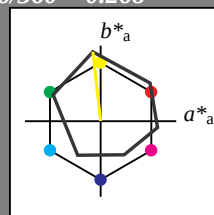
lab^*tch and lab^*nch

D65: hue Y

LCH*Ma: 90 92 96

olv*Ma: 1.0 1.0 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 93$

%Regularity

$g^*_{H,rel} = 57$

$g^*_{C,rel} = 59$

ORS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.37	50.52	82.62	38
YMa	90.37	-10.27	91.77	92.34	96
LMa	50.9	-62.79	34.95	71.87	151
CMa	58.62	-30.35	-45.01	54.3	236
VMa	25.71	31.11	-44.42	54.24	305
MMa	48.13	75.27	-8.35	75.73	354
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 NRS11

for hue $h^* = lab^*h = 91/360 = 0.253$

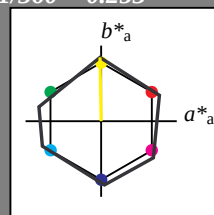
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 53 84 91

olv*Ma: 1.0 1.0 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 119$

%Regularity

$g^*_{H,rel} = 47$

$g^*_{C,rel} = 100$

NRS11; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	53.2	77.06	34.32	84.36	24
JMa	53.2	-1.51	84.38	84.39	91
GMa	53.2	-82.27	18.98	84.44	167
G50Bma	53.2	-77.72	-32.98	84.44	203
Bma	53.2	4.37	-84.28	84.41	273
B50Rma	53.2	69.09	-48.41	84.37	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 74.3 -0.72 42.18
LAB*LABa 74.3 -0.75 42.18
LAB*TCHa 75.0 42.19 91.03

relative CIELAB lab*
lab*lab 0.75 -0.008 0.5
lab*tch 0.75 0.5 0.253
lab*nch 0.0 0.5 0.253

relative Natural Colour (NC)
lab*lrj 0.75 0.015 0.5
lab*tce 0.75 0.5 0.245
lab*nce 0.0 0.5 r98j

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 32.1 -0.69 42.2
LAB*LABa 32.1 -0.75 42.18
LAB*TCHa 25.01 42.19 91.03

relative CIELAB lab*
lab*lab 0.25 -0.008 0.5
lab*tch 0.25 0.5 0.253
lab*nch 0.5 0.5 0.253

relative Natural Colour (NC)
lab*lrj 0.25 0.015 0.5
lab*tce 0.25 0.5 0.245
lab*nce 0.5 0.5 r98j

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 53.2 -1.46 84.37
LAB*LABa 53.2 -1.51 84.36
LAB*TCHa 50.0 84.37 91.03

relative CIELAB lab*
lab*lab 0.5 -0.017 1.0
lab*tch 0.5 1.0 0.253
lab*nch 0.0 1.0 0.253

relative Natural Colour (NC)
lab*lrj 0.5 0.031 0.999
lab*tce 0.5 1.0 0.245
lab*nce 0.0 1.0 r98j

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

blackness n^*

$n^* = 0,00$

$n^* = 1,0$

UE020-7, 3 step scales for constant CIELAB hue 96/360 = 0.268 (left)

BAM-test chart UE02; Colorimetric systems ORS18 & NRS11

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

3 step scales for constant CIELAB hue 91/360 = 0.253 (right)

input: $cmY0^* setcmykcolor$

output: no change compared to input

Input: Colorimetric Reflective System ORS18

for hue $h^* = lab^*h = 151/360 = 0.419$

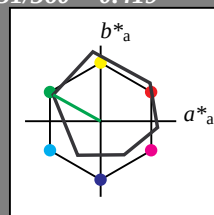
lab^*tch and lab^*nch

D65: hue L

LCH*Ma: 51 72 151

olv*Ma: 0.0 1.0 0.0

triangle lightness t^*



ORS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.37	50.52	82.62	38
YMa	90.37	-10.27	91.77	92.34	96
LMa	50.9	-62.79	34.95	71.87	151
CMa	58.62	-30.35	-45.01	54.3	236
VMa	25.71	31.11	-44.42	54.24	305
MMa	48.13	75.27	-8.35	75.73	354
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

%Gamut

$u^*_{rel} = 93$

%Regularity

$g^*_{H,rel} = 57$

$g^*_{C,rel} = 59$

Output: Colorimetric Reflective System NRS11

for hue $h^* = lab^*h = 167/360 = 0.464$

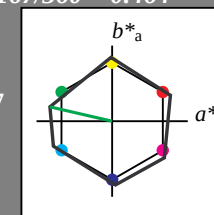
lab^*tch and lab^*nch

D65: hue G

LCH*Ma: 53 84 167

olv*Ma: 0.0 1.0 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 119$

%Regularity

$g^*_{H,rel} = 47$

$g^*_{C,rel} = 100$

NRS11; adapted (a) CIELAB data

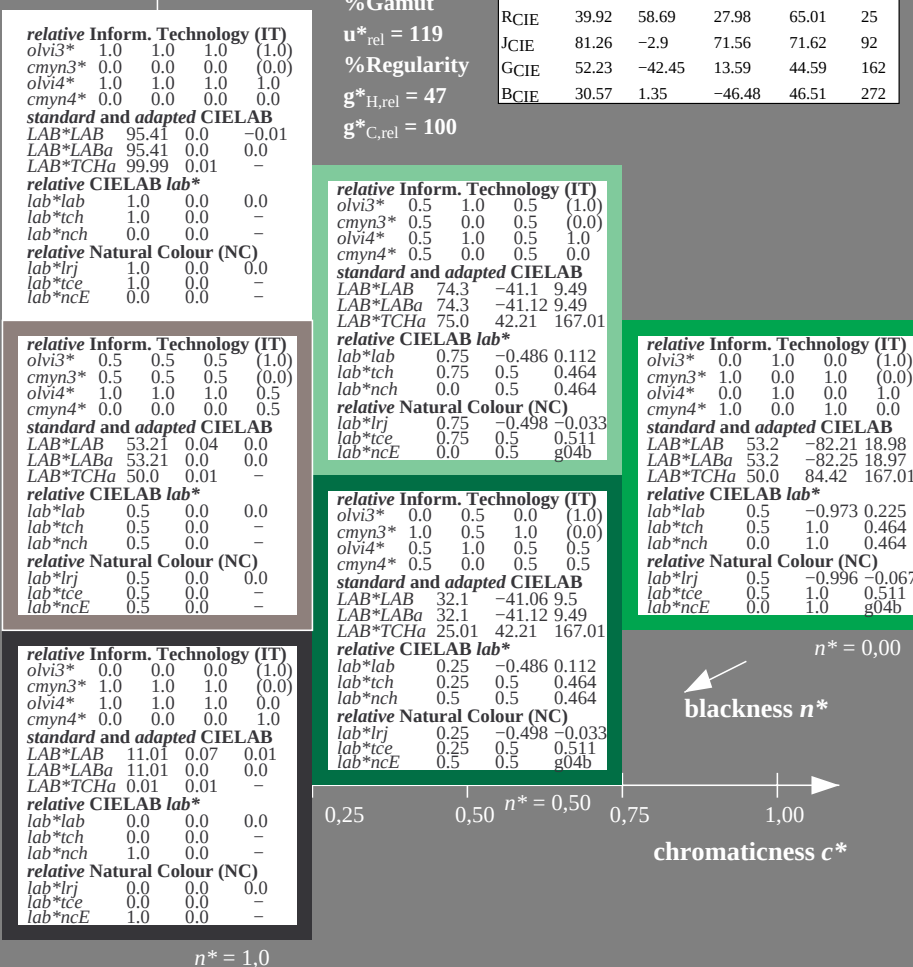
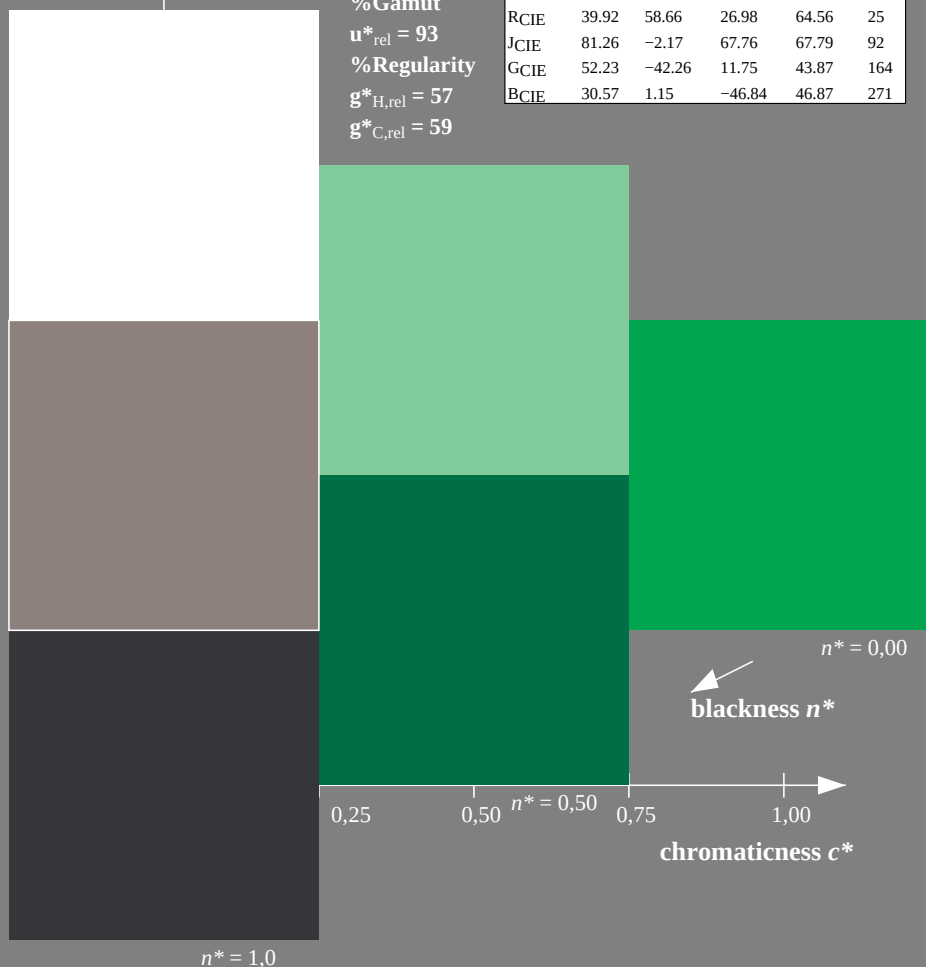
	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	53.2	77.06	34.32	84.36	24
JMa	53.2	-1.51	84.38	84.39	91
GMa	53.2	-82.27	18.98	84.44	167
G50BMa	53.2	-77.72	-32.98	84.44	203
BMa	53.2	4.37	-84.28	84.41	273
B50RMa	53.2	69.09	-48.41	84.37	325
NMa	10.99	0.0	0.0	0.0	0
WMa	95.41	0.0	0.0	0.0	0
RCIE	39.92	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	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	74.3	-41.1	9.49	
LAB*LABa	74.3	-41.12	9.49	
LAB*TCHa	75.0	42.21	167.01	
relative CIELAB lab*				
lab*lab	0.75	-0.486	0.112	
lab*tch	0.75	0.5	0.464	
lab*nch	0.0	0.5	0.464	
relative Natural Colour (NC)				
lab*lrj	0.75	-0.498	-0.033	
lab*tce	0.75	0.5	0.511	
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	32.1	-41.06	9.5	
LAB*LABa	32.1	-41.12	9.49	
LAB*TCHa	25.01	42.21	167.01	
relative CIELAB lab*				
lab*lab	0.25	-0.486	0.112	
lab*tch	0.25	0.5	0.464	
lab*nch	0.5	0.5	0.464	
relative Natural Colour (NC)				
lab*lrj	0.25	-0.498	-0.033	
lab*tce	0.25	0.5	0.511	
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	53.2	-82.21	18.98	
LAB*LABa	53.2	-82.25	18.97	
LAB*TCHa	50.0	84.42	167.01	
relative CIELAB lab*				
lab*lab	0.5	-0.973	0.225	
lab*tch	0.5	1.0	0.464	
lab*nch	0.0	1.0	0.464	
relative Natural Colour (NC)				
lab*lrj	0.5	-0.996	-0.067	
lab*tce	0.5	1.0	0.511	
lab*nce	0.0	1.0	g04b	



UE020-7, 3 step scales for constant CIELAB hue 151/360 = 0.419 (left)

3 step scales for constant CIELAB hue 167/360 = 0.464 (right)

BAM-test chart UE02; Colorimetric systems ORS18 & NRS11

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

input: $cmY0^* setcmykcolor$

output: no change compared to input

Input: Colorimetric Reflective System ORS18

for hue $h^* = lab^*h = 236/360 = 0.656$

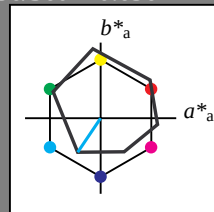
lab^*tch and lab^*nch

D65: hue C

LCH*Ma: 59 54 236

olv*Ma: 0.0 1.0 1.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 93$

%Regularity

$g^*_{H,rel} = 57$

$g^*_{C,rel} = 59$

ORS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.37	50.52	82.62	38
YMa	90.37	-10.27	91.77	92.34	96
LMa	50.9	-62.79	34.95	71.87	151
CMa	58.62	-30.35	-45.01	54.3	236
VMa	25.71	31.11	-44.42	54.24	305
MMa	48.13	75.27	-8.35	75.73	354
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 NRS11

for hue $h^* = lab^*h = 203/360 = 0.564$

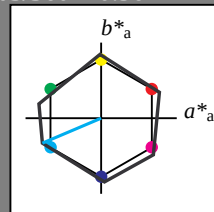
lab^*tch and lab^*nch

D65: hue G50B

LCH*Ma: 53 84 203

olv*Ma: 0.0 1.0 1.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 119$

%Regularity

$g^*_{H,rel} = 47$

$g^*_{C,rel} = 100$

NRS11; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	53.2	77.06	34.32	84.36	24
JMa	53.2	-1.51	84.38	84.39	91
GMa	53.2	-82.27	18.98	84.44	167
G50Bma	53.2	-77.72	-32.98	84.44	203
Bma	53.2	4.37	-84.28	84.41	273
B50Rma	53.2	69.09	-48.41	84.37	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*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 74.3 -38.82 -16.48
LAB*LABa 74.3 -38.85 -16.48
LAB*TCa 75.0 42.21 203.0

relative CIELAB lab*
lab*lab 0.75 -0.459 -0.194
lab*tch 0.75 0.5 0.564
lab*nch 0.0 0.5 0.564

relative Natural Colour (NC)
lab*lrj 0.75 -0.416 -0.275
lab*tce 0.75 0.5 0.593
lab*nce 0.0 0.5 g37b

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 32.1 -38.79 -16.46
LAB*LABa 32.1 -38.85 -16.48
LAB*TCa 25.01 42.21 203.0

relative CIELAB lab*
lab*lab 0.25 -0.459 -0.194
lab*tch 0.25 0.5 0.564
lab*nch 0.5 0.5 0.564

relative Natural Colour (NC)
lab*lrj 0.25 -0.416 -0.275
lab*tce 0.25 0.5 0.593
lab*nce 0.5 0.5 g37b

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 53.2 -77.67 -32.96
LAB*LABa 53.2 -77.71 -32.97
LAB*TCa 50.0 84.43 202.99

relative CIELAB lab*
lab*lab 0.5 -0.919 -0.39
lab*tch 0.5 1.0 0.564
lab*nch 0.0 1.0 0.564

relative Natural Colour (NC)
lab*lrj 0.5 -0.833 -0.551
lab*tce 0.5 1.0 0.593
lab*nce 0.0 1.0 g37b

BAM-test chart UE02; Colorimetric systems ORS18 & NRS11

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

3 step scales for constant CIELAB hue 203/360 = 0.564 (right)

input: $cmY0^* setcmykcolor$

output: no change compared to input

Input: Colorimetric Reflective System ORS18

for hue $h^* = lab^*h = 305/360 = 0.847$

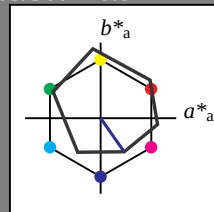
lab^*tch and lab^*nch

D65: hue V

LCH*Ma: 26 54 305

olv*Ma: 0.0 0.0 1.0

triangle lightness t^*



ORS18; adapted (a) CIELAB data	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.37	50.52	82.62	38
YMa	90.37	-10.27	91.77	92.34	96
LMa	50.9	-62.79	34.95	71.87	151
CMa	58.62	-30.35	-45.01	54.3	236
VMa	25.71	31.11	-44.42	54.24	305
MMa	48.13	75.27	-8.35	75.73	354
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

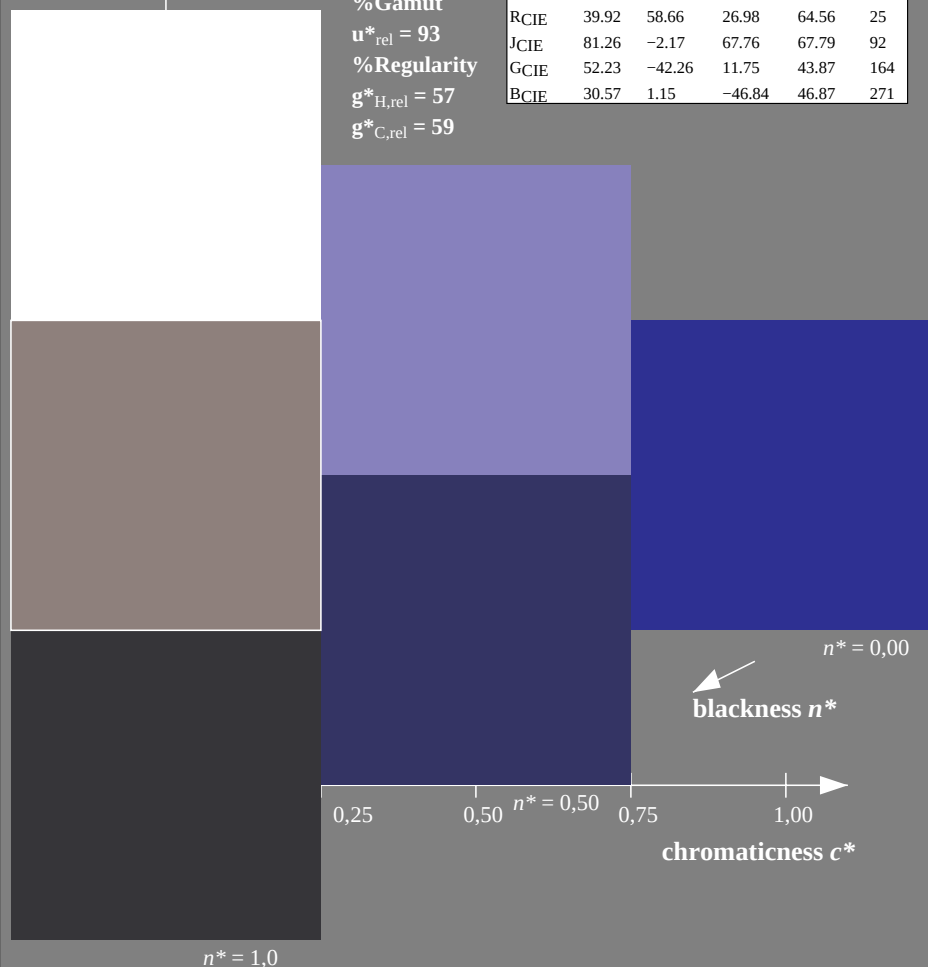
%Gamut

$u^*_{rel} = 93$

%Regularity

$g^*_{H,rel} = 57$

$g^*_{C,rel} = 59$



Output: Colorimetric Reflective System NRS11

for hue $h^* = lab^*h = 273/360 = 0.758$

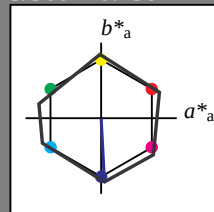
lab^*tch and lab^*nch

D65: hue B

LCH*Ma: 53 84 273

olv*Ma: 0.0 0.0 1.0

triangle lightness t^*



NRS11; adapted (a) CIELAB data	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	53.2	77.06	34.32	84.36	24
JMa	53.2	-1.51	84.38	84.39	91
GMa	53.2	-82.27	18.98	84.44	167
G50Bma	53.2	-77.72	-32.98	84.44	203
Bma	53.2	4.37	-84.28	84.41	273
B50Rma	53.2	69.09	-48.41	84.37	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

$u^*_{rel} = 119$

%Regularity

$g^*_{H,rel} = 47$

$g^*_{C,rel} = 100$

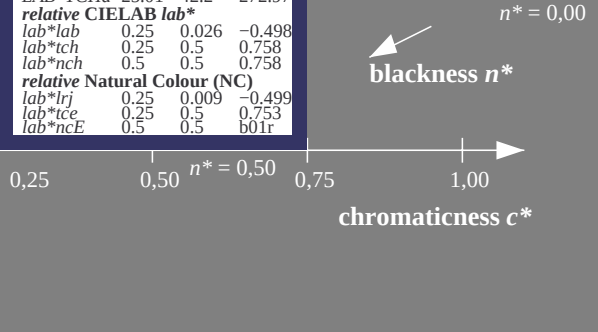
relative Inform. Technology (IT)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	1.0	0.0	1.0	0.0
	1.0	0.0	1.0	0.0
	1.0	0.0	1.0	0.0
	1.0	0.0	1.0	0.0
standard and adapted CIELAB				
LAB*LAB	95.41	0.0	-0.01	
LAB*LABa	95.41	0.0	0.0	
LAB*TCa	99.99	0.01	-	
relative CIELAB lab*				
lab*lab	1.0	0.0	0.0	
lab*tch	1.0	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)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	0.5	0.5	1.0	0.0
	0.5	0.5	0.0	0.0
	0.5	0.5	1.0	0.0
	0.5	0.5	0.0	0.0
standard and adapted CIELAB				
LAB*LAB	74.3	2.21	-42.13	
LAB*LABa	74.3	2.19	-42.13	
LAB*TCa	75.0	42.2	272.97	
relative CIELAB lab*				
lab*lab	0.75	0.026	-0.498	
lab*tch	0.75	0.5	0.758	
lab*nch	0.0	0.5	0.758	
relative Natural Colour (NC)				
lab*lrj	0.75	0.009	-0.499	
lab*tce	0.75	0.5	0.753	
lab*nce	0.0	0.5	b01r	

relative Inform. Technology (IT)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	0.5	0.5	0.5	0.0
	0.5	0.5	0.5	0.0
	1.0	1.0	1.0	0.5
	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)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	0.0	0.0	0.5	0.0
	0.0	0.0	0.5	0.0
	0.5	0.5	1.0	0.5
	0.5	0.5	0.0	0.5
standard and adapted CIELAB				
LAB*LAB	32.1	2.25	-42.11	
LAB*LABa	32.1	2.19	-42.13	
LAB*TCa	25.01	42.2	272.97	
relative CIELAB lab*				
lab*lab	0.25	0.026	-0.498	
lab*tch	0.25	0.5	0.758	
lab*nch	0.5	0.5	0.758	
relative Natural Colour (NC)				
lab*lrj	0.25	0.009	-0.499	
lab*tce	0.25	0.5	0.753	
lab*nce	0.5	0.5	b01r	

relative Inform. Technology (IT)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	0.0	0.0	1.0	0.0
	1.0	1.0	0.0	0.0
	0.0	0.0	1.0	1.0
	1.0	1.0	0.0	0.0
standard and adapted CIELAB				
LAB*LAB	53.2	4.42	-84.26	
LAB*LABa	53.2	4.37	-84.27	
LAB*TCa	50.0	84.39	272.97	
relative CIELAB lab*				
lab*lab	0.5	0.052	-0.997	
lab*tch	0.5	1.0	0.758	
lab*nch	0.0	1.0	0.758	
relative Natural Colour (NC)				
lab*lrj	0.5	0.018	-0.999	
lab*tce	0.5	1.0	0.753	
lab*nce	0.0	1.0	b01r	



3 step scales for constant CIELAB hue 273/360 = 0.758 (right)

input: $cmv0^* setcmykcolor$

output: no change compared to input

UE020-7, 3 step scales for constant CIELAB hue 305/360 = 0.847 (left)

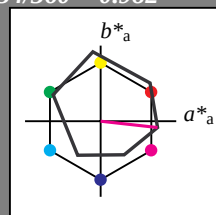
BAM-test chart UE02; Colorimetric systems ORS18 & NRS11

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

Input: Colorimetric Reflective System ORS18

for hue $h^* = lab^*h = 354/360 = 0.982$
 lab^*tch and lab^*nch

D65: hue M
LCH*Ma: 48 76 354
olv*Ma: 1.0 0.0 1.0
triangle lightness t^*



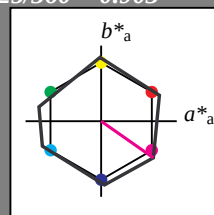
ORS18; adapted (a) CIELAB data	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.37	50.52	82.62	38
YMa	90.37	-10.27	91.77	92.34	96
LMa	50.9	-62.79	34.95	71.87	151
CMa	58.62	-30.35	-45.01	54.3	236
VMa	25.71	31.11	-44.42	54.24	305
MMa	48.13	75.27	-8.35	75.73	354
NMa	18.01	0.0	0.0	0.0	0
WMa	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

%Gamut
 $u^*_{rel} = 93$
%Regularity
 $g^*_{H,rel} = 57$
 $g^*_{C,rel} = 59$

Output: Colorimetric Reflective System NRS11

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

D65: hue B50R
LCH*Ma: 53 84 325
olv*Ma: 1.0 0.0 1.0
triangle lightness t^*



NRS11; adapted (a) CIELAB data	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	53.2	77.06	34.32	84.36	24
JMa	53.2	-1.51	84.38	84.39	91
GMa	53.2	-82.27	18.98	84.44	167
G50BMa	53.2	-77.72	-32.98	84.44	203
BMa	53.2	4.37	-84.28	84.41	273
B50RMa	53.2	69.09	-48.41	84.37	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
 $u^*_{rel} = 119$
%Regularity
 $g^*_{H,rel} = 47$
 $g^*_{C,rel} = 100$

relative Inform. Technology (IT)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	1.0	0.0	1.0	0.0
	1.0	0.0	0.0	1.0
	0.0	1.0	1.0	0.0
	0.0	0.0	0.0	1.0
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)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	1.0	0.5	1.0	0.0
	0.0	0.5	0.0	1.0
	1.0	0.5	1.0	0.0
	0.0	0.5	0.0	1.0
standard and adapted CIELAB	LAB^*LAB	74.3	34.57	-24.19
	LAB^*LABa	74.3	34.54	-24.2
	LAB^*TCHa	75.0	42.18	324.98
relative CIELAB lab*	lab^*lab	0.75	0.409	-0.286
	lab^*tch	0.75	0.5	0.903
	lab^*nch	0.0	0.5	0.903
relative Natural Colour (NC)	lab^*lrj	0.75	0.336	-0.37
	lab^*tce	0.75	0.5	0.867
	lab^*nce	0.0	0.5	0.867

relative Inform. Technology (IT)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	1.0	0.0	1.0	0.0
	0.0	1.0	0.0	1.0
	1.0	0.0	1.0	0.0
	0.0	1.0	0.0	1.0
standard and adapted CIELAB	LAB^*LAB	53.2	69.12	-48.39
	LAB^*LABa	53.2	69.08	-48.4
	LAB^*TCHa	50.0	84.35	324.98
relative CIELAB lab*	lab^*lab	0.5	0.819	-0.573
	lab^*tch	0.5	1.0	0.903
	lab^*nch	0.0	1.0	0.903
relative Natural Colour (NC)	lab^*lrj	0.5	0.671	-0.74
	lab^*tce	0.5	1.0	0.867
	lab^*nce	0.0	1.0	0.867

relative Inform. Technology (IT)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	0.5	0.5	0.5	0.0
	0.5	0.5	0.5	0.0
	1.0	1.0	1.0	0.5
	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)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	0.0	0.0	0.0	1.0
	1.0	1.0	1.0	0.0
	1.0	1.0	1.0	0.0
	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)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	0.5	0.0	0.5	0.0
	0.5	1.0	0.5	0.0
	1.0	0.5	1.0	0.5
	0.0	0.5	0.0	0.5
standard and adapted CIELAB	LAB^*LAB	32.1	34.6	-24.18
	LAB^*LABa	32.1	34.54	-24.2
	LAB^*TCHa	25.01	42.18	324.98
relative CIELAB lab*	lab^*lab	0.25	0.409	-0.286
	lab^*tch	0.25	0.5	0.903
	lab^*nch	0.5	0.5	0.903
relative Natural Colour (NC)	lab^*lrj	0.25	0.336	-0.37
	lab^*tce	0.25	0.5	0.867
	lab^*nce	0.5	0.5	0.867

relative Inform. Technology (IT)	$olvi3^*$	$cmyn3^*$	$olvi4^*$	$cmyn4^*$
	1.0	0.0	1.0	0.0
	0.0	1.0	0.0	1.0
	1.0	0.0	1.0	0.0
	0.0	1.0	0.0	1.0
standard and adapted CIELAB	LAB^*LAB	53.2	69.12	-48.39
	LAB^*LABa	53.2	69.08	-48.4
	LAB^*TCHa	50.0	84.35	324.98
relative CIELAB lab*	lab^*lab	0.5	0.819	-0.573
	lab^*tch	0.5	1.0	0.903
	lab^*nch	0.0	1.0	0.903
relative Natural Colour (NC)	lab^*lrj	0.5	0.671	-0.74
	lab^*tce	0.5	1.0	0.867
	lab^*nce	0.0	1.0	0.867

Input: Colorimetric Reflective System ORS18

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

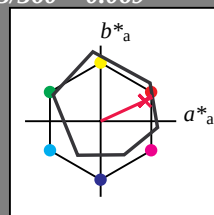
lab^*tch and lab^*nch

D65: hue R

LCH*Ma: 48 75 25

olv*Ma: 1.0 0.0 0.32

triangle lightness t^*



%Gamut

$u^*_{rel} = 93$

%Regularity

$g^*_{H,rel} = 57$

$g^*_{C,rel} = 59$

ORS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.37	50.52	82.62	38
YMa	90.37	-10.27	91.77	92.34	96
LMa	50.9	-62.79	34.95	71.87	151
CMa	58.62	-30.35	-45.01	54.3	236
VMa	25.71	31.11	-44.42	54.24	305
MMa	48.13	75.27	-8.35	75.73	354
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 NRS11

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

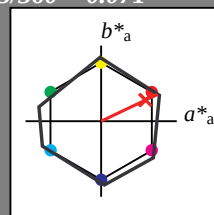
lab^*tch and lab^*nch

D65: hue R

LCH*Ma: 53 83 25

olv*Ma: 1.0 0.03 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 119$

%Regularity

$g^*_{H,rel} = 47$

$g^*_{C,rel} = 100$

NRS11; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	53.2	77.06	34.32	84.36	24
JMa	53.2	-1.51	84.38	84.39	91
GMa	53.2	-82.27	18.98	84.44	167
G50BMa	53.2	-77.72	-32.98	84.44	203
BMa	53.2	4.37	-84.28	84.41	273
B50RMa	53.2	69.09	-48.41	84.37	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*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* 1.0 0.514 0.5 (1.0)
cmyn3* 0.0 0.486 0.5 (0.0)
olvi4* 1.0 0.514 0.5 1.0
cmyn4* 0.0 0.486 0.5 0.0

standard and adapted CIELAB
LAB*LAB 74.3 37.46 17.85
LAB*LABa 74.3 37.44 17.85
LAB*TCa 75.0 41.47 25.49

relative CIELAB lab*
lab*lab 0.75 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 0.75 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 0.014 0.0 (1.0)
cmyn3* 0.5 0.986 1.0 (0.0)
olvi4* 1.0 0.514 0.5 0.5
cmyn4* 0.0 0.486 0.5 0.5

standard and adapted CIELAB
LAB*LAB 32.1 37.51 17.86
LAB*LABa 32.1 37.45 17.84
LAB*TCa 25.01 41.48 25.48

relative CIELAB lab*
lab*lab 0.25 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 0.25 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 0.028 0.0 (1.0)
cmyn3* 0.0 0.972 1.0 (0.0)
olvi4* 1.0 0.028 0.0 1.0
cmyn4* 0.0 0.972 1.0 0.0

standard and adapted CIELAB
LAB*LAB 53.2 74.93 35.7
LAB*LABa 53.2 74.88 35.69
LAB*TCa 50.0 82.95 25.48

relative CIELAB lab*
lab*lab 0.5 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 0.5 1.0 0.0
lab*tce 0.5 1.0 1.0
lab*nce 0.0 1.0 b99r

BAM-test chart UE02; Colorimetric systems ORS18 & NRS11

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

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

input: $cmY0^* setcmykcolor$

output: no change compared to input

Input: Colorimetric Reflective System ORS18

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

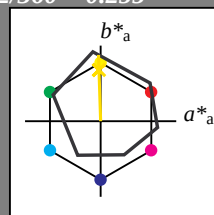
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 86 88 92

olv*Ma: 1.0 0.9 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 93$

%Regularity

$g^*_{H,rel} = 57$

$g^*_{C,rel} = 59$

ORS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.37	50.52	82.62	38
YMa	90.37	-10.27	91.77	92.34	96
LMa	50.9	-62.79	34.95	71.87	151
CMa	58.62	-30.35	-45.01	54.3	236
VMa	25.71	31.11	-44.42	54.24	305
MMa	48.13	75.27	-8.35	75.73	354
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 NRS11

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

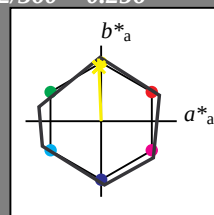
lab^*tch and lab^*nch

D65: hue J

LCH*Ma: 53 83 92

olv*Ma: 0.98 1.0 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 119$

%Regularity

$g^*_{H,rel} = 47$

$g^*_{C,rel} = 100$

NRS11; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	53.2	77.06	34.32	84.36	24
JMa	53.2	-1.51	84.38	84.39	91
GMa	53.2	-82.27	18.98	84.44	167
G50Bma	53.2	-77.72	-32.98	84.44	203
Bma	53.2	4.37	-84.28	84.41	273
B50Rma	53.2	69.09	-48.41	84.37	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* 0.989 1.0 0.5 (1.0)
cmyn3* 0.011 0.0 0.5 (0.0)
olvi4* 0.989 1.0 0.5 1.0
cmyn4* 0.011 0.0 0.5 0.0

standard and adapted CIELAB
LAB*LAB 74.3 -1.64 41.44
LAB*LABa 74.3 -1.67 41.44
LAB*TCHa 75.0 41.47 92.32

relative CIELAB lab*
lab*lab 0.75 -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 0.75 0.0 0.5
lab*tce 0.75 0.5 0.25
lab*nce 0.0 0.5 r99j

relative Inform. Technology (IT)
olvi3* 0.489 0.5 0.0 (1.0)
cmyn3* 0.511 0.5 1.0 (0.0)
olvi4* 0.989 1.0 0.5 0.5
cmyn4* 0.011 0.0 0.5 0.5

standard and adapted CIELAB
LAB*LAB 32.1 -1.62 41.45
LAB*LABa 32.1 -1.68 41.43
LAB*TCHa 25.01 41.46 92.33

relative CIELAB lab*
lab*lab 0.25 -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 0.25 0.0 0.5
lab*tce 0.25 0.5 0.25
lab*nce 0.5 0.5 100g

relative Inform. Technology (IT)
olvi3* 0.977 1.0 0.0 (1.0)
cmyn3* 0.023 0.0 1.0 (0.0)
olvi4* 0.977 1.0 0.0 1.0
cmyn4* 0.023 0.0 1.0 0.0

standard and adapted CIELAB
LAB*LAB 53.2 -3.31 82.87
LAB*LABa 53.2 -3.35 82.86
LAB*TCHa 50.0 82.93 92.32

relative CIELAB lab*
lab*lab 0.5 -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 0.5 0.0 1.0
lab*tce 0.5 1.0 0.25
lab*nce 0.0 1.0 r99j

Input: Colorimetric Reflective System ORS18

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

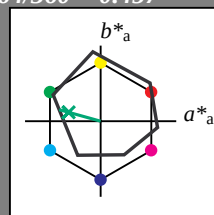
lab^*tch and lab^*nch

D65: hue G

LCH*Ma: 53 57 164

olv*Ma: 0.0 1.0 0.25

triangle lightness t^*



ORS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.37	50.52	82.62	38
YMa	90.37	-10.27	91.77	92.34	96
LMa	50.9	-62.79	34.95	71.87	151
CMa	58.62	-30.35	-45.01	54.3	236
VMa	25.71	31.11	-44.42	54.24	305
MMa	48.13	75.27	-8.35	75.73	354
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

%Gamut

$u^*_{rel} = 93$

%Regularity

$g^*_{H,rel} = 57$

$g^*_{C,rel} = 59$

Output: Colorimetric Reflective System NRS11

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

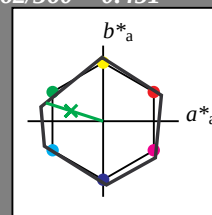
lab^*tch and lab^*nch

D65: hue G

LCH*Ma: 53 80 162

olv*Ma: 0.08 1.0 0.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 119$

%Regularity

$g^*_{H,rel} = 47$

$g^*_{C,rel} = 100$

NRS11; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	53.2	77.06	34.32	84.36	24
JMa	53.2	-1.51	84.38	84.39	91
GMa	53.2	-82.27	18.98	84.44	167
G50Bma	53.2	-77.72	-32.98	84.44	203
Bma	53.2	4.37	-84.28	84.41	273
B50Rma	53.2	69.09	-48.41	84.37	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* 0.54 1.0 0.5 (1.0)
cmyn3* 0.46 0.0 0.5 (0.0)
olvi4* 0.54 1.0 0.5 1.0
cmyn4* 0.46 0.0 0.5 0.0

standard and adapted CIELAB
LAB*LAB 74.3 -37.84 12.13
LAB*LABa 74.3 -37.87 12.12
LAB*TCHa 75.0 39.77 162.25

relative CIELAB lab*
lab*lab 0.75 -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 0.75 -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* 0.04 0.5 0.0 (1.0)
cmyn3* 0.96 0.5 1.0 (0.0)
olvi4* 0.54 1.0 0.5 0.5
cmyn4* 0.46 0.0 0.5 0.5

standard and adapted CIELAB
LAB*LAB 32.1 -37.81 12.13
LAB*LABa 32.1 -37.87 12.12
LAB*TCHa 25.01 39.77 162.27

relative CIELAB lab*
lab*lab 0.25 -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 0.25 -0.499 0.0
lab*tce 0.25 0.5 0.5
lab*nce 0.5 0.5 0.99g

relative Inform. Technology (IT)
olvi3* 0.081 1.0 0.0 (1.0)
cmyn3* 0.919 0.0 1.0 (0.0)
olvi4* 0.081 1.0 0.0 1.0
cmyn4* 0.919 0.0 1.0 0.0

standard and adapted CIELAB
LAB*LAB 53.2 -75.71 24.25
LAB*LABa 53.2 -75.75 24.24
LAB*TCHa 50.0 79.54 162.26

relative CIELAB lab*
lab*lab 0.5 -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 0.5 -0.999 0.0
lab*tce 0.5 1.0 0.5
lab*nce 0.0 1.0 0.99g

blackness n^*
chromaticness c^*

blackness n^*
chromaticness c^*

blackness n^*
chromaticness c^*

3 step scales for constant CIELAB hue 162/360 = 0.451 (right)

input: $cmv0^* setcmykcolor$

output: no change compared to input

BAM-test chart UE02; Colorimetric systems ORS18 & NRS11

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

Input: Colorimetric Reflective System ORS18

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

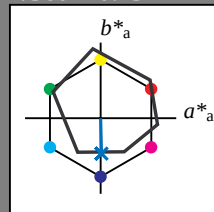
lab^*tch and lab^*nch

D65: hue B

LCH*Ma: 42 45 271

olv*Ma: 0.0 0.49 1.0

triangle lightness t^*



ORS18; adapted (a) CIELAB data

	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.37	50.52	82.62	38
YMa	90.37	-10.27	91.77	92.34	96
LMa	50.9	-62.79	34.95	71.87	151
CMa	58.62	-30.35	-45.01	54.3	236
VMa	25.71	31.11	-44.42	54.24	305
MMa	48.13	75.27	-8.35	75.73	354
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

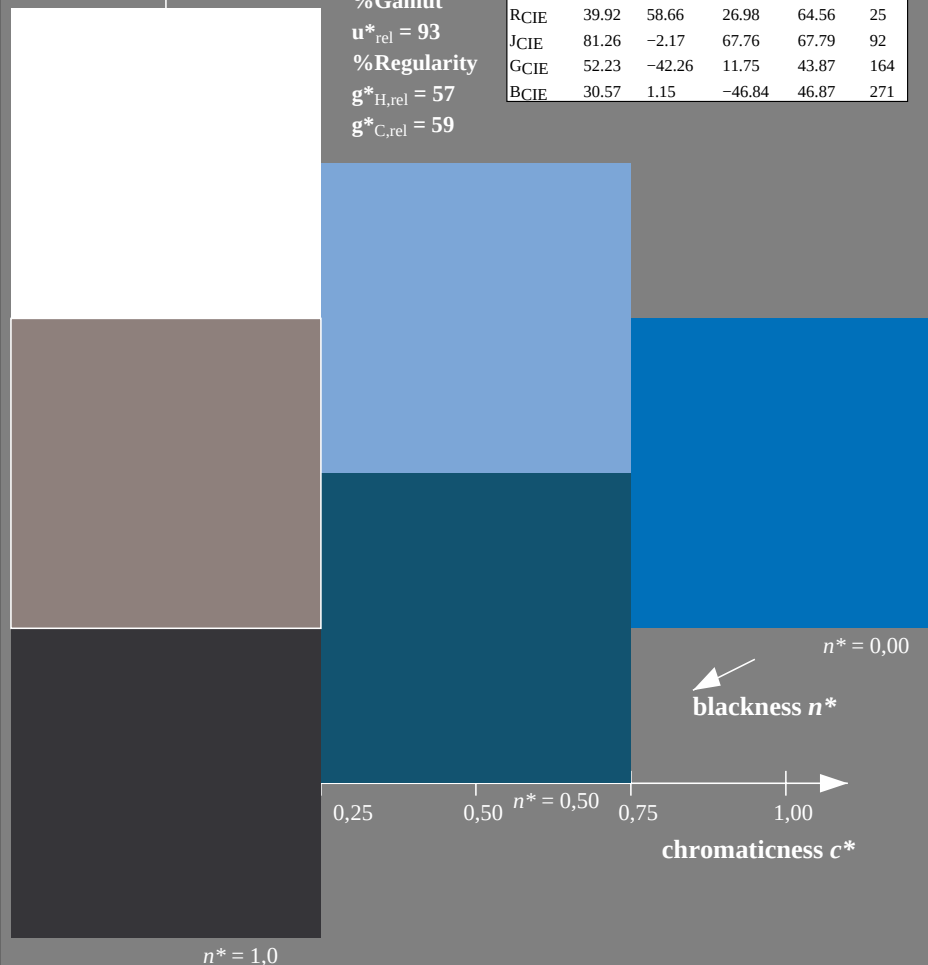
%Gamut

$u^*_{rel} = 93$

%Regularity

$g^*_{H,rel} = 57$

$g^*_{C,rel} = 59$



Output: Colorimetric Reflective System NRS11

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

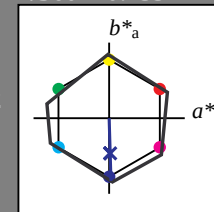
lab^*tch and lab^*nch

D65: hue B

LCH*Ma: 53 83 272

olv*Ma: 0.0 0.02 1.0

triangle lightness t^*



%Gamut

$u^*_{rel} = 119$

%Regularity

$g^*_{H,rel} = 47$

$g^*_{C,rel} = 100$

NRS11; adapted (a) CIELAB data

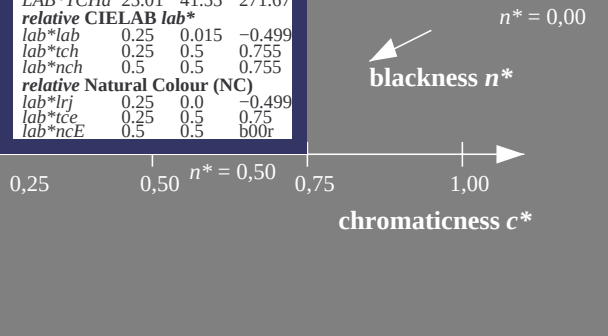
	$L^*=L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	53.2	77.06	34.32	84.36	24
JMa	53.2	-1.51	84.38	84.39	91
GMa	53.2	-82.27	18.98	84.44	167
G50Bma	53.2	-77.72	-32.98	84.44	203
Bma	53.2	4.37	-84.28	84.41	273
B50Rma	53.2	69.09	-48.41	84.37	325
NMa	10.99	0.0	0.0	0.0	0
WMa	95.41	0.0	0.0	0.0	0
RCIE	39.92	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*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	0.512	1.0	(1.0)
cmyn3*	0.5	0.488	0.0	(0.0)
olvi4*	0.5	0.512	1.0	1.0
cmyn4*	0.5	0.488	0.0	0.0
standard and adapted CIELAB				
LAB*LAB	74.3	1.23	-41.51	
LAB*LABa	74.3	1.2	-41.52	
LAB*TCa	75.0	41.54	271.66	
relative CIELAB lab*				
lab*lab	0.75	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	0.75	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	0.012	0.5	(1.0)
cmyn3*	1.0	0.988	0.5	(0.0)
olvi4*	0.5	0.512	1.0	0.5
cmyn4*	0.5	0.488	0.0	0.5
standard and adapted CIELAB				
LAB*LAB	32.1	1.27	-41.5	
LAB*LABa	32.1	1.21	-41.52	
LAB*TCa	25.01	41.55	271.67	
relative CIELAB lab*				
lab*lab	0.25	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	0.25	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	0.024	1.0	(1.0)
cmyn3*	1.0	0.976	0.0	(0.0)
olvi4*	0.0	0.024	1.0	1.0
cmyn4*	1.0	0.976	0.0	0.0
standard and adapted CIELAB				
LAB*LAB	53.2	2.46	-83.04	
LAB*LABa	53.2	2.42	-83.05	
LAB*TCa	50.0	83.09	271.67	
relative CIELAB lab*				
lab*lab	0.5	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	0.5	0.0	-0.999	
lab*tce	0.5	1.0	0.75	
lab*nce	0.0	1.0	b00r	



UE020-7, 3 step scales for constant CIELAB hue 271/360 = 0.754 (left)

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

BAM-test chart UE02; Colorimetric systems ORS18 & NRS11

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

input: $cmv0^* setcmykcolor$

output: no change compared to input