

## Input: Colorimetric Reflective System MRS18a

for hue  $h^* = lab^*h = 31/360 = 0.086$

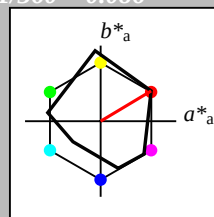
*lab\*tch* and *lab\*nch*

D65: hue R

LCH\*Ma: 50 78 31

olv\*Ma: 1.0 0.0 0.0

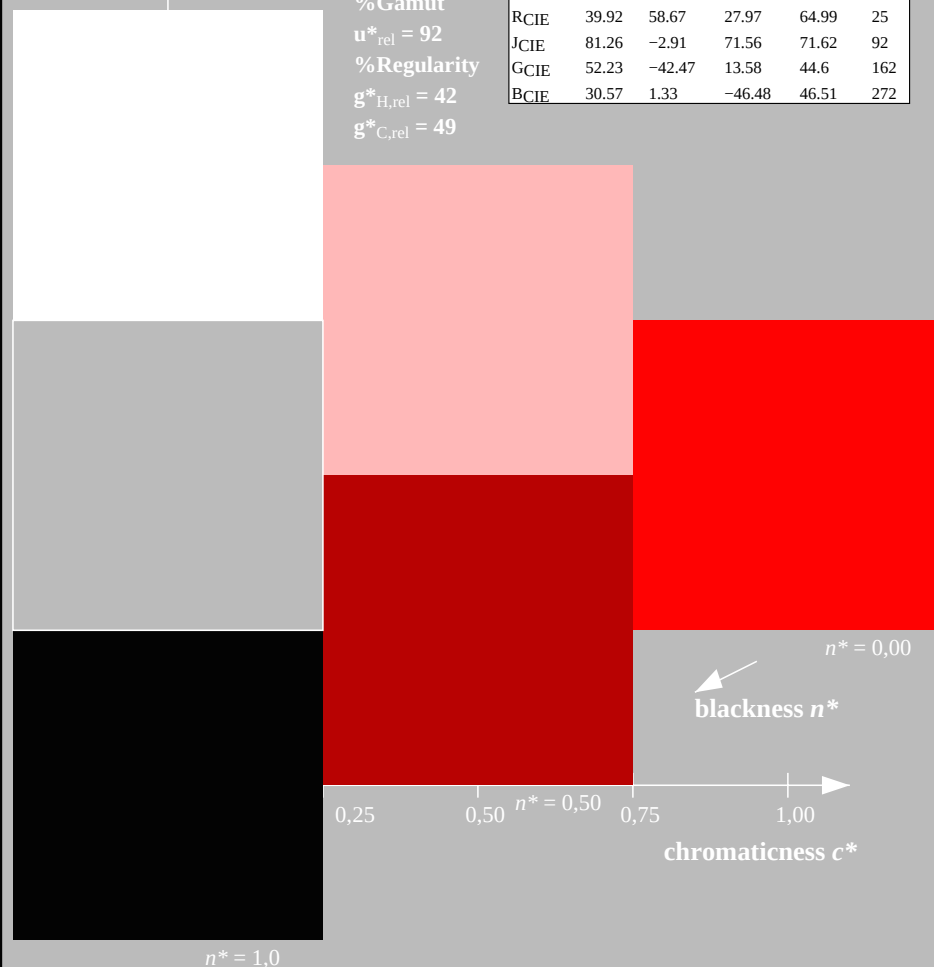
triangle lightness  $t^*$



## %Gamut

### %Regularity

| <b>MRS18a; adapted (a) CIELAB data</b> |         |         |         |              |              |
|----------------------------------------|---------|---------|---------|--------------|--------------|
|                                        | $L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| RMa                                    | 49.63   | 66.8    | 40.02   | 77.87        | 31           |
| JMa                                    | 90.7    | -7.27   | 93.19   | 93.48        | 94           |
| GMa                                    | 52.11   | -69.93  | 11.26   | 70.85        | 171          |
| G50B <sub>Ma</sub>                     | 45.03   | -36.65  | -27.13  | 45.61        | 217          |
| B <sub>Ma</sub>                        | 36.65   | 23.26   | -62.27  | 66.49        | 290          |
| B50R <sub>Ma</sub>                     | 34.94   | 57.27   | -43.6   | 71.99        | 323          |
| N <sub>Ma</sub>                        | 18.01   | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                        | 95.41   | 0.0     | 0.0     | 0.0          | 0            |
| RCIE                                   | 39.92   | 58.67   | 27.97   | 64.99        | 25           |
| JCIE                                   | 81.26   | -2.91   | 71.56   | 71.62        | 92           |
| GCIE                                   | 52.23   | -42.47  | 13.58   | 44.6         | 162          |
| BCIE                                   | 30.57   | 1.33    | -46.48  | 46.51        | 277          |



### Output: Colorimetric Reflective System ORS18

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

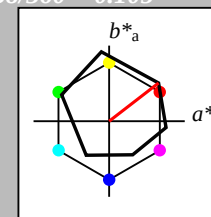
*lab\*tch* and *lab\*nch*

D65: hue O

LCH\*Ma: 48 83 38

olv\*Ma: 1.0 0.0 0.0

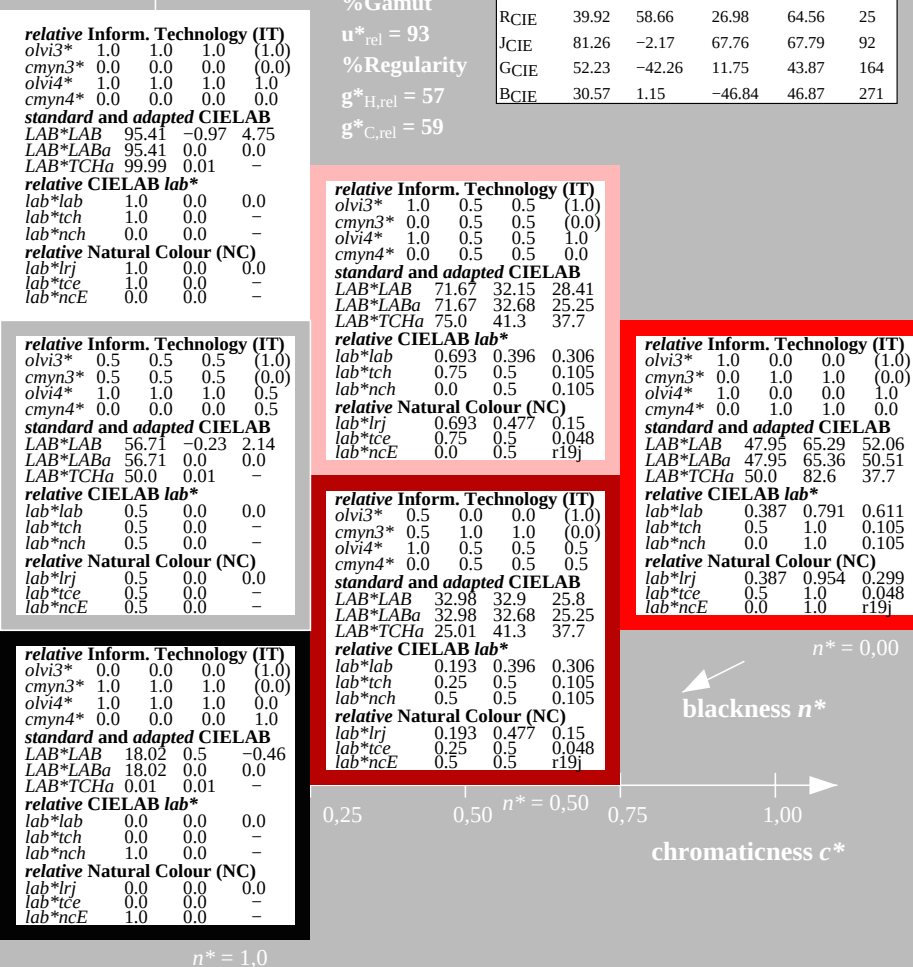
**triangle lightness  $t^*$**



## %Gamut

### %Regularity

| ORS18; adapted (a) CIELAB data |       |         |         |         |              |              |
|--------------------------------|-------|---------|---------|---------|--------------|--------------|
|                                |       | $L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| a                              | OMa   | 47.94   | 65.37   | 50.52   | 82.62        | 38           |
|                                | YMa   | 90.37   | -10.27  | 91.77   | 92.34        | 96           |
|                                | LMa   | 50.9    | -62.79  | 34.95   | 71.87        | 151          |
|                                | CMa   | 58.62   | -30.35  | -45.01  | 54.3         | 236          |
|                                | VMa   | 25.71   | 31.11   | -44.42  | 54.24        | 305          |
|                                | MMa   | 48.13   | 75.27   | -8.35   | 75.73        | 354          |
|                                | NMa   | 18.01   | 0.0     | 0.0     | 0.0          | 0            |
|                                | WMa   | 95.41   | 0.0     | 0.0     | 0.0          | 0            |
|                                | RCIE  | 39.92   | 58.66   | 26.98   | 64.56        | 25           |
|                                | JCIE  | 81.26   | -2.17   | 67.76   | 67.79        | 92           |
| GCIE                           | 52.23 | -42.26  | 11.75   | 43.87   | 164          |              |
| BCIE                           | 30.57 | 1.15    | -46.84  | 46.87   | 277          |              |



UE060-7, 3 step scales for constant CIELAB hue 31/360 = 0.086 (left)

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

BAM-test chart UE06; Colorimetric systems MRS18a & ORS18 input: *cmY0\** *setcmykcolor*

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

output: *olv\** *setrgbcolor* / *w\** *setgray*

Input: Colorimetric Reflective System MRS18a

for hue  $h^* = \text{lab}^*h = 94/360 = 0.262$

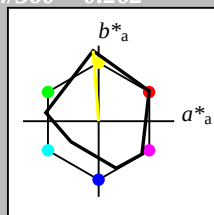
$\text{lab}^*tch$  and  $\text{lab}^*nch$

D65: hue J

LCH\*Ma: 91 93 94

olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



% Gamut

$u^*_{\text{rel}} = 92$

% Regularity

$g^*_{H,\text{rel}} = 42$

$g^*_{C,\text{rel}} = 49$

MRS18a; adapted (a) CIELAB data

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 49.63       | 66.8    | 40.02   | 77.87        | 31           |
| JMa    | 90.7        | -7.27   | 93.19   | 93.48        | 94           |
| GMa    | 52.11       | -69.93  | 11.26   | 70.85        | 171          |
| G50BMa | 45.03       | -36.65  | -27.13  | 45.61        | 217          |
| BMa    | 36.65       | 23.26   | -62.27  | 66.49        | 290          |
| B50RMa | 34.94       | 57.27   | -43.6   | 71.99        | 323          |
| NMa    | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE   | 39.92       | 58.67   | 27.97   | 64.99        | 25           |
| JCIE   | 81.26       | -2.91   | 71.56   | 71.62        | 92           |
| GCIE   | 52.23       | -42.47  | 13.58   | 44.6         | 162          |
| BCIE   | 30.57       | 1.33    | -46.48  | 46.51        | 272          |

Output: Colorimetric Reflective System ORS18

for hue  $h^* = \text{lab}^*h = 96/360 = 0.268$

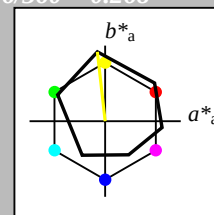
$\text{lab}^*tch$  and  $\text{lab}^*nch$

D65: hue Y

LCH\*Ma: 90 92 96

olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



% Gamut

$u^*_{\text{rel}} = 93$

% Regularity

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

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

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

relative Inform. Technology (IT)  
 $\text{olvi}3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$   
 $\text{cmyn}3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$   
 $\text{olvi}4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$   
 $\text{cmyn}4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

standard and adapted CIELAB  
 $\text{LAB}^*\text{LAB} = 95.41 \ -0.97 \ 4.75$   
 $\text{LAB}^*\text{LABa} = 95.41 \ 0.0 \ 0.0$   
 $\text{LAB}^*\text{TCHa} = 99.99 \ 0.01 \ -$

relative CIELAB lab\*  
 $\text{lab}^*\text{lab} = 1.0 \ 0.0 \ 0.0$   
 $\text{lab}^*\text{tch} = 1.0 \ 0.0 \ -$   
 $\text{lab}^*\text{nch} = 0.0 \ 0.0 \ -$

relative Natural Colour (NC)  
 $\text{lab}^*\text{lrj} = 1.0 \ 0.0 \ 0.0$   
 $\text{lab}^*\text{tce} = 1.0 \ 0.0 \ -$   
 $\text{lab}^*\text{nce} = 0.0 \ 0.0 \ -$

relative Inform. Technology (IT)  
 $\text{olvi}3^* = 0.5 \ 0.5 \ 0.5 \ (1.0)$   
 $\text{cmyn}3^* = 0.5 \ 0.5 \ 0.5 \ (0.0)$   
 $\text{olvi}4^* = 1.0 \ 1.0 \ 1.0 \ 0.5$   
 $\text{cmyn}4^* = 0.0 \ 0.0 \ 0.0 \ 0.5$

standard and adapted CIELAB  
 $\text{LAB}^*\text{LAB} = 56.71 \ -0.23 \ 2.14$   
 $\text{LAB}^*\text{LABa} = 56.71 \ 0.0 \ 0.0$   
 $\text{LAB}^*\text{TCHa} = 50.0 \ 0.01 \ -$

relative CIELAB lab\*  
 $\text{lab}^*\text{lab} = 0.5 \ 0.0 \ 0.0$   
 $\text{lab}^*\text{tch} = 0.5 \ 0.0 \ -$   
 $\text{lab}^*\text{nch} = 0.5 \ 0.0 \ -$

relative Natural Colour (NC)  
 $\text{lab}^*\text{lrj} = 0.5 \ 0.0 \ 0.0$   
 $\text{lab}^*\text{tce} = 0.5 \ 0.0 \ -$   
 $\text{lab}^*\text{nce} = 0.5 \ 0.0 \ -$

relative Inform. Technology (IT)  
 $\text{olvi}3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$   
 $\text{cmyn}3^* = 1.0 \ 1.0 \ 1.0 \ (0.0)$   
 $\text{olvi}4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$   
 $\text{cmyn}4^* = 0.0 \ 0.0 \ 0.0 \ 1.0$

standard and adapted CIELAB  
 $\text{LAB}^*\text{LAB} = 18.02 \ 0.5 \ -0.46$   
 $\text{LAB}^*\text{LABa} = 18.02 \ 0.0 \ 0.0$   
 $\text{LAB}^*\text{TCHa} = 0.01 \ 0.01 \ -$

relative CIELAB lab\*  
 $\text{lab}^*\text{lab} = 0.0 \ 0.0 \ 0.0$   
 $\text{lab}^*\text{tch} = 0.0 \ 0.0 \ -$   
 $\text{lab}^*\text{nch} = 1.0 \ 0.0 \ -$

relative Natural Colour (NC)  
 $\text{lab}^*\text{lrj} = 0.0 \ 0.0 \ 0.0$   
 $\text{lab}^*\text{tce} = 0.0 \ 0.0 \ -$   
 $\text{lab}^*\text{nce} = 1.0 \ 0.0 \ -$

relative Inform. Technology (IT)  
 $\text{olvi}3^* = 1.0 \ 1.0 \ 0.5 \ (1.0)$   
 $\text{cmyn}3^* = 0.0 \ 0.0 \ 0.5 \ (0.0)$   
 $\text{olvi}4^* = 1.0 \ 1.0 \ 0.5 \ 1.0$   
 $\text{cmyn}4^* = 0.0 \ 0.0 \ 0.5 \ 0.0$

standard and adapted CIELAB  
 $\text{LAB}^*\text{LAB} = 92.88 \ -6.06 \ 50.46$   
 $\text{LAB}^*\text{LABa} = 92.88 \ -5.13 \ 45.87$   
 $\text{LAB}^*\text{TCHa} = 75.0 \ 46.16 \ 96.39$

relative CIELAB lab\*  
 $\text{lab}^*\text{lab} = 0.967 \ -0.055 \ 0.497$   
 $\text{lab}^*\text{tch} = 0.75 \ 0.5 \ 0.268$   
 $\text{lab}^*\text{nch} = 0.0 \ 0.5 \ 0.268$

relative Natural Colour (NC)  
 $\text{lab}^*\text{lrj} = 0.967 \ -0.048 \ 0.497$   
 $\text{lab}^*\text{tce} = 0.75 \ 0.5 \ 0.266$   
 $\text{lab}^*\text{nce} = 0.0 \ 0.5 \ j06g$

relative Inform. Technology (IT)  
 $\text{olvi}3^* = 0.5 \ 0.5 \ 0.0 \ (1.0)$   
 $\text{cmyn}3^* = 0.5 \ 0.5 \ 1.0 \ (0.0)$   
 $\text{olvi}4^* = 1.0 \ 1.0 \ 0.5 \ 0.5$   
 $\text{cmyn}4^* = 0.0 \ 0.0 \ 0.5 \ 0.5$

standard and adapted CIELAB  
 $\text{LAB}^*\text{LAB} = 54.19 \ -5.32 \ 47.85$   
 $\text{LAB}^*\text{LABa} = 54.19 \ -5.13 \ 45.87$   
 $\text{LAB}^*\text{TCHa} = 25.01 \ 46.16 \ 96.39$

relative CIELAB lab\*  
 $\text{lab}^*\text{lab} = 0.467 \ -0.055 \ 0.497$   
 $\text{lab}^*\text{tch} = 0.25 \ 0.5 \ 0.268$   
 $\text{lab}^*\text{nch} = 0.5 \ 0.5 \ 0.268$

relative Natural Colour (NC)  
 $\text{lab}^*\text{lrj} = 0.467 \ -0.048 \ 0.497$   
 $\text{lab}^*\text{tce} = 0.25 \ 0.5 \ 0.266$   
 $\text{lab}^*\text{nce} = 0.5 \ 0.5 \ j06g$

relative Inform. Technology (IT)  
 $\text{olvi}3^* = 1.0 \ 1.0 \ 0.0 \ (1.0)$   
 $\text{cmyn}3^* = 0.0 \ 0.0 \ 1.0 \ (0.0)$   
 $\text{olvi}4^* = 1.0 \ 1.0 \ 0.0 \ 1.0$   
 $\text{cmyn}4^* = 0.0 \ 0.0 \ 1.0 \ 0.0$

standard and adapted CIELAB  
 $\text{LAB}^*\text{LAB} = 90.37 \ -11.15 \ 96.17$   
 $\text{LAB}^*\text{LABa} = 90.37 \ -10.26 \ 91.75$   
 $\text{LAB}^*\text{TCHa} = 50.0 \ 92.32 \ 96.39$

relative CIELAB lab\*  
 $\text{lab}^*\text{lab} = 0.935 \ -0.11 \ 0.994$   
 $\text{lab}^*\text{tch} = 0.5 \ 1.0 \ 0.268$   
 $\text{lab}^*\text{nch} = 0.0 \ 1.0 \ 0.268$

relative Natural Colour (NC)  
 $\text{lab}^*\text{lrj} = 0.935 \ -0.097 \ 0.995$   
 $\text{lab}^*\text{tce} = 0.5 \ 1.0 \ 0.266$   
 $\text{lab}^*\text{nce} = 0.0 \ 1.0 \ j06g$

blackness  $n^*$

chromaticness  $c^*$

$n^* = 0.00$

$n^* = 0.50$

$n^* = 1.0$

blackness  $n^*$

chromaticness  $c^*$

$n^* = 0.00$

$n^* = 0.50$

$n^* = 1.0$

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

BAM-test chart UE06; Colorimetric systems MRS18a & ORS18 input:  $\text{cmy}0^* \text{setcmykcolor}$

D65: 3 step colour scales and coordinate data for 10 hues output:  $\text{olv}^* \text{setrgbcolor} / w^* \text{setgray}$

BAM-test chart UE06; Colorimetric systems MRS18a & ORS18 input:  $\text{cmy}0^* \text{setcmykcolor}$

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

Input: Colorimetric Reflective System MRS18a

for hue  $h^* = lab^*h = 171/360 = 0.475$

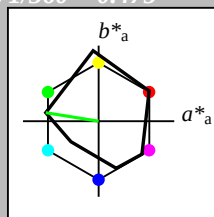
$lab^*tch$  and  $lab^*nch$

D65: hue G

LCH\*Ma: 52 71 171

olv\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 92$

%Regularity

$g^*_{H,rel} = 42$

$g^*_{C,rel} = 49$

MRS18a; adapted (a) CIELAB data

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 49.63       | 66.8    | 40.02   | 77.87        | 31           |
| JMa    | 90.7        | -7.27   | 93.19   | 93.48        | 94           |
| GMa    | 52.11       | -69.93  | 11.26   | 70.85        | 171          |
| G50BMa | 45.03       | -36.65  | -27.13  | 45.61        | 217          |
| BMa    | 36.65       | 23.26   | -62.27  | 66.49        | 290          |
| B50RMa | 34.94       | 57.27   | -43.6   | 71.99        | 323          |
| NMa    | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE   | 39.92       | 58.67   | 27.97   | 64.99        | 25           |
| JCIE   | 81.26       | -2.91   | 71.56   | 71.62        | 92           |
| GCIE   | 52.23       | -42.47  | 13.58   | 44.6         | 162          |
| BCIE   | 30.57       | 1.33    | -46.48  | 46.51        | 272          |

Output: Colorimetric Reflective System ORS18

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

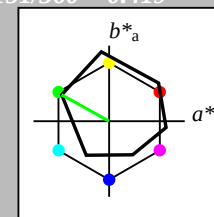
$lab^*tch$  and  $lab^*nch$

D65: hue L

LCH\*Ma: 51 72 151

olv\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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  
 $LAB^*LAB = 95.41$  -0.97 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  
 $LAB^*LAB = 56.71$  -0.23 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 -0.46  
 $LAB^*LABa = 18.02$  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 -

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  
 $LAB^*LAB = 73.15$  -31.94 20.73  
 $LAB^*LABa = 73.15$  -31.38 17.47  
 $LAB^*TCHa = 75.0$  35.93 150.91

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 j81g

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  
 $LAB^*LAB = 34.46$  -31.2 18.11  
 $LAB^*LABa = 34.46$  -31.38 17.47  
 $LAB^*TCHa = 25.01$  35.93 150.91

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

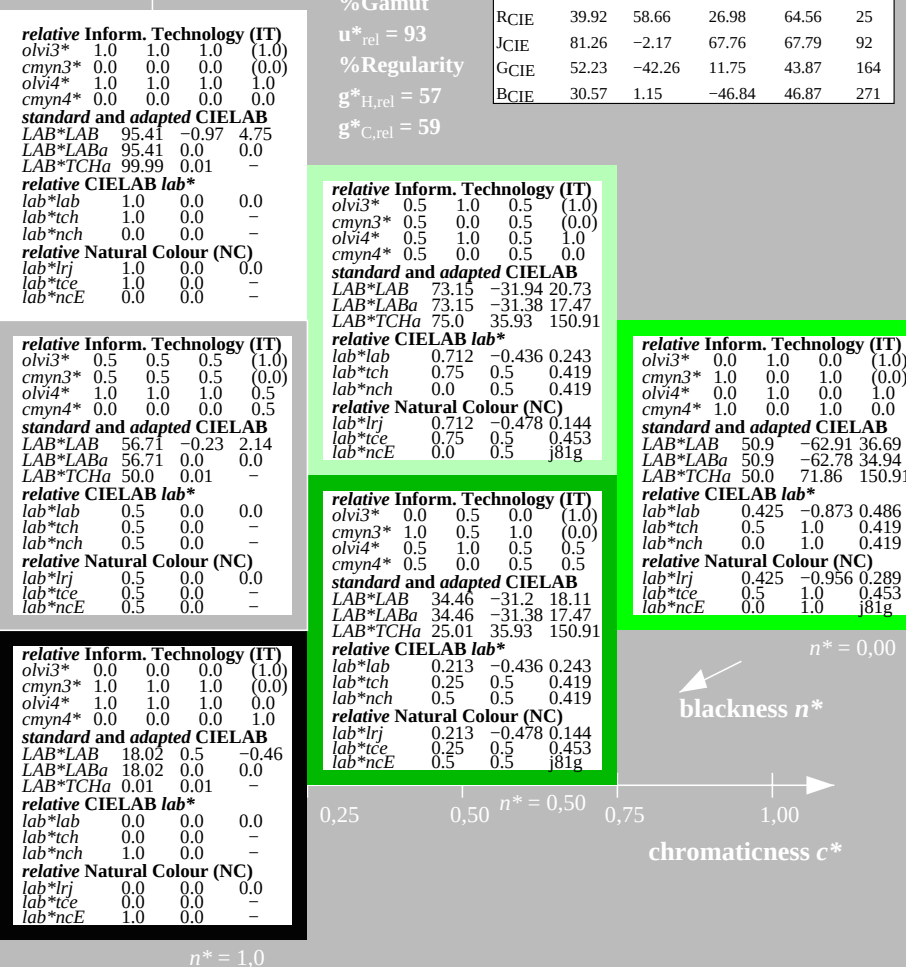
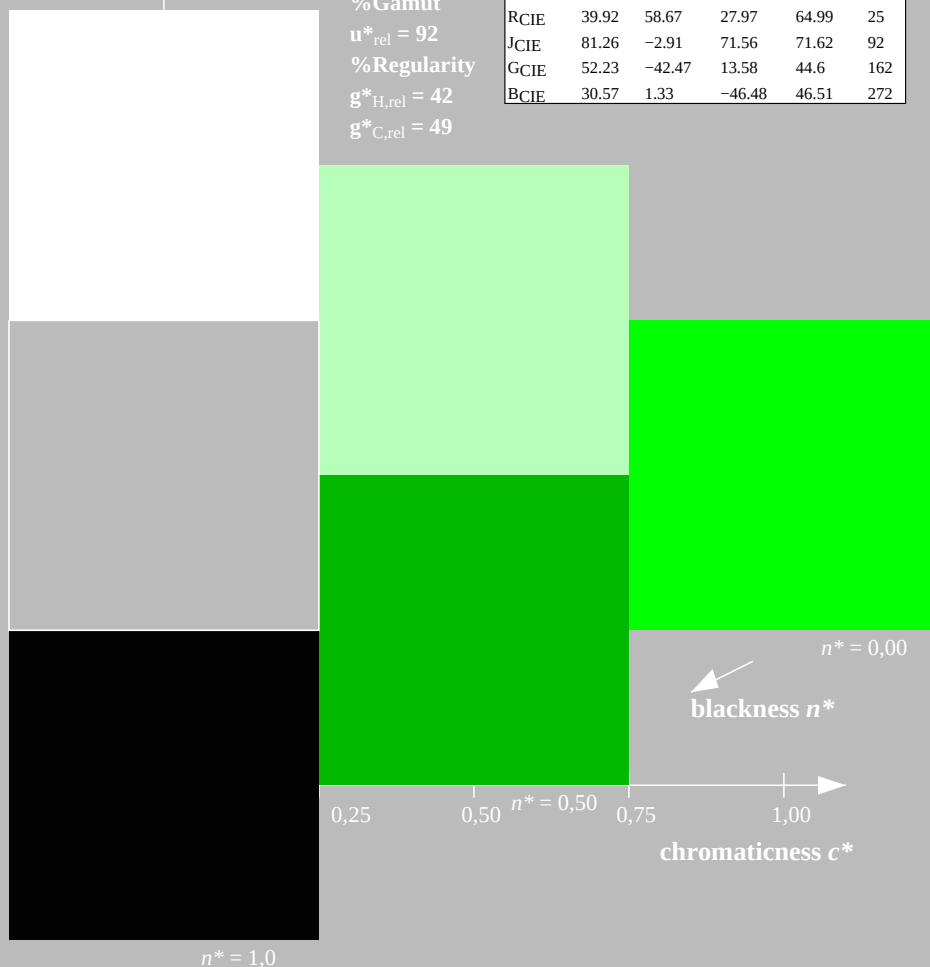
relative Natural Colour (NC)  
 $lab^*lrj = 0.213$  -0.478 0.144  
 $lab^*tce = 0.25$  0.5 0.453  
 $lab^*nce = 0.5$  0.5 j81g

relative Inform. Technology (IT)  
 $olvi3^* = 0.0$  1.0 0.0 (1.0)  
 $cmyn3^* = 1.0$  0.0 1.0 (0.0)  
 $olvi4^* = 0.0$  1.0 0.0 1.0  
 $cmyn4^* = 1.0$  0.0 1.0 0.0

standard and adapted CIELAB  
 $LAB^*LAB = 50.9$  -62.91 36.69  
 $LAB^*LABa = 50.9$  -62.78 34.94  
 $LAB^*TCHa = 50.0$  71.86 150.91

relative CIELAB lab\*  
 $lab^*lab = 0.425$  -0.873 0.486  
 $lab^*tch = 0.5$  1.0 0.419  
 $lab^*nch = 0.0$  1.0 0.419

relative Natural Colour (NC)  
 $lab^*lrj = 0.425$  -0.956 0.289  
 $lab^*tce = 0.5$  1.0 0.453  
 $lab^*nce = 0.0$  1.0 j81g



UE060-7, 3 step scales for constant CIELAB hue 171/360 = 0.475 (left)

3 step scales for constant CIELAB hue 151/360 = 0.419 (right)

BAM-test chart UE06; Colorimetric systems MRS18a & ORS18 input:  $cmY0^* setcmykcolor$

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

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

Input: Colorimetric Reflective System MRS18a

for hue  $h^* = lab^*h = 217/360 = 0.601$

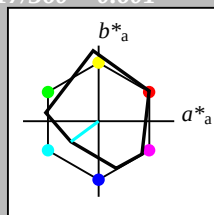
$lab^*tch$  and  $lab^*nch$

D65: hue G50B

LCH\*Ma: 45 46 217

olv\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 92$

% Regularity

$g^*_{H,rel} = 42$

$g^*_{C,rel} = 49$

MRS18a; adapted (a) CIELAB data

|                    | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------------------|-------------|---------|---------|--------------|--------------|
| RMa                | 49.63       | 66.8    | 40.02   | 77.87        | 31           |
| JMa                | 90.7        | -7.27   | 93.19   | 93.48        | 94           |
| GMa                | 52.11       | -69.93  | 11.26   | 70.85        | 171          |
| G50B <sub>Ma</sub> | 45.03       | -36.65  | -27.13  | 45.61        | 217          |
| B <sub>Ma</sub>    | 36.65       | 23.26   | -62.27  | 66.49        | 290          |
| B50R <sub>Ma</sub> | 34.94       | 57.27   | -43.6   | 71.99        | 323          |
| N <sub>Ma</sub>    | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>    | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE               | 39.92       | 58.67   | 27.97   | 64.99        | 25           |
| JCIE               | 81.26       | -2.91   | 71.56   | 71.62        | 92           |
| GCIE               | 52.23       | -42.47  | 13.58   | 44.6         | 162          |
| BCIE               | 30.57       | 1.33    | -46.48  | 46.51        | 272          |

Output: Colorimetric Reflective System ORS18

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

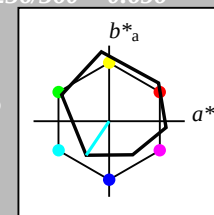
$lab^*tch$  and  $lab^*nch$

D65: hue C

LCH\*Ma: 59 54 236

olv\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

% Regularity

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

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

ORS18; adapted (a) CIELAB data

|                 | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------------|-------------|---------|---------|--------------|--------------|
| OMa             | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa             | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa             | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa             | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa             | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa             | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| N <sub>Ma</sub> | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub> | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE            | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE            | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE            | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE            | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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 -0.97 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 -0.23 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 -0.46  
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 -

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 -15.79 -18.98  
LAB\*LABa 77.01 -15.16 -22.5  
LAB\*TCHa 75.0 27.15 236.01

relative CIELAB lab\*  
lab\*lab 0.762 -0.278 -0.413  
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 -21.59  
LAB\*LABa 38.32 -15.16 -22.5  
LAB\*TCHa 25.01 27.15 236.01

relative CIELAB lab\*  
lab\*lab 0.262 -0.278 -0.413  
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

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 58.62 -30.62 -42.73  
LAB\*LABa 58.62 -30.34 -45.01  
LAB\*TCHa 50.0 54.29 236.01

relative CIELAB lab\*  
lab\*lab 0.525 -0.558 -0.828  
lab\*tch 0.5 1.0 0.656  
lab\*nch 0.0 1.0 0.656

relative Natural Colour (NC)  
lab\*lrj 0.525 -0.496 -0.867  
lab\*tce 0.5 1.0 0.667  
lab\*nce 0.0 1.0 g66b

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

UE060-7, 3 step scales for constant CIELAB hue 217/360 = 0.601 (left)

BAM-test chart UE06; Colorimetric systems MRS18a & ORS18 input: *cmv0\* setcmkcolor*

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

output: *olv\* setrgbcolor / w\* setgray*



Input: Colorimetric Reflective System MRS18a

for hue  $h^* = lab^*h = 290/360 = 0.807$

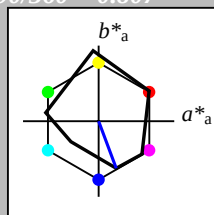
$lab^*tch$  and  $lab^*nch$

D65: hue B

LCH\*Ma: 37 66 290

olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 92$

%Regularity

$g^*_{H,rel} = 42$

$g^*_{C,rel} = 49$

MRS18a; adapted (a) CIELAB data

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 49.63       | 66.8    | 40.02   | 77.87        | 31           |
| JMa    | 90.7        | -7.27   | 93.19   | 93.48        | 94           |
| GMa    | 52.11       | -69.93  | 11.26   | 70.85        | 171          |
| G50BMa | 45.03       | -36.65  | -27.13  | 45.61        | 217          |
| BMa    | 36.65       | 23.26   | -62.27  | 66.49        | 290          |
| B50RMa | 34.94       | 57.27   | -43.6   | 71.99        | 323          |
| NMa    | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE   | 39.92       | 58.67   | 27.97   | 64.99        | 25           |
| JCIE   | 81.26       | -2.91   | 71.56   | 71.62        | 92           |
| GCIE   | 52.23       | -42.47  | 13.58   | 44.6         | 162          |
| BCIE   | 30.57       | 1.33    | -46.48  | 46.51        | 272          |

Output: Colorimetric Reflective System ORS18

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

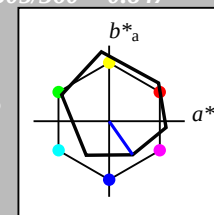
$lab^*tch$  and  $lab^*nch$

D65: hue V

LCH\*Ma: 26 54 305

olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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 -0.97 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 -0.23 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 -0.46  
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 -

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

standard and adapted CIELAB  
LAB\*LAB 60.56 15.24 -19.79  
LAB\*LABa 60.56 15.55 -22.2  
LAB\*TCHa 75.0 27.11 305.0

relative CIELAB lab\*  
lab\*lab 0.55 0.287 -0.408  
lab\*tch 0.75 0.5 0.847  
lab\*nch 0.0 0.5 0.847

relative Natural Colour (NC)  
lab\*lrj 0.55 0.225 -0.446  
lab\*tce 0.75 0.5 0.824  
lab\*nce 0.0 0.5 b29r

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

standard and adapted CIELAB  
LAB\*LAB 21.87 15.98 -22.4  
LAB\*LABa 21.87 15.55 -22.2  
LAB\*TCHa 25.01 27.11 305.0

relative CIELAB lab\*  
lab\*lab 0.05 0.287 -0.408  
lab\*tch 0.25 0.5 0.847  
lab\*nch 0.5 0.5 0.847

relative Natural Colour (NC)  
lab\*lrj 0.05 0.225 -0.446  
lab\*tce 0.25 0.5 0.824  
lab\*nce 0.5 0.5 b29r

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

standard and adapted CIELAB  
LAB\*LAB 25.72 31.46 -44.36  
LAB\*LABa 25.72 31.1 -44.41  
LAB\*TCHa 50.0 54.23 305.0

relative CIELAB lab\*  
lab\*lab 0.1 0.573 -0.818  
lab\*tch 0.5 1.0 0.847  
lab\*nch 0.0 1.0 0.847

relative Natural Colour (NC)  
lab\*lrj 0.1 0.449 -0.892  
lab\*tce 0.5 1.0 0.824  
lab\*nce 0.0 1.0 b29r

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

standard and adapted CIELAB  
LAB\*LAB 21.87 15.98 -22.4  
LAB\*LABa 21.87 15.55 -22.2  
LAB\*TCHa 25.01 27.11 305.0

relative CIELAB lab\*  
lab\*lab 0.05 0.287 -0.408  
lab\*tch 0.25 0.5 0.847  
lab\*nch 0.5 0.5 0.847

relative Natural Colour (NC)  
lab\*lrj 0.05 0.225 -0.446  
lab\*tce 0.25 0.5 0.824  
lab\*nce 0.5 0.5 b29r

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

standard and adapted CIELAB  
LAB\*LAB 25.72 31.46 -44.36  
LAB\*LABa 25.72 31.1 -44.41  
LAB\*TCHa 50.0 54.23 305.0

relative CIELAB lab\*  
lab\*lab 0.1 0.573 -0.818  
lab\*tch 0.5 1.0 0.847  
lab\*nch 0.0 1.0 0.847

relative Natural Colour (NC)  
lab\*lrj 0.1 0.449 -0.892  
lab\*tce 0.5 1.0 0.824  
lab\*nce 0.0 1.0 b29r

UE060-7, 3 step scales for constant CIELAB hue 290/360 = 0.807 (left)

3 step scales for constant CIELAB hue 305/360 = 0.847 (right)

BAM-test chart UE06; Colorimetric systems MRS18a & ORS18 input:  $cmY0^* setcmykcolor$

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

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

Input: Colorimetric Reflective System MRS18a

for hue  $h^* = lab^*h = 323/360 = 0.896$

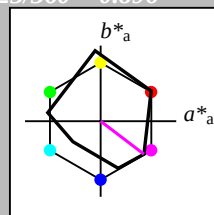
$lab^*tch$  and  $lab^*nch$

D65: hue B50R

LCH\*Ma: 35 72 323

olv\*Ma: 1.0 0.0 1.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 92$

% Regularity

$g^*_{H,rel} = 42$

$g^*_{C,rel} = 49$

MRS18a; adapted (a) CIELAB data

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 49.63       | 66.8    | 40.02   | 77.87        | 31           |
| JMa    | 90.7        | -7.27   | 93.19   | 93.48        | 94           |
| GMa    | 52.11       | -69.93  | 11.26   | 70.85        | 171          |
| G50BMa | 45.03       | -36.65  | -27.13  | 45.61        | 217          |
| BMa    | 36.65       | 23.26   | -62.27  | 66.49        | 290          |
| B50RMa | 34.94       | 57.27   | -43.6   | 71.99        | 323          |
| NMa    | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE   | 39.92       | 58.67   | 27.97   | 64.99        | 25           |
| JCIE   | 81.26       | -2.91   | 71.56   | 71.62        | 92           |
| GCIE   | 52.23       | -42.47  | 13.58   | 44.6         | 162          |
| BCIE   | 30.57       | 1.33    | -46.48  | 46.51        | 272          |

Output: Colorimetric Reflective System ORS18

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

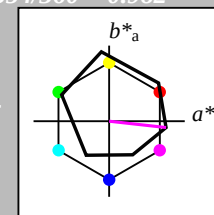
$lab^*tch$  and  $lab^*nch$

D65: hue M

LCH\*Ma: 48 76 354

olv\*Ma: 1.0 0.0 1.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

% Regularity

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

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

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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 -0.97 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 -0.23 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 -0.46  
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 -

relative Inform. Technology (IT)  
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)  
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 33.08 37.84 -3.62  
LAB\*LABa 33.08 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

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

standard and adapted CIELAB  
LAB\*LAB 48.14 75.18 -6.78  
LAB\*LABa 48.14 75.25 -8.35  
LAB\*TCHa 50.0 75.71 353.66

relative CIELAB lab\*  
lab\*lab 0.389 0.994 -0.109  
lab\*tch 0.5 1.0 0.982  
lab\*nch 0.0 1.0 0.982

relative Natural Colour (NC)  
lab\*lrj 0.389 0.909 -0.416  
lab\*tce 0.5 1.0 0.932  
lab\*nce 0.0 1.0 b72r

blackness  $n^*$

chromaticness  $c^*$

blackness  $n^*$

chromaticness  $c^*$

UE060-7, 3 step scales for constant CIELAB hue 323/360 = 0.896 (left)

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

BAM-test chart UE06; Colorimetric systems MRS18a & ORS18 input:  $cmv0^* setcmykcolor$

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

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

Input: Colorimetric Reflective System MRS18a

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

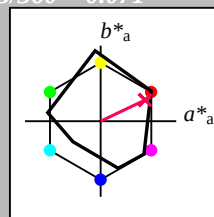
$lab^*tch$  and  $lab^*nch$

D65: hue R

LCH\*Ma: 48 73 25

olv\*Ma: 1.0 0.0 0.1

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 92$

% Regularity

$g^*_{H,rel} = 42$

$g^*_{C,rel} = 49$

MRS18a; adapted (a) CIELAB data

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 49.63       | 66.8    | 40.02   | 77.87        | 31           |
| JMa    | 90.7        | -7.27   | 93.19   | 93.48        | 94           |
| GMa    | 52.11       | -69.93  | 11.26   | 70.85        | 171          |
| G50BMa | 45.03       | -36.65  | -27.13  | 45.61        | 217          |
| BMa    | 36.65       | 23.26   | -62.27  | 66.49        | 290          |
| B50RMa | 34.94       | 57.27   | -43.6   | 71.99        | 323          |
| NMa    | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE   | 39.92       | 58.67   | 27.97   | 64.99        | 25           |
| JCIE   | 81.26       | -2.91   | 71.56   | 71.62        | 92           |
| GCIE   | 52.23       | -42.47  | 13.58   | 44.6         | 162          |
| BCIE   | 30.57       | 1.33    | -46.48  | 46.51        | 272          |

Output: Colorimetric Reflective System ORS18

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

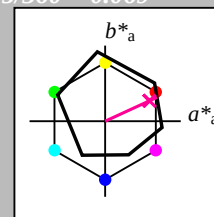
$lab^*tch$  and  $lab^*nch$

D65: hue R

LCH\*Ma: 48 75 25

olv\*Ma: 1.0 0.0 0.32

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

% Regularity

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

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

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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 -0.97 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 -0.23 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 -0.46  
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 -

relative Inform. Technology (IT)  
olvi3\* 1.0 0.5 0.661 (1.0)  
cmyn3\* 0.0 0.5 0.339 (0.0)  
olvi4\* 1.0 0.5 0.661 1.0  
cmyn4\* 0.0 0.5 0.339 0.0  
standard and adapted CIELAB  
LAB\*LAB 71.7 33.75 18.92  
LAB\*LABa 71.7 34.27 15.76  
LAB\*TCHa 75.0 37.72 24.69

relative CIELAB lab\*  
lab\*lab 0.694 0.454 0.209  
lab\*tch 0.75 0.5 0.069  
lab\*nch 0.0 0.5 0.069

relative Natural Colour (NC)  
lab\*lrj 0.694 0.5 0.0  
lab\*tce 0.75 0.5 1.0  
lab\*nce 0.0 0.5 0.99r

relative Inform. Technology (IT)  
olvi3\* 0.5 0.0 0.161 (1.0)  
cmyn3\* 0.5 1.0 0.839 (0.0)  
olvi4\* 1.0 0.5 0.661 0.5  
cmyn4\* 0.0 0.5 0.339 0.5  
standard and adapted CIELAB  
LAB\*LAB 33.01 34.49 16.31  
LAB\*LABa 33.01 34.27 15.77  
LAB\*TCHa 25.01 37.73 24.7

relative CIELAB lab\*  
lab\*lab 0.194 0.454 0.209  
lab\*tch 0.25 0.5 0.069  
lab\*nch 0.5 0.5 0.069

relative Natural Colour (NC)  
lab\*lrj 0.194 0.5 0.0  
lab\*tce 0.25 0.5 0.0  
lab\*nce 0.5 0.5 0.00j

relative Inform. Technology (IT)  
olvi3\* 1.0 0.0 0.322 (1.0)  
cmyn3\* 0.0 1.0 0.678 (0.0)  
olvi4\* 1.0 0.0 0.323 1.0  
cmyn4\* 0.0 1.0 0.677 0.0  
standard and adapted CIELAB  
LAB\*LAB 48.01 68.48 33.09  
LAB\*LABa 48.01 68.55 31.53  
LAB\*TCHa 50.0 75.45 24.7

relative CIELAB lab\*  
lab\*lab 0.388 0.908 0.418  
lab\*tch 0.5 1.0 0.069  
lab\*nch 0.0 1.0 0.069

relative Natural Colour (NC)  
lab\*lrj 0.388 1.0 0.0  
lab\*tce 0.5 1.0 0.0  
lab\*nce 0.0 1.0 0.00j

$n^* = 0.00$

blackness  $n^*$

0,25 0,50  $n^* = 0.50$  0,75 1,00  
chromaticness  $c^*$

$n^* = 1.0$

UE060-7, 3 step scales for constant CIELAB hue 25/360 = 0.071 (left)

3 step scales for constant CIELAB hue 25/360 = 0.069 (right)

BAM-test chart UE06; Colorimetric systems MRS18a & ORS18 input:  $cmY0^* setcmykcolor$

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

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

Input: Colorimetric Reflective System MRS18a

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

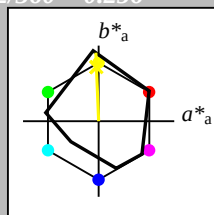
$lab^*tch$  and  $lab^*nch$

D65: hue J

LCH\*Ma: 89 91 92

olv\*Ma: 1.0 0.95 0.0

triangle lightness  $t^*$



MRS18a; adapted (a) CIELAB data

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 49.63       | 66.8    | 40.02   | 77.87        | 31           |
| JMa    | 90.7        | -7.27   | 93.19   | 93.48        | 94           |
| GMa    | 52.11       | -69.93  | 11.26   | 70.85        | 171          |
| G50BMa | 45.03       | -36.65  | -27.13  | 45.61        | 217          |
| BMa    | 36.65       | 23.26   | -62.27  | 66.49        | 290          |
| B50RMa | 34.94       | 57.27   | -43.6   | 71.99        | 323          |
| NMa    | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE   | 39.92       | 58.67   | 27.97   | 64.99        | 25           |
| JCIE   | 81.26       | -2.91   | 71.56   | 71.62        | 92           |
| GCIE   | 52.23       | -42.47  | 13.58   | 44.6         | 162          |
| BCIE   | 30.57       | 1.33    | -46.48  | 46.51        | 272          |

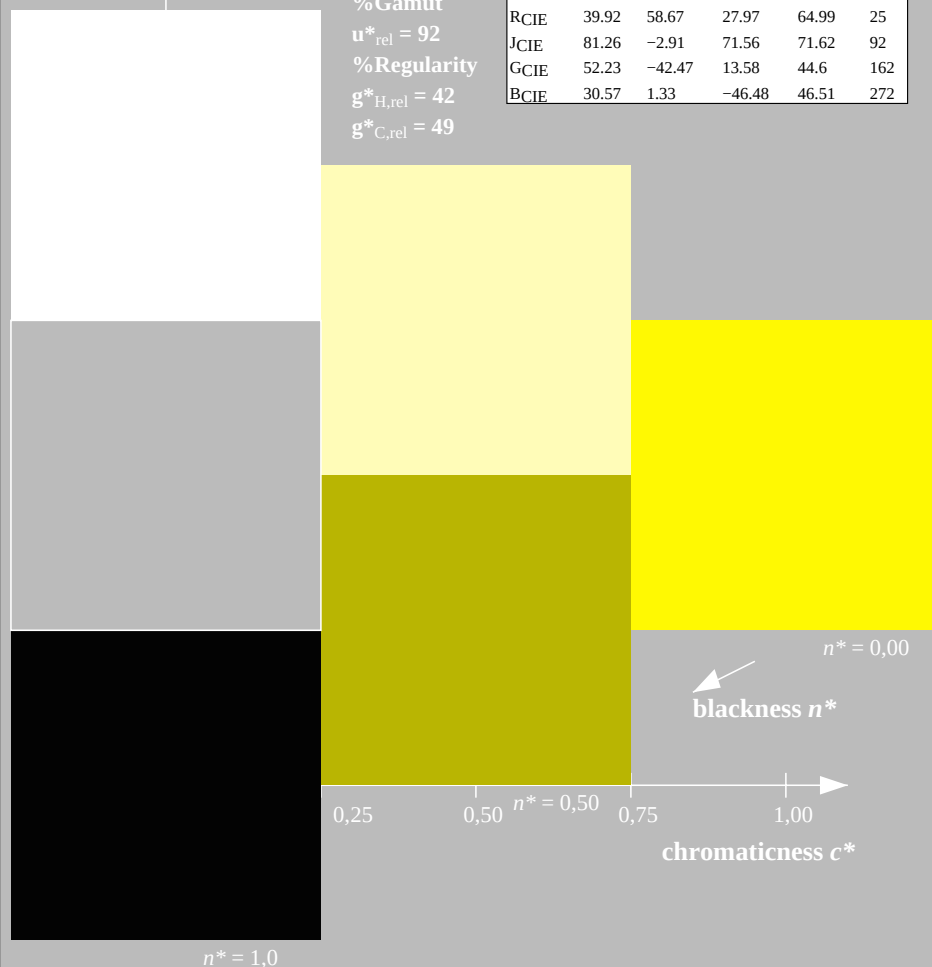
%Gamut

$u^*_{rel} = 92$

%Regularity

$g^*_{H,rel} = 42$

$g^*_{C,rel} = 49$



Output: Colorimetric Reflective System ORS18

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

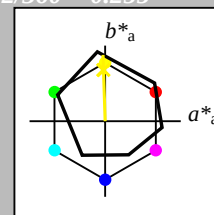
$lab^*tch$  and  $lab^*nch$

D65: hue J

LCH\*Ma: 86 88 92

olv\*Ma: 1.0 0.9 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

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 -0.97 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 -0.23 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 -0.46  
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 -

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

relative Inform. Technology (IT)  
olvi3\* 1.0 0.951 0.5 (1.0)  
cmyn3\* 0.0 0.049 0.5 (0.0)  
olvi4\* 1.0 0.951 0.5 1.0  
cmyn4\* 0.0 0.049 0.5 0.0

standard and adapted CIELAB

LAB\*LAB 90.8 -2.3 48.29  
LAB\*LABa 90.8 -1.41 43.85  
LAB\*TCHa 75.0 43.87 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)  
olvi3\* 0.5 0.451 0.0 (1.0)  
cmyn3\* 0.5 0.549 1.0 (0.0)  
olvi4\* 1.0 0.951 0.5 0.5  
cmyn4\* 0.0 0.049 0.5 0.5

standard and adapted CIELAB

LAB\*LAB 52.1 -1.55 45.68  
LAB\*LABa 52.1 -1.4 43.84  
LAB\*TCHa 25.01 43.87 91.84

relative CIELAB lab\*

lab\*lab 0.44 -0.015 0.5  
lab\*tch 0.25 0.5 0.255  
lab\*nch 0.5 0.5 0.255

relative Natural Colour (NC)

lab\*lrj 0.44 0.0 0.5  
lab\*tce 0.25 0.5 0.25  
lab\*nce 0.5 0.5 j99j

relative Inform. Technology (IT)  
olvi3\* 1.0 0.901 0.0 (1.0)  
cmyn3\* 0.0 0.099 1.0 (0.0)  
olvi4\* 1.0 0.902 0.0 1.0  
cmyn4\* 0.0 0.098 1.0 0.0

standard and adapted CIELAB

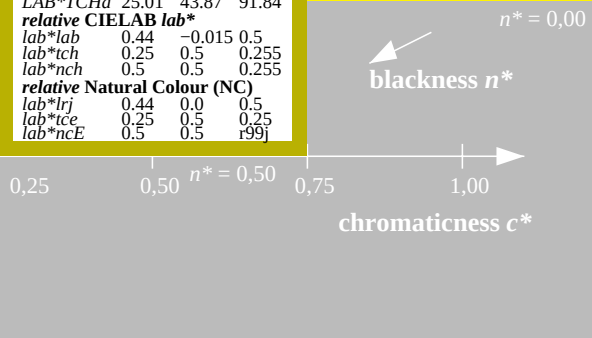
LAB\*LAB 86.19 -3.62 91.83  
LAB\*LABa 86.19 -2.82 87.69  
LAB\*TCHa 50.0 87.73 91.85

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



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

UE060-7, 3 step scales for constant CIELAB hue 92/360 = 0.256 (left)

BAM-test chart UE06; Colorimetric systems MRS18a & ORS18 input:  $cmY0^* setcmykcolor$

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

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



Input: Colorimetric Reflective System MRS18a

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

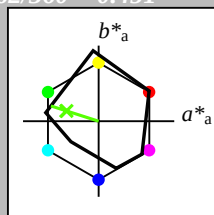
$lab^*tch$  and  $lab^*nch$

D65: hue G

LCH\*Ma: 56 66 162

olv\*Ma: 0.11 1.0 0.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 92$

% Regularity

$g^*_{H,rel} = 42$

$g^*_{C,rel} = 49$

MRS18a; adapted (a) CIELAB data

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 49.63       | 66.8    | 40.02   | 77.87        | 31           |
| JMa    | 90.7        | -7.27   | 93.19   | 93.48        | 94           |
| GMa    | 52.11       | -69.93  | 11.26   | 70.85        | 171          |
| G50BMa | 45.03       | -36.65  | -27.13  | 45.61        | 217          |
| BMa    | 36.65       | 23.26   | -62.27  | 66.49        | 290          |
| B50RMa | 34.94       | 57.27   | -43.6   | 71.99        | 323          |
| NMa    | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE   | 39.92       | 58.67   | 27.97   | 64.99        | 25           |
| JCIE   | 81.26       | -2.91   | 71.56   | 71.62        | 92           |
| GCIE   | 52.23       | -42.47  | 13.58   | 44.6         | 162          |
| BCIE   | 30.57       | 1.33    | -46.48  | 46.51        | 272          |

Output: Colorimetric Reflective System ORS18

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

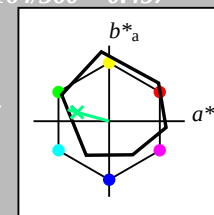
$lab^*tch$  and  $lab^*nch$

D65: hue G

LCH\*Ma: 53 57 164

olv\*Ma: 0.0 1.0 0.25

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

% Regularity

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

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

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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 -0.97 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 -0.23 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 -0.46  
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 -

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 -27.96 10.94  
LAB\*LABa 74.1 -27.39 7.62  
LAB\*TCHa 75.0 28.44 164.46

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 -27.22 8.34  
LAB\*LABa 35.41 -27.39 7.63  
LAB\*TCHa 25.01 28.44 164.45

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

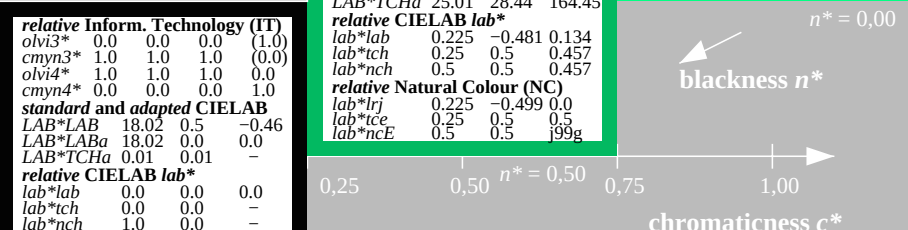
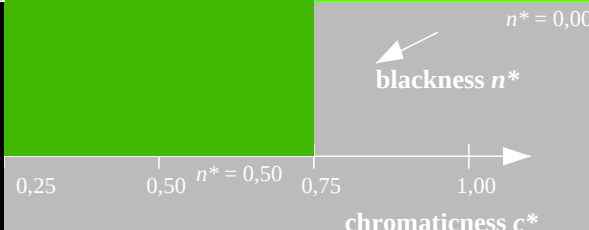
relative Natural Colour (NC)  
lab\*lrj 0.225 -0.499 0.0  
lab\*tce 0.25 0.5 0.5  
lab\*nce 0.5 0.5 g99g

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 -54.95 17.13  
LAB\*LABa 52.8 -54.79 15.24  
LAB\*TCHa 50.0 56.88 164.45

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 g99g



UE060-7, 3 step scales for constant CIELAB hue 162/360 = 0.451 (left)

3 step scales for constant CIELAB hue 164/360 = 0.457 (right)

BAM-test chart UE06; Colorimetric systems MRS18a & ORS18 input: *cmY0\* setcmykcolor*

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

output: *olv\* setrgbcolor / w\* setgray*

Input: Colorimetric Reflective System MRS18a

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

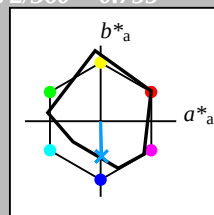
$lab^*tch$  and  $lab^*nch$

D65: hue B

LCH\*Ma: 40 49 272

olv\*Ma: 0.0 0.36 1.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 92$

% Regularity

$g^*_{H,rel} = 42$

$g^*_{C,rel} = 49$

MRS18a; adapted (a) CIELAB data

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 49.63       | 66.8    | 40.02   | 77.87        | 31           |
| JMa    | 90.7        | -7.27   | 93.19   | 93.48        | 94           |
| GMa    | 52.11       | -69.93  | 11.26   | 70.85        | 171          |
| G50BMa | 45.03       | -36.65  | -27.13  | 45.61        | 217          |
| BMa    | 36.65       | 23.26   | -62.27  | 66.49        | 290          |
| B50RMa | 34.94       | 57.27   | -43.6   | 71.99        | 323          |
| NMa    | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE   | 39.92       | 58.67   | 27.97   | 64.99        | 25           |
| JCIE   | 81.26       | -2.91   | 71.56   | 71.62        | 92           |
| GCIE   | 52.23       | -42.47  | 13.58   | 44.6         | 162          |
| BCIE   | 30.57       | 1.33    | -46.48  | 46.51        | 272          |

Output: Colorimetric Reflective System ORS18

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

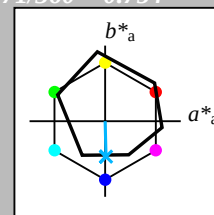
$lab^*tch$  and  $lab^*nch$

D65: hue B

LCH\*Ma: 42 45 271

olv\*Ma: 0.0 0.49 1.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

% Regularity

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

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

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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 -0.97 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 -0.23 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 -0.46  
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 -

relative Inform. Technology (IT)  
olvi3\* 0.5 0.744 1.0 (1.0)  
cmyn3\* 0.5 0.256 0.0 (0.0)  
olvi4\* 0.5 0.744 1.0 1.0  
cmyn4\* 0.5 0.256 0.0 0.0

standard and adapted CIELAB  
LAB\*LAB 68.59 0.08 -19.4  
LAB\*LABa 68.59 0.54 -22.35  
LAB\*TCHa 75.0 22.36 271.4

relative CIELAB lab\*  
lab\*lab 0.654 0.012 -0.499  
lab\*tch 0.75 0.5 0.754  
lab\*nch 0.0 0.5 0.754

relative Natural Colour (NC)  
lab\*lrj 0.654 0.0 -0.499  
lab\*tce 0.75 0.5 0.75  
lab\*nce 0.0 0.5 g99b

relative Inform. Technology (IT)  
olvi3\* 0.0 0.244 0.5 (1.0)  
cmyn3\* 1.0 0.756 0.5 (0.0)  
olvi4\* 0.5 0.744 1.0 0.5  
cmyn4\* 0.5 0.256 0.0 0.5

standard and adapted CIELAB  
LAB\*LAB 29.9 0.83 -22.01  
LAB\*LABa 29.9 0.55 -22.35  
LAB\*TCHa 25.01 22.36 271.41

relative CIELAB lab\*  
lab\*lab 0.154 0.012 -0.499  
lab\*tch 0.25 0.5 0.754  
lab\*nch 0.5 0.5 0.754

relative Natural Colour (NC)  
lab\*lrj 0.154 0.0 -0.499  
lab\*tce 0.25 0.5 0.75  
lab\*nce 0.5 0.5 b00r

relative Inform. Technology (IT)  
olvi3\* 0.0 0.488 1.0 (1.0)  
cmyn3\* 1.0 0.512 0.0 (0.0)  
olvi4\* 0.0 0.488 1.0 1.0  
cmyn4\* 1.0 0.512 0.0 0.0

standard and adapted CIELAB  
LAB\*LAB 41.79 1.14 -43.56  
LAB\*LABa 41.79 1.1 -44.7  
LAB\*TCHa 50.0 44.73 271.4

relative CIELAB lab\*  
lab\*lab 0.307 0.024 -0.998  
lab\*tch 0.5 1.0 0.754  
lab\*nch 0.0 1.0 0.754

relative Natural Colour (NC)  
lab\*lrj 0.307 0.0 -0.999  
lab\*tce 0.5 1.0 0.75  
lab\*nce 0.0 1.0 b00r

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

UE060-7, 3 step scales for constant CIELAB hue 272/360 = 0.755 (left)

BAM-test chart UE06; Colorimetric systems MRS18a & ORS18 input:  $cmv0^* setcmykcolor$

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

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