

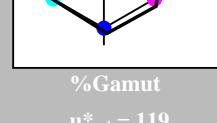


## Input: Colorimetric Reflective System NRS11

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

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

D65: hue R  
LCH\*Ma: 53 84 24  
rgb\*Ma: 1.0 0.0 0.0



%Gamut  
 $u^*_{rel} = 119$

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

standard and adapted CIELAB  
 $LAB^*LAB$  95.41 0.0 -0.01  
 $LAB^*TCh$  99.41 0.0 0.0  
 $LAB^*TCh$  99.99 0.01

relative CIELAB  $lab^*$   
 $lab^*tch$  1.0 0.0 0.0  
 $lab^*nch$  1.0 0.0 0.0 -

relative Natural Colour (NC)  
 $lab^*tce$  1.0 0.0 0.0  
 $lab^*nCE$  1.0 0.0 0.0 -

relative Inform. Technology (IT)  
 $olv3^*$  0.75 0.75 0.75 (1.0)  
 $cmy3^*$  0.25 0.25 0.25 (0.0)  
 $olv4^*$  1.0 1.0 1.0 0.75  
 $cmy4^*$  0.0 0.25 0.25 0.25

standard and adapted CIELAB  
 $LAB^*LAB$  74.31 0.02 0.04  
 $LAB^*LAB$  74.31 0.0 0.0  
 $LAB^*TCh$  74.31 0.01 0.01

relative CIELAB  $lab^*$   
 $lab^*tch$  0.75 0.0 0.0  
 $lab^*nch$  0.75 0.0 0.0 -

relative Natural Colour (NC)  
 $lab^*tce$  0.75 0.0 0.0  
 $lab^*nCE$  0.75 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)  
 $olv4^*$  0.25 0.25 0.25 (0.0)  
 $cmy4^*$  0.0 0.0 0.0 0.0

standard and adapted CIELAB  
 $LAB^*LAB$  53.21 0.04 0.04  
 $LAB^*LAB$  53.21 0.0 0.0  
 $LAB^*TCh$  50.01 0.01 0.01

relative CIELAB  $lab^*$   
 $lab^*tch$  0.5 0.0 0.0  
 $lab^*nch$  0.5 0.0 0.0 -

relative Natural Colour (NC)  
 $lab^*tce$  0.5 0.0 0.0  
 $lab^*nCE$  0.5 0.0 0.0 -

relative Inform. Technology (IT)  
 $olv3^*$  0.75 0.75 0.75 (1.0)  
 $cmy3^*$  0.25 0.25 0.25 (0.0)  
 $olv4^*$  1.0 1.0 1.0 0.75  
 $cmy4^*$  0.0 0.25 0.25 0.25

standard and adapted CIELAB  
 $LAB^*LAB$  74.31 0.05 0.01  
 $LAB^*LAB$  32.11 0.05 0.01  
 $LAB^*TCh$  23.01 0.01 0.01

relative CIELAB  $lab^*$   
 $lab^*tch$  0.25 0.0 0.0  
 $lab^*nch$  0.25 0.0 0.0 -

relative Natural Colour (NC)  
 $lab^*tce$  0.25 0.0 0.0  
 $lab^*nCE$  0.25 0.0 0.0 -

relative Inform. Technology (IT)  
 $olv3^*$  0.0 0.0 0.0 (1.0)  
 $cmy3^*$  1.0 1.0 1.0 (0.0)  
 $olv4^*$  0.25 0.25 0.25 (0.0)  
 $cmy4^*$  0.0 0.0 0.0 1.0

standard and adapted CIELAB  
 $LAB^*LAB$  11.01 0.07 0.01  
 $LAB^*LAB$  11.01 0.0 0.0  
 $LAB^*TCh$  0.01 0.01

relative CIELAB  $lab^*$   
 $lab^*tch$  0.0 0.0 0.0  
 $lab^*nch$  1.0 0.0 0.0 -

relative Natural Colour (NC)  
 $lab^*tce$  0.0 0.0 0.0  
 $lab^*nCE$  1.0 0.0 0.0 -

n\* = 1,0

## 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

## %Regularity

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

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

## relative Inform. Technology (IT)

$olv3^*$  1.0 0.75 0.75 (1.0)  
 $cmy3^*$  0.0 0.25 0.25 (0.0)

$olv4^*$  1.0 1.0 1.0 0.75  
 $cmy4^*$  0.0 0.25 0.25 0.25

standard and adapted CIELAB  
 $LAB^*LAB$  74.31 0.02 0.04  
 $LAB^*LAB$  74.31 0.0 0.0  
 $LAB^*TCh$  74.31 0.01 0.01

relative CIELAB  $lab^*$   
 $lab^*tch$  0.75 0.0 0.0  
 $lab^*nch$  0.75 0.0 0.0 -

relative Natural Colour (NC)  
 $lab^*tce$  0.75 0.0 0.0  
 $lab^*nCE$  0.75 0.0 0.0 -

relative Inform. Technology (IT)  
 $olv3^*$  0.75 0.5 0.5 (1.0)  
 $cmy3^*$  0.25 0.5 0.5 (0.0)

$olv4^*$  1.0 0.75 0.75 (0.0)  
 $cmy4^*$  0.0 0.25 0.25 0.25

standard and adapted CIELAB  
 $LAB^*LAB$  63.75 19.23 8.59  
 $LAB^*LAB$  63.75 20.26 19.09  
 $LAB^*TCh$  62.25 21.09 24.01

relative CIELAB  $lab^*$   
 $lab^*tch$  0.62 0.22 0.102  
 $lab^*nch$  0.25 0.25 0.067

relative Natural Colour (NC)  
 $lab^*tce$  0.62 0.25 0.044  
 $lab^*nCE$  0.25 0.25 0.098

relative Inform. Technology (IT)  
 $olv3^*$  0.75 0.25 0.25 (1.0)  
 $cmy3^*$  0.25 0.75 0.75 (0.0)

$olv4^*$  1.0 0.25 0.25 0.067  
 $cmy4^*$  0.0 0.5 0.5 0.0

standard and adapted CIELAB  
 $LAB^*LAB$  53.2 38.55 17.16  
 $LAB^*LAB$  53.2 38.53 17.17  
 $LAB^*TCh$  50.0 38.53 24.01

relative CIELAB  $lab^*$   
 $lab^*tch$  0.625 0.688 0.305  
 $lab^*nch$  0.25 0.25 0.067

relative Natural Colour (NC)  
 $lab^*tce$  0.625 0.25 0.014  
 $lab^*nCE$  0.25 0.25 0.098

relative Inform. Technology (IT)  
 $olv3^*$  0.5 0.25 0.25 (1.0)  
 $cmy3^*$  0.25 0.5 0.5 (0.0)

$olv4^*$  1.0 0.25 0.25 0.067  
 $cmy4^*$  0.0 0.5 0.5 0.0

standard and adapted CIELAB  
 $LAB^*LAB$  42.65 57.79 25.74  
 $LAB^*LAB$  42.65 57.79 25.75  
 $LAB^*TCh$  50.0 57.79 25.74

relative CIELAB  $lab^*$   
 $lab^*tch$  0.625 0.688 0.305  
 $lab^*nch$  0.25 0.25 0.067

relative Natural Colour (NC)  
 $lab^*tce$  0.625 0.25 0.014  
 $lab^*nCE$  0.25 0.25 0.098

n\* = 0,00

## blackness $n^*$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

## chromaticness $c^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

## Output: Colorimetric Reflective System ORS18

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

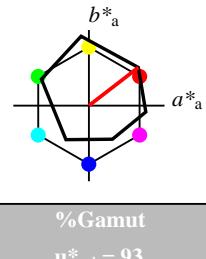
$lab^*tch$  and  $lab^*nch$

D65: hue O

LCH\*Ma: 48 83 38

rgb\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{rel} = 93$

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

standard and adapted CIELAB  
 $LAB^*LAB$  95.41 0.0 0.0  
 $LAB^*TCh$  99.99 0.01

relative CIELAB  $lab^*$   
 $lab^*tch$  1.0 0.0 0.0  
 $lab^*nch$  1.0 0.0 0.0 -

relative Natural Colour (NC)  
 $lab^*tce$  1.0 0.0 0.0  
 $lab^*nCE$  1.0 0.0 0.0 -

relative Inform. Technology (IT)  
 $olv3^*$  1.0 0.25 0.25 (1.0)  
 $cmy3^*$  0.25 0.25 0.25 (0.0)  
 $olv4^*$  1.0 0.1 0.1 0.75  
 $cmy4^*$  0.0 0.25 0.25 0.25

standard and adapted CIELAB  
 $LAB^*LAB$  76.06 -0.6 3.44  
 $LAB^*LAB$  76.06 0.0 0.0  
 $LAB^*TCh$  75.01 0.0 0.01

relative CIELAB  $lab^*$   
 $lab^*tch$  0.847 0.198 0.153  
 $lab^*nch$  0.25 0.25 0.105

relative Natural Colour (NC)  
 $lab^*tce$  0.847 0.238 0.075  
 $lab^*nCE$  0.25 0.25 0.105

relative Inform. Technology (IT)  
 $olv3^*$  1.0 0.25 0.25 (1.0)  
 $cmy3^*$  0.25 0.25 0.25 (0.0)  
 $olv4^*$  1.0 0.1 0.1 0.75  
 $cmy4^*$  0.0 0.25 0.25 0.25

standard and adapted CIELAB  
 $LAB^*LAB$  56.71 0.23 2.14  
 $LAB^*LAB$  56.71 0.23 2.14  
 $LAB^*TCh$  51.0 0.0 0.01

relative CIELAB  $lab^*$   
 $lab^*tch$  0.597 0.198 0.153  
 $lab^*nch$  0.25 0.25 0.105

relative Natural Colour (NC)  
 $lab^*tce$  0.597 0.239 0.075  
 $lab^*nCE$  0.25 0.25 0.105

relative Inform. Technology (IT)  
 $olv3^*$  1.0 0.25 0.25 (1.0)  
 $cmy3^*$  0.25 0.25 0.25 (0.0)  
 $olv4^*$  1.0 0.1 0.1 0.75  
 $cmy4^*$  0.0 0.25 0.25 0.25

standard and adapted CIELAB  
 $LAB^*LAB$  48.72 13.44 2.98  
 $LAB^*LAB$  48.72 13.44 2.98  
 $LAB^*TCh$  44.16 13.44 12.63

relative CIELAB  $lab^*$   
 $lab^*tch$  0.597 0.198 0.153  
 $lab^*nch$  0.25 0.25 0.105

relative Natural Colour (NC)  
 $lab^*tce$  0.597 0.239 0.075  
 $lab^*nCE$  0.25 0.25 0.105

relative Inform. Technology (IT)  
 $olv3^*$  1.0 0.25 0.25 (1.0)  
 $cmy3^*$  0.25 0.25 0.25 (0.0)  
 $olv4^*$  1.0 0.1 0.1 0.75  
 $cmy4^*$  0.0 0.25 0.25 0.25

standard and adapted CIELAB  
 $LAB^*LAB$  25.55 16.7 12.67  
 $LAB^*LAB$  25.55 16.7 12.67  
 $LAB^*TCh$  25.2 16.3 11.3

relative CIELAB  $lab^*$   
 $lab^*tch$  0.097 0.198 0.153  
 $lab^*nch$  0.25 0.25 0.105

relative Natural Colour (NC)  
 $lab^*tce$  0.097 0.238 0.075  
 $lab^*nCE$  0.25 0.25 0.105

relative Inform. Technology (IT)  
 $olv3^*$  1.0 0.25 0.25 (1.0)  
 $cmy3^*$  0.25 0.25 0.25 (0.0)  
 $olv4^*$  1.0 0.1 0.1 0.75  
 $cmy4^*$  0.0 0.25 0.25 0.25

standard and adapted CIELAB  
 $LAB^*LAB$  18.02 0.5 -0.46  
 $LAB^*LAB$  18.02 0.5 -0.46  
 $LAB^*TCh$  17.55 0.5 0.01

relative CIELAB  $lab^*$   
 $lab^*tch$  0.097 0.198 0.153  
 $lab^*nch$  0.25 0.25 0.105

relative Natural Colour (NC)  
 $lab^*tce$  0.097 0.238 0.075  
 $lab^*nCE$  0.25 0.25 0.105

relative Inform. Technology (IT)  
 $olv3^*$  1.0 0.25 0.25 (1.0)  
 $cmy3^*$  0.25 0.25 0.25 (0.0)  
 $olv4^*$  1.0 0.1 0.1 0.75  
 $cmy4^*$  0.0 0.25 0.25 0.25

standard and adapted CIELAB  
 $LAB^*LAB$  12.55 16.7 12.62  
 $LAB^*LAB$  12.55 16.7 12.62  
 $LAB^*TCh$  12.25 16.3 11.3

relative CIELAB  $lab^*$   
 $lab^*tch$  0.097 0.198 0.153  
 $lab^*nch$  0.25 0.25 0.105

relative Natural Colour (NC)  
 $lab^*tce$  0.097 0.238 0.075  
 $lab^*nCE$  0.25 0.25 0.105

relative Inform. Technology (IT)  
 $olv3^*$  1.0 0.25 0.25 (1.0)  
 $cmy3^*$  0.25 0.25 0.25 (0.0)  
 $olv4^*$  1.0 0.1 0.1 0.75  
 $cmy4^*$  0.0 0.25 0.25 0.25

standard and adapted CIELAB  
 $LAB^*LAB$  7.55 16.7 12.62  
 $LAB^*LAB$  7.55 16.7 12.62  
 $LAB^*TCh$  7.25 16.3 11.3

relative CIELAB  $lab^*$   
 $lab^*tch$  0.097 0.198 0.153  
 $lab^*nch$  0.25 0.25 0.105

relative Natural Colour (NC)  
 $lab^*tce$  0.097 0.238 0.075  
 $lab^*nCE$  0.25 0.25 0.105

relative Inform. Technology (IT)  
 $olv3^*$  1.0 0.25 0.25 (1.0)  
 $cmy3^*$  0.25 0.25 0.25 (0.0)  
 $olv4^*$  1.0 0.1 0.1 0.75  
 $cmy4^*$  0.0 0.25 0.25 0.25

standard and adapted CIELAB  
 $LAB^*LAB$  2.55 16.7 12.62  
 $LAB^*LAB$  2.55 16.7 12.62  
 $LAB^*TCh$  2.25 16.3 11.3



$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

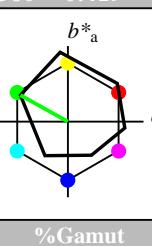
$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

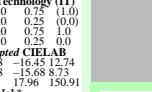
input:  $cmy0^*$  setcmykcolor

output:  $olv^*$  setrgbcolor /  $w^*$  setgray



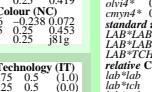
%Gamut

$u^*_{rel} = 93$

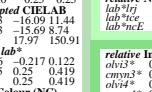


%Regularity

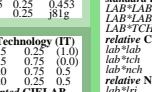
$g^*_{H,rel} = 57$



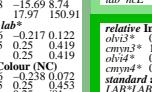
$g^*_{C,rel} = 59$



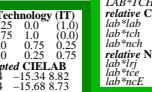
$n^* = 0,00$



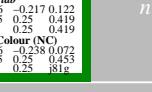
$n^* = 0,25$



$n^* = 0,50$



$n^* = 0,75$



$n^* = 1,00$

## Output: 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

rgb\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$

%Gamut

$u^*_{rel} = 1,00$

%Regularity

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

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

$n^* = 0,75$

$n^* = 0,50$

$n^* = 0,25$

$n^* = 0,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

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$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

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$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50</math$

n\* = 0,00

blackness n\*

n\* = 0,25

blackness n\*

n\* = 1,00

chromaticness c\*

n\* = 0,00

blackness n\*

n\* = 0,25

blackness n\*

n\* = 0,50

blackness n\*

n\* = 1,00

chromaticness c\*

n\* = 1,00

chromaticness c\*

5 step scales for constant CIELAB hue 236/360 = 0.656 (right)

input: cmy0\* setcmykcolor

output: olv\* setrgbcolor / w\* setgray

n\* = 1,00

## Output: 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

rgb\*Ma: 0.0 1.0 1.0

triangle lightness t\*

%Gamut

$u^*_{rel} = 93$

triangle lightness t\*

%Regularity

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

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

%Regularity

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

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

## ORS18; adapted (a) CIELAB data

$L^* = L^*_{a,a}$   $a^*_{a,a}$   $b^*_{a,a}$   $C^*_{ab,a}$   $h^*_{ab,a}$

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

## Input: 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

rgb\*Ma: 0.0 1.0 1.0

triangle lightness t\*

%Gamut

$u^*_{rel} = 119$

triangle lightness t\*

%Regularity

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

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

%Regularity

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

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

%Regularity

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

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

%Regularity

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

### Input: Colorimetric Reflective System NRS11

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

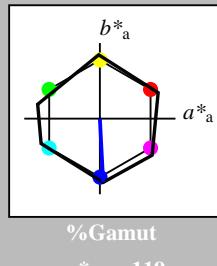
$lab^*tch$  and  $lab^*nch$

D65: hue B

LCH\*Ma: 53 84 273

rgb\*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

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)

standard and adapted CIELAB

LAB\*LAB 74.31 0.02 0.0

LAB\*TChla 99.99 0.01

relative CIELAB lab\*

lab\*tch 0.75 0.0 0.0

lab\*nch 1.0 0.0 0.0

relative Natural Colour (NC)

lab\*irr 0.75 0.0 0.0

lab\*ice 0.75 0.0 0.0

lab\*nce 0.25 0.0 0.0

relative Inform. Technology (IT)

olv3\* 0.75 0.25 0.25 (0,0)

cmy3\* 0.25 0.25 0.25 (0,0)

olv4\* 1.0 1.0 1.0 (1,0)

cmy4\* 0.0 0.0 0.0 (0,0)

standard and adapted CIELAB

LAB\*LAB 74.31 0.02 0.0

LAB\*TChla 99.99 0.01

relative CIELAB lab\*

lab\*tch 0.75 0.0 0.0

lab\*nch 1.0 0.0 0.0

relative Natural Colour (NC)

lab\*irr 0.75 0.0 0.0

lab\*ice 0.75 0.0 0.0

lab\*nce 0.25 0.0 0.0

relative Inform. Technology (IT)

olv3\* 0.5 0.5 0.5 (0,0)

cmy3\* 0.5 0.5 0.5 (0,0)

olv4\* 1.0 1.0 1.0 (1,0)

cmy4\* 0.0 0.0 0.0 (0,0)

standard and adapted CIELAB

LAB\*LAB 11.01 0.07 0.01

LAB\*TChla 0.01 0.01

relative CIELAB lab\*

lab\*tch 0.25 0.0 0.0

lab\*nch 1.0 0.0 0.0

relative Natural Colour (NC)

lab\*irr 0.25 0.0 0.0

lab\*ice 0.25 0.0 0.0

lab\*nce 0.75 0.0 0.0

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)

standard and adapted CIELAB

LAB\*LAB 21.95 1.16 0.01

LAB\*TChla 21.95 1.16 -21.03

relative CIELAB lab\*

lab\*tch 0.25 0.026 -0.498

lab\*nch 0.25 0.5 0.758

relative Natural Colour (NC)

lab\*irr 0.25 0.009 -0.499

lab\*ice 0.25 0.5 0.753

lab\*nce 0.5 0.25 0.601r

relative Inform. Technology (IT)

olv3\* 0.5 0.25 0.25 (0,0)

cmy3\* 0.5 0.25 0.25 (0,0)

olv4\* 1.0 1.0 1.0 (1,0)

cmy4\* 0.0 0.0 0.0 (0,0)

standard and adapted CIELAB

LAB\*LAB 21.95 1.16 0.01

LAB\*TChla 21.95 1.16 -21.03

relative CIELAB lab\*

lab\*tch 0.123 0.013 -0.249

lab\*nch 0.125 0.25 0.558

relative Natural Colour (NC)

lab\*irr 0.125 0.005 -0.249

lab\*ice 0.125 0.25 0.553

lab\*nce 0.75 0.25 0.601r

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)

standard and adapted CIELAB

LAB\*LAB 11.01 0.07 0.01

LAB\*TChla 0.01 0.01

relative CIELAB lab\*

lab\*tch 0.0 0.0 0.0

lab\*nch 1.0 0.0 0.0

relative Natural Colour (NC)

lab\*irr 0.0 0.0 0.0

lab\*ice 0.0 0.0 0.0

lab\*nce 0.0 0.0 0.0

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)

standard and adapted CIELAB

LAB\*LAB 18.02 0.5 -0.46

LAB\*TChla 0.01 0.01

relative CIELAB lab\*

lab\*tch 0.0 0.0 0.0

lab\*nch 1.0 0.0 0.0

relative Natural Colour (NC)

lab\*irr 0.0 0.0 0.0

lab\*ice 0.0 0.0 0.0

lab\*nce 0.0 0.0 0.0

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)

standard and adapted CIELAB

LAB\*LAB 18.02 0.5 -0.46

LAB\*TChla 0.01 0.01

relative CIELAB lab\*

lab\*tch 0.0 0.0 0.0

lab\*nch 1.0 0.0 0.0

relative Natural Colour (NC)

lab\*irr 0.0 0.0 0.0

lab\*ice 0.0 0.0 0.0

lab\*nce 0.0 0.0 0.0

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)

standard and adapted CIELAB

LAB\*LAB 18.02 0.5 -0.46

LAB\*TChla 0.01 0.01

relative CIELAB lab\*

lab\*tch 0.0 0.0 0.0

lab\*nch 1.0 0.0 0.0

relative Natural Colour (NC)

lab\*irr 0.0 0.0 0.0

lab\*ice 0.0 0.0 0.0

lab\*nce 0.0 0.0 0.0

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)

standard and adapted CIELAB

LAB\*LAB 18.02 0.5 -0.46

LAB\*TChla 0.01 0.01

relative CIELAB lab\*

lab\*tch 0.0 0.0 0.0

lab\*nch 1.0 0.0 0.0

relative Natural Colour (NC)

lab\*irr 0.0 0.0 0.0

lab\*ice 0.0 0.0 0.0

lab\*nce 0.0 0.0 0.0

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)

standard and adapted CIELAB

LAB\*LAB 18.02 0.5 -0.46

LAB\*TChla 0.01 0.01

relative CIELAB lab\*

lab\*tch 0.0 0.0 0.0

lab\*nch 1.0 0.0 0.0

relative Natural Colour (NC)

lab\*irr 0.0 0.0 0.0

lab\*ice 0.0 0.0 0.0

lab\*nce 0.0 0.0 0.0

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)

standard and adapted CIELAB

LAB\*LAB 18.02 0.5 -0.46

LAB\*TChla 0.01 0.01

relative CIELAB lab\*

lab\*tch 0.0 0.0 0.0

lab\*nch 1.0 0.0 0.0

relative Natural Colour (NC)

lab\*irr 0.0 0.0 0.0

lab\*ice 0.0 0.0 0.0

lab\*nce 0.0 0.0 0.0

relative Inform. Technology (IT)

olv3\* 1.0 1.0 1.0 (1,0)





$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$



### Input: Colorimetric Reflective System NRS11

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

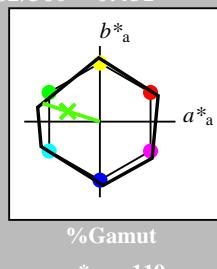
$lab^*tch$  and  $lab^*nch$

D65: hue G

LCH\*Ma: 53 80 162

rgb\*Ma: 0.08 1.0 0.0

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

relative Inform. Technology (IT)

$olv^*_{IT}$  1.0 1.0 1.0 (1.0)

$cmy^*_{IT}$  0.0 0.0 0.0 (0.0)

$olv^*_{IT}$  1.0 1.0 1.0

$cmy^*_{IT}$  0.0 0.0 0.0

standard and adapted CIELAB

$LAB^*LAB$  74.31 0.02 0.0

$LAB^*TChA$  99.99 0.01

relative CIELAB  $lab^*$

$lab^*tch$  0.75 0.0 0.0

$lab^*nch$  1.0 0.0 0.0

relative Natural Colour (NC)

$lab^*lrc$  1.0 0.0 0.0

$lab^*nCE$  0.0 0.0 0.0

triangle lightness  $t^*$

relative Inform. Technology (IT)

$olv^*_{IT}$  0.25 0.25 0.25 (0.0)

$cmy^*_{IT}$  1.0 1.0 1.0 (0.75)

$olv^*_{IT}$  0.0 0.0 0.25

standard and adapted CIELAB

$LAB^*LAB$  74.31 0.02 0.0

$LAB^*TChA$  99.99 0.01

relative CIELAB  $lab^*$

$lab^*tch$  0.75 0.0 0.0

$lab^*nch$  0.75 0.0 0.0

relative Natural Colour (NC)

$lab^*lrc$  0.75 0.0 0.0

$lab^*nCE$  0.25 0.0 0.0

triangle lightness  $t^*$

relative Inform. Technology (IT)

$olv^*_{IT}$  0.5 0.5 0.5 (1.0)

$cmy^*_{IT}$  0.5 0.5 0.5 (0.0)

$olv^*_{IT}$  0.0 0.0 0.0

standard and adapted CIELAB

$LAB^*LAB$  74.31 0.02 0.0

$LAB^*TChA$  32.11 0.08 0.01

$LAB^*LAB$  32.11 0.08 0.01

$LAB^*TChA$  25.11 0.01

relative CIELAB  $lab^*$

$lab^*tch$  0.25 0.0 0.0

$lab^*nch$  0.5 0.0 0.0

relative Natural Colour (NC)

$lab^*lrc$  0.25 0.0 0.0

$lab^*nCE$  0.75 0.0 0.0

triangle lightness  $t^*$

relative Inform. Technology (IT)

$olv^*_{IT}$  0.0 0.0 0.0 (1.0)

$cmy^*_{IT}$  1.0 1.0 1.0 (0.0)

$olv^*_{IT}$  0.75 0.75 0.75

standard and adapted CIELAB

$LAB^*LAB$  11.01 0.07 0.01

$LAB^*TChA$  0.01 0.01

relative CIELAB  $lab^*$

$lab^*tch$  0.0 0.0 0.0

$lab^*nch$  1.0 0.0 0.0

relative Natural Colour (NC)

$lab^*lrc$  0.0 0.0 0.0

$lab^*nCE$  0.0 0.0 0.0

triangle lightness  $t^*$

relative Inform. Technology (IT)

$olv^*_{IT}$  0.25 0.25 0.25 (0.0)

$cmy^*_{IT}$  1.0 1.0 1.0 (0.75)

$olv^*_{IT}$  0.0 0.0 0.25

standard and adapted CIELAB

$LAB^*LAB$  74.31 0.02 0.0

$LAB^*TChA$  99.99 0.01

relative CIELAB  $lab^*$

$lab^*tch$  0.75 0.0 0.0

$lab^*nch$  1.0 0.0 0.0

relative Natural Colour (NC)

$lab^*lrc$  0.75 0.0 0.0

$lab^*nCE$  0.25 0.0 0.0

triangle lightness  $t^*$

relative Inform. Technology (IT)

$olv^*_{IT}$  0.25 0.25 0.25 (0.0)

$cmy^*_{IT}$  0.5 0.5 0.5 (0.0)

$olv^*_{IT}$  0.0 0.0 0.0

standard and adapted CIELAB

$LAB^*LAB$  53.21 0.04 0.0

$LAB^*TChA$  53.21 0.04 0.0

relative CIELAB  $lab^*$

$lab^*tch$  0.25 0.0 0.0

$lab^*nch$  0.5 0.0 0.0

relative Natural Colour (NC)

$lab^*lrc$  0.25 0.0 0.0

$lab^*nCE$  0.75 0.0 0.0

triangle lightness  $t^*$

relative Inform. Technology (IT)

$olv^*_{IT}$  0.0 0.0 0.0 (1.0)

$cmy^*_{IT}$  1.0 1.0 1.0 (0.0)

$olv^*_{IT}$  0.75 0.75 0.75

standard and adapted CIELAB

$LAB^*LAB$  21.55 0.08 0.07

$LAB^*TChA$  21.55 0.08 0.07

relative CIELAB  $lab^*$

$lab^*tch$  0.25 0.0 0.0

$lab^*nch$  0.5 0.0 0.0

relative Natural Colour (NC)

$lab^*lrc$  0.25 0.0 0.0

$lab^*nCE$  0.75 0.0 0.0

triangle lightness  $t^*$

relative Inform. Technology (IT)

$olv^*_{IT}$  0.0 0.0 0.0 (1.0)

$cmy^*_{IT}$  1.0 1.0 1.0 (0.0)

$olv^*_{IT}$  0.75 0.75 0.75

standard and adapted CIELAB

$LAB^*LAB$  11.01 0.07 0.01

$LAB^*TChA$  0.01 0.01

relative CIELAB  $lab^*$

$lab^*tch$  0.0 0.0 0.0

$lab^*nch$  1.0 0.0 0.0

relative Natural Colour (NC)

$lab^*lrc$  0.0 0.0 0.0

$lab^*nCE$  0.0 0.0 0.0

triangle lightness  $t^*$

relative Inform. Technology (IT)

$olv^*_{IT}$  0.0 0.0 0.0 (1.0)

$cmy^*_{IT}$  1.0 1.0 1.0 (0.0)

$olv^*_{IT}$  0.75 0.75 0.75

standard and adapted CIELAB

$LAB^*LAB$  11.01 0.07 0.01

$LAB^*TChA$  0.01 0.01

relative CIELAB  $lab^*$

$lab^*tch$  0.0 0.0 0.0

$lab^*nch$  1.0 0.0 0.0

relative Natural Colour (NC)

$lab^*lrc$  0.0 0.0 0.0

$lab^*nCE$  0.0 0.0 0.0

triangle lightness  $t^*$

relative Inform. Technology (IT)

$olv^*_{IT}$  0.0 0.0 0.0 (1.0)

$cmy^*_{IT}$  1.0 1.0 1.0 (0.0)

$olv^*_{IT}$  0.75 0.75 0.75

standard and adapted CIELAB

$LAB^*LAB$  11.01 0.07 0.01

$LAB^*TChA$  0.01 0.01

relative CIELAB  $lab^*$

$lab^*tch$  0.0 0.0 0.0

$lab^*nch$  1.0 0.0 0.0

relative Natural Colour (NC)

$lab^*lrc$  0.0 0.0 0.0

$lab^*nCE$  0.0 0.0 0.0

triangle lightness  $t^*$

relative Inform. Technology (IT)

$olv^*_{IT}$  0.0 0.0 0.0 (1.0)

$cmy^*_{IT}$  1.0 1.0 1.0 (0.0)

$olv^*_{IT}$  0.75 0.75 0.75

standard and adapted CIELAB

$LAB^*LAB$  11.01 0.07 0.01

$LAB^*TChA$  0.01 0.01

relative CIELAB  $lab^*$

$lab^*tch$  0.0 0.0 0.0

$lab^*nch$  1.0 0.0 0.0

relative Natural Colour (NC)

$lab^*lrc$  0.0 0.0 0.0

$lab^*nCE$  0.0 0.0 0.0

triangle lightness  $t^*$

relative Inform. Technology (IT)

$olv^*_{IT}$  0.0 0.0 0.0 (1.0)

$cmy^*_{IT}$  1.0 1.0 1.0 (0.0)

$olv^*_{IT}$  0.75 0.75 0.75

standard and adapted CIELAB

$LAB^*LAB$  11.01 0.07 0.01

$LAB^*TChA$  0.01 0.01

relative CIELAB  $lab^*$

$lab^*tch$  0.0 0.0 0.0

$lab^*nch$  1.0 0.0 0.0

relative Natural Colour (NC)

$lab^*lrc$  0.0 0.0 0.0

$lab^*nCE$  0.0 0.0 0.0

triangle lightness  $t^*$

relative Inform. Technology (IT)

$olv^*_{IT}$  0.0 0.0 0.0 (1.0)

$cmy^*_{IT}$  1.0 1.0 1.0 (0.0)

$olv^*_{IT}$  0.75 0.75 0.75

standard and adapted CIELAB

$LAB^*LAB$  11.01 0.07 0.01

$LAB^*TChA$  0.01 0.01

relative CIELAB  $lab^*$

$lab^*tch$  0.0 0.0 0.0

$lab^*nch$  1.0 0.0 0.0

relative Natural Colour (NC

n\* = 0,00

blackness n\*

n\* = 0,25

blackness n\*

n\* = 0,50

chromaticness c\*

n\* = 1,00

chromaticness c\*

5 step scales for constant CIELAB hue 271/360 = 0.754 (right)

input: cmy0\* setcmykcolor  
output: olv\* setrgbcolor / w\* setgray

5 step scales for constant CIELAB hue 272/360 = 0.755 (left)

input: cmy0\* setcmykcolor  
output: olv\* setrgbcolor / w\* setgray

## Output: Colorimetric Reflective System ORS18

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

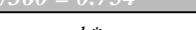
lab\*tch and lab\*nch

D65: hue B

LCH\*Ma: 42 45 271

rgb\*Ma: 0.0 0.49 1.0

triangle lightness t\*



$b^*_a$

$a^*_a$

%Gamut

$u^*_{rel} = 93$

### ORS18; adapted (a) CIELAB data

	$L^* = L^*_{ab}$	$a^*_{ab}$	$b^*_{ab}$	$C^*_{ab,a}$	$h^*_{ab,a}$
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
WMa	18.01	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

%Regularity

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

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

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