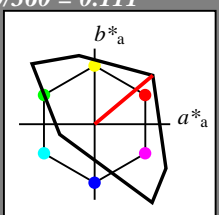


Input: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab^*h = 40/360 = 0.111$   
 $lab^*tch$  and  $lab^*nch$

D65: hue O  
LCH\*Ma: 51 100 40  
olv\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



TLS00; adapted (a) CIELAB data

	$L^*=L^*_a$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	50.5	76.92	64.55	100.42	40
YMa	92.66	-20.69	90.75	93.08	103
LMa	83.63	-82.75	79.9	115.04	136
CMa	86.88	-46.16	-13.55	48.12	196
VMa	30.39	76.06	-103.59	128.52	306
MMa	57.3	94.35	-58.41	110.97	328
NMa	0.01	0.0	0.0	0.0	0
WMa	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.74	27.99	65.07	25
JCIE	81.26	-2.88	71.56	71.62	92
GCIE	52.23	-42.41	13.6	44.55	162
BCIE	30.57	1.41	-46.46	46.49	272

%Gamut  
 $u^*_{rel} = 158$   
%Regularity  
 $g^*_{H,rel} = 20$   
 $g^*_{C,rel} = 37$

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 0.0  
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 47.72 0.0 0.0  
LAB\*LABa 47.72 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 0.03 0.0 0.0  
LAB\*LABa 0.03 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 -

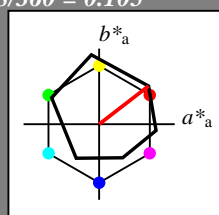
$n^* = 1.0$

Output: Colorimetric Offset 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	65.39	50.52	82.63	38
YMa	90.37	-10.26	91.75	92.32	96
LMa	50.9	-62.83	34.96	71.91	151
CMa	58.62	-30.34	-45.01	54.3	236
VMa	25.72	31.1	-44.4	54.22	305
MMa	48.13	75.28	-8.36	75.74	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	64.57	25
JCIE	81.26	-2.16	67.76	67.79	92
GCIE	52.23	-42.25	11.76	43.87	164
BCIE	30.57	1.15	-46.84	46.86	271

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

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 -0.98 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 -0.24 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 -0.47  
LAB\*LABa 18.02 0.0 0.0  
LAB\*TCHa 18.01 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 -

$n^* = 1.0$

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 72.95 38.45 32.27  
LAB\*LABa 72.95 38.45 32.27  
LAB\*TCHa 75.0 50.2 40.0

relative CIELAB lab\*  
lab\*lab 0.765 0.383 0.321  
lab\*tch 0.75 0.5 0.111  
lab\*nch 0.0 0.5 0.111

relative Natural Colour (NC)  
lab\*lrj 0.765 0.471 0.167  
lab\*tce 0.75 0.5 0.054  
lab\*nce 0.0 0.5 r21j

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 25.26 38.45 32.27  
LAB\*LABa 25.26 38.45 32.27  
LAB\*TCHa 25.01 50.2 40.0

relative CIELAB lab\*  
lab\*lab 0.265 0.383 0.321  
lab\*tch 0.25 0.5 0.111  
lab\*nch 0.5 0.5 0.111

relative Natural Colour (NC)  
lab\*lrj 0.265 0.471 0.167  
lab\*tce 0.25 0.5 0.054  
lab\*nce 0.5 0.5 r21j

$n^* = 0.50$

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 50.5 76.9 64.54  
LAB\*LABa 50.5 76.9 64.54  
LAB\*TCHa 50.0 100.4 40.0

relative CIELAB lab\*  
lab\*lab 0.529 0.766 0.643  
lab\*tch 0.5 1.0 0.111  
lab\*nch 0.0 1.0 0.111

relative Natural Colour (NC)  
lab\*lrj 0.529 0.942 0.335  
lab\*tce 0.5 1.0 0.054  
lab\*nce 0.0 1.0 r21j

$n^* = 0.00$

blackness  $n^*$

chromaticness  $c^*$

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

standard and adapted CIELAB  
LAB\*LAB 71.67 32.15 28.41  
LAB\*LABa 71.67 32.69 25.25  
LAB\*TCHa 75.0 41.31 37.69

relative CIELAB lab\*  
lab\*lab 0.693 0.396 0.306  
lab\*tch 0.75 0.5 0.105  
lab\*nch 0.0 0.5 0.105

relative Natural Colour (NC)  
lab\*lrj 0.693 0.477 0.15  
lab\*tce 0.75 0.5 0.048  
lab\*nce 0.0 0.5 r19j

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 32.98 32.9 25.8  
LAB\*LABa 32.98 32.69 25.25  
LAB\*TCHa 25.01 41.31 37.69

relative CIELAB lab\*  
lab\*lab 0.193 0.396 0.306  
lab\*tch 0.25 0.5 0.105  
lab\*nch 0.5 0.5 0.105

relative Natural Colour (NC)  
lab\*lrj 0.193 0.477 0.15  
lab\*tce 0.25 0.5 0.048  
lab\*nce 0.5 0.5 r19j

$n^* = 0.50$

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

standard and adapted CIELAB  
LAB\*LAB 47.94 65.3 52.06  
LAB\*LABa 47.94 65.37 50.51  
LAB\*TCHa 50.0 82.61 37.69

relative CIELAB lab\*  
lab\*lab 0.387 0.791 0.611  
lab\*tch 0.5 1.0 0.105  
lab\*nch 0.0 1.0 0.105

relative Natural Colour (NC)  
lab\*lrj 0.387 0.954 0.299  
lab\*tce 0.5 1.0 0.048  
lab\*nce 0.0 1.0 r19j

$n^* = 0.00$

blackness  $n^*$

chromaticness  $c^*$

NE150-7, 3 step scales for constant CIELAB hue 40/360 = 0.111 (left)

3 step scales for constant CIELAB hue 38/360 = 0.105 (right)

BAM-test chart NE15; Colorimetric systems ORS18 & ORS18  
D65: 2 coordinate data of 3 step colour scales for 10 hues

input:  $olv^* setrgbcolor$   
output: Startup (S) data dependend

See for similar files: <http://www.ps.bam.de/NE15/>  
Technical information: <http://www.ps.bam.de>  
Version 2.1, io=1,1?

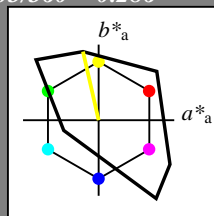
BAM registration: 20060101-NE15/10L/L15E00SP.PS/.PDF BAM material: code=rh4ta  
application for evaluation and measurement of printer or monitor systems  
/NE15/ Form: 1/10, Serie: 1/1, Page: 1 Page count: 1

Input: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab^*h = 103/360 = 0.286$   
 $lab^*tch$  and  $lab^*nch$

D65: hue Y  
LCH\*Ma: 93 93 103  
olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



TLS00; adapted (a) CIELAB data

	$L^*=L^*_a$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	50.5	76.92	64.55	100.42	40
YMa	92.66	-20.69	90.75	93.08	103
LMa	83.63	-82.75	79.9	115.04	136
CMa	86.88	-46.16	-13.55	48.12	196
VMa	30.39	76.06	-103.59	128.52	306
MMa	57.3	94.35	-58.41	110.97	328
NMa	0.01	0.0	0.0	0.0	0
WMa	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.74	27.99	65.07	25
JCIE	81.26	-2.88	71.56	71.62	92
GCIE	52.23	-42.41	13.6	44.55	162
BCIE	30.57	1.41	-46.46	46.49	272

%Gamut

$u^*_{rel} = 158$

%Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

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	0.0
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*	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	94.03	-10.34	45.37
LAB*LABa	94.03	-10.34	45.37
LAB*TCHa	75.0	46.53	102.85

relative CIELAB lab\*

lab*lab	0.985	-0.11	0.487
lab*tch	0.75	0.5	0.286
lab*nch	0.0	0.5	0.286

relative Natural Colour (NC)

lab*lrj	0.985	-0.116	0.486
lab*tce	0.75	0.5	0.288
lab*nce	0.0	0.5	0.286

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	47.72	0.0	0.0
LAB*LABa	47.72	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	0.03	0.0	0.0
LAB*LABa	0.03	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	-

$n^* = 1.0$

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	46.34	-10.34	45.37
LAB*LABa	46.34	-10.34	45.37
LAB*TCHa	25.01	46.53	102.85

relative CIELAB lab\*

lab*lab	0.486	-0.11	0.487
lab*tch	0.25	0.5	0.286
lab*nch	0.5	0.5	0.286

relative Natural Colour (NC)

lab*lrj	0.486	-0.116	0.486
lab*tce	0.25	0.5	0.288
lab*nce	0.5	0.5	0.286

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	-0.47
LAB*LABa	18.02	0.0	0.0
LAB*TCHa	18.01	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	-

$n^* = 0.00$   
blackness  $n^*$

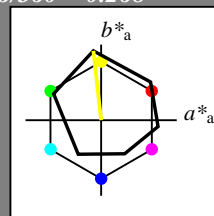
chromaticness  $c^*$

Output: Colorimetric Offset 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  $t^*$



ORS18; adapted (a) CIELAB data

	$L^*=L^*_a$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.39	50.52	82.63	38
YMa	90.37	-10.26	91.75	92.32	96
LMa	50.9	-62.83	34.96	71.91	151
CMa	58.62	-30.34	-45.01	54.3	236
VMa	25.72	31.1	-44.4	54.22	305
MMa	48.13	75.28	-8.36	75.74	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	64.57	25
JCIE	81.26	-2.16	67.76	67.79	92
GCIE	52.23	-42.25	11.76	43.87	164
BCIE	30.57	1.15	-46.84	46.86	271

%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

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	-0.98	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*	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	92.88	-6.06	50.46
LAB*LABa	92.88	-5.12	45.87
LAB*TCHa	75.0	46.15	96.38

relative CIELAB lab\*

lab*lab	0.967	-0.055	0.497
lab*tch	0.75	0.5	0.268
lab*nch	0.0	0.5	0.268

relative Natural Colour (NC)

lab*lrj	0.967	-0.048	0.497
lab*tce	0.75	0.5	0.266
lab*nce	0.0	0.5	0.268

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	-0.24	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*	0.5	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	54.19	-5.32	47.84
LAB*LABa	54.19	-5.12	45.87
LAB*TCHa	25.01	46.15	96.38

relative CIELAB lab\*

lab*lab	0.467	-0.055	0.497
lab*tch	0.25	0.5	0.268
lab*nch	0.5	0.5	0.268

relative Natural Colour (NC)

lab*lrj	0.467	-0.048	0.497
lab*tce	0.25	0.5	0.266
lab*nce	0.5	0.5	0.268

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	1.0

standard and adapted CIELAB

LAB*LAB	90.36	-11.15	96.15
LAB*LABa	90.36	-10.25	91.73
LAB*TCHa	50.0	92.3	96.38

relative CIELAB lab\*

lab*lab	0.935	-0.11	0.994
lab*tch	0.5	1.0	0.268
lab*nch	0.0	1.0	0.268

relative Natural Colour (NC)

lab*lrj	0.935	-0.097	0.995
lab*tce	0.5	1.0	0.266
lab*nce	0.0	1.0	0.268

$n^* = 0.00$   
blackness  $n^*$

chromaticness  $c^*$

$n^* = 1.0$

NE150-7, 3 step scales for constant CIELAB hue 103/360 = 0.286 (left)

3 step scales for constant CIELAB hue 96/360 = 0.268 (right)

BAM-test chart NE15; Colorimetric systems ORS18 & ORS18  
D65: 2 coordinate data of 3 step colour scales for 10 hues

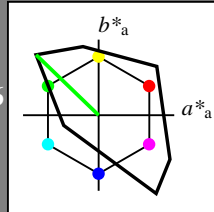
input:  $olv^* setrgbcolor$   
output: Startup (S) data dependend

Input: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab^*h = 136/360 = 0.378$   
 $lab^*tch$  and  $lab^*nch$

D65: hue L  
LCH\*Ma: 84 115 136  
olv\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



TLS00; adapted (a) CIELAB data

	$L^*$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	50.5	76.92	64.55	100.42	40
YMa	92.66	-20.69	90.75	93.08	103
LMa	83.63	-82.75	79.9	115.04	136
CMa	86.88	-46.16	-13.55	48.12	196
VMa	30.39	76.06	-103.59	128.52	306
MMa	57.3	94.35	-58.41	110.97	328
NMa	0.01	0.0	0.0	0.0	0
WMa	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.74	27.99	65.07	25
JCIE	81.26	-2.88	71.56	71.62	92
GCIE	52.23	-42.41	13.6	44.55	162
BCIE	30.57	1.41	-46.46	46.49	272

%Gamut

$u^*_{rel} = 158$

%Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

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	0.0
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	47.72	0.0	0.0
LAB*LABa	47.72	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	0.03	0.0	0.0
LAB*LABa	0.03	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	-

$n^* = 1.0$

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	89.51	-41.36	39.94
LAB*LABa	89.51	-41.36	39.94
LAB*TCHa	75.0	57.51	136.01

relative CIELAB lab\*

lab*lab	0.938	-0.359	0.347
lab*tch	0.75	0.5	0.378
lab*nch	0.0	0.5	0.378

relative Natural Colour (NC)

lab*lrj	0.938	-0.415	0.278
lab*tce	0.75	0.5	0.406
lab*nce	0.0	0.5	0.62g

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	41.82	-41.36	39.94
LAB*LABa	41.82	-41.36	39.94
LAB*TCHa	25.01	57.51	136.01

relative CIELAB lab\*

lab*lab	0.438	-0.359	0.347
lab*tch	0.25	0.5	0.378
lab*nch	0.5	0.5	0.378

relative Natural Colour (NC)

lab*lrj	0.438	-0.415	0.278
lab*tce	0.25	0.5	0.406
lab*nce	0.5	0.5	0.62g

$n^* = 0.50$

blackness  $n^*$

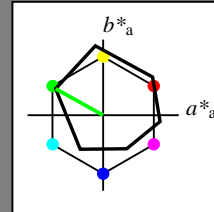
chromaticness  $c^*$

Output: Colorimetric Offset 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

	$L^*$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.39	50.52	82.63	38
YMa	90.37	-10.26	91.75	92.32	96
LMa	50.9	-62.83	34.96	71.91	151
CMa	58.62	-30.34	-45.01	54.3	236
VMa	25.72	31.1	-44.4	54.22	305
MMa	48.13	75.28	-8.36	75.74	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	64.57	25
JCIE	81.26	-2.16	67.76	67.79	92
GCIE	52.23	-42.25	11.76	43.87	164
BCIE	30.57	1.15	-46.84	46.86	271

%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

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	-0.98	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	-0.24	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*	0.5	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	73.15	-31.96	20.73
LAB*LABa	73.15	-31.4	17.48
LAB*TCHa	75.0	35.95	150.91

relative CIELAB lab\*

lab*lab	0.712	-0.436	0.243
lab*tch	0.75	0.5	0.419
lab*nch	0.0	0.5	0.419

relative Natural Colour (NC)

lab*lrj	0.712	-0.478	0.144
lab*tce	0.75	0.5	0.453
lab*nce	0.0	0.5	0.81g

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	34.46	-31.22	18.12
LAB*LABa	34.46	-31.4	17.48
LAB*TCHa	25.01	35.95	150.91

relative CIELAB lab\*

lab*lab	0.213	-0.436	0.243
lab*tch	0.25	0.5	0.419
lab*nch	0.5	0.5	0.419

relative Natural Colour (NC)

lab*lrj	0.213	-0.478	0.144
lab*tce	0.25	0.5	0.453
lab*nce	0.5	0.5	0.81g

$n^* = 0.50$

blackness  $n^*$

chromaticness  $c^*$

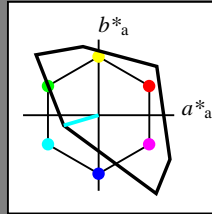
$n^* = 1.0$

Input: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab^*h = 196/360 = 0.545$   
 $lab^*tch$  and  $lab^*nch$

D65: hue C  
LCH\*Ma: 87 48 196  
olv\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



TLS00; adapted (a) CIELAB data

	$L^*$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	50.5	76.92	64.55	100.42	40
YMa	92.66	-20.69	90.75	93.08	103
LMa	83.63	-82.75	79.9	115.04	136
CMa	86.88	-46.16	-13.55	48.12	196
VMa	30.39	76.06	-103.59	128.52	306
MMa	57.3	94.35	-58.41	110.97	328
NMa	0.01	0.0	0.0	0.0	0
WMa	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.74	27.99	65.07	25
JCIE	81.26	-2.88	71.56	71.62	92
GCIE	52.23	-42.41	13.6	44.55	162
BCIE	30.57	1.41	-46.46	46.49	272

%Gamut

$u^*_{rel} = 158$

%Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

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	0.0
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	47.72	0.0	0.0
LAB*LABa	47.72	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	0.03	0.0	0.0
LAB*LABa	0.03	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	-

$n^* = 1.0$

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	91.14	-23.07	-6.77
LAB*LABa	91.14	-23.07	-6.77
LAB*TCHa	75.0	24.06	196.37

relative CIELAB lab\*

lab*lab	0.955	-0.479	-0.14
lab*tch	0.75	0.5	0.545
lab*nch	0.0	0.5	0.545

relative Natural Colour (NC)

lab*lrj	0.955	-0.44	-0.234
lab*tce	0.75	0.5	0.578
lab*nce	0.0	0.5	g31b

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	43.45	-23.07	-6.77
LAB*LABa	43.45	-23.07	-6.77
LAB*TCHa	25.01	24.06	196.37

relative CIELAB lab\*

lab*lab	0.455	-0.479	-0.14
lab*tch	0.25	0.5	0.545
lab*nch	0.5	0.5	0.545

relative Natural Colour (NC)

lab*lrj	0.455	-0.44	-0.234
lab*tce	0.25	0.5	0.578
lab*nce	0.5	0.5	g31b

$n^* = 0.50$

chromaticness  $c^*$

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	86.87	-46.15	-13.55
LAB*LABa	86.87	-46.15	-13.55
LAB*TCHa	50.0	48.11	196.37

relative CIELAB lab\*

lab*lab	0.911	-0.958	-0.281
lab*tch	0.5	1.0	0.545
lab*nch	0.0	1.0	0.545

relative Natural Colour (NC)

lab*lrj	0.911	-0.881	-0.469
lab*tce	0.5	1.0	0.578
lab*nce	0.0	1.0	g31b

$n^* = 0.00$

blackness  $n^*$

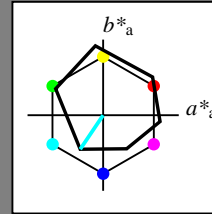
chromaticness  $c^*$

Output: Colorimetric Offset 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  $t^*$



ORS18; adapted (a) CIELAB data

	$L^*$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.39	50.52	82.63	38
YMa	90.37	-10.26	91.75	92.32	96
LMa	50.9	-62.83	34.96	71.91	151
CMa	58.62	-30.34	-45.01	54.3	236
VMa	25.72	31.1	-44.4	54.22	305
MMa	48.13	75.28	-8.36	75.74	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	64.57	25
JCIE	81.26	-2.16	67.76	67.79	92
GCIE	52.23	-42.25	11.76	43.87	164
BCIE	30.57	1.15	-46.84	46.86	271

%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

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	-0.98	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	-0.24	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	-0.47
LAB*LABa	18.02	0.0	0.0
LAB*TCHa	18.01	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	-

$n^* = 1.0$

blackness  $n^*$

chromaticness  $c^*$

relative Inform. Technology (IT)

olvi3*	0.5	1.0	1.0	(1.0)
cmyn3*	0.5	0.0	0.0	(0.0)
olvi4*	0.5	1.0	1.0	1.0
cmyn4*	0.5	0.0	0.0	0.0

standard and adapted CIELAB

LAB*LAB	77.01	-15.8	-18.98
LAB*LABa	77.01	-15.16	-22.5
LAB*TCHa	75.0	27.14	236.02

relative CIELAB lab\*

lab*lab	0.762	-0.278	-0.414
lab*tch	0.75	0.5	0.656
lab*nch	0.0	0.5	0.656

relative Natural Colour (NC)

lab*lrj	0.762	-0.247	-0.433
lab*tce	0.75	0.5	0.667
lab*nce	0.0	0.5	g66b

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	38.32	-15.05	-21.6
LAB*LABa	38.32	-15.16	-22.5
LAB*TCHa	25.01	27.14	236.02

relative CIELAB lab\*

lab*lab	0.262	-0.278	-0.414
lab*tch	0.25	0.5	0.656
lab*nch	0.5	0.5	0.656

relative Natural Colour (NC)

lab*lrj	0.262	-0.247	-0.433
lab*tce	0.25	0.5	0.667
lab*nce	0.5	0.5	g66b

$n^* = 0.00$

blackness  $n^*$

chromaticness  $c^*$

Input: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab^*h = 306/360 = 0.851$   
 $lab^*tch$  and  $lab^*nch$

D65: hue V  
LCH\*Ma: 30 129 306  
olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$

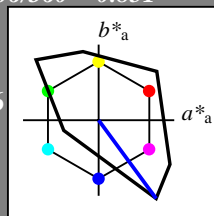


Table with 5 columns: L\*, a\*, b\*, C\*ab,a, h\*ab,a. Rows include OMa, YMa, LMa, CMa, VMa, MMa, NMa, WMa, RCIE, JCIE, GCIE, BCIE.

%Gamut

$u^*_{rel} = 158$

%Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 1.0, 0.0, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.5, 0.5, 1.0, 0.5.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.0, 1.0, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

$n^* = 1.0$

Output: Colorimetric Offset 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  $t^*$

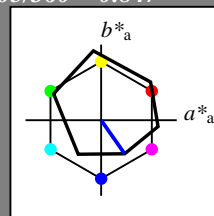


Table with 5 columns: L\*, a\*, b\*, C\*ab,a, h\*ab,a. Rows include OMa, YMa, LMa, CMa, VMa, MMa, NMa, WMa, RCIE, JCIE, GCIE, BCIE.

%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 1.0, 0.0, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.5, 0.5, 1.0, 0.5.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.0, 1.0, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

$n^* = 1.0$

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.5, 0.5, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.0, 0.0, 0.5, 1.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

$n^* = 0.50$

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.0, 0.0, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

$n^* = 0.00$

blackness  $n^*$

chromaticness  $c^*$

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.5, 0.5, 0.5, 0.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.0, 0.0, 0.0, 0.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.5, 0.5, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.0, 0.0, 0.5, 1.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

blackness  $n^*$

chromaticness  $c^*$

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.0, 0.0, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.0, 0.0, 0.5, 1.0.

standard and adapted CIELAB LAB\*LAB, LAB\*LABa, LAB\*TCHa

relative CIELAB lab\* lab\*lab, lab\*tch, lab\*nch

relative Natural Colour (NC) lab\*lrj, lab\*tce, lab\*ncE

$n^* = 0.00$

blackness  $n^*$

chromaticness  $c^*$

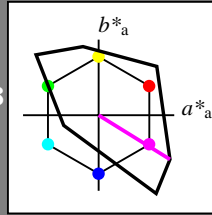
BAM registration: 20060101-NE15/10L/L15E05SP.PS/.PDF BAM material: code=rh4ta  
application for evaluation and measurement of printer or monitor systems  
/NE15/ Form: 6/10, Serie: 1/1, Page: 6 Page count: 6

Input: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab^*h = 328/360 = 0.912$   
 $lab^*tch$  and  $lab^*nch$

D65: hue M  
LCH\*Ma: 57 111 328  
olv\*Ma: 1.0 0.0 1.0

triangle lightness  $t^*$



TLS00; adapted (a) CIELAB data

	$L^*=L^*_a$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	50.5	76.92	64.55	100.42	40
YMa	92.66	-20.69	90.75	93.08	103
LMa	83.63	-82.75	79.9	115.04	136
CMa	86.88	-46.16	-13.55	48.12	196
VMa	30.39	76.06	-103.59	128.52	306
MMa	57.3	94.35	-58.41	110.97	328
NMa	0.01	0.0	0.0	0.0	0
WMa	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.74	27.99	65.07	25
JCIE	81.26	-2.88	71.56	71.62	92
GCIE	52.23	-42.41	13.6	44.55	162
BCIE	30.57	1.41	-46.46	46.49	272

%Gamut  
 $u^*_{rel} = 158$   
%Regularity  
 $g^*_{H,rel} = 20$   
 $g^*_{C,rel} = 37$

relative Inform. Technology (IT)

	1.0	1.0	1.0	(1.0)
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 0.0  
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)

	0.5	0.5	0.5	(1.0)
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 47.72 0.0 0.0  
LAB\*LABa 47.72 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)

	0.0	0.0	0.0	(1.0)
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 0.03 0.0 0.0  
LAB\*LABa 0.03 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 -

$n^* = 1.0$

relative Inform. Technology (IT)

	1.0	0.5	1.0	(1.0)
olvi3*	1.0	0.5	1.0	(1.0)
cmyn3*	0.0	0.5	0.0	(0.0)
olvi4*	1.0	0.5	1.0	1.0
cmyn4*	0.0	0.5	0.0	0.0

standard and adapted CIELAB  
LAB\*LAB 76.35 47.17 -29.19  
LAB\*LABa 76.35 47.17 -29.19  
LAB\*TCHa 75.0 55.47 328.23

relative CIELAB lab\*  
lab\*lab 0.8 0.425 -0.262  
lab\*tch 0.75 0.5 0.912  
lab\*nch 0.0 0.5 0.912

relative Natural Colour (NC)  
lab\*lrj 0.8 0.352 -0.354  
lab\*tce 0.75 0.5 0.874  
lab\*nce 0.0 0.5 b49r

relative Inform. Technology (IT)

	0.5	0.0	0.5	(1.0)
olvi3*	0.5	0.0	0.5	(1.0)
cmyn3*	0.5	1.0	0.5	(0.0)
olvi4*	1.0	0.5	1.0	0.5
cmyn4*	0.0	0.5	0.0	0.5

standard and adapted CIELAB  
LAB\*LAB 28.66 47.17 -29.19  
LAB\*LABa 28.66 47.17 -29.19  
LAB\*TCHa 25.01 55.47 328.23

relative CIELAB lab\*  
lab\*lab 0.3 0.425 -0.262  
lab\*tch 0.25 0.5 0.912  
lab\*nch 0.5 0.5 0.912

relative Natural Colour (NC)  
lab\*lrj 0.3 0.352 -0.354  
lab\*tce 0.25 0.5 0.874  
lab\*nce 0.5 0.5 b49r

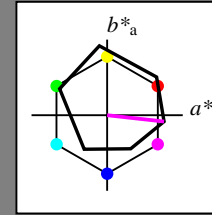
$n^* = 0.50$   
 $n^* = 0.00$   
blackness  $n^*$   
chromaticness  $c^*$

Output: Colorimetric Offset 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	65.39	50.52	82.63	38
YMa	90.37	-10.26	91.75	92.32	96
LMa	50.9	-62.83	34.96	71.91	151
CMa	58.62	-30.34	-45.01	54.3	236
VMa	25.72	31.1	-44.4	54.22	305
MMa	48.13	75.28	-8.36	75.74	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	64.57	25
JCIE	81.26	-2.16	67.76	67.79	92
GCIE	52.23	-42.25	11.76	43.87	164
BCIE	30.57	1.15	-46.84	46.86	271

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

relative Inform. Technology (IT)

	1.0	1.0	1.0	(1.0)
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 -0.98 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)

	0.5	0.5	0.5	(1.0)
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 -0.24 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)

	0.0	0.0	0.0	(1.0)
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 -0.47  
LAB\*LABa 18.02 0.0 0.0  
LAB\*TCHa 18.01 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 -

$n^* = 1.0$

relative Inform. Technology (IT)

	1.0	0.5	1.0	(1.0)
olvi3*	1.0	0.5	1.0	(1.0)
cmyn3*	0.0	0.5	0.0	(0.0)
olvi4*	1.0	0.5	1.0	1.0
cmyn4*	0.0	0.5	0.0	0.0

standard and adapted CIELAB  
LAB\*LAB 71.77 37.1 -1.01  
LAB\*LABa 71.77 37.63 -4.17  
LAB\*TCHa 75.0 37.86 353.66

relative CIELAB lab\*  
lab\*lab 0.695 0.497 -0.054  
lab\*tch 0.75 0.5 0.982  
lab\*nch 0.0 0.5 0.982

relative Natural Colour (NC)  
lab\*lrj 0.695 0.454 -0.208  
lab\*tce 0.75 0.5 0.932  
lab\*nce 0.0 0.5 b72r

relative Inform. Technology (IT)

	0.5	0.0	0.5	(1.0)
olvi3*	0.5	0.0	0.5	(1.0)
cmyn3*	0.5	1.0	0.5	(0.0)
olvi4*	1.0	0.5	1.0	0.5
cmyn4*	0.0	0.5	0.0	0.5

standard and adapted CIELAB  
LAB\*LAB 33.07 37.84 -3.62  
LAB\*LABa 33.07 37.63 -4.17  
LAB\*TCHa 25.01 37.86 353.66

relative CIELAB lab\*  
lab\*lab 0.195 0.497 -0.054  
lab\*tch 0.25 0.5 0.982  
lab\*nch 0.5 0.5 0.982

relative Natural Colour (NC)  
lab\*lrj 0.195 0.454 -0.208  
lab\*tce 0.25 0.5 0.932  
lab\*nce 0.5 0.5 b72r

$n^* = 0.50$   
 $n^* = 0.00$   
blackness  $n^*$   
chromaticness  $c^*$

NE150-7, 3 step scales for constant CIELAB hue 328/360 = 0.912 (left)

3 step scales for constant CIELAB hue 354/360 = 0.982 (right)

BAM-test chart NE15; Colorimetric systems ORS18 & ORS18  
D65: 2 coordinate data of 3 step colour scales for 10 hues

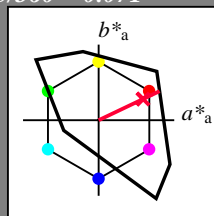
input:  $olv^* setrgbcolor$   
output: Startup (S) data dependend

Input: Colorimetric Television Luminous System TLS00

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

D65: hue R  
LCH\*Ma: 52 89 25  
olv\*Ma: 1.0 0.0 0.21

triangle lightness  $t^*$



TLS00; adapted (a) CIELAB data

	$L^*=L^*_a$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	50.5	76.92	64.55	100.42	40
YMa	92.66	-20.69	90.75	93.08	103
LMa	83.63	-82.75	79.9	115.04	136
CMa	86.88	-46.16	-13.55	48.12	196
VMa	30.39	76.06	-103.59	128.52	306
MMa	57.3	94.35	-58.41	110.97	328
NMa	0.01	0.0	0.0	0.0	0
WMa	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.74	27.99	65.07	25
JCIE	81.26	-2.88	71.56	71.62	92
GCIE	52.23	-42.41	13.6	44.55	162
BCIE	30.57	1.41	-46.46	46.49	272

%Gamut  
 $u^*_{rel} = 158$   
%Regularity  
 $g^*_{H,rel} = 20$   
 $g^*_{C,rel} = 37$

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 0.0  
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 47.72 0.0 0.0  
LAB\*LABa 47.72 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 0.03 0.0 0.0  
LAB\*LABa 0.03 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 -

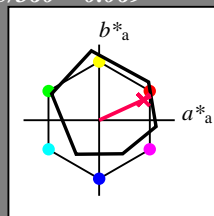
$n^* = 1.0$

Output: Colorimetric Offset 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  $t^*$



ORS18; adapted (a) CIELAB data

	$L^*=L^*_a$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$
OMa	47.94	65.39	50.52	82.63	38
YMa	90.37	-10.26	91.75	92.32	96
LMa	50.9	-62.83	34.96	71.91	151
CMa	58.62	-30.34	-45.01	54.3	236
VMa	25.72	31.1	-44.4	54.22	305
MMa	48.13	75.28	-8.36	75.74	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	64.57	25
JCIE	81.26	-2.16	67.76	67.79	92
GCIE	52.23	-42.25	11.76	43.87	164
BCIE	30.57	1.15	-46.84	46.86	271

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

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 -0.98 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 -0.24 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 -0.47  
LAB\*LABa 18.02 0.0 0.0  
LAB\*TCHa 18.01 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 -

$n^* = 1.0$

relative Inform. Technology (IT)  
olvi3\* 1.0 0.5 0.606 (1.0)  
cmyn3\* 0.0 0.5 0.394 (0.0)  
olvi4\* 1.0 0.5 0.606 1.0  
cmyn4\* 0.0 0.5 0.394 0.0

standard and adapted CIELAB  
LAB\*LAB 73.67 40.3 19.2  
LAB\*LABa 73.67 40.3 19.2  
LAB\*TCHa 75.0 44.64 25.47

relative CIELAB lab\*  
lab\*lab 0.772 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 0.772 0.5 0.0  
lab\*tce 0.75 0.5 1.0  
lab\*nce 0.0 0.5 b99r

relative Inform. Technology (IT)  
olvi3\* 0.5 0.0 0.106 (1.0)  
cmyn3\* 0.5 1.0 0.894 (0.0)  
olvi4\* 1.0 0.5 0.606 0.5  
cmyn4\* 0.0 0.5 0.394 0.5

standard and adapted CIELAB  
LAB\*LAB 25.98 40.3 19.21  
LAB\*LABa 25.98 40.3 19.21  
LAB\*TCHa 25.01 44.65 25.49

relative CIELAB lab\*  
lab\*lab 0.272 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 0.272 0.5 0.0  
lab\*tce 0.25 0.5 0.0  
lab\*nce 0.5 0.5 r00j

$n^* = 0.50$

blackness  $n^*$

chromaticness  $c^*$

relative Inform. Technology (IT)  
olvi3\* 1.0 0.0 0.213 (1.0)  
cmyn3\* 0.0 1.0 0.787 (0.0)  
olvi4\* 1.0 0.0 0.213 1.0  
cmyn4\* 0.0 1.0 0.787 0.0

standard and adapted CIELAB  
LAB\*LAB 51.94 80.61 38.42  
LAB\*LABa 51.94 80.61 38.42  
LAB\*TCHa 50.0 89.29 25.48

relative CIELAB lab\*  
lab\*lab 0.544 1.0 0.0  
lab\*tch 0.5 1.0 0.0  
lab\*nch 0.0 1.0 r00j

relative Natural Colour (NC)  
lab\*lrj 0.544 1.0 0.0  
lab\*tce 0.5 1.0 0.0  
lab\*nce 0.0 1.0 r00j

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 -0.24 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 -

$n^* = 0.00$

blackness  $n^*$

chromaticness  $c^*$

$n^* = 0.50$

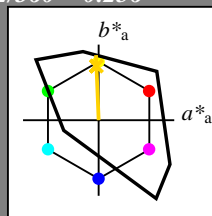
Input: Colorimetric Television Luminous System TLS00

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

$lab^*tch$  and  $lab^*nch$

D65: hue J  
LCH\*Ma: 85 86 92  
olv\*Ma: 1.0 0.82 0.0

triangle lightness  $t^*$



TLS00; adapted (a) CIELAB data

Table with 5 columns: L\*, a\*, b\*, C\*ab,a, h\*ab,a. Rows include OMa, YMa, LMa, CMa, VMa, MMa, NMa, WMa, RCIE, JCIE, GCIE, BCIE.

%Gamut

$u^*_{rel} = 158$

%Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 1.0, 0.0, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB 95.41 0.0 0.0 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) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.5, 0.5, 1.0, 0.5.

standard and adapted CIELAB LAB\*LAB 47.72 0.0 0.0 LAB\*LABa 47.72 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) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.0, 0.0, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB 0.03 0.0 0.0 LAB\*LABa 0.03 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 -

$n^* = 1.0$

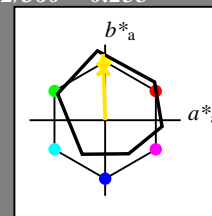
Output: Colorimetric Offset Reflective System ORS18

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

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

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

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 1.0, 0.0, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB 95.41 -0.98 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) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.5, 0.5, 1.0, 0.5.

standard and adapted CIELAB LAB\*LAB 56.71 -0.24 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) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 0.0, 0.0, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB 18.02 0.5 -0.47 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 -

$n^* = 1.0$

ORS18; adapted (a) CIELAB data

Table with 5 columns: L\*, a\*, b\*, C\*ab,a, h\*ab,a. Rows include OMa, YMa, LMa, CMa, VMa, MMa, NMa, WMa, RCIE, JCIE, GCIE, BCIE.

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 1.0, 0.0, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB 90.8 -2.3 48.29 LAB\*LABa 90.8 -1.4 43.84 LAB\*TCHa 75.0 43.86 91.85

relative CIELAB lab\* lab\*lab 0.94 -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 0.94 0.0 0.5 lab\*tce 0.75 0.5 0.25 lab\*nce 0.0 0.5 j00g

relative Inform. Technology (IT) table with columns olvi3\*, cmyn3\*, olvi4\*, cmyn4\* and values 1.0, 0.0, 1.0, 0.0.

standard and adapted CIELAB LAB\*LAB 86.19 -3.62 91.81 LAB\*LABa 86.19 -2.81 87.67 LAB\*TCHa 50.0 87.72 91.84

relative CIELAB lab\* lab\*lab 0.881 -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 0.881 0.0 1.0 lab\*tce 0.5 1.0 0.25 lab\*nce 0.0 1.0 j00g

$n^* = 0.00$

chromaticness  $c^*$

chromaticness  $c^*$

NE150-7, 3 step scales for constant CIELAB hue 92/360 = 0.256 (left)

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

BAM-test chart NE15; Colorimetric systems ORS18 & ORS18

D65: 2 coordinate data of 3 step colour scales for 10 hues

input:  $olv^* setrgbcolor$

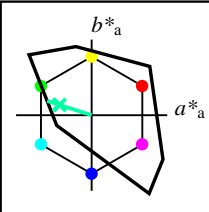
output: Startup (S) data dependend



### Input: Colorimetric Television Luminous System TLS00

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

D65: hue G  
 LCH\*Ma: 86 62 162  
 olv\*Ma: 0.0 1.0 0.65  
 triangle lightness  $t^*$



TLS00; adapted (a) CIELAB data					
$L^*$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$	
OMa	50.5	76.92	64.55	100.42	40
YMa	92.66	-20.69	90.75	93.08	103
LMa	83.63	-82.75	79.9	115.04	136
CMa	86.88	-46.16	-13.55	48.12	196
VMa	30.39	76.06	-103.59	128.52	306
MMa	57.3	94.35	-58.41	110.97	328
NMa	0.01	0.0	0.0	0.0	0
WMa	95.41	0.0	0.0	0.0	0
RCIE	39.92	58.74	27.99	65.07	25
JCIE	81.26	-2.88	71.56	71.62	92
GCIE	52.23	-42.41	13.6	44.55	162
BCIE	30.57	1.41	-46.46	46.49	272

%Gamut  
 $u^*_{rel} = 158$   
 %Regularity  
 $g^*_{H,rel} = 20$   
 $g^*_{C,rel} = 37$

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 0.0  
 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 47.72 0.0 0.0  
 LAB\*LABa 47.72 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 0.03 0.0 0.0  
 LAB\*LABa 0.03 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 -

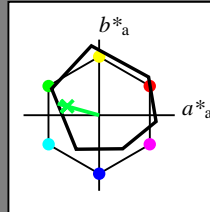
relative Natural Colour (NC)  
 lab\*lrj 0.0 0.0 0.0  
 lab\*tce 0.0 0.0 -  
 lab\*nce 1.0 0.0 -

$n^* = 1.0$

### Output: Colorimetric Offset 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					
$L^*$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$	
OMa	47.94	65.39	50.52	82.63	38
YMa	90.37	-10.26	91.75	92.32	96
LMa	50.9	-62.83	34.96	71.91	151
CMa	58.62	-30.34	-45.01	54.3	236
VMa	25.72	31.1	-44.4	54.22	305
MMa	48.13	75.28	-8.36	75.74	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	64.57	25
JCIE	81.26	-2.16	67.76	67.79	92
GCIE	52.23	-42.25	11.76	43.87	164
BCIE	30.57	1.15	-46.84	46.86	271

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

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 -0.98 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 -0.24 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\* 0.5 1.0 0.623 (1.0)  
 cmyn3\* 0.5 0.0 0.377 (0.0)  
 olvi4\* 0.5 1.0 0.623 1.0  
 cmyn4\* 0.5 0.0 0.377 0.0

standard and adapted CIELAB  
 LAB\*LAB 74.1 -27.98 10.94  
 LAB\*LABa 74.1 -27.4 7.62  
 LAB\*TCHa 75.0 28.45 164.46

relative CIELAB lab\*  
 lab\*lab 0.725 -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 0.725 -0.499 0.0  
 lab\*tce 0.75 0.5 0.5  
 lab\*nce 0.0 0.5 g00b

relative Inform. Technology (IT)  
 olvi3\* 0.0 0.5 0.123 (1.0)  
 cmyn3\* 1.0 0.5 0.877 (0.0)  
 olvi4\* 0.5 1.0 0.623 0.5  
 cmyn4\* 0.5 0.0 0.377 0.5

standard and adapted CIELAB  
 LAB\*LAB 35.41 -27.24 8.34  
 LAB\*LABa 35.41 -27.4 7.63  
 LAB\*TCHa 25.01 28.46 164.44

relative CIELAB lab\*  
 lab\*lab 0.225 -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 0.225 -0.499 0.0  
 lab\*tce 0.25 0.5 0.5  
 lab\*nce 0.5 0.5 j99g

relative Inform. Technology (IT)  
 olvi3\* 0.0 1.0 0.246 (1.0)  
 cmyn3\* 1.0 0.0 0.754 (0.0)  
 olvi4\* 0.0 1.0 0.246 1.0  
 cmyn4\* 1.0 0.0 0.754 0.0

standard and adapted CIELAB  
 LAB\*LAB 52.8 -54.98 17.14  
 LAB\*LABa 52.8 -54.81 15.26  
 LAB\*TCHa 50.0 56.91 164.45

relative CIELAB lab\*  
 lab\*lab 0.45 -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 0.45 -0.999 0.0  
 lab\*tce 0.5 1.0 0.5  
 lab\*nce 0.0 1.0 j99g

$n^* = 0.00$

relative Inform. Technology (IT)  
 olvi3\* 0.5 1.0 0.826 (1.0)  
 cmyn3\* 0.5 0.0 0.174 (0.0)  
 olvi4\* 0.5 1.0 0.827 1.0  
 cmyn4\* 0.5 0.0 0.173 0.0

standard and adapted CIELAB  
 LAB\*LAB 90.57 -29.42 9.43  
 LAB\*LABa 90.57 -29.42 9.43  
 LAB\*TCHa 75.0 30.9 162.23

relative CIELAB lab\*  
 lab\*lab 0.949 -0.475 0.153  
 lab\*tch 0.75 0.5 0.457  
 lab\*nch 0.0 0.5 0.451

relative Natural Colour (NC)  
 lab\*lrj 0.949 -0.499 0.0  
 lab\*tce 0.75 0.5 0.5  
 lab\*nce 0.0 0.5 g00b

relative Inform. Technology (IT)  
 olvi3\* 0.0 1.0 0.653 (1.0)  
 cmyn3\* 1.0 0.0 0.347 (0.0)  
 olvi4\* 0.0 1.0 0.653 1.0  
 cmyn4\* 1.0 0.0 0.347 0.0

standard and adapted CIELAB  
 LAB\*LAB 85.74 -58.84 18.87  
 LAB\*LABa 85.74 -58.84 18.87  
 LAB\*TCHa 50.0 61.8 162.23

relative CIELAB lab\*  
 lab\*lab 0.899 -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 0.899 -0.999 0.0  
 lab\*tce 0.5 1.0 0.5  
 lab\*nce 0.0 1.0 g00b

$n^* = 0.00$

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 -0.24 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 -

blackness  $n^*$

chromaticness  $c^*$

blackness  $n^*$

chromaticness  $c^*$

blackness  $n^*$

chromaticness  $c^*$

