

### Input: Colorimetric Offset Reflective System ORS18

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

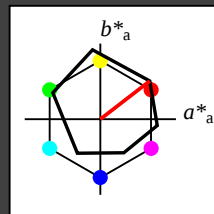
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue O

LCH\*Ma: 48 83 38

olv\*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

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 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          |

### Output: Colorimetric Offset Reflective System ORS18

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

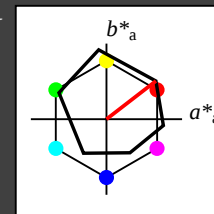
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

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          |
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| $V_m$     | 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  $t^*$

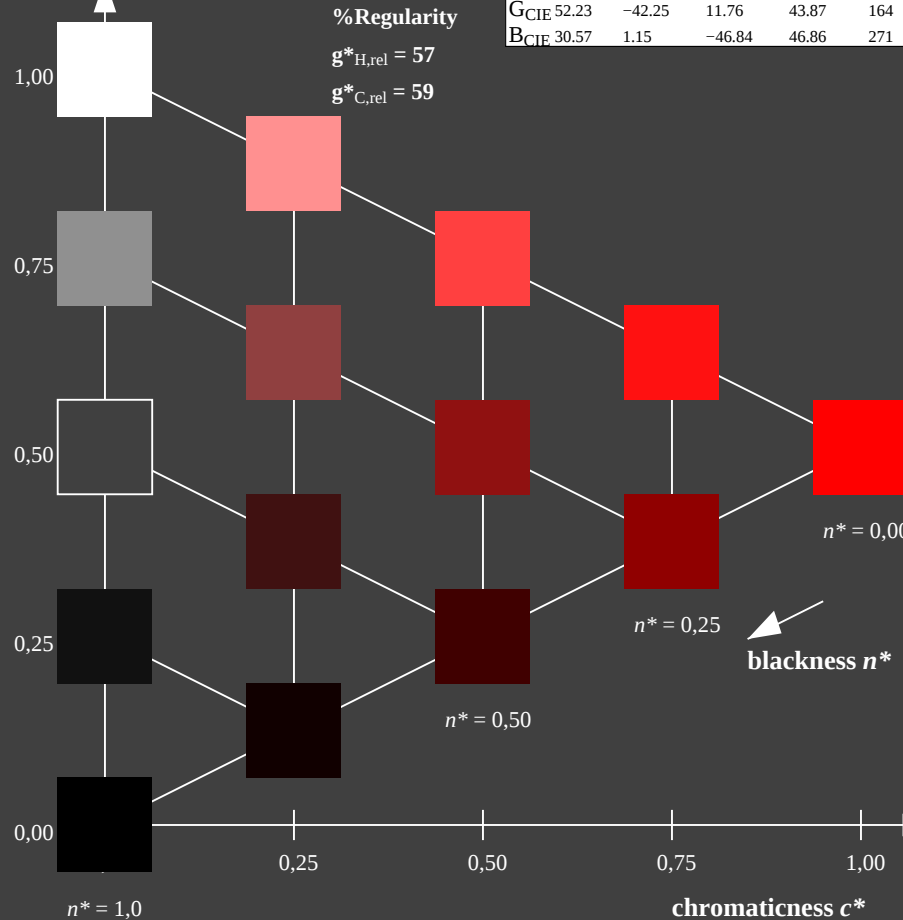
%Gamut

$u^*_{rel} = 93$

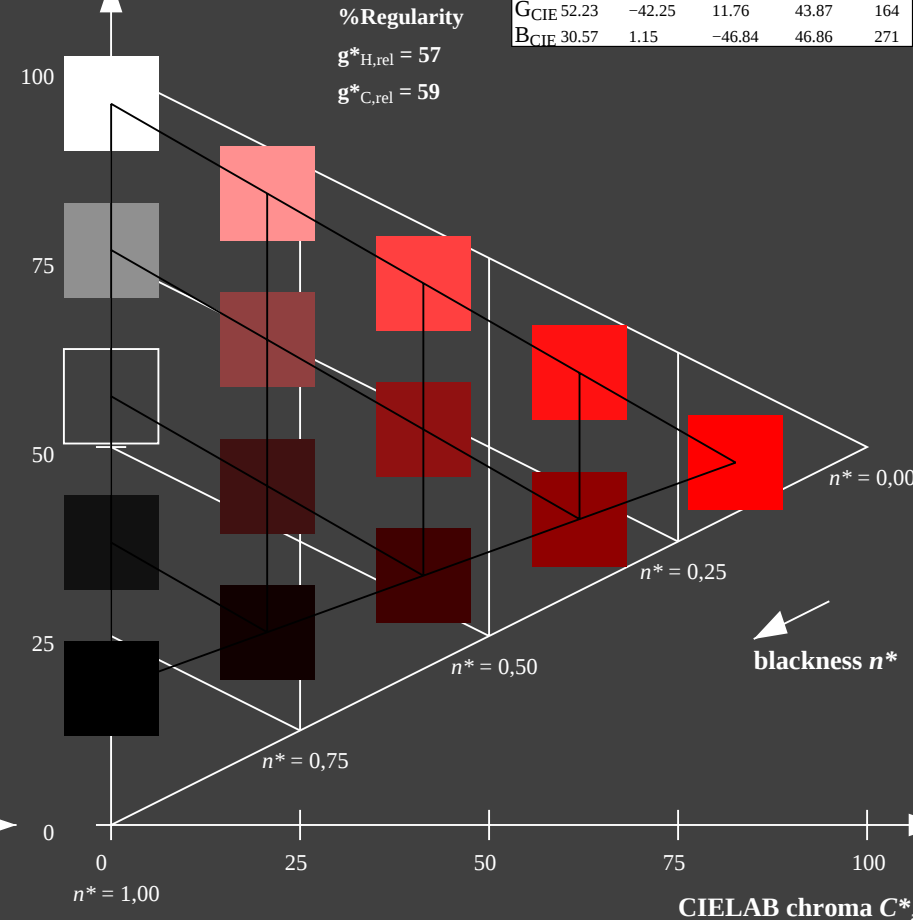
%Regularity

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

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



NE240-7, 5 step scales for constant CIELAB hue 38/360 = 0.105 (left)



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

BAM-test chart NE24; Colorimetric systems ORS18 & ORS18

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

input:  $olv \cdot setrgbcolor$

output:  $olv \cdot setrgbcolor / w \cdot setgray$

### Input: Colorimetric Offset Reflective System ORS18

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

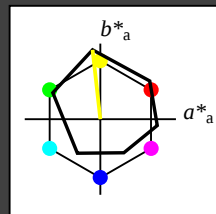
$lab^*tch$  and  $lab^*nch$

D65: hue Y

LCH\*Ma: 90 92 96

olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

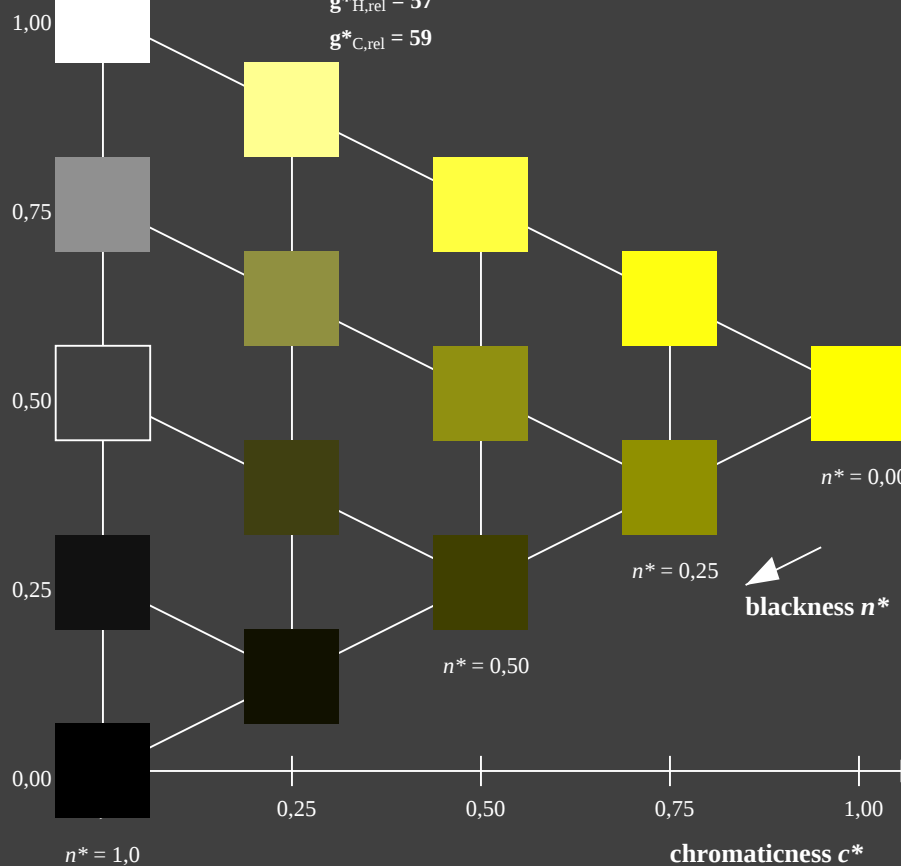
%Regularity

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

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

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

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
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| $L_m$     | 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          |



NE240-7, 5 step scales for constant CIELAB hue 96/360 = 0.268 (left)

### Output: Colorimetric Offset Reflective System ORS18

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

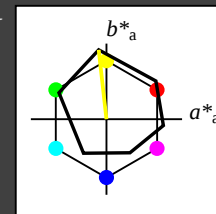
$LAB^*LCH$ ,  $LAB^*NCH$

D65: hue Y

LCH\*Ma: 90 92 96

olv\*Ma: 1.0 1.0 0.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

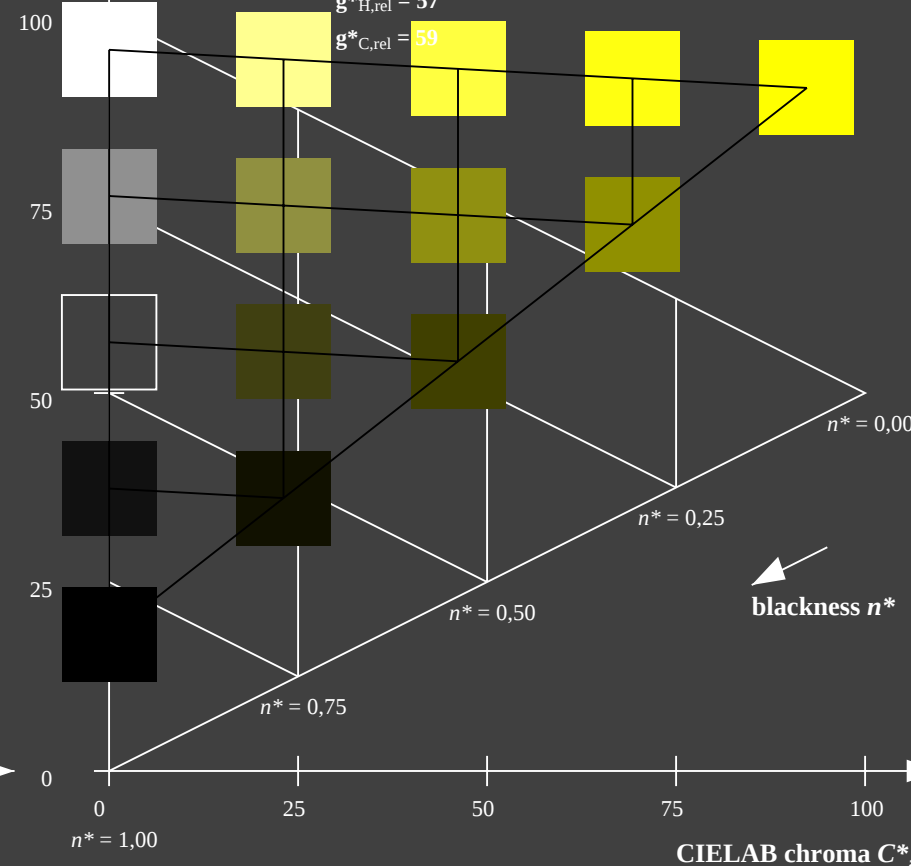
%Regularity

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

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

#### 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 NE24; Colorimetric systems ORS18 & ORS18

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

input:  $olv^*setrgbcolor$

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

### Input: Colorimetric Offset Reflective System ORS18

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

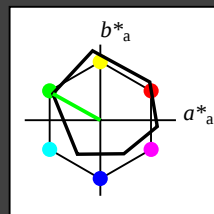
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue L

LCH\*Ma: 51 72 151

olv\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

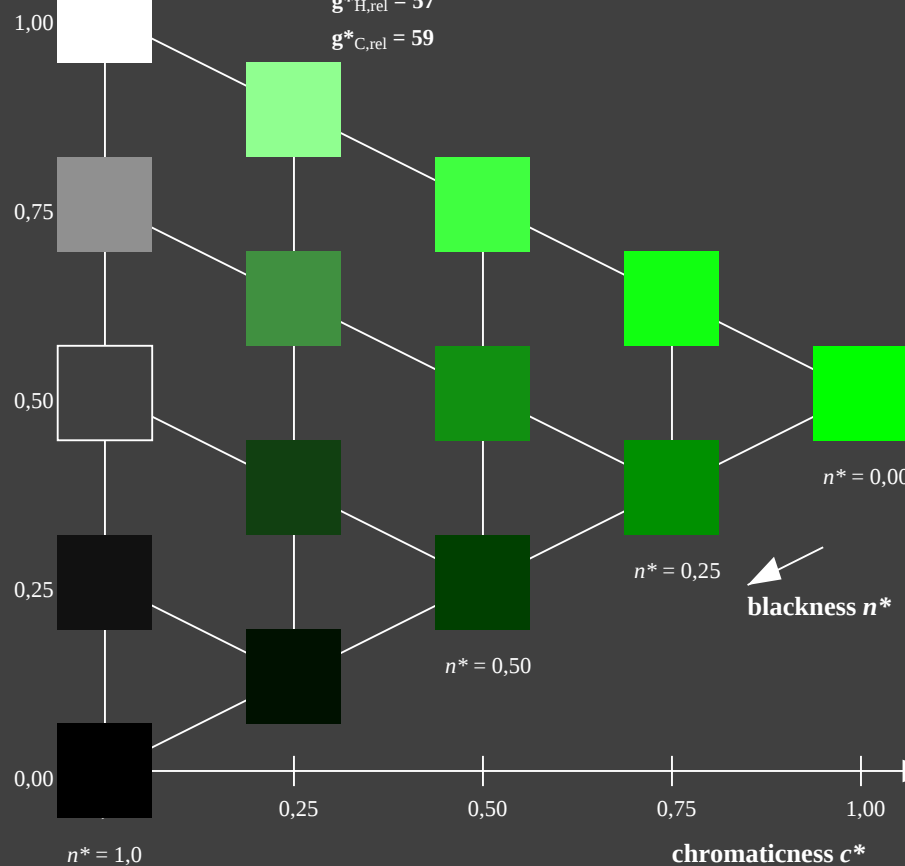
%Regularity

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

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

### ORS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 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          |



NE240-7, 5 step scales for constant CIELAB hue 151/360 = 0.419 (left)

### Output: Colorimetric Offset Reflective System ORS18

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

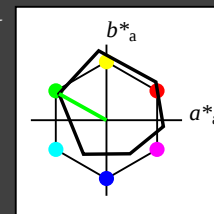
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue L

LCH\*Ma: 51 72 151

olv\*Ma: 0.0 1.0 0.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

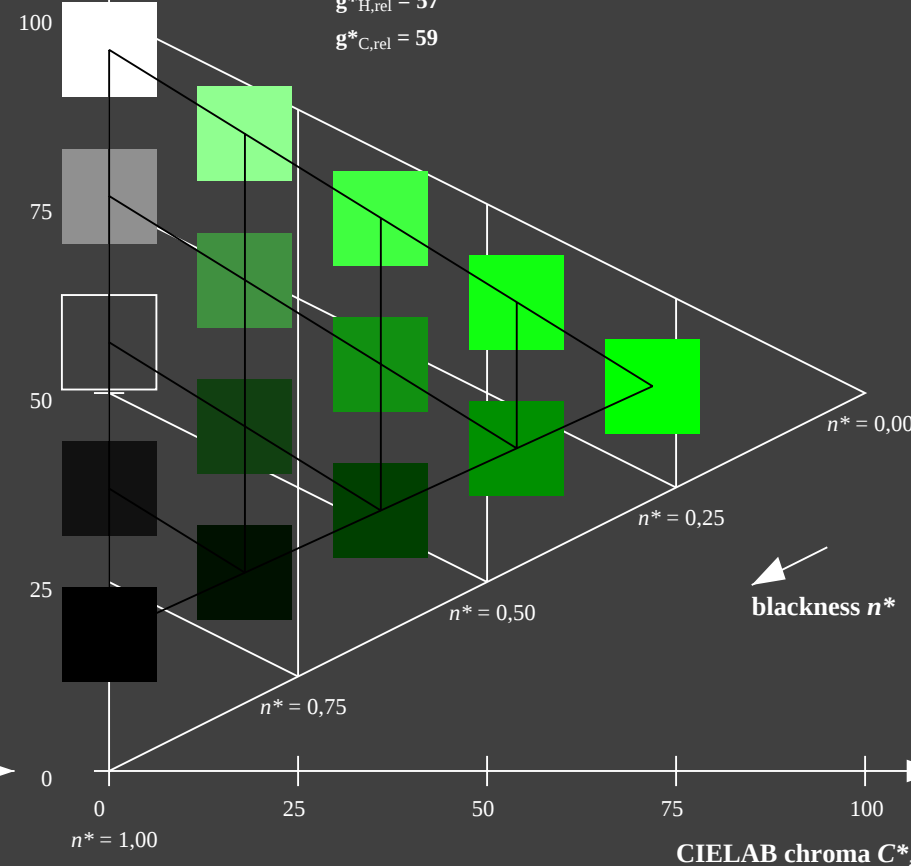
%Regularity

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

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

### 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          |



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

BAM-test chart NE24; Colorimetric systems ORS18 & ORS18

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

input:  $olv \cdot setrgbcolor$

output:  $olv \cdot setrgbcolor / w \cdot setgray$

### Input: Colorimetric Offset Reflective System ORS18

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

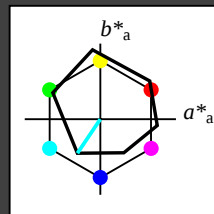
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue C

LCH\*Ma: 59 54 236

olv\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

### ORS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 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          |
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| $M_m$     | 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          |

### Output: Colorimetric Offset Reflective System ORS18

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

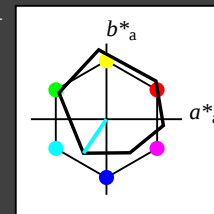
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue C

LCH\*Ma: 59 54 236

olv\*Ma: 0.0 1.0 1.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

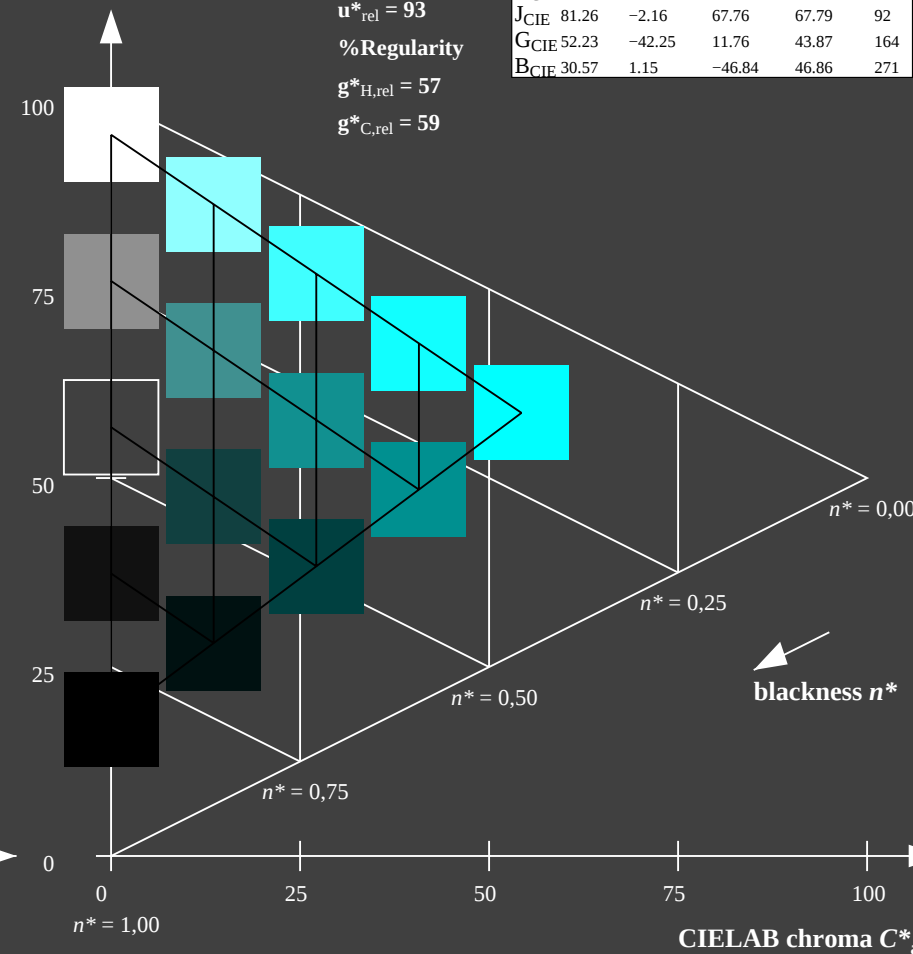
%Regularity

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

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

### 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          |
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| $N_m$     | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
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| $R_{CIE}$ | 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          |



NE240-7, 5 step scales for constant CIELAB hue 236/360 = 0.656 (left)

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

BAM-test chart NE24; Colorimetric systems ORS18 & ORS18

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

input:  $olv^* \cdot setrgbcolor$

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

### Input: Colorimetric Offset Reflective System ORS18

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

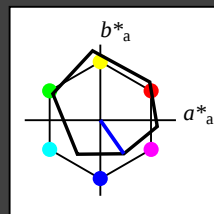
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue V

LCH\*Ma: 26 54 305

olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

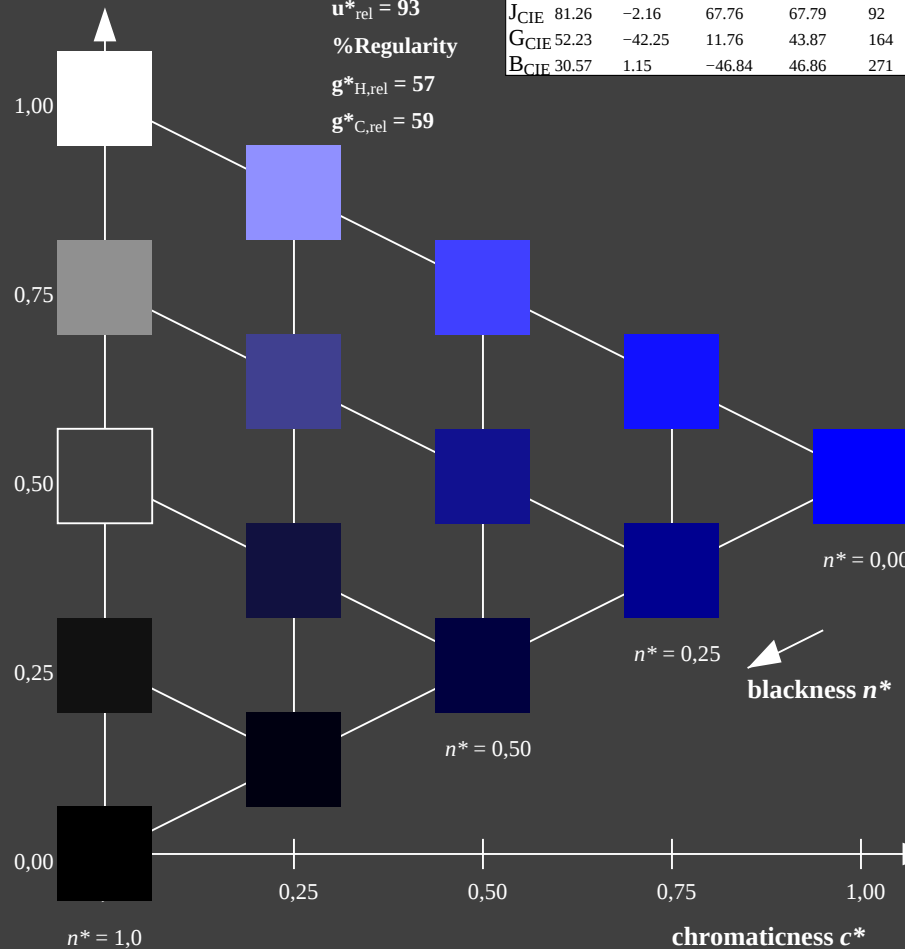
%Regularity

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

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

### ORS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
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| $O_m$     | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
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| $C_m$     | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
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| $M_m$     | 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           |
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| $G_{CIE}$ | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| $B_{CIE}$ | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



NE240-7, 5 step scales for constant CIELAB hue 305/360 = 0.847 (left)

### Output: Colorimetric Offset Reflective System ORS18

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

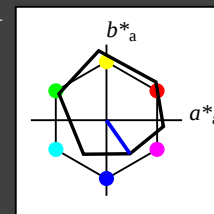
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue V

LCH\*Ma: 26 54 305

olv\*Ma: 0.0 0.0 1.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

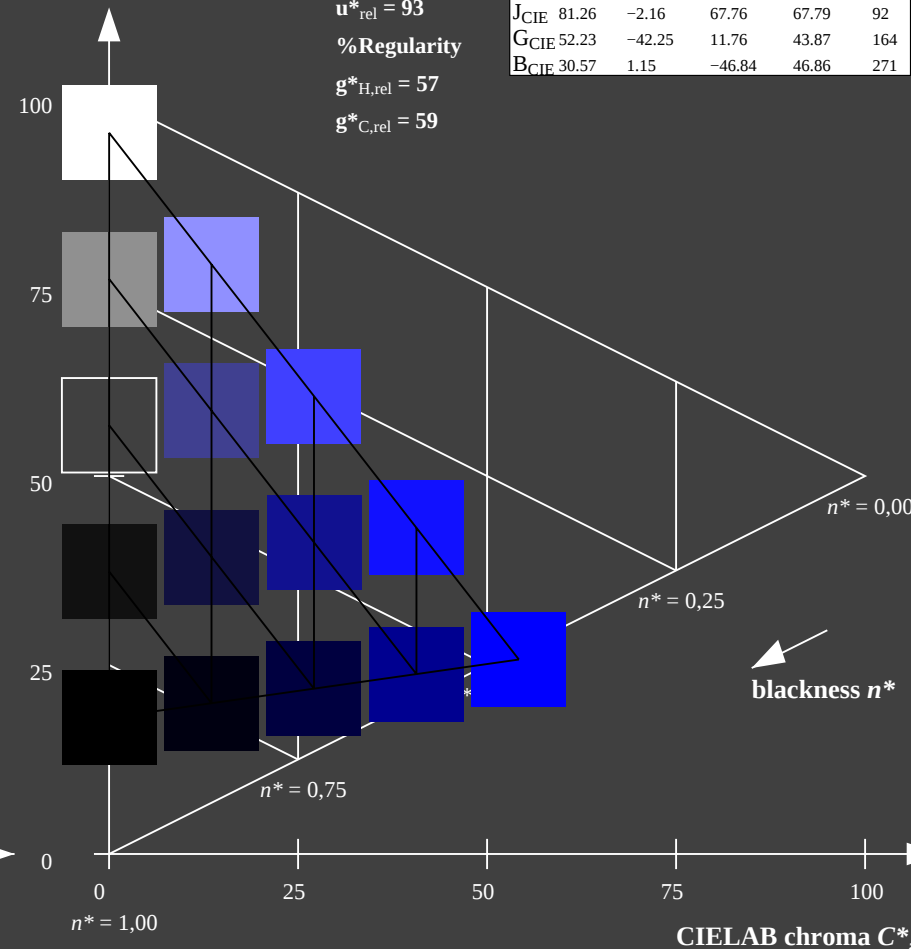
%Regularity

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

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

### ORS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
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| $L_m$     | 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 NE24; Colorimetric systems ORS18 & ORS18

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

input:  $olv \cdot setrgbcolor$

output:  $olv \cdot setrgbcolor / w \cdot setgray$

### Input: Colorimetric Offset Reflective System ORS18

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

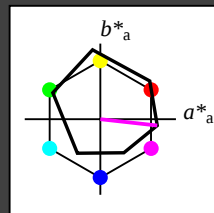
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue M

LCH\*Ma: 48 76 354

olv\*Ma: 1.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

### ORS18; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 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          |

### Output: Colorimetric Offset Reflective System ORS18

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

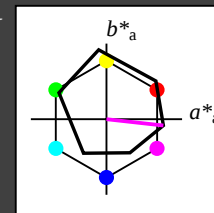
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue M

LCH\*Ma: 48 76 354

olv\*Ma: 1.0 0.0 1.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

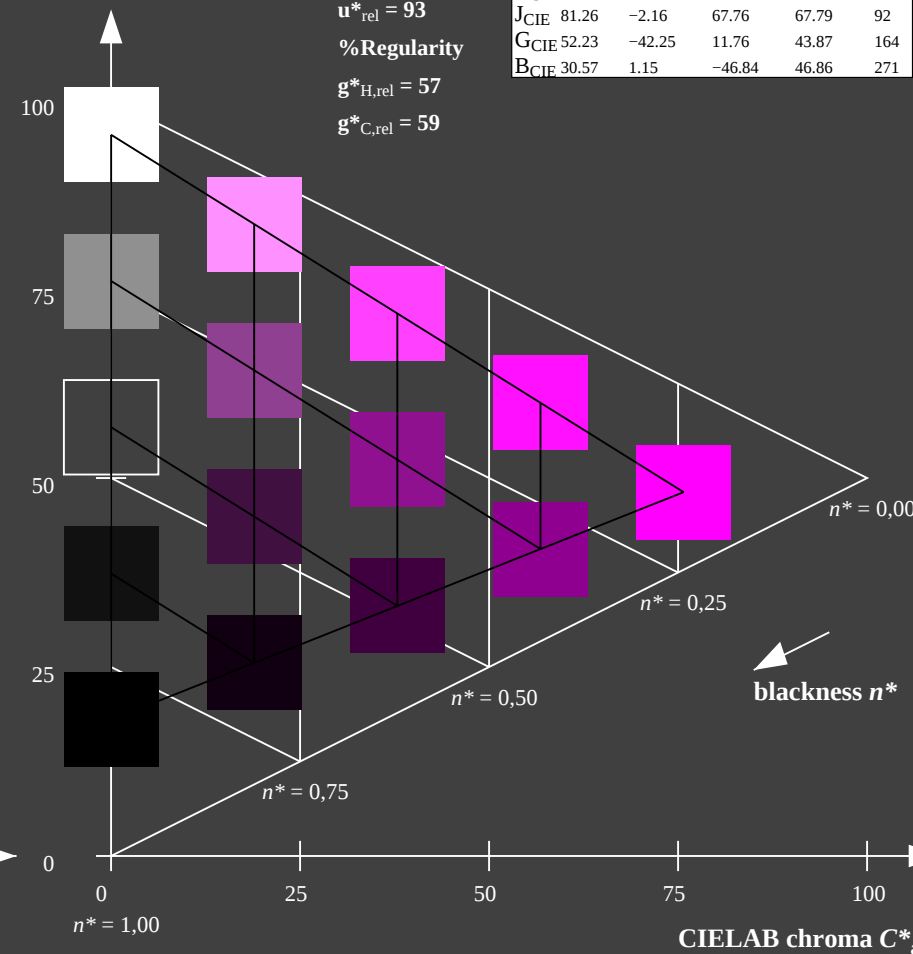
%Regularity

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

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

### 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          |



NE240-7, 5 step scales for constant CIELAB hue 354/360 = 0.982 (left)

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

BAM-test chart NE24; Colorimetric systems ORS18 & ORS18

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

input:  $olv \cdot setrgbcolor$

output:  $olv \cdot setrgbcolor / w \cdot setgray$

### Input: Colorimetric Offset Reflective System ORS18

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

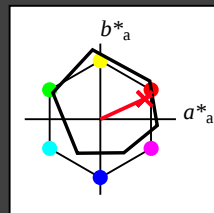
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue R

LCH\*Ma: 48 75 25

olv\*Ma: 1.0 0.0 0.32

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

### ORS18; adapted (a) CIELAB data

|       | $L^* = L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|---------------|---------|---------|--------------|--------------|
| $O_m$ | 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          |

### Output: Colorimetric Offset Reflective System ORS18

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

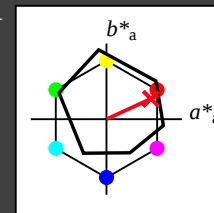
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

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          |

CIELAB lightness  $L^*$

%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

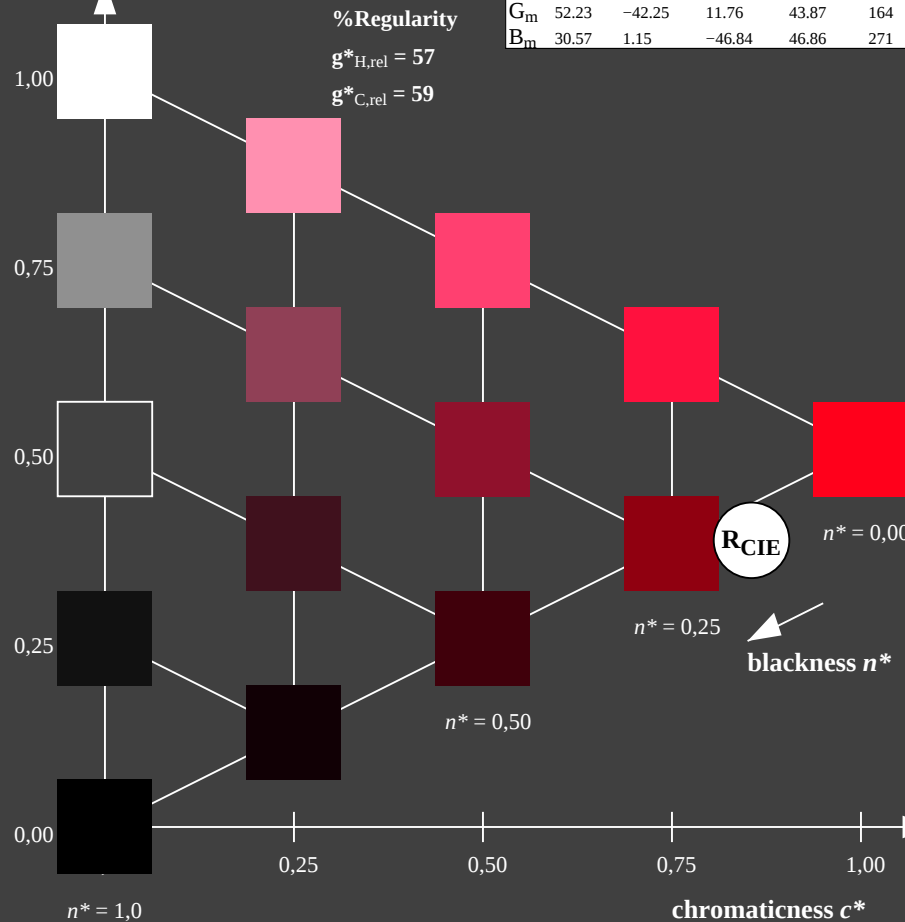
%Gamut

$u^*_{rel} = 93$

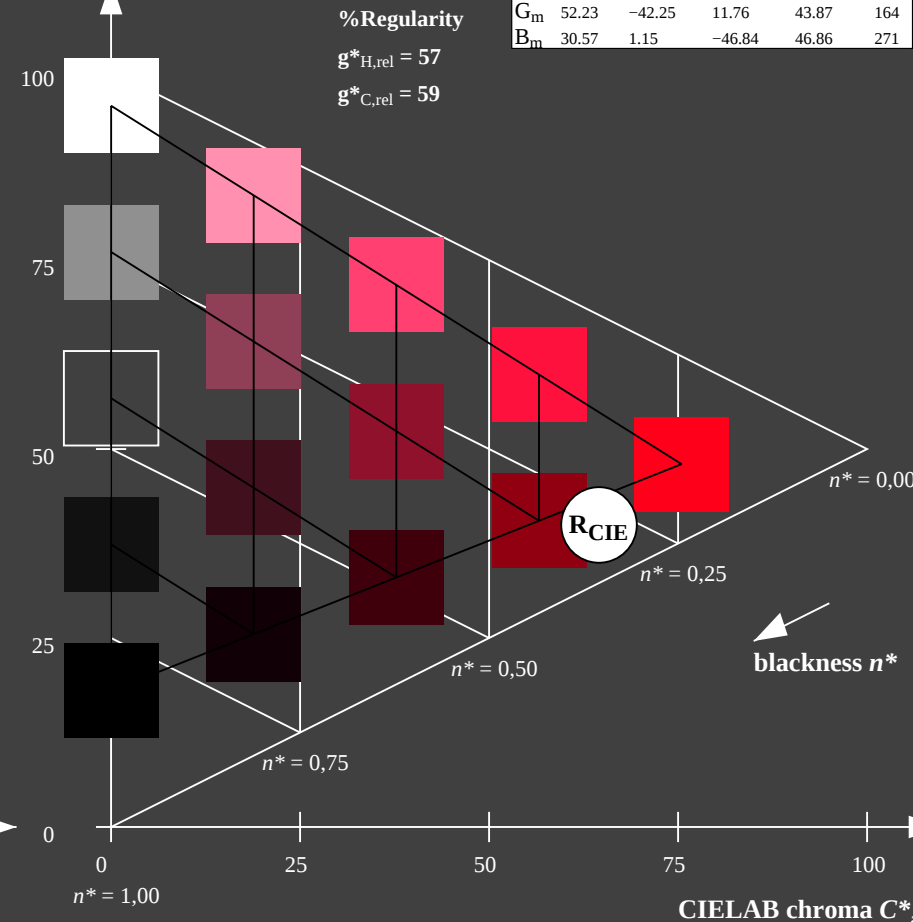
%Regularity

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

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



NE240-7, 5 step scales for constant CIELAB hue 25/360 = 0.069 (left)



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

BAM-test chart NE24; Colorimetric systems ORS18 & ORS18

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

input:  $olv \cdot setrgbcolor$

output:  $olv \cdot setrgbcolor / w \cdot setgray$

### Input: Colorimetric Offset Reflective System ORS18

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

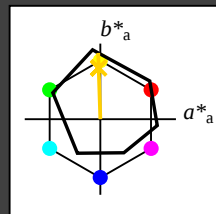
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue J

LCH\*Ma: 86 88 92

olv\*Ma: 1.0 0.9 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

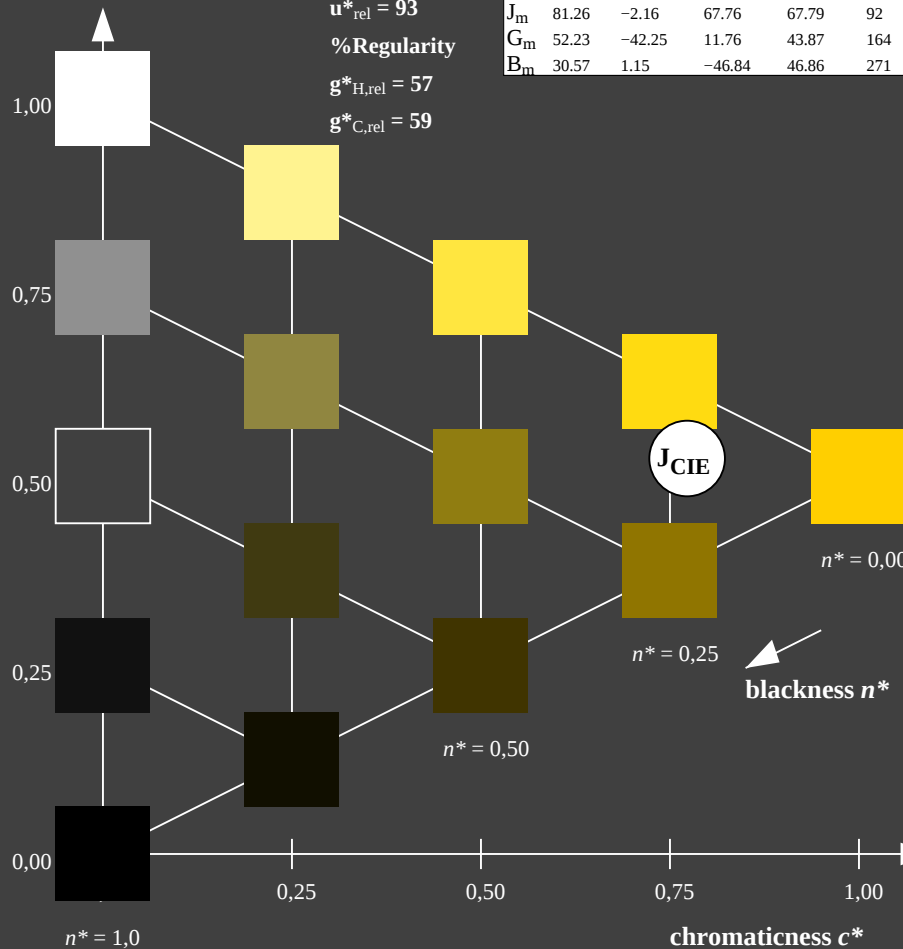
%Regularity

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

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

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

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 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          |



NE240-7, 5 step scales for constant CIELAB hue 92/360 = 0.255 (left)

### Output: Colorimetric Offset Reflective System ORS18

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

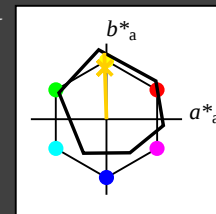
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue J

LCH\*Ma: 86 88 92

olv\*Ma: 1.0 0.9 0.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

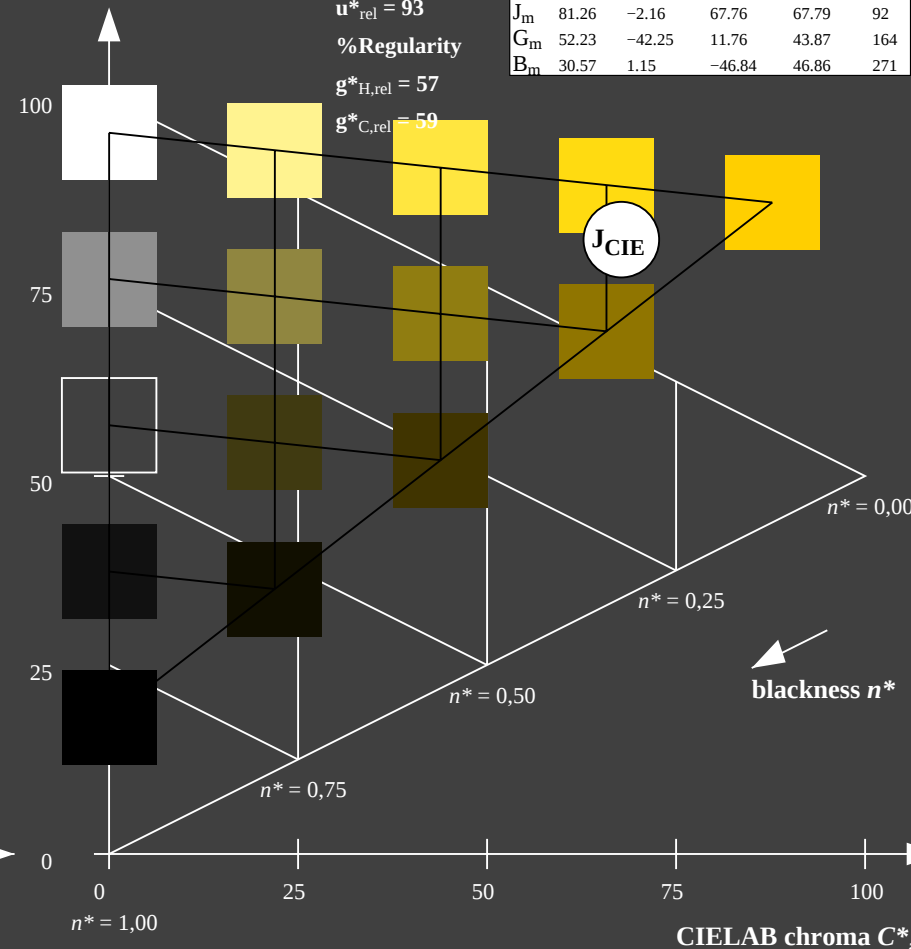
%Regularity

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

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

#### 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          |



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

BAM-test chart NE24; Colorimetric systems ORS18 & ORS18

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

input:  $olv \cdot setrgbcolor$

output:  $olv \cdot setrgbcolor / w \cdot setgray$

### Input: Colorimetric Offset Reflective System ORS18

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

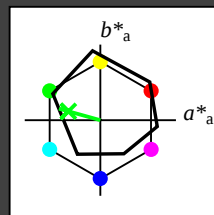
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue G

LCH\*Ma: 53 57 164

olv\*Ma: 0.0 1.0 0.25

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

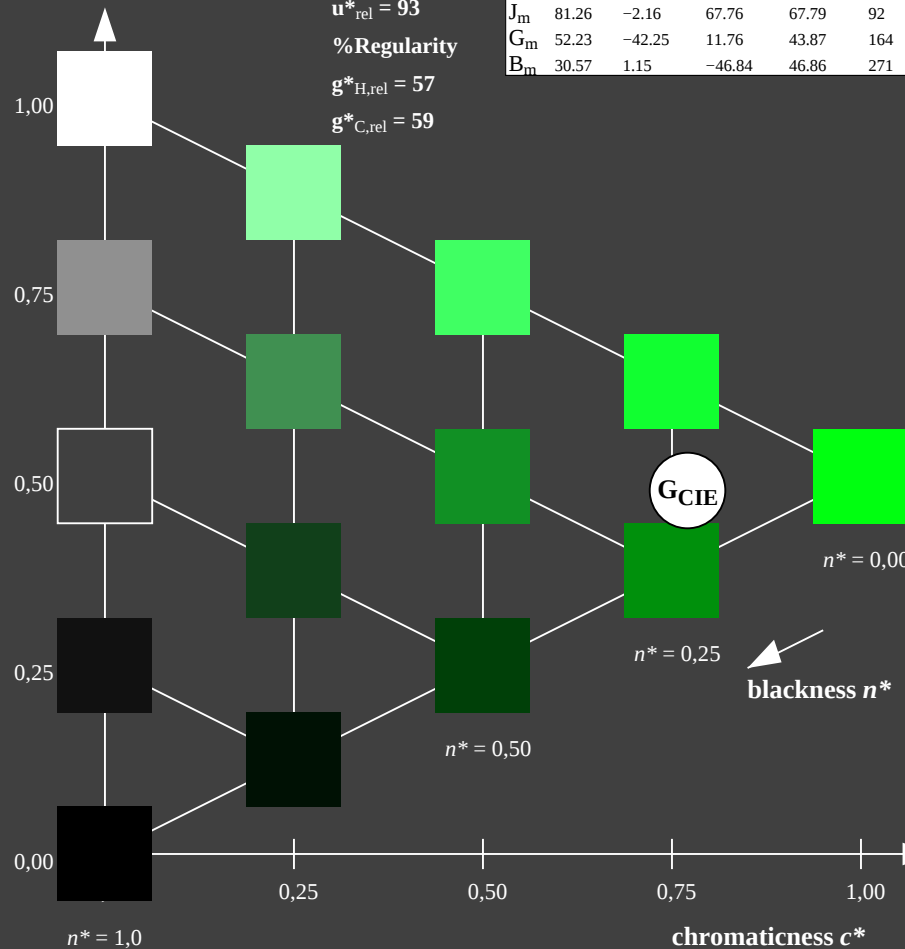
%Regularity

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

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

### ORS18; adapted (a) CIELAB data

|                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|----------------|-------------|---------|---------|--------------|--------------|
| O <sub>m</sub> | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| Y <sub>m</sub> | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| L <sub>m</sub> | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| C <sub>m</sub> | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| V <sub>m</sub> | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| M <sub>m</sub> | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| N <sub>m</sub> | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>m</sub> | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>m</sub> | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| J <sub>m</sub> | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| G <sub>m</sub> | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| B <sub>m</sub> | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



NE240-7, 5 step scales for constant CIELAB hue 164/360 = 0.457 (left)

### Output: Colorimetric Offset Reflective System ORS18

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

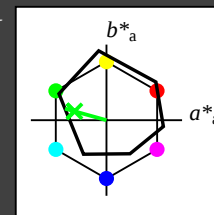
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue G

LCH\*Ma: 53 57 164

olv\*Ma: 0.0 1.0 0.25

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 93$

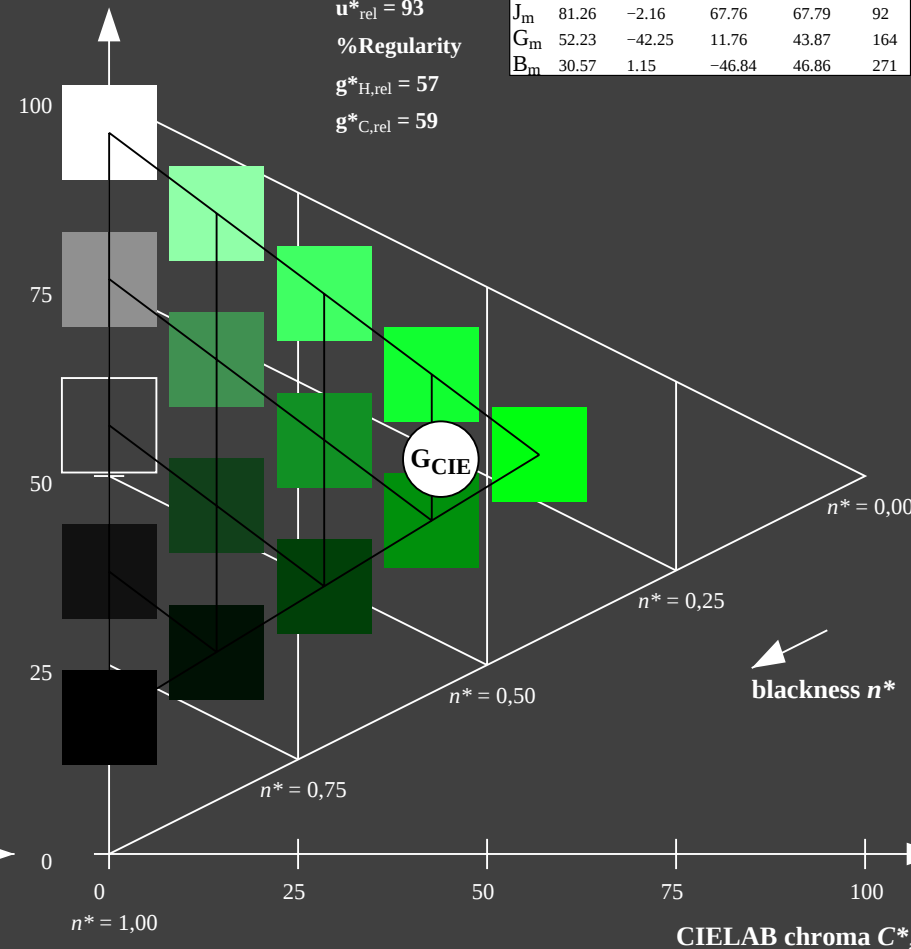
%Regularity

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

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

### ORS18; adapted (a) CIELAB data

|                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|----------------|-------------|---------|---------|--------------|--------------|
| O <sub>m</sub> | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| Y <sub>m</sub> | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| L <sub>m</sub> | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| C <sub>m</sub> | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| V <sub>m</sub> | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| M <sub>m</sub> | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| N <sub>m</sub> | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>m</sub> | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>m</sub> | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| J <sub>m</sub> | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| G <sub>m</sub> | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| B <sub>m</sub> | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



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

BAM-test chart NE24; Colorimetric systems ORS18 & ORS18

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

input:  $olv \cdot setrgbcolor$

output:  $olv \cdot setrgbcolor / w \cdot setgray$

### Input: Colorimetric Offset Reflective System ORS18

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

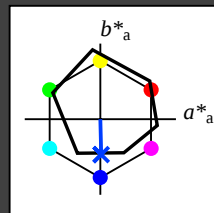
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue B

LCH\*Ma: 42 45 271

olv\*Ma: 0.0 0.49 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

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

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 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          |

### Output: Colorimetric Offset Reflective System ORS18

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

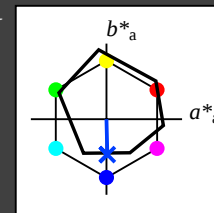
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

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          |

blackness  $n^*$

$n^* = B_{CIE}$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

blackness  $n^*$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 0,75$

$n^* = 1,00$

CIELAB chroma  $C^*_{ab}$

NE240-7, 5 step scales for constant CIELAB hue 271/360 = 0.754 (left)

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

BAM-test chart NE24; Colorimetric systems ORS18 & ORS18

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

input:  $olv^* \cdot setrgbcolor$

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