

### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = lab \cdot h = 35/360 = 0.097$

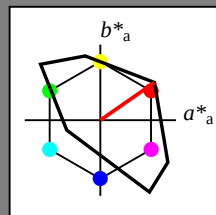
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue O

LCH\*Ma: 53 87 35

olv\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 118$

%Regularity

$g^*_{H,rel} = 22$

$g^*_{C,rel} = 40$

#### TLS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| $Y_m$     | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| $L_m$     | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| $C_m$     | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| $V_m$     | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| $M_m$     | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| $N_m$     | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$     | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_{CIE}$ | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| $J_{CIE}$ | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| $G_{CIE}$ | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| $B_{CIE}$ | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

### Output: Colorimetric Offset Reflective System ORS18

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

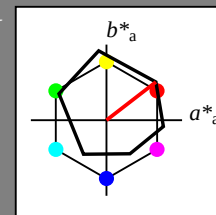
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue O

LCH\*Ma: 48 83 38

olv\*Ma: 1.0 0.0 0.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

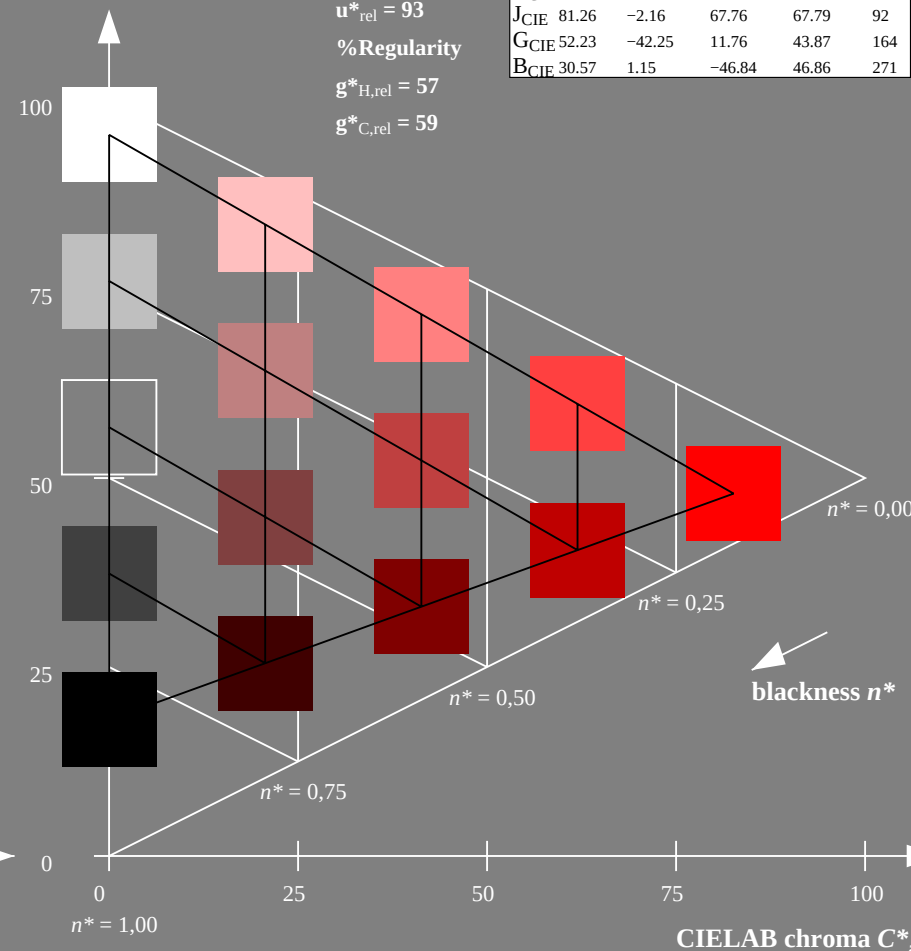
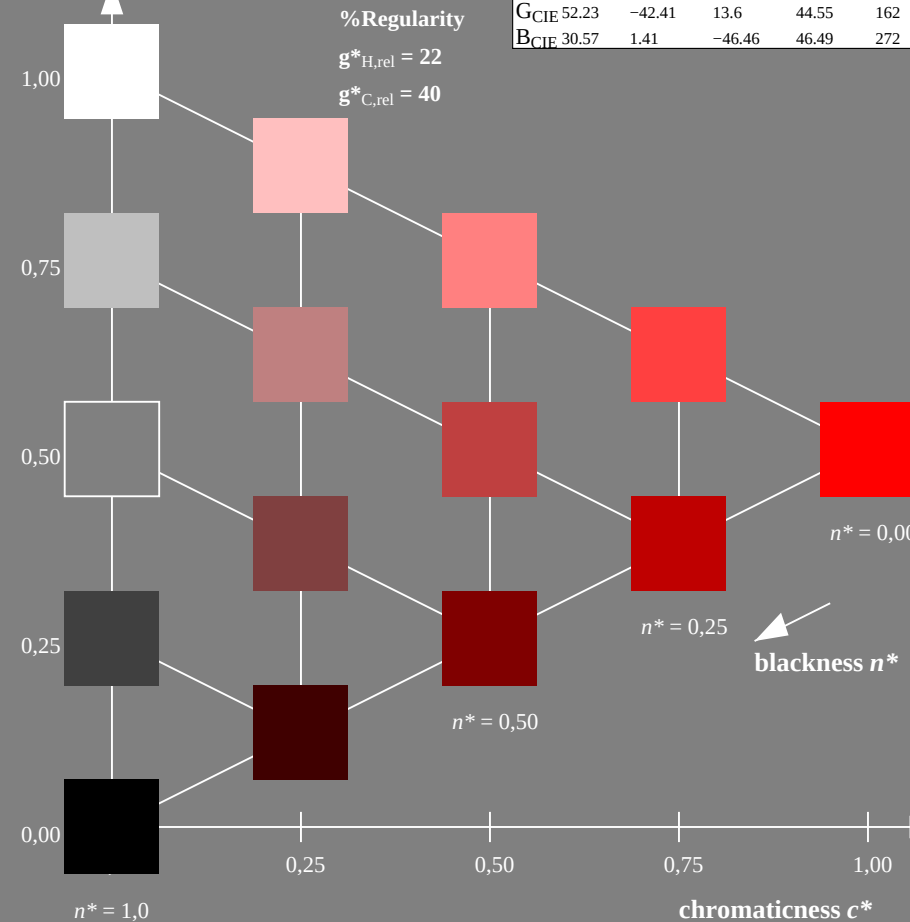
$g^*_{H,rel} = 57$

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

#### ORS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| $Y_m$     | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| $L_m$     | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| $C_m$     | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| $V_m$     | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| $M_m$     | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| $N_m$     | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$     | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_{CIE}$ | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| $J_{CIE}$ | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| $G_{CIE}$ | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| $B_{CIE}$ | 30.57       | 1.15    | -46.84  | 46.86        | 271          |

triangle lightness  $t^*$



NE260-7, 5 step scales for constant CIELAB hue 35/360 = 0.097 (left)

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

BAM-test chart NE26; Colorimetric systems TLS18 & ORS18

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

input: olv\* setrgbcolor

output: no change compared to input

### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = lab^*h = 103/360 = 0.287$

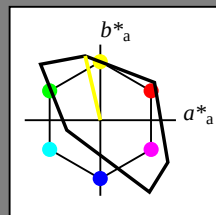
$lab^*tch$  and  $lab^*nch$

D65: hue Y

LCH\*Ma: 93 87 103

olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 118$

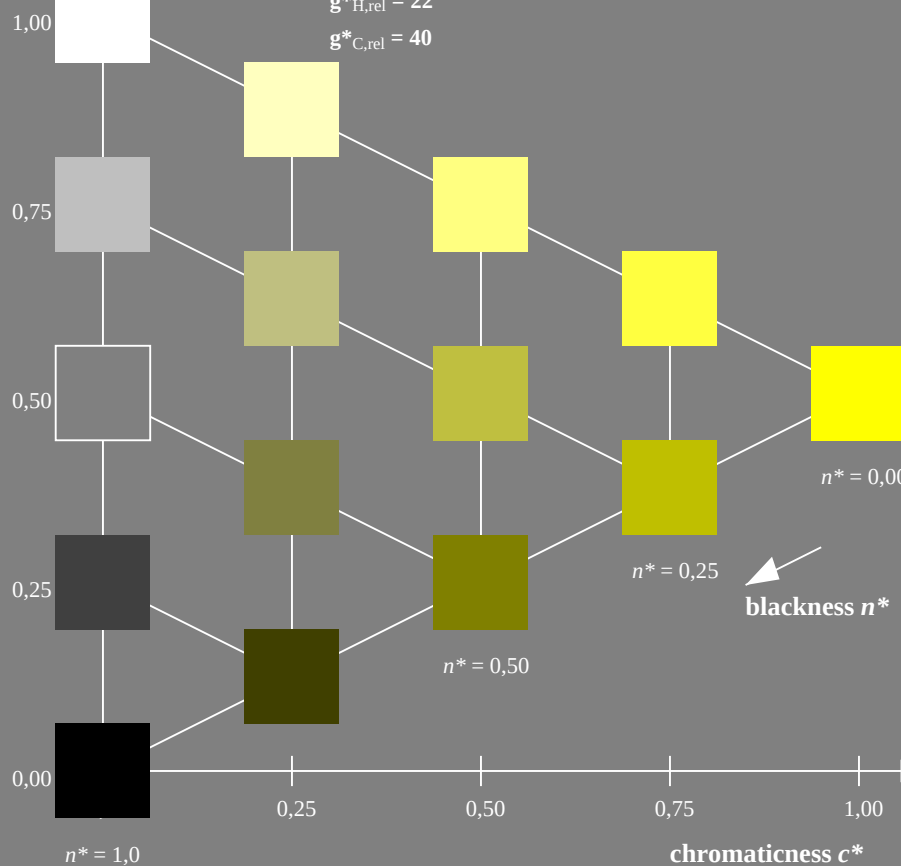
%Regularity

$g^*_{H,rel} = 22$

$g^*_{C,rel} = 40$

#### TLS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| $Y_m$     | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| $L_m$     | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| $C_m$     | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| $V_m$     | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| $M_m$     | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| $N_m$     | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$     | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_{CIE}$ | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| $J_{CIE}$ | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| $G_{CIE}$ | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| $B_{CIE}$ | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



NE260-7, 5 step scales for constant CIELAB hue 103/360 = 0.287 (left)

### Output: Colorimetric Offset Reflective System ORS18

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

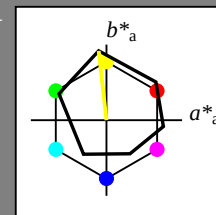
$LAB^*LCH$ ,  $LAB^*NCH$

D65: hue Y

LCH\*Ma: 90 92 96

olv\*Ma: 1.0 1.0 0.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

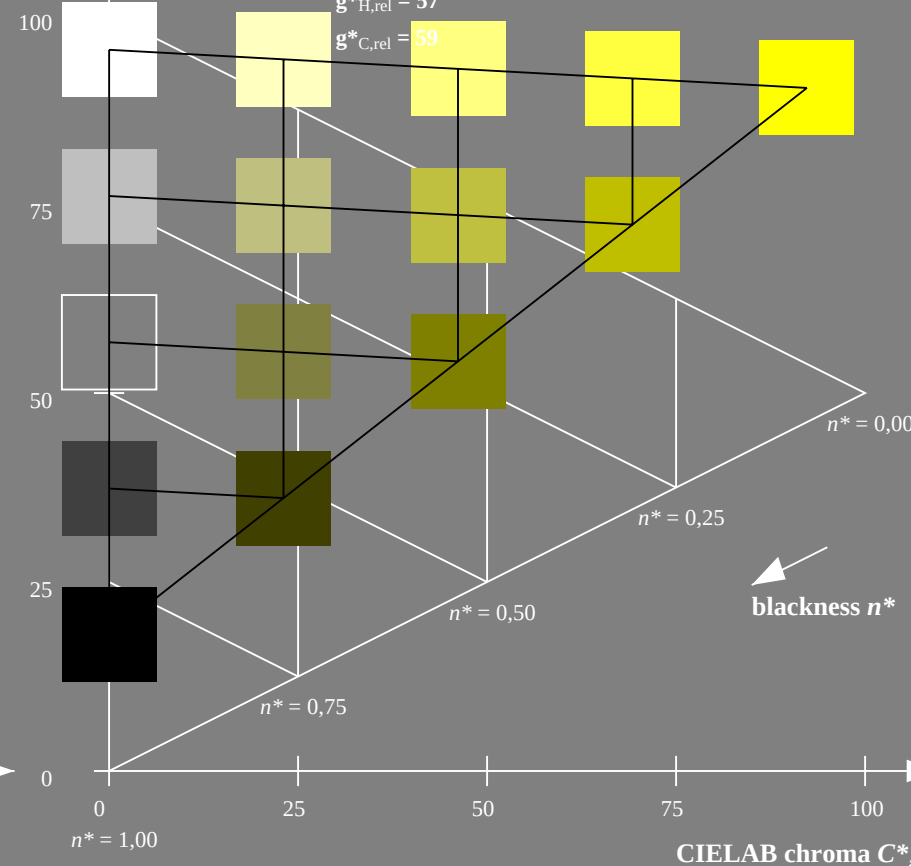
%Regularity

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

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

#### ORS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| $Y_m$     | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| $L_m$     | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| $C_m$     | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| $V_m$     | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| $M_m$     | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| $N_m$     | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$     | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_{CIE}$ | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| $J_{CIE}$ | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| $G_{CIE}$ | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| $B_{CIE}$ | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



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

BAM-test chart NE26; Colorimetric systems TLS18 & ORS18

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

input: olv\* setrgbcolor

output: no change compared to input

### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = lab \cdot h = 137/360 = 0.38$

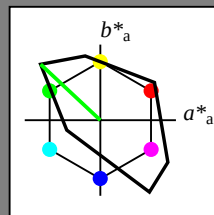
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue L

LCH\*Ma: 84 108 137

olv\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 118$

%Regularity

$g^*_{H,rel} = 22$

$g^*_{C,rel} = 40$

#### TLS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| $Y_m$     | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| $L_m$     | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| $C_m$     | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| $V_m$     | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| $M_m$     | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| $N_m$     | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$     | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_{CIE}$ | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| $J_{CIE}$ | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| $G_{CIE}$ | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| $B_{CIE}$ | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

### Output: Colorimetric Offset Reflective System ORS18

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

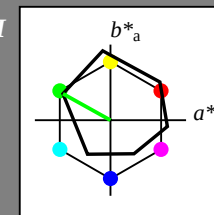
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue L

LCH\*Ma: 51 72 151

olv\*Ma: 0.0 1.0 0.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

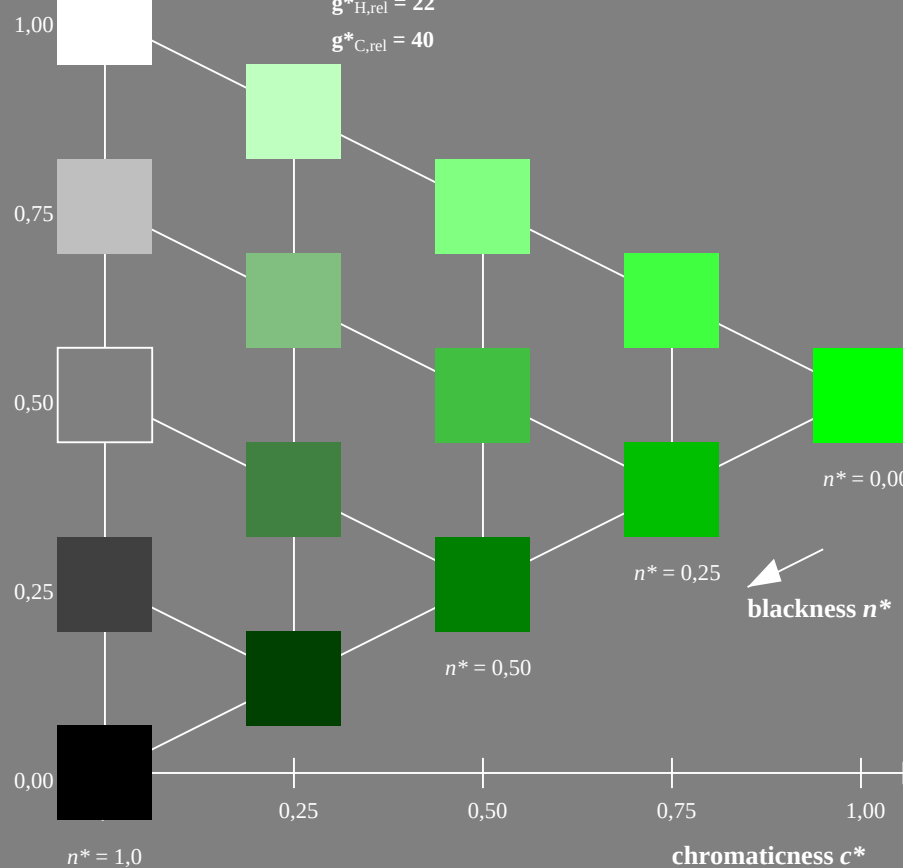
%Regularity

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

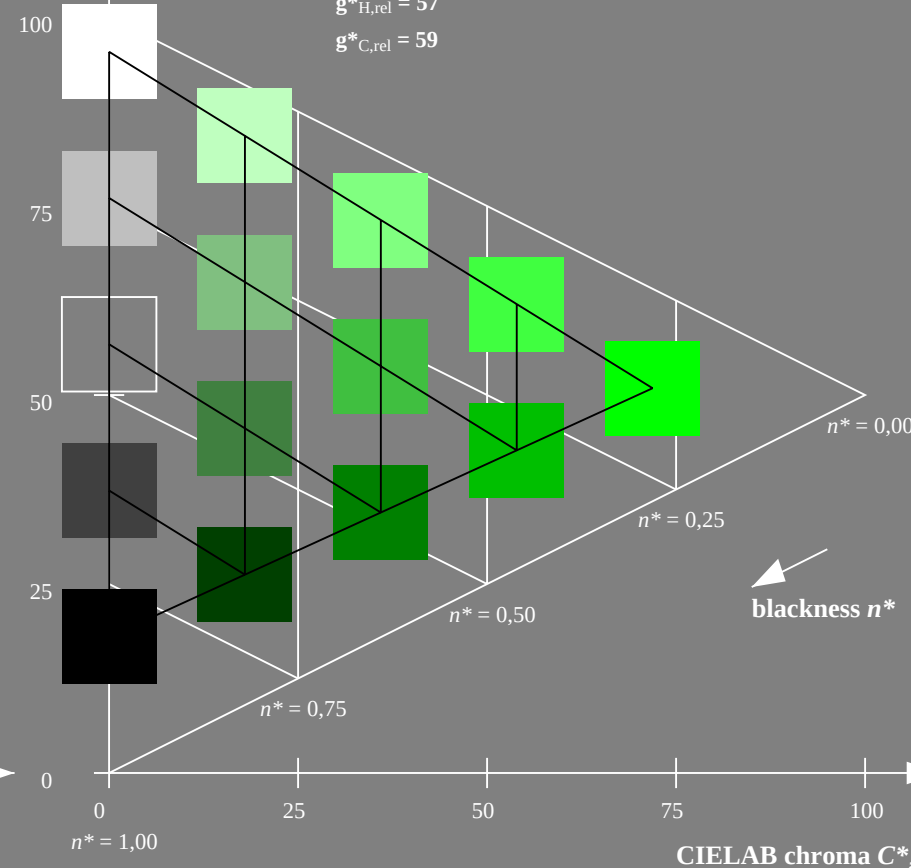
$g^*_{C,rel} = 59$

#### ORS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| $Y_m$     | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| $L_m$     | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| $C_m$     | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| $V_m$     | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| $M_m$     | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| $N_m$     | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$     | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_{CIE}$ | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| $J_{CIE}$ | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| $G_{CIE}$ | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| $B_{CIE}$ | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



NE260-7, 5 step scales for constant CIELAB hue 137/360 = 0.38 (left)



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

BAM-test chart NE26; Colorimetric systems TLS18 & ORS18

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

input: olv\* setrgbcolor

output: no change compared to input

**Input: Colorimetric Television Luminous System TLS18**

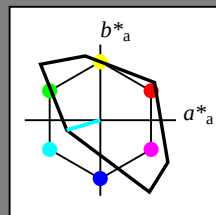
**for hue  $h^* = lab^*h = 196/360 = 0.546$**

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

**D65: hue C**

**LCH\*Ma: 87 46 196**

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

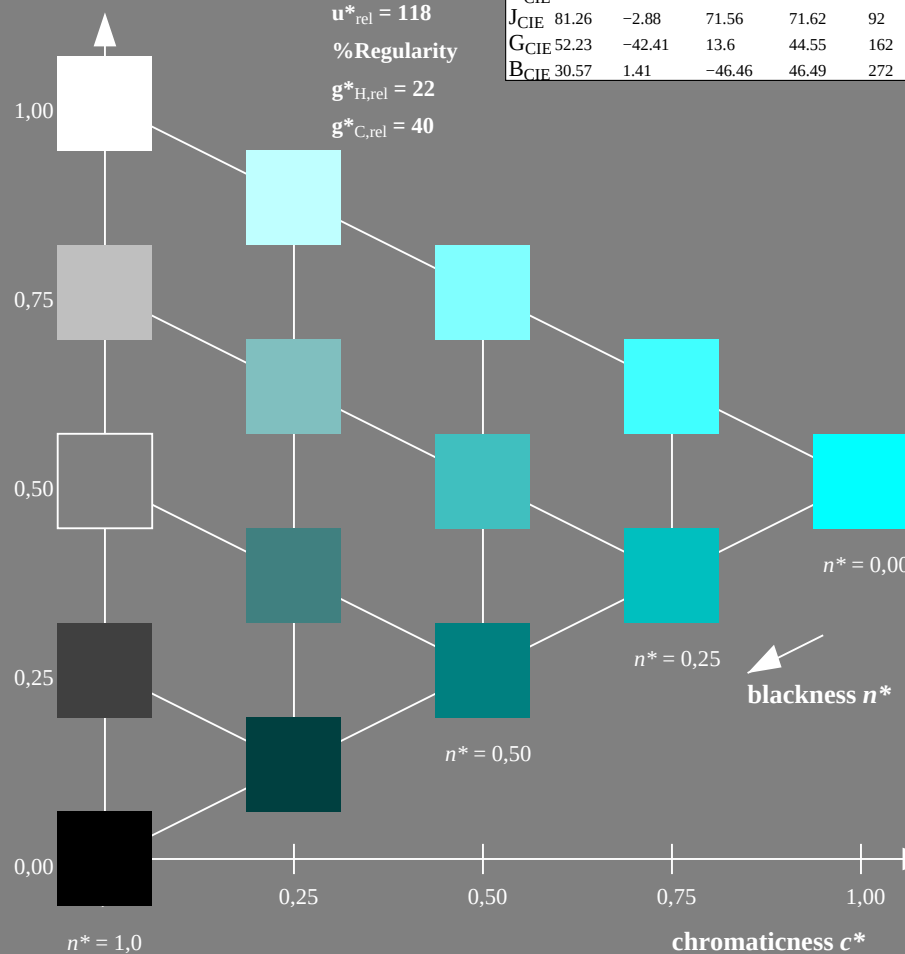


triangle lightness  $t^*$

%Gamut

$$\mathbf{u}_{\text{rel}}^* = 118$$

### %Regularity

$$g^*_{H,rel} = 22$$
$$g^*_{C,rel} = 40$$


NE260-7, 5 step scales for constant CIELAB hue 196/360 = 0.546 (left)

BAM-test chart NE26; Colorimetric systems TLS18 &amp; ORS18

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

### Output: Colorimetric Offset Reflective System ORS18

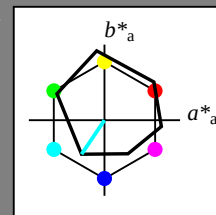
**for hue  $h^* = lab^*h = 236/360 = 0.656$**

*LAB\*LCH, LAB\*NCH*

D65: hue C

LCH\*Ma: 59 54 236

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

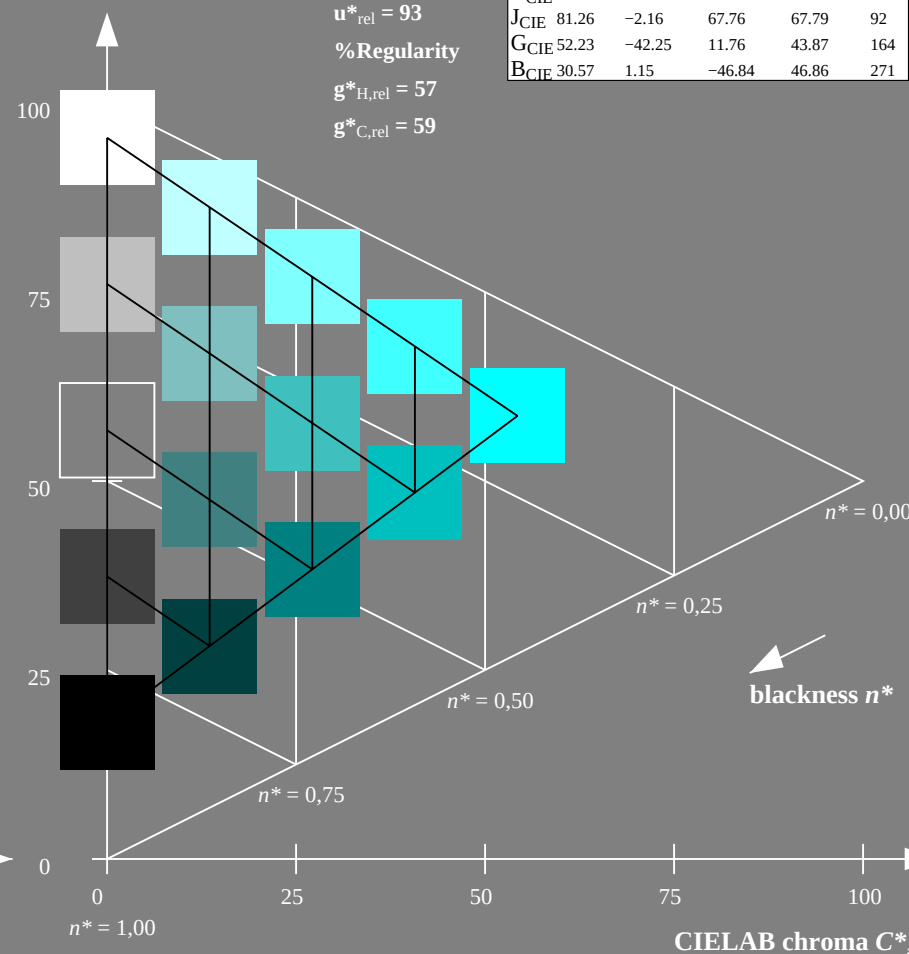


**CIELAB lightness  $L^*$**

%Gamut

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

### %Regularity

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


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

```
input: olv* setrgbcolor
```

output: *no change compared to input*

### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = lab \cdot h = 304/360 = 0.845$

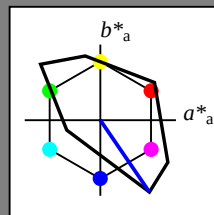
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue V

LCH\*Ma: 35 115 304

olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 118$

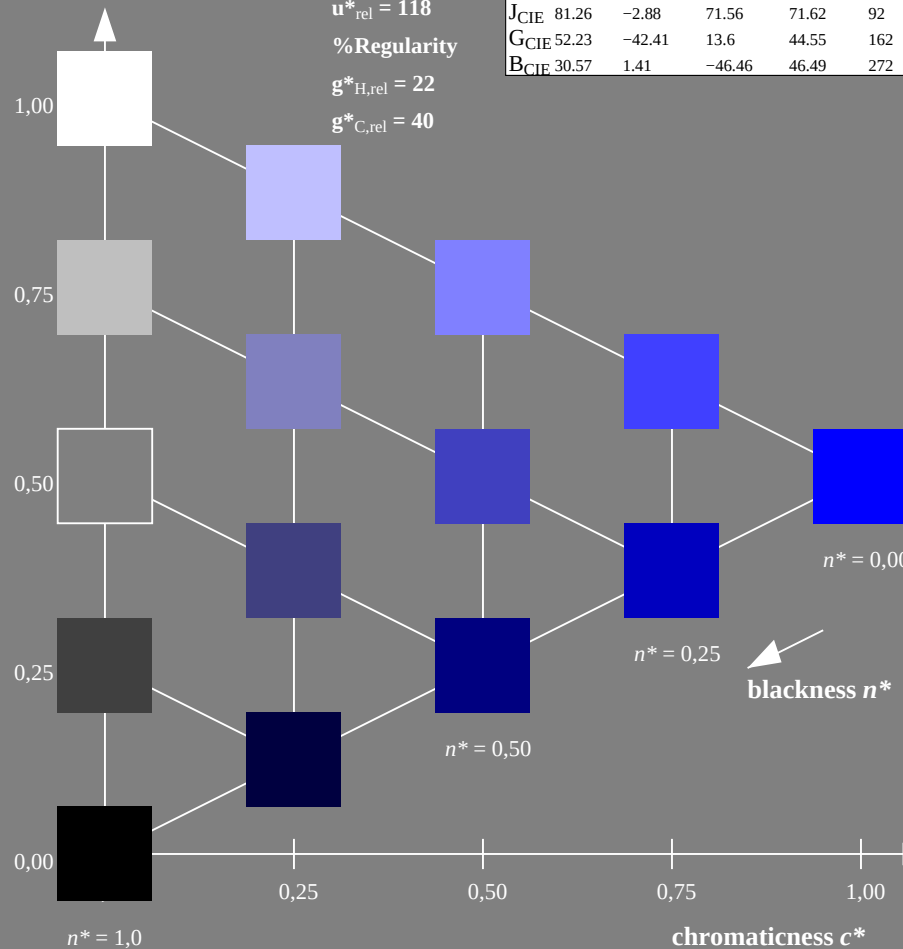
%Regularity

$g^*_{H,rel} = 22$

$g^*_{C,rel} = 40$

#### TLS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| $Y_m$     | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| $L_m$     | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| $C_m$     | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| $V_m$     | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| $M_m$     | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| $N_m$     | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$     | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_{CIE}$ | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| $J_{CIE}$ | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| $G_{CIE}$ | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| $B_{CIE}$ | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



NE260-7, 5 step scales for constant CIELAB hue 304/360 = 0.845 (left)

### Output: Colorimetric Offset Reflective System ORS18

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

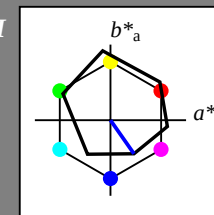
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue V

LCH\*Ma: 26 54 305

olv\*Ma: 0.0 0.0 1.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

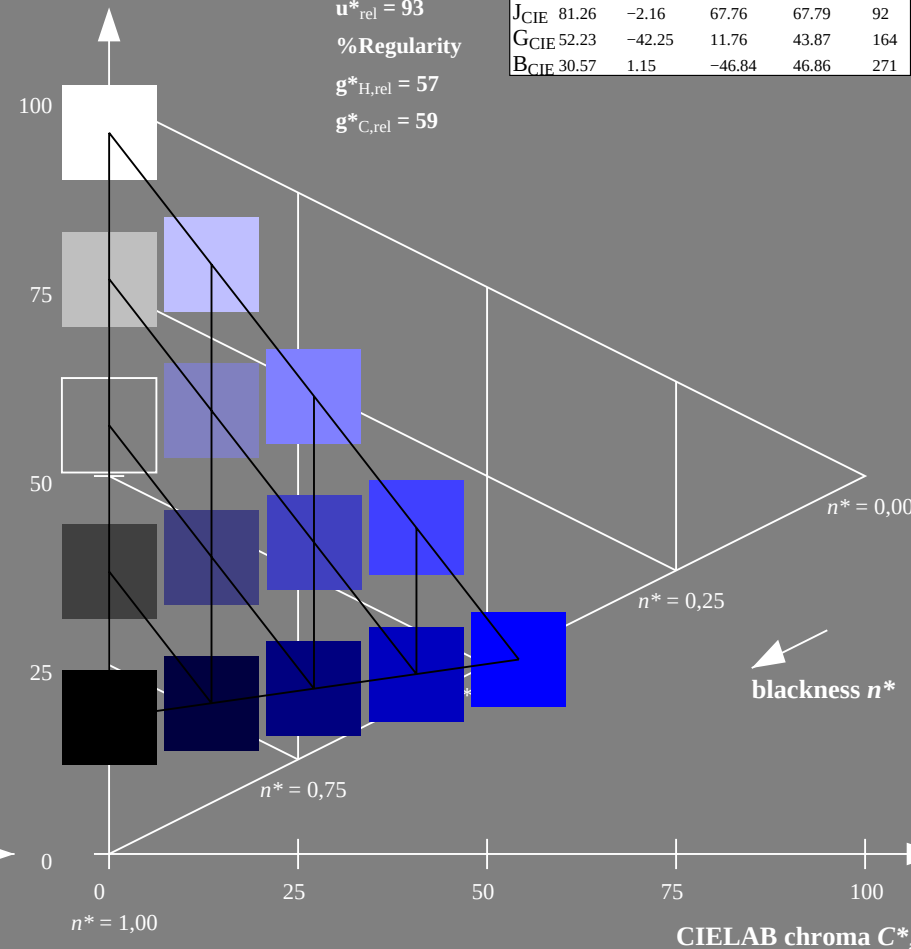
%Regularity

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

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

#### ORS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| $Y_m$     | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| $L_m$     | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| $C_m$     | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| $V_m$     | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| $M_m$     | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| $N_m$     | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$     | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_{CIE}$ | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| $J_{CIE}$ | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| $G_{CIE}$ | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| $B_{CIE}$ | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



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

BAM-test chart NE26; Colorimetric systems TLS18 & ORS18

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

input: olv\* setrgbcolor

output: no change compared to input

### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = lab \cdot h = 328/360 = 0.911$

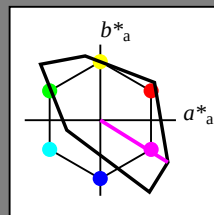
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue M

LCH\*Ma: 59 105 328

olv\*Ma: 1.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 118$

%Regularity

$g^*_{H,rel} = 22$

$g^*_{C,rel} = 40$

#### TLS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| $Y_m$     | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| $L_m$     | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| $C_m$     | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| $V_m$     | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| $M_m$     | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| $N_m$     | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$     | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_{CIE}$ | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| $J_{CIE}$ | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| $G_{CIE}$ | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| $B_{CIE}$ | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

### Output: Colorimetric Offset Reflective System ORS18

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

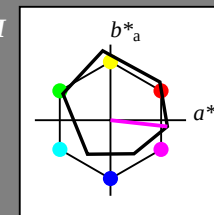
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue M

LCH\*Ma: 48 76 354

olv\*Ma: 1.0 0.0 1.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

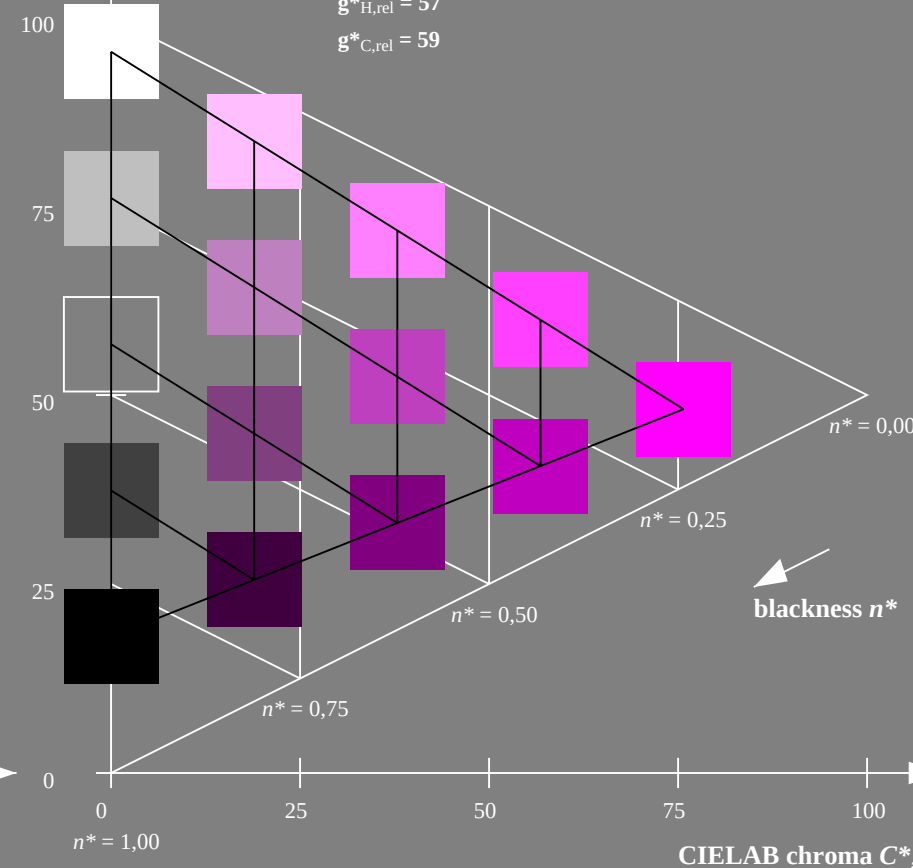
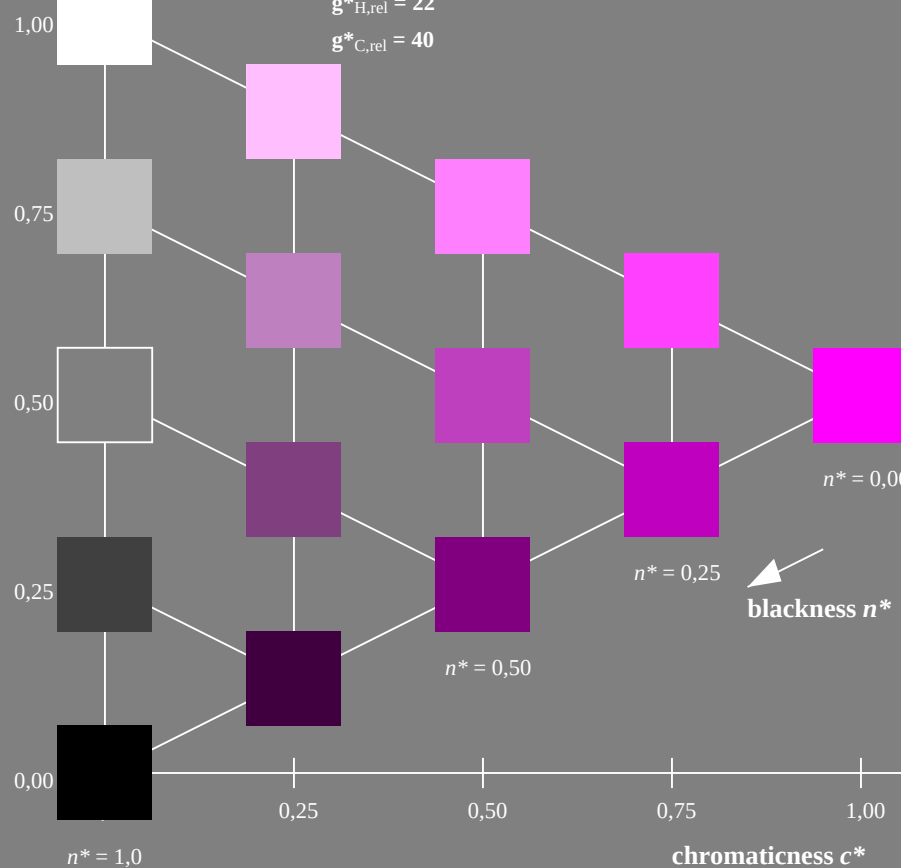
%Regularity

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

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

#### ORS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| $Y_m$     | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| $L_m$     | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| $C_m$     | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| $V_m$     | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| $M_m$     | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| $N_m$     | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$     | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_{CIE}$ | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| $J_{CIE}$ | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| $G_{CIE}$ | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| $B_{CIE}$ | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



NE260-7, 5 step scales for constant CIELAB hue 328/360 = 0.911 (left)

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

BAM-test chart NE26; Colorimetric systems TLS18 & ORS18

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

input: olv\* setrgbcolor

output: no change compared to input

### Input: Colorimetric Television Luminous System TLS18

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

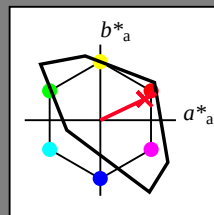
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue R

LCH\*Ma: 54 82 25

olv\*Ma: 1.0 0.0 0.14

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 118$

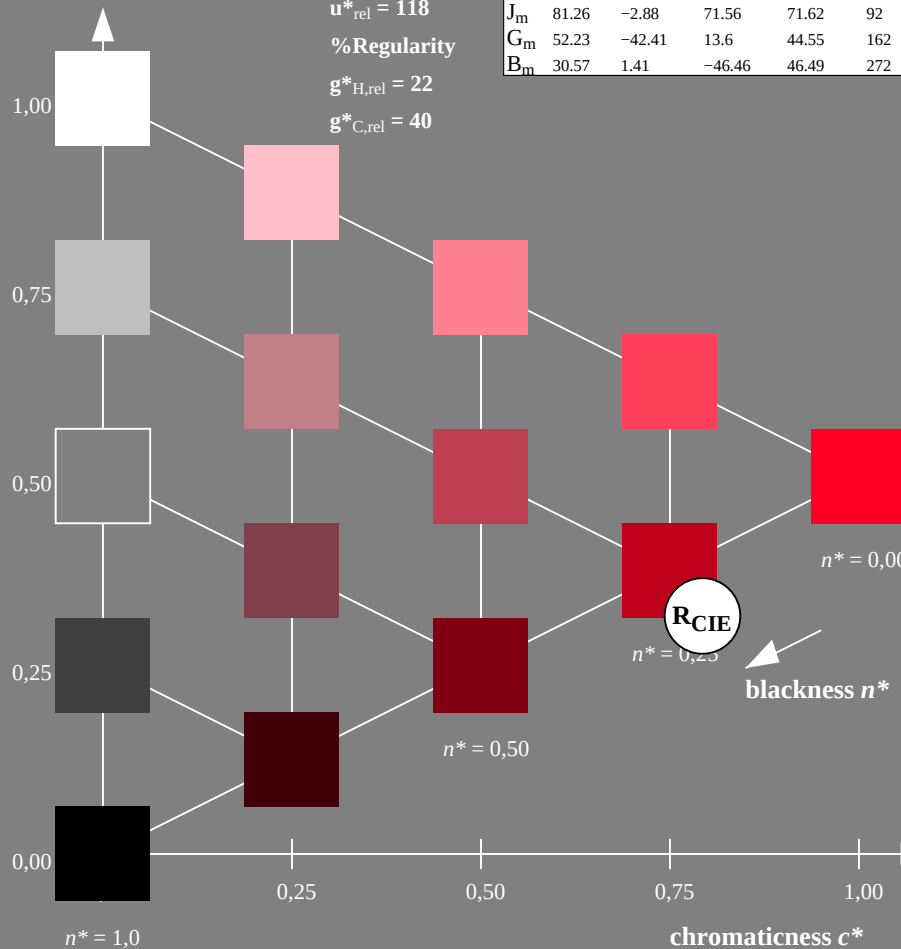
%Regularity

$g^*_{H,rel} = 22$

$g^*_{C,rel} = 40$

#### TLS18; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| $Y_m$ | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| $L_m$ | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| $C_m$ | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| $V_m$ | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| $M_m$ | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| $N_m$ | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$ | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_m$ | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| $J_m$ | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| $G_m$ | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| $B_m$ | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



NE260-7, 5 step scales for constant CIELAB hue 25/360 = 0.071 (left)

### Output: Colorimetric Offset Reflective System ORS18

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

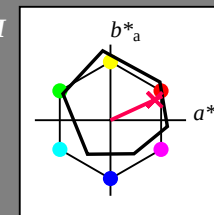
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue R

LCH\*Ma: 48 75 25

olv\*Ma: 1.0 0.0 0.32

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

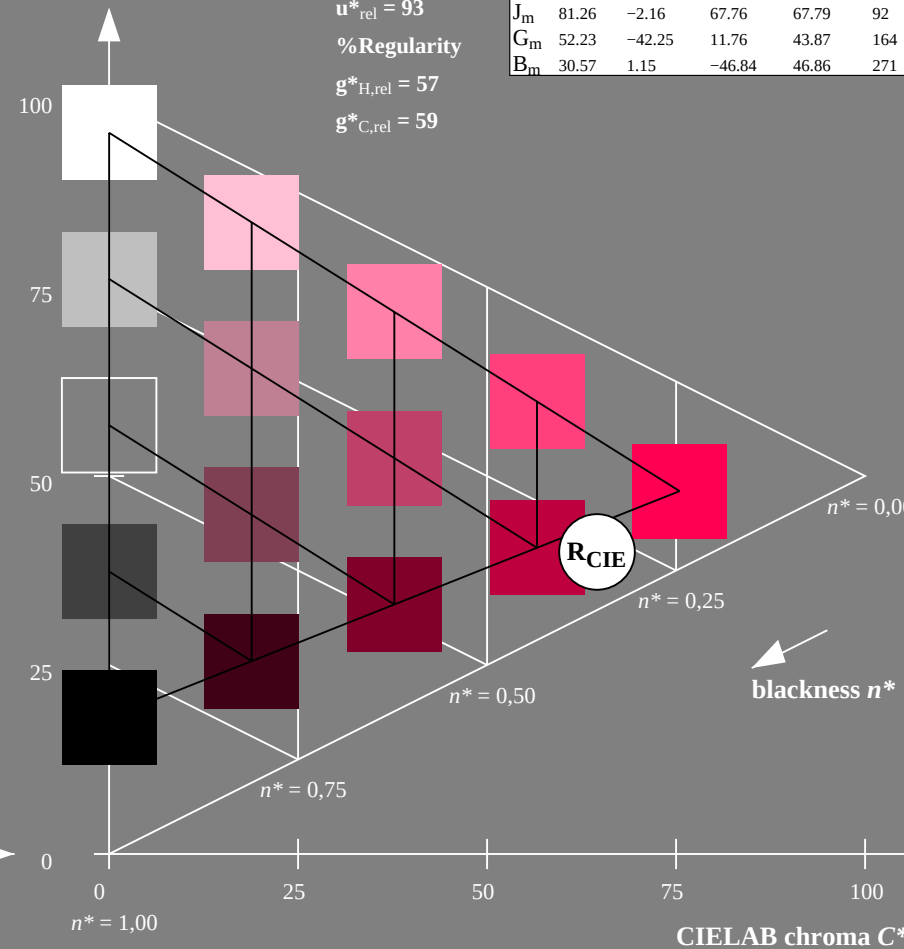
%Regularity

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

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

#### ORS18; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| $Y_m$ | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| $L_m$ | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| $C_m$ | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| $V_m$ | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| $M_m$ | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| $N_m$ | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$ | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_m$ | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| $J_m$ | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| $G_m$ | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| $B_m$ | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



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

BAM-test chart NE26; Colorimetric systems TLS18 & ORS18

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

input: olv\* setrgbcolor

output: no change compared to input



### Input: Colorimetric Television Luminous System TLS18

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

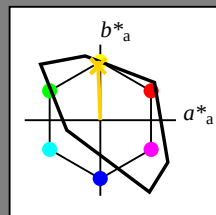
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue J

LCH\*Ma: 85 79 92

olv\*Ma: 1.0 0.82 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 118$

%Regularity

$g^*_{H,rel} = 22$

$g^*_{C,rel} = 40$

#### TLS18; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| $Y_m$ | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| $L_m$ | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| $C_m$ | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| $V_m$ | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| $M_m$ | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| $N_m$ | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$ | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_m$ | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| $J_m$ | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| $G_m$ | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| $B_m$ | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

### Output: Colorimetric Offset Reflective System ORS18

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

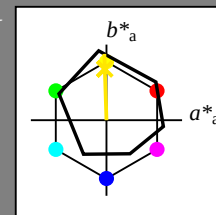
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue J

LCH\*Ma: 86 88 92

olv\*Ma: 1.0 0.9 0.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

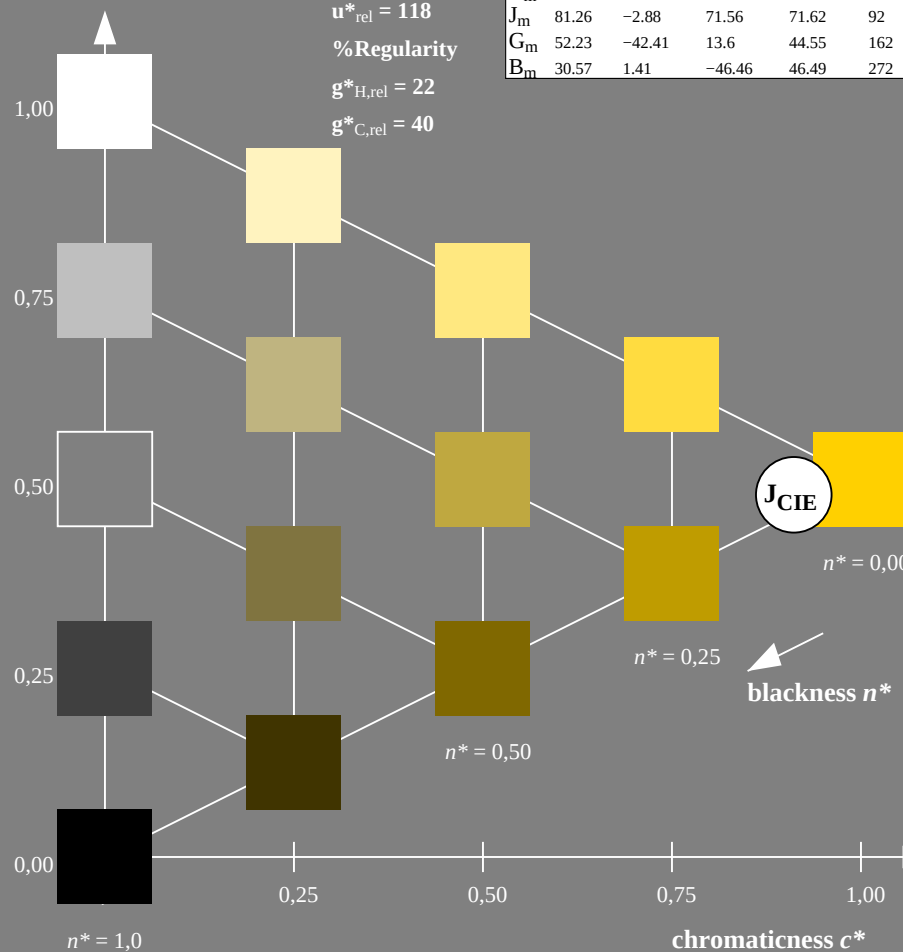
%Regularity

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

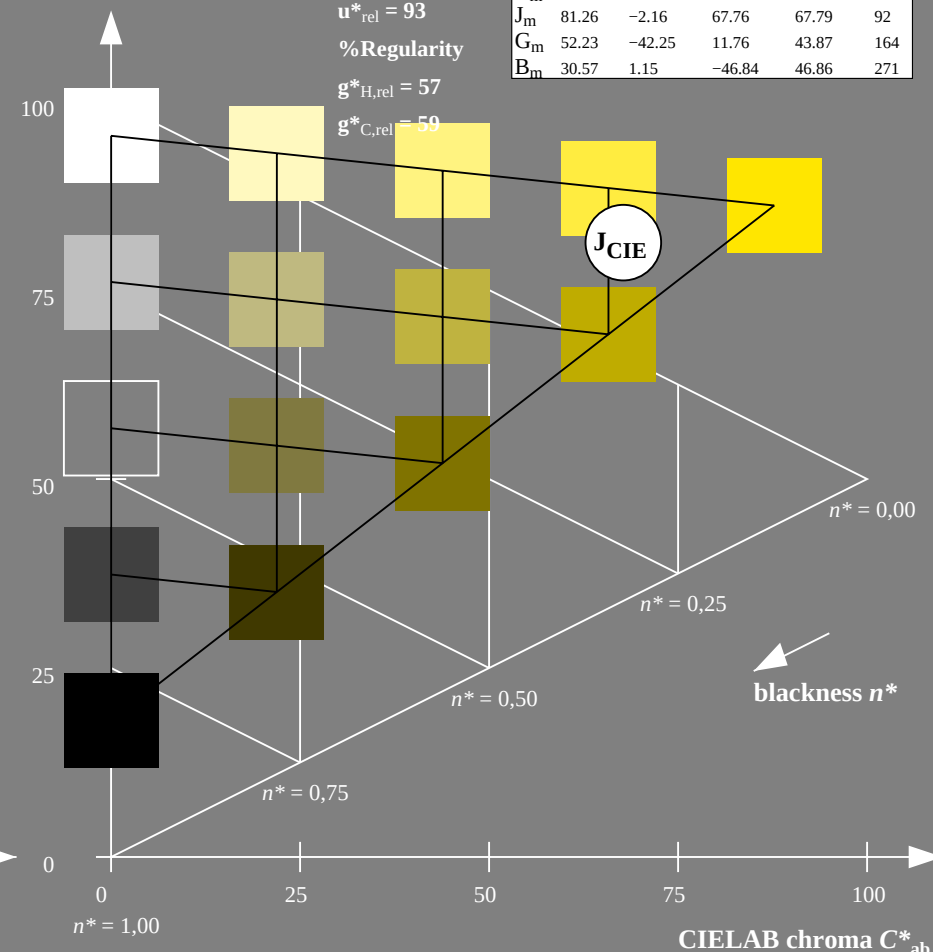
$g^*_{C,rel} = 59$

#### ORS18; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| $Y_m$ | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| $L_m$ | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| $C_m$ | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| $V_m$ | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| $M_m$ | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| $N_m$ | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$ | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_m$ | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| $J_m$ | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| $G_m$ | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| $B_m$ | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



NE260-7, 5 step scales for constant CIELAB hue 92/360 = 0.256 (left)



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

BAM-test chart NE26; Colorimetric systems TLS18 & ORS18

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

input: olv\* setrgbcolor

output: no change compared to input



### Input: Colorimetric Television Luminous System TLS18

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

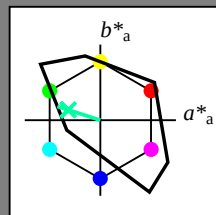
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue G

LCH\*Ma: 86 60 162

olv\*Ma: 0.0 1.0 0.64

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 118$

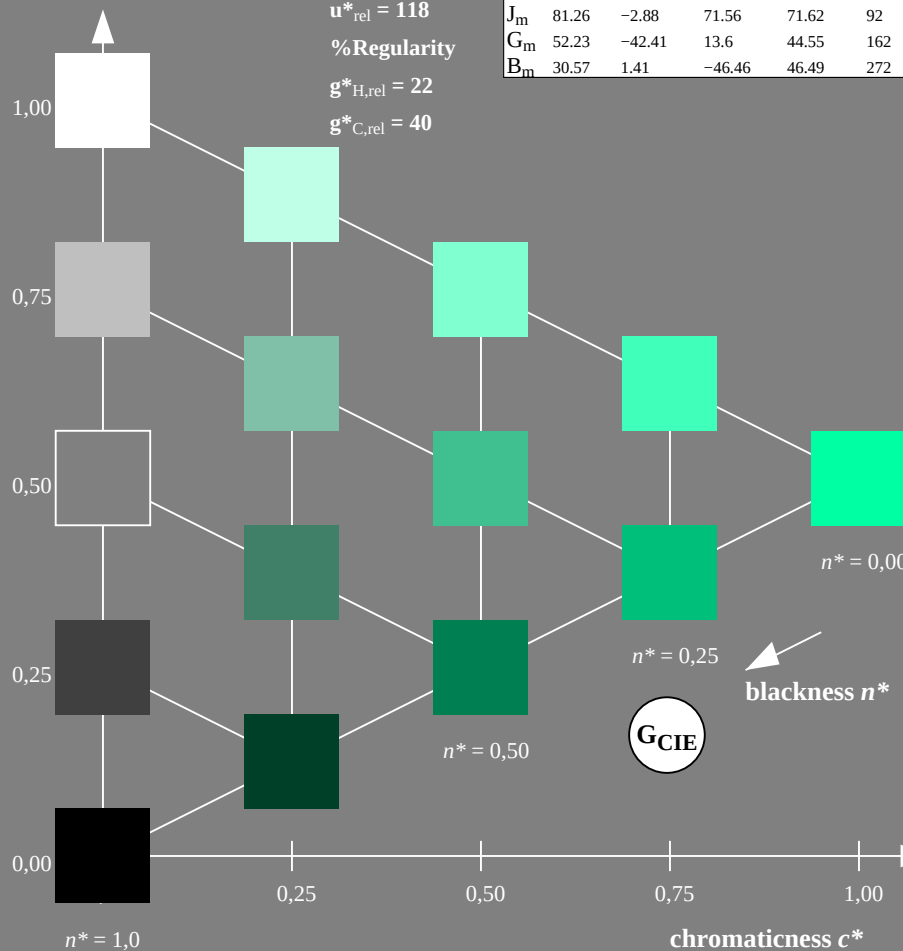
%Regularity

$g^*_{H,rel} = 22$

$g^*_{C,rel} = 40$

#### TLS18; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| $Y_m$ | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| $L_m$ | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| $C_m$ | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| $V_m$ | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| $M_m$ | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| $N_m$ | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$ | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_m$ | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| $J_m$ | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| $G_m$ | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| $B_m$ | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



NE260-7, 5 step scales for constant CIELAB hue 162/360 = 0.451 (left)

### Output: Colorimetric Offset Reflective System ORS18

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

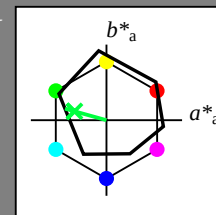
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue G

LCH\*Ma: 53 57 164

olv\*Ma: 0.0 1.0 0.25

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

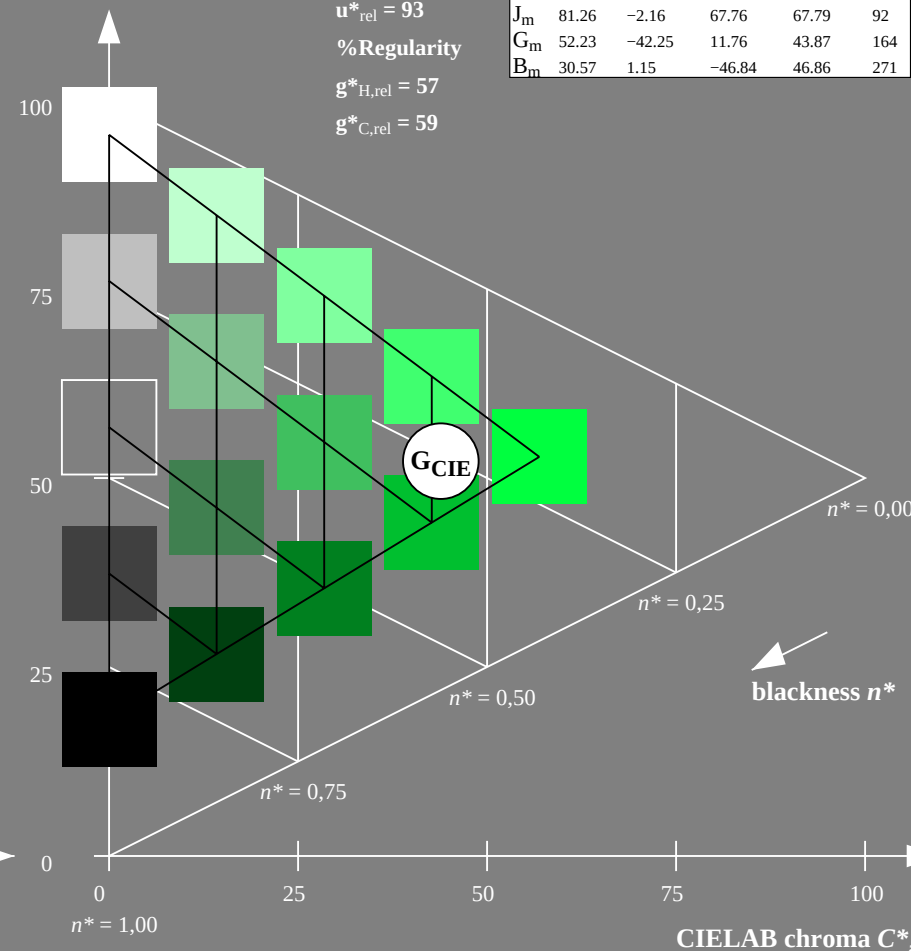
%Regularity

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

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

#### ORS18; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| $Y_m$ | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| $L_m$ | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| $C_m$ | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| $V_m$ | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| $M_m$ | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| $N_m$ | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$ | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_m$ | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| $J_m$ | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| $G_m$ | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| $B_m$ | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



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

BAM-test chart NE26; Colorimetric systems TLS18 & ORS18

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

input: olv\* setrgbcolor

output: no change compared to input

### Input: Colorimetric Television Luminous System TLS18

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

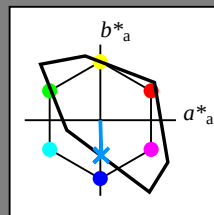
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue B

LCH\*Ma: 65 48 272

olv\*Ma: 0.0 0.58 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 118$

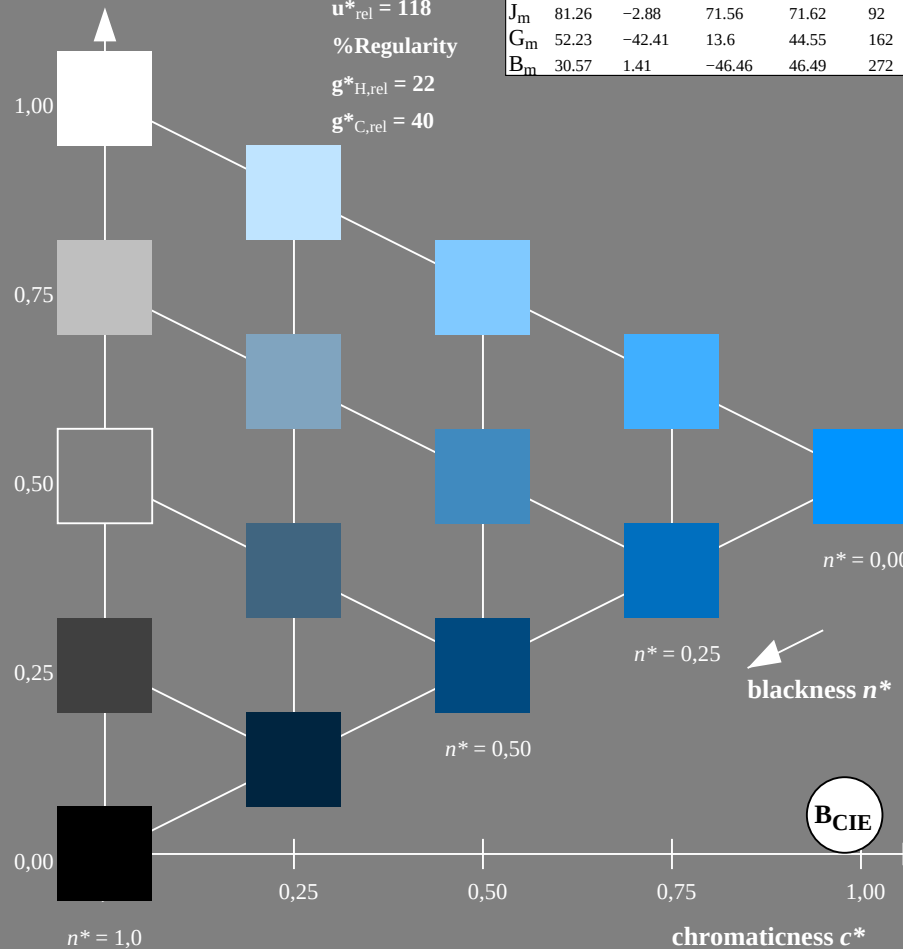
%Regularity

$g^*_{H,rel} = 22$

$g^*_{C,rel} = 40$

#### TLS18; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| $Y_m$ | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| $L_m$ | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| $C_m$ | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| $V_m$ | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| $M_m$ | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| $N_m$ | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$ | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_m$ | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| $J_m$ | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| $G_m$ | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| $B_m$ | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



NE260-7, 5 step scales for constant CIELAB hue 272/360 = 0.755 (left)

### Output: Colorimetric Offset Reflective System ORS18

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

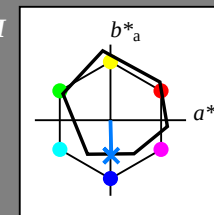
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue B

LCH\*Ma: 42 45 271

olv\*Ma: 0.0 0.49 1.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

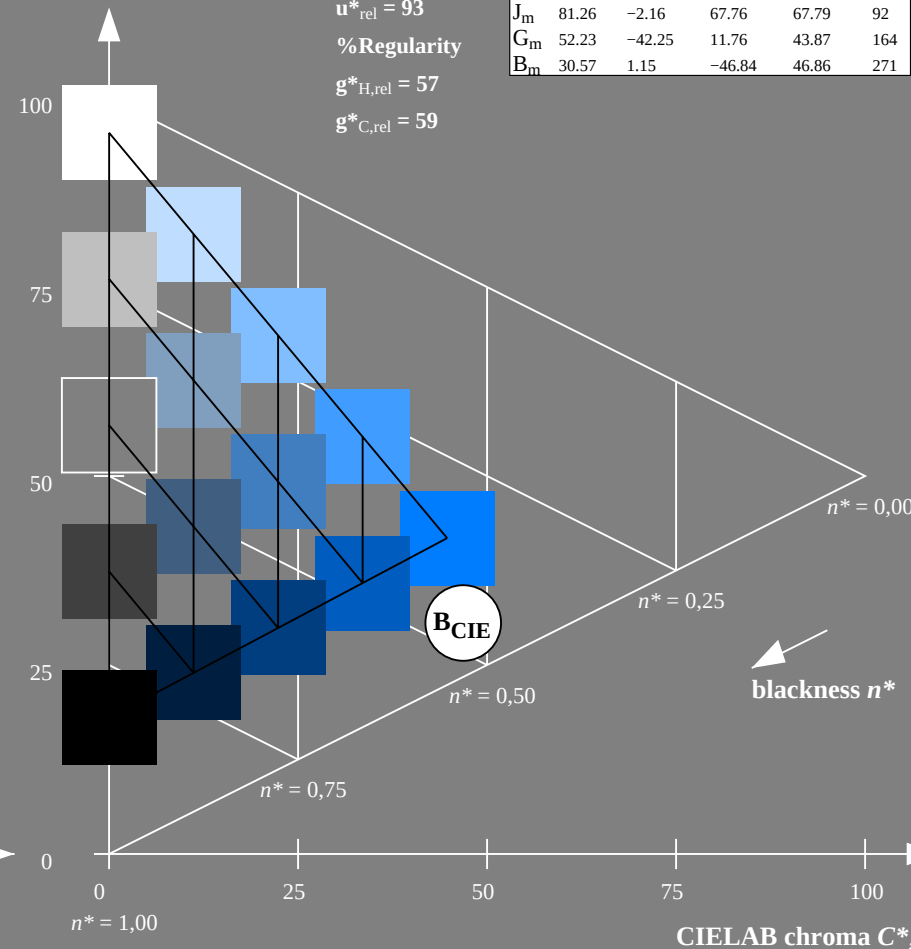
%Regularity

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

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

#### ORS18; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| $Y_m$ | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| $L_m$ | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| $C_m$ | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| $V_m$ | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| $M_m$ | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| $N_m$ | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| $W_m$ | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| $R_m$ | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| $J_m$ | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| $G_m$ | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| $B_m$ | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



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

BAM-test chart NE26; Colorimetric systems TLS18 & ORS18

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

input: olv\* setrgbcolor

output: no change compared to input