

Input: Colorimetric Offset Reflective System ORS18

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

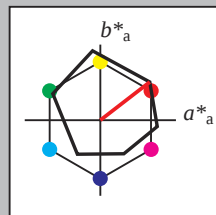
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue O

LCH\*Ma: 48 83 38

olv\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

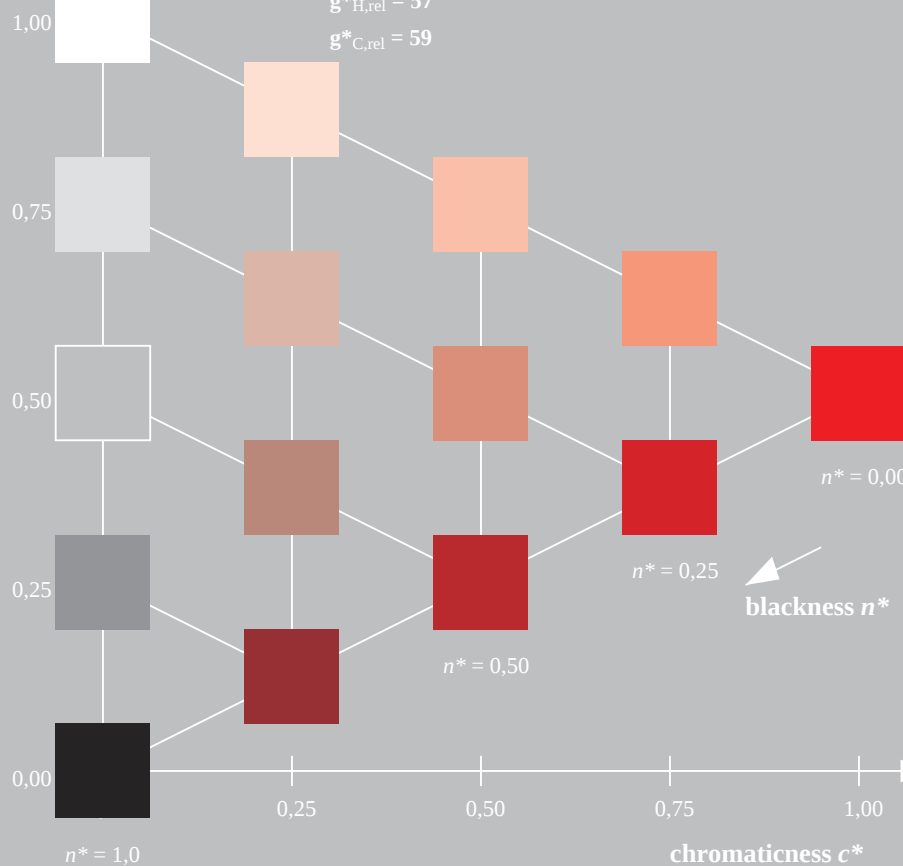
% Regularity

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

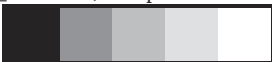
$g^*_{C,rel} = 59$

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          |



SE200-7, 5 step scales for constant CIELAB hue 38/360 = 0.105 (left)



BAM-test chart SE20; Colorimetric systems ORS18 & TLS00

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

Output: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab \cdot h = 40/360 = 0.111$

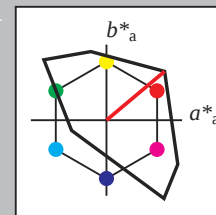
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue O

LCH\*Ma: 51 100 40

olv\*Ma: 1.0 0.0 0.0

CIELAB lightness  $L^*$



% Gamut

$u^*_{rel} = 158$

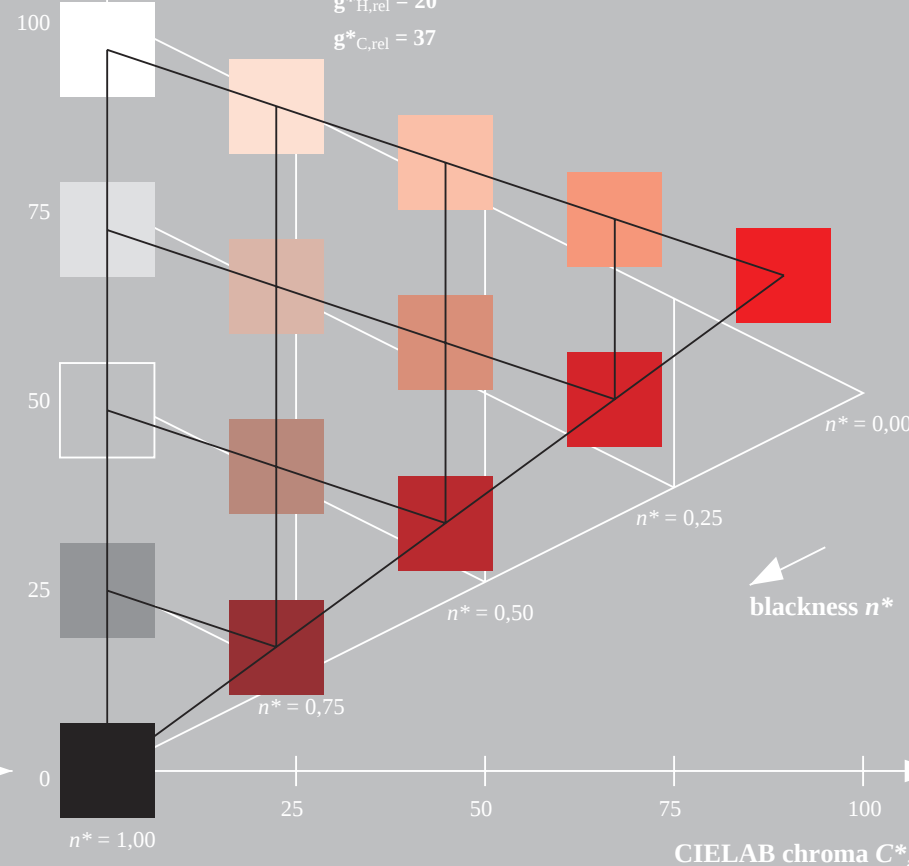
% Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

TLS00; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| $Y_m$     | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| $L_m$     | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| $C_m$     | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| $V_m$     | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| $M_m$     | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| $N_m$     | 0.01        | 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          |



5 step scales for constant CIELAB hue 40/360 = 0.111 (right)

input:  $cmY0^* \text{ set } cmykcolor$

output:  $cmY0^* / 000n^* \text{ set } cmykcolor$



Input: Colorimetric Offset Reflective System ORS18

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

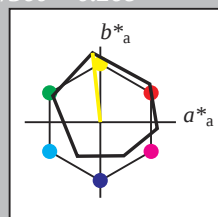
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue Y

LCH\*Ma: 90 92 96

olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

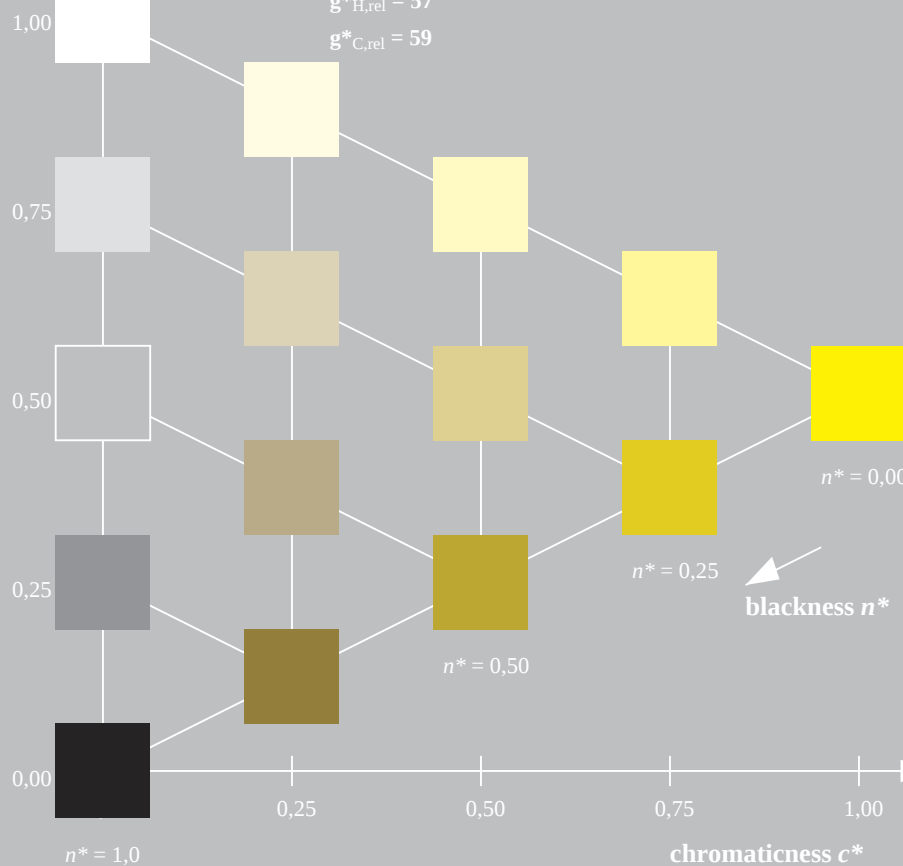
% Regularity

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

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

ORS18; adapted (a) CIELAB data

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



SE200-7, 5 step scales for constant CIELAB hue 96/360 = 0.268 (left)

Output: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab \cdot h = 103/360 = 0.286$

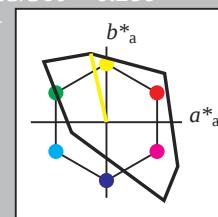
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue Y

LCH\*Ma: 93 93 103

olv\*Ma: 1.0 1.0 0.0

CIELAB lightness  $L^*$



% Gamut

$u^*_{rel} = 158$

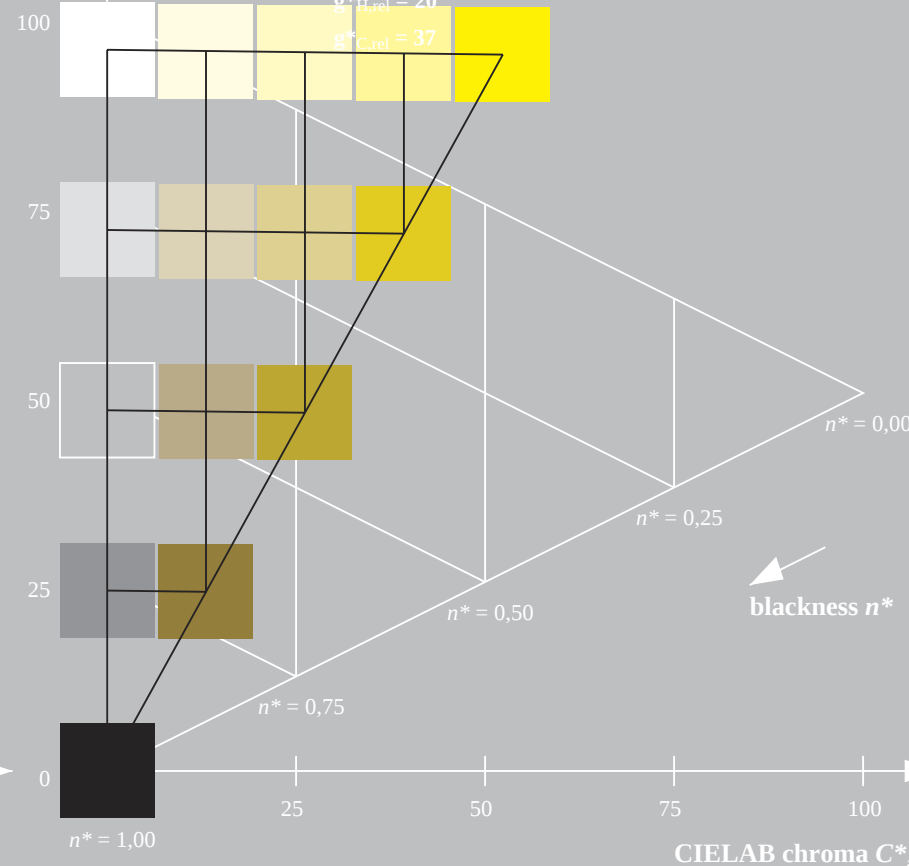
% Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

TLS00; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| $Y_m$     | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| $L_m$     | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| $C_m$     | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| $V_m$     | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| $M_m$     | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| $N_m$     | 0.01        | 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          |



5 step scales for constant CIELAB hue 103/360 = 0.286 (right)

BAM-test chart SE20; Colorimetric systems ORS18 & TLS00

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

input:  $cmY0^* setcmykcolor$

output:  $cmY0^* / 000n^* setcmykcolor$

Input: Colorimetric Offset Reflective System ORS18

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

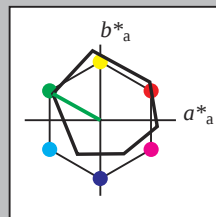
$lab \cdot tch$  and  $lab \cdot nch$

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          |

Output: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab \cdot h = 136/360 = 0.378$

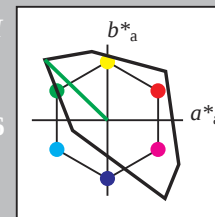
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue L

LCH\*Ma: 84 115 136

olv\*Ma: 0.0 1.0 0.0

CIELAB lightness  $L^*$



% Gamut

$u^*_{rel} = 158$

% Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

TLS00; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| $Y_m$     | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| $L_m$     | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| $C_m$     | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| $V_m$     | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| $M_m$     | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| $N_m$     | 0.01        | 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          |

triangle lightness  $t^*$

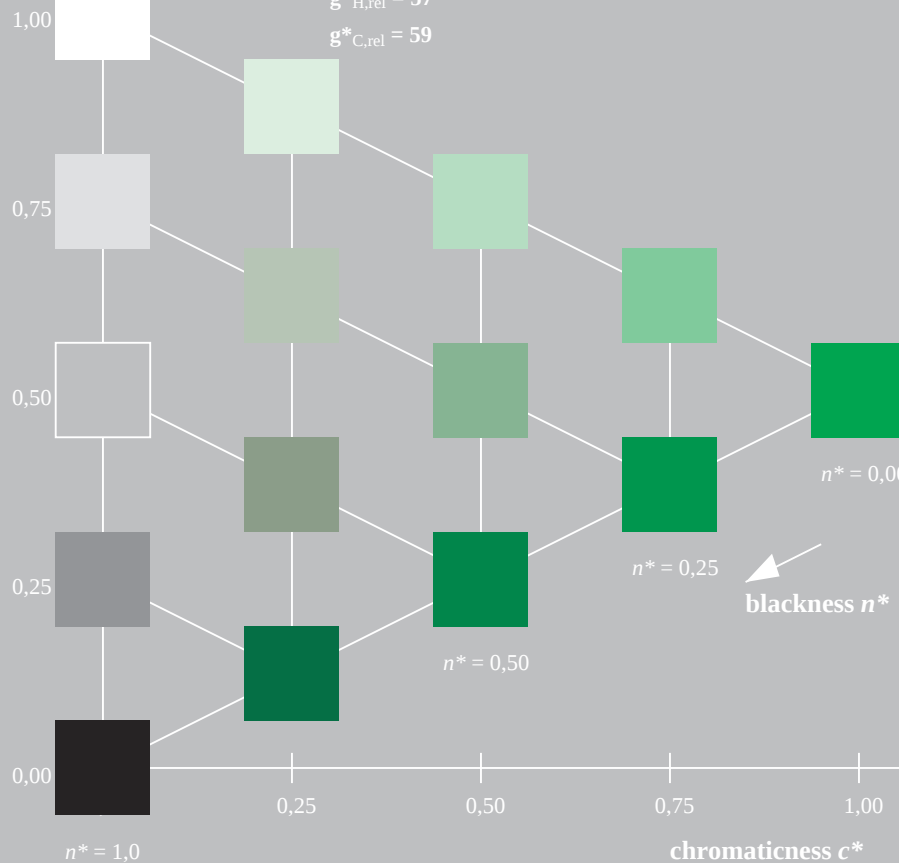
% Gamut

$u^*_{rel} = 158$

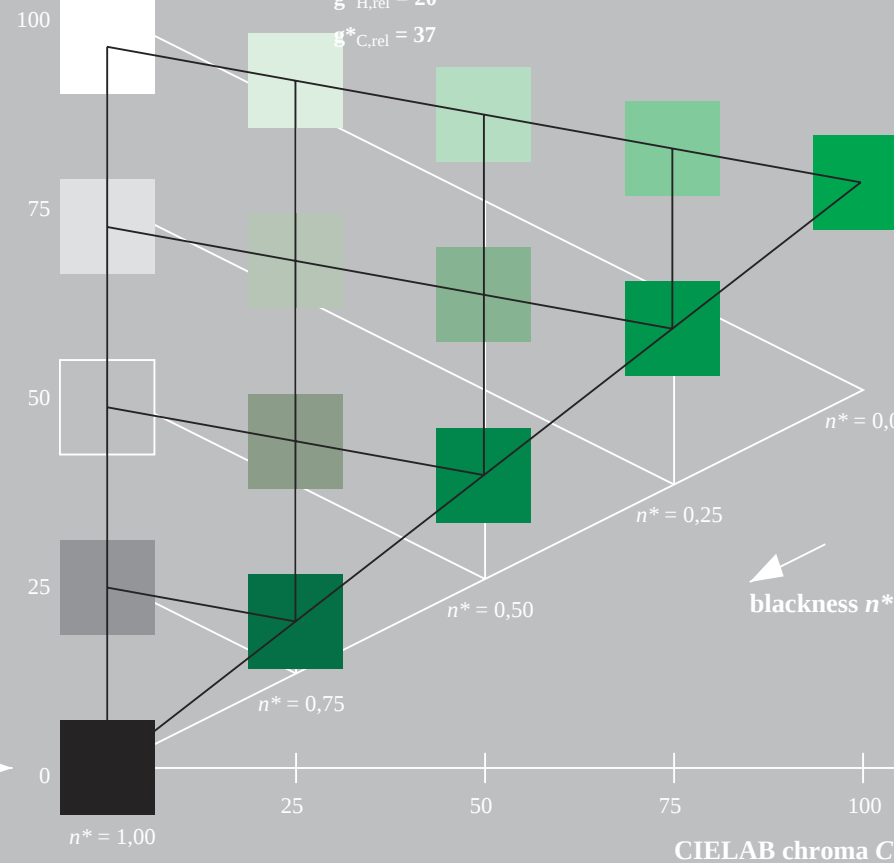
% Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$



SE200-7, 5 step scales for constant CIELAB hue 151/360 = 0.419 (left)



5 step scales for constant CIELAB hue 136/360 = 0.378 (right)

BAM-test chart SE20; Colorimetric systems ORS18 & TLS00

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

input:  $cmY0^* setcmykcolor$

output:  $cmY0^* / 000n^* setcmykcolor$

Input: Colorimetric Offset Reflective System ORS18

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

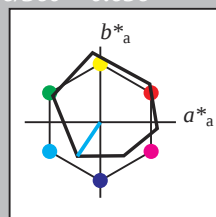
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue C

LCH\*Ma: 59 54 236

olv\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

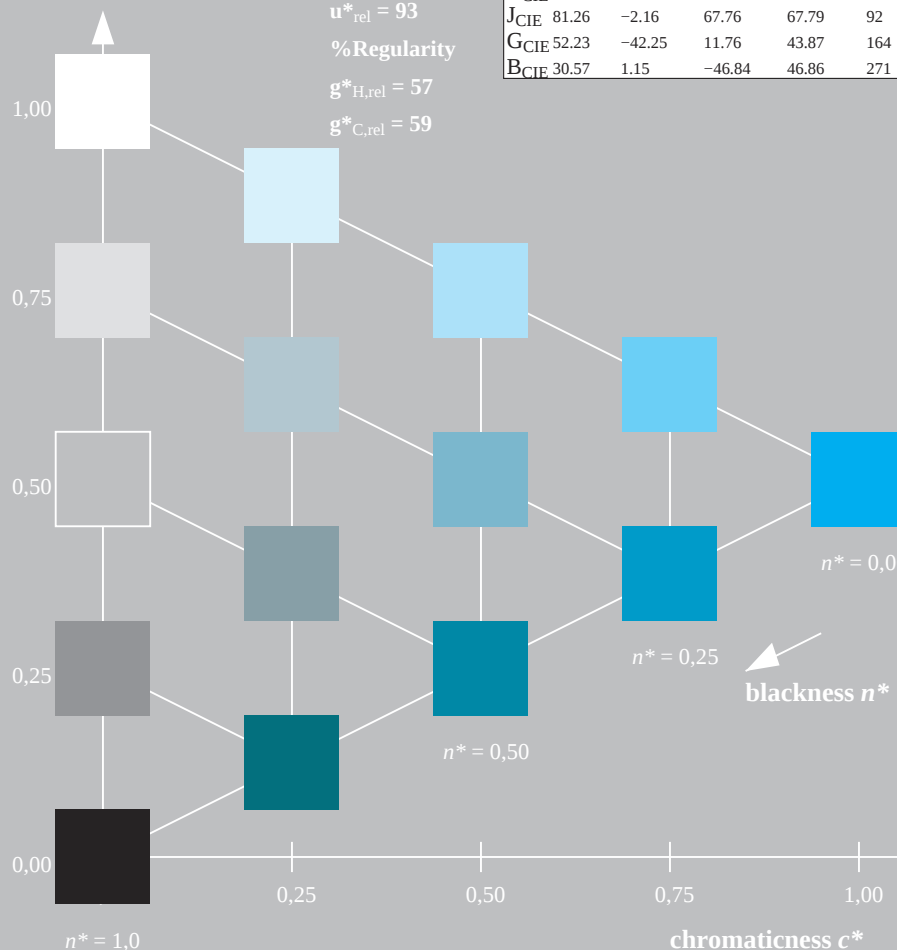
% Regularity

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

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

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          |
| $C_m$     | 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          |



SE200-7, 5 step scales for constant CIELAB hue 236/360 = 0.656 (left)

Output: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab \cdot h = 196/360 = 0.545$

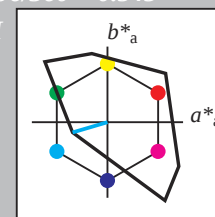
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue C

LCH\*Ma: 87 48 196

olv\*Ma: 0.0 1.0 1.0

CIELAB lightness  $L^*$



% Gamut

$u^*_{rel} = 158$

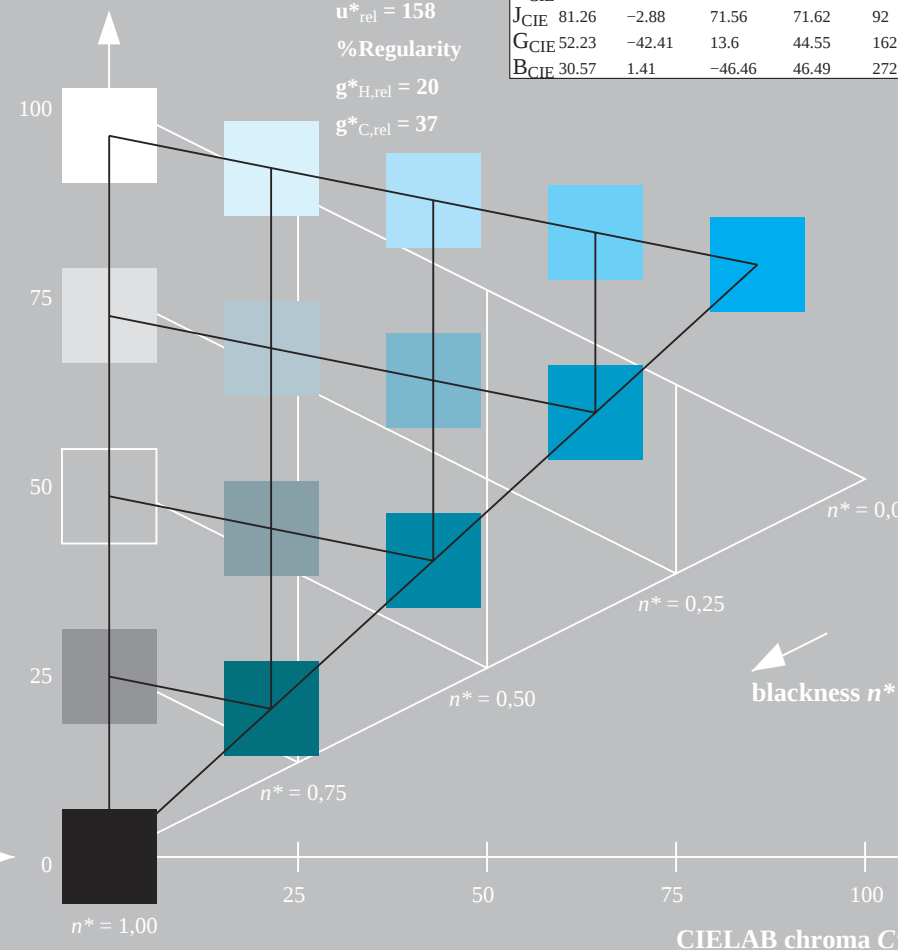
% Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

TLS00; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| $Y_m$     | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| $L_m$     | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| $C_m$     | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| $V_m$     | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| $M_m$     | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| $N_m$     | 0.01        | 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          |



5 step scales for constant CIELAB hue 196/360 = 0.545 (right)

BAM-test chart SE20; Colorimetric systems ORS18 & TLS00

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

input:  $cmY0^* \text{ set } cmYkcolor$

output:  $cmY0^* / 000n^* \text{ set } cmYkcolor$

Input: Colorimetric Offset Reflective System ORS18

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

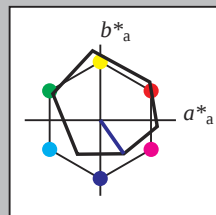
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue V

LCH\*Ma: 26 54 305

olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

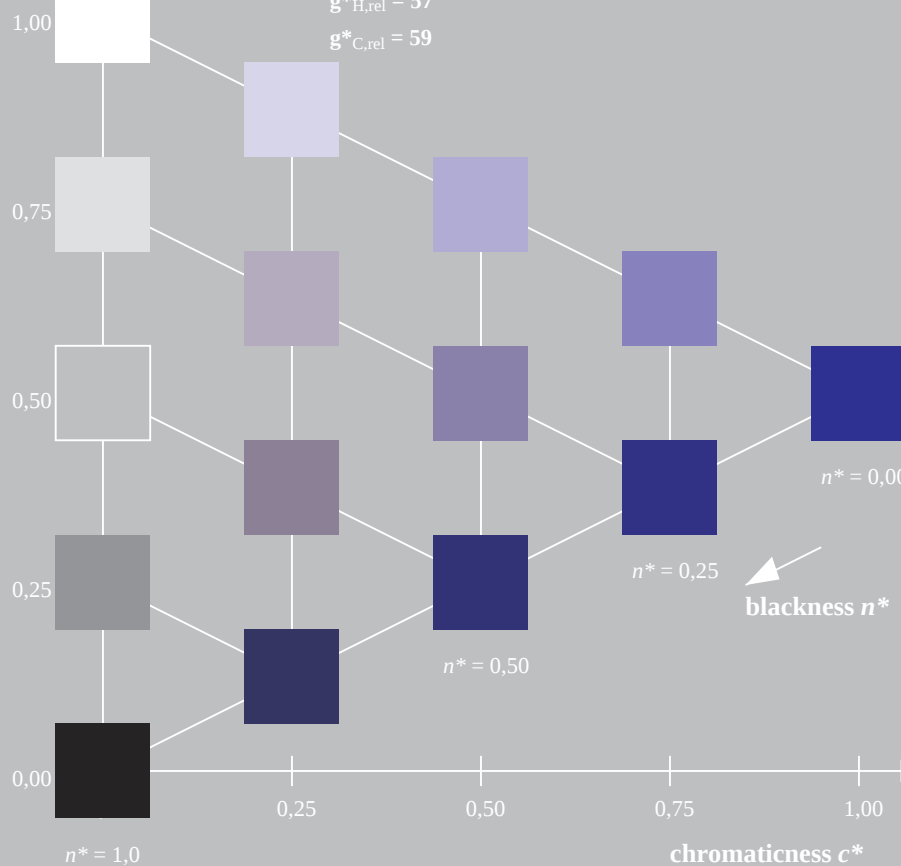
% Regularity

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

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

ORS18; adapted (a) CIELAB data

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



SE200-7, 5 step scales for constant CIELAB hue 305/360 = 0.847 (left)

Output: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab \cdot h = 306/360 = 0.851$

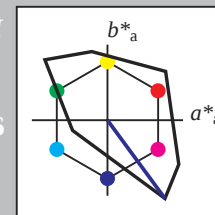
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue V

LCH\*Ma: 30 129 306

olv\*Ma: 0.0 0.0 1.0

CIELAB lightness  $L^*$



% Gamut

$u^*_{rel} = 158$

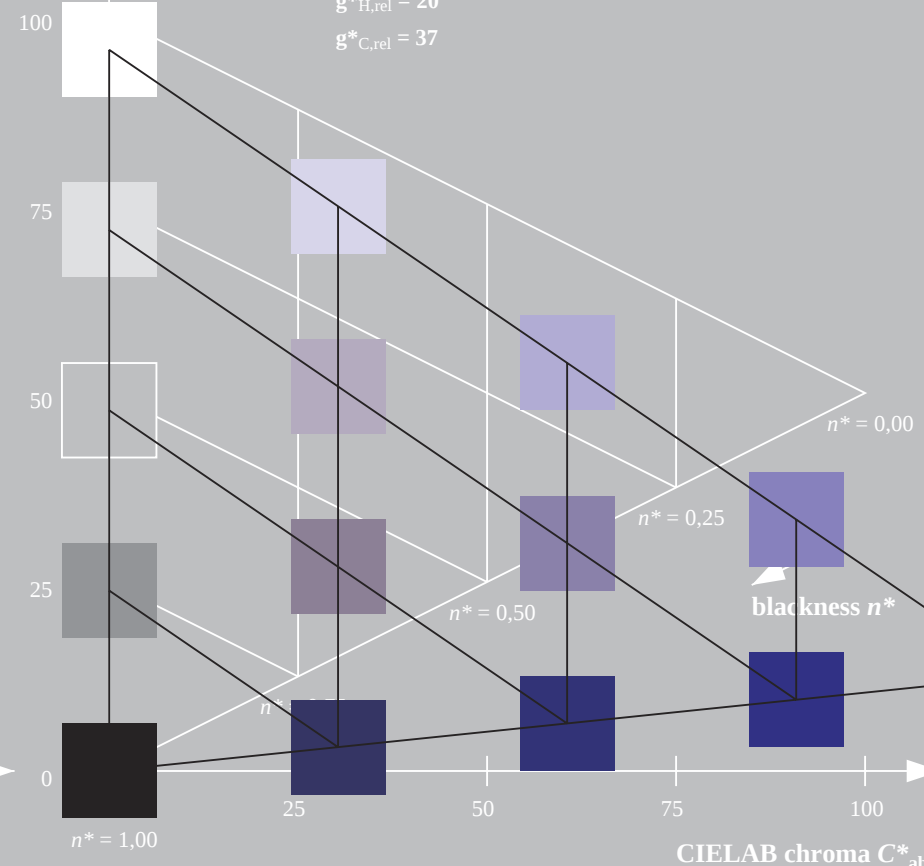
% Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

TLS00; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| $Y_m$     | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| $L_m$     | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| $C_m$     | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| $V_m$     | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| $M_m$     | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| $N_m$     | 0.01        | 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          |



5 step scales for constant CIELAB hue 306/360 = 0.851 (right)

BAM-test chart SE20; Colorimetric systems ORS18 & TLS00

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

input:  $cmy0^* \cdot setcmykcolor$

output:  $cmy0^* / 000n^* \cdot setcmykcolor$

Input: Colorimetric Offset Reflective System ORS18

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

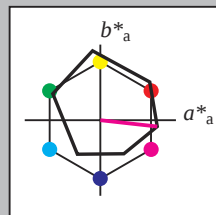
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue M

LCH\*Ma: 48 76 354

olv\*Ma: 1.0 0.0 1.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

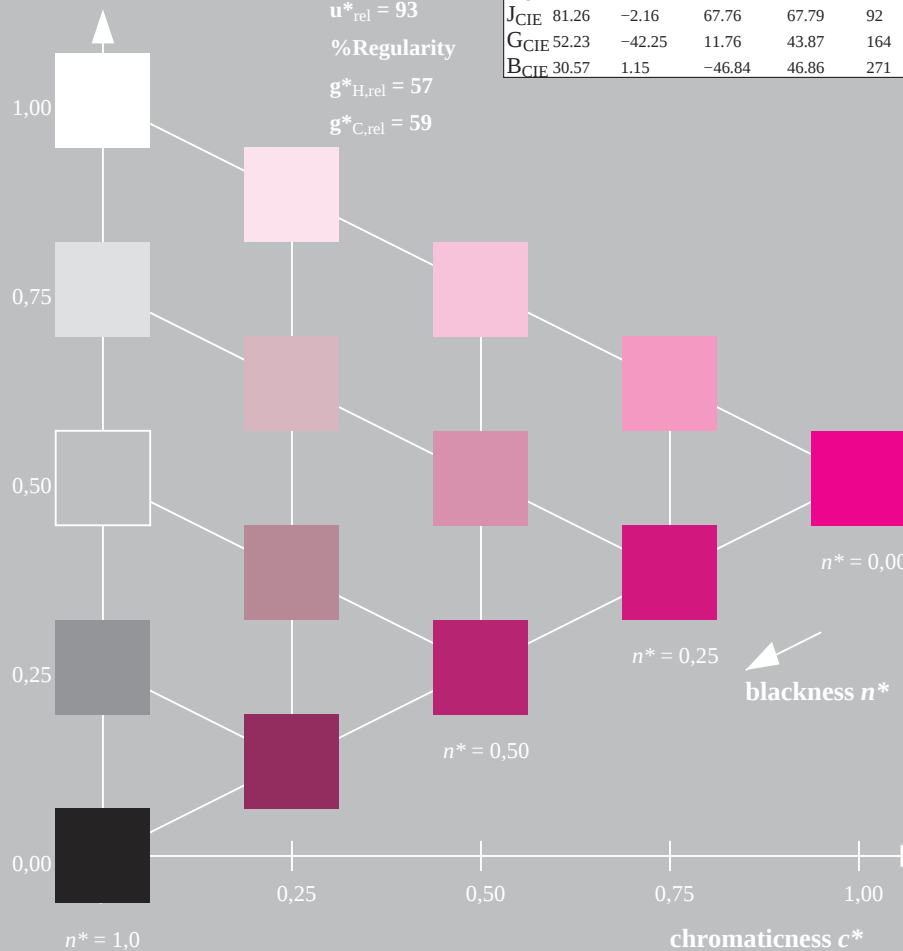
% Regularity

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

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

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          |



SE200-7, 5 step scales for constant CIELAB hue 354/360 = 0.982 (left)

Output: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab \cdot h = 328/360 = 0.912$

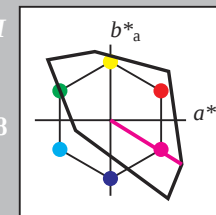
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue M

LCH\*Ma: 57 111 328

olv\*Ma: 1.0 0.0 1.0

CIELAB lightness  $L^*$



% Gamut

$u^*_{rel} = 158$

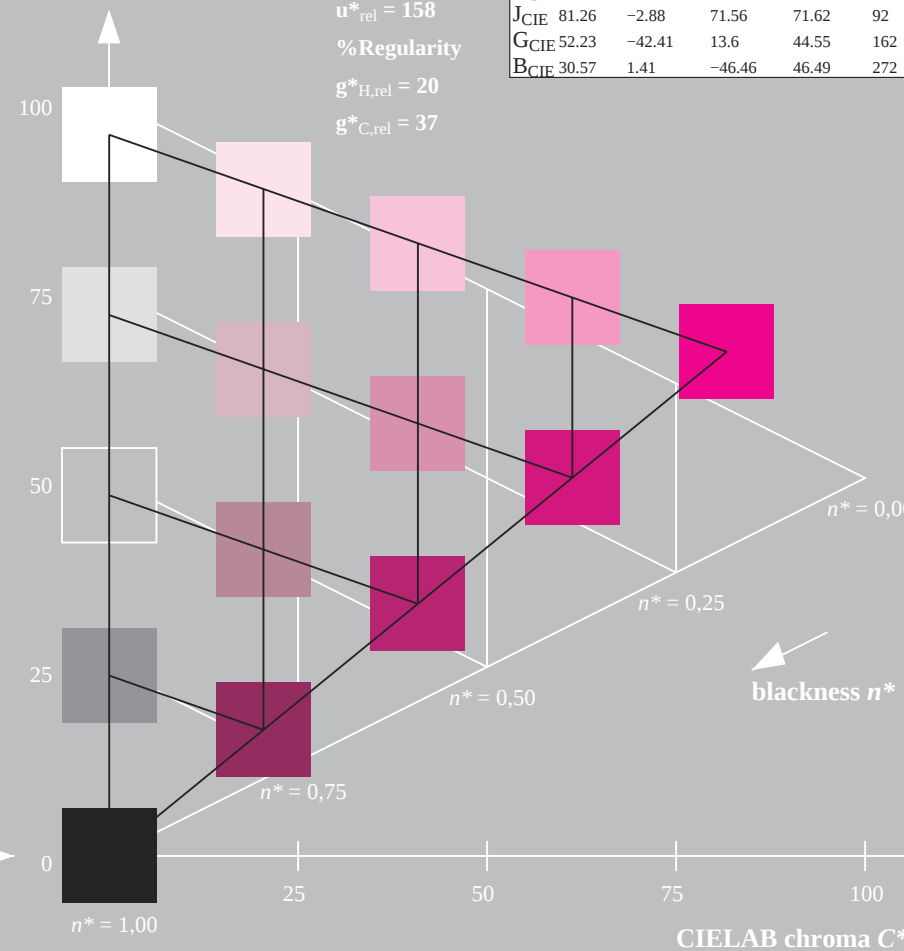
% Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

TLS00; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| $Y_m$     | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| $L_m$     | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| $C_m$     | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| $V_m$     | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| $M_m$     | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| $N_m$     | 0.01        | 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          |



5 step scales for constant CIELAB hue 328/360 = 0.912 (right)

BAM-test chart SE20; Colorimetric systems ORS18 & TLS00

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

input:  $cmy0^* \cdot setcmykcolor$

output:  $cmy0^* / 000n^* \cdot setcmykcolor$

Input: Colorimetric Offset Reflective System ORS18

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

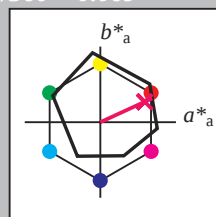
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue R

LCH\*Ma: 48 75 25

olv\*Ma: 1.0 0.0 0.32

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

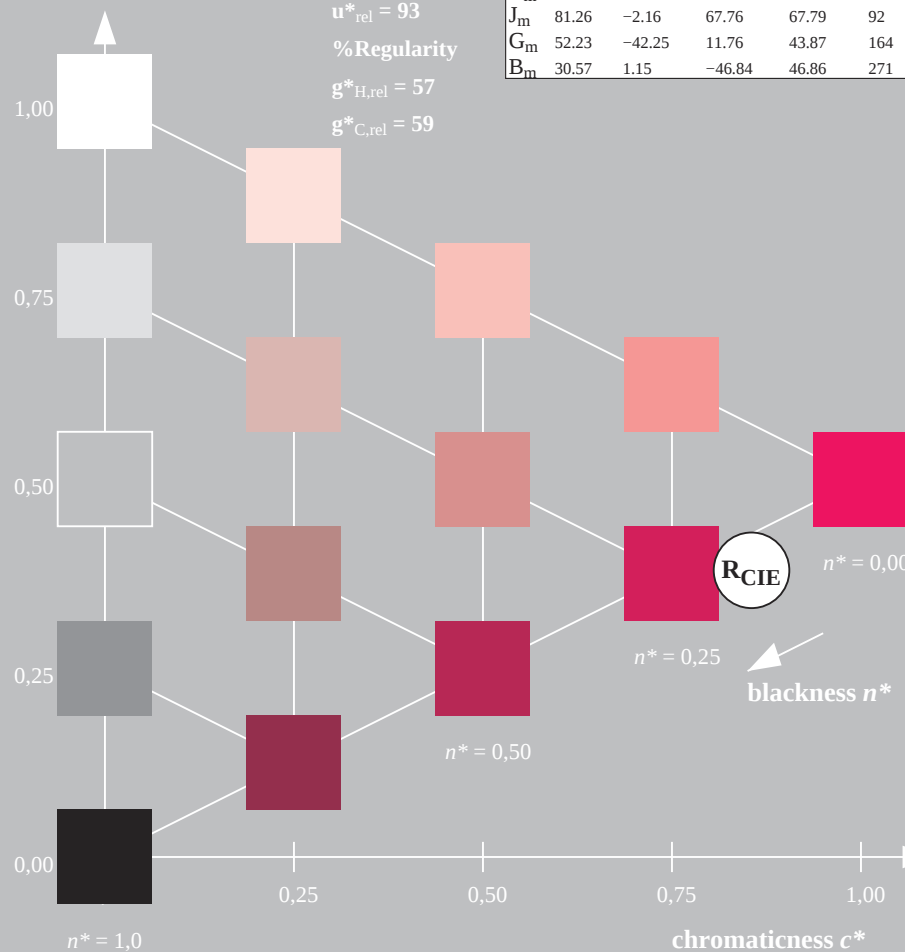
% Regularity

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

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

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          |



SE200-7, 5 step scales for constant CIELAB hue 25/360 = 0.069 (left)

Output: Colorimetric Television Luminous System TLS00

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

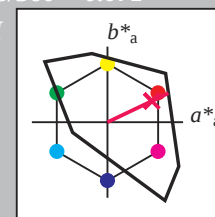
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue R

LCH\*Ma: 52 89 25

olv\*Ma: 1.0 0.0 0.21

CIELAB lightness  $L^*$



% Gamut

$u^*_{rel} = 158$

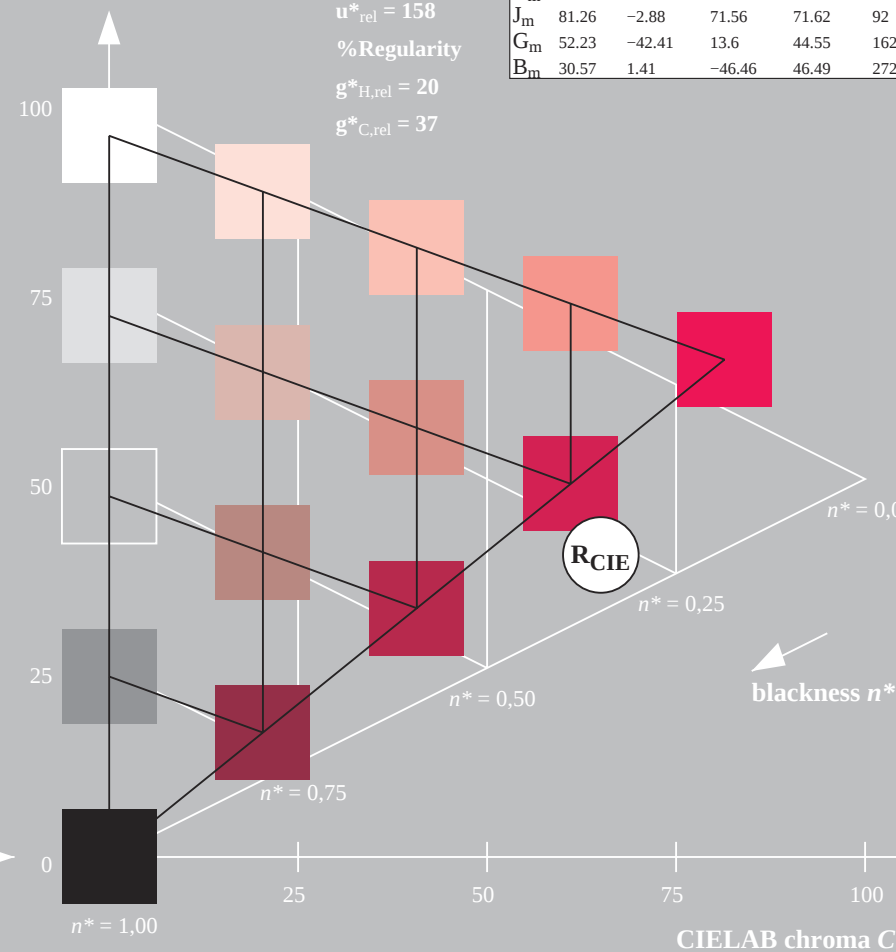
% Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

TLS00; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| $Y_m$ | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| $L_m$ | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| $C_m$ | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| $V_m$ | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| $M_m$ | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| $N_m$ | 0.01        | 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          |



5 step scales for constant CIELAB hue 25/360 = 0.071 (right)

BAM-test chart SE20; Colorimetric systems ORS18 & TLS00

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

input:  $cmY0^* \cdot setcmykcolor$

output:  $cmY0^* / 000n^* \cdot setcmykcolor$

Input: Colorimetric Offset Reflective System ORS18

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

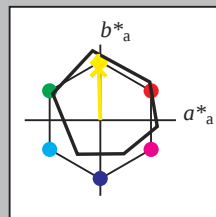
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue J

LCH\*Ma: 86 88 92

olv\*Ma: 1.0 0.9 0.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

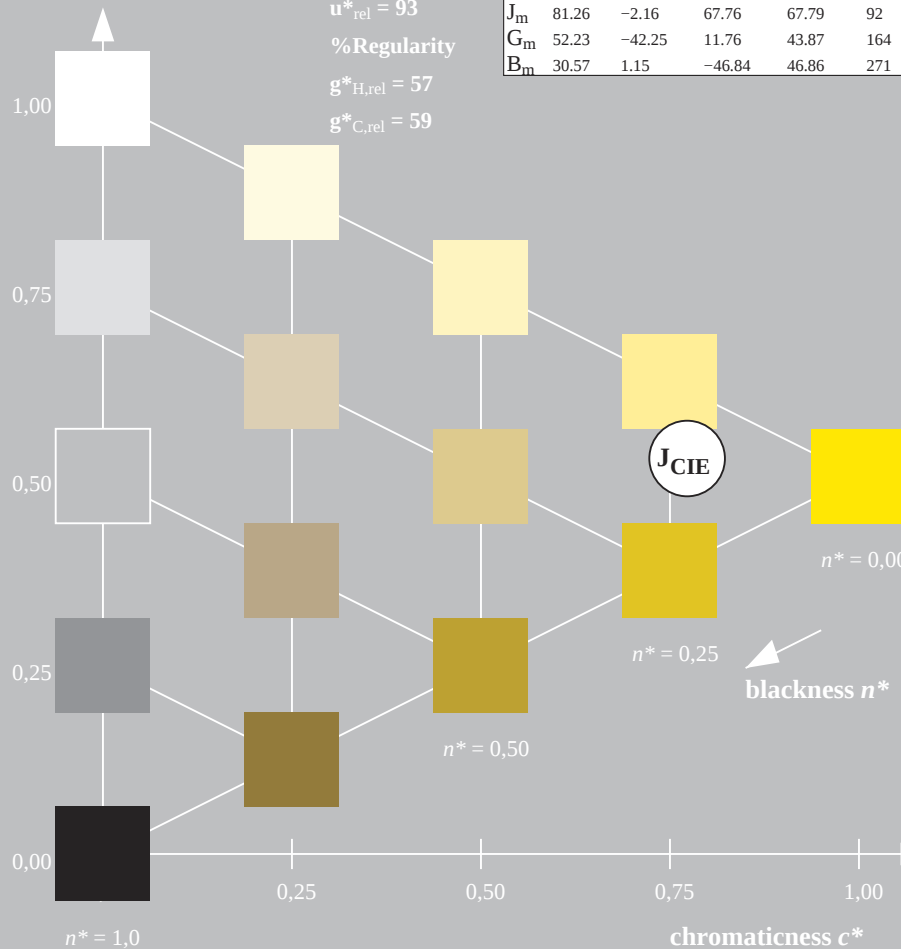
% Regularity

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

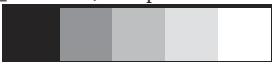
$g^*_{C,rel} = 59$

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          |



SE200-7, 5 step scales for constant CIELAB hue 92/360 = 0.255 (left)



BAM-test chart SE20; Colorimetric systems ORS18 & TLS00

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

Output: Colorimetric Television Luminous System TLS00

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

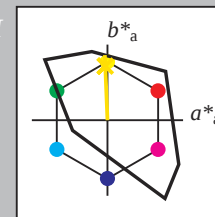
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue J

LCH\*Ma: 85 86 92

olv\*Ma: 1.0 0.82 0.0

CIELAB lightness  $L^*$



% Gamut

$u^*_{rel} = 158$

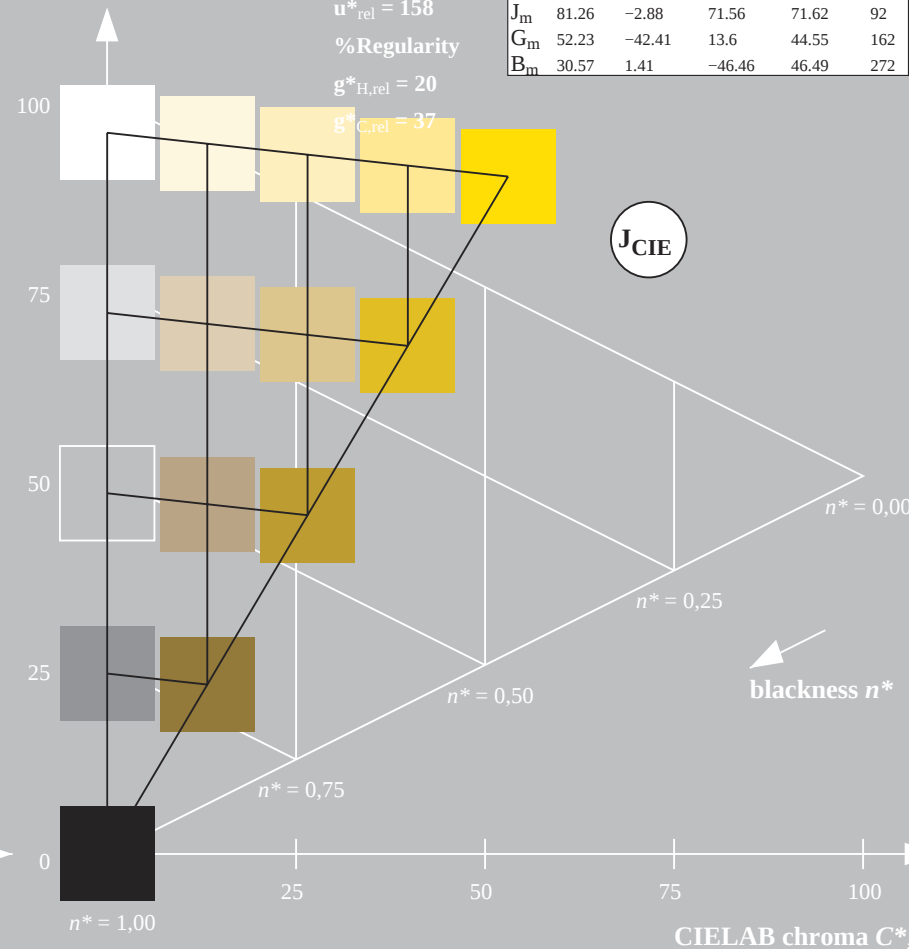
% Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

TLS00; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| $Y_m$ | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| $L_m$ | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| $C_m$ | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| $V_m$ | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| $M_m$ | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| $N_m$ | 0.01        | 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          |



5 step scales for constant CIELAB hue 92/360 = 0.256 (right)

input:  $cmY0^* setcmykcolor$

output:  $cmY0^* / 000n^* setcmykcolor$



Input: Colorimetric Offset Reflective System ORS18

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

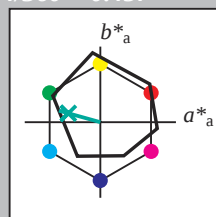
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue G

LCH\*Ma: 53 57 164

olv\*Ma: 0.0 1.0 0.25

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

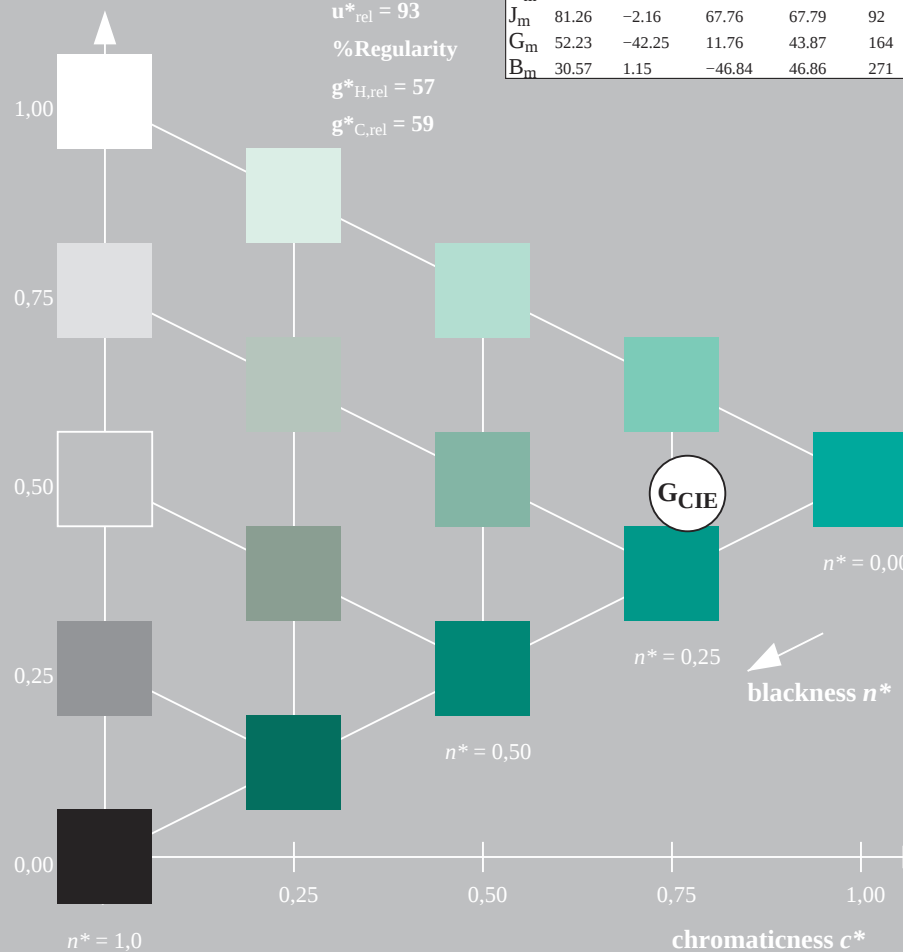
% Regularity

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

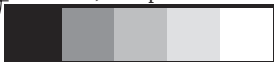
$g^*_{C,rel} = 59$

ORS18; adapted (a) CIELAB data

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



SE200-7, 5 step scales for constant CIELAB hue 164/360 = 0.457 (left)



BAM-test chart SE20; Colorimetric systems ORS18 & TLS00

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

Output: Colorimetric Television Luminous System TLS00

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

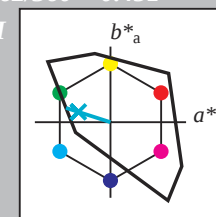
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue G

LCH\*Ma: 86 62 162

olv\*Ma: 0.0 1.0 0.65

CIELAB lightness  $L^*$



% Gamut

$u^*_{rel} = 158$

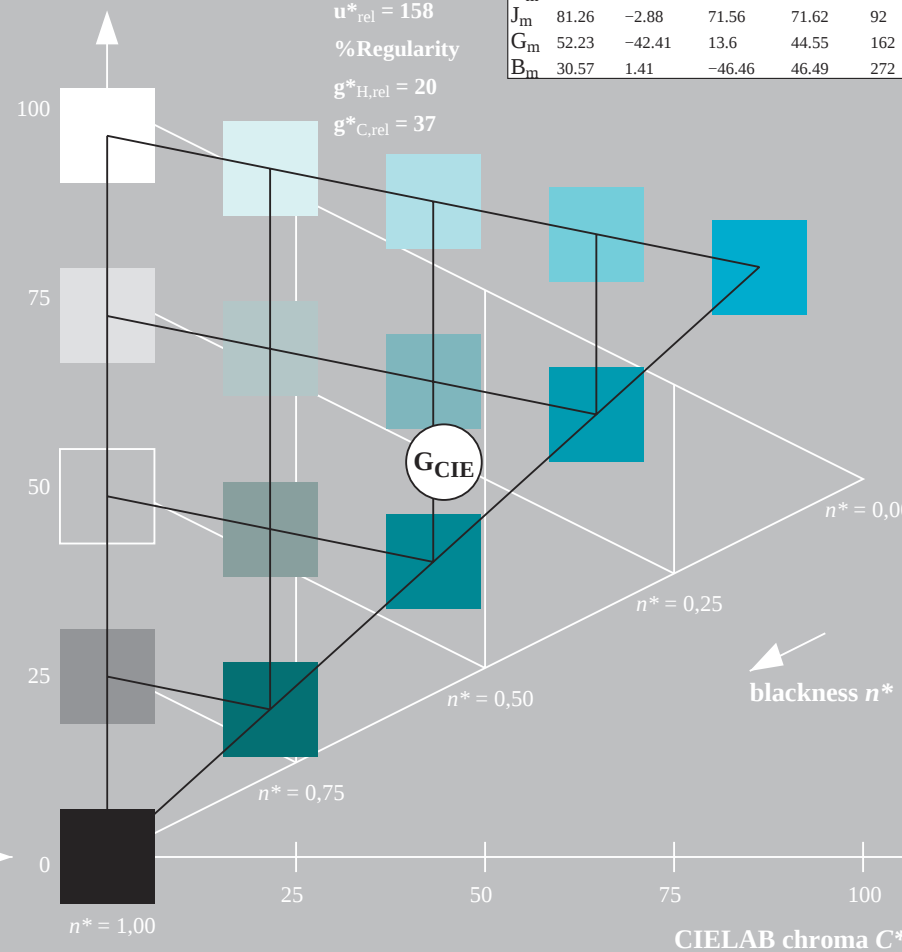
% Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

TLS00; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| $Y_m$ | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| $L_m$ | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| $C_m$ | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| $V_m$ | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| $M_m$ | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| $N_m$ | 0.01        | 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          |



5 step scales for constant CIELAB hue 162/360 = 0.451 (right)

input:  $cmy0^* \cdot setcmykcolor$

output:  $cmy0^* / 000n^* \cdot setcmykcolor$



Input: Colorimetric Offset Reflective System ORS18

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

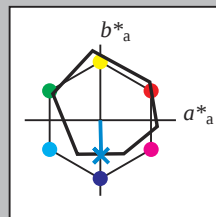
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue B

LCH\*Ma: 42 45 271

olv\*Ma: 0.0 0.49 1.0

triangle lightness  $t^*$



% Gamut

$u^*_{rel} = 93$

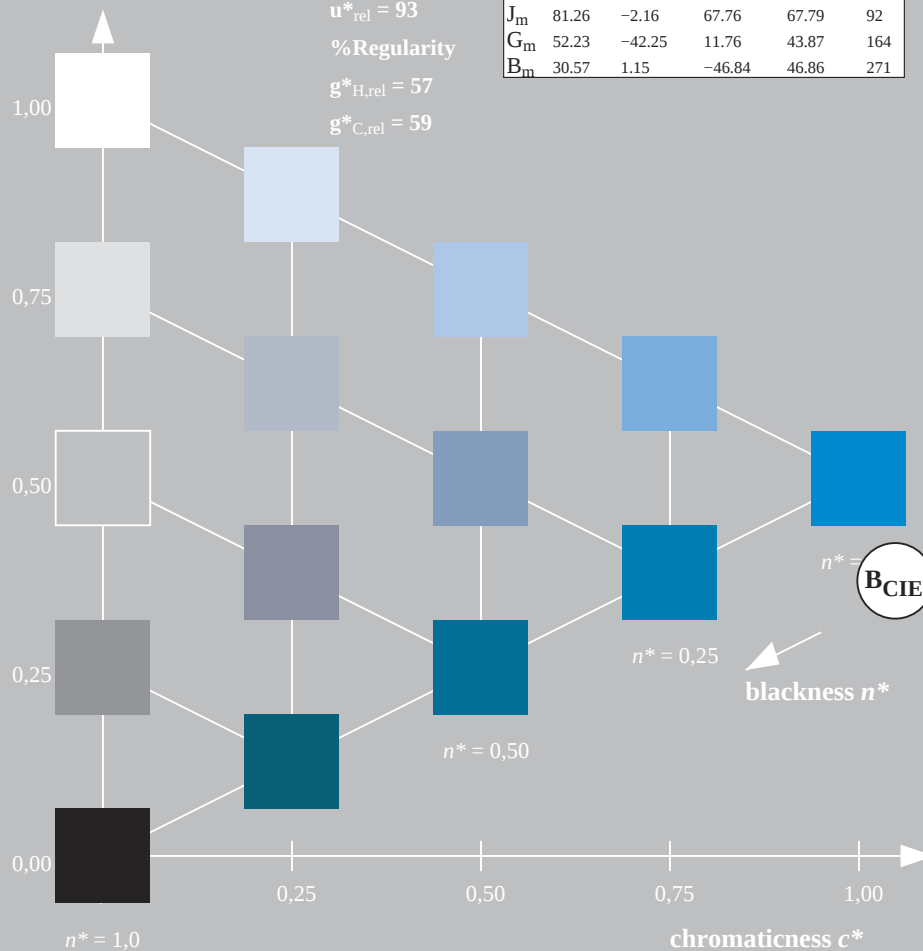
% Regularity

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

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

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          |



SE200-7, 5 step scales for constant CIE hue 271/360 = 0.754 (left)

Output: Colorimetric Television Luminous System TLS00

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

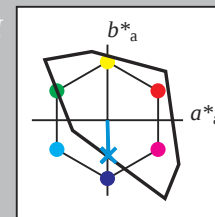
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue B

LCH\*Ma: 65 49 272

olv\*Ma: 0.0 0.61 1.0

CIELAB lightness  $L^*$



% Gamut

$u^*_{rel} = 158$

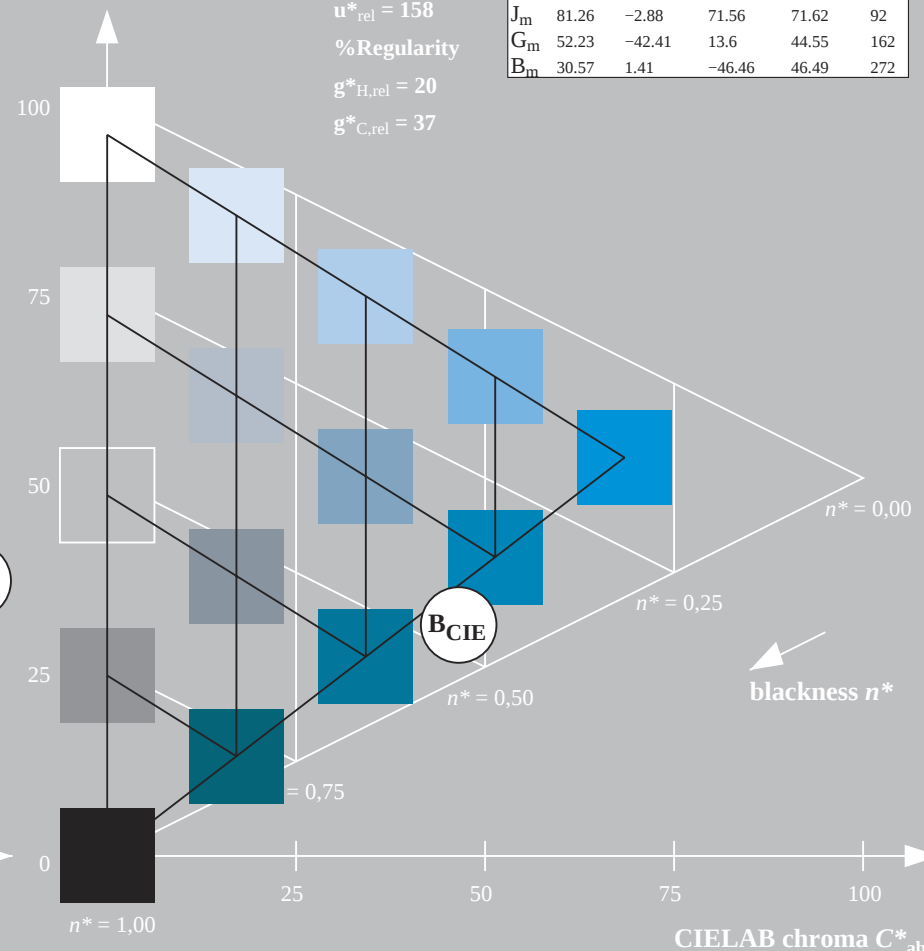
% Regularity

$g^*_{H,rel} = 20$

$g^*_{C,rel} = 37$

TLS00; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| $Y_m$ | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| $L_m$ | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| $C_m$ | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| $V_m$ | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| $M_m$ | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| $N_m$ | 0.01        | 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          |



5 step scales for constant CIE hue 272/360 = 0.755 (right)

BAM-test chart SE20; Colorimetric systems ORS18 & TLS00

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

input:  $cmY0^* \text{ setcmYcolor}$

output:  $cmY0^* / 000n^* \text{ setcmYcolor}$