

Input: Colorimetric Reflective System MRS18a

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

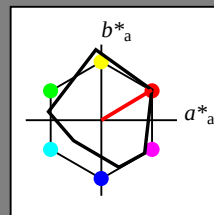
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue R

LCH\*Ma: 50 78 31

rgb\*Ma: 1.0 0.0 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  $h^* = lab \cdot h = 38/360 = 0.105$

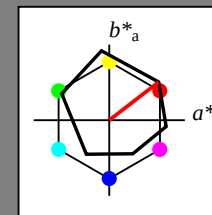
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue O

LCH\*Ma: 48 83 38

rgb\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



%Gamut

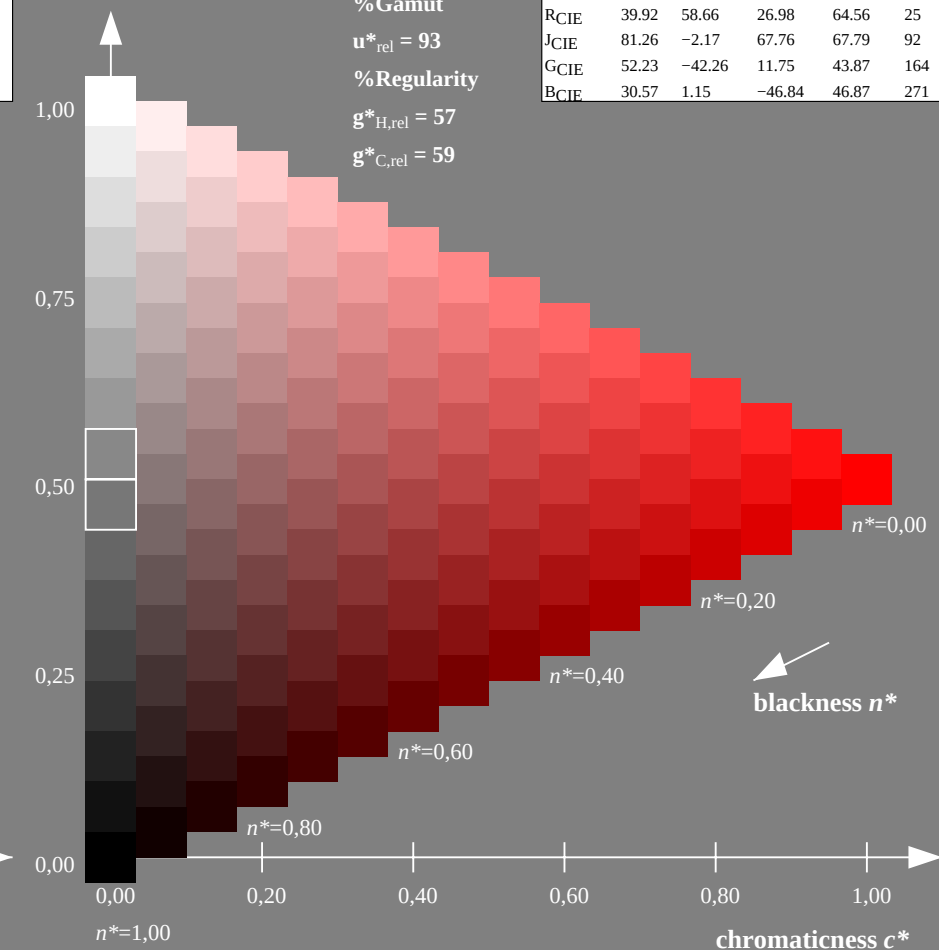
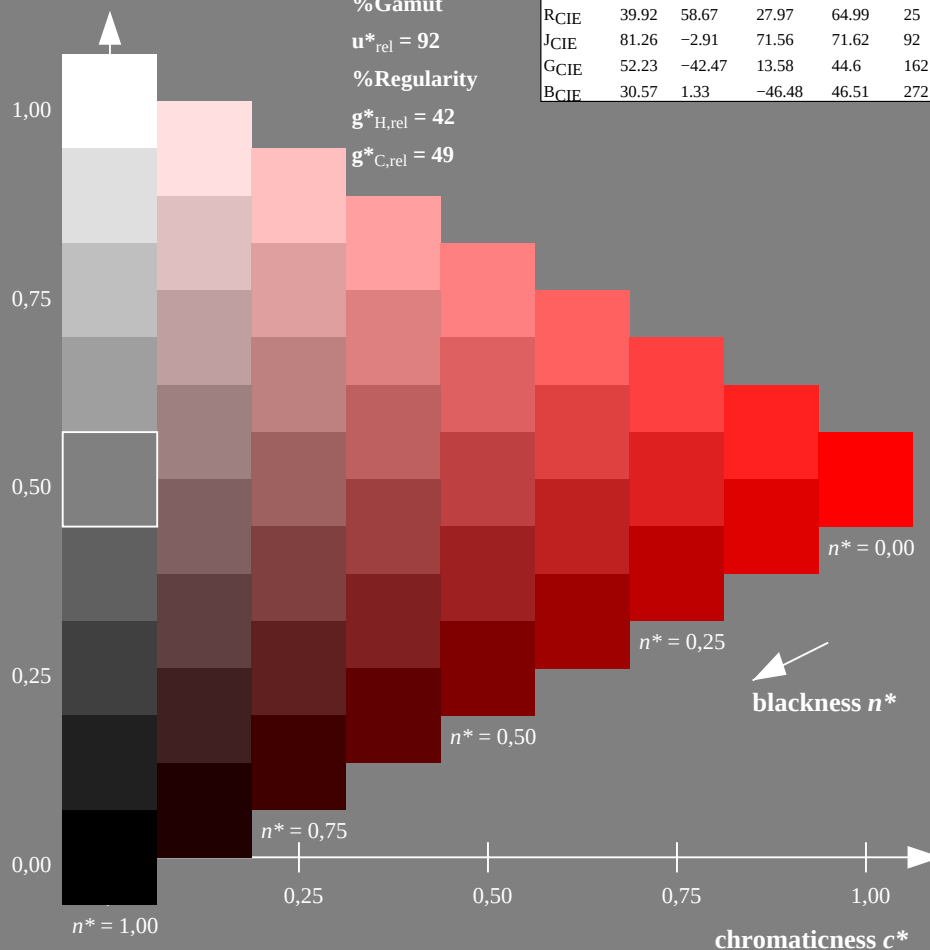
$u^*_{rel} = 93$

%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          |



TE960-7, 9 step scales for constant CIELAB hue 31/360 = 0.086 (left)

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

BAM-test chart TE96; Colorimetric systems MRS18a & ORS18 input:  $olv^* setrgbcolor$

D65: 9 and 16 step colour scales for 10 hues

output: no change compared to input

Input: Colorimetric Reflective System MRS18a

for hue  $h^* = lab \cdot h = 94/360 = 0.262$

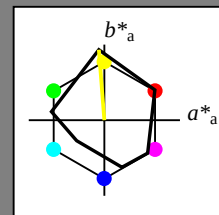
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue J

LCH\*Ma: 91 93 94

rgb\*Ma: 1.0 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  $h^* = lab \cdot h = 96/360 = 0.268$

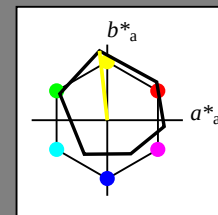
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue Y

LCH\*Ma: 90 92 96

rgb\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

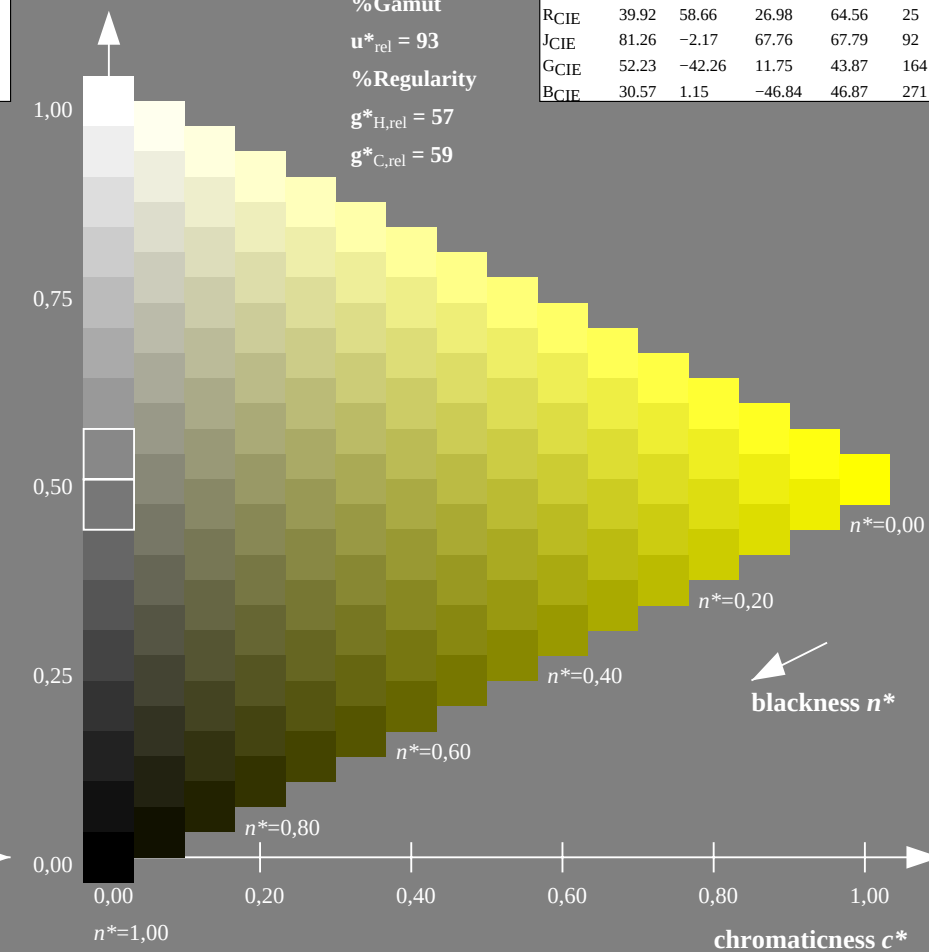
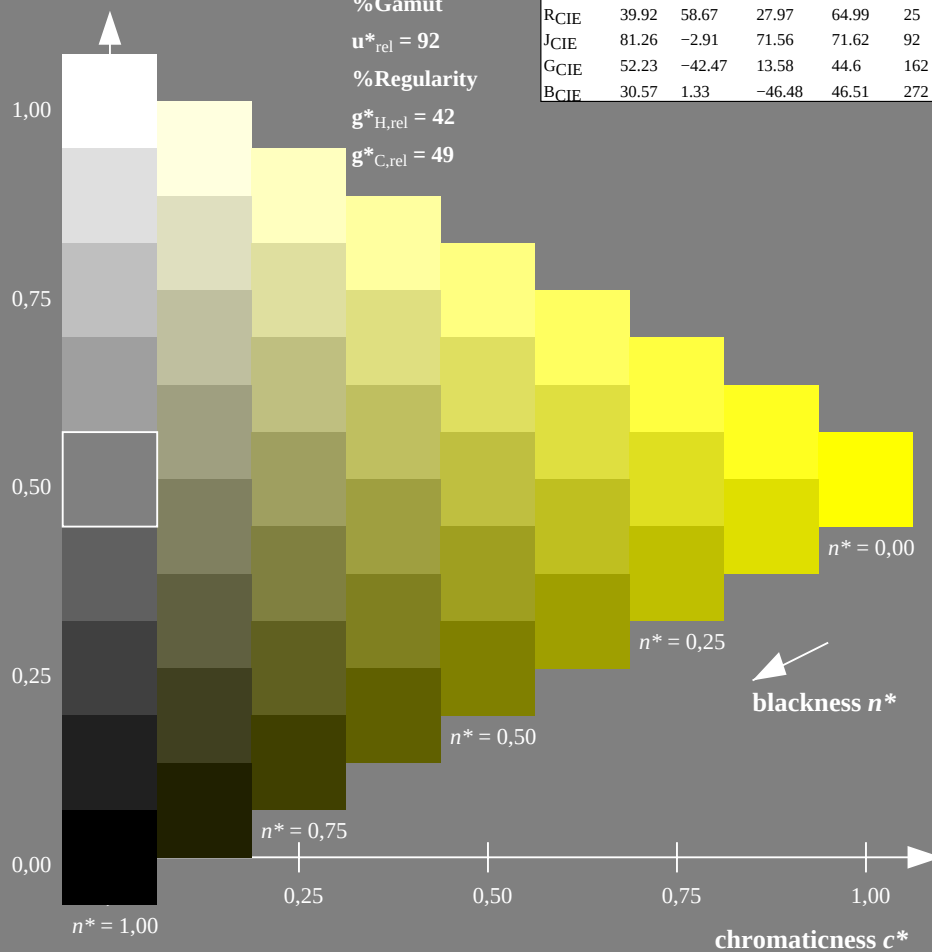
%Regularity

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

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

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          |



TE960-7, 9 step scales for constant CIELAB hue 94/360 = 0.262 (left)

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

BAM-test chart TE96; Colorimetric systems MRS18a & ORS18 input:  $olv^* setrgbcolor$

D65: 9 and 16 step colour scales for 10 hues

output: no change compared to input

Input: Colorimetric Reflective System MRS18a

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

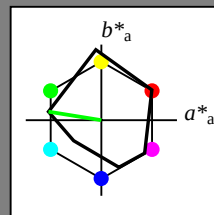
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue G

LCH\*Ma: 52 71 171

rgb\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 92$

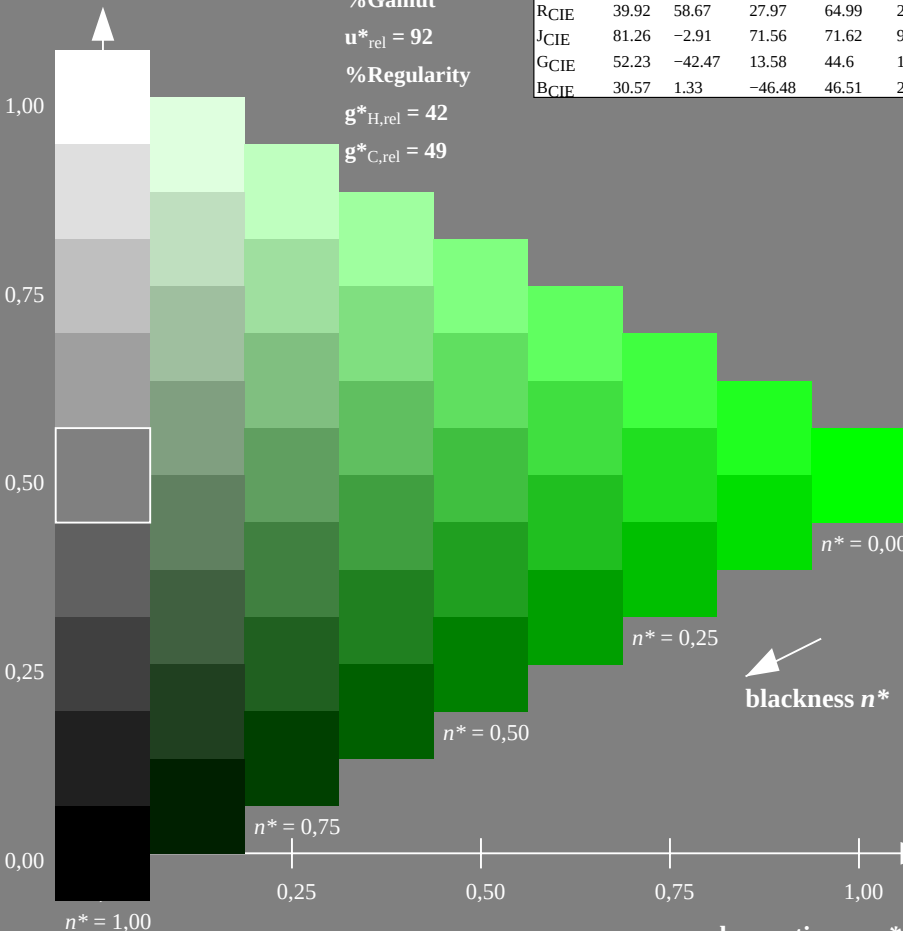
%Regularity

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

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

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  $h^* = lab \cdot h = 151/360 = 0.419$

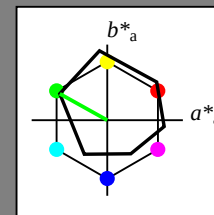
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue L

LCH\*Ma: 51 72 151

rgb\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

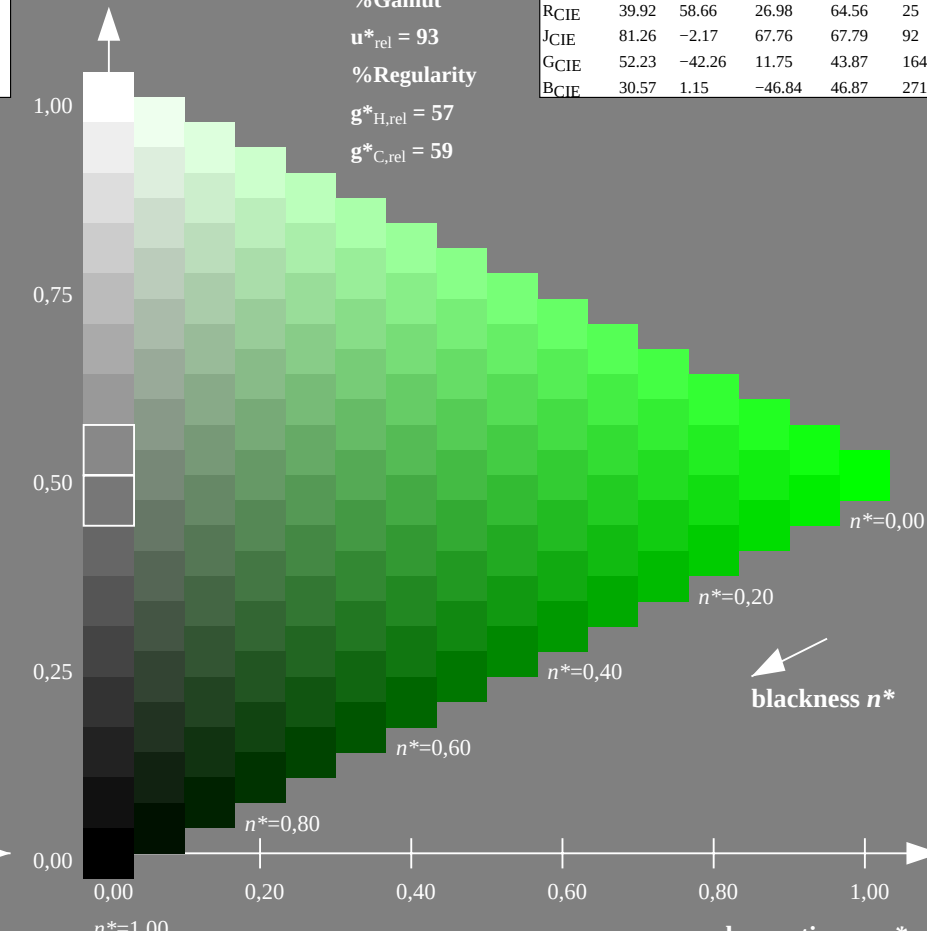
%Regularity

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

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

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          |



TE960-7, 9 step scales for constant CIELAB hue 171/360 = 0.475 (left)

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

BAM-test chart TE96; Colorimetric systems MRS18a & ORS18 input:  $olv^* setrgbcolor$

D65: 9 and 16 step colour scales for 10 hues

output: no change compared to input

Input: Colorimetric Reflective System MRS18a

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

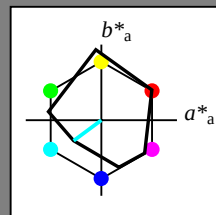
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue G50B

LCH\*Ma: 45 46 217

rgb\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 92$

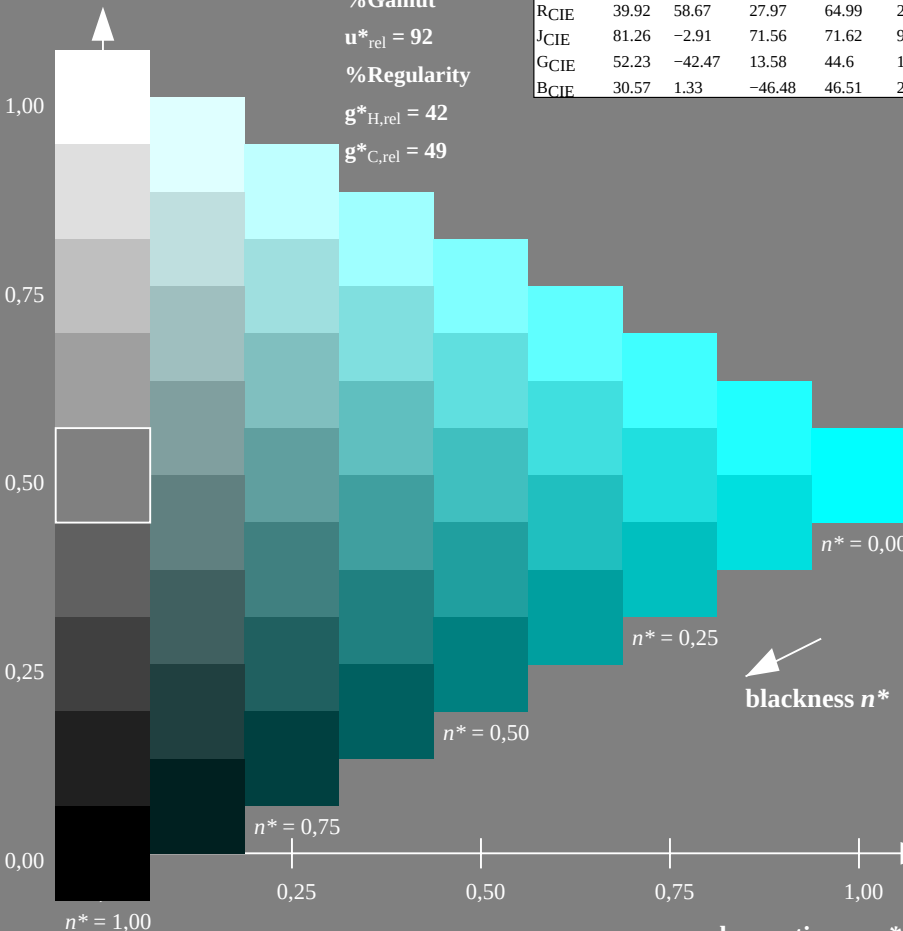
%Regularity

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

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

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  $h^* = lab \cdot h = 236/360 = 0.656$

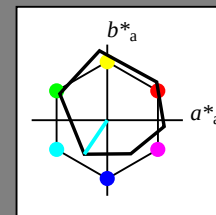
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue C

LCH\*Ma: 59 54 236

rgb\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

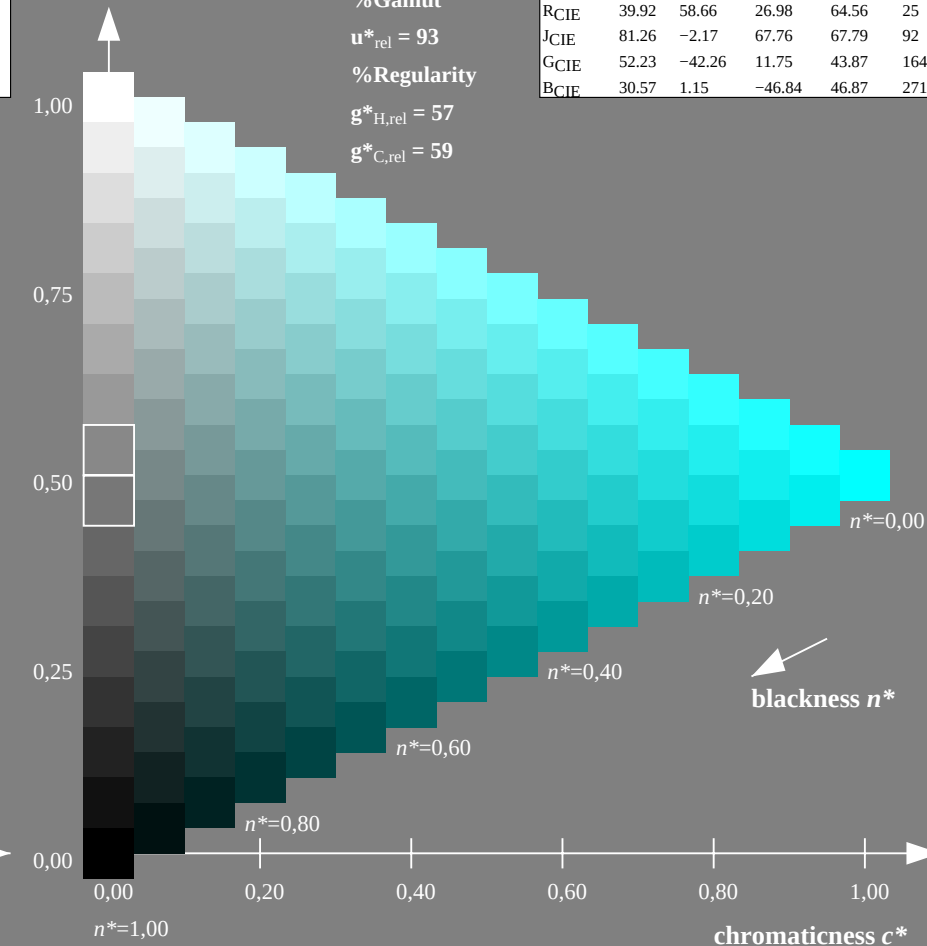
%Regularity

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

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

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          |



TE960-7, 9 step scales for constant CIELAB hue 217/360 = 0.601 (left)

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

BAM-test chart TE96; Colorimetric systems MRS18a & ORS18 input:  $olv^* setrgbcolor$

D65: 9 and 16 step colour scales for 10 hues

output: no change compared to input

Input: Colorimetric Reflective System MRS18a

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

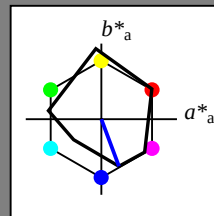
$lab^*tch$  and  $lab^*nch$

D65: hue B

LCH\*Ma: 37 66 290

rgb\*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  $h^* = lab^*h = 305/360 = 0.847$

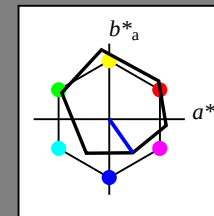
$lab^*tch$  and  $lab^*nch$

D65: hue V

LCH\*Ma: 26 54 305

rgb\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

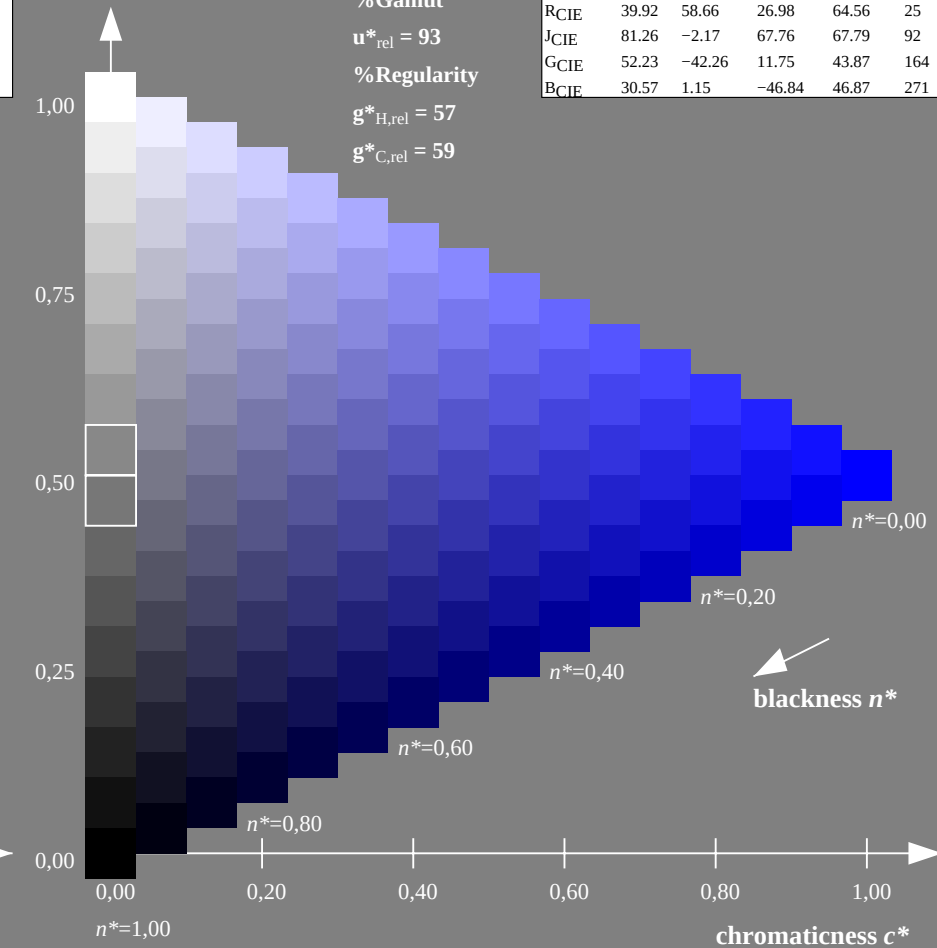
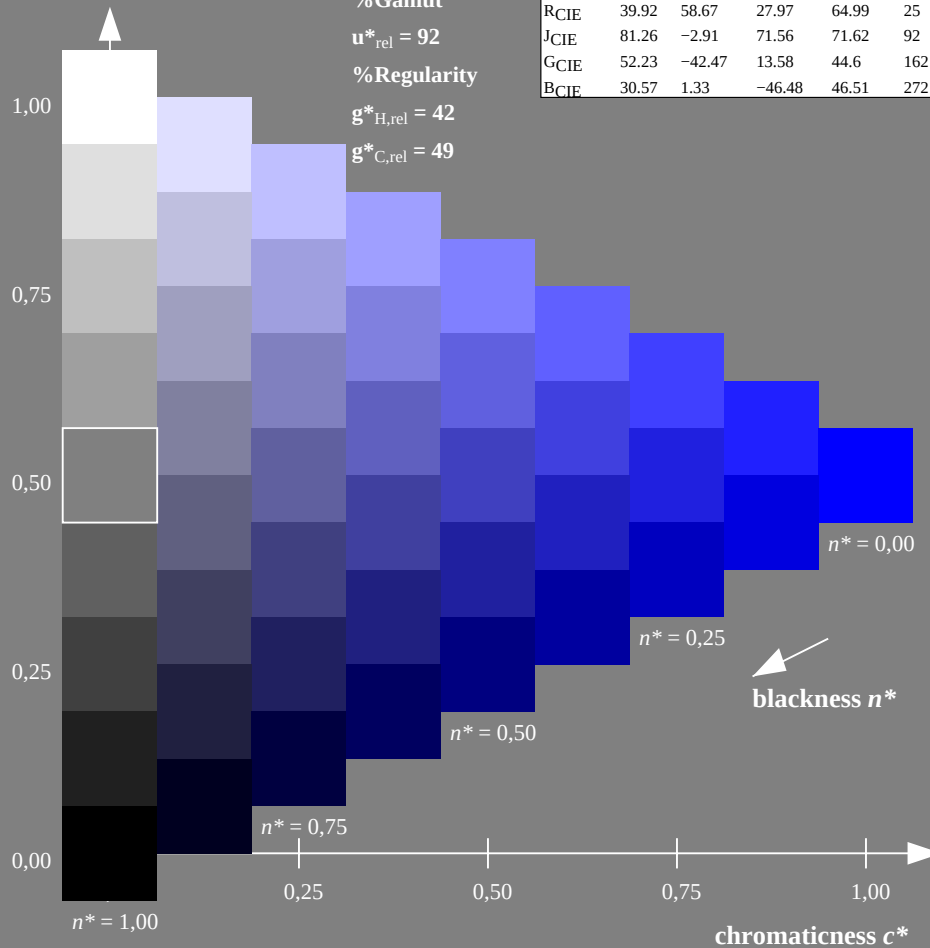
%Regularity

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

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

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          |



TE960-7, 9 step scales for constant CIELAB hue 290/360 = 0.807 (left)

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

BAM-test chart TE96; Colorimetric systems MRS18a & ORS18 input:  $olv^*$  setrgbcolor

D65: 9 and 16 step colour scales for 10 hues

output: no change compared to input

Input: Colorimetric Reflective System MRS18a

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

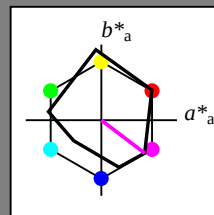
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue B50R

LCH\*Ma: 35 72 323

rgb\*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  $h^* = lab \cdot h = 354/360 = 0.982$

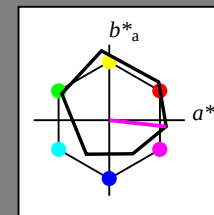
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue M

LCH\*Ma: 48 76 354

rgb\*Ma: 1.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

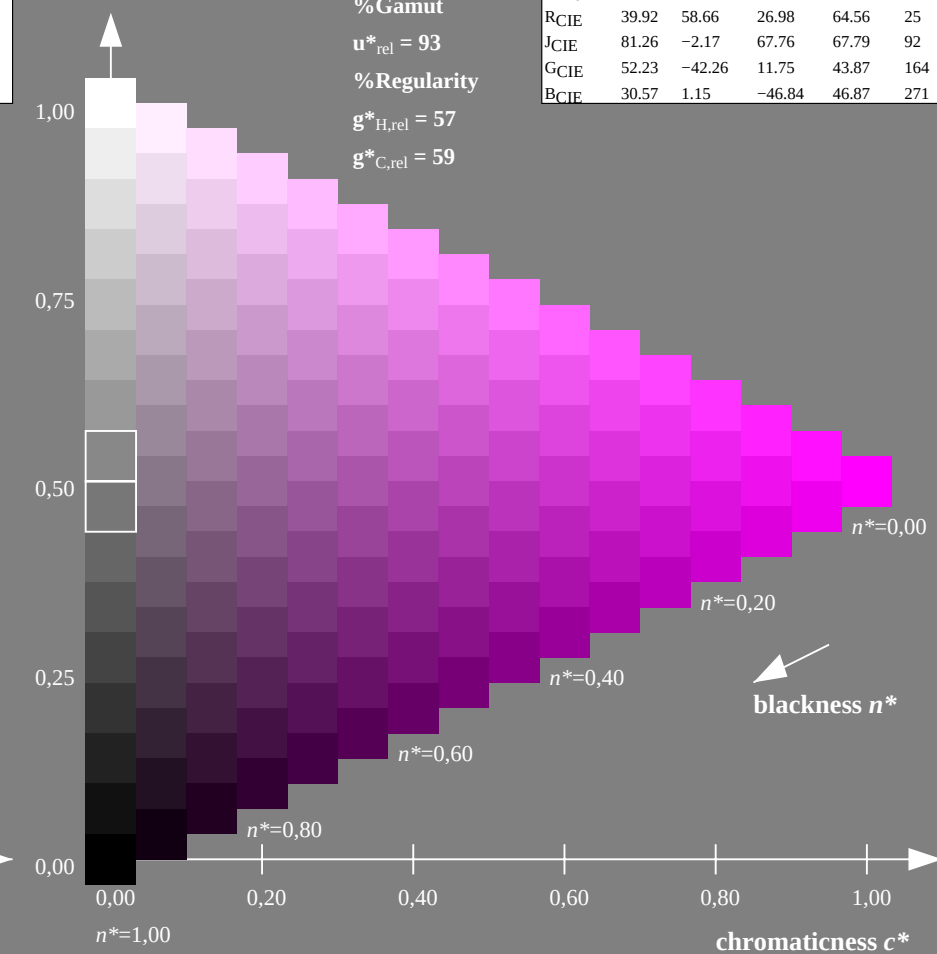
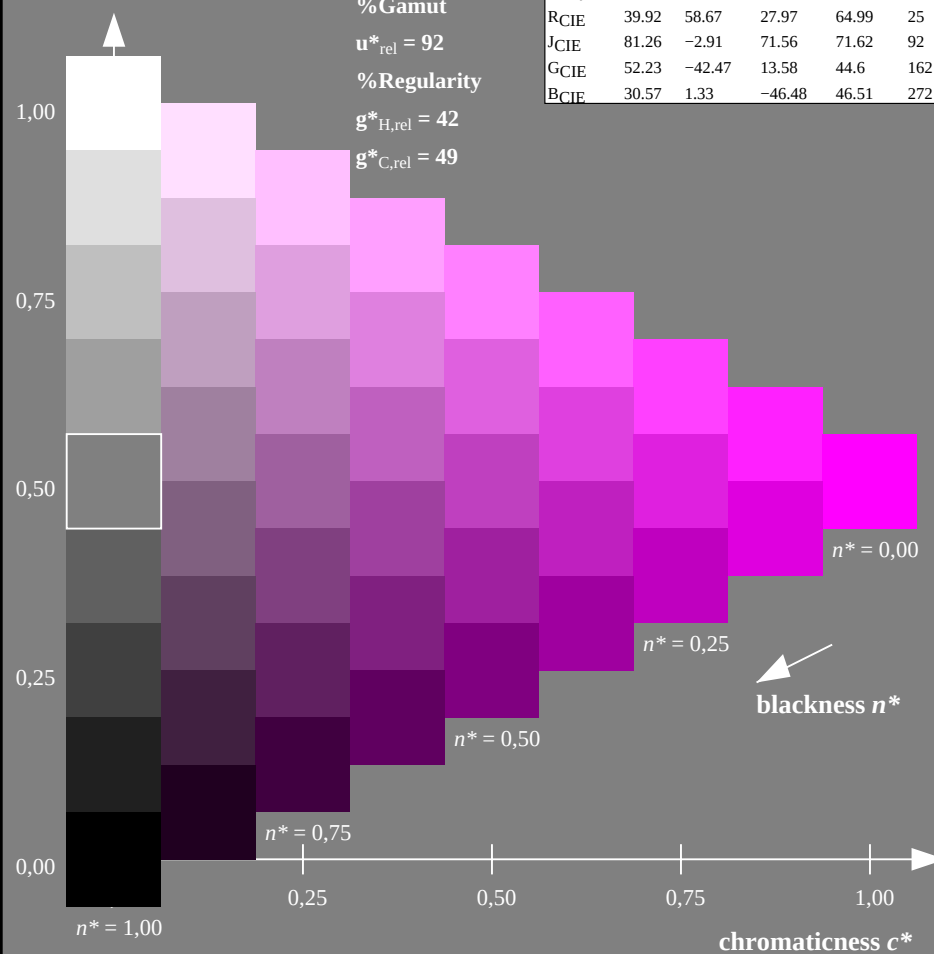
%Regularity

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

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

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          |



TE960-7, 9 step scales for constant CIELAB hue 323/360 = 0.896 (left)

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

BAM-test chart TE96; Colorimetric systems MRS18a & ORS18 input:  $olv^* setrgbcolor$

D65: 9 and 16 step colour scales for 10 hues

output: no change compared to input

Input: Colorimetric Reflective System MRS18a

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

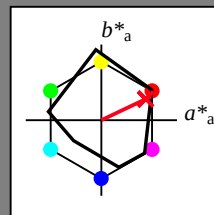
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue R

LCH\*Ma: 48 73 25

rgb\*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  $h^* = lab \cdot h = 25/360 = 0.069$

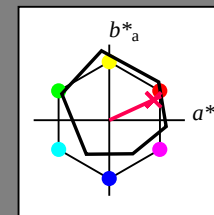
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue R

LCH\*Ma: 48 75 25

rgb\*Ma: 1.0 0.0 0.32

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

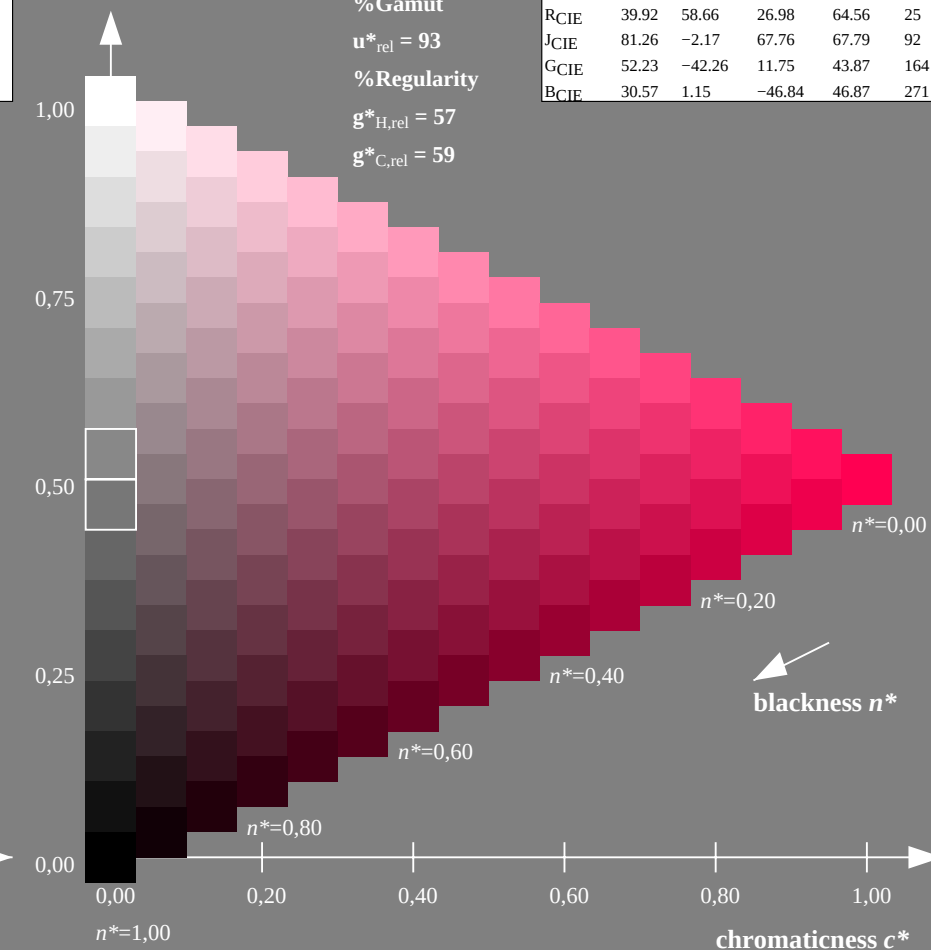
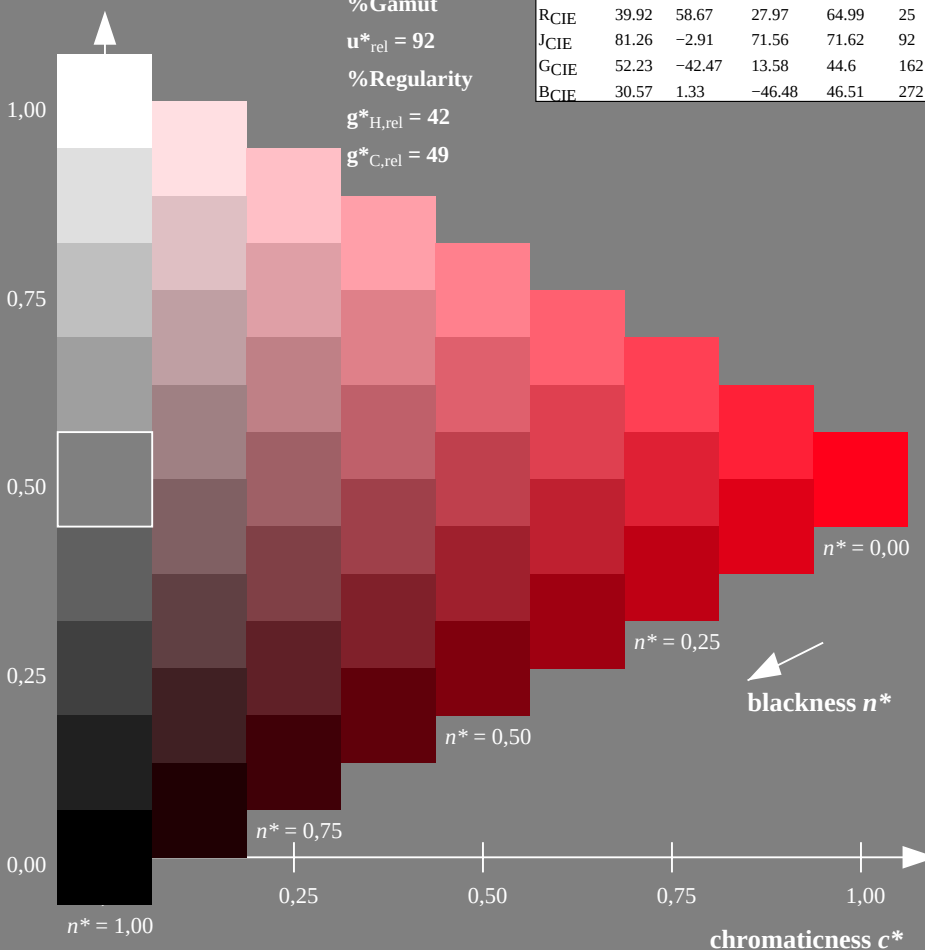
%Regularity

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

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

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          |



TE960-7, 9 step scales for constant CIELAB hue 25/360 = 0.071 (left)

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

BAM-test chart TE96; Colorimetric systems MRS18a & ORS18 input:  $olv^* setrgbcolor$

D65: 9 and 16 step colour scales for 10 hues

output: no change compared to input

Input: Colorimetric Reflective System MRS18a

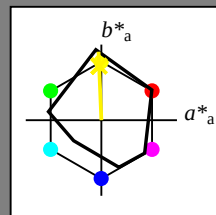
for hue  $h^* = lab \cdot h = 92/360 = 0.256$

$lab \cdot tch$  and  $lab \cdot nch$

D65: hue J

LCH\*Ma: 89 91 92

rgb\*Ma: 1.0 0.95 0.0



| 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          |

triangle lightness  $t^*$

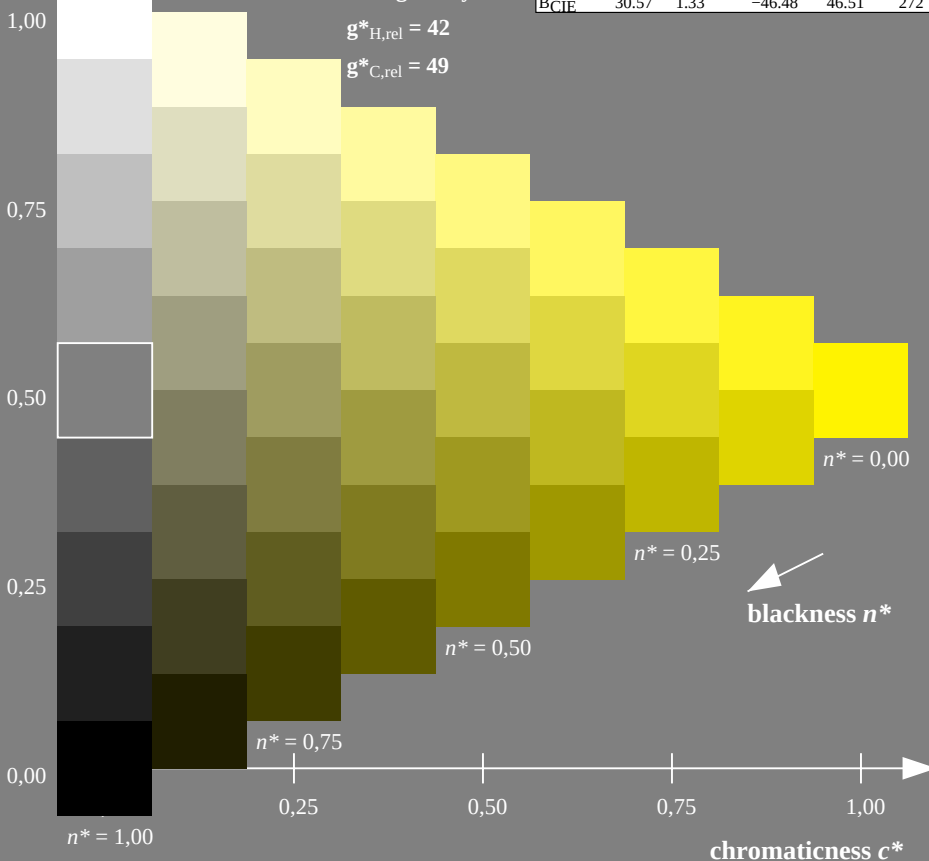
%Gamut

$u^*_{rel} = 92$

%Regularity

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

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



Output: Colorimetric Reflective System ORS18

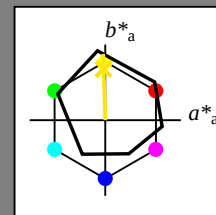
for hue  $h^* = lab \cdot h = 92/360 = 0.255$

$lab \cdot tch$  and  $lab \cdot nch$

D65: hue J

LCH\*Ma: 86 88 92

rgb\*Ma: 1.0 0.9 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          |

triangle lightness  $t^*$

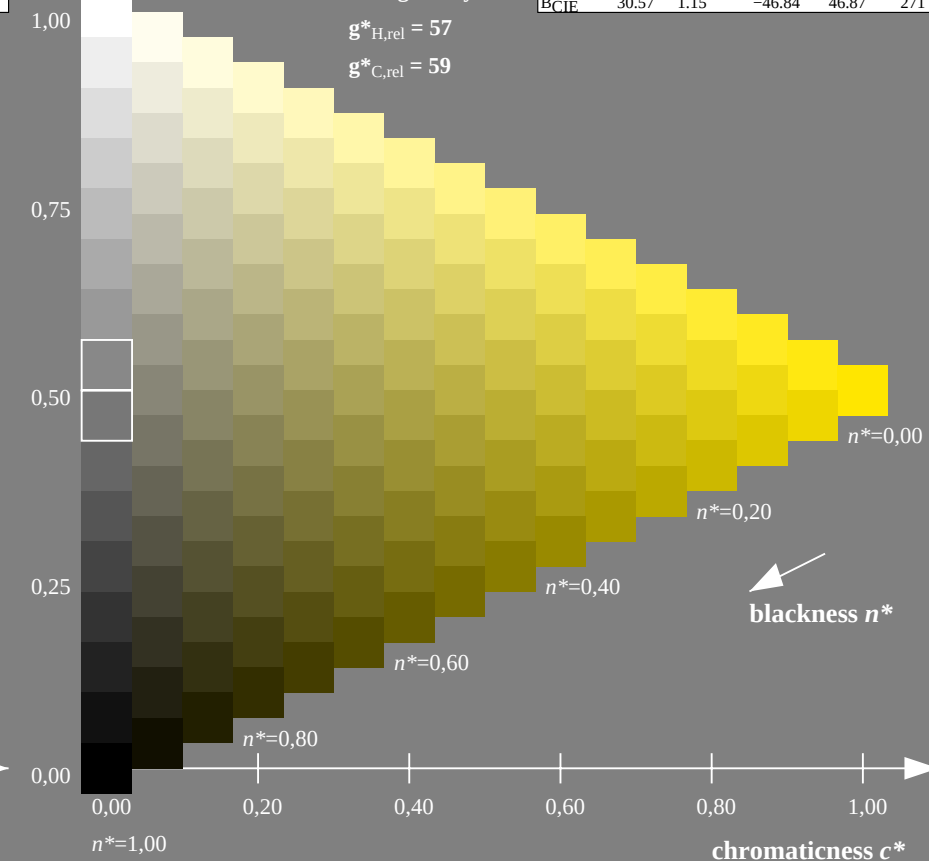
%Gamut

$u^*_{rel} = 93$

%Regularity

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

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



TE960-7, 9 step scales for constant CIELAB hue 92/360 = 0.256 (left)

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

BAM-test chart TE96; Colorimetric systems MRS18a & ORS18 input:  $olv^* setrgbcolor$

D65: 9 and 16 step colour scales for 10 hues

output: no change compared to input



Input: Colorimetric Reflective System MRS18a

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

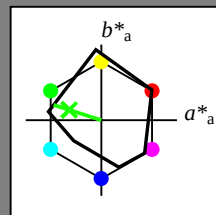
$lab^*tch$  and  $lab^*nch$

D65: hue G

LCH\*Ma: 56 66 162

rgb\*Ma: 0.11 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 92$

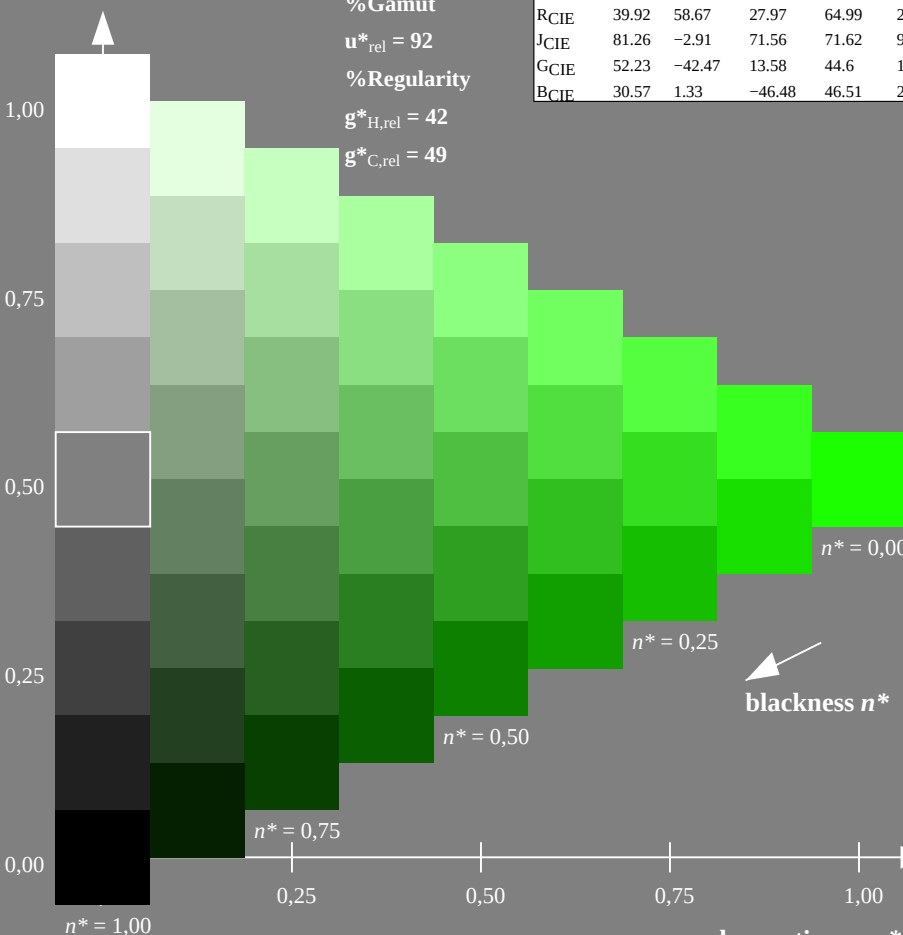
%Regularity

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

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

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          |



blackness  $n^*$

TE960-7, 9 step scales for constant CIELAB hue 162/360 = 0.451 (left)



BAM-test chart TE96; Colorimetric systems MRS18a & ORS18 input:  $olv^* setrgbcolor$   
D65: 9 and 16 step colour scales for 10 hues

Output: Colorimetric Reflective System ORS18

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

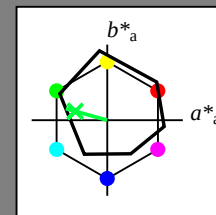
$lab^*tch$  and  $lab^*nch$

D65: hue G

LCH\*Ma: 53 57 164

rgb\*Ma: 0.0 1.0 0.25

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

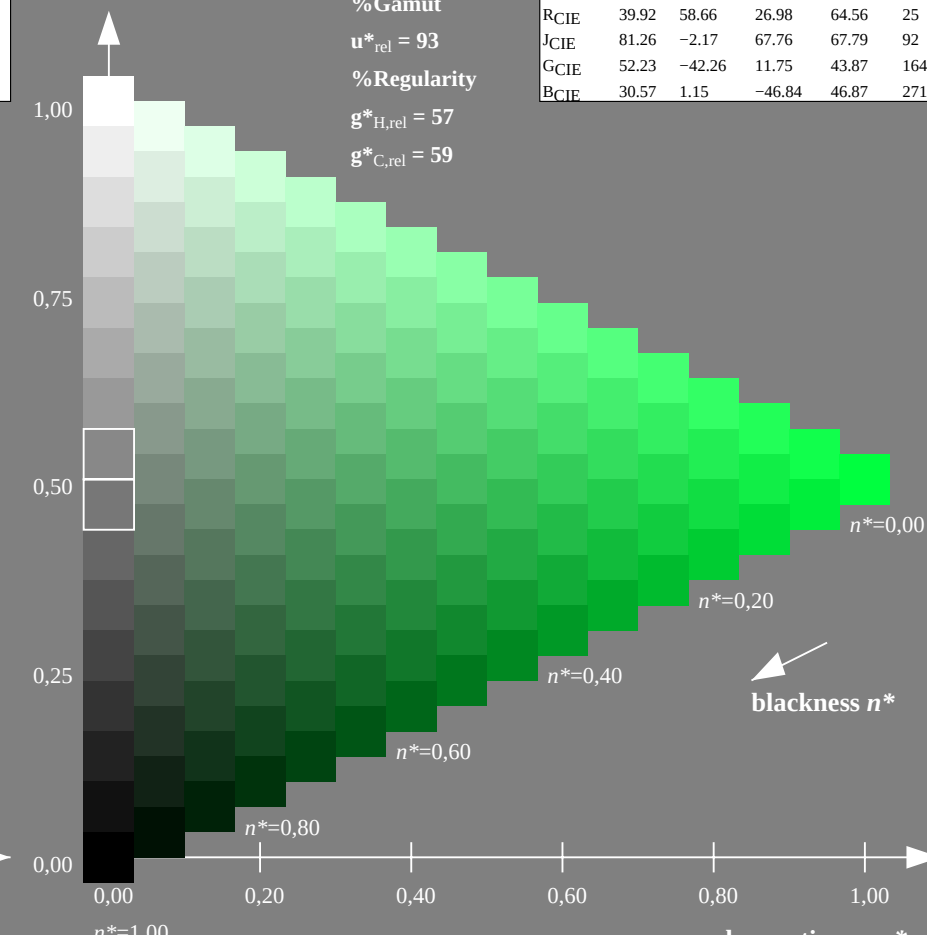
%Regularity

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

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

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          |



blackness  $n^*$

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

output: no change compared to input



-See for similar files: <http://www.ps.bam.de/TE96/>  
 Technical information: <http://www.ps.bam.de> Version 2.1, io=1,1

BAM registration: 20060101-TE96/10Q/Q96E09NP.PS.PDF BAM material: code=rha4ta  
application for evaluation and measurement of printer or monitor systems

PDF BLM material: code=rha4ta  
monitor systems

Input: Colorimetric Reflective System MRS18a

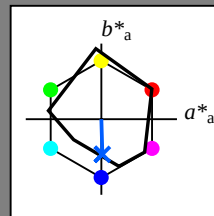
**for hue  $h^* = lab^*h = 272/360 = 0.755$**

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

**D65: hue B**

LCH\*Ma: 40 49 272

rgb\*Ma: 0.0 0.36 1.0



triangle lightness  $t^*$

### %Gamut

$$u_{\text{rel}}^* = 92$$

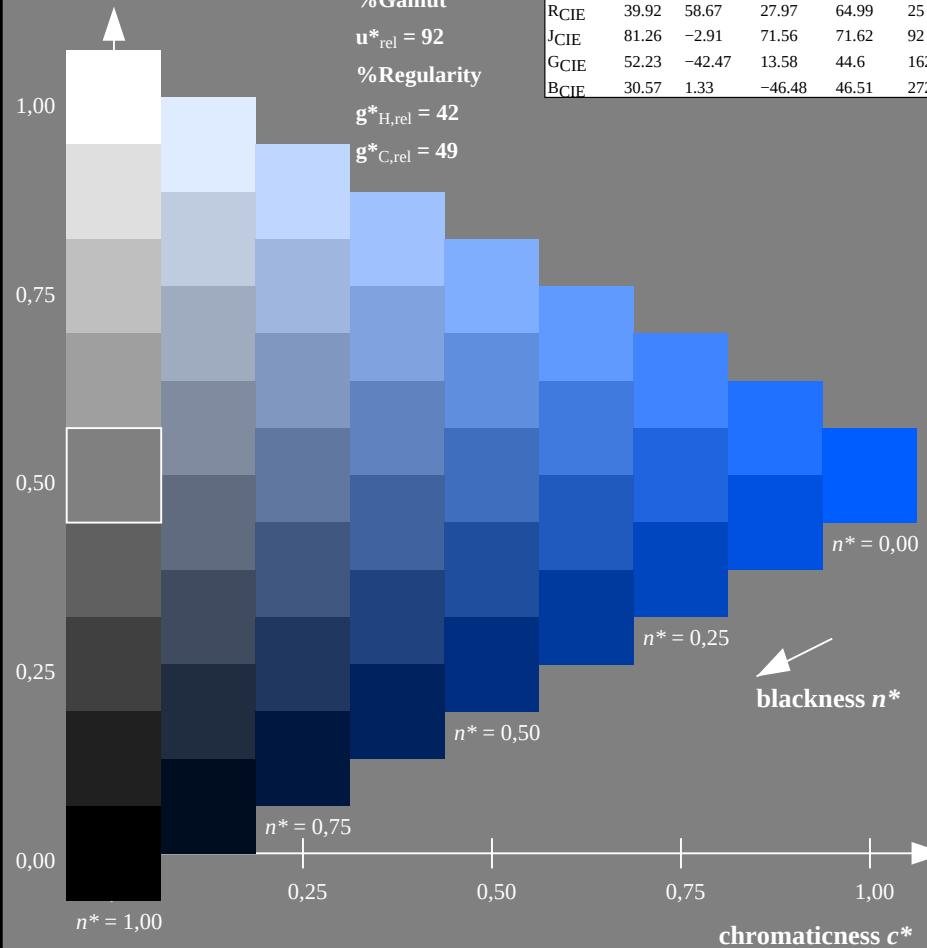
### %Regularity

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

■  $g^*_{C,rel} = 49$

1

| MRS18a; adapted (a) CIELAB data |         |         |         |              |              |
|---------------------------------|---------|---------|---------|--------------|--------------|
|                                 | $L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| R <sub>Ma</sub>                 | 49.63   | 66.8    | 40.02   | 77.87        | 31           |
| J <sub>Ma</sub>                 | 90.7    | -7.27   | 93.19   | 93.48        | 94           |
| G <sub>Ma</sub>                 | 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            |
| R <sub>CIE</sub>                | 39.92   | 58.67   | 27.97   | 64.99        | 25           |
| J <sub>CIE</sub>                | 81.26   | -2.91   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub>                | 52.23   | -42.47  | 13.58   | 44.6         | 162          |
| B <sub>CIE</sub>                | 30.57   | 1.33    | -46.48  | 46.51        | 272          |



TE960-7, 9 step scales for constant CIELAB hue 272/360 = 0.755 (left)

BAM-test chart TE96: Colorimetric systems MRS18a & ORS18 input: *oly\* setrgbcolor*

D65: 9 and 16 step colour scales for 10 hues

### Output: Colorimetric Reflective System ORS18

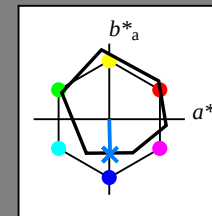
```
for hue  $h^* = lab^*h = 271/360 = 0.754$ 
```

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

D65: hue B

LCH\*Ma: 42 45 271

rgb\*Ma: 0.0 0.49 1.0

triangle lightness  $t^*$ 

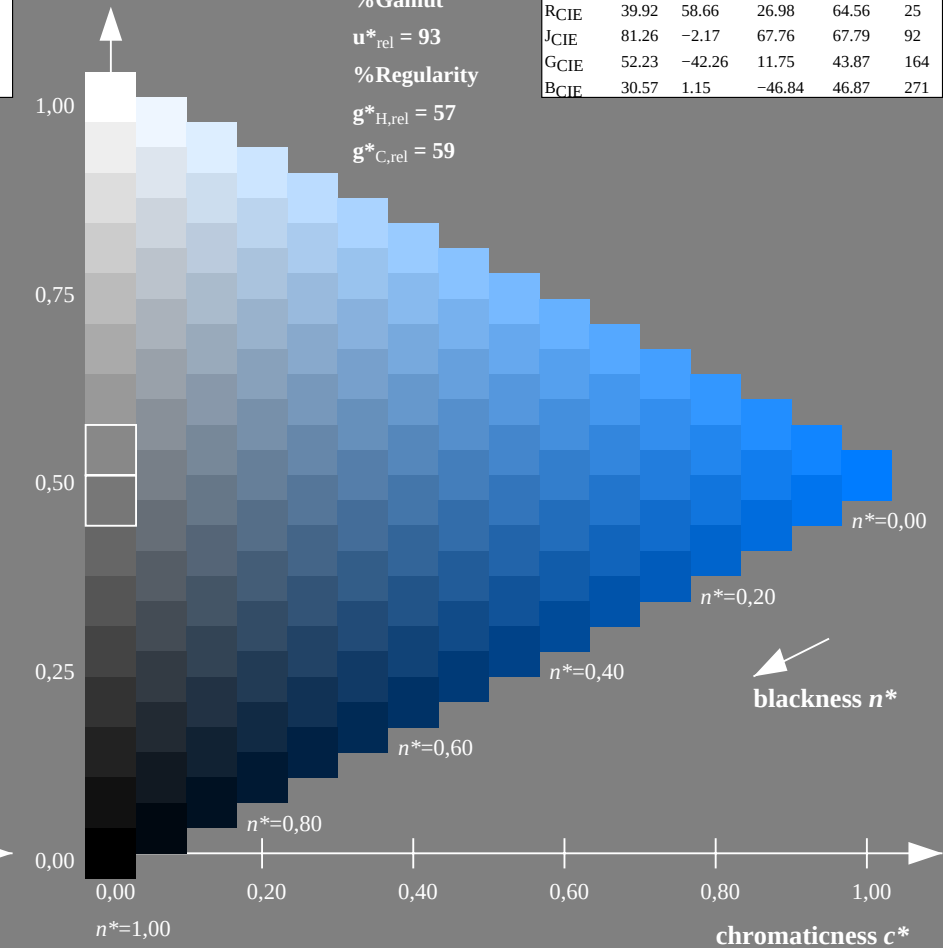
%Gamut

$$u_{\text{rel}}^* = 93$$

### %Regularity

$$g^*_{H,rel} = 57$$
 $\text{gr}^*_{C_{\text{rel}}} = 59$ 

| ORS18; adapted (a) CIELAB data |         |         |         |              |              |
|--------------------------------|---------|---------|---------|--------------|--------------|
|                                | $L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| 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          |



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

```
3 input: olv* setrabcOLOR
```

output: *no change compared to input*