

### Input: Colorimetric Television Luminous System TLS00

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

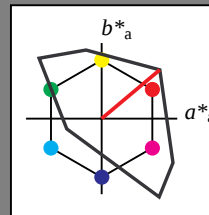
$lab^*tch$  and  $lab^*nch$

D65: hue O

LCH\*Ma: 51 100 40

olv\*Ma: 1.0 0.0 0.0

triangle lightness



| TLS00; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>                | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>                | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>                | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>                | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>                | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>                | 0.01        | 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          |

%Regularity

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

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

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

chromaticness  $c^*$

### Output: Colorimetric Offset Reflective System ORS18

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

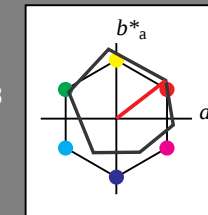
$lab^*tch$  and  $lab^*nch$

D65: hue O

LCH\*Ma: 48 83 38

olv\*Ma: 1.0 0.0 0.0

triangle lightness



| 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          |

%Regularity

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

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

1,00

0,75

0,50

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58,75

### Input: Colorimetric Television Luminous System TLS00

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

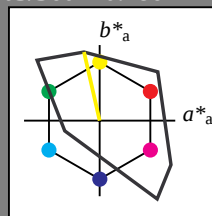
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue Y

LCH\*Ma: 93 93 103

olv\*Ma: 1.0 1.0 0.0

triangle lightness



### TLS00; adapted (a) CIELAB data

|                  | $L^* = L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|---------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5          | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66         | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63         | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88         | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39         | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3          | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01          | 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          |

%Regularity

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

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

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

chromaticness  $c^*$

### Output: Colorimetric Offset Reflective System ORS18

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

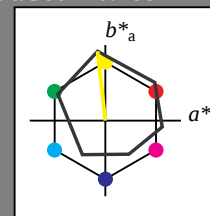
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue Y

LCH\*Ma: 90 92 96

olv\*Ma: 1.0 1.0 0.0

triangle lightness



### 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          |

%Regularity

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

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

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

chromaticness  $c^*$

OE450-7, 5 step scales for constant CIELAB hue 103/360 = 0.286 (left)

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

BAM-test chart OE45; Colorimetric systems TLS00 & ORS18

D65: 5 step colour scales and coordinate data for 10 hues

input:  $cmy0^* \text{ set } cmykcolor$

output: no change compared to input

### Input: Colorimetric Television Luminous System TLS00

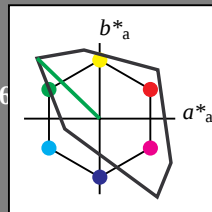
for hue  $h^* = lab \cdot h = 136/360 = 0.378$

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

D65: hue L  
LCH\*Ma: 84 115 136  
olv\*Ma: 0.0 1.0 0.0

triangle lightness

1,00



% Gamut  
 $u^*_{rel} = 158$

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

|                  | $L^* = L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|---------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5          | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66         | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63         | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88         | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39         | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3          | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01          | 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          |

% Regularity

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

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

1,00

| relative Inform. Technology (IT) |       |       |      |       |
|----------------------------------|-------|-------|------|-------|
| olvi3*                           | 1.0   | 1.0   | 1.0  | (1.0) |
| cmyn3*                           | 0.0   | 0.0   | 0.0  | (0.0) |
| olvi4*                           | 1.0   | 1.0   | 1.0  | (1.0) |
| cmyn4*                           | 0.0   | 0.0   | 0.0  | (0.0) |
| standard and adapted CIELAB      |       |       |      |       |
| LAB*LAB                          | 95.41 | -0.98 | 4.75 |       |
| LAB*LABa                         | 95.41 | 0.0   | 0.0  |       |
| LAB*TCha                         | 99.91 | 0.01  | 0.0  |       |
| relative CIELAB lab*             |       |       |      |       |
| lab*lab                          | 1.0   | 0.0   | 0.0  |       |
| lab*tch                          | 1.0   | 0.0   | 0.0  |       |
| lab*nch                          | 0.0   | 0.0   | 0.0  |       |
| lab*trj                          | 1.0   | 0.0   | 0.0  |       |
| lab*tce                          | 1.0   | 0.0   | 0.0  |       |
| lab*nce                          | 0.0   | 0.0   | 0.0  |       |

| relative Inform. Technology (IT) |       |       |      |       |
|----------------------------------|-------|-------|------|-------|
| olvi3*                           | 0.75  | 0.75  | 0.75 | (1.0) |
| cmyn3*                           | 0.25  | 0.25  | 0.25 | (0.0) |
| olvi4*                           | 1.0   | 1.0   | 1.0  | (1.0) |
| cmyn4*                           | 0.0   | 0.0   | 0.0  | (0.0) |
| standard and adapted CIELAB      |       |       |      |       |
| LAB*LAB                          | 76.06 | -0.61 | 3.44 |       |
| LAB*LABa                         | 76.06 | 0.0   | 0.0  |       |
| LAB*TCha                         | 75.0  | 0.01  | 0.0  |       |
| relative CIELAB lab*             |       |       |      |       |
| lab*lab                          | 0.75  | 0.0   | 0.0  |       |
| lab*tch                          | 0.75  | 0.0   | 0.0  |       |
| lab*nch                          | 0.25  | 0.0   | 0.0  |       |
| lab*trj                          | 0.75  | 0.0   | 0.0  |       |
| lab*tce                          | 0.75  | 0.0   | 0.0  |       |
| lab*nce                          | 0.25  | 0.0   | 0.0  |       |

| relative Inform. Technology (IT) |       |      |      |       |
|----------------------------------|-------|------|------|-------|
| olvi3*                           | 0.5   | 0.5  | 0.5  | (1.0) |
| cmyn3*                           | 0.5   | 0.5  | 0.5  | (0.0) |
| olvi4*                           | 1.0   | 1.0  | 1.0  | (1.0) |
| cmyn4*                           | 0.0   | 0.0  | 0.0  | (0.0) |
| standard and adapted CIELAB      |       |      |      |       |
| LAB*LAB                          | 56.71 | 0.24 | 2.14 |       |
| LAB*LABa                         | 56.71 | 0.0  | 0.0  |       |
| LAB*TCha                         | 50.0  | 0.01 | 0.0  |       |
| relative CIELAB lab*             |       |      |      |       |
| lab*lab                          | 0.5   | 0.0  | 0.0  |       |
| lab*tch                          | 0.5   | 0.0  | 0.0  |       |
| lab*nch                          | 0.5   | 0.0  | 0.0  |       |
| lab*trj                          | 0.5   | 0.0  | 0.0  |       |
| lab*tce                          | 0.5   | 0.0  | 0.0  |       |
| lab*nce                          | 0.5   | 0.0  | 0.0  |       |

| relative Inform. Technology (IT) |       |      |      |       |
|----------------------------------|-------|------|------|-------|
| olvi3*                           | 0.25  | 0.25 | 0.25 | (1.0) |
| cmyn3*                           | 0.75  | 0.75 | 0.75 | (0.0) |
| olvi4*                           | 1.0   | 1.0  | 1.0  | (1.0) |
| cmyn4*                           | 0.0   | 0.0  | 0.0  | (0.0) |
| standard and adapted CIELAB      |       |      |      |       |
| LAB*LAB                          | 37.36 | 0.13 | 0.83 |       |
| LAB*LABa                         | 37.36 | 0.0  | 0.0  |       |
| LAB*TCha                         | 25.0  | 0.01 | 0.0  |       |
| relative CIELAB lab*             |       |      |      |       |
| lab*lab                          | 0.25  | 0.0  | 0.0  |       |
| lab*tch                          | 0.25  | 0.0  | 0.0  |       |
| lab*nch                          | 0.75  | 0.0  | 0.0  |       |
| lab*trj                          | 0.25  | 0.0  | 0.0  |       |
| lab*tce                          | 0.25  | 0.0  | 0.0  |       |
| lab*nce                          | 0.75  | 0.0  | 0.0  |       |

| relative Inform. Technology (IT) |       |     |      |       |
|----------------------------------|-------|-----|------|-------|
| olvi3*                           | 0.0   | 0.0 | 0.0  | (1.0) |
| cmyn3*                           | 1.0   | 1.0 | 1.0  | (0.0) |
| olvi4*                           | 1.0   | 1.0 | 1.0  | (1.0) |
| cmyn4*                           | 0.0   | 0.0 | 0.0  | (0.0) |
| standard and adapted CIELAB      |       |     |      |       |
| LAB*LAB                          | 18.02 | 0.3 | 0.47 |       |
| LAB*LABa                         | 18.02 | 0.0 | 0.0  |       |
| LAB*TCha                         | 0.01  | 0.0 | 0.0  |       |
| relative CIELAB lab*             |       |     |      |       |
| lab*lab                          | 0.0   | 0.0 | 0.0  |       |
| lab*tch                          | 0.0   | 0.0 | 0.0  |       |
| lab*nch                          | 1.0   | 0.0 | 0.0  |       |
| lab*trj                          | 0.0   | 0.0 | 0.0  |       |
| lab*tce                          | 0.0   | 0.0 | 0.0  |       |
| lab*nce                          | 1.0   | 0.0 | 0.0  |       |

$n^* = 1,0$

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

BAM-test chart OE45; Colorimetric systems TLS00 & ORS18

D65: 5 step colour scales and coordinate data for 10 hues

output: no change compared to input

### Output: Colorimetric Offset Reflective System ORS18

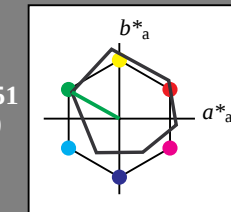
for hue  $h^* = lab \cdot h = 151/360 = 0.419$

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

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

triangle lightness

1,00



% Gamut  
 $u^*_{rel} = 93$

#### 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          |

% Regularity

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

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

| relative Inform. Technology (IT) |       |        |        |       |
|----------------------------------|-------|--------|--------|-------|
| olvi3*                           | 0.75  | 1.0    | 0.75   | (1.0) |
| cmyn3*                           | 0.25  | 0.0    | 0.25   | (0.0) |
| olvi4*                           | 0.75  | 1.0    | 0.75   | (1.0) |
| cmyn4*                           | 0.0   | 0.0    | 0.0    | (0.0) |
| standard and adapted CIELAB      |       |        |        |       |
| LAB*LAB                          | 84.28 | -16.47 | 12.74  |       |
| LAB*LABa                         | 84.28 | -15.69 | 8.74   |       |
| LAB*TCha                         | 87.5  | 17.97  | 150.91 |       |
| relative CIELAB lab*             |       |        |        |       |
| lab*lab                          | 0.75  | 0.25   | 0.419  |       |
| lab*tch                          | 0.75  | 0.25   | 0.419  |       |
| lab*nch                          | 0.0   | 0.25   | 0.419  |       |
| lab*trj                          | 0.75  | 0.25   | 0.419  |       |
| lab*tce                          | 0.75  | 0.25   | 0.453  |       |
| lab*nce                          | 0.0   | 0.25   | 0.818  |       |

| relative Inform. Technology (IT) |       |       |        |       |
|----------------------------------|-------|-------|--------|-------|
| olvi3*                           | 0.5   | 0.75  | 0.5    | (1.0) |
| cmyn3*                           | 0.5   | 0.25  | 0.5    | (0.0) |
| olvi4*                           | 0.75  | 1.0   | 0.75   | (1.0) |
| cmyn4*                           | 0.0   | 0.0   | 0.0    | (0.0) |
| standard and adapted CIELAB      |       |       |        |       |
| LAB*LAB                          | 64.93 | -16.1 | 11.44  |       |
| LAB*LABa                         | 64.93 | -15.7 | 8.74   |       |
| LAB*TCha                         | 62.5  | 17.98 | 150.91 |       |
| relative CIELAB lab*             |       |       |        |       |
| lab*lab                          | 0.5   | 0.25  | 0.419  |       |
| lab*tch                          | 0.5   | 0.25  | 0.419  |       |
| lab*nch                          | 0.0   | 0.25  | 0.419  |       |
| lab*trj                          | 0.5   | 0.25  | 0.419  |       |
| lab*tce                          | 0.5   | 0.25  | 0.453  |       |
| lab*nce                          | 0.0   | 0.25  | 0.818  |       |

| relative Inform. Technology (IT) |       |        |        |       |
|----------------------------------|-------|--------|--------|-------|
| olvi3*                           | 0.25  | 0.75   | 0.25   | (1.0) |
| cmyn3*                           | 0.75  | 0.25   | 0.75   | (0.0) |
| olvi4*                           | 0.5   | 1.0    | 0.5    | (1.0) |
| cmyn4*                           | 0.0   | 0.0    | 0.0    | (0.0) |
| standard and adapted CIELAB      |       |        |        |       |
| LAB*LAB                          | 45.38 | -15.73 | 10.13  |       |
| LAB*LABa                         | 45.38 | -15.7  | 8.74   |       |
| LAB*TCha                         | 37.5  | 17.98  | 150.91 |       |
| relative CIELAB lab*             |       |        |        |       |
| lab*lab                          | 0.25  | 0.25   | 0.419  |       |
| lab*tch                          | 0.25  | 0.25   | 0.419  |       |
| lab*nch                          | 0.0   | 0.25   | 0.419  |       |
| lab*trj                          | 0.25  | 0.25   | 0.419  |       |
| lab*tce                          | 0.25  | 0.25   | 0.453  |       |
| lab*nce                          | 0.0   | 0.25   | 0.818  |       |

| relative Inform. Technology (IT) |       |        |        |       |
|----------------------------------|-------|--------|--------|-------|
| olvi3*                           | 0.0   | 0.5    | 0.0    | (1.0) |
| cmyn3*                           | 1.0   | 0.5    | 1.0    | (0.0) |
| olvi4*                           | 0.5   | 1.0    | 0.5    | (1.0) |
| cmyn4*                           | 0.0   | 0.0    | 0.0    | (0.0) |
| standard and adapted CIELAB      |       |        |        |       |
| LAB*LAB                          | 34.46 | -31.22 | 18.12  |       |
| LAB*LABa                         | 34.46 | -31.4  | 14.48  |       |
| LAB*TCha                         | 25.01 | 35.95  | 150.91 |       |
| relative CIELAB lab*             |       |        |        |       |
| lab*lab                          | 0.0   | 0.25   | 0.419  |       |
| lab*tch                          | 0.0   | 0.25   | 0.419  |       |
| lab*nch                          | 0.5   | 0.0    | 0.419  |       |
| lab*trj                          | 0.0   | 0.25   | 0.419  |       |
| lab*tce                          | 0.0   | 0.25   | 0.453  |       |
| lab*nce                          | 0.5   | 0.0    | 0.818  |       |

| relative Inform. Technology (IT) |       |     |      |       |
|----------------------------------|-------|-----|------|-------|
| olvi3*                           | 0.0   | 0.0 | 0.0  | (1.0) |
| cmyn3*                           | 1.0   | 0.0 | 0.0  | (0.0) |
| olvi4*                           | 1.0   | 1.0 | 1.0  | (1.0) |
| cmyn4*                           | 0.0   | 0.0 | 0.0  | (0.0) |
| standard and adapted CIELAB      |       |     |      |       |
| LAB*LAB                          | 18.02 | 0.3 | 0.47 |       |
| LAB*LABa                         | 18.02 | 0.0 | 0.0  |       |
| LAB*TCha                         | 0.01  | 0.0 | 0.0  |       |
| relative CIELAB lab*             |       |     |      |       |
| lab*lab                          | 0.0   | 0.0 | 0.0  |       |
| lab*tch                          | 0.0   | 0.0 | 0.0  |       |
| lab*nch                          | 1.0   | 0.0 | 0.0  |       |
| lab*trj                          | 0.0   | 0.0 | 0.0  |       |
| lab*tce                          | 0.0   | 0.0 | 0.0  |       |
| lab*nce                          | 1.0   | 0.0 | 0.0  |       |

output: no change compared to input

OE450-7, 5 step scales for constant CIELAB hue 136/360 = 0.378 (left)

BAM-test chart OE45; Colorimetric systems TLS00 & ORS18

D65: 5 step colour scales and coordinate data for 10 hues

output: no change compared to input

BAM material: code=rha4ta

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### Input: Colorimetric Television Luminous System TLS00

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

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

D65: hue M  
LCH\*Ma: 57 111 328  
olv\*Ma: 1.0 0.0 1.0

triangle lightness

1,00

% Gamut

$u^*_{rel} = 158$

% Regularity

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

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

0,75

0,25

0,00

blackness  $n^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

0,25

0,50

0,75

1,00

blackness  $n^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

0,25

0,50

0,75

1,00

blackness  $n^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

0,25

0,50

0,75

1,00

### TLS00; adapted (a) CIELAB data

|                  | $L^* = L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|---------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5          | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66         | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63         | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88         | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39         | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3          | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01          | 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          |

% Regularity

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

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

1,00

% Gamut

$u^*_{rel} = 93$

% Regularity

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

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

0,75

0,25

0,00

blackness  $n^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

0,25

0,50

0,75

1,00

blackness  $n^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

0,25

0,50

0,75

1,00

blackness  $n^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

0,25

0,50

0,75

1,00

### Output: 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

1,00

% Gamut

$u^*_{rel} = 93$

% Regularity

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

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

0,75

0,25

0,00

blackness  $n^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

0,25

0,50

0,75

1,00

blackness  $n^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

0,25

0,50

0,75

1,00

blackness  $n^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

0,25

0,50

0,75

1,00

### 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          |

% Regularity

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

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

0,75

0,25

0,00

blackness  $n^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

0,25

0,50

0,75

1,00

blackness  $n^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

0,25

0,50

0,75

1,00

blackness  $n^*$

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

0,25

0,50

0,75

1,00

OE450-7, 5 step scales for constant CIELAB hue 328/360 = 0.912 (left)

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

BAM-test chart OE45; Colorimetric systems TLS00 & ORS18

D65: 5 step colour scales and coordinate data for 10 hues

input:  $cmY0^* set cmykcolor$

output: no change compared to input

### Input: Colorimetric Television Luminous System TLS00

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

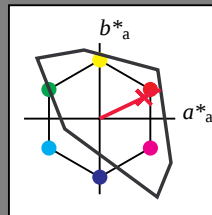
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue R

LCH\*Ma: 52 89 25

olv\*Ma: 1.0 0.0 0.21

triangle lightness



$u^*_{rel} = 158$

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

|                  | $L^* = L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|---------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5          | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66         | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63         | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88         | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39         | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3          | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01          | 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          |

%Regularity

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

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

### Output: Colorimetric Offset Reflective System ORS18

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

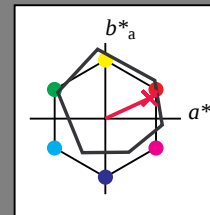
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue R

LCH\*Ma: 48 75 25

olv\*Ma: 1.0 0.0 0.32

triangle lightness



$u^*_{rel} = 93$

#### 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          |

%Regularity

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

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

OE450-7, 5 step scales for constant CIELAB hue 25/360 = 0.071 (left)

BAM-test chart OE45; Colorimetric systems TLS00 & ORS18

D65: 5 step colour scales and coordinate data for 10 hues

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

input:  $cmY0^* set cmykcolor$

output: no change compared to input

### Input: Colorimetric Television Luminous System TLS00

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

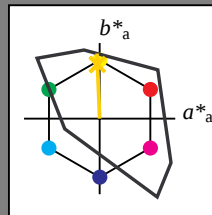
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue J

LCH\*Ma: 85 86 92

olv\*Ma: 1.0 0.82 0.0

triangle lightness



| TLS00; adapted (a) CIELAB data |               |         |         |              |              |
|--------------------------------|---------------|---------|---------|--------------|--------------|
|                                | $L^* = L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 50.5          | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>                | 92.66         | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>                | 83.63         | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>                | 86.88         | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>                | 30.39         | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>                | 57.3          | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>                | 0.01          | 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          |

%Regularity

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

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

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

0,00

chromaticness  $c^*$

### Output: Colorimetric Offset Reflective System ORS18

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

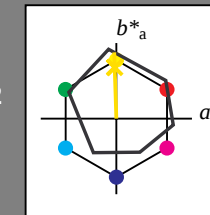
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue J

LCH\*Ma: 86 88 92

olv\*Ma: 1.0 0.9 0.0

triangle lightness



| 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          |

%Regularity

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

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

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

0,00

chromaticness  $c^*$

OE450-7, 5 step scales for constant CIELAB hue 92/360 = 0.256 (left)

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

BAM-test chart OE45; Colorimetric systems TLS00 & ORS18

D65: 5 step colour scales and coordinate data for 10 hues

input:  $cmy0^* \cdot setcmykcolor$

output: no change compared to input



### Input: Colorimetric Television Luminous System TLS00

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

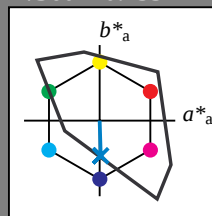
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue B

LCH\*Ma: 65 49 272

olv\*Ma: 0.0 0.61 1.0

triangle lightness



| TLS00; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <sub>Ma</sub>                | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>                | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>                | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>                | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>                | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>                | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>                | 0.01        | 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          |

%Regularity

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

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

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

OE450-7, 5 step scales for constant CIELAB hue 272/360 = 0.755 (left)



BAM-test chart OE45; Colorimetric systems TLS00 & ORS18

D65: 5 step colour scales and coordinate data for 10 hues

### Output: Colorimetric Offset Reflective System ORS18

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

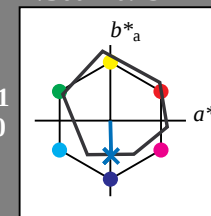
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue B

LCH\*Ma: 42 45 271

olv\*Ma: 0.0 0.49 1.0

triangle lightness



| 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          |

%Regularity

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

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

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

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

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

output: no change compared to input