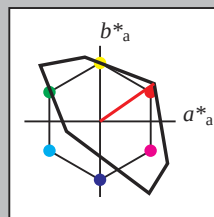


### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = \text{lab}^*h = 35/360 = 0.097$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

D65: hue O  
LCH\*Ma: 53 87 35  
olv\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 118$   
%Regularity  
 $g^*_{H,\text{rel}} = 22$   
 $g^*_{C,\text{rel}} = 40$

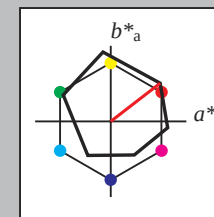
| TLS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| Y <sub>Ma</sub>                | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| L <sub>Ma</sub>                | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| C <sub>Ma</sub>                | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| V <sub>Ma</sub>                | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| M <sub>Ma</sub>                | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| N <sub>Ma</sub>                | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub>               | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub>               | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

### Output: Colorimetric Offset Reflective System ORS18

for hue  $h^* = \text{lab}^*h = 38/360 = 0.105$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

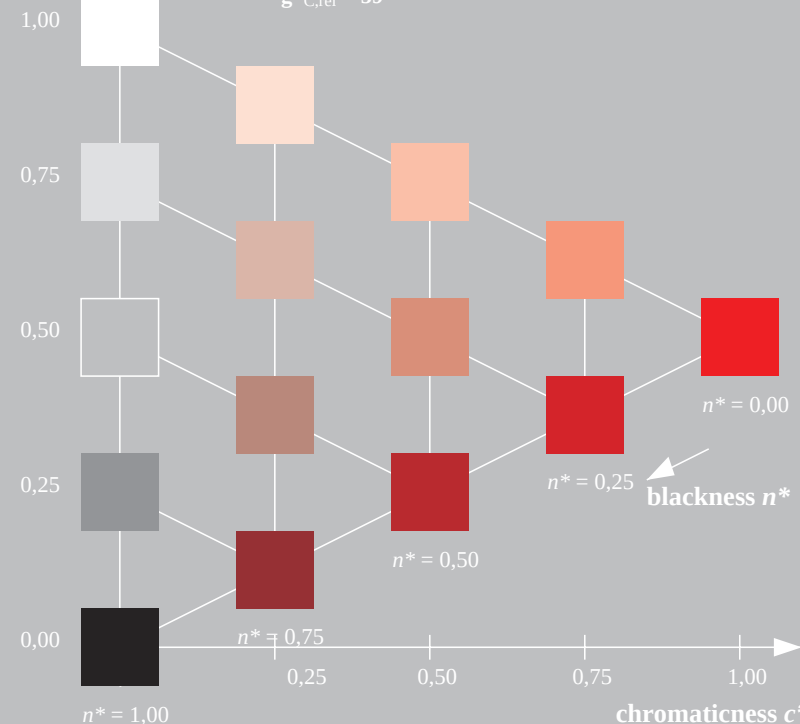
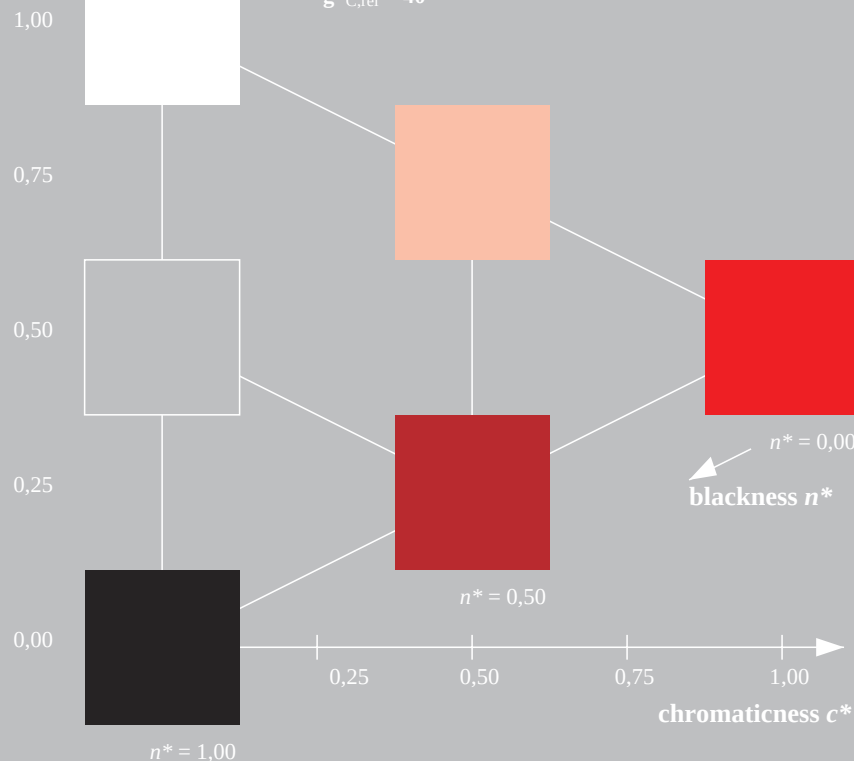
D65: hue O  
LCH\*Ma: 48 83 38  
olv\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 93$   
%Regularity  
 $g^*_{H,\text{rel}} = 57$   
 $g^*_{C,\text{rel}} = 59$

| ORS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| Y <sub>Ma</sub>                | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| L <sub>Ma</sub>                | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| C <sub>Ma</sub>                | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>                | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| M <sub>Ma</sub>                | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| N <sub>Ma</sub>                | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub>               | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| B <sub>CIE</sub>               | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



OE660-7, 3 step scales for constant CIELAB hue 35/360 = 0.097 (left)

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

BAM-test chart OE66; Colorimetric systems TLS18 & ORS18

D65: 3 and 5 step colour scales for 10 hues

input:  $\text{cmy}0^* \text{ setcmykcolor}$

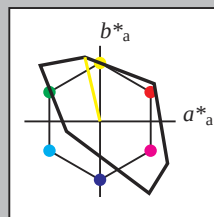
output:  $\text{cmy}0^* / 000n^* \text{ setcmykcolor}$

### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = \text{lab}^*h = 103/360 = 0.287$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

D65: hue Y  
LCH\*Ma: 93 87 103  
olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 118$   
%Regularity  
 $g^*_{\text{H,rel}} = 22$   
 $g^*_{\text{C,rel}} = 40$

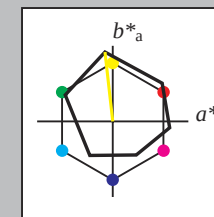
| TLS18; adapted (a) CIELAB data |         |         |              |              |  |
|--------------------------------|---------|---------|--------------|--------------|--|
| $L^*=L^*_a$                    | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |  |
| O <sub>Ma</sub> 52.76          | 71.63   | 49.88   | 87.29        | 35           |  |
| Y <sub>Ma</sub> 92.74          | -20.02  | 84.97   | 87.3         | 103          |  |
| L <sub>Ma</sub> 84.0           | -78.98  | 73.94   | 108.2        | 137          |  |
| C <sub>Ma</sub> 87.14          | -44.41  | -13.11  | 46.32        | 196          |  |
| V <sub>Ma</sub> 35.47          | 64.92   | -95.06  | 115.12       | 304          |  |
| M <sub>Ma</sub> 59.01          | 89.33   | -55.67  | 105.26       | 328          |  |
| N <sub>Ma</sub> 18.01          | 0.0     | 0.0     | 0.0          | 0            |  |
| W <sub>Ma</sub> 95.41          | 0.0     | 0.0     | 0.0          | 0            |  |
| R <sub>CIE</sub> 39.92         | 58.74   | 27.99   | 65.07        | 25           |  |
| J <sub>CIE</sub> 81.26         | -2.88   | 71.56   | 71.62        | 92           |  |
| G <sub>CIE</sub> 52.23         | -42.41  | 13.6    | 44.55        | 162          |  |
| B <sub>CIE</sub> 30.57         | 1.41    | -46.46  | 46.49        | 272          |  |

### Output: Colorimetric Offset Reflective System ORS18

for hue  $h^* = \text{lab}^*h = 96/360 = 0.268$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

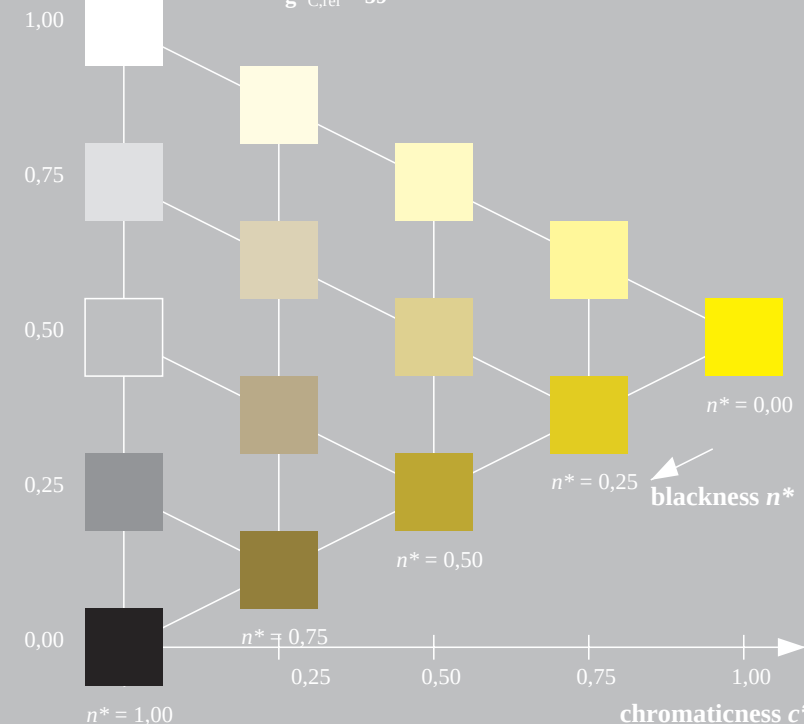
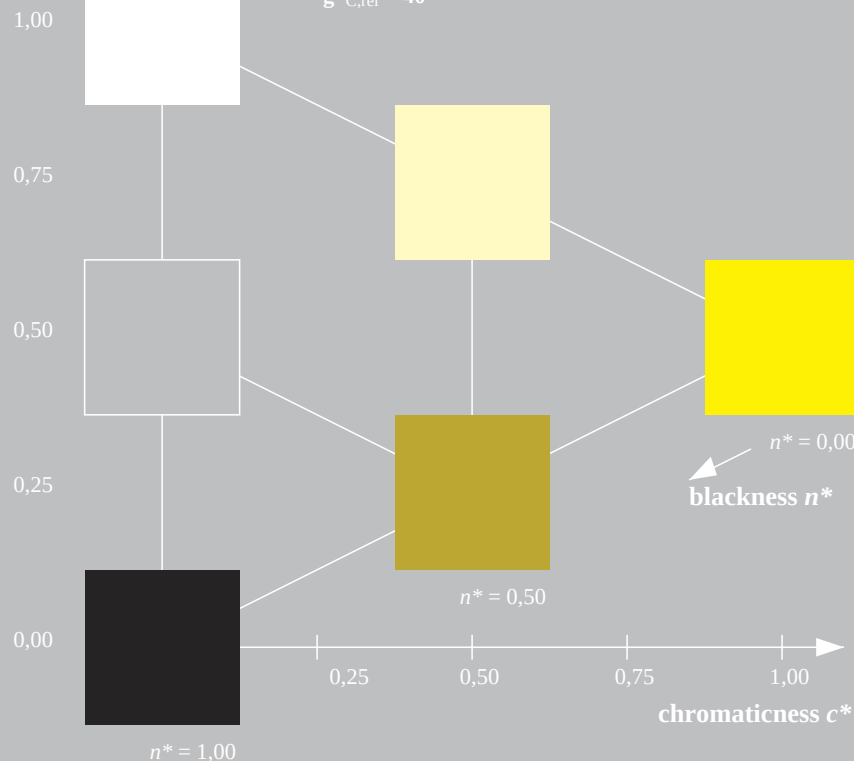
D65: hue Y  
LCH\*Ma: 90 92 96  
olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 93$   
%Regularity  
 $g^*_{\text{H,rel}} = 57$   
 $g^*_{\text{C,rel}} = 59$

| ORS18; adapted (a) CIELAB data |         |         |              |              |  |
|--------------------------------|---------|---------|--------------|--------------|--|
| $L^*=L^*_a$                    | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |  |
| O <sub>Ma</sub> 47.94          | 65.39   | 50.52   | 82.63        | 38           |  |
| Y <sub>Ma</sub> 90.37          | -10.26  | 91.75   | 92.32        | 96           |  |
| L <sub>Ma</sub> 50.9           | -62.83  | 34.96   | 71.91        | 151          |  |
| C <sub>Ma</sub> 58.62          | -30.34  | -45.01  | 54.3         | 236          |  |
| V <sub>Ma</sub> 25.72          | 31.1    | -44.4   | 54.22        | 305          |  |
| M <sub>Ma</sub> 48.13          | 75.28   | -8.36   | 75.74        | 354          |  |
| N <sub>Ma</sub> 18.01          | 0.0     | 0.0     | 0.0          | 0            |  |
| W <sub>Ma</sub> 95.41          | 0.0     | 0.0     | 0.0          | 0            |  |
| R <sub>CIE</sub> 39.92         | 58.66   | 26.98   | 64.57        | 25           |  |
| J <sub>CIE</sub> 81.26         | -2.16   | 67.76   | 67.79        | 92           |  |
| G <sub>CIE</sub> 52.23         | -42.25  | 11.76   | 43.87        | 164          |  |
| B <sub>CIE</sub> 30.57         | 1.15    | -46.84  | 46.86        | 271          |  |



OE660-7, 3 step scales for constant CIELAB hue 103/360 = 0.287 (left)

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

BAM-test chart OE66; Colorimetric systems TLS18 & ORS18

D65: 3 and 5 step colour scales for 10 hues

input:  $\text{cmy0}^* \text{ setcmykcolor}$

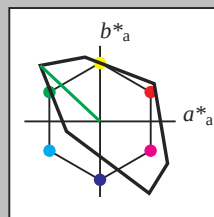
output:  $\text{cmy0}^* / 000n^* \text{ setcmykcolor}$

### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = \text{lab}^*h = 137/360 = 0.38$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

D65: hue L  
LCH\*Ma: 84 108 137  
olv\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 118$   
%Regularity  
 $g^*_{H,\text{rel}} = 22$   
 $g^*_{C,\text{rel}} = 40$

### TLS18; adapted (a) CIELAB data

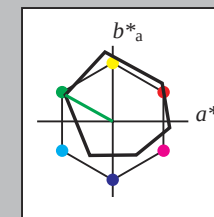
|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| Y <sub>Ma</sub>  | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| L <sub>Ma</sub>  | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| C <sub>Ma</sub>  | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| V <sub>Ma</sub>  | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| M <sub>Ma</sub>  | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| N <sub>Ma</sub>  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

### Output: Colorimetric Offset Reflective System ORS18

for hue  $h^* = \text{lab}^*h = 151/360 = 0.419$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

D65: hue L  
LCH\*Ma: 51 72 151  
olv\*Ma: 0.0 1.0 0.0

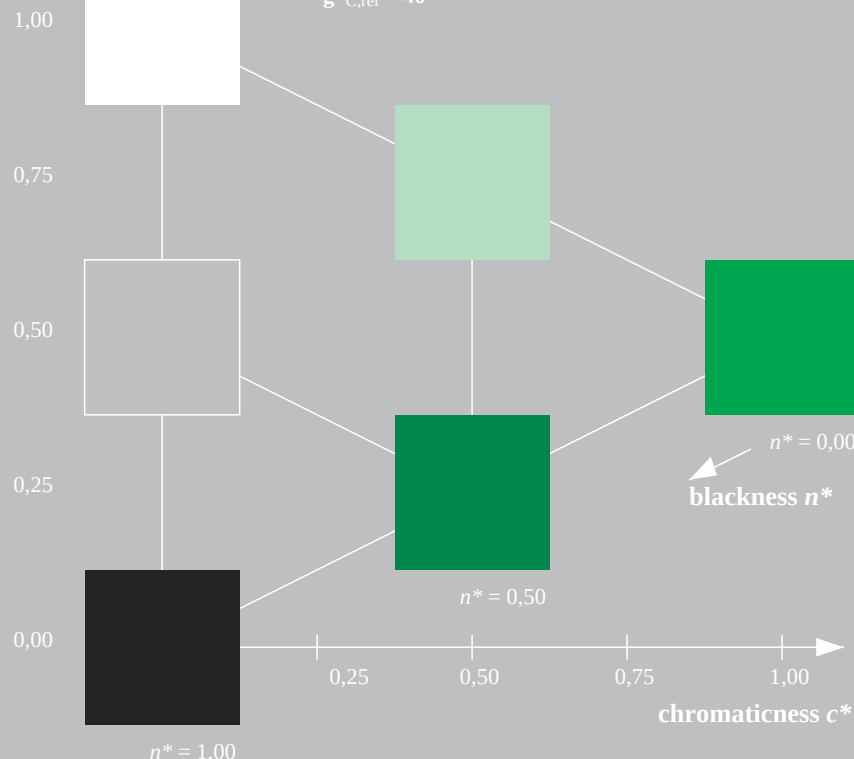
triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 93$   
%Regularity  
 $g^*_{H,\text{rel}} = 57$   
 $g^*_{C,\text{rel}} = 59$

### ORS18; adapted (a) CIELAB data

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



OE660-7, 3 step scales for constant CIELAB hue 137/360 = 0.38 (left)

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

BAM-test chart OE66; Colorimetric systems TLS18 & ORS18

D65: 3 and 5 step colour scales for 10 hues

input:  $\text{cmy0}^* \text{ setcmykcolor}$

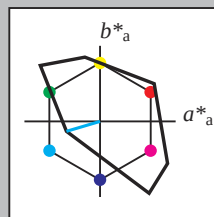
output:  $\text{cmy0}^* / 000n^* \text{ setcmykcolor}$

### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = \text{lab}^*h = 196/360 = 0.546$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

D65: hue C  
LCH\*Ma: 87 46 196  
olv\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 118$   
%Regularity  
 $g^*_{H,\text{rel}} = 22$   
 $g^*_{C,\text{rel}} = 40$

### TLS18; adapted (a) CIELAB data

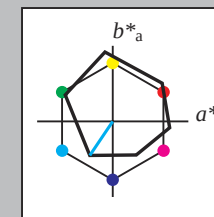
|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| Y <sub>Ma</sub>  | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| L <sub>Ma</sub>  | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| C <sub>Ma</sub>  | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| V <sub>Ma</sub>  | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| M <sub>Ma</sub>  | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| N <sub>Ma</sub>  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

### Output: Colorimetric Offset Reflective System ORS18

for hue  $h^* = \text{lab}^*h = 236/360 = 0.656$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

D65: hue C  
LCH\*Ma: 59 54 236  
olv\*Ma: 0.0 1.0 1.0

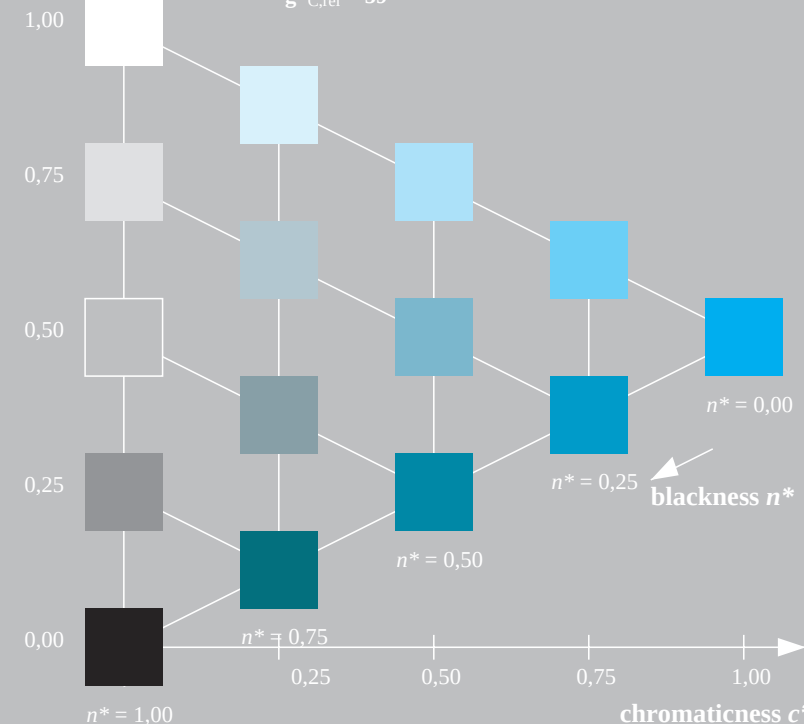
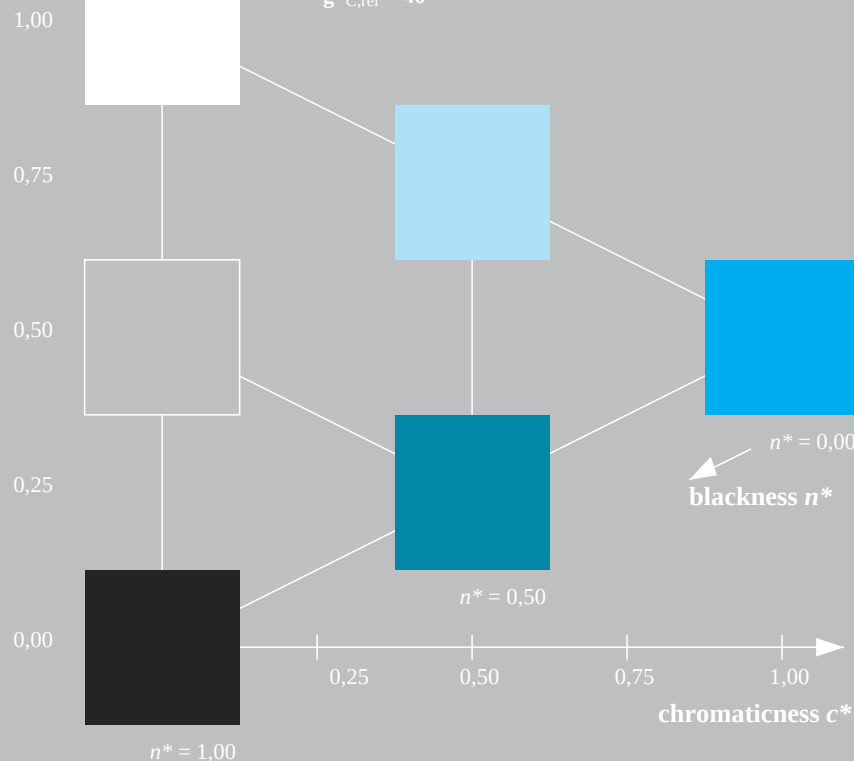
triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 93$   
%Regularity  
 $g^*_{H,\text{rel}} = 57$   
 $g^*_{C,\text{rel}} = 59$

### ORS18; adapted (a) CIELAB data

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



OE660-7, 3 step scales for constant CIELAB hue 196/360 = 0.546 (left)

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

BAM-test chart OE66; Colorimetric systems TLS18 & ORS18

D65: 3 and 5 step colour scales for 10 hues

input:  $\text{cmy}0^* \text{ setcmykcolor}$

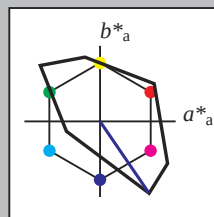
output:  $\text{cmy}0^* / 000n^* \text{ setcmykcolor}$

### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = \text{lab}^*h = 304/360 = 0.845$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

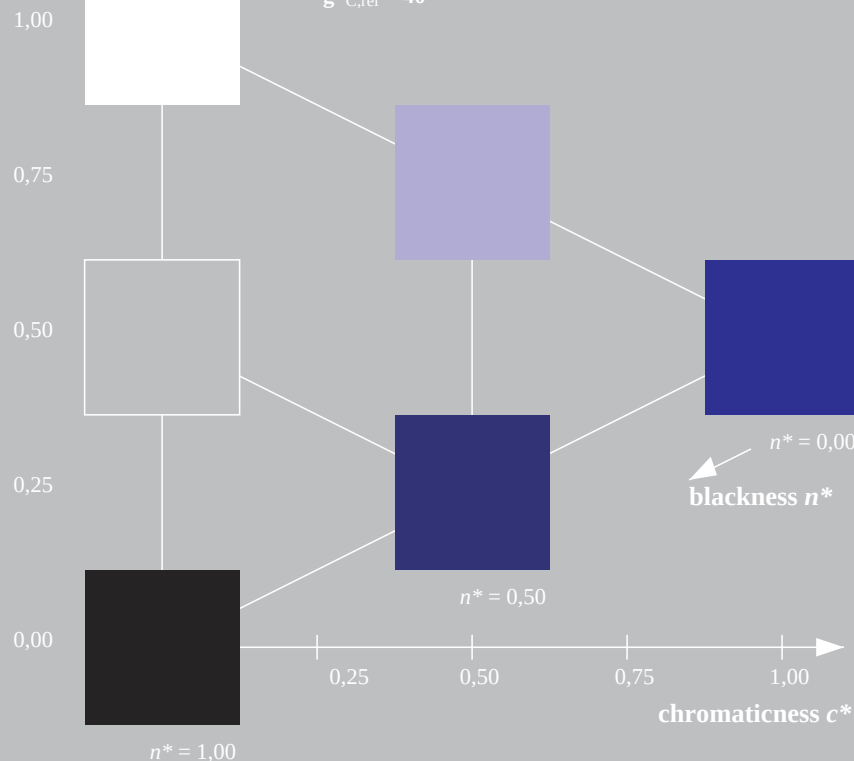
D65: hue V  
LCH\*Ma: 35 115 304  
olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 118$   
%Regularity  
 $g^*_{H,\text{rel}} = 22$   
 $g^*_{C,\text{rel}} = 40$

| TLS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| Y <sub>Ma</sub>                | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| L <sub>Ma</sub>                | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| C <sub>Ma</sub>                | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| V <sub>Ma</sub>                | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| M <sub>Ma</sub>                | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| N <sub>Ma</sub>                | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub>               | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub>               | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



OE660-7, 3 step scales for constant CIELAB hue 304/360 = 0.845 (left)



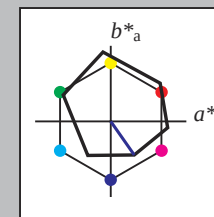
BAM-test chart OE66; Colorimetric systems TLS18 & ORS18  
D65: 3 and 5 step colour scales for 10 hues

### Output: Colorimetric Offset Reflective System ORS18

for hue  $h^* = \text{lab}^*h = 305/360 = 0.847$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

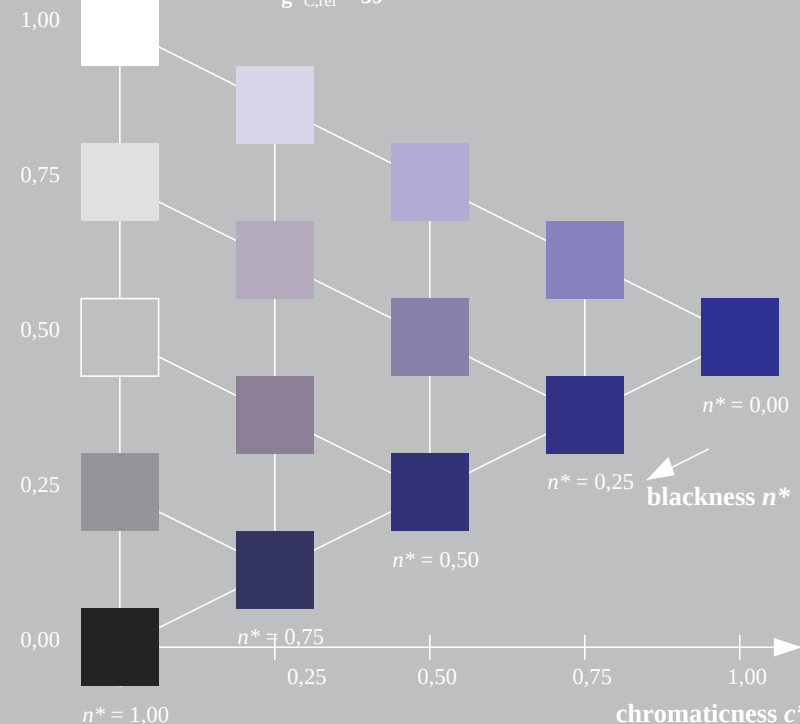
D65: hue V  
LCH\*Ma: 26 54 305  
olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 93$   
%Regularity  
 $g^*_{H,\text{rel}} = 57$   
 $g^*_{C,\text{rel}} = 59$

| ORS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| Y <sub>Ma</sub>                | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| L <sub>Ma</sub>                | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| C <sub>Ma</sub>                | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>                | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| M <sub>Ma</sub>                | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| N <sub>Ma</sub>                | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub>               | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| B <sub>CIE</sub>               | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



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

input:  $\text{cmy0}^* \text{ setcmykcolor}$   
output:  $\text{cmy0}^* / 000n^* \text{ setcmykcolor}$

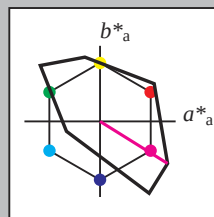


### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = \text{lab}^*h = 328/360 = 0.911$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

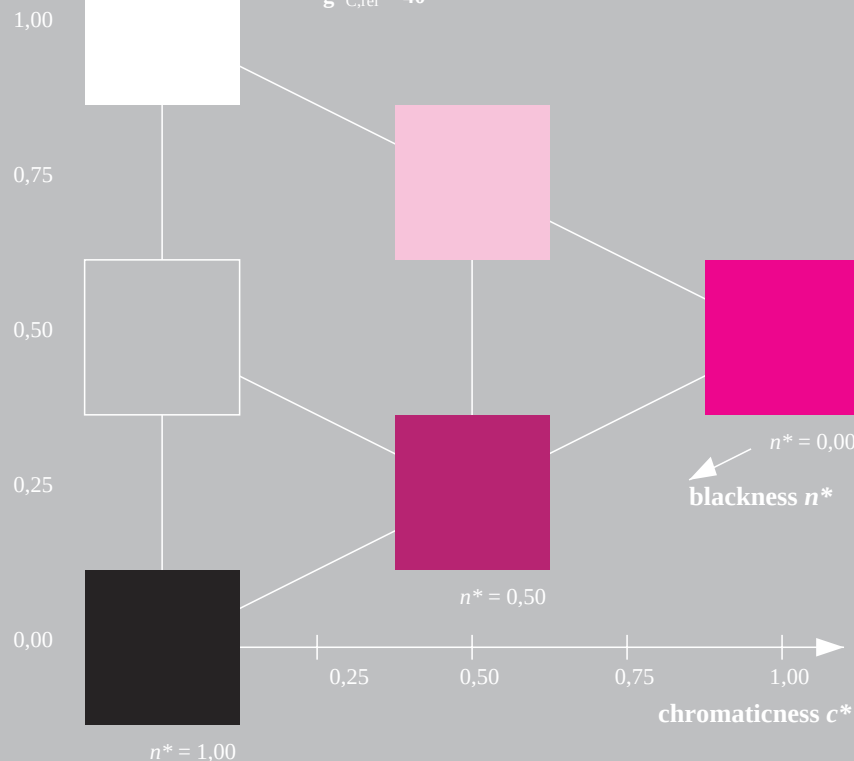
D65: hue M  
LCH\*Ma: 59 105 328  
olv\*Ma: 1.0 0.0 1.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 118$   
%Regularity  
 $g^*_{\text{H,rel}} = 22$   
 $g^*_{\text{C,rel}} = 40$

| TLS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| Y <sub>Ma</sub>                | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| L <sub>Ma</sub>                | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| C <sub>Ma</sub>                | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| V <sub>Ma</sub>                | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| M <sub>Ma</sub>                | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| N <sub>Ma</sub>                | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub>               | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub>               | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



OE660-7, 3 step scales for constant CIELAB hue 328/360 = 0.911 (left)



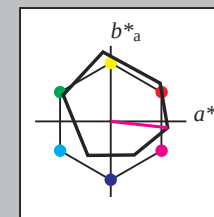
BAM-test chart OE66; Colorimetric systems TLS18 & ORS18  
D65: 3 and 5 step colour scales for 10 hues

### Output: Colorimetric Offset Reflective System ORS18

for hue  $h^* = \text{lab}^*h = 354/360 = 0.982$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

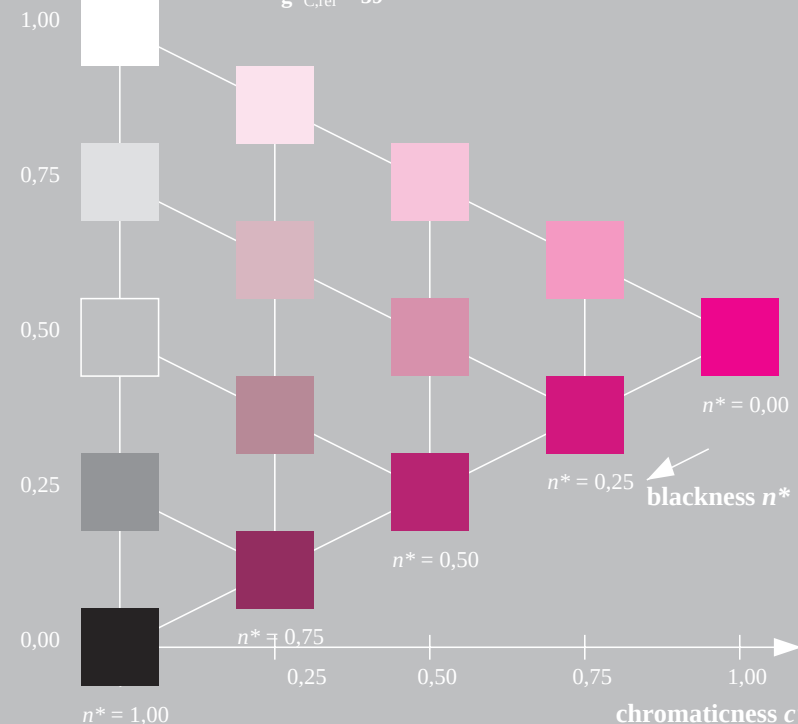
D65: hue M  
LCH\*Ma: 48 76 354  
olv\*Ma: 1.0 0.0 1.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 93$   
%Regularity  
 $g^*_{\text{H,rel}} = 57$   
 $g^*_{\text{C,rel}} = 59$

| ORS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| Y <sub>Ma</sub>                | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| L <sub>Ma</sub>                | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| C <sub>Ma</sub>                | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>                | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| M <sub>Ma</sub>                | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| N <sub>Ma</sub>                | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub>               | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| B <sub>CIE</sub>               | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



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

input:  $\text{cmy0}^* \text{ setcmykcolor}$   
output:  $\text{cmy0}^* / 000n^* \text{ setcmykcolor}$

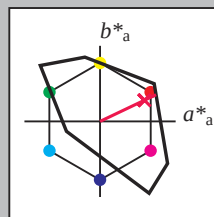


### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = \text{lab}^*h = 25/360 = 0.071$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

D65: hue R  
LCH\*Ma: 54 82 25  
olv\*Ma: 1.0 0.0 0.14

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 118$   
%Regularity  
 $g^*_{H,\text{rel}} = 22$   
 $g^*_{C,\text{rel}} = 40$

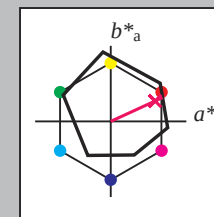
| TLS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| Y <sub>Ma</sub>                | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| L <sub>Ma</sub>                | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| C <sub>Ma</sub>                | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| V <sub>Ma</sub>                | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| M <sub>Ma</sub>                | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| N <sub>Ma</sub>                | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub>               | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub>               | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

### Output: Colorimetric Offset Reflective System ORS18

for hue  $h^* = \text{lab}^*h = 25/360 = 0.069$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

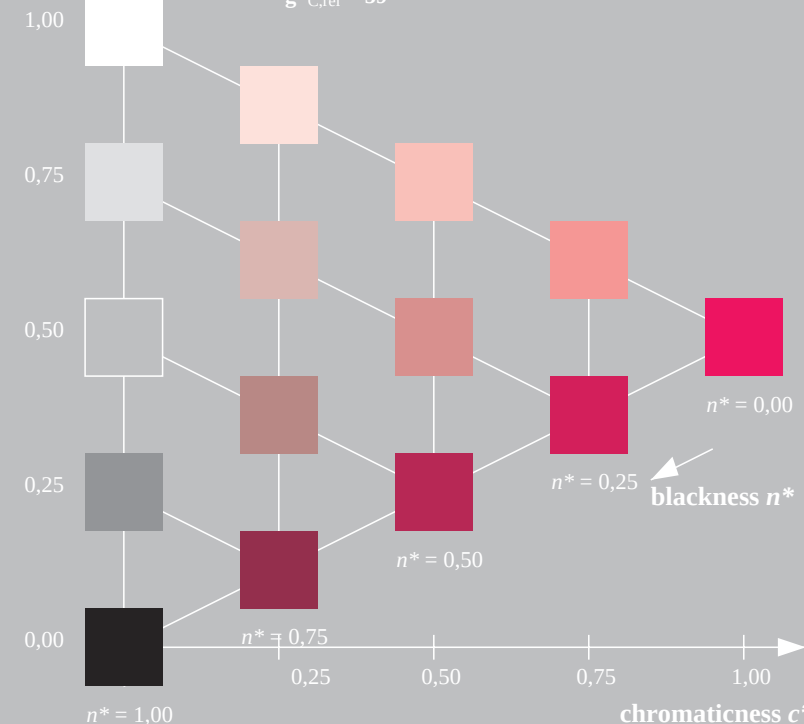
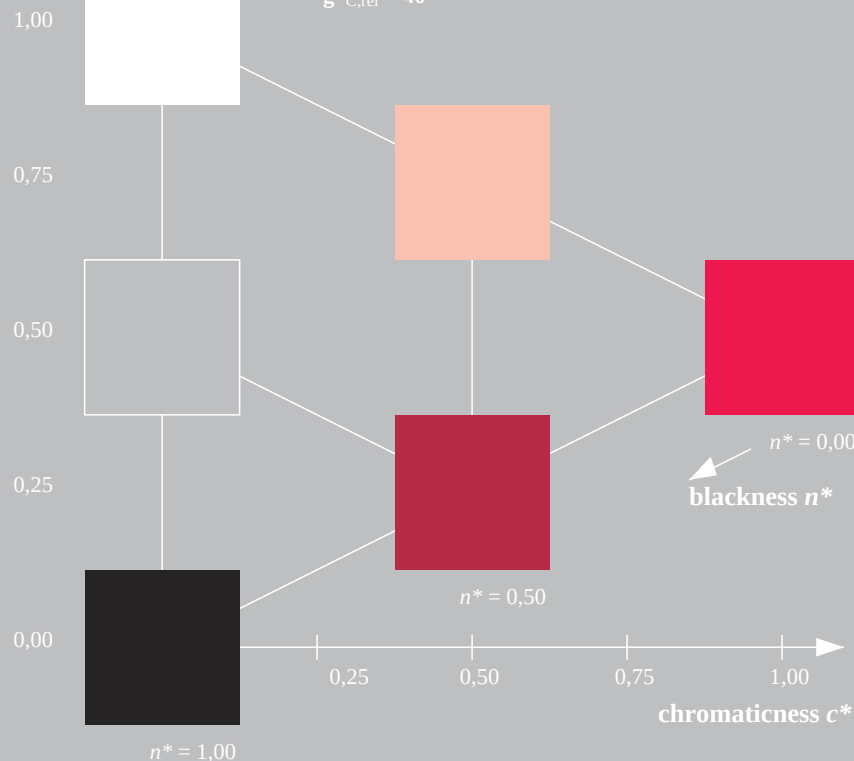
D65: hue R  
LCH\*Ma: 48 75 25  
olv\*Ma: 1.0 0.0 0.32

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 93$   
%Regularity  
 $g^*_{H,\text{rel}} = 57$   
 $g^*_{C,\text{rel}} = 59$

| ORS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| Y <sub>Ma</sub>                | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| L <sub>Ma</sub>                | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| C <sub>Ma</sub>                | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>                | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| M <sub>Ma</sub>                | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| N <sub>Ma</sub>                | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub>               | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| B <sub>CIE</sub>               | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



OE660-7, 3 step scales for constant CIELAB hue 25/360 = 0.071 (left)

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

BAM-test chart OE66; Colorimetric systems TLS18 & ORS18  
D65: 3 and 5 step colour scales for 10 hues

input:  $\text{cmy0}^* \text{ setcmykcolor}$   
output:  $\text{cmy0}^* / 000n^* \text{ setcmykcolor}$



### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = \text{lab}^*h = 92/360 = 0.256$

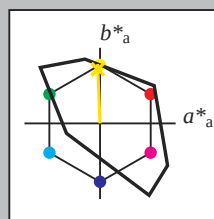
$\text{lab}^*ich$  and  $\text{lab}^*nch$

D65: hue J

LCH\*Ma: 85 79 92

olv\*Ma: 1.0 0.82 0.0

triangle lightness  $t^*$



%Gamut

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

%Regularity

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

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

### TLS18; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| Y <sub>Ma</sub>  | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| L <sub>Ma</sub>  | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| C <sub>Ma</sub>  | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| V <sub>Ma</sub>  | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| M <sub>Ma</sub>  | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| N <sub>Ma</sub>  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

### Output: Colorimetric Offset Reflective System ORS18

for hue  $h^* = \text{lab}^*h = 92/360 = 0.255$

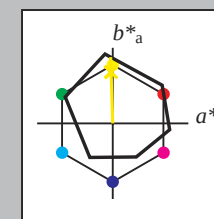
$\text{lab}^*ich$  and  $\text{lab}^*nch$

D65: hue J

LCH\*Ma: 86 88 92

olv\*Ma: 1.0 0.9 0.0

triangle lightness  $t^*$



%Gamut

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

%Regularity

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

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

### ORS18; adapted (a) CIELAB data

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

1,00

0,75

0,50

0,25

0,00

$n^* = 1,00$

$n^* = 0,50$

blackness  $n^*$

chromaticness  $c^*$

1,00

0,75

0,50

0,25

0,00

$n^* = 1,00$

$n^* = 0,75$

$n^* = 0,50$

$n^* = 0,25$

$n^* = 0,00$

chromaticness  $c^*$

OE660-7, 3 step scales for constant CIELAB hue 92/360 = 0.256 (left)



BAM-test chart OE66; Colorimetric systems TLS18 & ORS18

D65: 3 and 5 step colour scales for 10 hues

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

input:  $\text{cmy}0^* \text{ setcmykcolor}$

output:  $\text{cmy}0^* / 000n^* \text{ setcmykcolor}$



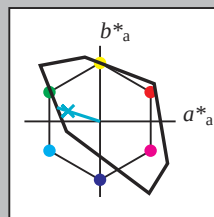


### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = \text{lab}^*h = 162/360 = 0.451$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

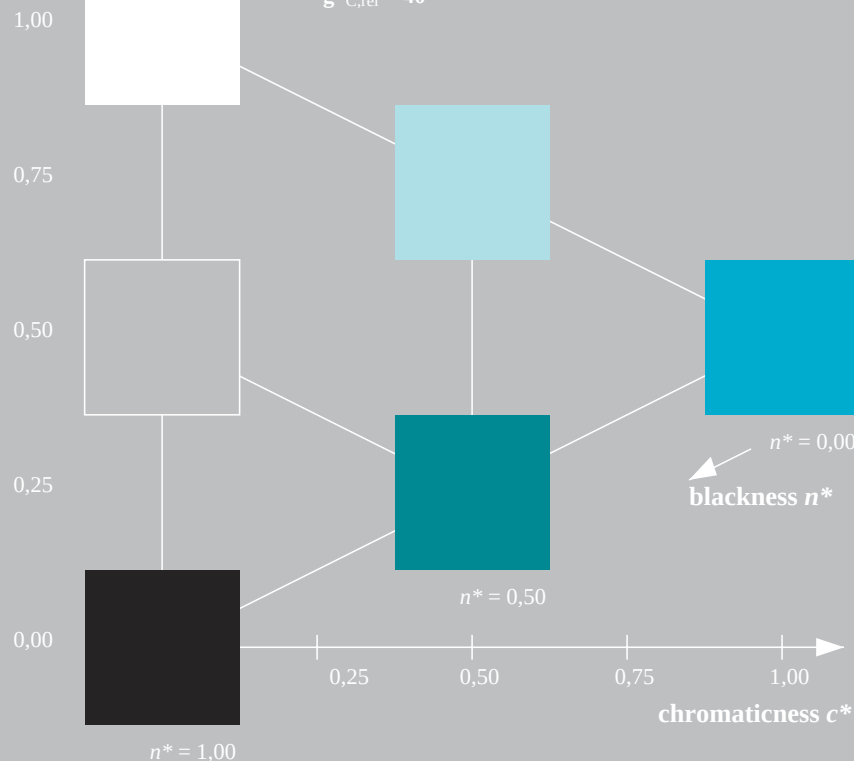
D65: hue G  
LCH\*Ma: 86 60 162  
olv\*Ma: 0.0 1.0 0.64

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 118$   
%Regularity  
 $g^*_{H,\text{rel}} = 22$   
 $g^*_{C,\text{rel}} = 40$

| TLS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| Y <sub>Ma</sub>                | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| L <sub>Ma</sub>                | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| C <sub>Ma</sub>                | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| V <sub>Ma</sub>                | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| M <sub>Ma</sub>                | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| N <sub>Ma</sub>                | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub>               | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub>               | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

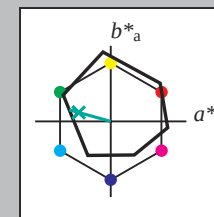


### Output: Colorimetric Offset Reflective System ORS18

for hue  $h^* = \text{lab}^*h = 164/360 = 0.457$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

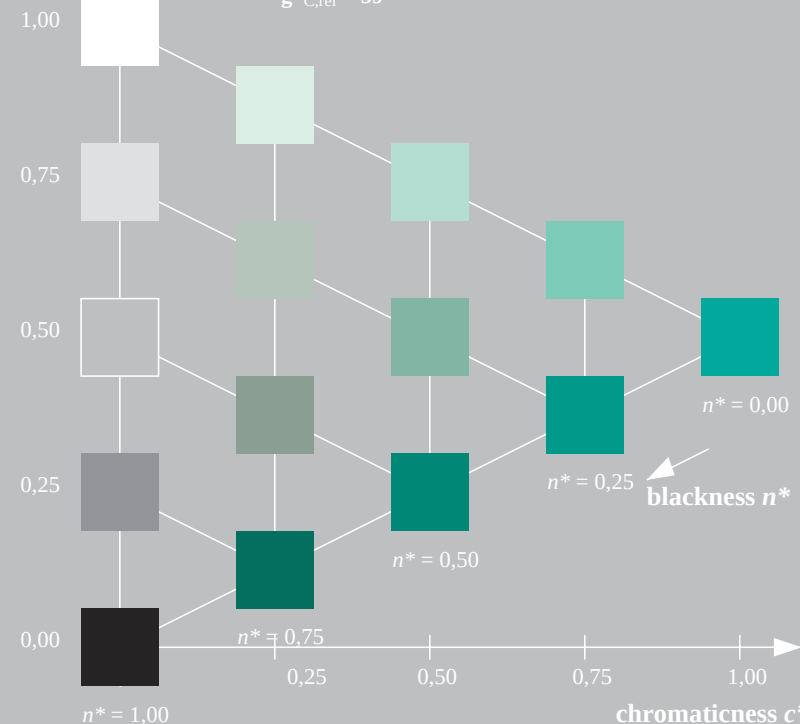
D65: hue G  
LCH\*Ma: 53 57 164  
olv\*Ma: 0.0 1.0 0.25

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 93$   
%Regularity  
 $g^*_{H,\text{rel}} = 57$   
 $g^*_{C,\text{rel}} = 59$

| ORS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| Y <sub>Ma</sub>                | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| L <sub>Ma</sub>                | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| C <sub>Ma</sub>                | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>                | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| M <sub>Ma</sub>                | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| N <sub>Ma</sub>                | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub>               | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| B <sub>CIE</sub>               | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



OE660-7, 3 step scales for constant CIE LAB hue 162/360 = 0.451 (left)

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

BAM-test chart OE66; Colorimetric systems TLS18 & ORS18

D65: 3 and 5 step colour scales for 10 hues

input:  $\text{cmy0}^* \text{ setcmykcolor}$

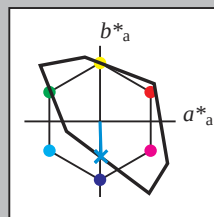
output:  $\text{cmy0}^* / 000n^* \text{ setcmykcolor}$

### Input: Colorimetric Television Luminous System TLS18

for hue  $h^* = \text{lab}^*h = 272/360 = 0.755$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

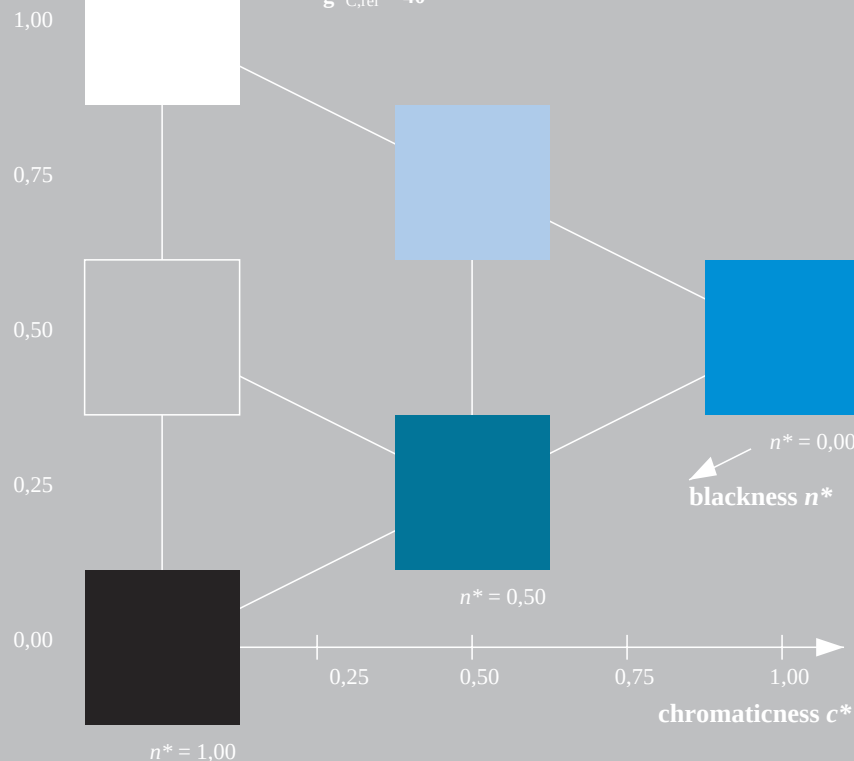
D65: hue B  
LCH\*Ma: 65 48 272  
olv\*Ma: 0.0 0.58 1.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 118$   
%Regularity  
 $g^*_{H,\text{rel}} = 22$   
 $g^*_{C,\text{rel}} = 40$

| TLS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 52.76       | 71.63   | 49.88   | 87.29        | 35           |
| Y <sub>Ma</sub>                | 92.74       | -20.02  | 84.97   | 87.3         | 103          |
| L <sub>Ma</sub>                | 84.0        | -78.98  | 73.94   | 108.2        | 137          |
| C <sub>Ma</sub>                | 87.14       | -44.41  | -13.11  | 46.32        | 196          |
| V <sub>Ma</sub>                | 35.47       | 64.92   | -95.06  | 115.12       | 304          |
| M <sub>Ma</sub>                | 59.01       | 89.33   | -55.67  | 105.26       | 328          |
| N <sub>Ma</sub>                | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub>               | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub>               | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



OE660-7, 3 step scales for constant CIELAB hue 272/360 = 0.755 (left)



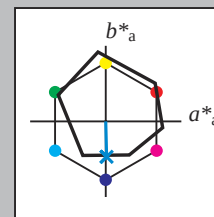
BAM-test chart OE66; Colorimetric systems TLS18 & ORS18  
D65: 3 and 5 step colour scales for 10 hues

### Output: Colorimetric Offset Reflective System ORS18

for hue  $h^* = \text{lab}^*h = 271/360 = 0.754$   
 $\text{lab}^*ich$  and  $\text{lab}^*nch$

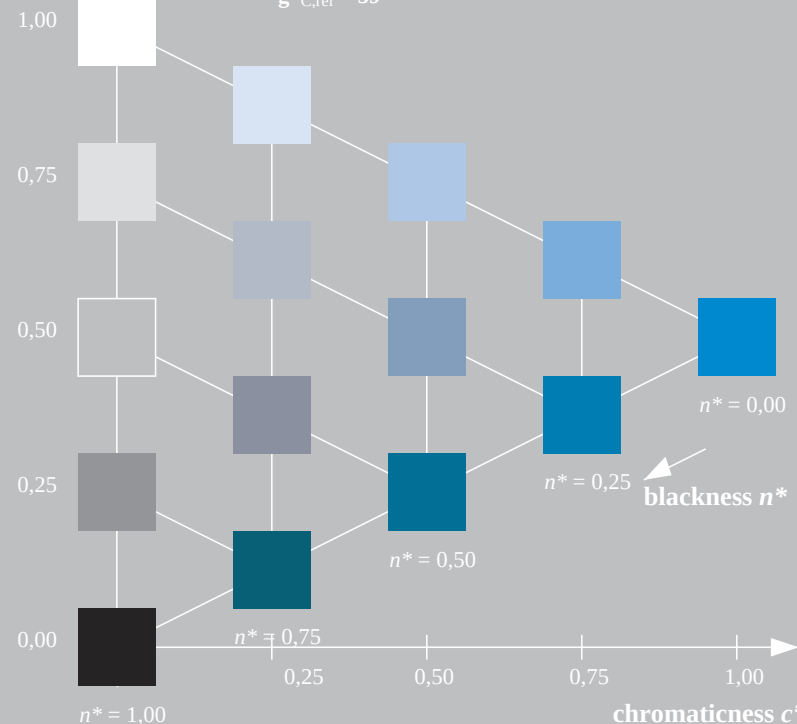
D65: hue B  
LCH\*Ma: 42 45 271  
olv\*Ma: 0.0 0.49 1.0

triangle lightness  $t^*$



%Gamut  
 $u^*_{\text{rel}} = 93$   
%Regularity  
 $g^*_{H,\text{rel}} = 57$   
 $g^*_{C,\text{rel}} = 59$

| ORS18; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 47.94       | 65.39   | 50.52   | 82.63        | 38           |
| Y <sub>Ma</sub>                | 90.37       | -10.26  | 91.75   | 92.32        | 96           |
| L <sub>Ma</sub>                | 50.9        | -62.83  | 34.96   | 71.91        | 151          |
| C <sub>Ma</sub>                | 58.62       | -30.34  | -45.01  | 54.3         | 236          |
| V <sub>Ma</sub>                | 25.72       | 31.1    | -44.4   | 54.22        | 305          |
| M <sub>Ma</sub>                | 48.13       | 75.28   | -8.36   | 75.74        | 354          |
| N <sub>Ma</sub>                | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>                | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub>               | 39.92       | 58.66   | 26.98   | 64.57        | 25           |
| J <sub>CIE</sub>               | 81.26       | -2.16   | 67.76   | 67.79        | 92           |
| G <sub>CIE</sub>               | 52.23       | -42.25  | 11.76   | 43.87        | 164          |
| B <sub>CIE</sub>               | 30.57       | 1.15    | -46.84  | 46.86        | 271          |



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

input:  $\text{cmy0}^* \text{ setcmykcolor}$   
output:  $\text{cmy0}^* / 000n^* \text{ setcmykcolor}$

