

## Input: Colorimetric Reflective System NCS11

for hue  $h^* = lab \cdot h = 24/360 = 0.066$

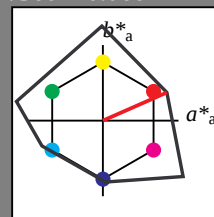
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue R

LCH\*Ma: 47 92 24

rgb\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



## NCS11; adapted (a) CIELAB data

|                    | $L^* = L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------------------|---------------|---------|---------|--------------|--------------|
| RMa                | 47.15         | 84.64   | 37.25   | 92.48        | 24           |
| JMa                | 91.37         | -1.27   | 125.03  | 125.03       | 91           |
| GMa                | 63.07         | -114.28 | 25.35   | 117.06       | 167          |
| G50B <sub>Ma</sub> | 59.47         | -80.6   | -33.45  | 87.28        | 203          |
| B <sub>Ma</sub>    | 49.01         | 3.65    | -81.19  | 81.28        | 273          |
| B50R <sub>Ma</sub> | 44.06         | 106.09  | -73.93  | 129.32       | 325          |
| N <sub>Ma</sub>    | 10.99         | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>    | 95.41         | 0.0     | 0.0     | 0.0          | 0            |
| RCIE               | 39.92         | 58.69   | 27.98   | 65.01        | 25           |
| JCIE               | 81.26         | -2.9    | 71.56   | 71.62        | 92           |
| GCIE               | 52.23         | -42.45  | 13.59   | 44.59        | 162          |
| BCIE               | 30.57         | 1.35    | -46.48  | 46.51        | 272          |

%Regularity

$g^*_{H,rel} = 46$

$g^*_{C,rel} = 65$

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 | 0.0  | -0.01 |
| LAB*LABa | 95.41 | 0.0  | 0.0   |
| LAB*LABb | 99.99 | 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 |

relative Natural Colour (NC)

|         |     |     |     |
|---------|-----|-----|-----|
| 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* | 1.0 | 0.75 | 0.75 | (1.0) |
| cmyn3* | 0.0 | 0.25 | 0.25 | (0.0) |
| olvi4* | 1.0 | 0.75 | 0.75 | (1.0) |
| cmyn4* | 0.0 | 0.25 | 0.25 | (0.0) |

standard and adapted CIELAB

|          |       |      |     |
|----------|-------|------|-----|
| LAB*LAB  | 74.31 | 0.02 | 0.0 |
| LAB*LABa | 74.31 | 0.02 | 0.0 |
| LAB*LABb | 74.31 | 0.02 | 0.0 |

relative CIELAB lab\*

|         |       |       |       |
|---------|-------|-------|-------|
| lab*lab | 0.857 | 0.229 | 0.101 |
| lab*tch | 0.875 | 0.25  | 0.066 |
| lab*nch | 0.0   | 0.25  | 0.066 |

relative Natural Colour (NC)

|         |       |      |        |
|---------|-------|------|--------|
| lab*trj | 0.857 | 0.25 | -0.005 |
| lab*tce | 0.875 | 0.25 | 0.996  |
| lab*nce | 0.0   | 0.25 | 0.996  |

relative Inform. Technology (IT)

|        |     |     |     |       |
|--------|-----|-----|-----|-------|
| olvi3* | 1.0 | 0.5 | 0.5 | (1.0) |
| cmyn3* | 0.0 | 0.5 | 0.5 | (0.0) |
| olvi4* | 1.0 | 0.5 | 0.5 | (1.0) |
| cmyn4* | 0.0 | 0.5 | 0.5 | (0.0) |

standard and adapted CIELAB

|          |       |      |        |
|----------|-------|------|--------|
| LAB*LAB  | 71.27 | 0.23 | 0.1863 |
| LAB*LABa | 71.27 | 0.23 | 0.1863 |
| LAB*LABb | 71.27 | 0.23 | 0.1863 |

relative CIELAB lab\*

|         |       |       |       |
|---------|-------|-------|-------|
| lab*lab | 0.714 | 0.458 | 0.201 |
| lab*tch | 0.75  | 0.5   | 0.066 |
| lab*nch | 0.0   | 0.5   | 0.066 |

relative Natural Colour (NC)

|         |       |     |        |
|---------|-------|-----|--------|
| lab*trj | 0.714 | 0.5 | -0.011 |
| lab*tce | 0.75  | 0.5 | 0.996  |
| lab*nce | 0.0   | 0.5 | 0.996  |

relative Inform. Technology (IT)

|        |     |      |      |       |
|--------|-----|------|------|-------|
| olvi3* | 1.0 | 0.25 | 0.25 | (1.0) |
| cmyn3* | 0.0 | 0.75 | 0.75 | (0.0) |
| olvi4* | 1.0 | 0.25 | 0.25 | (1.0) |
| cmyn4* | 0.0 | 0.75 | 0.75 | (0.0) |

standard and adapted CIELAB

|          |       |      |        |
|----------|-------|------|--------|
| LAB*LAB  | 59.21 | 0.35 | 0.2794 |
| LAB*LABa | 59.21 | 0.35 | 0.2794 |
| LAB*LABb | 59.21 | 0.35 | 0.2794 |

relative CIELAB lab\*

|         |       |       |       |
|---------|-------|-------|-------|
| lab*lab | 0.571 | 0.686 | 0.302 |
| lab*tch | 0.625 | 0.75  | 0.066 |
| lab*nch | 0.0   | 0.75  | 0.066 |

relative Natural Colour (NC)

|         |       |      |        |
|---------|-------|------|--------|
| lab*trj | 0.571 | 0.75 | -0.017 |
| lab*tce | 0.625 | 0.75 | 0.996  |
| lab*nce | 0.0   | 0.75 | 0.996  |

relative Inform. Technology (IT)

|        |     |     |     |       |
|--------|-----|-----|-----|-------|
| olvi3* | 1.0 | 0.0 | 0.0 | (1.0) |
| cmyn3* | 0.0 | 1.0 | 1.0 | (0.0) |
| olvi4* | 1.0 | 0.0 | 0.0 | (1.0) |
| cmyn4* | 0.0 | 1.0 | 1.0 | (0.0) |

standard and adapted CIELAB

|          |       |       |       |
|----------|-------|-------|-------|
| LAB*LAB  | 47.15 | 84.63 | 37.24 |
| LAB*LABa | 47.15 | 84.63 | 37.24 |
| LAB*LABb | 47.15 | 84.63 | 37.24 |

relative CIELAB lab\*

|         |       |       |       |
|---------|-------|-------|-------|
| lab*lab | 0.428 | 0.915 | 0.403 |
| lab*tch | 0.5   | 1.0   | 0.066 |
| lab*nch | 0.0   | 1.0   | 0.066 |

relative Natural Colour (NC)

|         |       |     |        |
|---------|-------|-----|--------|
| lab*trj | 0.428 | 1.0 | -0.023 |
| lab*tce | 0.5   | 1.0 | 0.996  |
| lab*nce | 0.0   | 1.0 | 0.996  |

$n^* = 0.00$

$n^* = 0.25$

$n^* = 0.50$

$n^* = 0.75$

$n^* = 1.00$

$n^* = 1.0$

$n^* = 1.0$

$n^* = 1.0$

$n^* = 1.0$

$n^* = 1.0$

$n^* = 1.0$

$n^* = 1.0$

## Output: Colorimetric Reflective System NCS11

for hue  $h^* = lab \cdot h = 24/360 = 0.066$

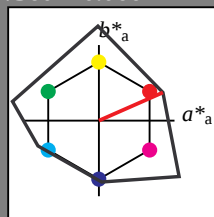
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue R

LCH\*Ma: 47 92 24

rgb\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



## NCS11; adapted (a) CIELAB data

|                    | $L^* = L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------------------|---------------|---------|---------|--------------|--------------|
| RMa                | 47.15         | 84.64   | 37.25   | 92.48        | 24           |
| JMa                | 91.37         | -1.27   | 125.03  | 125.03       | 91           |
| GMa                | 63.07         | -114.28 | 25.35   | 117.06       | 167          |
| G50B <sub>Ma</sub> | 59.47         | -80.6   | -33.45  | 87.28        | 203          |
| B <sub>Ma</sub>    | 49.01         | 3.65    | -81.19  | 81.28        | 273          |
| B50R <sub>Ma</sub> | 44.06         | 106.09  | -73.93  | 129.32       | 325          |
| N <sub>Ma</sub>    | 10.99         | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>    | 95.41         | 0.0     | 0.0     | 0.0          | 0            |
| RCIE               | 39.92         | 58.69   | 27.98   | 65.01        | 25           |
| JCIE               | 81.26         | -2.9    | 71.56   | 71.62        | 92           |
| GCIE               | 52.23         | -42.45  | 13.59   | 44.59        | 162          |
| BCIE               | 30.57         | 1.35    | -46.48  | 46.51        | 272          |

%Regularity

$g^*_{H,rel} = 46$

$g^*_{C,rel} = 65$

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 | 0.0  | -0.01 |
| LAB*LABa | 95.41 | 0.0  | 0.0   |
| LAB*LABb | 99.99 | 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 |

relative Natural Colour (NC)

|         |     |     |     |
|---------|-----|-----|-----|
| 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* | 1.0 | 0.75 | 0.75 | (1.0) |
| cmyn3* | 0.0 | 0.25 | 0.25 | (0.0) |
| olvi4* | 1.0 | 0.75 | 0.75 | (1.0) |
| cmyn4* | 0.0 | 0.25 | 0.25 | (0.0) |

standard and adapted CIELAB

|          |       |      |     |
|----------|-------|------|-----|
| LAB*LAB  | 74.31 | 0.02 | 0.0 |
| LAB*LABa | 74.31 | 0.02 | 0.0 |
| LAB*LABb | 74.31 | 0.02 | 0.0 |

relative CIELAB lab\*

|         |       |       |       |
|---------|-------|-------|-------|
| lab*lab | 0.857 | 0.229 | 0.101 |
| lab*tch | 0.875 | 0.25  | 0.066 |
| lab*nch | 0.0   | 0.25  | 0.066 |

relative Natural Colour (NC)

|         |       |      |        |
|---------|-------|------|--------|
| lab*trj | 0.857 | 0.25 | -0.005 |
| lab*tce | 0.875 | 0.25 | 0.996  |
| lab*nce | 0.0   | 0.25 | 0.996  |

relative Inform. Technology (IT)

|        |     |     |     |       |
|--------|-----|-----|-----|-------|
| olvi3* | 1.0 | 0.5 | 0.5 | (1.0) |
| cmyn3* | 0.0 | 0.5 | 0.5 | (0.0) |
| olvi4* | 1.0 | 0.5 | 0.5 | (1.0) |
| cmyn4* | 0.0 | 0.5 | 0.5 | (0.0) |

standard and adapted CIELAB

|          |       |      |        |
|----------|-------|------|--------|
| LAB*LAB  | 71.27 | 0.23 | 0.1863 |
| LAB*LABa | 71.27 | 0.23 | 0.1863 |
| LAB*LABb | 71.27 | 0.23 | 0.1863 |

relative CIELAB lab\*

|         |       |       |       |
|---------|-------|-------|-------|
| lab*lab | 0.714 | 0.458 | 0.201 |
| lab*tch | 0.75  | 0.5   | 0.066 |
| lab*nch | 0.0   | 0.5   | 0.066 |

relative Natural Colour (NC)

|         |       |     |        |
|---------|-------|-----|--------|
| lab*trj | 0.714 | 0.5 | -0.011 |
| lab*tce | 0.75  | 0.5 | 0.996  |
| lab*nce | 0.0   | 0.5 | 0.996  |

relative Inform. Technology (IT)

|        |     |      |      |       |
|--------|-----|------|------|-------|
| olvi3* | 1.0 | 0.25 | 0.25 | (1.0) |
| cmyn3* | 0.0 | 0.75 | 0.75 | (0.0) |
| olvi4* | 1.0 | 0.25 | 0.25 | (1.0) |
| cmyn4* | 0.0 | 0.75 | 0.75 | (0.0) |

standard and adapted CIELAB

|          |       |      |        |
|----------|-------|------|--------|
| LAB*LAB  | 59.21 | 0.35 | 0.2794 |
| LAB*LABa | 59.21 | 0.35 | 0.2794 |
| LAB*LABb | 59.21 | 0.35 | 0.2794 |

relative CIELAB lab\*

|         |       |       |       |
|---------|-------|-------|-------|
| lab*lab | 0.571 | 0.686 | 0.302 |
| lab*tch | 0.625 | 0.75  | 0.066 |
| lab*nch | 0.0   | 0.75  | 0.066 |

relative Natural Colour (NC)

|         |       |      |        |
|---------|-------|------|--------|
| lab*trj | 0.571 | 0.75 | -0.017 |
| lab*tce | 0.625 | 0.75 | 0.996  |
| lab*nce | 0.0   | 0.75 | 0.996  |

relative Inform. Technology (IT)

|        |     |     |     |       |
|--------|-----|-----|-----|-------|
| olvi3* | 1.0 | 0.0 | 0.0 | (1.0) |
| cmyn3* | 0.0 | 1.0 | 1.0 | (0.0) |
| olvi4* | 1.0 | 0.0 | 0.0 | (1.0) |
| cmyn4* | 0.0 | 1.0 | 1.0 | (0.0) |

standard and adapted CIELAB

|          |       |       |       |
|----------|-------|-------|-------|
| LAB*LAB  | 47.15 | 84.63 | 37.24 |
| LAB*LABa | 47.15 | 84.63 | 37.24 |
| LAB*LABb | 47.15 | 84.63 | 37.24 |

relative CIELAB lab\*

|         |       |       |       |
|---------|-------|-------|-------|
| lab*lab | 0.428 | 0.915 | 0.403 |
| lab*tch | 0.5   | 1.0   | 0.066 |
| lab*nch | 0.0   | 1.0   | 0.066 |

relative Natural Colour (NC)

|         |       |     |        |
|---------|-------|-----|--------|
| lab*trj | 0.428 | 1.0 | -0.023 |
| lab*tce | 0.5   | 1.0 | 0.996  |
| lab*nce | 0.0   | 1.0 | 0.996  |

$n^* = 0.00$

$n^* = 0.25$

$n^* = 0.50$

$n^* = 0.75$

$n^* = 1.00$

$n^* = 1.0$

$n^* = 1.0$

$n^* = 1.0$

$n^* = 1.0$

$n^* = 1.0$

$n^* = 1.0$

$n^* = 1.0$

UE590-7, 5 step scales for constant CIELAB hue 24/360 = 0.066 (left)

5 step scales for constant CIELAB hue 24/360 = 0.066 (right)

BAM-test chart UE59; Colorimetric systems NCS11a & NCS11ainput:  $cm y0^* set c m y k c o l o r$

D65: 2 coordinate data of 5 step colour scales for 10 hues

output: no change compared to input

output: *no change compared to input*



output: *no change compared to input*

# Input: Colorimetric Reflective System NCS11

for hue  $h^* = lab^*h = 273/360 = 0.757$

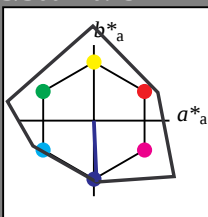
$lab^*tch$  and  $lab^*nch$

D65: hue B

LCH\*Ma: 49 81 273

rgb\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



$u^*_{rel} = 149$

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 0.0 -0.01  
LAB\*Lab 95.41 0.0 0.0  
LAB\*TCa 99.99 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  
relative Natural Colour (NC)  
lab\*trj 1.0 0.0 0.0  
lab\*trc 1.0 0.0 0.0  
lab\*ncc 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 0.75  
cmyn4\* 0.0 0.0 0.0 0.25  
standard and adapted CIELAB  
LAB\*LAB 74.31 0.02 0.0  
LAB\*Lab 74.31 0.02 0.0  
LAB\*TCa 75.0 0.01 -

relative CIELAB lab\*  
lab\*lab 0.863 0.011 -0.249  
lab\*tch 0.875 0.25 0.757  
lab\*nch 0.0 0.25 0.757  
relative Natural Colour (NC)  
lab\*trj 0.863 0.003 -0.249  
lab\*trc 0.875 0.25 0.752  
lab\*ncc 0.0 0.25 0.752

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 0.5  
cmyn4\* 0.0 0.0 0.0 0.5  
standard and adapted CIELAB  
LAB\*LAB 53.21 0.04 0.0  
LAB\*Lab 53.21 0.04 0.0  
LAB\*TCa 53.0 0.01 -

relative CIELAB lab\*  
lab\*lab 0.613 0.011 -0.249  
lab\*tch 0.625 0.25 0.757  
lab\*nch 0.25 0.25 0.757  
relative Natural Colour (NC)  
lab\*trj 0.613 0.003 -0.249  
lab\*trc 0.625 0.25 0.752  
lab\*ncc 0.25 0.25 0.752

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 0.25  
cmyn4\* 0.0 0.0 0.0 0.75  
standard and adapted CIELAB  
LAB\*LAB 32.11 0.08 0.0  
LAB\*Lab 32.11 0.08 0.0  
LAB\*TCa 32.0 0.01 -

relative CIELAB lab\*  
lab\*lab 0.363 0.011 -0.249  
lab\*tch 0.375 0.25 0.757  
lab\*nch 0.25 0.25 0.757  
relative Natural Colour (NC)  
lab\*trj 0.363 0.003 -0.249  
lab\*trc 0.375 0.25 0.752  
lab\*ncc 0.25 0.25 0.752

relative Inform. Technology (IT)  
olvi3\* 0.0 0.0 0.0 (1.0)  
cmyn3\* 0.75 0.75 0.75 (0.0)  
olvi4\* 1.0 1.0 1.0 0.0  
cmyn4\* 0.0 0.0 0.0 0.75  
standard and adapted CIELAB  
LAB\*LAB 11.01 0.07 0.01  
LAB\*Lab 11.01 0.07 0.01  
LAB\*TCa 11.0 0.01 -

relative CIELAB lab\*  
lab\*lab 0.113 0.011 -0.249  
lab\*tch 0.125 0.25 0.757  
lab\*nch 0.25 0.25 0.757  
relative Natural Colour (NC)  
lab\*trj 0.113 0.003 -0.249  
lab\*trc 0.125 0.25 0.752  
lab\*ncc 0.25 0.25 0.752

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 0.0  
cmyn4\* 0.0 0.0 0.0 0.0  
standard and adapted CIELAB  
LAB\*LAB 0.01 0.01 0.01  
LAB\*Lab 0.01 0.01 0.01  
LAB\*TCa 0.01 0.01 -

relative CIELAB lab\*  
lab\*lab 0.0 0.0 0.0  
lab\*tch 0.0 0.0 0.0  
lab\*nch 0.0 0.0 0.0  
relative Natural Colour (NC)  
lab\*trj 0.0 0.0 0.0  
lab\*trc 0.0 0.0 0.0  
lab\*ncc 0.0 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 0.0  
cmyn4\* 0.0 0.0 0.0 0.0  
standard and adapted CIELAB  
LAB\*LAB 0.0 0.0 0.0  
LAB\*Lab 0.0 0.0 0.0  
LAB\*TCa 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 0.0 0.0 0.0  
relative Natural Colour (NC)  
lab\*trj 0.0 0.0 0.0  
lab\*trc 0.0 0.0 0.0  
lab\*ncc 0.0 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 0.0  
cmyn4\* 0.0 0.0 0.0 0.0  
standard and adapted CIELAB  
LAB\*LAB 0.0 0.0 0.0  
LAB\*Lab 0.0 0.0 0.0  
LAB\*TCa 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 0.0 0.0 0.0  
relative Natural Colour (NC)  
lab\*trj 0.0 0.0 0.0  
lab\*trc 0.0 0.0 0.0  
lab\*ncc 0.0 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 0.0  
cmyn4\* 0.0 0.0 0.0 0.0  
standard and adapted CIELAB  
LAB\*LAB 0.0 0.0 0.0  
LAB\*Lab 0.0 0.0 0.0  
LAB\*TCa 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 0.0 0.0 0.0  
relative Natural Colour (NC)  
lab\*trj 0.0 0.0 0.0  
lab\*trc 0.0 0.0 0.0  
lab\*ncc 0.0 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 0.0  
cmyn4\* 0.0 0.0 0.0 0.0  
standard and adapted CIELAB  
LAB\*LAB 0.0 0.0 0.0  
LAB\*Lab 0.0 0.0 0.0  
LAB\*TCa 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 0.0 0.0 0.0  
relative Natural Colour (NC)  
lab\*trj 0.0 0.0 0.0  
lab\*trc 0.0 0.0 0.0  
lab\*ncc 0.0 0.0 0.0

UE59-7, 5 step scales for constant CIELAB hue 273/360 = 0.757 (left)

BAM-test chart UE59; Colorimetric systems NCS11a & NCS11ainput: cmy0\* setcmykcolor

D65: 2 coordinate data of 5 step colour scales for 10 hues

# Output: Colorimetric Reflective System NCS11

for hue  $h^* = lab^*h = 273/360 = 0.757$

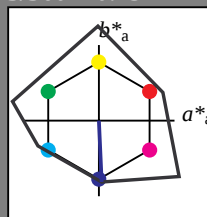
$lab^*tch$  and  $lab^*nch$

D65: hue B

LCH\*Ma: 49 81 273

rgb\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



$u^*_{rel} = 149$

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 0.0 -0.01  
LAB\*Lab 95.41 0.0 0.0  
LAB\*TCa 99.99 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  
relative Natural Colour (NC)  
lab\*trj 1.0 0.0 0.0  
lab\*trc 1.0 0.0 0.0  
lab\*ncc 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 0.75  
cmyn4\* 0.0 0.0 0.0 0.25  
standard and adapted CIELAB  
LAB\*LAB 74.31 0.02 0.0  
LAB\*Lab 74.31 0.02 0.0  
LAB\*TCa 75.0 0.01 -

relative CIELAB lab\*  
lab\*lab 0.863 0.011 -0.249  
lab\*tch 0.875 0.25 0.757  
lab\*nch 0.0 0.25 0.757  
relative Natural Colour (NC)  
lab\*trj 0.863 0.003 -0.249  
lab\*trc 0.875 0.25 0.752  
lab\*ncc 0.0 0.25 0.752

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 0.5  
cmyn4\* 0.0 0.0 0.0 0.5  
standard and adapted CIELAB  
LAB\*LAB 53.21 0.04 0.0  
LAB\*Lab 53.21 0.04 0.0  
LAB\*TCa 53.0 0.01 -

relative CIELAB lab\*  
lab\*lab 0.613 0.011 -0.249  
lab\*tch 0.625 0.25 0.757  
lab\*nch 0.25 0.25 0.757  
relative Natural Colour (NC)  
lab\*trj 0.613 0.003 -0.249  
lab\*trc 0.625 0.25 0.752  
lab\*ncc 0.25 0.25 0.752

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 0.25  
cmyn4\* 0.0 0.0 0.0 0.75  
standard and adapted CIELAB  
LAB\*LAB 32.11 0.08 0.0  
LAB\*Lab 32.11 0.08 0.0  
LAB\*TCa 32.0 0.01 -

relative CIELAB lab\*  
lab\*lab 0.363 0.011 -0.249  
lab\*tch 0.375 0.25 0.757  
lab\*nch 0.25 0.25 0.757  
relative Natural Colour (NC)  
lab\*trj 0.363 0.003 -0.249  
lab\*trc 0.375 0.25 0.752  
lab\*ncc 0.25 0.25 0.752

relative Inform. Technology (IT)  
olvi3\* 0.0 0.0 0.0 (1.0)  
cmyn3\* 0.75 0.75 0.75 (0.0)  
olvi4\* 1.0 1.0 1.0 0.0  
cmyn4\* 0.0 0.0 0.0 0.75  
standard and adapted CIELAB  
LAB\*LAB 11.01 0.07 0.01  
LAB\*Lab 11.01 0.07 0.01  
LAB\*TCa 11.0 0.01 -

relative CIELAB lab\*  
lab\*lab 0.113 0.011 -0.249  
lab\*tch 0.125 0.25 0.757  
lab\*nch 0.25 0.25 0.757  
relative Natural Colour (NC)  
lab\*trj 0.113 0.003 -0.249  
lab\*trc 0.125 0.25 0.752  
lab\*ncc 0.25 0.25 0.752

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 0.0  
cmyn4\* 0.0 0.0 0.0 0.0  
standard and adapted CIELAB  
LAB\*LAB 0.01 0.01 0.01  
LAB\*Lab 0.01 0.01 0.01  
LAB\*TCa 0.01 0.01 -

relative CIELAB lab\*  
lab\*lab 0.0 0.0 0.0  
lab\*tch 0.0 0.0 0.0  
lab\*nch 0.0 0.0 0.0  
relative Natural Colour (NC)  
lab\*trj 0.0 0.0 0.0  
lab\*trc 0.0 0.0 0.0  
lab\*ncc 0.0 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 0.0  
cmyn4\* 0.0 0.0 0.0 0.0  
standard and adapted CIELAB  
LAB\*LAB 0.0 0.0 0.0  
LAB\*Lab 0.0 0.0 0.0  
LAB\*TCa 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 0.0 0.0 0.0  
relative Natural Colour (NC)  
lab\*trj 0.0 0.0 0.0  
lab\*trc 0.0 0.0 0.0  
lab\*ncc 0.0 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 0.0  
cmyn4\* 0.0 0.0 0.0 0.0  
standard and adapted CIELAB  
LAB\*LAB 0.0 0.0 0.0  
LAB\*Lab 0.0 0.0 0.0  
LAB\*TCa 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 0.0 0.0 0.0  
relative Natural Colour (NC)  
lab\*trj 0.0 0.0 0.0  
lab\*trc 0.0 0.0 0.0  
lab\*ncc 0.0 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 0.0  
cmyn4\* 0.0 0.0 0.0 0.0  
standard and adapted CIELAB  
LAB\*LAB 0.0 0.0 0.0  
LAB\*Lab 0.0 0.0 0.0  
LAB\*TCa 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 0.0 0.0 0.0  
relative Natural Colour (NC)  
lab\*trj 0.0 0.0 0.0  
lab\*trc 0.0 0.0 0.0  
lab\*ncc 0.0 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 0.0  
cmyn4\* 0.0 0.0 0.0 0.0  
standard and adapted CIELAB  
LAB\*LAB 0.0 0.0 0.0  
LAB\*Lab 0.0 0.0 0.0  
LAB\*TCa 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 0.0 0.0 0.0  
relative Natural Colour (NC)  
lab\*trj 0.0 0.0 0.0  
lab\*trc 0.0 0.0 0.0  
lab\*ncc 0.0 0.0 0.0

5 step scales for constant CIELAB hue 273/360 = 0.757 (right)

output: no change compared to input









