

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^*

%Gamut
 $u^*_{rel} = 93$
%Regularity
 $g^*_{Hrel} = 57$
 $g^*_{Crel} = 59$

relative Inform. Technology (IT)
olv3* 1.0 1.0 1.0 (1.0)
cmyn3* 0.0 0.0 0.0 (0.0)
olv4* 1.0 1.0 1.0 (1.0)
cmyn4* 0.0 0.0 0.0 (0.0)
standard and adapted CIELAB
LAB*LAB 95.41 -0.97 4.75
LAB*LABo 95.41 0.0 0.0
LAB*TCHo 39.39 0.01 -

relative CIELAB lab*
lab*lab 1.0 0.5 0.0 (1.0)
lab*tch 1.0 0.0 - (0.0)
lab*nch 1.0 0.0 - (0.0)
relative Natural Colour (NC)
lab*lrj 1.0 0.0 0.0 (1.0)
lab*nce 1.0 0.0 0.0 (1.0)
lab*nce 0.0 0.0 - (0.0)

standard and adapted CIELAB
LAB*LAB 56.71 -0.23 2.14
LAB*LABo 56.71 0.0 0.0
LAB*TCHo 30.0 0.01 -

relative CIELAB lab*
lab*lab 0.5 0.0 0.0 (1.0)
lab*tch 0.5 0.0 - (0.0)
lab*nch 0.5 0.0 - (0.0)
relative Natural Colour (NC)
lab*lrj 0.5 0.0 0.0 (1.0)
lab*nce 0.5 0.0 0.0 (1.0)
lab*nce 0.0 0.0 - (0.0)

relative Inform. Technology (IT)
olv3* 0.5 0.5 0.5 (1.0)
cmyn3* 0.5 0.5 0.5 (0.0)
olv4* 1.0 1.0 1.0 (1.0)
cmyn4* 0.0 0.0 0.0 (0.0)
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 (1.0)
lab*tch 0.0 0.0 - (0.0)
lab*nch 1.0 0.0 - (0.0)
relative Natural Colour (NC)
lab*lrj 0.0 0.0 0.0 (1.0)
lab*nce 0.0 0.0 0.0 (1.0)
lab*nce 1.0 0.0 - (0.0)

$n^* = 1.0$

relative Inform. Technology (IT)
olv3* 1.0 0.5 0.5 (1.0)
cmyn3* 0.0 0.5 0.5 (0.0)
olv4* 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*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 0.15

relative Inform. Technology (IT)
olv3* 0.5 0.0 0.0 (1.0)
cmyn3* 0.5 0.0 0.0 (0.0)
olv4* 1.0 0.5 0.5 (1.0)
cmyn4* 0.0 0.5 0.5 (0.0)
standard and adapted CIELAB
LAB*LAB 32.98 32.9 25.8
LAB*LABo 32.98 32.68 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 0.15

relative Inform. Technology (IT)
olv3* 0.0 0.0 0.0 (1.0)
cmyn3* 1.0 1.0 1.0 (0.0)
olv4* 1.0 1.0 1.0 (1.0)
cmyn4* 0.0 0.0 0.0 (0.0)
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 (1.0)
lab*tch 0.0 0.0 - (0.0)
lab*nch 1.0 0.0 - (0.0)
relative Natural Colour (NC)
lab*lrj 0.0 0.0 0.0 (1.0)
lab*nce 0.0 0.0 0.0 (1.0)
lab*nce 1.0 0.0 - (0.0)

relative Inform. Technology (IT)
olv3* 1.0 0.0 0.0 (1.0)
cmyn3* 0.0 1.0 0.0 (0.0)
olv4* 1.0 0.0 1.0 (1.0)
cmyn4* 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 0.5 0.105
lab*nch 0.0 1.0 0.105
relative Natural Colour (NC)
lab*lrj 0.387 0.5 0.048
lab*nce 0.5 1.0 0.299
lab*nce 0.0 1.0 0.15

relative Inform. Technology (IT)
olv3* 0.5 0.5 0.5 (1.0)
cmyn3* 0.5 0.5 0.5 (0.0)
olv4* 1.0 1.0 1.0 (1.0)
cmyn4* 0.0 0.5 0.5 (0.0)
standard and adapted CIELAB
LAB*LAB 33.82 33.47 20.03
LAB*LABo 33.82 33.39 20.01
LAB*TCHo 25.01 38.93 30.93

relative CIELAB lab*
lab*lab 0.204 0.429 0.257
lab*tch 0.25 0.5 0.086
lab*nch 0.0 0.5 0.086
relative Natural Colour (NC)
lab*lrj 0.204 0.496 0.064
lab*nce 0.25 0.5 0.02
lab*nce 0.0 0.5 0.086

relative Inform. Technology (IT)
olv3* 0.0 0.0 0.0 (1.0)
cmyn3* 1.0 1.0 1.0 (0.0)
olv4* 1.0 1.0 1.0 (1.0)
cmyn4* 0.0 0.0 0.0 (0.0)
standard and adapted CIELAB
LAB*LAB 18.02 0.1 0.02
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 (1.0)
lab*tch 0.0 0.0 - (0.0)
lab*nch 1.0 0.0 - (0.0)
relative Natural Colour (NC)
lab*lrj 0.0 0.0 0.0 (1.0)
lab*nce 0.0 0.0 0.0 (1.0)
lab*nce 1.0 0.0 - (0.0)

$n^* = 0.00$

blackness n^*

chromaticness c^*

Output: Colorimetric Reflective System MRS18a
for hue $h^* = lab^*h = 31/360 = 0.086$
 lab^*tch and lab^*nch



D65: hue R
LCH*Ma: 50 78 31
olv*Ma: 1.0 0.0 0.0
triangle lightness t^*

%Gamut
 $u^*_{rel} = 92$
%Regularity
 $g^*_{Hrel} = 42$
 $g^*_{Crel} = 49$

relative Inform. Technology (IT)
olv3* 1.0 1.0 1.0 (1.0)
cmyn3* 0.0 0.0 0.0 (0.0)
olv4* 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 0.01 0.0
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 (1.0)
lab*tch 1.0 0.0 - (0.0)
lab*nch 1.0 0.0 - (0.0)
relative Natural Colour (NC)
lab*lrj 1.0 0.0 0.0 (1.0)
lab*nce 1.0 0.0 0.0 (1.0)
lab*nce 0.0 0.0 - (0.0)

relative Inform. Technology (IT)
olv3* 0.5 0.5 0.5 (1.0)
cmyn3* 0.5 0.5 0.5 (0.0)
olv4* 1.0 1.0 1.0 (1.0)
cmyn4* 0.0 0.5 0.5 (0.0)
standard and adapted CIELAB
LAB*LAB 56.71 0.05 0.0
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 (1.0)
lab*tch 0.5 0.0 - (0.0)
lab*nch 0.5 0.0 - (0.0)
relative Natural Colour (NC)
lab*lrj 0.5 0.0 0.0 (1.0)
lab*nce 0.5 0.0 0.0 (1.0)
lab*nce 0.0 0.0 - (0.0)

relative Inform. Technology (IT)
olv3* 0.0 0.0 0.0 (1.0)
cmyn3* 1.0 1.0 1.0 (0.0)
olv4* 1.0 1.0 1.0 (1.0)
cmyn4* 0.0 0.0 0.0 (0.0)
standard and adapted CIELAB
LAB*LAB 33.82 33.47 20.03
LAB*LABo 33.82 33.39 20.01
LAB*TCHo 25.01 38.93 30.93

relative CIELAB lab*
lab*lab 0.204 0.429 0.257
lab*tch 0.25 0.5 0.086
lab*nch 0.0 0.5 0.086
relative Natural Colour (NC)
lab*lrj 0.204 0.496 0.064
lab*nce 0.25 0.5 0.02
lab*nce 0.0 0.5 0.086

relative Inform. Technology (IT)
olv3* 0.0 0.0 0.0 (1.0)
cmyn3* 1.0 1.0 1.0 (0.0)
olv4* 1.0 1.0 1.0 (1.0)
cmyn4* 0.0 0.0 0.0 (0.0)
standard and adapted CIELAB
LAB*LAB 18.02 0.1 0.02
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 (1.0)
lab*tch 0.0 0.0 - (0.0)
lab*nch 1.0 0.0 - (0.0)
relative Natural Colour (NC)
lab*lrj 0.0 0.0 0.0 (1.0)
lab*nce 0.0 0.0 0.0 (1.0)
lab*nce 1.0 0.0 - (0.0)

$n^* = 0.00$

blackness n^*

chromaticness c^*

relative Inform. Technology (IT)
olv3* 1.0 0.5 0.5 (1.0)
cmyn3* 0.0 0.5 0.5 (0.0)
olv4* 1.0 0.5 0.5 (1.0)
cmyn4* 0.0 0.5 0.5 (0.0)
standard and adapted CIELAB
LAB*LAB 72.52 33.43 20.01
LAB*LABo 72.52 33.39 20.01
LAB*TCHo 75.0 38.93 30.93

relative CIELAB lab*
lab*lab 0.429 0.257
lab*tch 0.75 0.5 0.086
lab*nch 0.0 0.5 0.086
relative Natural Colour (NC)
lab*lrj 0.704 0.496 0.064
lab*nce 0.75 0.5 0.02
lab*nce 0.0 0.5 0.086

relative Inform. Technology (IT)
olv3* 0.5 0.0 0.0 (1.0)
cmyn3* 0.5 1.0 0.0 (0.0)
olv4* 1.0 0.5 0.5 (1.0)
cmyn4* 0.0 0.5 0.5 (0.0)
standard and adapted CIELAB
LAB*LAB 33.82 33.47 20.03
LAB*LABo 33.82 33.39 20.01
LAB*TCHo 25.01 38.93 30.93

relative CIELAB lab*
lab*lab 0.204 0.429 0.257
lab*tch 0.25 0.5 0.086
lab*nch 0.0 0.5 0.086
relative Natural Colour (NC)
lab*lrj 0.204 0.496 0.064
lab*nce 0.25 0.5 0.02
lab*nce 0.0 0.5 0.086

relative Inform. Technology (IT)
olv3* 0.0 0.0 0.0 (1.0)
cmyn3* 1.0 1.0 1.0 (0.0)
olv4* 1.0 1.0 1.0 (1.0)
cmyn4* 0.0 0.0 0.0 (0.0)
standard and adapted CIELAB
LAB*LAB 18.02 0.1 0.02
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 (1.0)
lab*tch 0.0 0.0 - (0.0)
lab*nch 1.0 0.0 - (0.0)
relative Natural Colour (NC)
lab*lrj 0.0 0.0 0.0 (1.0)
lab*nce 0.0 0.0 0.0 (1.0)
lab*nce 1.0 0.0 - (0.0)

relative Inform. Technology (IT)
olv3* 0.0 0.0 0.0 (1.0)
cmyn3* 1.0 1.0 1.0 (0.0)
olv4* 1.0 1.0 1.0 (1.0)
cmyn4* 0.0 0.0 0.0 (0.0)
standard and adapted CIELAB
LAB*LAB 18.02 0.1 0.02
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 (1.0)
lab*tch 0.0 0.0 - (0.0)
lab*nch 1.0 0.0 - (0.0)
relative Natural Colour (NC)
lab*lrj 0.0 0.0 0.0 (1.0)
lab*nce 0.0 0.0 0.0 (1.0)
lab*nce 1.0 0.0 - (0.0)

$n^* = 0.00$

blackness n^*

chromaticness c^*

chromaticness c^*

$n^* = 1.0$

UE110-7, 3 step scales for constant CIELAB hue 38/360 = 0.105 (left)

BAM-test chart UE11; Colorimetric systems ORS18 & MRS18a input: `cmv0* setmkycolor`
D65: 2 coordinate data of 3 step colour scales for 10 hues output: `olv* setrgbcolor / w* setgray`