

Input: Colorimetric Television Luminous System TLS70

for hue  $h^* = lab \cdot h = 22/360 = 0.061$

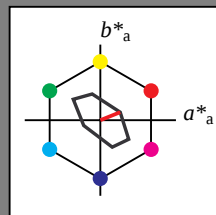
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue O

LCH\*Ma: 76 28 22

olv\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 16$

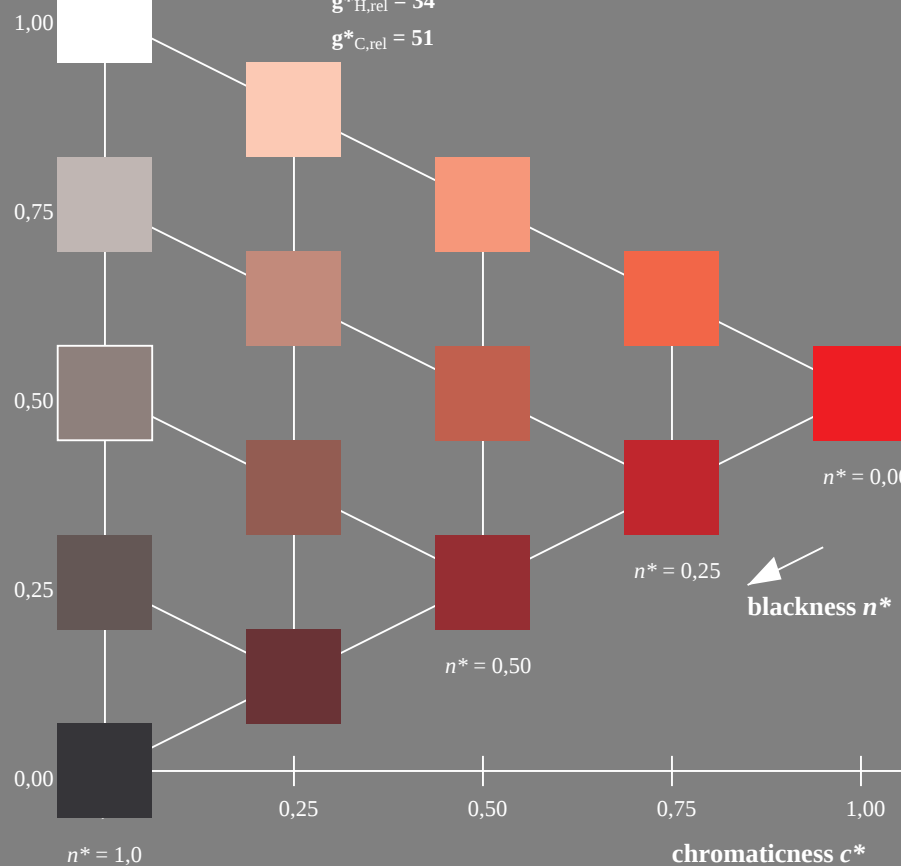
%Regularity

$g^*_{H,rel} = 34$

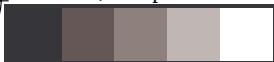
$g^*_{C,rel} = 51$

TLS70; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| $Y_m$     | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| $L_m$     | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| $C_m$     | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| $V_m$     | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| $M_m$     | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| $N_m$     | 69.7        | 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          |



OE280-7, 5 step scales for constant CIELAB hue 22/360 = 0.061 (left)



BAM-test chart OE28; Colorimetric systems TLS70 & TLS00  
D65: Coordinate systems of 5 step colour scales for 10 hues

Output: Colorimetric Television Luminous System TLS00

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

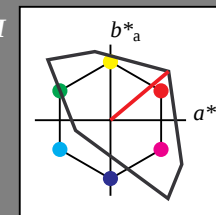
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue O

LCH\*Ma: 51 100 40

olv\*Ma: 1.0 0.0 0.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 158$

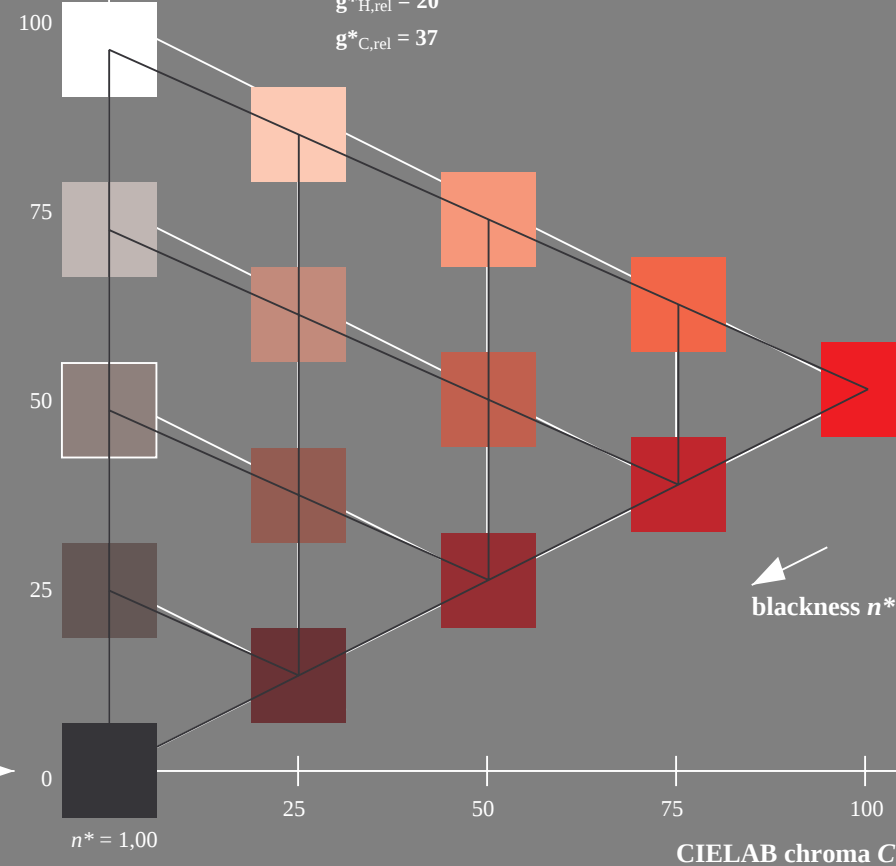
%Regularity

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

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

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:  $cmY0^* setcmykcolor$

output: no change compared to input



Input: Colorimetric Television Luminous System TLS70

for hue  $h^* = lab \cdot h = 107/360 = 0.298$

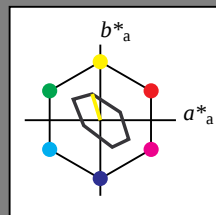
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue Y

LCH\*Ma: 94 36 107

olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 16$

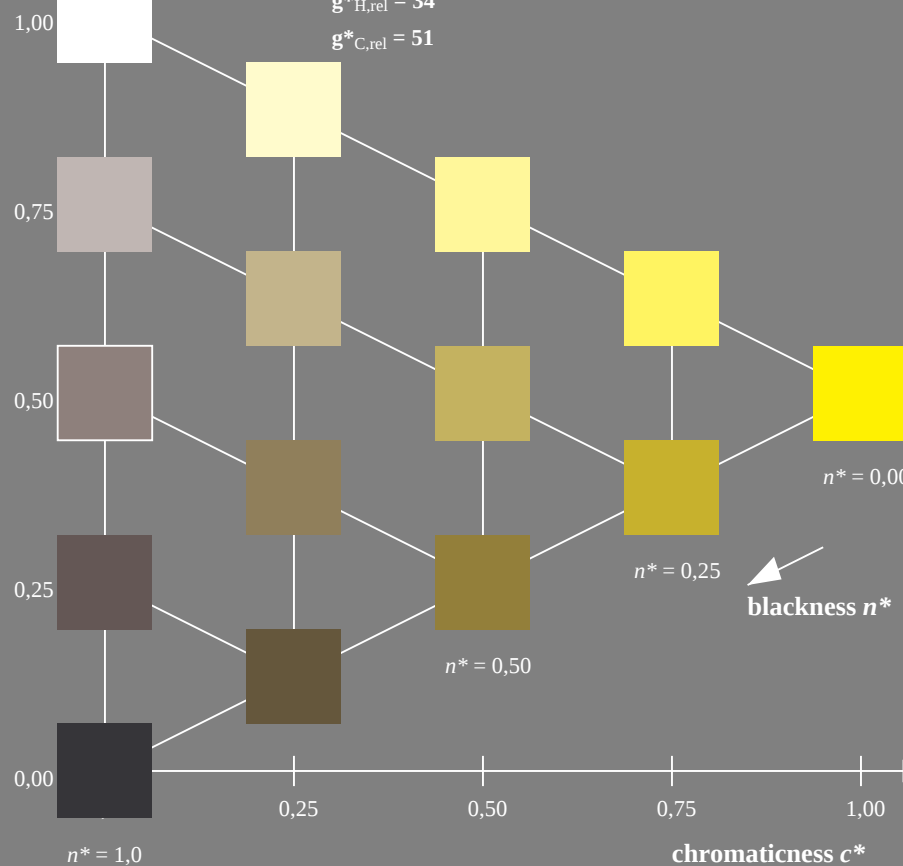
%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$

TLS70; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| $Y_m$     | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| $L_m$     | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| $C_m$     | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| $V_m$     | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| $M_m$     | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| $N_m$     | 69.7        | 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          |



OE280-7, 5 step scales for constant CIELAB hue 107/360 = 0.298 (left)

Output: Colorimetric Television Luminous System TLS00

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

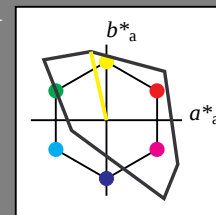
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue Y

LCH\*Ma: 93 93 103

olv\*Ma: 1.0 1.0 0.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 158$

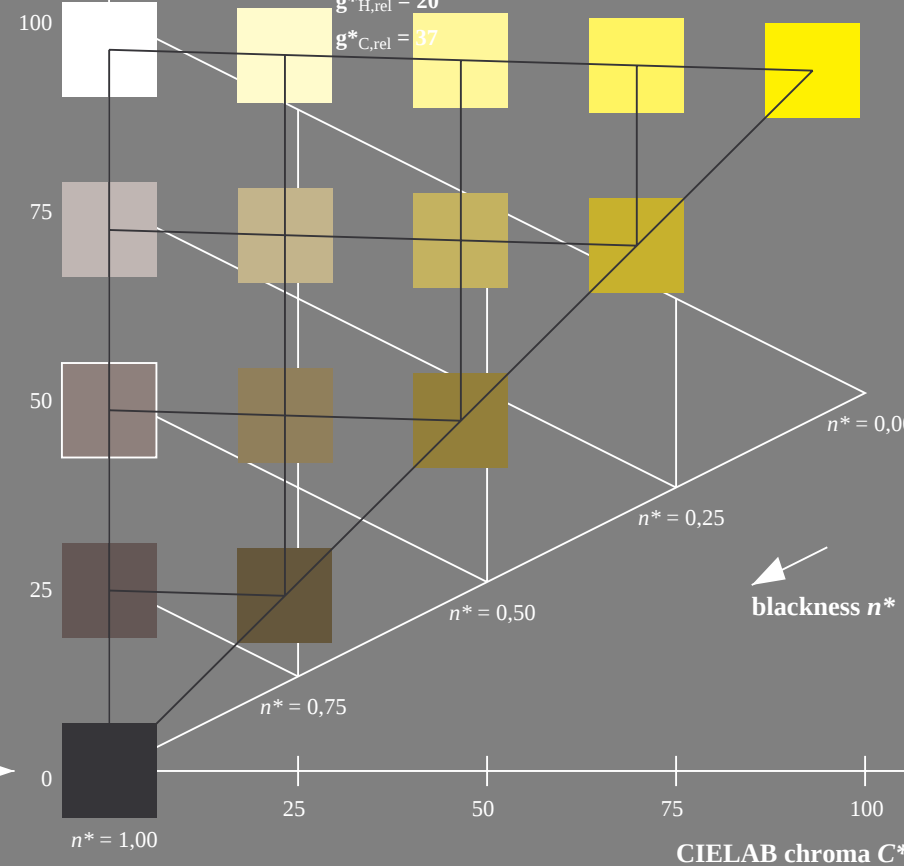
%Regularity

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

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

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 OE28; Colorimetric systems TLS70 & TLS00

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

input:  $cmY0^* setcmykcolor$

output: no change compared to input

Input: Colorimetric Television Luminous System TLS70

for hue  $h^* = lab \cdot h = 142/360 = 0.395$

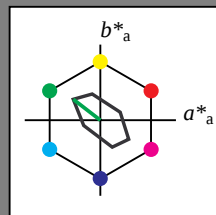
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue L

LCH\*Ma: 89 45 142

olv\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 16$

%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$

TLS70; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| $Y_m$     | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| $L_m$     | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| $C_m$     | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| $V_m$     | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| $M_m$     | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| $N_m$     | 69.7        | 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 Television Luminous System TLS00

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

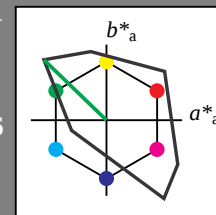
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

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          |



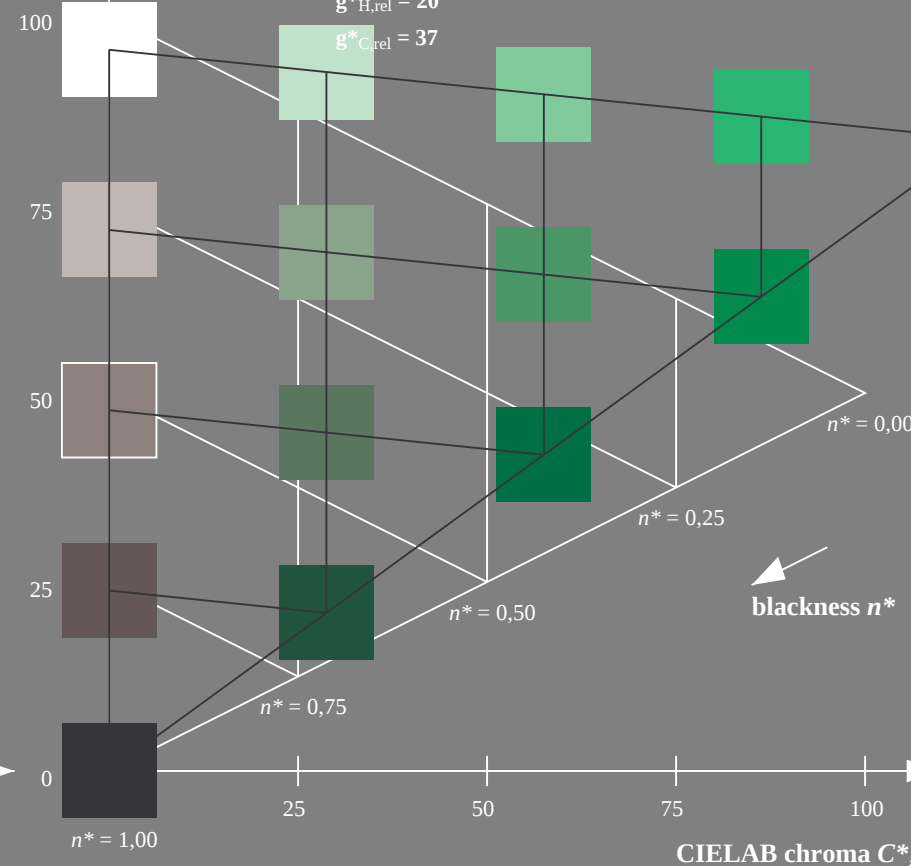
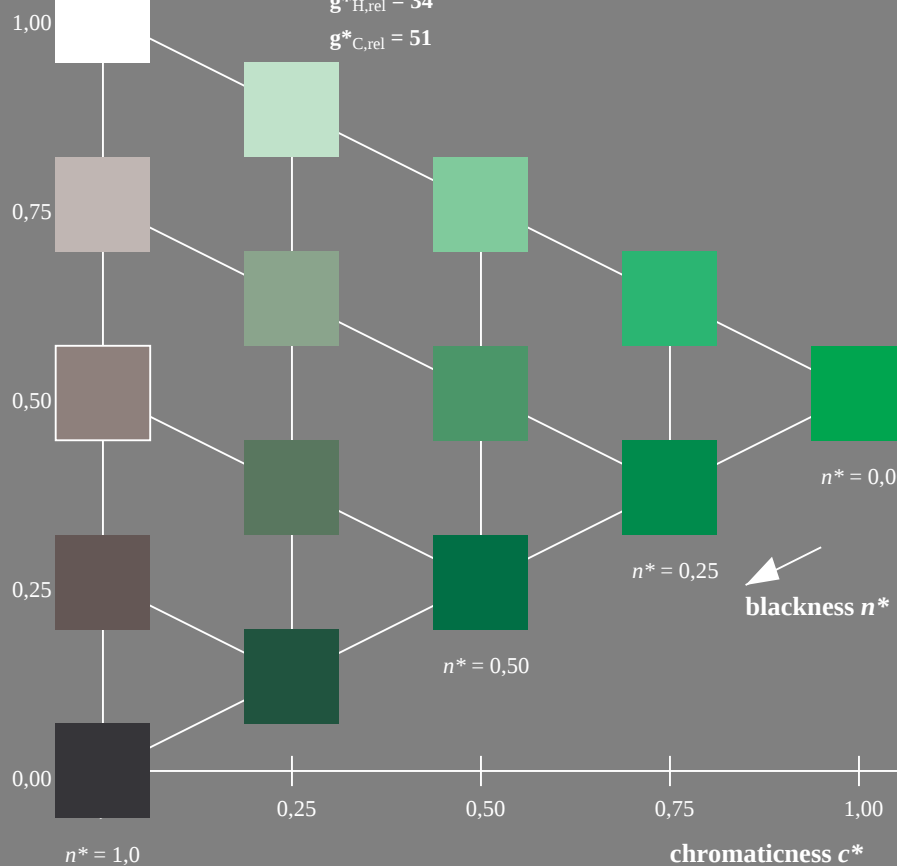
%Gamut

$u^*_{rel} = 158$

%Regularity

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

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



OE280-7, 5 step scales for constant CIELAB hue 142/360 = 0.395 (left)

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

BAM-test chart OE28; Colorimetric systems TLS70 & TLS00

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

input:  $cmY0 \cdot setcmykcolor$

output: no change compared to input

Input: Colorimetric Television Luminous System TLS70

for hue  $h^* = lab \cdot h = 198/360 = 0.55$

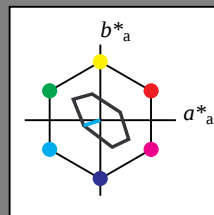
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue C

LCH\*Ma: 91 23 198

olv\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 16$

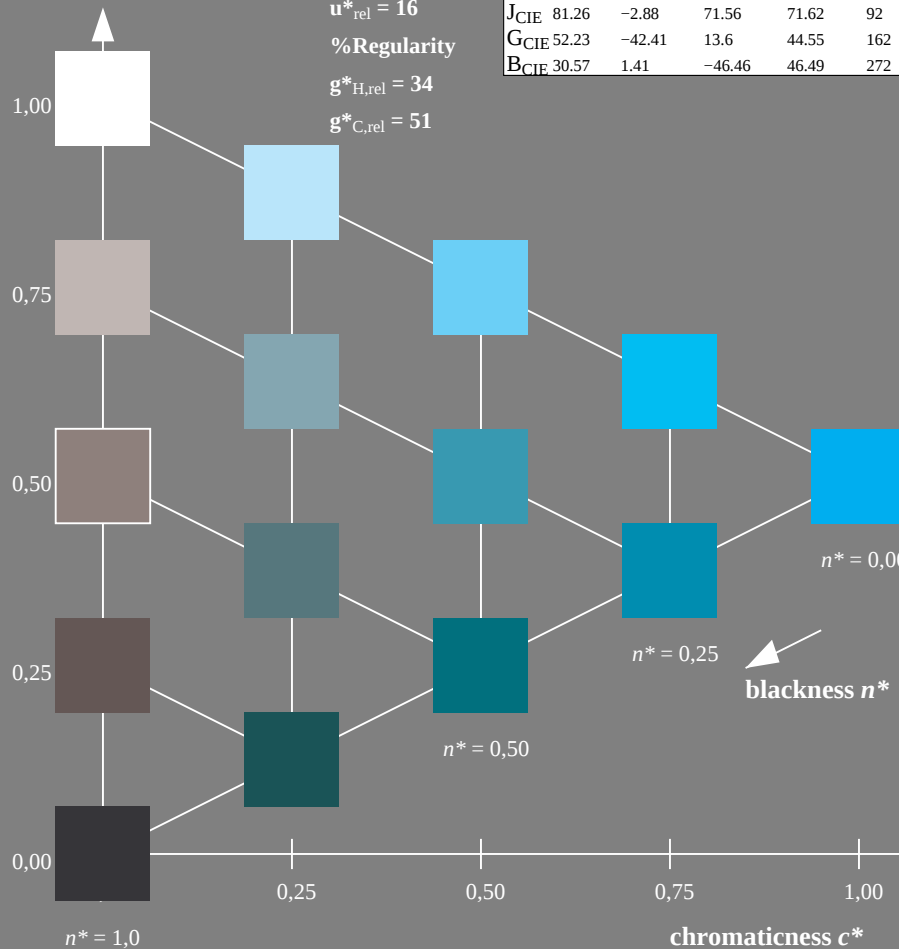
%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$

TLS70; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| $Y_m$     | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| $L_m$     | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| $C_m$     | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| $V_m$     | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| $M_m$     | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| $N_m$     | 69.7        | 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          |



OE280-7, 5 step scales for constant CIELAB hue 198/360 = 0.55 (left)

Output: Colorimetric Television Luminous System TLS00

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

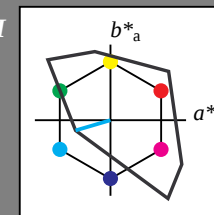
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue C

LCH\*Ma: 87 48 196

olv\*Ma: 0.0 1.0 1.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 158$

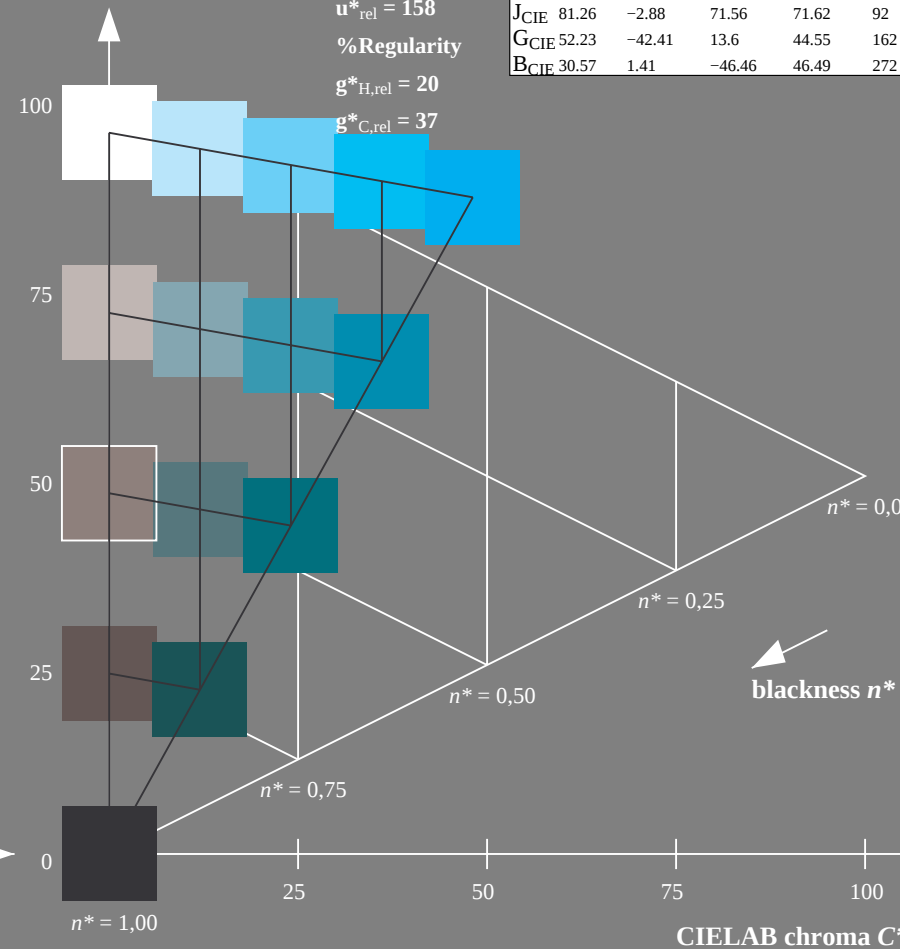
%Regularity

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

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

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 OE28; Colorimetric systems TLS70 & TLS00

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

input:  $cmY0^* setcmykcolor$

output: no change compared to input

Input: Colorimetric Television Luminous System TLS70

for hue  $h^* = lab \cdot h = 294/360 = 0.816$

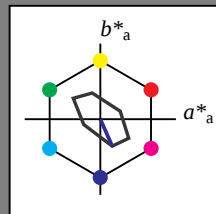
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue V

LCH\*Ma: 72 39 294

olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 16$

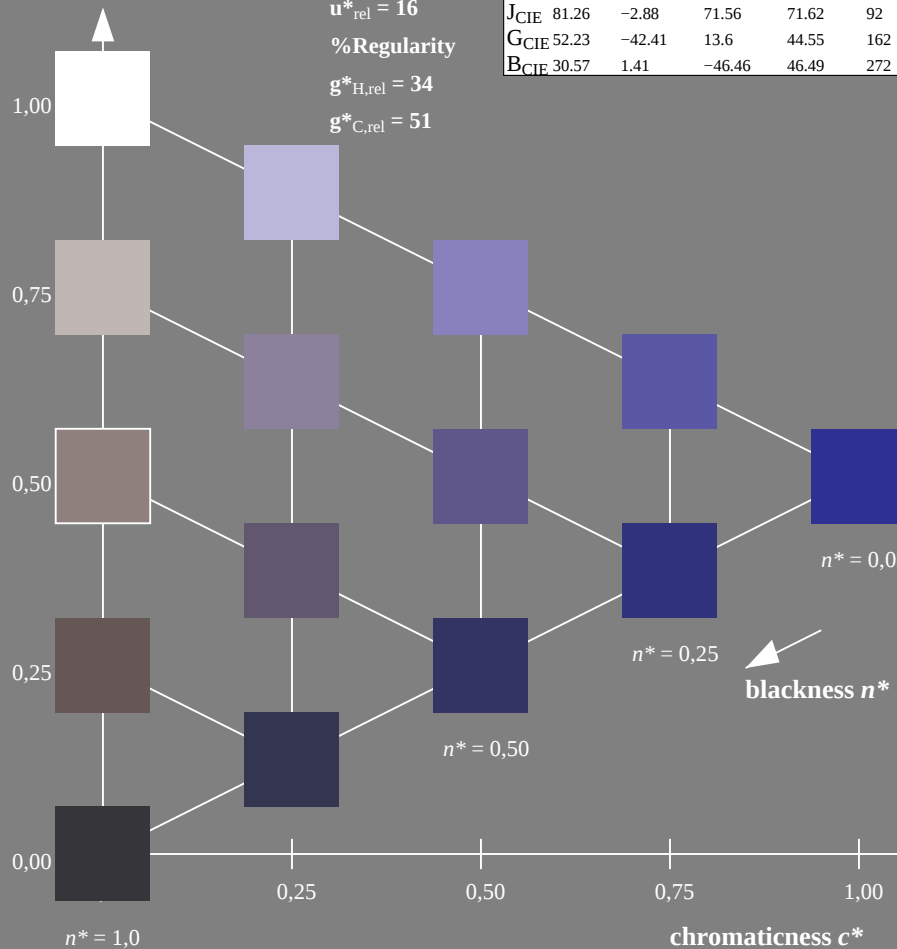
%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$

TLS70; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| $Y_m$     | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| $L_m$     | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| $C_m$     | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| $V_m$     | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| $M_m$     | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| $N_m$     | 69.7        | 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          |



OE280-7, 5 step scales for constant CIELAB hue 294/360 = 0.816 (left)

Output: Colorimetric Television Luminous System TLS00

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

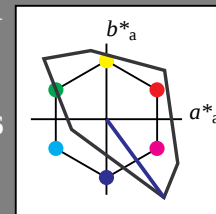
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue V

LCH\*Ma: 30 129 306

olv\*Ma: 0.0 0.0 1.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 158$

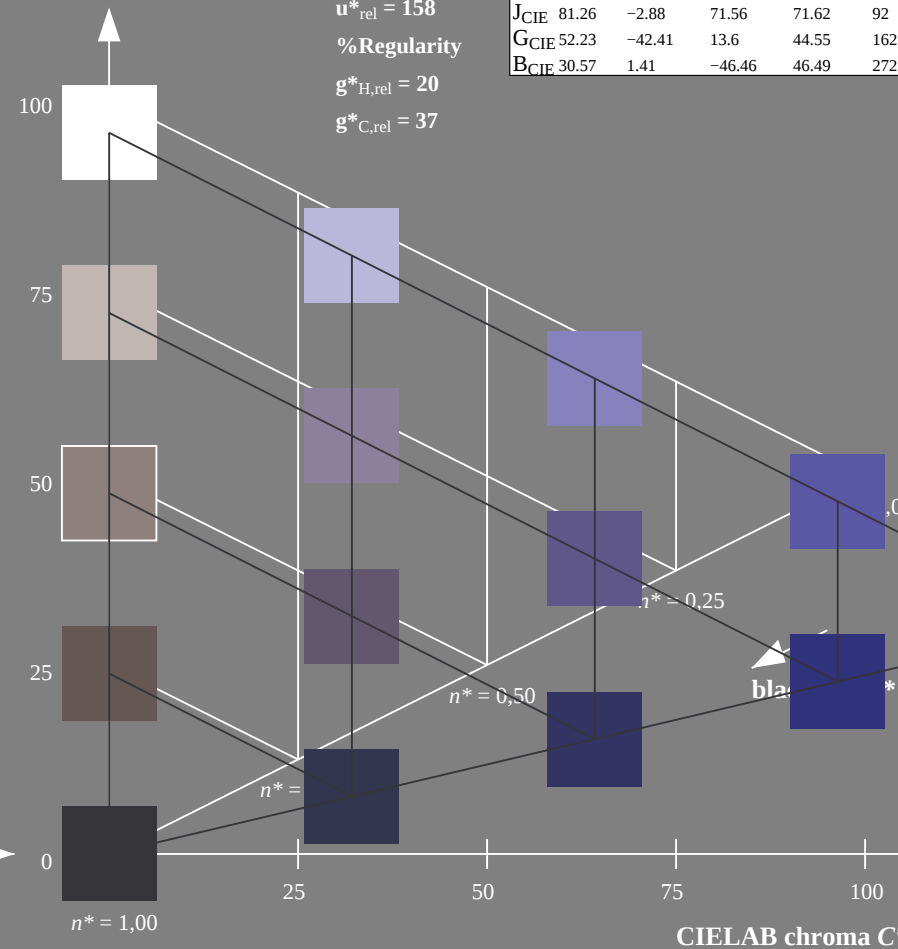
%Regularity

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

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

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 OE28; Colorimetric systems TLS70 & TLS00

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

input:  $cmY0^* setcmykcolor$

output: no change compared to input

### Input: Colorimetric Television Luminous System TLS70

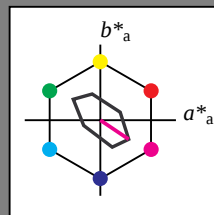
for hue  $h^* = lab \cdot h = 326/360 = 0.906$

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

D65: hue M

LCH\*Ma: 79 45 326

olv\*Ma: 1.0 0.0 1.0



#### TLS70; adapted (a) CIELAB data

|           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-----------|-------------|---------|---------|--------------|--------------|
| $O_m$     | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| $Y_m$     | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| $L_m$     | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| $C_m$     | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| $V_m$     | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| $M_m$     | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| $N_m$     | 69.7        | 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  $t^*$

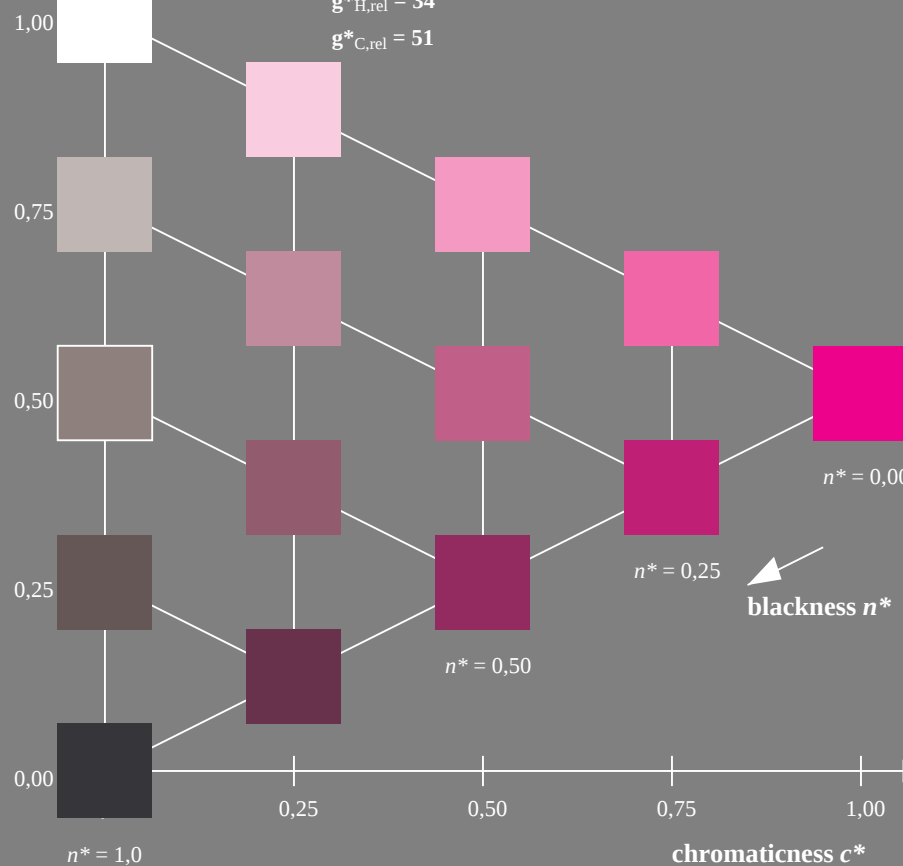
%Gamut

$u^*_{rel} = 16$

%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$



OE280-7, 5 step scales for constant CIELAB hue 326/360 = 0.906 (left)

### Output: Colorimetric Television Luminous System TLS00

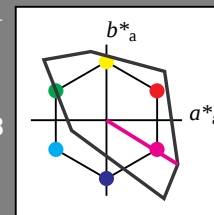
for hue  $h^* = lab \cdot h = 328/360 = 0.912$

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

D65: hue M

LCH\*Ma: 57 111 328

olv\*Ma: 1.0 0.0 1.0



#### 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          |

CIELAB lightness  $L^*$

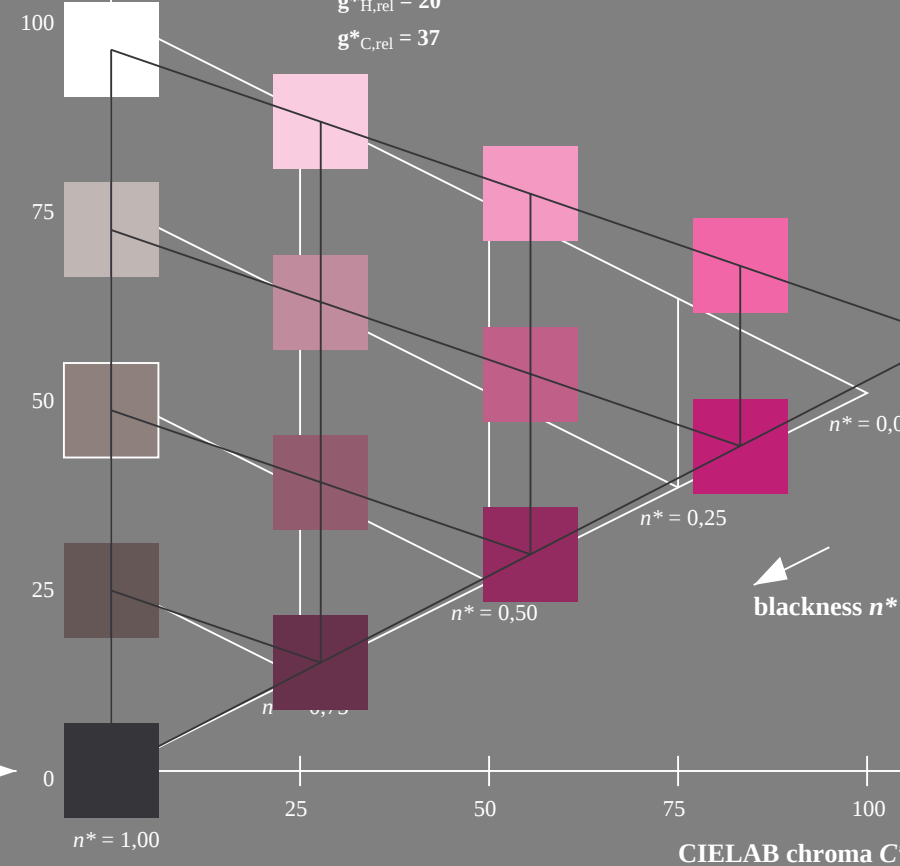
%Gamut

$u^*_{rel} = 158$

%Regularity

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

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



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

BAM-test chart OE28; Colorimetric systems TLS70 & TLS00

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

input:  $cmY0^* setcmykcolor$

output: no change compared to input

Input: Colorimetric Television Luminous System TLS70

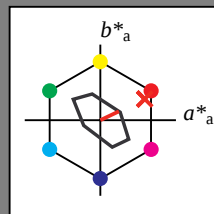
**for hue  $h^* = lab^*h = 25/360 = 0.071$**

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

D65: hue R

LCH\*Ma: 77 27 25

**olv\*Ma: 1.0 0.05 0.0**

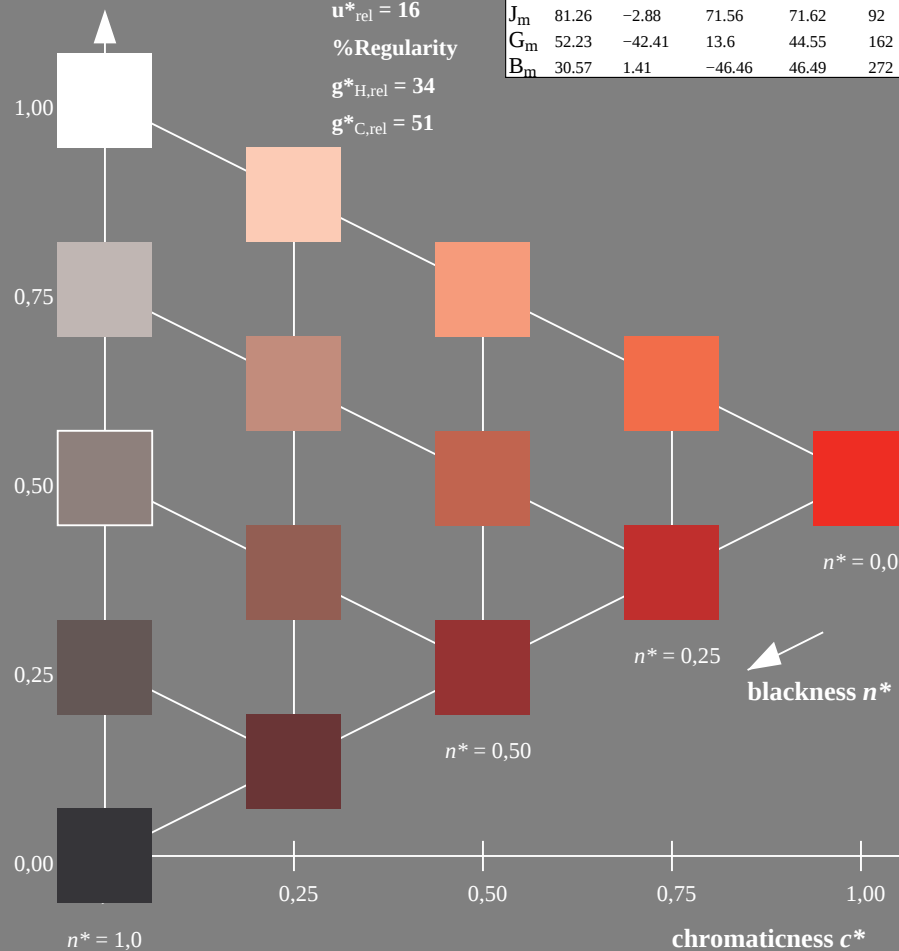


**triangle lightness  $t^*$**

%Gamut

$$\mathbf{u}_{rel}^* = 16$$

### %Regularity

$$g^*_{H,rel} = 34$$
$$\mathbf{g}^*_{C,rel} = 51$$


OE280-7, 5 step scales for constant CIELAB hue 25/360 = 0.071 (left

## BAM-test chart OE28: Colorimetric systems TLS70 & TLS00

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

**Output: Colorimetric Television Luminous System TLS00**

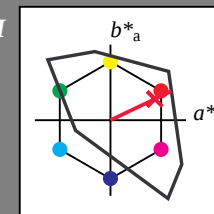
for hue  $h^* = lab^*h = 25/360 = 0.071$

*LAB\*LCH, LAB\*NCH*

D65: hue R

LCH\*Ma: 52 89 25

olv\*Ma: 1.0 0.0 0.21

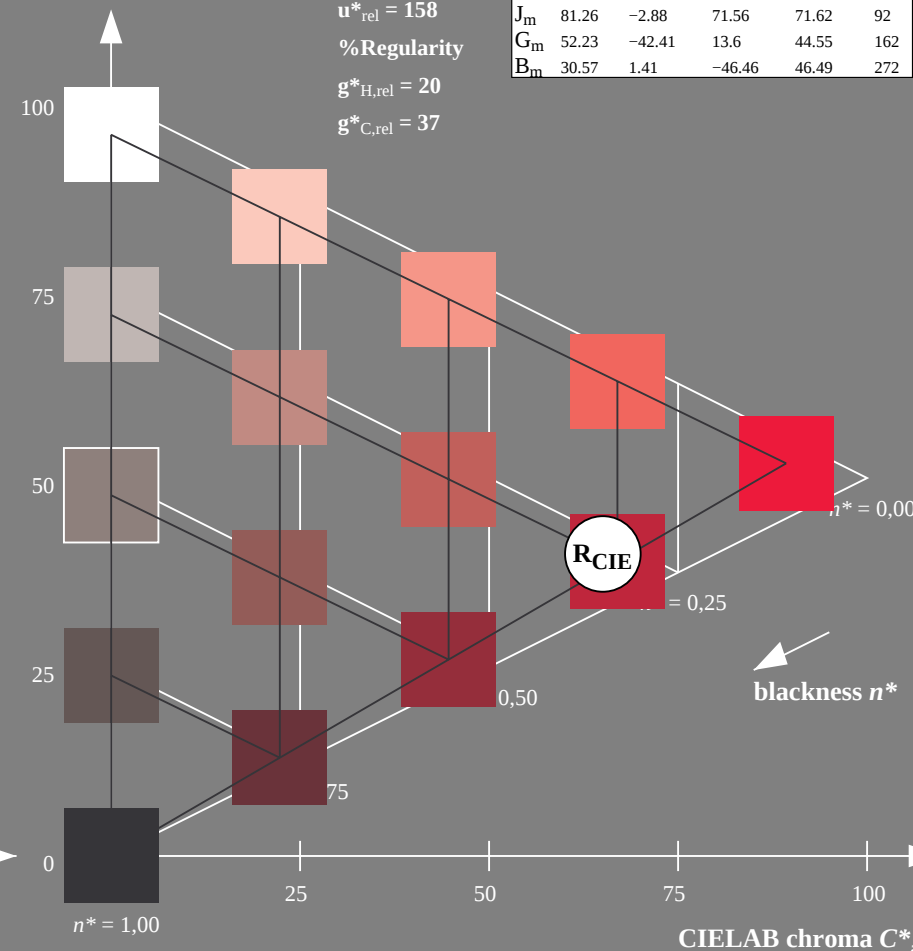


**CIELAB lightness  $L^*$**

%Gamut

$$u_{rel}^* = 158$$

### %Regularity

$$g^*_{H,rel} = 20$$
$$g^*_{C,rel} = 37$$


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

```
input: cmv0* setcmvcolor
```

output: *no change compared to input*

### Input: Colorimetric Television Luminous System TLS70

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

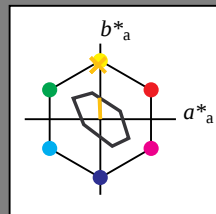
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue J

LCH\*Ma: 89 28 92

olv\*Ma: 1.0 0.74 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 16$

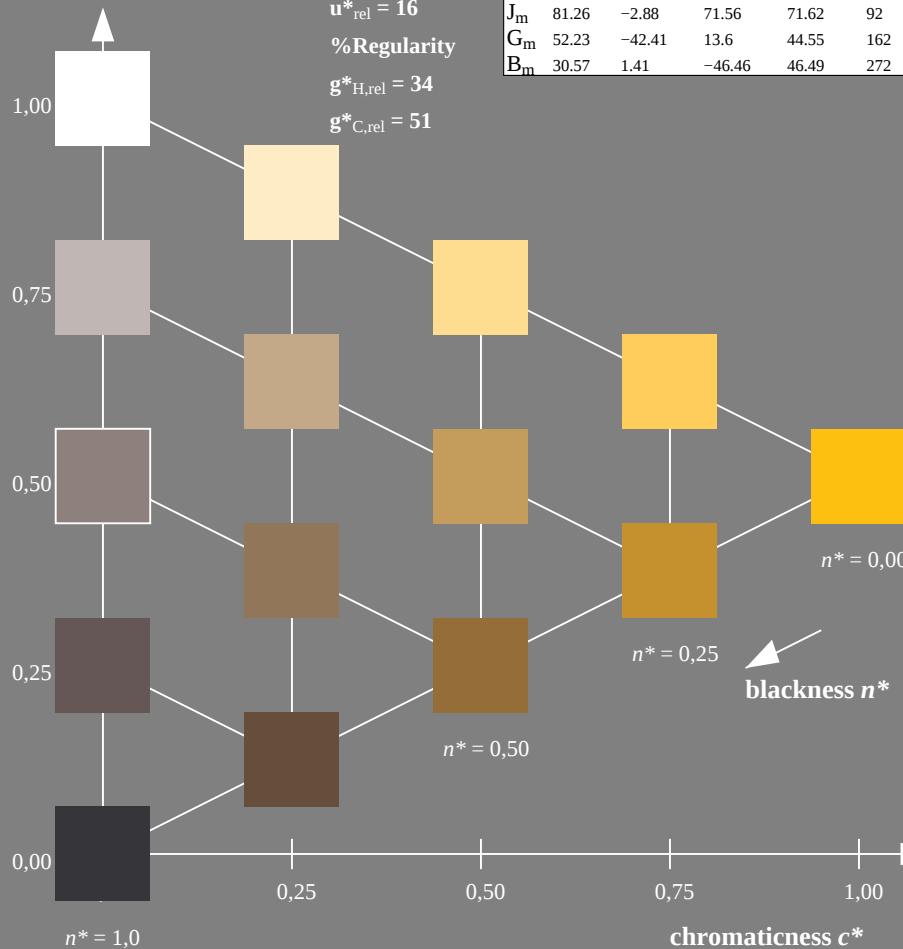
%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$

#### TLS70; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| $Y_m$ | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| $L_m$ | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| $C_m$ | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| $V_m$ | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| $M_m$ | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| $N_m$ | 69.7        | 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          |



OE280-7, 5 step scales for constant CIE hue 92/360 = 0.256 (left)



BAM-test chart OE28; Colorimetric systems TLS70 & TLS00

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

### Output: Colorimetric Television Luminous System TLS00

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

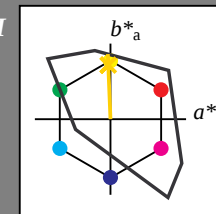
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue J

LCH\*Ma: 85 86 92

olv\*Ma: 1.0 0.82 0.0

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 158$

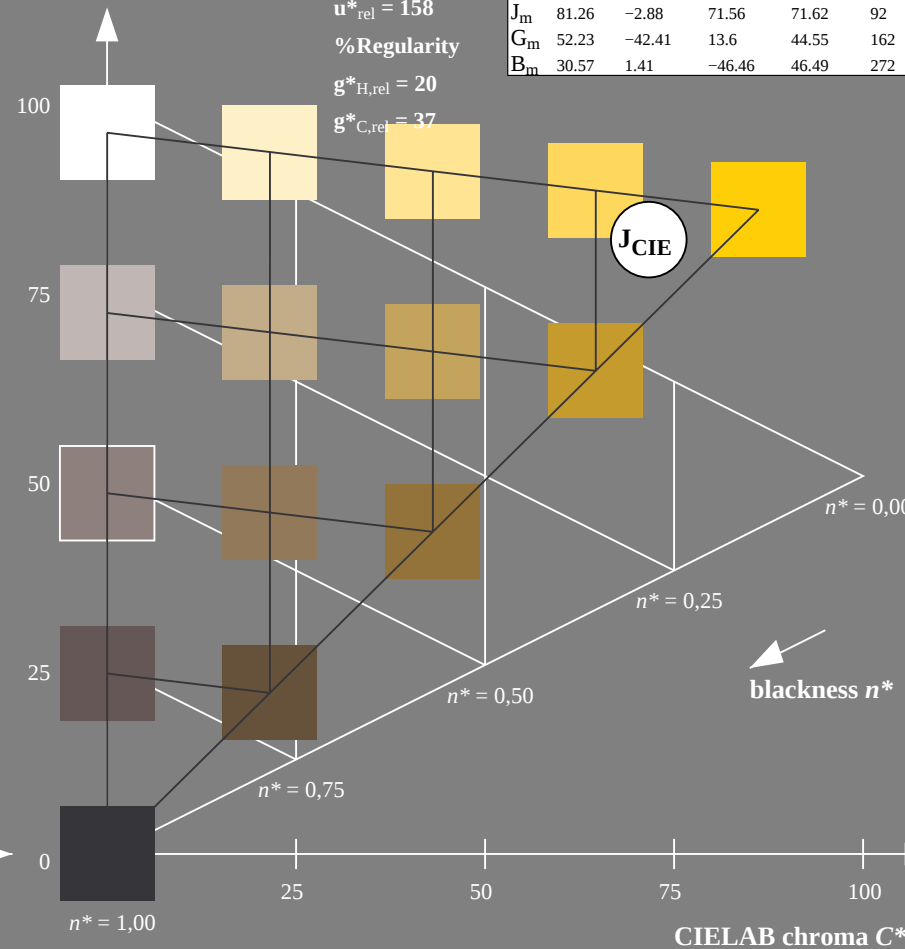
%Regularity

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

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

#### 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 CIE hue 92/360 = 0.256 (right)

input:  $cmY0^* setcmykcolor$

output: no change compared to input



Input: Colorimetric Television Luminous System TLS70

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

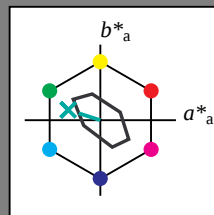
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue G

LCH\*Ma: 90 30 162

olv\*Ma: 0.0 1.0 0.53

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 16$

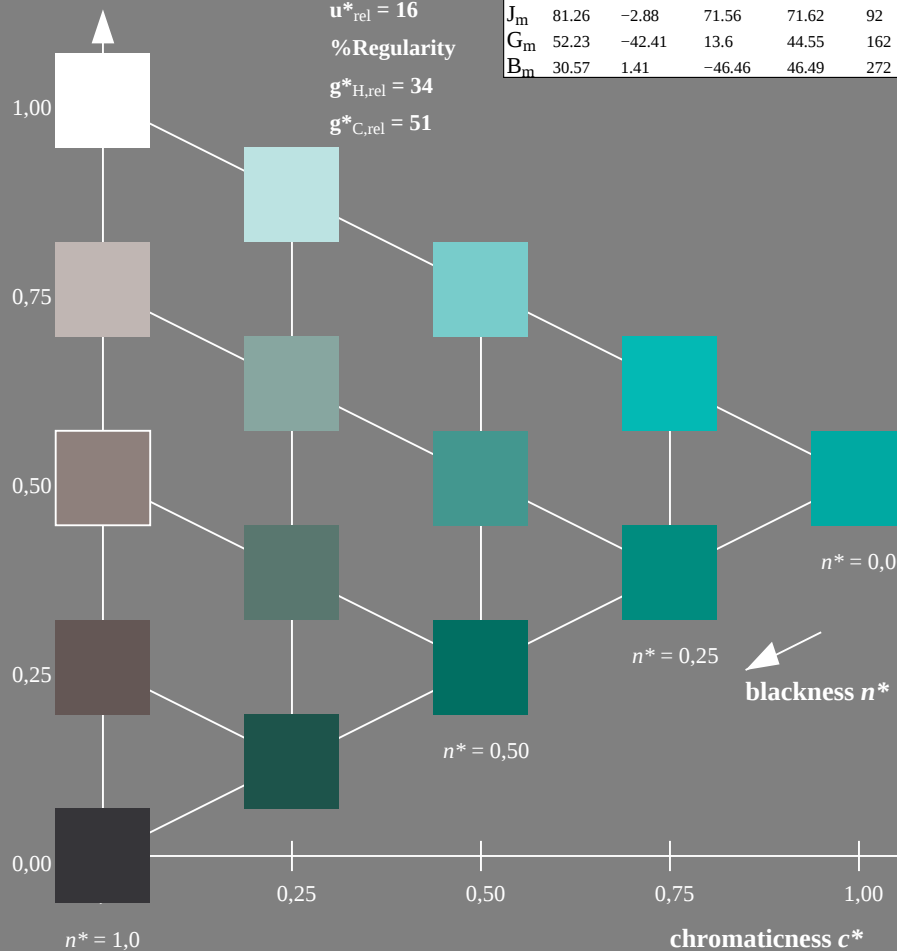
%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$

TLS70; adapted (a) CIELAB data

|       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------|-------------|---------|---------|--------------|--------------|
| $O_m$ | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| $Y_m$ | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| $L_m$ | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| $C_m$ | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| $V_m$ | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| $M_m$ | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| $N_m$ | 69.7        | 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          |



OE280-7, 5 step scales for constant CIELAB hue 162/360 = 0.451 (left)



BAM-test chart OE28; Colorimetric systems TLS70 & TLS00  
D65: Coordinate systems of 5 step colour scales for 10 hues

Output: Colorimetric Television Luminous System TLS00

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

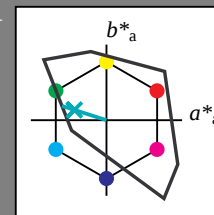
$LAB \cdot LCH$ ,  $LAB \cdot NCH$

D65: hue G

LCH\*Ma: 86 62 162

olv\*Ma: 0.0 1.0 0.65

CIELAB lightness  $L^*$



%Gamut

$u^*_{rel} = 158$

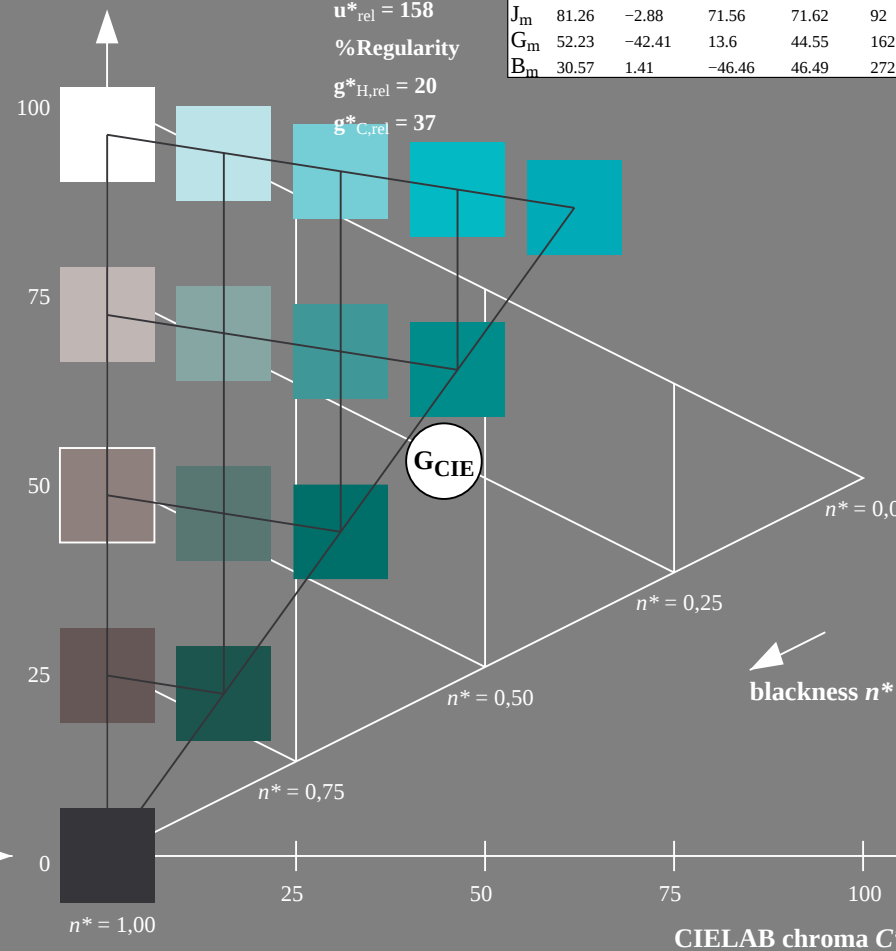
%Regularity

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

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

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:  $cmY0^* setcmykcolor$

output: no change compared to input



### Input: Colorimetric Television Luminous System TLS70

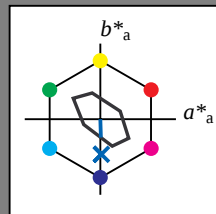
for hue  $h^* = lab \cdot h = 272/360 = 0.755$

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

D65: hue B

LCH\*Ma: 80 24 272

olv\*Ma: 0.0 0.4 1.0



#### TLS70; adapted (a) CIELAB data

|                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|----------------|-------------|---------|---------|--------------|--------------|
| O <sub>m</sub> | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| Y <sub>m</sub> | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| L <sub>m</sub> | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| C <sub>m</sub> | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| V <sub>m</sub> | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| M <sub>m</sub> | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| N <sub>m</sub> | 69.7        | 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       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>m</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>m</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>m</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

triangle lightness  $t^*$

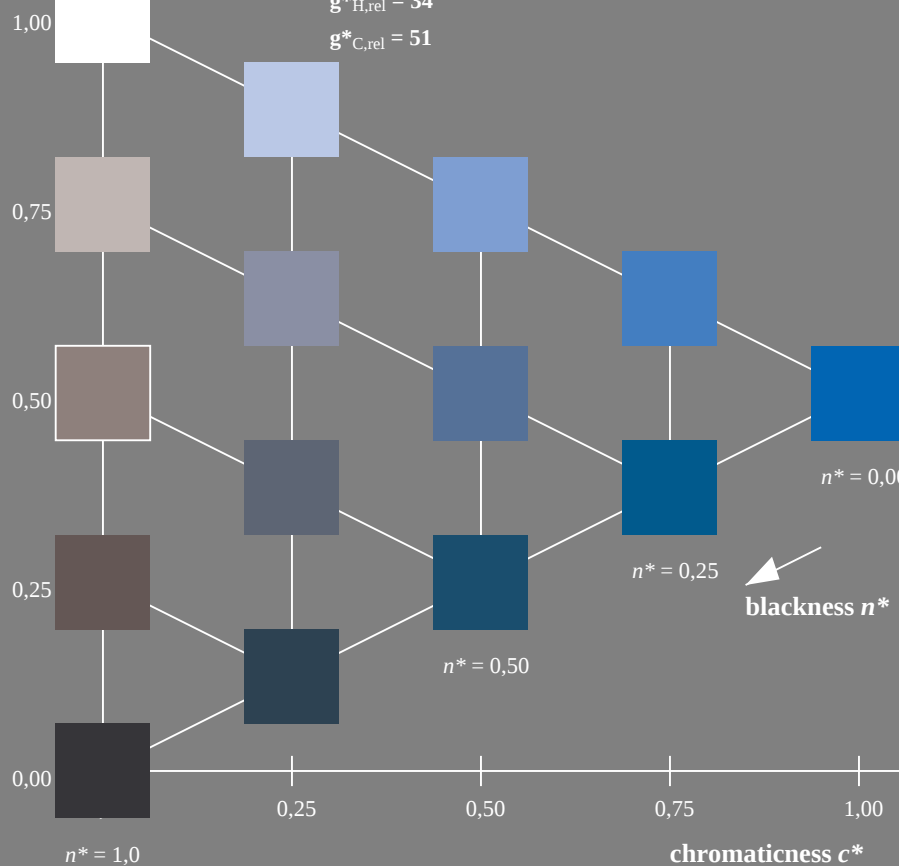
%Gamut

$u^*_{rel} = 16$

%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$



OE280-7, 5 step scales for constant CIELAB hue 272/360 = 0.755 (left)

### Output: Colorimetric Television Luminous System TLS00

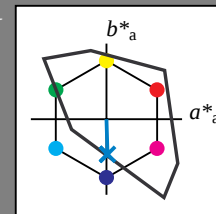
for hue  $h^* = lab \cdot h = 272/360 = 0.755$

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

D65: hue B

LCH\*Ma: 65 49 272

olv\*Ma: 0.0 0.61 1.0



#### TLS00; adapted (a) CIELAB data

|                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|----------------|-------------|---------|---------|--------------|--------------|
| O <sub>m</sub> | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>m</sub> | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>m</sub> | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>m</sub> | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>m</sub> | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>m</sub> | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>m</sub> | 0.01        | 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       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>m</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>m</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>m</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

CIELAB lightness  $L^*$

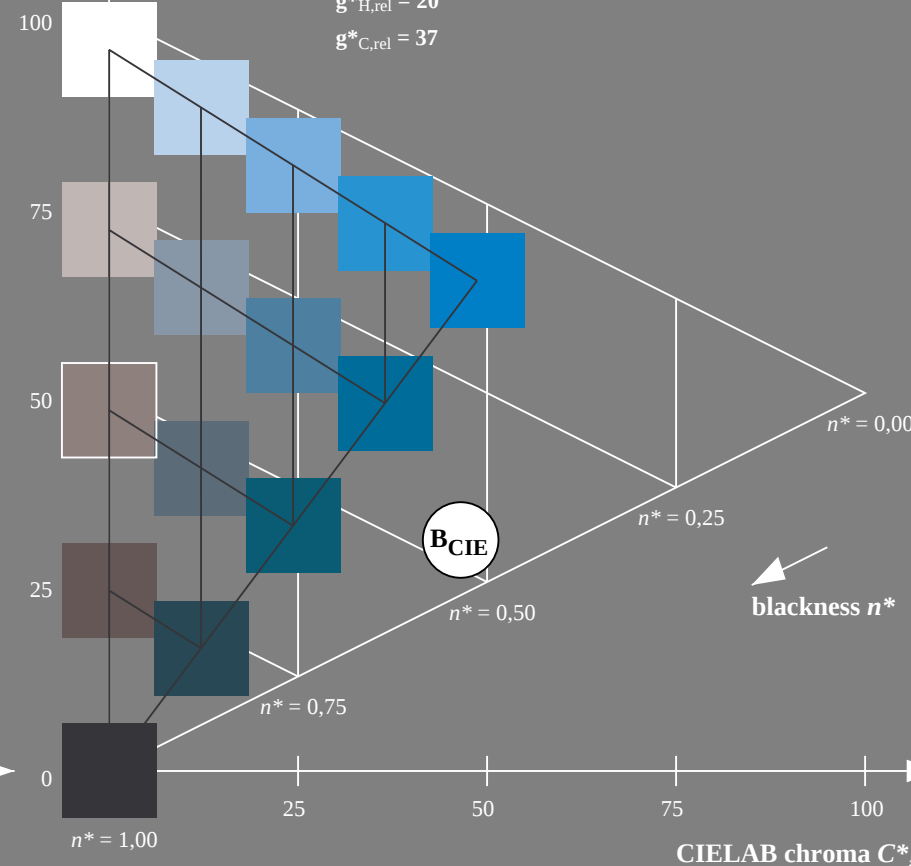
%Gamut

$u^*_{rel} = 158$

%Regularity

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

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



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

BAM-test chart OE28; Colorimetric systems TLS70 & TLS00

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

input:  $cmY0^* setcmykcolor$

output: no change compared to input