

Input: Colorimetric Reflective System MRS18

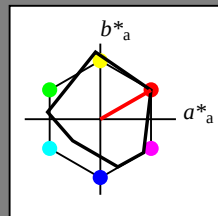
for hue  $h^* = lab \cdot h = 30/360 = 0.083$

LAB\*LCH, LAB\*NCH

D65: hue R

LCH\*Ma: 50 77 30

olv\*Ma: 1.0 0.0 0.0



| MRS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| R <sub>Ma</sub>                | 49.63       | 66.96   | 38.37   | 77.18        | 30           |
| J <sub>Ma</sub>                | 90.7        | -6.36   | 88.75   | 88.98        | 94           |
| G <sub>Ma</sub>                | 52.11       | -69.73  | 9.44    | 70.37        | 172          |
| G50B <sub>Ma</sub>             | 45.03       | -36.57  | -28.47  | 46.36        | 218          |
| B <sub>Ma</sub>                | 36.65       | 23.19   | -63.05  | 67.18        | 290          |
| B50R <sub>Ma</sub>             | 34.94       | 57.17   | -44.26  | 72.31        | 322          |
| 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       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub>               | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

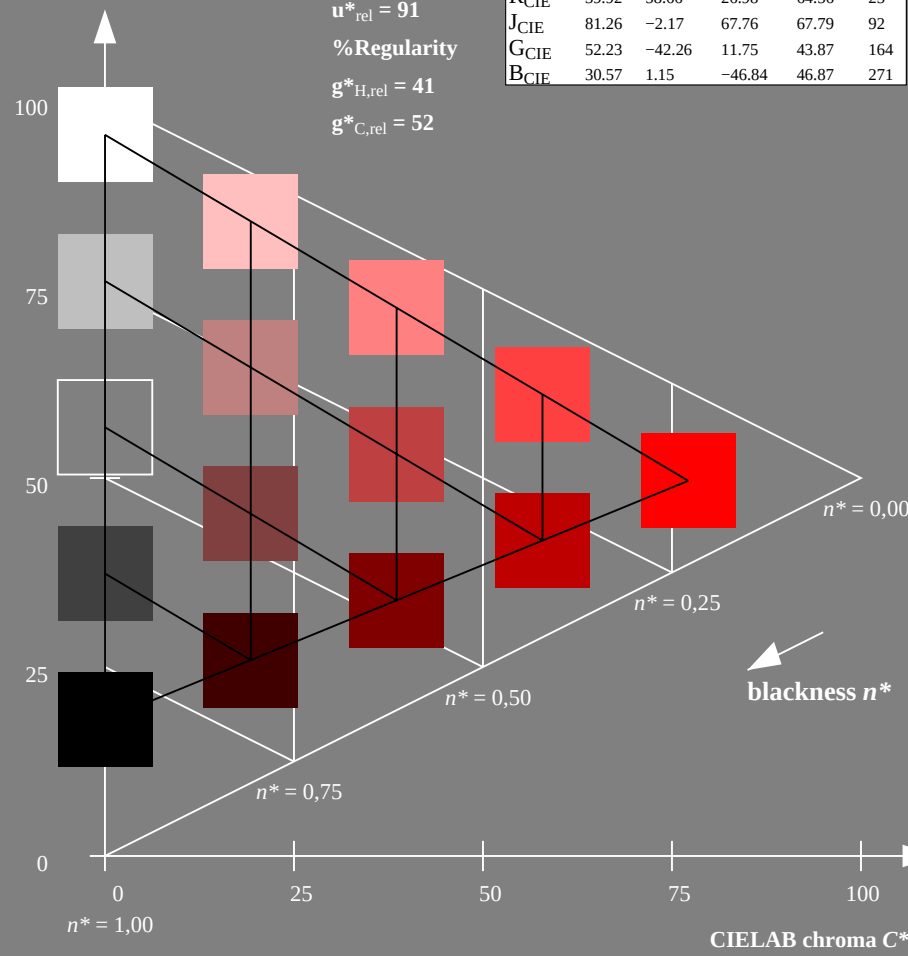
% Gamut

$u^*_{rel} = 91$

% Regularity

$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$



TE350-7, 5 step scales for constant CIELAB hue 30/360 = 0.083 (left)

Output: Colorimetric Reflective System ORS18

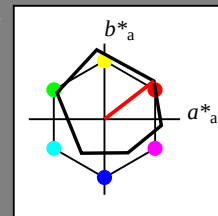
for hue  $h^* = lab \cdot h = 38/360 = 0.105$

LAB\*LCH, LAB\*NCH

D65: hue O

LCH\*Ma: 48 83 38

olv\*Ma: 1.0 0.0 0.0



| ORS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| Y <sub>Ma</sub>                | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| L <sub>Ma</sub>                | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| C <sub>Ma</sub>                | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>                | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| M <sub>Ma</sub>                | 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            |
| R <sub>CIE</sub>               | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub>               | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

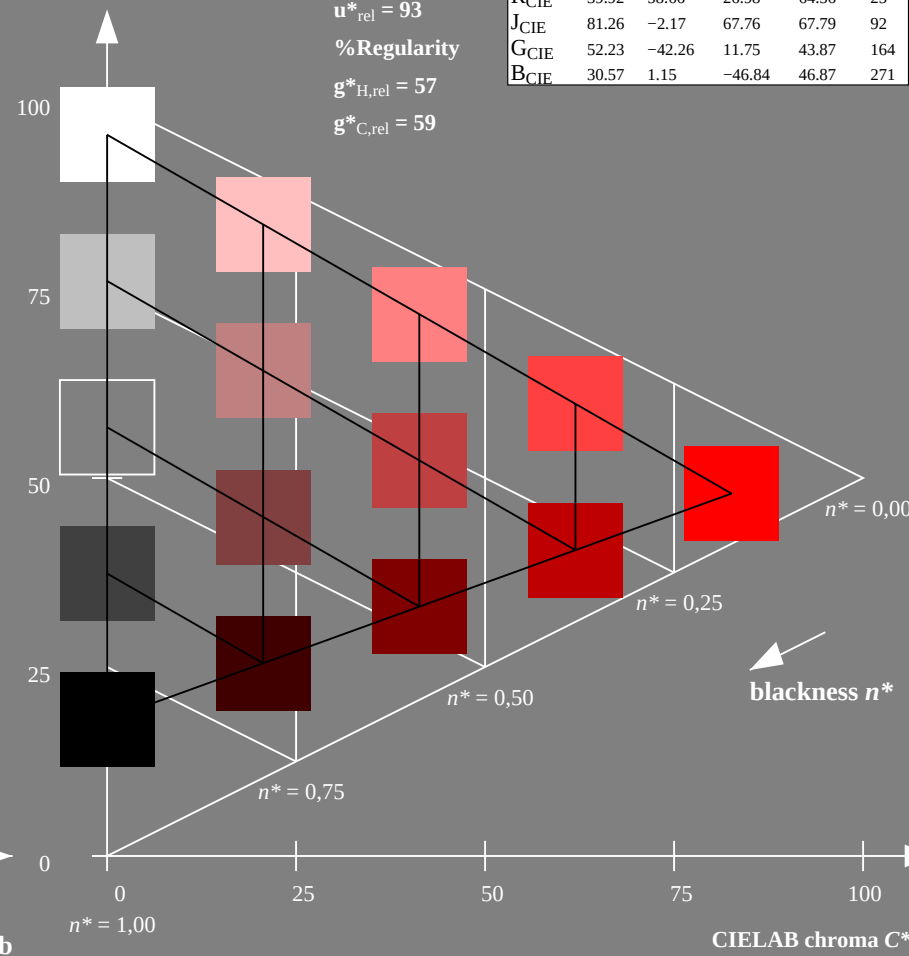
% Gamut

$u^*_{rel} = 93$

% Regularity

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

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



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

BAM-test chart TE35; Colorimetric systems MRS18 & ORS18

D65: Coordinate systems of 5 step colour scales for 10 hues

input: olv\* setrgbcolor

output: no change compared to input

Input: Colorimetric Reflective System MRS18

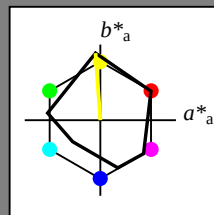
for hue  $h^* = lab^*h = 94/360 = 0.261$

LAB\*LCH, LAB\*NCH

D65: hue J

LCH\*Ma: 91 89 94

olv\*Ma: 1.0 1.0 0.0



MRS18; adapted (a) CIELAB data

|                    | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------------------|-------------|---------|---------|--------------|--------------|
| R <sub>Ma</sub>    | 49.63       | 66.96   | 38.37   | 77.18        | 30           |
| J <sub>Ma</sub>    | 90.7        | -6.36   | 88.75   | 88.98        | 94           |
| G <sub>Ma</sub>    | 52.11       | -69.73  | 9.44    | 70.37        | 172          |
| G50B <sub>Ma</sub> | 45.03       | -36.57  | -28.47  | 46.36        | 218          |
| B <sub>Ma</sub>    | 36.65       | 23.19   | -63.05  | 67.18        | 290          |
| B50R <sub>Ma</sub> | 34.94       | 57.17   | -44.26  | 72.31        | 322          |
| 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       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub>   | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>   | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub>   | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

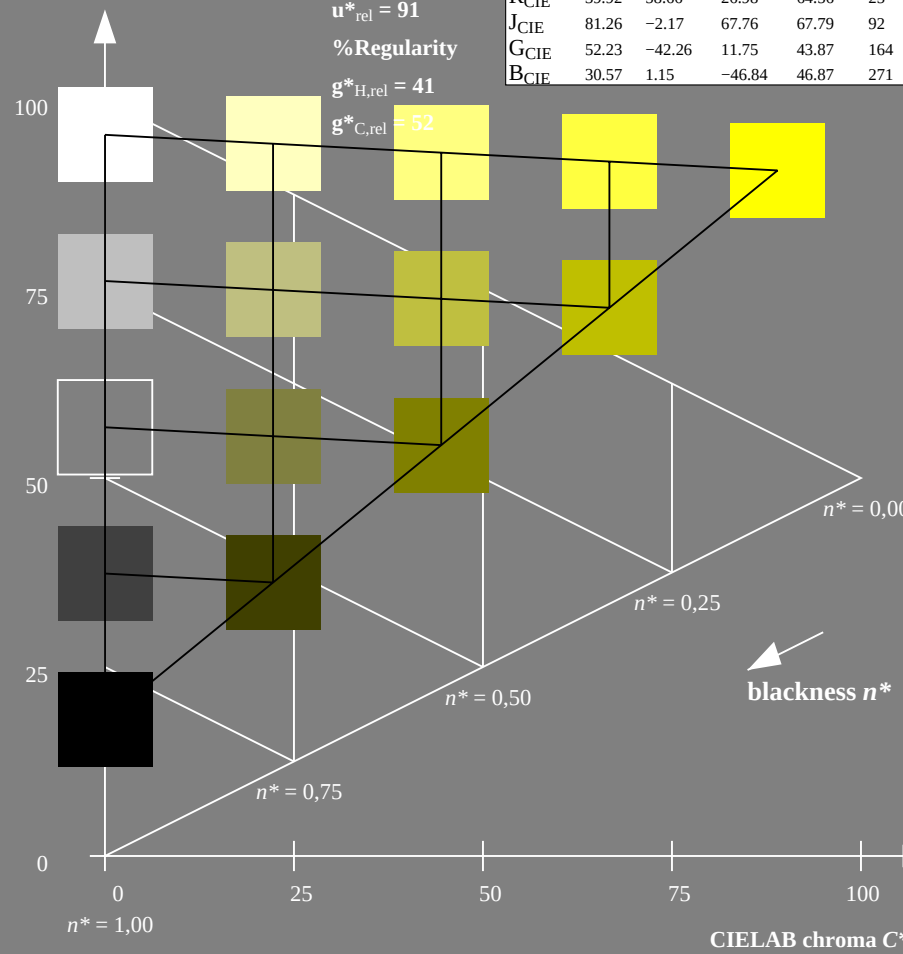
% Gamut

$u^*_{rel} = 91$

% Regularity

$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$



TE350-7, 5 step scales for constant CIELAB hue 94/360 = 0.261 (left)

Output: Colorimetric Reflective System ORS18

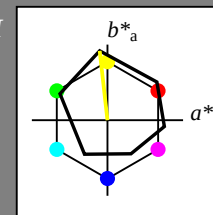
for hue  $h^* = lab^*h = 96/360 = 0.268$

LAB\*LCH, LAB\*NCH

D65: hue Y

LCH\*Ma: 90 92 96

olv\*Ma: 1.0 1.0 0.0



ORS18; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| Y <sub>Ma</sub>  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| L <sub>Ma</sub>  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| C <sub>Ma</sub>  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| M <sub>Ma</sub>  | 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            |
| R <sub>CIE</sub> | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub> | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

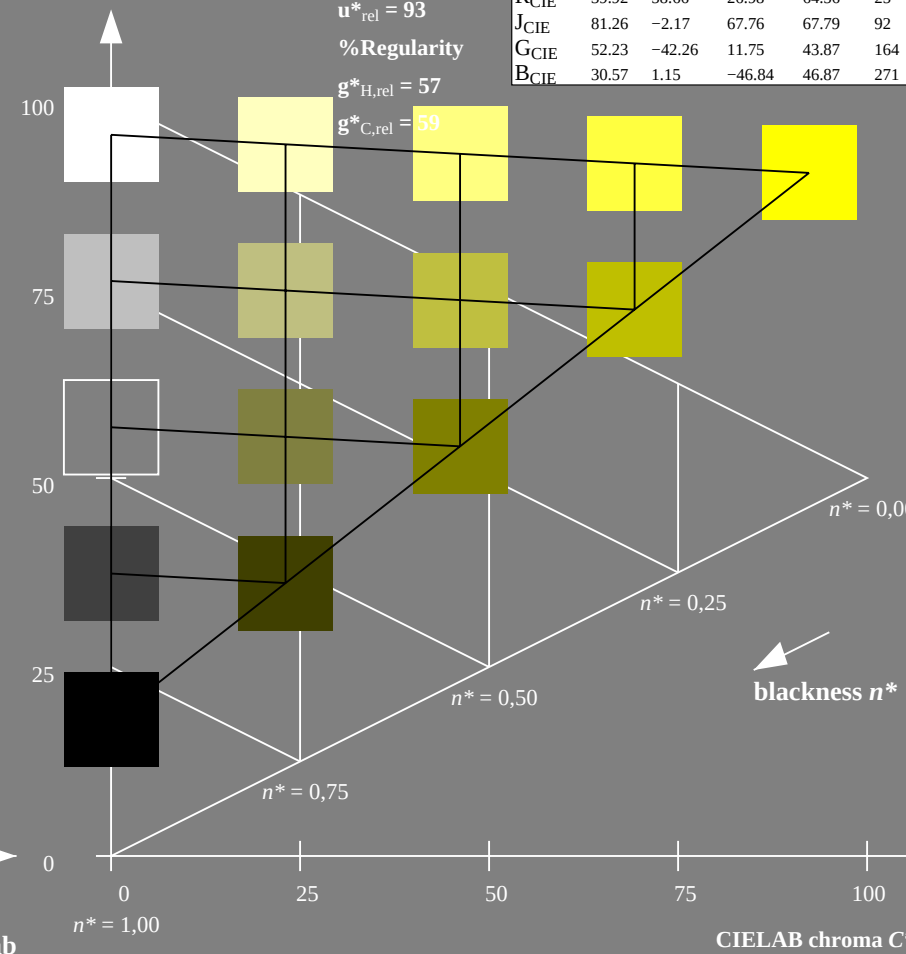
% Gamut

$u^*_{rel} = 93$

% Regularity

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

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



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

BAM-test chart TE35; Colorimetric systems MRS18 & ORS18

D65: Coordinate systems of 5 step colour scales for 10 hues

input: olv\* setrgbcolor

output: no change compared to input

Input: Colorimetric Reflective System MRS18

for hue  $h^* = lab \cdot h = 172/360 = 0.479$

LAB\*LCH, LAB\*NCH

D65: hue G

LCH\*Ma: 52 70 172

olv\*Ma: 0.0 1.0 0.0

CIELAB lightness  $L^*$

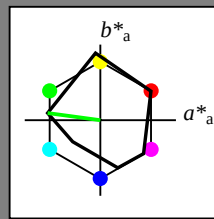
% Gamut

$u^*_{rel} = 91$

% Regularity

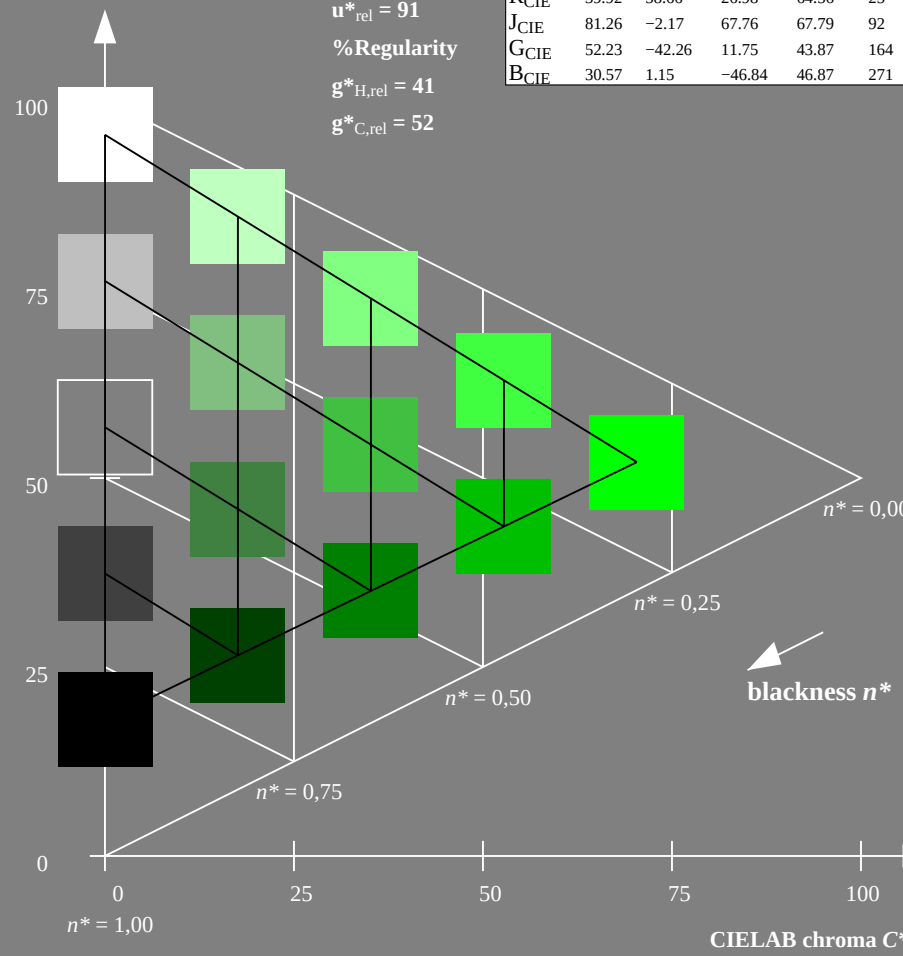
$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$



MRS18; adapted (a) CIELAB data

|                    | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------------------|-------------|---------|---------|--------------|--------------|
| R <sub>Ma</sub>    | 49.63       | 66.96   | 38.37   | 77.18        | 30           |
| J <sub>Ma</sub>    | 90.7        | -6.36   | 88.75   | 88.98        | 94           |
| G <sub>Ma</sub>    | 52.11       | -69.73  | 9.44    | 70.37        | 172          |
| G50B <sub>Ma</sub> | 45.03       | -36.57  | -28.47  | 46.36        | 218          |
| B <sub>Ma</sub>    | 36.65       | 23.19   | -63.05  | 67.18        | 290          |
| B50R <sub>Ma</sub> | 34.94       | 57.17   | -44.26  | 72.31        | 322          |
| 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       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub>   | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>   | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub>   | 30.57       | 1.15    | -46.84  | 46.87        | 271          |



TE350-7, 5 step scales for constant CIELAB hue 172/360 = 0.479 (left)

Output: Colorimetric Reflective System ORS18

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

LAB\*LCH, LAB\*NCH

D65: hue L

LCH\*Ma: 51 72 151

olv\*Ma: 0.0 1.0 0.0

CIELAB lightness  $L^*$

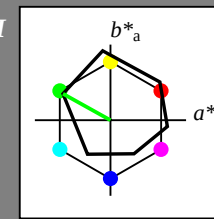
% Gamut

$u^*_{rel} = 93$

% Regularity

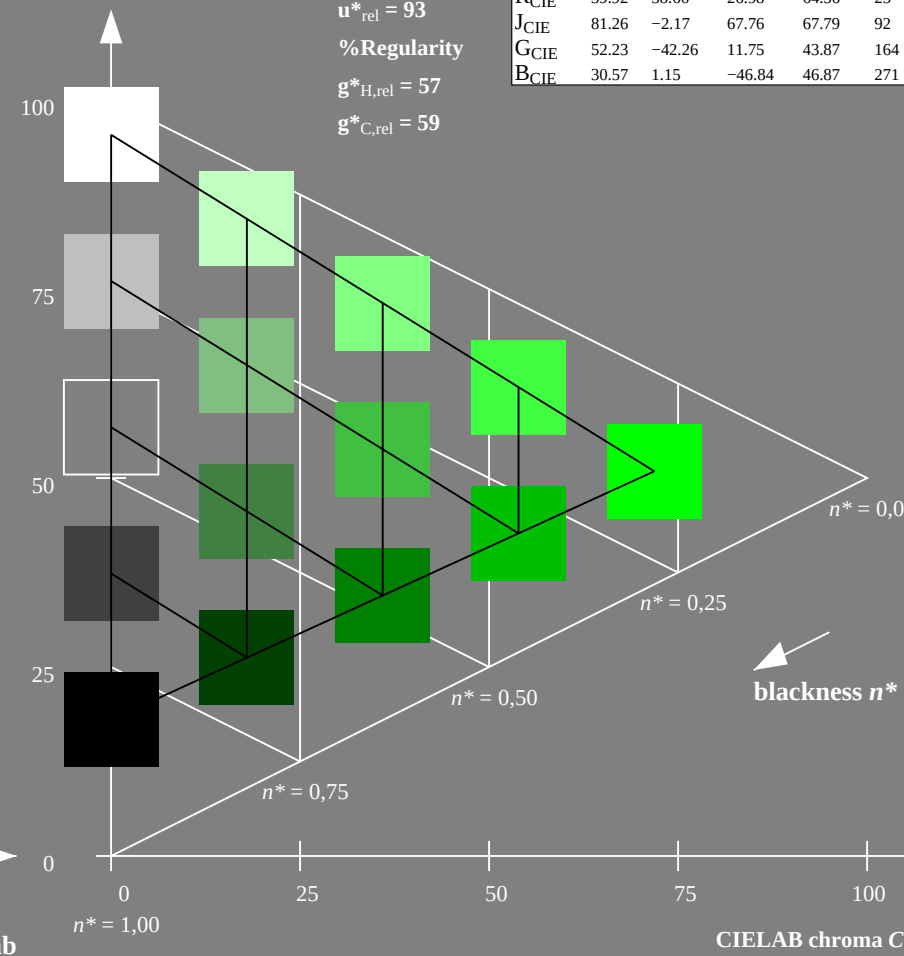
$g^*_{H,rel} = 57$

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



ORS18; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| Y <sub>Ma</sub>  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| L <sub>Ma</sub>  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| C <sub>Ma</sub>  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| M <sub>Ma</sub>  | 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            |
| R <sub>CIE</sub> | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub> | 30.57       | 1.15    | -46.84  | 46.87        | 271          |



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

BAM-test chart TE35; Colorimetric systems MRS18 & ORS18

D65: Coordinate systems of 5 step colour scales for 10 hues

input: olv\* setrgbcolor

output: no change compared to input

Input: Colorimetric Reflective System MRS18

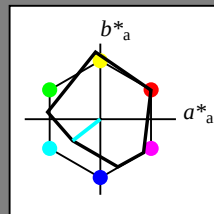
for hue  $h^* = lab \cdot h = 218/360 = 0.605$

LAB\*LCH, LAB\*NCH

D65: hue G50B

LCH\*Ma: 45 46 218

olv\*Ma: 0.0 1.0 1.0



MRS18; adapted (a) CIELAB data

|                    | $L^*=L_a^*$ | $a_a^*$ | $b_a^*$ | $C_{ab,a}^*$ | $h_{ab,a}^*$ |
|--------------------|-------------|---------|---------|--------------|--------------|
| R <sub>Ma</sub>    | 49.63       | 66.96   | 38.37   | 77.18        | 30           |
| J <sub>Ma</sub>    | 90.7        | -6.36   | 88.75   | 88.98        | 94           |
| G <sub>Ma</sub>    | 52.11       | -69.73  | 9.44    | 70.37        | 172          |
| G50B <sub>Ma</sub> | 45.03       | -36.57  | -28.47  | 46.36        | 218          |
| B <sub>Ma</sub>    | 36.65       | 23.19   | -63.05  | 67.18        | 290          |
| B50R <sub>Ma</sub> | 34.94       | 57.17   | -44.26  | 72.31        | 322          |
| 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       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub>   | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>   | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub>   | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

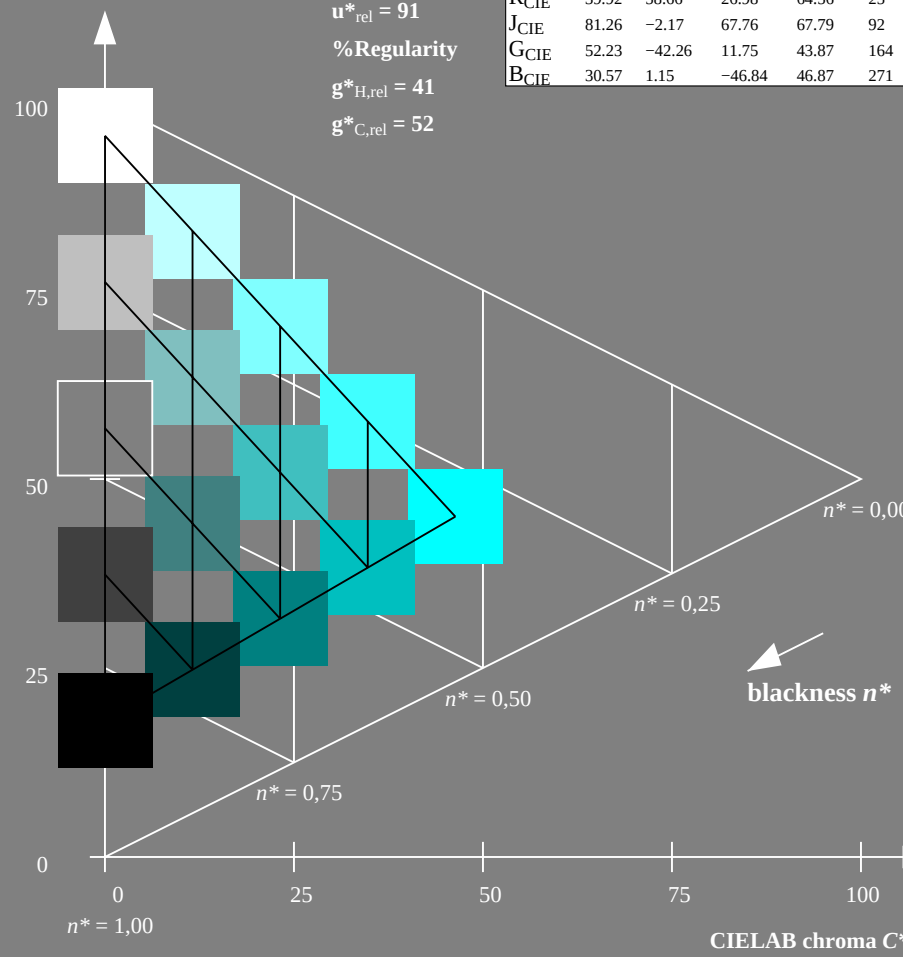
% Gamut

$u_{rel}^* = 91$

% Regularity

$g_{H,rel}^* = 41$

$g_{C,rel}^* = 52$



TE350-7, 5 step scales for constant CIELAB hue 218/360 = 0.605 (left)

Output: Colorimetric Reflective System ORS18

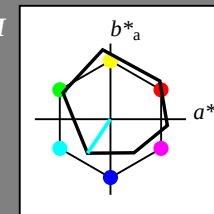
for hue  $h^* = lab \cdot h = 236/360 = 0.656$

LAB\*LCH, LAB\*NCH

D65: hue C

LCH\*Ma: 59 54 236

olv\*Ma: 0.0 1.0 1.0



ORS18; adapted (a) CIELAB data

|                  | $L^*=L_a^*$ | $a_a^*$ | $b_a^*$ | $C_{ab,a}^*$ | $h_{ab,a}^*$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| Y <sub>Ma</sub>  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| L <sub>Ma</sub>  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| C <sub>Ma</sub>  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| M <sub>Ma</sub>  | 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            |
| R <sub>CIE</sub> | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub> | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

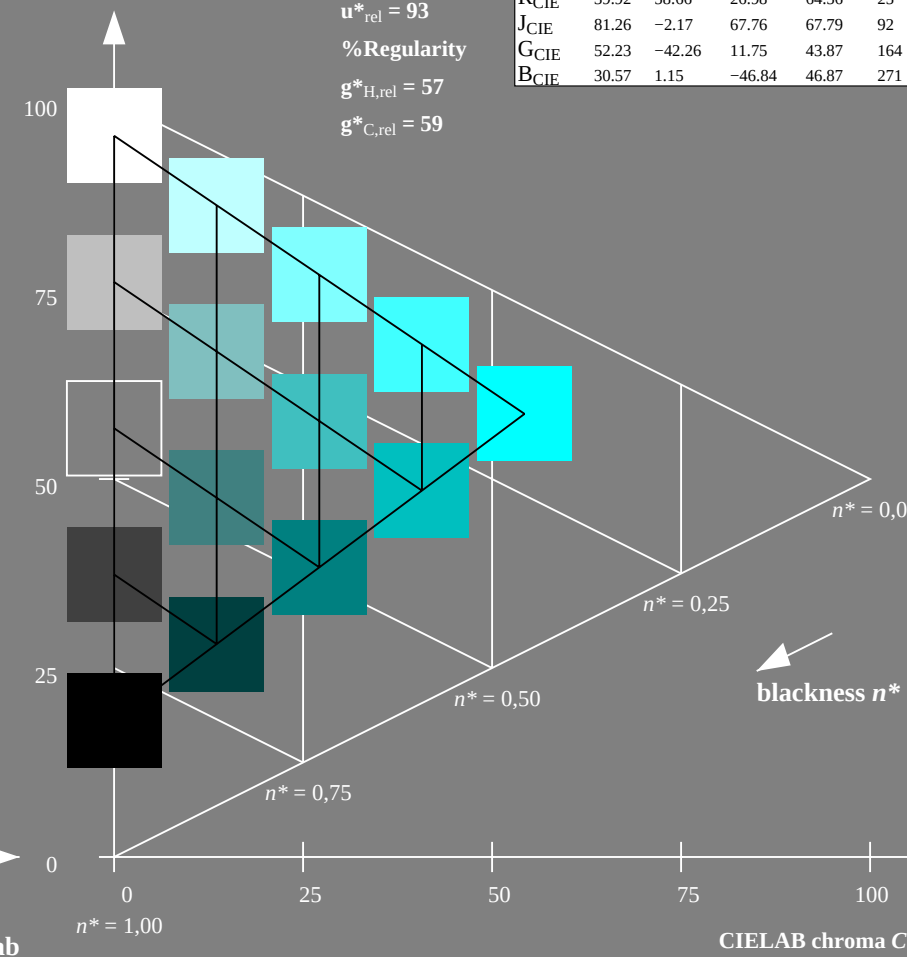
% Gamut

$u_{rel}^* = 93$

% Regularity

$g_{H,rel}^* = 57$

$g_{C,rel}^* = 59$



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

BAM-test chart TE35; Colorimetric systems MRS18 & ORS18

D65: Coordinate systems of 5 step colour scales for 10 hues

input: olv\* setrgbcolor

output: no change compared to input

Input: Colorimetric Reflective System MRS18

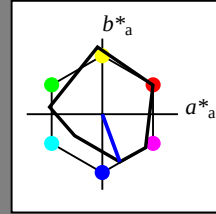
**for hue  $h^* = lab^*h = 290/360 = 0.806$**

*LAB\*LCH, LAB\*NCH*

D65: hue B

LCH\*Ma: 37 67 290

olv\*Ma: 0.0 0.0 1.0



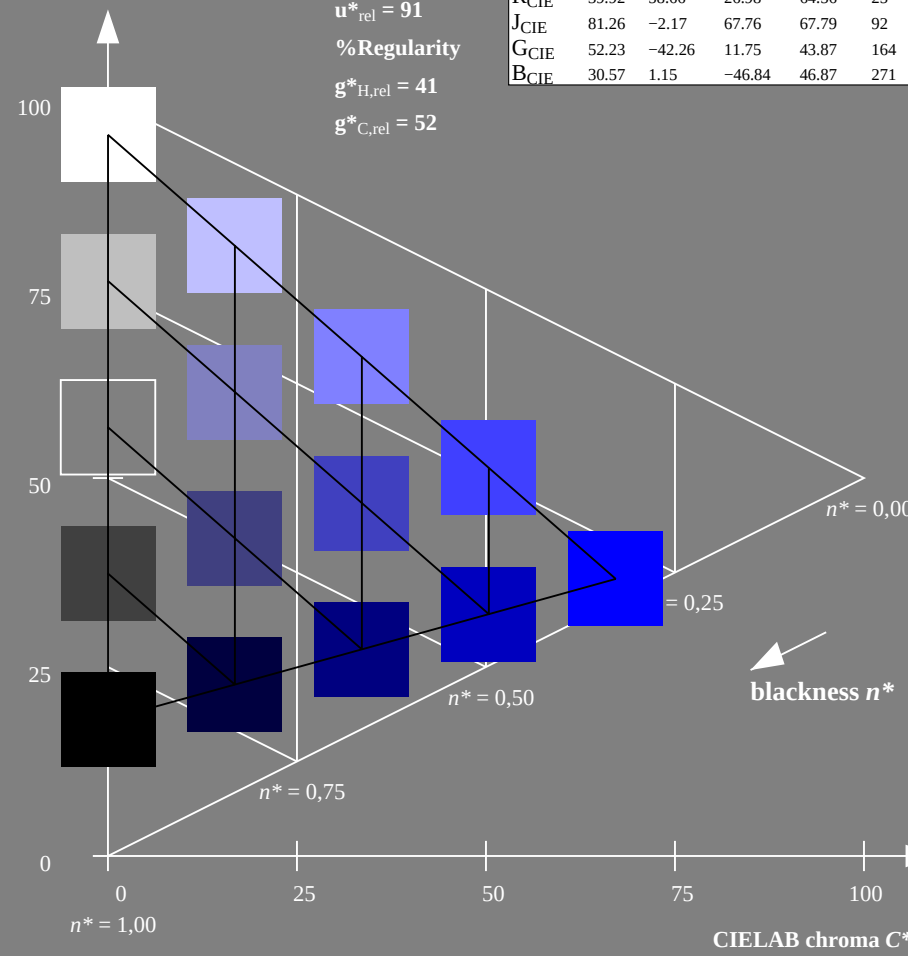
| MRS18; adapted (a) CIELAB data |            |            |            |              |              |
|--------------------------------|------------|------------|------------|--------------|--------------|
|                                | $L^*_{*a}$ | $a^*_{*a}$ | $b^*_{*a}$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| R <sub>Ma</sub>                | 49.63      | 66.96      | 38.37      | 77.18        | 30           |
| J <sub>Ma</sub>                | 90.7       | -6.36      | 88.75      | 88.98        | 94           |
| G <sub>Ma</sub>                | 52.11      | -69.73     | 9.44       | 70.37        | 172          |
| G50B <sub>Ma</sub>             | 45.03      | -36.57     | -28.47     | 46.36        | 218          |
| B <sub>Ma</sub>                | 36.65      | 23.19      | -63.05     | 67.18        | 290          |
| B50R <sub>Ma</sub>             | 34.94      | 57.17      | -44.26     | 72.31        | 322          |
| 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      | 58.66      | 26.98      | 64.56        | 25           |
| J <sub>CIE</sub>               | 81.26      | -2.17      | 67.76      | 67.79        | 92           |
| G <sub>CIE</sub>               | 52.23      | -42.26     | 11.75      | 43.87        | 164          |
| B <sub>CIE</sub>               | 30.57      | 1.15       | -46.84     | 46.87        | 271          |

CIELAB lightness  $L^*$

## %Gamut

$$\mathbf{u}_{\text{rel}}^* = 91$$

### %Regularity

$$g^*_{H,rel} = 41$$
$$g^*_{C,rel} = 52$$


TE350-7, 5 step scales for constant CIELAB hue  $290/360 = 0.806$  (left)

### Output: Colorimetric Reflective System ORS18

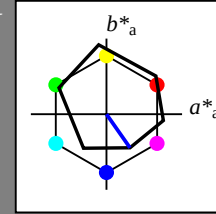
for hue  $h^* = lab^*h = 305/360 = 0.847$

*LAB\*LCH, LAB\*NCH*

D65: hue V

LCH\*Ma: 26 54 305

**olv\*Ma: 0.0 0.0 1.0**



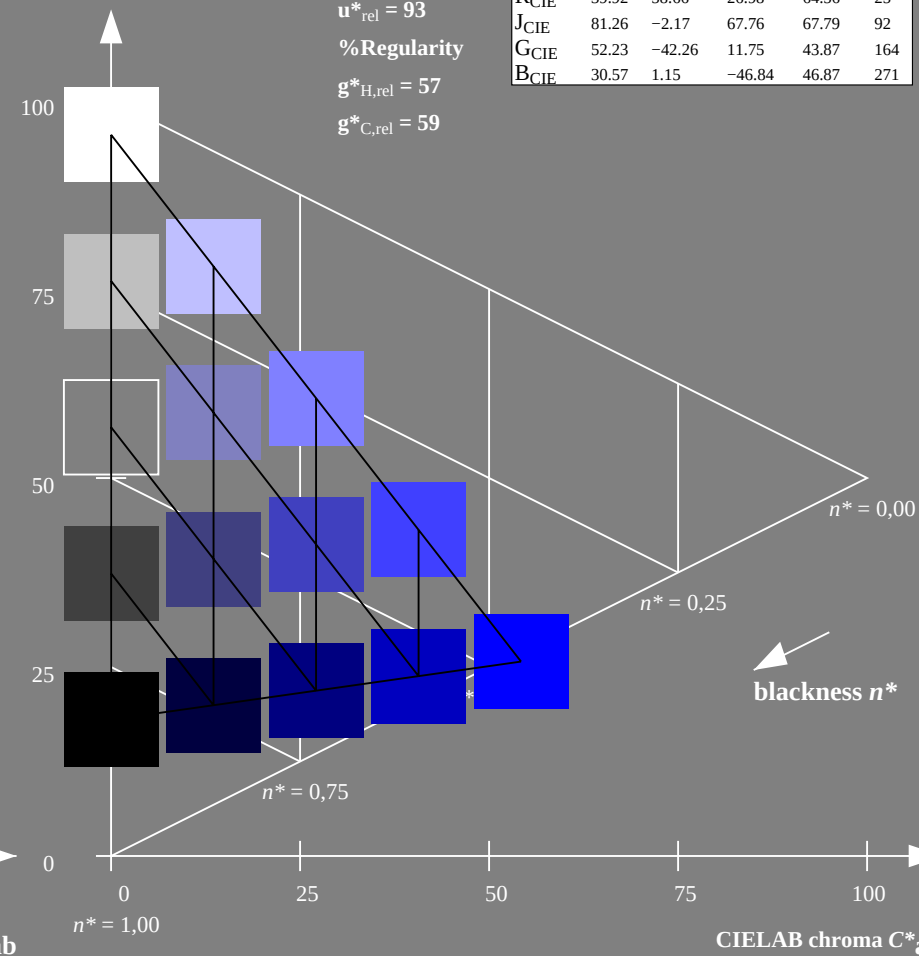
| ORS18; adapted (a) CIELAB data |                  |                  |                  |                     |                     |
|--------------------------------|------------------|------------------|------------------|---------------------|---------------------|
|                                | $L^*_{\text{a}}$ | $a^*_{\text{a}}$ | $b^*_{\text{a}}$ | $C^*_{\text{ab,a}}$ | $h^*_{\text{ab,a}}$ |
| O <sub>Ma</sub>                | 47.94            | 65.37            | 50.52            | 82.62               | 38                  |
| Y <sub>Ma</sub>                | 90.37            | -10.27           | 91.77            | 92.34               | 96                  |
| L <sub>Ma</sub>                | 50.9             | -62.79           | 34.95            | 71.87               | 151                 |
| C <sub>Ma</sub>                | 58.62            | -30.35           | -45.01           | 54.3                | 236                 |
| V <sub>Ma</sub>                | 25.71            | 31.11            | -44.42           | 54.24               | 305                 |
| M <sub>Ma</sub>                | 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                   |
| R <sub>CIE</sub>               | 39.92            | 58.66            | 26.98            | 64.56               | 25                  |
| J <sub>CIE</sub>               | 81.26            | -2.17            | 67.76            | 67.79               | 92                  |
| G <sub>CIE</sub>               | 52.23            | -42.26           | 11.75            | 43.87               | 164                 |
| B <sub>CIE</sub>               | 30.57            | 1.15             | -46.84           | 46.87               | 271                 |

**CIELAB lightness  $L^*$**

**%Gamut**

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

### %Regularity

$$g^*_{H,rel} = 57$$
$$g^*_{C,rel} = 59$$


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

BAM-test chart TE35; Colorimetric systems MRS18 & ORS18

D65: Coordinate systems of 5 step colour scales for 10 hues

input: *olv\** *setrgbcolor*

output: *no change compared to input*

Input: Colorimetric Reflective System MRS18

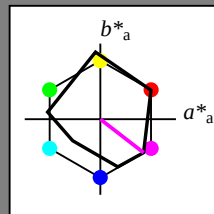
for hue  $h^* = lab \cdot h = 322/360 = 0.895$

LAB\*LCH, LAB\*NCH

D65: hue B50R

LCH\*Ma: 35 72 322

olv\*Ma: 1.0 0.0 1.0



MRS18; adapted (a) CIELAB data

|                    | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------------------|-------------|---------|---------|--------------|--------------|
| R <sub>Ma</sub>    | 49.63       | 66.96   | 38.37   | 77.18        | 30           |
| J <sub>Ma</sub>    | 90.7        | -6.36   | 88.75   | 88.98        | 94           |
| G <sub>Ma</sub>    | 52.11       | -69.73  | 9.44    | 70.37        | 172          |
| G50B <sub>Ma</sub> | 45.03       | -36.57  | -28.47  | 46.36        | 218          |
| B <sub>Ma</sub>    | 36.65       | 23.19   | -63.05  | 67.18        | 290          |
| B50R <sub>Ma</sub> | 34.94       | 57.17   | -44.26  | 72.31        | 322          |
| 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       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub>   | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>   | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub>   | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

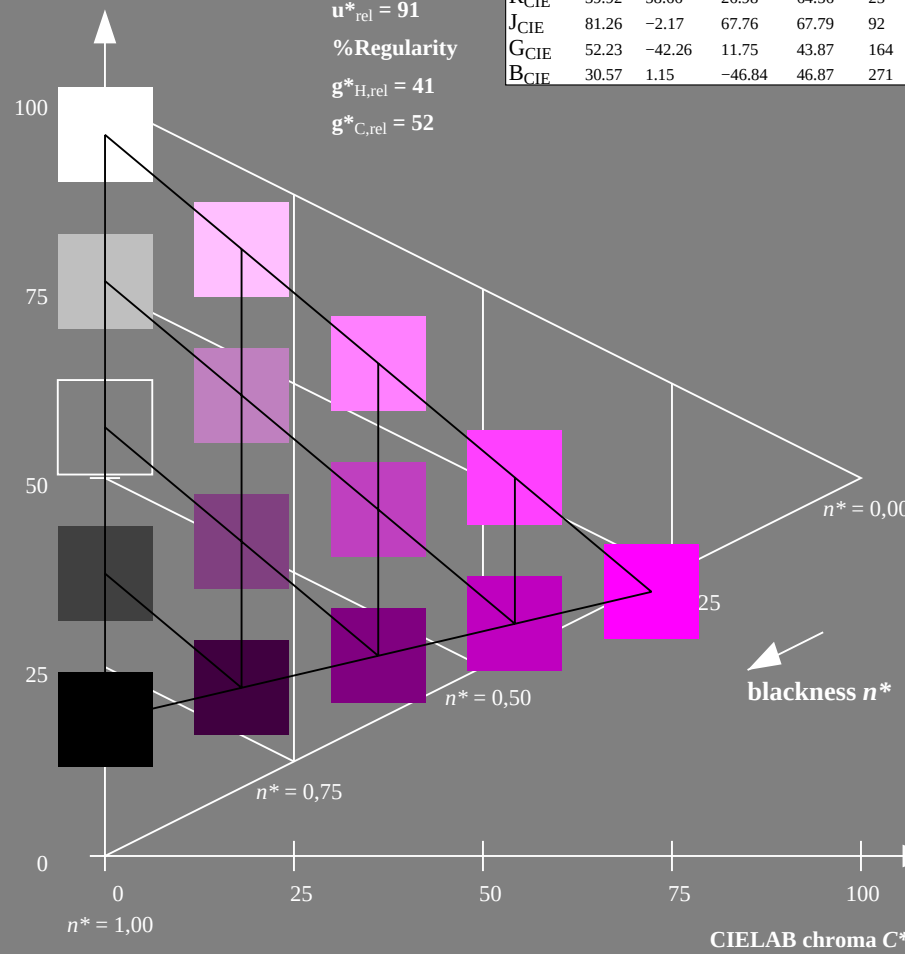
% Gamut

$u^*_{rel} = 91$

% Regularity

$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$



TE350-7, 5 step scales for constant CIELAB hue 322/360 = 0.895 (left)

Output: Colorimetric Reflective System ORS18

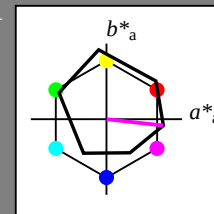
for hue  $h^* = lab \cdot h = 354/360 = 0.982$

LAB\*LCH, LAB\*NCH

D65: hue M

LCH\*Ma: 48 76 354

olv\*Ma: 1.0 0.0 1.0



ORS18; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| Y <sub>Ma</sub>  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| L <sub>Ma</sub>  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| C <sub>Ma</sub>  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| M <sub>Ma</sub>  | 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            |
| R <sub>CIE</sub> | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub> | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

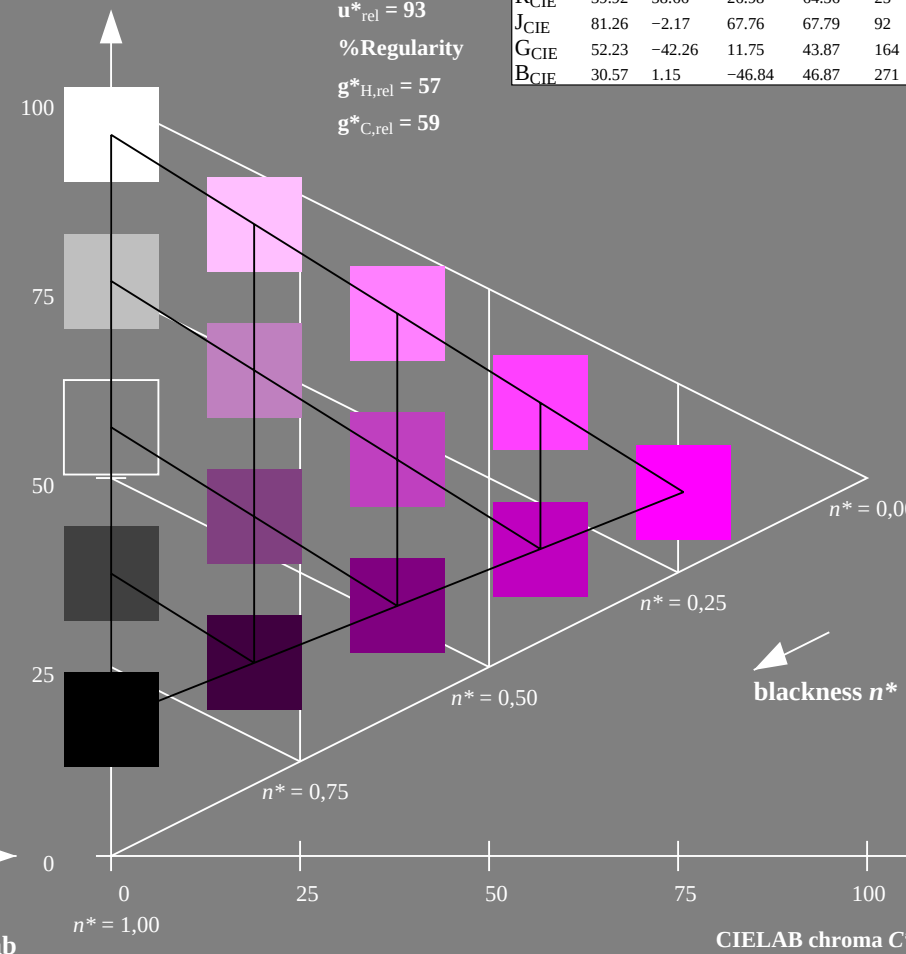
% Gamut

$u^*_{rel} = 93$

% Regularity

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

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



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

BAM-test chart TE35; Colorimetric systems MRS18 & ORS18

D65: Coordinate systems of 5 step colour scales for 10 hues

input: olv\* setrgbcolor

output: no change compared to input

Input: Colorimetric Reflective System MRS18

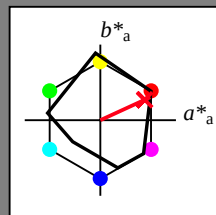
for hue  $h^* = lab \cdot h = 25/360 = 0.069$

LAB\*LCH, LAB\*NCH

D65: hue R

LCH\*Ma: 48 73 25

olv\*Ma: 1.0 0.0 0.1



MRS18; adapted (a) CIELAB data

|                    | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------------------|-------------|---------|---------|--------------|--------------|
| R <sub>Ma</sub>    | 49.63       | 66.96   | 38.37   | 77.18        | 30           |
| J <sub>Ma</sub>    | 90.7        | -6.36   | 88.75   | 88.98        | 94           |
| G <sub>Ma</sub>    | 52.11       | -69.73  | 9.44    | 70.37        | 172          |
| G50B <sub>Ma</sub> | 45.03       | -36.57  | -28.47  | 46.36        | 218          |
| B <sub>Ma</sub>    | 36.65       | 23.19   | -63.05  | 67.18        | 290          |
| B50R <sub>Ma</sub> | 34.94       | 57.17   | -44.26  | 72.31        | 322          |
| 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       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub>   | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>   | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub>   | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

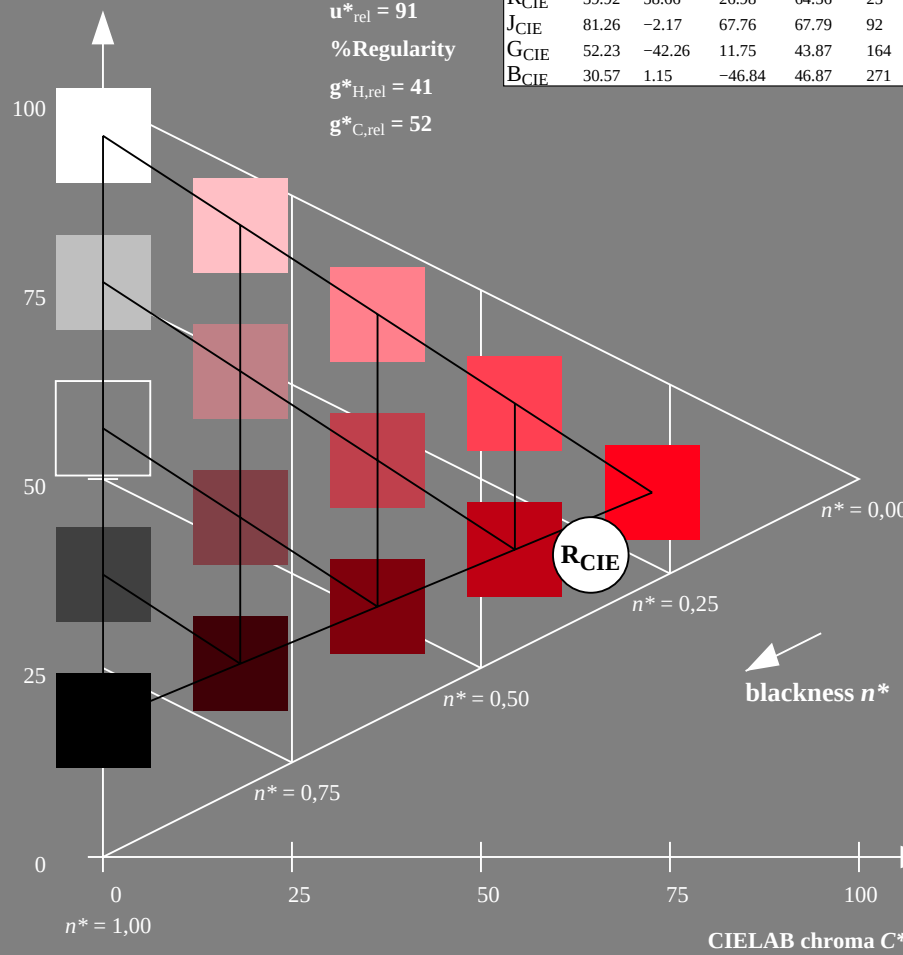
% Gamut

$u^*_{rel} = 91$

% Regularity

$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$



TE350-7, 5 step scales for constant CIELAB hue 25/360 = 0.069 (left)

Output: Colorimetric Reflective System ORS18

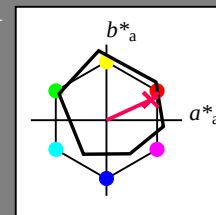
for hue  $h^* = lab \cdot h = 25/360 = 0.069$

LAB\*LCH, LAB\*NCH

D65: hue R

LCH\*Ma: 48 75 25

olv\*Ma: 1.0 0.0 0.32



ORS18; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| Y <sub>Ma</sub>  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| L <sub>Ma</sub>  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| C <sub>Ma</sub>  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| M <sub>Ma</sub>  | 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            |
| R <sub>CIE</sub> | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub> | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

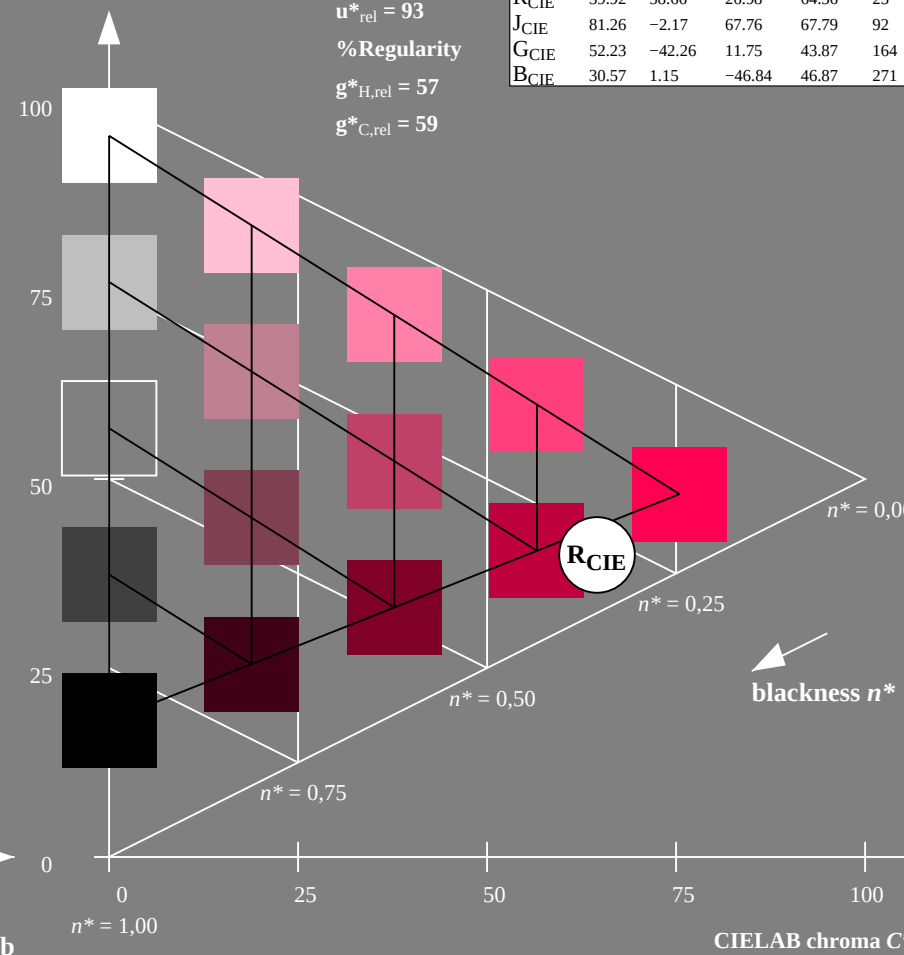
% Gamut

$u^*_{rel} = 93$

% Regularity

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

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



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

BAM-test chart TE35; Colorimetric systems MRS18 & ORS18

D65: Coordinate systems of 5 step colour scales for 10 hues

input: olv\* setrgbcolor

output: no change compared to input



Input: Colorimetric Reflective System MRS18

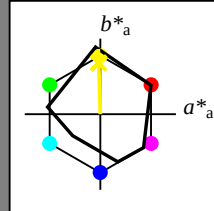
for hue  $h^* = lab^*h = 92/360 = 0.255$

LAB\*LCH, LAB\*NCH

D65: hue J

LCH\*Ma: 89 86 92

olv\*Ma: 1.0 0.95 0.0



MRS18; adapted (a) CIELAB data

|                    | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------------------|-------------|---------|---------|--------------|--------------|
| R <sub>Ma</sub>    | 49.63       | 66.96   | 38.37   | 77.18        | 30           |
| J <sub>Ma</sub>    | 90.7        | -6.36   | 88.75   | 88.98        | 94           |
| G <sub>Ma</sub>    | 52.11       | -69.73  | 9.44    | 70.37        | 172          |
| G50B <sub>Ma</sub> | 45.03       | -36.57  | -28.47  | 46.36        | 218          |
| B <sub>Ma</sub>    | 36.65       | 23.19   | -63.05  | 67.18        | 290          |
| B50R <sub>Ma</sub> | 34.94       | 57.17   | -44.26  | 72.31        | 322          |
| 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       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub>   | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>   | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub>   | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

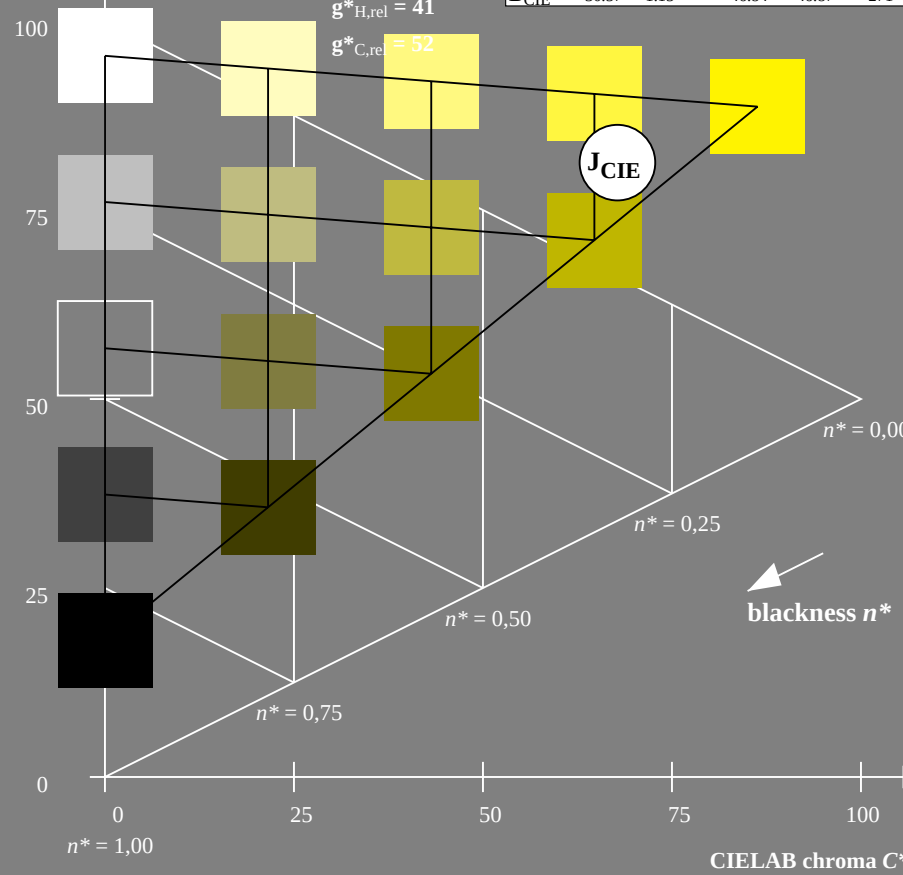
% Gamut

$u^*_{rel} = 91$

% Regularity

$g^*_{H,rel} = 41$

$g^*_{C,rel} = 52$



TE350-7, 5 step scales for constant CIELAB hue 92/360 = 0.255 (left)

Output: Colorimetric Reflective System ORS18

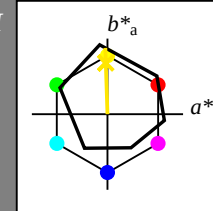
for hue  $h^* = lab^*h = 92/360 = 0.255$

LAB\*LCH, LAB\*NCH

D65: hue J

LCH\*Ma: 86 88 92

olv\*Ma: 1.0 0.9 0.0



ORS18; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| Y <sub>Ma</sub>  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| L <sub>Ma</sub>  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| C <sub>Ma</sub>  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| M <sub>Ma</sub>  | 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            |
| R <sub>CIE</sub> | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub> | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

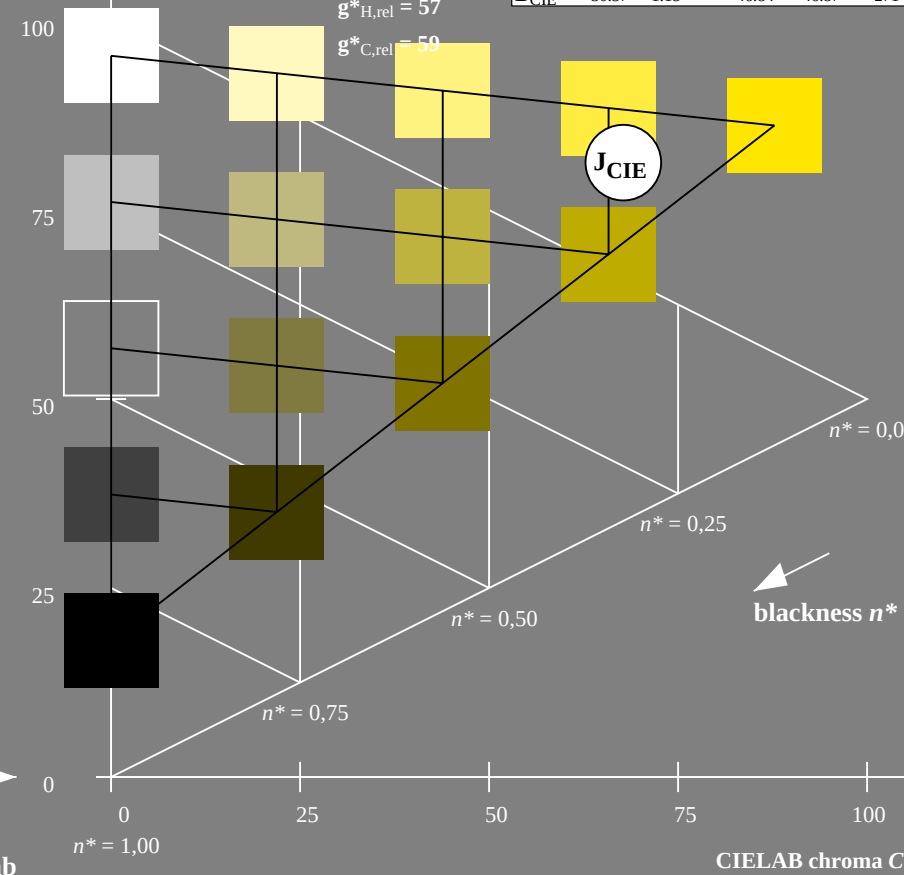
% Gamut

$u^*_{rel} = 93$

% Regularity

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

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



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

BAM-test chart TE35; Colorimetric systems MRS18 & ORS18

D65: Coordinate systems of 5 step colour scales for 10 hues

input: olv\* setrgbcolor

output: no change compared to input



Input: Colorimetric Reflective System MRS18

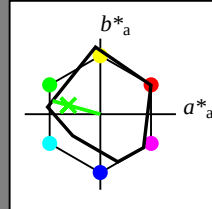
for hue  $h^* = lab \cdot h = 164/360 = 0.457$

LAB\*LCH, LAB\*NCH

D65: hue G

LCH\*Ma: 56 66 164

olv\*Ma: 0.1 1.0 0.0



MRS18; adapted (a) CIELAB data

|                    | $L^*=L_a^*$ | $a_a^*$ | $b_a^*$ | $C_{ab,a}^*$ | $h_{ab,a}^*$ |
|--------------------|-------------|---------|---------|--------------|--------------|
| R <sub>Ma</sub>    | 49.63       | 66.96   | 38.37   | 77.18        | 30           |
| J <sub>Ma</sub>    | 90.7        | -6.36   | 88.75   | 88.98        | 94           |
| G <sub>Ma</sub>    | 52.11       | -69.73  | 9.44    | 70.37        | 172          |
| G50B <sub>Ma</sub> | 45.03       | -36.57  | -28.47  | 46.36        | 218          |
| B <sub>Ma</sub>    | 36.65       | 23.19   | -63.05  | 67.18        | 290          |
| B50R <sub>Ma</sub> | 34.94       | 57.17   | -44.26  | 72.31        | 322          |
| 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       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub>   | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>   | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub>   | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

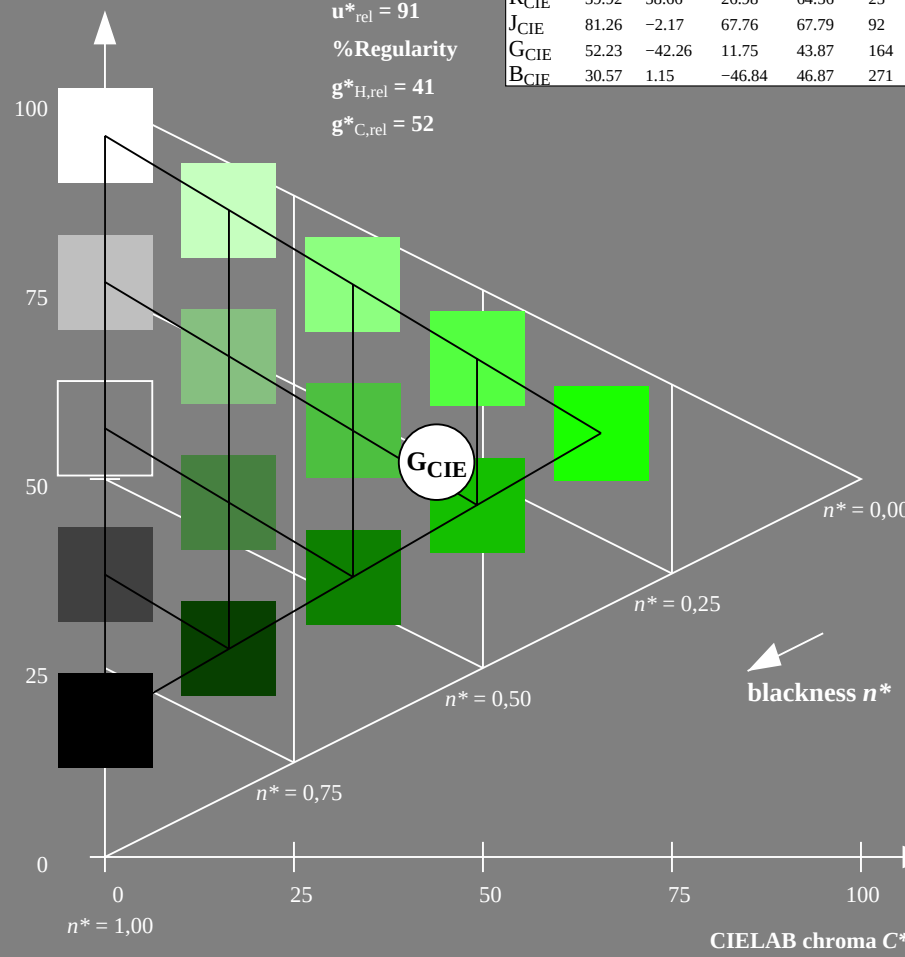
% Gamut

$u_{rel}^* = 91$

% Regularity

$g_{H,rel}^* = 41$

$g_{C,rel}^* = 52$



TE350-7, 5 step scales for constant CIELAB hue 164/360 = 0.457 (left)

Output: Colorimetric Reflective System ORS18

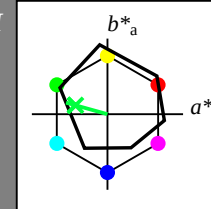
for hue  $h^* = lab \cdot h = 164/360 = 0.457$

LAB\*LCH, LAB\*NCH

D65: hue G

LCH\*Ma: 53 57 164

olv\*Ma: 0.0 1.0 0.25



ORS18; adapted (a) CIELAB data

|                  | $L^*=L_a^*$ | $a_a^*$ | $b_a^*$ | $C_{ab,a}^*$ | $h_{ab,a}^*$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| Y <sub>Ma</sub>  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| L <sub>Ma</sub>  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| C <sub>Ma</sub>  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| M <sub>Ma</sub>  | 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            |
| R <sub>CIE</sub> | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub> | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

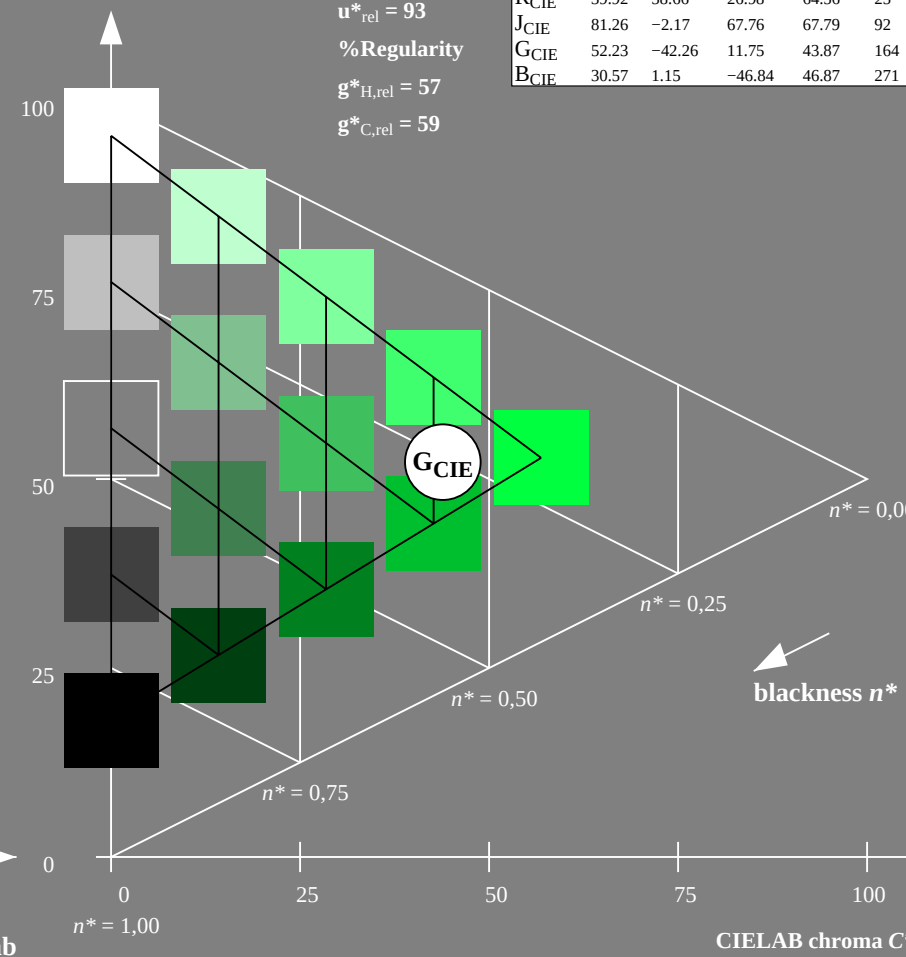
% Gamut

$u_{rel}^* = 93$

% Regularity

$g_{H,rel}^* = 57$

$g_{C,rel}^* = 59$



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

BAM-test chart TE35; Colorimetric systems MRS18 & ORS18

D65: Coordinate systems of 5 step colour scales for 10 hues

input: olv\* setrgbcolor

output: no change compared to input

Input: Colorimetric Reflective System MRS18

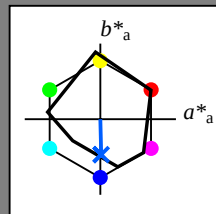
for hue  $h^* = lab \cdot h = 271/360 = 0.754$

LAB\*LCH, LAB\*NCH

D65: hue B

LCH\*Ma: 40 50 271

olv\*Ma: 0.0 0.37 1.0



MRS18; adapted (a) CIELAB data

|                    | $L^*=L_a^*$ | $a_a^*$ | $b_a^*$ | $C_{ab,a}^*$ | $h_{ab,a}^*$ |
|--------------------|-------------|---------|---------|--------------|--------------|
| R <sub>Ma</sub>    | 49.63       | 66.96   | 38.37   | 77.18        | 30           |
| J <sub>Ma</sub>    | 90.7        | -6.36   | 88.75   | 88.98        | 94           |
| G <sub>Ma</sub>    | 52.11       | -69.73  | 9.44    | 70.37        | 172          |
| G50B <sub>Ma</sub> | 45.03       | -36.57  | -28.47  | 46.36        | 218          |
| B <sub>Ma</sub>    | 36.65       | 23.19   | -63.05  | 67.18        | 290          |
| B50R <sub>Ma</sub> | 34.94       | 57.17   | -44.26  | 72.31        | 322          |
| 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       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub>   | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>   | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub>   | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

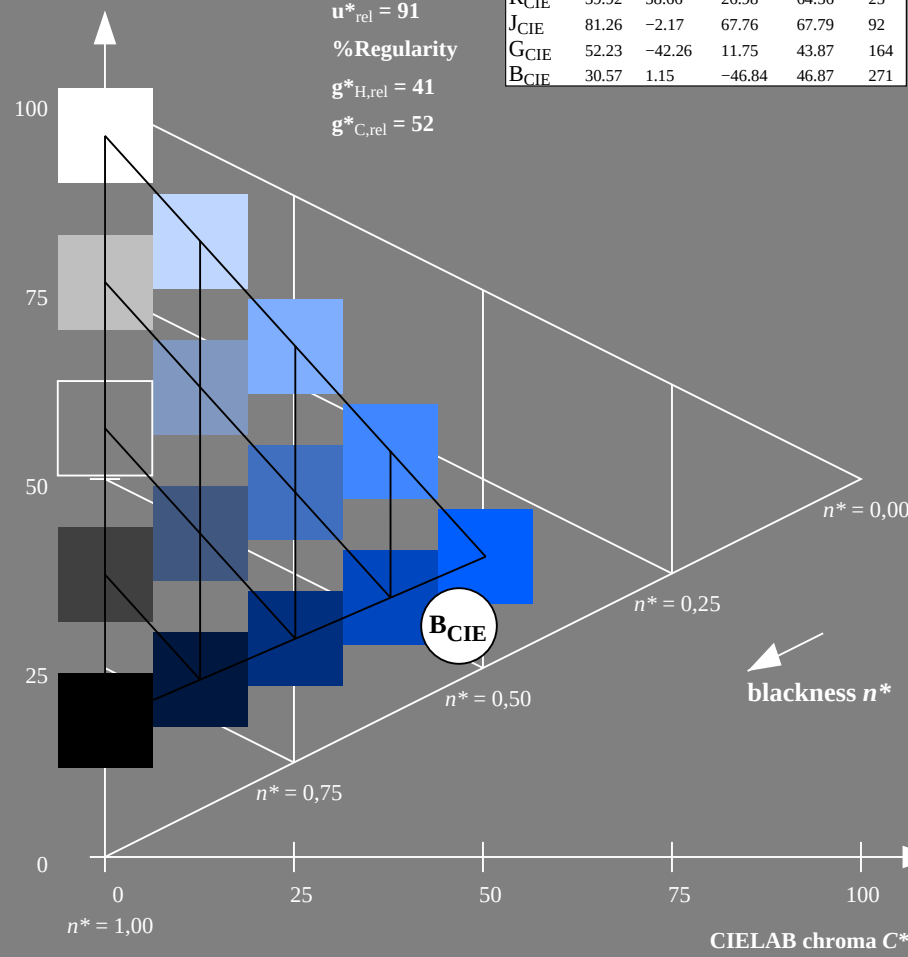
% Gamut

$u_{rel}^* = 91$

% Regularity

$g_{H,rel}^* = 41$

$g_{C,rel}^* = 52$



TE350-7, 5 step scales for constant CIELAB hue 271/360 = 0.754 (left)

Output: Colorimetric Reflective System ORS18

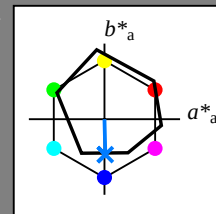
for hue  $h^* = lab \cdot h = 271/360 = 0.754$

LAB\*LCH, LAB\*NCH

D65: hue B

LCH\*Ma: 42 45 271

olv\*Ma: 0.0 0.49 1.0



ORS18; adapted (a) CIELAB data

|                  | $L^*=L_a^*$ | $a_a^*$ | $b_a^*$ | $C_{ab,a}^*$ | $h_{ab,a}^*$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| Y <sub>Ma</sub>  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| L <sub>Ma</sub>  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| C <sub>Ma</sub>  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| M <sub>Ma</sub>  | 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            |
| R <sub>CIE</sub> | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| B <sub>CIE</sub> | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

CIELAB lightness  $L^*$

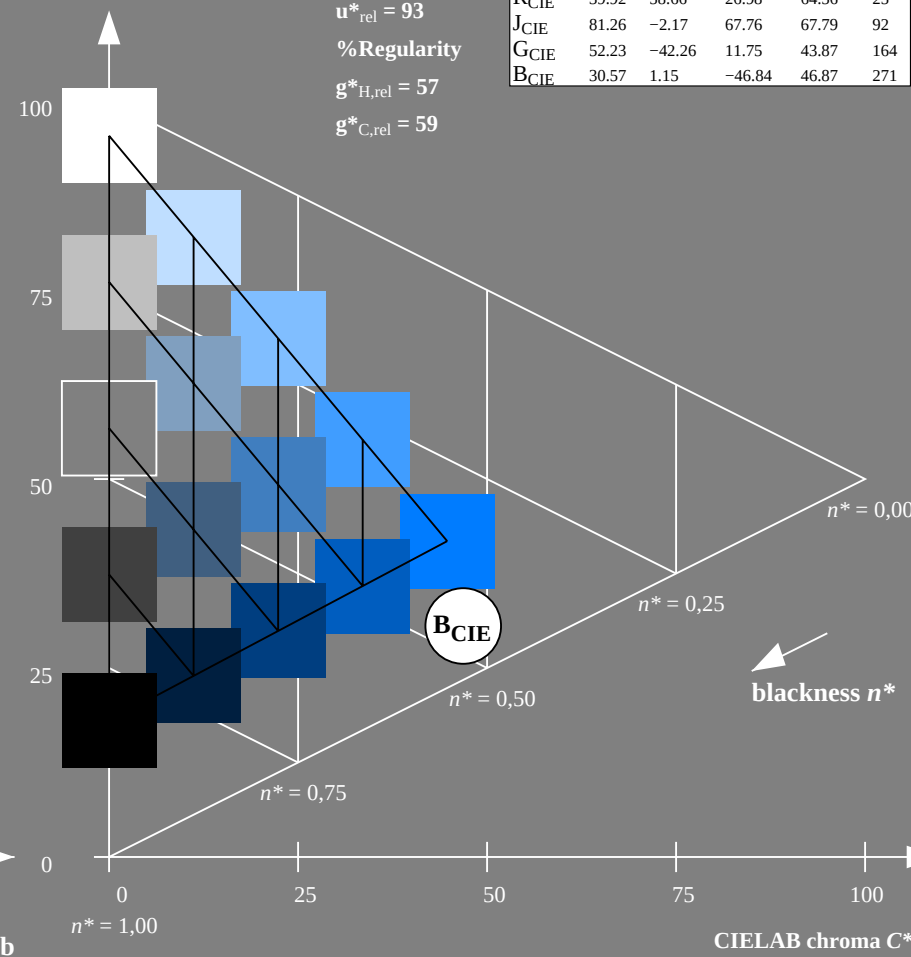
% Gamut

$u_{rel}^* = 93$

% Regularity

$g_{H,rel}^* = 57$

$g_{C,rel}^* = 59$



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

BAM-test chart TE35; Colorimetric systems MRS18 & ORS18

D65: Coordinate systems of 5 step colour scales for 10 hues

input: olv\* setrgbcolor

output: no change compared to input