

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^*

relative Inform. Technology (IT)
 olv3* 1.0 1.0 1.0 (1.0)
 cmy3* 0.0 0.0 0.0 (0.0)
 olv4* 1.0 1.0 1.0 1.0
 cmy4* 0.0 0.0 0.0 0.0
 LAB*LAB 95.41 -0.97 4.75
 LAB*LABo 95.41 0.0 0.0
 LAB*TCHo 39.99 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*nce 1.0 0.0 0.0

relative Inform. Technology (IT)
 olv3* 0.5 0.5 0.5 (1.0)
 cmy3* 0.5 0.5 0.5 (0.0)
 olv4* 1.0 1.0 1.0 0.5
 cmy4* 0.0 0.0 0.0 0.5
 standard and adapted CIELAB
 LAB*LAB 56.71 -0.23 2.14
 LAB*LABo 56.71 0.0 0.0
 LAB*TCHo 50.0 0.01 -

relative CIELAB lab*
 lab*lab 0.5 0.0 0.0
 lab*tch 0.5 0.0 0.0
 lab*nch 0.5 0.0 -
 relative Natural Colour (NC)
 lab*lrj 0.5 0.0 0.0
 lab*nce 0.5 0.0 -

relative Inform. Technology (IT)
 olv3* 0.0 0.0 0.0 (1.0)
 cmy3* 1.0 1.0 1.0 (0.0)
 olv4* 1.0 1.0 1.0 0.0
 cmy4* 0.0 0.0 0.0 1.0
 standard and adapted CIELAB
 LAB*LAB 18.02 0.5 -0.46
 LAB*LABo 18.02 0.0 0.0
 LAB*TCHo 0.01 0.01 -

relative CIELAB lab*
 lab*lab 0.0 0.0 0.0
 lab*tch 1.0 0.0 -
 lab*nch 0.0 0.0 -
 relative Natural Colour (NC)
 lab*lrj 0.0 0.0 0.0
 lab*nce 0.0 0.0 -

$n^* = 1.0$

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
YMa	90.37	-10.27	91.77	92.34
YMa	50.9	-62.79	34.95	71.87
CMa	58.62	-30.35	-45.01	54.3
VMa	25.71	31.11	-44.42	54.24
MMa	48.13	75.27	-8.35	75.73
NMa	18.01	0.0	0.0	0.0
WMa	95.41	0.0	0.0	0.0
RCIE	39.92	58.66	26.98	64.56
ICIE	81.26	-2.17	67.76	67.79
GCIE	52.23	-42.26	11.75	43.87
BCIE	30.57	1.15	-46.84	46.87

relative Inform. Technology (IT)
 olv3* 1.0 0.5 0.5 (1.0)
 cmy3* 0.0 0.5 0.5 (0.0)
 olv4* 1.0 0.5 0.5 0.0
 cmy4* 0.0 0.5 0.5 0.0
 standard and adapted CIELAB
 LAB*LAB 71.67 32.15 28.41
 LAB*LABo 71.67 32.15 28.41
 LAB*TCHo 75.0 41.3 37.7

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*nce 0.75 0.5 0.048
 lab*nce 0.0 0.5 r19

relative Inform. Technology (IT)
 olv3* 0.5 0.0 0.0 (1.0)
 cmy3* 0.5 1.0 0.0 (0.0)
 olv4* 1.0 0.5 0.5 0.5
 cmy4* 0.0 0.5 0.5 0.5
 standard and adapted CIELAB
 LAB*LAB 32.98 32.9 25.8
 LAB*LABo 32.98 32.98 25.25
 LAB*TCHo 25.01 41.3 37.7

relative CIELAB lab*
 lab*lab 0.193 0.396 0.306
 lab*tch 0.25 0.5 0.105
 lab*nch 0.0 0.5 0.105
 relative Natural Colour (NC)
 lab*lrj 0.193 0.477 0.15
 lab*nce 0.25 0.5 0.048
 lab*nce 0.0 0.5 r19

relative Inform. Technology (IT)
 olv3* 1.0 0.0 0.0 (1.0)
 cmy3* 0.0 0.0 0.0 (0.0)
 olv4* 1.0 0.0 1.0 0.0
 cmy4* 0.0 0.0 1.0 0.0
 standard and adapted CIELAB
 LAB*LAB 47.95 65.29 52.06
 LAB*LABo 47.95 65.36 50.51
 LAB*TCHo 50.0 82.6 37.7

relative CIELAB lab*
 lab*lab 0.387 0.791 0.611
 lab*tch 0.387 0.791 0.611
 lab*nch 0.0 1.0 0.105
 relative Natural Colour (NC)
 lab*lrj 0.387 0.791 0.611
 lab*nce 0.5 1.0 0.248
 lab*nce 0.0 1.0 r19

$n^* = 0.00$

blackness n^*

chromaticness c^*

Output: Colorimetric Reflective System MRS18

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



D65: hue R
 LCH*Ma: 50 77 30
 olv*Ma: 1.0 0.0 0.0

triangle lightness t^*

relative Inform. Technology (IT)
 olv3* 1.0 1.0 1.0 (1.0)
 cmy3* 0.0 0.0 0.0 (0.0)
 olv4* 1.0 1.0 1.0 1.0
 cmy4* 0.0 0.0 0.0 0.0
 LAB*LAB 95.41 -0.97 4.75
 LAB*LABo 95.41 0.0 0.0
 LAB*TCHo 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*nce 1.0 0.0 0.0

relative Inform. Technology (IT)
 olv3* 0.5 0.5 0.5 (1.0)
 cmy3* 0.5 0.5 0.5 (0.0)
 olv4* 1.0 1.0 1.0 0.5
 cmy4* 0.0 0.0 0.0 0.5
 standard and adapted CIELAB
 LAB*LAB 56.71 -0.23 2.14
 LAB*LABo 56.71 0.0 0.0
 LAB*TCHo 50.0 0.01 -

relative CIELAB lab*
 lab*lab 0.5 0.0 0.0
 lab*tch 0.5 0.0 0.0
 lab*nch 0.5 0.0 -
 relative Natural Colour (NC)
 lab*lrj 0.5 0.0 0.0
 lab*nce 0.5 0.0 -

relative Inform. Technology (IT)
 olv3* 0.0 0.0 0.0 (1.0)
 cmy3* 1.0 1.0 1.0 (0.0)
 olv4* 1.0 1.0 1.0 0.0
 cmy4* 0.0 0.0 0.0 1.0
 standard and adapted CIELAB
 LAB*LAB 18.02 0.5 -0.46
 LAB*LABo 18.02 0.0 0.0
 LAB*TCHo 0.01 0.01 -

relative CIELAB lab*
 lab*lab 0.0 0.0 0.0
 lab*tch 1.0 0.0 -
 lab*nch 0.0 0.0 -
 relative Natural Colour (NC)
 lab*lrj 0.0 0.0 0.0
 lab*nce 0.0 0.0 -

$n^* = 1.0$

MRS18; adapted (a) CIELAB data

$L^* = L^*_a$	a^*_a	b^*_a	$C^*_{ab,a}$	$h^*_{ab,a}$
RMa	49.63	66.96	38.37	77.18
YMa	90.7	-6.36	88.75	88.98
YMa	52.11	-69.73	9.44	70.37
G50Ma	45.03	-36.57	-28.47	46.36
BMa	36.65	23.19	-63.05	67.18
B50RMa	34.94	57.17	-44.26	72.31
NMa	18.01	0.0	0.0	0.0
WMa	95.41	0.0	0.0	0.0
RCIE	39.92	58.66	26.98	64.56
ICIE	81.26	-2.17	67.76	67.79
GCIE	52.23	-42.26	11.75	43.87
BCIE	30.57	1.15	-46.84	46.87

% Gamut
 $u^*_ni = 91$
 % Regularity
 $g^*_{r,rel} = 41$
 $g^*_{r,rel} = 52$

relative Inform. Technology (IT)
 olv3* 1.0 0.5 0.5 (1.0)
 cmy3* 0.0 0.5 0.5 (0.0)
 olv4* 1.0 0.5 0.5 0.0
 cmy4* 0.0 0.5 0.5 0.0
 standard and adapted CIELAB
 LAB*LAB 72.52 33.93 22.4
 LAB*LABo 72.52 33.97 19.18
 LAB*TCHo 75.0 38.58 29.82

relative CIELAB lab*
 lab*lab 0.704 0.434 0.249
 lab*tch 0.75 0.5 0.083
 lab*nch 0.0 0.5 0.083
 relative Natural Colour (NC)
 lab*lrj 0.704 0.496 0.06
 lab*nce 0.75 0.5 0.019
 lab*nce 0.0 0.5 r07

relative Inform. Technology (IT)
 olv3* 0.5 0.0 0.0 (1.0)
 cmy3* 0.5 1.0 0.0 (0.0)
 olv4* 1.0 0.5 0.5 0.5
 cmy4* 0.0 0.5 0.5 0.5
 standard and adapted CIELAB
 LAB*LAB 33.82 33.67 19.79
 LAB*LABo 33.82 33.47 19.18
 LAB*TCHo 25.01 38.58 29.82

relative CIELAB lab*
 lab*lab 0.204 0.434 0.249
 lab*tch 0.25 0.5 0.083
 lab*nch 0.0 0.5 0.083
 relative Natural Colour (NC)
 lab*lrj 0.204 0.496 0.06
 lab*nce 0.25 0.5 0.019
 lab*nce 0.0 0.5 r07

$n^* = 0.00$

blackness n^*

chromaticness c^*