

**Input: Colorimetric Reflective System NRS11**

for hue  $h^* = lab^*h = 24/360 = 0.067$

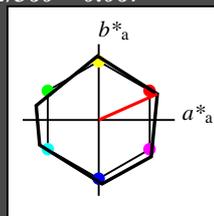
$lab^*tch$  and  $lab^*nch$

D65: hue R

LCH\*Ma: 53 84 24

olv\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



**NRS11; adapted (a) CIELAB data**

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 53.2        | 77.06   | 34.32   | 84.36        | 24           |
| JMa    | 53.2        | -1.51   | 84.38   | 84.39        | 91           |
| GMa    | 53.2        | -82.27  | 18.98   | 84.44        | 167          |
| G50BMa | 53.2        | -77.72  | -32.98  | 84.44        | 203          |
| BMa    | 53.2        | 4.37    | -84.28  | 84.41        | 273          |
| B50RMa | 53.2        | 69.09   | -48.41  | 84.37        | 325          |
| NMa    | 10.99       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 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          |

%Gamut

$u^*_{rel} = 119$

%Regularity

$g^*_{H,rel} = 47$

$g^*_{C,rel} = 100$

**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*TCHa | 99.99 | 0.01 | -     |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 1.0 | 0.0 | 0.0 |
| lab*tch | 1.0 | 0.0 | -   |
| lab*nch | 0.0 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 1.0 | 0.0 | 0.0 |
| lab*tce | 1.0 | 0.0 | -   |
| lab*nce | 0.0 | 0.0 | -   |

**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  | 74.3 | 38.55 | 17.16 |
| LAB*LABa | 74.3 | 38.52 | 17.16 |
| LAB*TCHa | 75.0 | 42.17 | 24.01 |

**relative CIELAB lab\***

|         |      |       |       |
|---------|------|-------|-------|
| lab*lab | 0.75 | 0.457 | 0.203 |
| lab*tch | 0.75 | 0.5   | 0.067 |
| lab*nch | 0.0  | 0.5   | 0.067 |

**relative Natural Colour (NC)**

|         |      |     |        |
|---------|------|-----|--------|
| lab*lrj | 0.75 | 0.5 | -0.009 |
| lab*tce | 0.75 | 0.5 | 0.997  |
| lab*nce | 0.0  | 0.5 | 0.98r  |

**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*LABa | 53.21 | 0.0  | 0.0 |
| LAB*TCHa | 50.0  | 0.01 | -   |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.5 | 0.0 | 0.0 |
| lab*tch | 0.5 | 0.0 | -   |
| lab*nch | 0.5 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.5 | 0.0 | 0.0 |
| lab*tce | 0.5 | 0.0 | -   |
| lab*nce | 0.5 | 0.0 | -   |

**relative Inform. Technology (IT)**

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

**standard and adapted CIELAB**

|          |       |       |       |
|----------|-------|-------|-------|
| LAB*LAB  | 32.1  | 38.58 | 17.17 |
| LAB*LABa | 32.1  | 38.52 | 17.16 |
| LAB*TCHa | 25.01 | 42.17 | 24.01 |

**relative CIELAB lab\***

|         |      |       |       |
|---------|------|-------|-------|
| lab*lab | 0.25 | 0.457 | 0.203 |
| lab*tch | 0.25 | 0.5   | 0.067 |
| lab*nch | 0.5  | 0.5   | 0.067 |

**relative Natural Colour (NC)**

|         |      |     |        |
|---------|------|-----|--------|
| lab*lrj | 0.25 | 0.5 | -0.009 |
| lab*tce | 0.25 | 0.5 | 0.997  |
| lab*nce | 0.5  | 0.5 | 0.98r  |

**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 | 1.0   |

**standard and adapted CIELAB**

|          |       |      |      |
|----------|-------|------|------|
| LAB*LAB  | 11.01 | 0.07 | 0.01 |
| LAB*LABa | 11.01 | 0.0  | 0.0  |
| LAB*TCHa | 1.01  | 0.01 | -    |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.0 | 0.0 | 0.0 |
| lab*tch | 0.0 | 0.0 | -   |
| lab*nch | 1.0 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.0 | 0.0 | 0.0 |
| lab*tce | 0.0 | 0.0 | -   |
| lab*nce | 1.0 | 0.0 | -   |

$n^* = 1.0$

**Output: Colorimetric Reflective System ORS18**

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

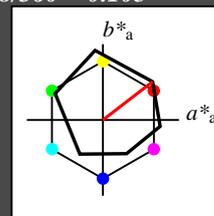
$lab^*tch$  and  $lab^*nch$

D65: hue O

LCH\*Ma: 48 83 38

olv\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

**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 | -0.97 | 4.75 |
| LAB*LABa | 95.41 | 0.0   | 0.0  |
| LAB*TCHa | 99.99 | 0.01  | -    |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 1.0 | 0.0 | 0.0 |
| lab*tch | 1.0 | 0.0 | -   |
| lab*nch | 0.0 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 1.0 | 0.0 | 0.0 |
| lab*tce | 1.0 | 0.0 | -   |
| lab*nce | 0.0 | 0.0 | -   |

**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  | 71.67 | 32.15 | 28.41 |
| LAB*LABa | 71.67 | 32.68 | 25.25 |
| LAB*TCHa | 75.0  | 41.3  | 37.7  |

**relative CIELAB lab\***

|         |       |       |       |
|---------|-------|-------|-------|
| lab*lab | 0.693 | 0.396 | 0.306 |
| lab*tch | 0.75  | 0.5   | 0.105 |
| lab*nch | 0.0   | 0.5   | 0.105 |

**relative Natural Colour (NC)**

|         |       |       |       |
|---------|-------|-------|-------|
| lab*lrj | 0.693 | 0.477 | 0.15  |
| lab*tce | 0.75  | 0.5   | 0.048 |
| lab*nce | 0.0   | 0.5   | 0.19j |

**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  | 56.71 | -0.23 | 2.14 |
| LAB*LABa | 56.71 | 0.0   | 0.0  |
| LAB*TCHa | 50.0  | 0.01  | -    |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.5 | 0.0 | 0.0 |
| lab*tch | 0.5 | 0.0 | -   |
| lab*nch | 0.5 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.5 | 0.0 | 0.0 |
| lab*tce | 0.5 | 0.0 | -   |
| lab*nce | 0.5 | 0.0 | -   |

**relative Inform. Technology (IT)**

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

**standard and adapted CIELAB**

|          |       |       |       |
|----------|-------|-------|-------|
| LAB*LAB  | 32.98 | 32.9  | 25.8  |
| LAB*LABa | 32.98 | 32.68 | 25.25 |
| LAB*TCHa | 25.01 | 41.3  | 37.7  |

**relative CIELAB lab\***

|         |       |       |       |
|---------|-------|-------|-------|
| lab*lab | 0.193 | 0.396 | 0.306 |
| lab*tch | 0.25  | 0.5   | 0.105 |
| lab*nch | 0.5   | 0.5   | 0.105 |

**relative Natural Colour (NC)**

|         |       |       |       |
|---------|-------|-------|-------|
| lab*lrj | 0.193 | 0.477 | 0.15  |
| lab*tce | 0.25  | 0.5   | 0.048 |
| lab*nce | 0.5   | 0.5   | 0.19j |

**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 | 1.0   |

**standard and adapted CIELAB**

|          |       |      |       |
|----------|-------|------|-------|
| LAB*LAB  | 18.02 | 0.5  | -0.46 |
| LAB*LABa | 18.02 | 0.0  | 0.0   |
| LAB*TCHa | 0.01  | 0.01 | -     |

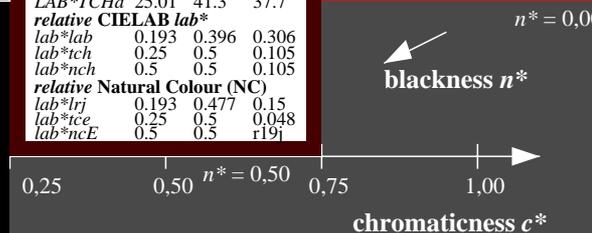
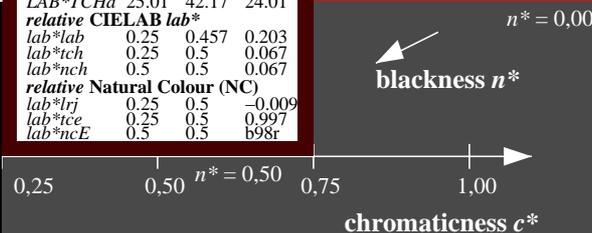
**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.0 | 0.0 | 0.0 |
| lab*tch | 0.0 | 0.0 | -   |
| lab*nch | 1.0 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.0 | 0.0 | 0.0 |
| lab*tce | 0.0 | 0.0 | -   |
| lab*nce | 1.0 | 0.0 | -   |

$n^* = 1.0$



UE170-7, 3 step scales for constant CIELAB hue 24/360 = 0.067 (left)

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

BAM-test chart UE17; Colorimetric systems NRS11 & ORS18  
 D65: 2 coordinate data of 3 step colour scales for 10 hues

input:  $cmv0^*$  setcmkcolor  
 output:  $olv^*$  setrgbcolor /  $w^*$  setgray

Input: Colorimetric Reflective System NRS11

for hue  $h^* = lab^*h = 91/360 = 0.253$

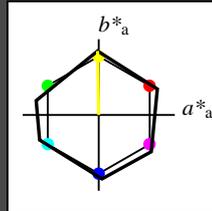
$lab^*tch$  and  $lab^*nch$

D65: hue J

LCH\*Ma: 53 84 91

olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



NRS11; adapted (a) CIELAB data

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 53.2        | 77.06   | 34.32   | 84.36        | 24           |
| JMa    | 53.2        | -1.51   | 84.38   | 84.39        | 91           |
| GMa    | 53.2        | -82.27  | 18.98   | 84.44        | 167          |
| G50BMa | 53.2        | -77.72  | -32.98  | 84.44        | 203          |
| BMa    | 53.2        | 4.37    | -84.28  | 84.41        | 273          |
| B50RMa | 53.2        | 69.09   | -48.41  | 84.37        | 325          |
| NMa    | 10.99       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 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          |

%Gamut

$u^*_{rel} = 119$

%Regularity

$g^*_{H,rel} = 47$

$g^*_{C,rel} = 100$

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*TCHa | 99.99 | 0.01 | -     |

relative CIELAB lab\*

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 1.0 | 0.0 | 0.0 |
| lab*tch | 1.0 | 0.0 | -   |
| lab*nch | 0.0 | 0.0 | -   |

relative Natural Colour (NC)

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 1.0 | 0.0 | 0.0 |
| lab*tce | 1.0 | 0.0 | -   |
| lab*nce | 0.0 | 0.0 | -   |

relative Inform. Technology (IT)

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

standard and adapted CIELAB

|          |      |       |       |
|----------|------|-------|-------|
| LAB*LAB  | 74.3 | -0.72 | 42.18 |
| LAB*LABa | 74.3 | -0.75 | 42.18 |
| LAB*TCHa | 75.0 | 42.19 | 91.03 |

relative CIELAB lab\*

|         |      |        |       |
|---------|------|--------|-------|
| lab*lab | 0.75 | -0.008 | 0.5   |
| lab*tch | 0.75 | 0.5    | 0.253 |
| lab*nch | 0.0  | 0.5    | 0.253 |

relative Natural Colour (NC)

|         |      |       |       |
|---------|------|-------|-------|
| lab*lrj | 0.75 | 0.015 | 0.5   |
| lab*tce | 0.75 | 0.5   | 0.245 |
| lab*nce | 0.0  | 0.5   | r98j  |

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*LABa | 53.21 | 0.0  | 0.0 |
| LAB*TCHa | 50.0  | 0.01 | -   |

relative CIELAB lab\*

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.5 | 0.0 | 0.0 |
| lab*tch | 0.5 | 0.0 | -   |
| lab*nch | 0.5 | 0.0 | -   |

relative Natural Colour (NC)

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.5 | 0.0 | 0.0 |
| lab*tce | 0.5 | 0.0 | -   |
| lab*nce | 0.5 | 0.0 | -   |

relative Inform. Technology (IT)

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

standard and adapted CIELAB

|          |       |       |       |
|----------|-------|-------|-------|
| LAB*LAB  | 32.1  | -0.69 | 42.2  |
| LAB*LABa | 32.1  | -0.75 | 42.18 |
| LAB*TCHa | 25.01 | 42.19 | 91.03 |

relative CIELAB lab\*

|         |      |        |       |
|---------|------|--------|-------|
| lab*lab | 0.25 | -0.008 | 0.5   |
| lab*tch | 0.25 | 0.5    | 0.253 |
| lab*nch | 0.5  | 0.5    | 0.253 |

relative Natural Colour (NC)

|         |      |       |       |
|---------|------|-------|-------|
| lab*lrj | 0.25 | 0.015 | 0.5   |
| lab*tce | 0.25 | 0.5   | 0.245 |
| lab*nce | 0.5  | 0.5   | r98j  |

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 | 1.0   |

standard and adapted CIELAB

|          |       |      |      |
|----------|-------|------|------|
| LAB*LAB  | 11.01 | 0.07 | 0.01 |
| LAB*LABa | 11.01 | 0.0  | 0.0  |
| LAB*TCHa | 1.01  | 0.01 | -    |

relative CIELAB lab\*

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.0 | 0.0 | 0.0 |
| lab*tch | 0.0 | 0.0 | -   |
| lab*nch | 1.0 | 0.0 | -   |

relative Natural Colour (NC)

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.0 | 0.0 | 0.0 |
| lab*tce | 0.0 | 0.0 | -   |
| lab*nce | 1.0 | 0.0 | -   |

$n^* = 1.0$

Output: Colorimetric Reflective System ORS18

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

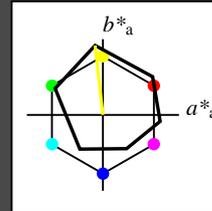
$lab^*tch$  and  $lab^*nch$

D65: hue Y

LCH\*Ma: 90 92 96

olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

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 | -0.97 | 4.75 |
| LAB*LABa | 95.41 | 0.0   | 0.0  |
| LAB*TCHa | 99.99 | 0.01  | -    |

relative CIELAB lab\*

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 1.0 | 0.0 | 0.0 |
| lab*tch | 1.0 | 0.0 | -   |
| lab*nch | 0.0 | 0.0 | -   |

relative Natural Colour (NC)

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 1.0 | 0.0 | 0.0 |
| lab*tce | 1.0 | 0.0 | -   |
| lab*nce | 0.0 | 0.0 | -   |

relative Inform. Technology (IT)

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

standard and adapted CIELAB

|          |       |       |       |
|----------|-------|-------|-------|
| LAB*LAB  | 92.88 | -6.06 | 50.46 |
| LAB*LABa | 92.88 | -5.13 | 45.87 |
| LAB*TCHa | 75.0  | 46.16 | 96.39 |

relative CIELAB lab\*

|         |       |        |       |
|---------|-------|--------|-------|
| lab*lab | 0.967 | -0.055 | 0.497 |
| lab*tch | 0.75  | 0.5    | 0.268 |
| lab*nch | 0.0   | 0.5    | 0.268 |

relative Natural Colour (NC)

|         |       |        |       |
|---------|-------|--------|-------|
| lab*lrj | 0.967 | -0.048 | 0.497 |
| lab*tce | 0.75  | 0.5    | 0.266 |
| lab*nce | 0.0   | 0.5    | j06g  |

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  | 56.71 | -0.23 | 2.14 |
| LAB*LABa | 56.71 | 0.0   | 0.0  |
| LAB*TCHa | 50.0  | 0.01  | -    |

relative CIELAB lab\*

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.5 | 0.0 | 0.0 |
| lab*tch | 0.5 | 0.0 | -   |
| lab*nch | 0.5 | 0.0 | -   |

relative Natural Colour (NC)

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.5 | 0.0 | 0.0 |
| lab*tce | 0.5 | 0.0 | -   |
| lab*nce | 0.5 | 0.0 | -   |

relative Inform. Technology (IT)

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

standard and adapted CIELAB

|          |       |       |       |
|----------|-------|-------|-------|
| LAB*LAB  | 54.19 | -5.32 | 47.85 |
| LAB*LABa | 54.19 | -5.13 | 45.87 |
| LAB*TCHa | 25.01 | 46.16 | 96.39 |

relative CIELAB lab\*

|         |       |        |       |
|---------|-------|--------|-------|
| lab*lab | 0.467 | -0.055 | 0.497 |
| lab*tch | 0.25  | 0.5    | 0.268 |
| lab*nch | 0.5   | 0.5    | 0.268 |

relative Natural Colour (NC)

|         |       |        |       |
|---------|-------|--------|-------|
| lab*lrj | 0.467 | -0.048 | 0.497 |
| lab*tce | 0.25  | 0.5    | 0.266 |
| lab*nce | 0.5   | 0.5    | j06g  |

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 | 1.0   |

standard and adapted CIELAB

|          |       |      |       |
|----------|-------|------|-------|
| LAB*LAB  | 18.02 | 0.5  | -0.46 |
| LAB*LABa | 18.02 | 0.0  | 0.0   |
| LAB*TCHa | 0.01  | 0.01 | -     |

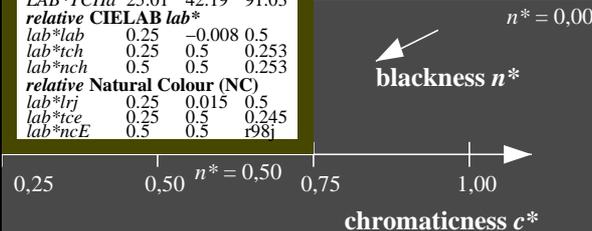
relative CIELAB lab\*

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.0 | 0.0 | 0.0 |
| lab*tch | 0.0 | 0.0 | -   |
| lab*nch | 1.0 | 0.0 | -   |

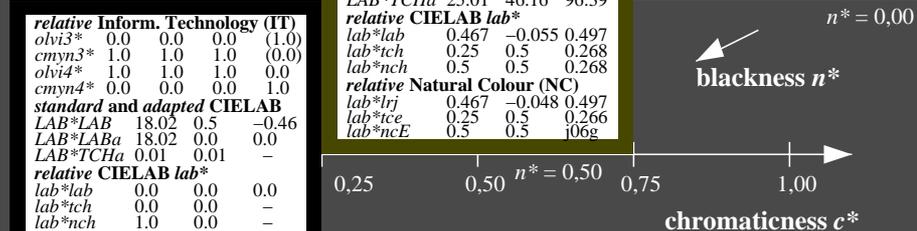
relative Natural Colour (NC)

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.0 | 0.0 | 0.0 |
| lab*tce | 0.0 | 0.0 | -   |
| lab*nce | 1.0 | 0.0 | -   |

$n^* = 1.0$



chromaticness  $c^*$



chromaticness  $c^*$

UE170-7, 3 step scales for constant CIELAB hue 91/360 = 0.253 (left)

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

BAM-test chart UE17; Colorimetric systems NRS11 & ORS18

D65: 2 coordinate data of 3 step colour scales for 10 hues

input:  $cmY0^* setcmykcolor$

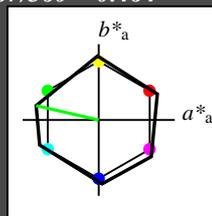
output:  $olv^* setrgbcolor / w^* setgray$

Input: Colorimetric Reflective System NRS11

for hue  $h^* = lab^*h = 167/360 = 0.464$   
 $lab^*tch$  and  $lab^*nch$

D65: hue G  
 LCH\*Ma: 53 84 167  
 olv\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



**NRS11; adapted (a) CIELAB data**

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 53.2        | 77.06   | 34.32   | 84.36        | 24           |
| JMa    | 53.2        | -1.51   | 84.38   | 84.39        | 91           |
| GMa    | 53.2        | -82.27  | 18.98   | 84.44        | 167          |
| G50BMa | 53.2        | -77.72  | -32.98  | 84.44        | 203          |
| BMa    | 53.2        | 4.37    | -84.28  | 84.41        | 273          |
| B50RMa | 53.2        | 69.09   | -48.41  | 84.37        | 325          |
| NMa    | 10.99       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 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          |

%Gamut  
 $u^*_{rel} = 119$   
 %Regularity  
 $g^*_{H,rel} = 47$   
 $g^*_{C,rel} = 100$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$   
 $cmyn^*3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 95.41 \ 0.0 \ -0.01$   
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 1.0 \ 0.0 \ 0.0$   
 $lab^*tch = 1.0 \ 0.0 \ -$   
 $lab^*nch = 0.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 1.0 \ 0.0 \ 0.0$   
 $lab^*tce = 1.0 \ 0.0 \ -$   
 $lab^*nce = 0.0 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.5 \ 1.0 \ 0.5 \ (1.0)$   
 $cmyn^*3^* = 0.5 \ 0.0 \ 0.5 \ (0.0)$   
 $olv^*4^* = 0.5 \ 1.0 \ 0.5 \ 1.0$   
 $cmyn^*4^* = 0.5 \ 0.0 \ 0.5 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 74.3 \ -41.1 \ 9.49$   
 $LAB^*LABa = 74.3 \ -41.12 \ 9.49$   
 $LAB^*TCHa = 75.0 \ 42.21 \ 167.01$

**relative CIELAB lab\***  
 $lab^*lab = 0.75 \ -0.486 \ 0.112$   
 $lab^*tch = 0.75 \ 0.5 \ 0.464$   
 $lab^*nch = 0.0 \ 0.5 \ 0.464$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.75 \ -0.498 \ -0.033$   
 $lab^*tce = 0.75 \ 0.5 \ 0.511$   
 $lab^*nce = 0.0 \ 0.5 \ g04b$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.5 \ 0.5 \ 0.5 \ (1.0)$   
 $cmyn^*3^* = 0.5 \ 0.5 \ 0.5 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 0.5$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 53.21 \ 0.04 \ 0.0$   
 $LAB^*LABa = 53.21 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.5 \ 0.0 \ 0.0$   
 $lab^*tch = 0.5 \ 0.0 \ -$   
 $lab^*nch = 0.5 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.5 \ 0.0 \ 0.0$   
 $lab^*tce = 0.5 \ 0.0 \ -$   
 $lab^*nce = 0.5 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.5 \ 0.0 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 0.5 \ 1.0 \ (0.0)$   
 $olv^*4^* = 0.5 \ 1.0 \ 0.5 \ 0.5$   
 $cmyn^*4^* = 0.5 \ 0.0 \ 0.5 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 32.1 \ -41.06 \ 9.5$   
 $LAB^*LABa = 32.1 \ -41.12 \ 9.49$   
 $LAB^*TCHa = 25.01 \ 42.21 \ 167.01$

**relative CIELAB lab\***  
 $lab^*lab = 0.25 \ -0.486 \ 0.112$   
 $lab^*tch = 0.25 \ 0.5 \ 0.464$   
 $lab^*nch = 0.5 \ 0.5 \ 0.464$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.25 \ -0.498 \ -0.033$   
 $lab^*tce = 0.25 \ 0.5 \ 0.511$   
 $lab^*nce = 0.5 \ 0.5 \ g04b$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 1.0 \ 1.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 11.01 \ 0.07 \ 0.01$   
 $LAB^*LABa = 11.01 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.0 \ 0.0 \ 0.0$   
 $lab^*tch = 0.0 \ 0.0 \ -$   
 $lab^*nch = 1.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$   
 $lab^*tce = 0.0 \ 0.0 \ -$   
 $lab^*nce = 1.0 \ 0.0 \ -$

$n^* = 0.50$   
 chromaticness  $c^*$

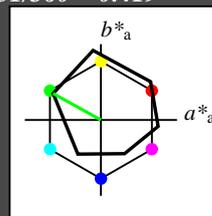
$n^* = 1.0$

Output: Colorimetric Reflective System ORS18

for hue  $h^* = lab^*h = 151/360 = 0.419$   
 $lab^*tch$  and  $lab^*nch$

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

triangle lightness  $t^*$



**ORS18; adapted (a) CIELAB data**

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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

**relative Inform. Technology (IT)**  
 $olv^*3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$   
 $cmyn^*3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 95.41 \ -0.97 \ 4.75$   
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 1.0 \ 0.0 \ 0.0$   
 $lab^*tch = 1.0 \ 0.0 \ -$   
 $lab^*nch = 0.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 1.0 \ 0.0 \ 0.0$   
 $lab^*tce = 1.0 \ 0.0 \ -$   
 $lab^*nce = 0.0 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.5 \ 1.0 \ 0.5 \ (1.0)$   
 $cmyn^*3^* = 0.5 \ 0.0 \ 0.5 \ (0.0)$   
 $olv^*4^* = 0.5 \ 1.0 \ 0.5 \ 1.0$   
 $cmyn^*4^* = 0.5 \ 0.0 \ 0.5 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 73.15 \ -31.94 \ 20.73$   
 $LAB^*LABa = 73.15 \ -31.38 \ 17.47$   
 $LAB^*TCHa = 75.0 \ 35.93 \ 150.91$

**relative CIELAB lab\***  
 $lab^*lab = 0.712 \ -0.436 \ 0.243$   
 $lab^*tch = 0.75 \ 0.5 \ 0.419$   
 $lab^*nch = 0.0 \ 0.5 \ 0.419$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.712 \ -0.478 \ 0.144$   
 $lab^*tce = 0.75 \ 0.5 \ 0.453$   
 $lab^*nce = 0.0 \ 0.5 \ j81g$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.5 \ 0.5 \ 0.5 \ (1.0)$   
 $cmyn^*3^* = 0.5 \ 0.5 \ 0.5 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 0.5$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 56.71 \ -0.23 \ 2.14$   
 $LAB^*LABa = 56.71 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.5 \ 0.0 \ 0.0$   
 $lab^*tch = 0.5 \ 0.0 \ -$   
 $lab^*nch = 0.5 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.5 \ 0.0 \ 0.0$   
 $lab^*tce = 0.5 \ 0.0 \ -$   
 $lab^*nce = 0.5 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.5 \ 0.0 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 0.5 \ 1.0 \ (0.0)$   
 $olv^*4^* = 0.5 \ 1.0 \ 0.5 \ 0.5$   
 $cmyn^*4^* = 0.5 \ 0.0 \ 0.5 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 34.46 \ -31.2 \ 18.11$   
 $LAB^*LABa = 34.46 \ -31.38 \ 17.47$   
 $LAB^*TCHa = 25.01 \ 35.93 \ 150.91$

**relative CIELAB lab\***  
 $lab^*lab = 0.213 \ -0.436 \ 0.243$   
 $lab^*tch = 0.25 \ 0.5 \ 0.419$   
 $lab^*nch = 0.5 \ 0.5 \ 0.419$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.213 \ -0.478 \ 0.144$   
 $lab^*tce = 0.25 \ 0.5 \ 0.453$   
 $lab^*nce = 0.5 \ 0.5 \ j81g$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 1.0 \ 1.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 18.02 \ 0.5 \ -0.46$   
 $LAB^*LABa = 18.02 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.0 \ 0.0 \ 0.0$   
 $lab^*tch = 0.0 \ 0.0 \ -$   
 $lab^*nch = 1.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$   
 $lab^*tce = 0.0 \ 0.0 \ -$   
 $lab^*nce = 1.0 \ 0.0 \ -$

$n^* = 0.50$   
 chromaticness  $c^*$

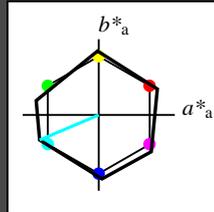
$n^* = 1.0$

**Input: Colorimetric Reflective System NRS11**

for hue  $h^* = lab^*h = 203/360 = 0.564$   
 $lab^*tch$  and  $lab^*nch$

D65: hue G50B  
 LCH\*Ma: 53 84 203  
 olv\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



**NRS11; adapted (a) CIELAB data**

|        | $L^*=L_a^*$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 53.2        | 77.06   | 34.32   | 84.36        | 24           |
| JMa    | 53.2        | -1.51   | 84.38   | 84.39        | 91           |
| GMa    | 53.2        | -82.27  | 18.98   | 84.44        | 167          |
| G50BMa | 53.2        | -77.72  | -32.98  | 84.44        | 203          |
| BMa    | 53.2        | 4.37    | -84.28  | 84.41        | 273          |
| B50RMa | 53.2        | 69.09   | -48.41  | 84.37        | 325          |
| NMa    | 10.99       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 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          |

%Gamut  
 $u^*_{rel} = 119$   
 %Regularity  
 $g^*_{H,rel} = 47$   
 $g^*_{C,rel} = 100$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$   
 $cmyn3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$   
 $olv_i4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$   
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 95.41 \ 0.0 \ -0.01$   
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 1.0 \ 0.0 \ 0.0$   
 $lab^*tch = 1.0 \ 0.0 \ -$   
 $lab^*nch = 0.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 1.0 \ 0.0 \ 0.0$   
 $lab^*tce = 1.0 \ 0.0 \ -$   
 $lab^*nce = 0.0 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.5 \ 1.0 \ 1.0 \ (1.0)$   
 $cmyn3^* = 0.5 \ 0.0 \ 0.0 \ (0.0)$   
 $olv_i4^* = 0.5 \ 1.0 \ 1.0 \ 1.0$   
 $cmyn4^* = 0.5 \ 0.0 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 74.3 \ -38.82 \ -16.48$   
 $LAB^*LABa = 74.3 \ -38.85 \ -16.48$   
 $LAB^*TCHa = 75.0 \ 42.21 \ 203.0$

**relative CIELAB lab\***  
 $lab^*lab = 0.75 \ -0.459 \ -0.194$   
 $lab^*tch = 0.75 \ 0.5 \ 0.564$   
 $lab^*nch = 0.0 \ 0.5 \ 0.564$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.75 \ -0.416 \ -0.275$   
 $lab^*tce = 0.75 \ 0.5 \ 0.593$   
 $lab^*nce = 0.0 \ 0.5 \ g37b$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.0 \ 1.0 \ 1.0 \ (1.0)$   
 $cmyn3^* = 1.0 \ 0.0 \ 0.0 \ (0.0)$   
 $olv_i4^* = 1.0 \ 1.0 \ 1.0 \ 0.5$   
 $cmyn4^* = 1.0 \ 0.0 \ 0.0 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 53.2 \ -77.67 \ -32.96$   
 $LAB^*LABa = 53.2 \ -77.71 \ -32.97$   
 $LAB^*TCHa = 50.0 \ 84.43 \ 202.99$

**relative CIELAB lab\***  
 $lab^*lab = 0.5 \ -0.919 \ -0.39$   
 $lab^*tch = 0.5 \ 1.0 \ 0.564$   
 $lab^*nch = 0.0 \ 1.0 \ 0.564$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.5 \ -0.833 \ -0.551$   
 $lab^*tce = 0.5 \ 1.0 \ 0.593$   
 $lab^*nce = 0.0 \ 1.0 \ g37b$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.0 \ 0.5 \ 0.5 \ (1.0)$   
 $cmyn3^* = 1.0 \ 0.5 \ 0.5 \ (0.0)$   
 $olv_i4^* = 0.5 \ 1.0 \ 1.0 \ 0.5$   
 $cmyn4^* = 0.5 \ 0.0 \ 0.0 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 32.1 \ -38.79 \ -16.46$   
 $LAB^*LABa = 32.1 \ -38.85 \ -16.48$   
 $LAB^*TCHa = 25.01 \ 42.21 \ 203.0$

**relative CIELAB lab\***  
 $lab^*lab = 0.25 \ -0.459 \ -0.194$   
 $lab^*tch = 0.25 \ 0.5 \ 0.564$   
 $lab^*nch = 0.5 \ 0.5 \ 0.564$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.25 \ -0.416 \ -0.275$   
 $lab^*tce = 0.25 \ 0.5 \ 0.593$   
 $lab^*nce = 0.5 \ 0.5 \ g37b$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$   
 $cmyn3^* = 1.0 \ 1.0 \ 1.0 \ (0.0)$   
 $olv_i4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$   
 $cmyn4^* = 1.0 \ 0.0 \ 0.0 \ 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 18.02 \ 0.5 \ -0.46$   
 $LAB^*LABa = 18.02 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.0 \ 0.0 \ 0.0$   
 $lab^*tch = 0.0 \ 0.0 \ -$   
 $lab^*nch = 1.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$   
 $lab^*tce = 0.0 \ 0.0 \ -$   
 $lab^*nce = 1.0 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.0 \ 1.0 \ 0.0 \ (1.0)$   
 $cmyn3^* = 1.0 \ 0.0 \ 0.0 \ (0.0)$   
 $olv_i4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$   
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 11.01 \ 0.07 \ 0.01$   
 $LAB^*LABa = 11.01 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.0 \ 0.0 \ 0.0$   
 $lab^*tch = 0.0 \ 0.0 \ -$   
 $lab^*nch = 1.0 \ 0.0 \ -$

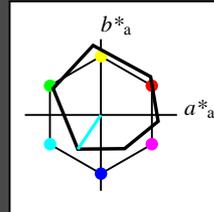
**relative Natural Colour (NC)**  
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$   
 $lab^*tce = 0.0 \ 0.0 \ -$   
 $lab^*nce = 1.0 \ 0.0 \ -$

**Output: Colorimetric Reflective System ORS18**

for hue  $h^* = lab^*h = 236/360 = 0.656$   
 $lab^*tch$  and  $lab^*nch$

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

triangle lightness  $t^*$



**ORS18; adapted (a) CIELAB data**

|      | $L^*=L_a^*$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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

**relative Inform. Technology (IT)**  
 $olv_i3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$   
 $cmyn3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$   
 $olv_i4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$   
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 95.41 \ -0.97 \ 4.75$   
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 1.0 \ 0.0 \ 0.0$   
 $lab^*tch = 1.0 \ 0.0 \ -$   
 $lab^*nch = 0.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 1.0 \ 0.0 \ 0.0$   
 $lab^*tce = 1.0 \ 0.0 \ -$   
 $lab^*nce = 0.0 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.5 \ 1.0 \ 1.0 \ (1.0)$   
 $cmyn3^* = 0.5 \ 0.0 \ 0.0 \ (0.0)$   
 $olv_i4^* = 0.5 \ 1.0 \ 1.0 \ 1.0$   
 $cmyn4^* = 0.5 \ 0.0 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 77.01 \ -15.79 \ -18.98$   
 $LAB^*LABa = 77.01 \ -15.16 \ -22.5$   
 $LAB^*TCHa = 75.0 \ 27.15 \ 236.01$

**relative CIELAB lab\***  
 $lab^*lab = 0.762 \ -0.278 \ -0.413$   
 $lab^*tch = 0.75 \ 0.5 \ 0.656$   
 $lab^*nch = 0.0 \ 0.5 \ 0.656$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.762 \ -0.247 \ -0.433$   
 $lab^*tce = 0.75 \ 0.5 \ 0.667$   
 $lab^*nce = 0.0 \ 0.5 \ g66b$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.0 \ 1.0 \ 1.0 \ (1.0)$   
 $cmyn3^* = 1.0 \ 0.0 \ 0.0 \ (0.0)$   
 $olv_i4^* = 0.0 \ 1.0 \ 1.0 \ 1.0$   
 $cmyn4^* = 1.0 \ 0.0 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 58.62 \ -30.62 \ -42.73$   
 $LAB^*LABa = 58.62 \ -30.34 \ -45.01$   
 $LAB^*TCHa = 50.0 \ 54.29 \ 236.01$

**relative CIELAB lab\***  
 $lab^*lab = 0.525 \ -0.558 \ -0.828$   
 $lab^*tch = 0.5 \ 1.0 \ 0.656$   
 $lab^*nch = 0.0 \ 1.0 \ 0.656$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.525 \ -0.496 \ -0.867$   
 $lab^*tce = 0.5 \ 1.0 \ 0.667$   
 $lab^*nce = 0.0 \ 1.0 \ g66b$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.5 \ 0.5 \ 0.5 \ (1.0)$   
 $cmyn3^* = 0.5 \ 0.5 \ 0.5 \ (0.0)$   
 $olv_i4^* = 1.0 \ 1.0 \ 1.0 \ 0.5$   
 $cmyn4^* = 0.0 \ 0.0 \ 0.0 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 56.71 \ -0.23 \ 2.14$   
 $LAB^*LABa = 56.71 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.5 \ 0.0 \ 0.0$   
 $lab^*tch = 0.5 \ 0.0 \ -$   
 $lab^*nch = 0.5 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.5 \ 0.0 \ 0.0$   
 $lab^*tce = 0.5 \ 0.0 \ -$   
 $lab^*nce = 0.5 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.0 \ 0.5 \ 0.5 \ (1.0)$   
 $cmyn3^* = 1.0 \ 0.5 \ 0.5 \ (0.0)$   
 $olv_i4^* = 0.5 \ 1.0 \ 1.0 \ 0.5$   
 $cmyn4^* = 0.5 \ 0.0 \ 0.0 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 38.32 \ -15.05 \ -21.59$   
 $LAB^*LABa = 38.32 \ -15.16 \ -22.5$   
 $LAB^*TCHa = 25.01 \ 27.15 \ 236.01$

**relative CIELAB lab\***  
 $lab^*lab = 0.262 \ -0.278 \ -0.413$   
 $lab^*tch = 0.25 \ 0.5 \ 0.656$   
 $lab^*nch = 0.5 \ 0.5 \ 0.656$

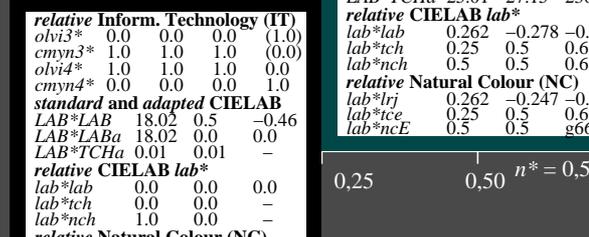
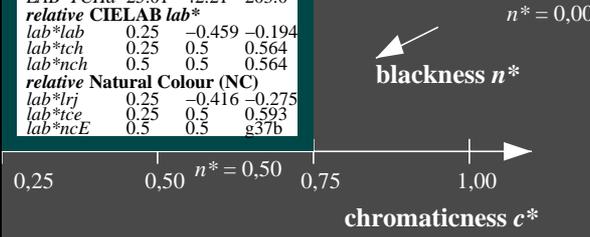
**relative Natural Colour (NC)**  
 $lab^*lrj = 0.262 \ -0.247 \ -0.433$   
 $lab^*tce = 0.25 \ 0.5 \ 0.667$   
 $lab^*nce = 0.5 \ 0.5 \ g66b$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$   
 $cmyn3^* = 1.0 \ 0.0 \ 0.0 \ (0.0)$   
 $olv_i4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$   
 $cmyn4^* = 1.0 \ 0.0 \ 0.0 \ 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 11.01 \ 0.07 \ 0.01$   
 $LAB^*LABa = 11.01 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.0 \ 0.0 \ 0.0$   
 $lab^*tch = 0.0 \ 0.0 \ -$   
 $lab^*nch = 1.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$   
 $lab^*tce = 0.0 \ 0.0 \ -$   
 $lab^*nce = 1.0 \ 0.0 \ -$



UE170-7, 3 step scales for constant CIELAB hue 203/360 = 0.564 (left)

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

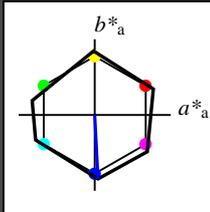
BAM-test chart UE17; Colorimetric systems NRS11 & ORS18  
 D65: 2 coordinate data of 3 step colour scales for 10 hues

input:  $cm_y0^* \ setcm_ycolor$   
 output:  $olv^* \ setrgbcolor / w^* \ setgray$

**Input: Colorimetric Reflective System NRS11**

for hue  $h^* = lab^*h = 273/360 = 0.758$   
 $lab^*tch$  and  $lab^*nch$

D65: hue B  
 LCH\*Ma: 53 84 273  
 olv\*Ma: 0.0 0.0 1.0  
 triangle lightness  $t^*$



**NRS11; adapted (a) CIELAB data**

|        | $L^*=L_a^*$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 53.2        | 77.06   | 34.32   | 84.36        | 24           |
| JMa    | 53.2        | -1.51   | 84.38   | 84.39        | 91           |
| GMa    | 53.2        | -82.27  | 18.98   | 84.44        | 167          |
| G50BMa | 53.2        | -77.72  | -32.98  | 84.44        | 203          |
| BMa    | 53.2        | 4.37    | -84.28  | 84.41        | 273          |
| B50RMa | 53.2        | 69.09   | -48.41  | 84.37        | 325          |
| NMa    | 10.99       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 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          |

%Gamut  
 $u^*_{rel} = 119$   
 %Regularity  
 $g^*_{H,rel} = 47$   
 $g^*_{C,rel} = 100$

**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*TCHa | 99.99 | 0.01 | -     |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 1.0 | 0.0 | 0.0 |
| lab*tch | 1.0 | 0.0 | -   |
| lab*nch | 0.0 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 1.0 | 0.0 | 0.0 |
| lab*tce | 1.0 | 0.0 | -   |
| lab*nce | 0.0 | 0.0 | -   |

**relative Inform. Technology (IT)**

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

**standard and adapted CIELAB**

|          |      |      |        |
|----------|------|------|--------|
| LAB*LAB  | 74.3 | 2.21 | -42.13 |
| LAB*LABa | 74.3 | 2.19 | -42.13 |
| LAB*TCHa | 75.0 | 42.2 | 272.97 |

**relative CIELAB lab\***

|         |      |       |        |
|---------|------|-------|--------|
| lab*lab | 0.75 | 0.026 | -0.498 |
| lab*tch | 0.75 | 0.5   | 0.758  |
| lab*nch | 0.0  | 0.5   | 0.758  |

**relative Natural Colour (NC)**

|         |      |       |        |
|---------|------|-------|--------|
| lab*lrj | 0.75 | 0.009 | -0.499 |
| lab*tce | 0.75 | 0.5   | 0.753  |
| lab*nce | 0.0  | 0.5   | b01r   |

**relative Inform. Technology (IT)**

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

**standard and adapted CIELAB**

|          |      |       |        |
|----------|------|-------|--------|
| LAB*LAB  | 53.2 | 4.42  | -84.26 |
| LAB*LABa | 53.2 | 4.37  | -84.27 |
| LAB*TCHa | 50.0 | 84.39 | 272.97 |

**relative CIELAB lab\***

|         |     |       |        |
|---------|-----|-------|--------|
| lab*lab | 0.5 | 0.052 | -0.997 |
| lab*tch | 0.5 | 1.0   | 0.758  |
| lab*nch | 0.0 | 1.0   | 0.758  |

**relative Natural Colour (NC)**

|         |     |       |        |
|---------|-----|-------|--------|
| lab*lrj | 0.5 | 0.018 | -0.999 |
| lab*tce | 0.5 | 1.0   | 0.753  |
| lab*nce | 0.0 | 1.0   | b01r   |

**relative Inform. Technology (IT)**

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

**standard and adapted CIELAB**

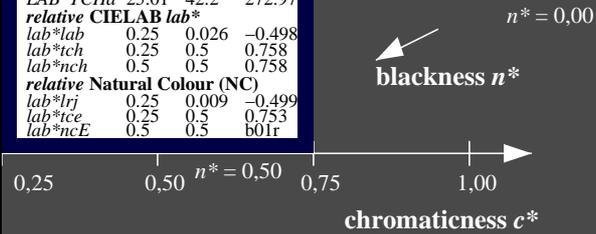
|          |       |      |        |
|----------|-------|------|--------|
| LAB*LAB  | 32.1  | 2.25 | -42.11 |
| LAB*LABa | 32.1  | 2.19 | -42.13 |
| LAB*TCHa | 25.01 | 42.2 | 272.97 |

**relative CIELAB lab\***

|         |      |       |        |
|---------|------|-------|--------|
| lab*lab | 0.25 | 0.026 | -0.498 |
| lab*tch | 0.25 | 0.5   | 0.758  |
| lab*nch | 0.5  | 0.5   | 0.758  |

**relative Natural Colour (NC)**

|         |      |       |        |
|---------|------|-------|--------|
| lab*lrj | 0.25 | 0.009 | -0.499 |
| lab*tce | 0.25 | 0.5   | 0.753  |
| lab*nce | 0.5  | 0.5   | b01r   |



**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 | 1.0   |

**standard and adapted CIELAB**

|          |       |      |      |
|----------|-------|------|------|
| LAB*LAB  | 11.01 | 0.07 | 0.01 |
| LAB*LABa | 11.01 | 0.0  | 0.0  |
| LAB*TCHa | 0.01  | 0.01 | -    |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.0 | 0.0 | 0.0 |
| lab*tch | 0.0 | 0.0 | -   |
| lab*nch | 1.0 | 0.0 | -   |

**relative Natural Colour (NC)**

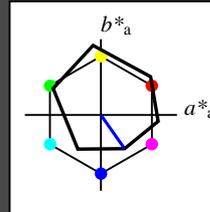
|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.0 | 0.0 | 0.0 |
| lab*tce | 0.0 | 0.0 | -   |
| lab*nce | 1.0 | 0.0 | -   |

$n^* = 1.0$

**Output: Colorimetric Reflective System ORS18**

for hue  $h^* = lab^*h = 305/360 = 0.847$   
 $lab^*tch$  and  $lab^*nch$

D65: hue V  
 LCH\*Ma: 26 54 305  
 olv\*Ma: 0.0 0.0 1.0  
 triangle lightness  $t^*$



**ORS18; adapted (a) CIELAB data**

|      | $L^*=L_a^*$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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

**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 | -0.97 | 4.75 |
| LAB*LABa | 95.41 | 0.0   | 0.0  |
| LAB*TCHa | 99.99 | 0.01  | -    |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 1.0 | 0.0 | 0.0 |
| lab*tch | 1.0 | 0.0 | -   |
| lab*nch | 0.0 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 1.0 | 0.0 | 0.0 |
| lab*tce | 1.0 | 0.0 | -   |
| lab*nce | 0.0 | 0.0 | -   |

**relative Inform. Technology (IT)**

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

**standard and adapted CIELAB**

|          |       |       |        |
|----------|-------|-------|--------|
| LAB*LAB  | 60.56 | 15.24 | -19.79 |
| LAB*LABa | 60.56 | 15.55 | -22.2  |
| LAB*TCHa | 75.0  | 27.11 | 305.0  |

**relative CIELAB lab\***

|         |      |       |        |
|---------|------|-------|--------|
| lab*lab | 0.55 | 0.287 | -0.408 |
| lab*tch | 0.75 | 0.5   | 0.847  |
| lab*nch | 0.0  | 0.5   | 0.847  |

**relative Natural Colour (NC)**

|         |      |       |        |
|---------|------|-------|--------|
| lab*lrj | 0.55 | 0.225 | -0.446 |
| lab*tce | 0.75 | 0.5   | 0.824  |
| lab*nce | 0.0  | 0.5   | b29r   |

**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  | 56.71 | -0.23 | 2.14 |
| LAB*LABa | 56.71 | 0.0   | 0.0  |
| LAB*TCHa | 50.0  | 0.01  | -    |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.5 | 0.0 | 0.0 |
| lab*tch | 0.5 | 0.0 | -   |
| lab*nch | 0.5 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.5 | 0.0 | 0.0 |
| lab*tce | 0.5 | 0.0 | -   |
| lab*nce | 0.5 | 0.0 | -   |

**relative Inform. Technology (IT)**

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

**standard and adapted CIELAB**

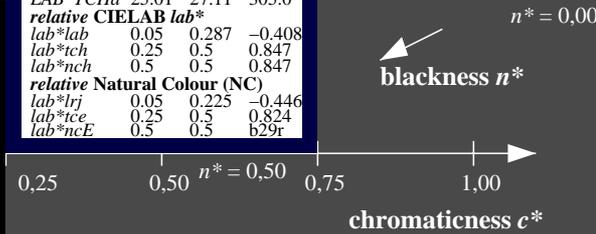
|          |       |       |       |
|----------|-------|-------|-------|
| LAB*LAB  | 21.87 | 15.98 | -22.4 |
| LAB*LABa | 21.87 | 15.55 | -22.2 |
| LAB*TCHa | 25.01 | 27.11 | 305.0 |

**relative CIELAB lab\***

|         |      |       |        |
|---------|------|-------|--------|
| lab*lab | 0.05 | 0.287 | -0.408 |
| lab*tch | 0.25 | 0.5   | 0.847  |
| lab*nch | 0.5  | 0.5   | 0.847  |

**relative Natural Colour (NC)**

|         |      |       |        |
|---------|------|-------|--------|
| lab*lrj | 0.05 | 0.225 | -0.446 |
| lab*tce | 0.25 | 0.5   | 0.824  |
| lab*nce | 0.5  | 0.5   | b29r   |



**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 | 1.0   |

**standard and adapted CIELAB**

|          |       |      |       |
|----------|-------|------|-------|
| LAB*LAB  | 18.02 | 0.5  | -0.46 |
| LAB*LABa | 18.02 | 0.0  | 0.0   |
| LAB*TCHa | 0.01  | 0.01 | -     |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.0 | 0.0 | 0.0 |
| lab*tch | 0.0 | 0.0 | -   |
| lab*nch | 1.0 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.0 | 0.0 | 0.0 |
| lab*tce | 0.0 | 0.0 | -   |
| lab*nce | 1.0 | 0.0 | -   |

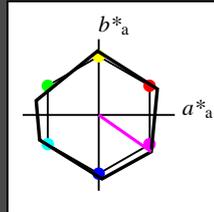
$n^* = 1.0$

**Input: Colorimetric Reflective System NRS11**

for hue  $h^* = lab^*h = 325/360 = 0.903$   
 $lab^*tch$  and  $lab^*nch$

D65: hue B50R  
 LCH\*Ma: 53 84 325  
 olv\*Ma: 1.0 0.0 1.0

triangle lightness  $t^*$



**NRS11; adapted (a) CIELAB data**

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 53.2        | 77.06   | 34.32   | 84.36        | 24           |
| JMa    | 53.2        | -1.51   | 84.38   | 84.39        | 91           |
| GMa    | 53.2        | -82.27  | 18.98   | 84.44        | 167          |
| G50BMa | 53.2        | -77.72  | -32.98  | 84.44        | 203          |
| BMa    | 53.2        | 4.37    | -84.28  | 84.41        | 273          |
| B50RMa | 53.2        | 69.09   | -48.41  | 84.37        | 325          |
| NMa    | 10.99       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 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          |

%Gamut  
 $u^*_{rel} = 119$   
 %Regularity  
 $g^*_{H,rel} = 47$   
 $g^*_{C,rel} = 100$

**relative Inform. Technology (IT)**  
 $olv3^* 1.0 1.0 1.0 (1.0)$   
 $cmyn3^* 0.0 0.0 0.0 (0.0)$   
 $olv4^* 1.0 1.0 1.0 1.0$   
 $cmyn4^* 0.0 0.0 0.0 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB 95.41 0.0 -0.01$   
 $LAB^*LABa 95.41 0.0 0.0$   
 $LAB^*TCHa 99.99 0.01 -$

**relative CIELAB lab\***  
 $lab^*lab 1.0 0.0 0.0$   
 $lab^*tch 1.0 0.0 -$   
 $lab^*nch 0.0 0.0 -$

**relative Natural Colour (NC)**  
 $lab^*lrj 1.0 0.0 0.0$   
 $lab^*tce 1.0 0.0 -$   
 $lab^*nce 0.0 0.0 -$

**relative Inform. Technology (IT)**  
 $olv3^* 1.0 0.5 1.0 (1.0)$   
 $cmyn3^* 0.0 0.5 0.0 (0.0)$   
 $olv4^* 1.0 0.5 1.0 1.0$   
 $cmyn4^* 0.0 0.5 0.0 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB 74.3 34.57 -24.19$   
 $LAB^*LABa 74.3 34.54 -24.2$   
 $LAB^*TCHa 75.0 42.18 324.98$

**relative CIELAB lab\***  
 $lab^*lab 0.75 0.409 -0.286$   
 $lab^*tch 0.75 0.5 0.903$   
 $lab^*nch 0.0 0.5 0.903$

**relative Natural Colour (NC)**  
 $lab^*lrj 0.75 0.336 -0.37$   
 $lab^*tce 0.75 0.5 0.867$   
 $lab^*nce 0.0 0.5 b46r$

**relative Inform. Technology (IT)**  
 $olv3^* 0.5 0.5 0.5 (1.0)$   
 $cmyn3^* 0.5 0.5 0.5 (0.0)$   
 $olv4^* 1.0 1.0 1.0 0.5$   
 $cmyn4^* 0.0 0.0 0.0 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB 53.21 0.04 0.0$   
 $LAB^*LABa 53.21 0.0 0.0$   
 $LAB^*TCHa 50.0 0.01 -$

**relative CIELAB lab\***  
 $lab^*lab 0.5 0.0 0.0$   
 $lab^*tch 0.5 0.0 -$   
 $lab^*nch 0.5 0.0 -$

**relative Natural Colour (NC)**  
 $lab^*lrj 0.5 0.0 0.0$   
 $lab^*tce 0.5 0.0 -$   
 $lab^*nce 0.5 0.0 -$

**relative Inform. Technology (IT)**  
 $olv3^* 0.5 0.0 0.5 (1.0)$   
 $cmyn3^* 0.5 1.0 0.5 (0.0)$   
 $olv4^* 1.0 0.5 1.0 0.5$   
 $cmyn4^* 0.0 0.5 0.0 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB 32.1 34.6 -24.18$   
 $LAB^*LABa 32.1 34.54 -24.2$   
 $LAB^*TCHa 25.01 42.18 324.98$

**relative CIELAB lab\***  
 $lab^*lab 0.25 0.409 -0.286$   
 $lab^*tch 0.25 0.5 0.903$   
 $lab^*nch 0.5 0.5 0.903$

**relative Natural Colour (NC)**  
 $lab^*lrj 0.25 0.336 -0.37$   
 $lab^*tce 0.25 0.5 0.867$   
 $lab^*nce 0.5 0.5 b46r$

**relative Inform. Technology (IT)**  
 $olv3^* 0.0 0.0 0.0 (1.0)$   
 $cmyn3^* 1.0 1.0 1.0 (0.0)$   
 $olv4^* 1.0 1.0 1.0 0.0$   
 $cmyn4^* 0.0 0.0 0.0 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB 11.01 0.07 0.01$   
 $LAB^*LABa 11.01 0.0 0.0$   
 $LAB^*TCHa 0.01 0.01 -$

**relative CIELAB lab\***  
 $lab^*lab 0.0 0.0 0.0$   
 $lab^*tch 0.0 0.0 -$   
 $lab^*nch 1.0 0.0 -$

**relative Natural Colour (NC)**  
 $lab^*lrj 0.0 0.0 0.0$   
 $lab^*tce 0.0 0.0 -$   
 $lab^*nce 1.0 0.0 -$

**relative Inform. Technology (IT)**  
 $olv3^* 0.0 1.0 0.0 (1.0)$   
 $cmyn3^* 1.0 0.0 0.0 (0.0)$   
 $olv4^* 1.0 1.0 1.0 0.0$   
 $cmyn4^* 0.0 0.0 1.0 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB 18.02 0.5 -0.46$   
 $LAB^*LABa 18.02 0.0 0.0$   
 $LAB^*TCHa 0.01 0.01 -$

**relative CIELAB lab\***  
 $lab^*lab 0.0 0.0 0.0$   
 $lab^*tch 0.0 0.0 -$   
 $lab^*nch 1.0 0.0 -$

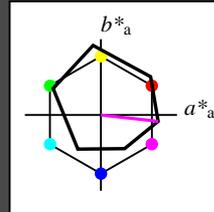
**relative Natural Colour (NC)**  
 $lab^*lrj 0.0 0.0 0.0$   
 $lab^*tce 0.0 0.0 -$   
 $lab^*nce 1.0 0.0 -$

**Output: Colorimetric Reflective System ORS18**

for hue  $h^* = lab^*h = 354/360 = 0.982$   
 $lab^*tch$  and  $lab^*nch$

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

triangle lightness  $t^*$



**ORS18; adapted (a) CIELAB data**

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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

**relative Inform. Technology (IT)**  
 $olv3^* 1.0 1.0 1.0 (1.0)$   
 $cmyn3^* 0.0 0.0 0.0 (0.0)$   
 $olv4^* 1.0 1.0 1.0 1.0$   
 $cmyn4^* 0.0 0.0 0.0 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB 95.41 -0.97 4.75$   
 $LAB^*LABa 95.41 0.0 0.0$   
 $LAB^*TCHa 99.99 0.01 -$

**relative CIELAB lab\***  
 $lab^*lab 1.0 0.0 0.0$   
 $lab^*tch 1.0 0.0 -$   
 $lab^*nch 0.0 0.0 -$

**relative Natural Colour (NC)**  
 $lab^*lrj 1.0 0.0 0.0$   
 $lab^*tce 1.0 0.0 -$   
 $lab^*nce 0.0 0.0 -$

**relative Inform. Technology (IT)**  
 $olv3^* 1.0 0.5 1.0 (1.0)$   
 $cmyn3^* 0.0 0.5 0.0 (0.0)$   
 $olv4^* 1.0 0.5 1.0 1.0$   
 $cmyn4^* 0.0 0.5 0.0 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB 71.77 37.1 -1.01$   
 $LAB^*LABa 71.77 37.63 -4.17$   
 $LAB^*TCHa 75.0 37.86 353.66$

**relative CIELAB lab\***  
 $lab^*lab 0.695 0.497 -0.054$   
 $lab^*tch 0.75 0.5 0.982$   
 $lab^*nch 0.0 0.5 0.982$

**relative Natural Colour (NC)**  
 $lab^*lrj 0.695 0.454 -0.208$   
 $lab^*tce 0.75 0.5 0.932$   
 $lab^*nce 0.0 0.5 b72r$

**relative Inform. Technology (IT)**  
 $olv3^* 0.5 0.5 0.5 (1.0)$   
 $cmyn3^* 0.5 0.5 0.5 (0.0)$   
 $olv4^* 1.0 1.0 1.0 0.5$   
 $cmyn4^* 0.0 0.0 0.0 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB 56.71 -0.23 2.14$   
 $LAB^*LABa 56.71 0.0 0.0$   
 $LAB^*TCHa 50.0 0.01 -$

**relative CIELAB lab\***  
 $lab^*lab 0.5 0.0 0.0$   
 $lab^*tch 0.5 0.0 -$   
 $lab^*nch 0.5 0.0 -$

**relative Natural Colour (NC)**  
 $lab^*lrj 0.5 0.0 0.0$   
 $lab^*tce 0.5 0.0 -$   
 $lab^*nce 0.5 0.0 -$

**relative Inform. Technology (IT)**  
 $olv3^* 0.5 0.0 0.5 (1.0)$   
 $cmyn3^* 0.5 1.0 0.5 (0.0)$   
 $olv4^* 1.0 0.5 1.0 0.5$   
 $cmyn4^* 0.0 0.5 0.0 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB 33.08 37.84 -3.62$   
 $LAB^*LABa 33.08 37.63 -4.17$   
 $LAB^*TCHa 25.01 37.86 353.66$

**relative CIELAB lab\***  
 $lab^*lab 0.195 0.497 -0.054$   
 $lab^*tch 0.25 0.5 0.982$   
 $lab^*nch 0.5 0.5 0.982$

**relative Natural Colour (NC)**  
 $lab^*lrj 0.195 0.454 -0.208$   
 $lab^*tce 0.25 0.5 0.932$   
 $lab^*nce 0.5 0.5 b72r$

**relative Inform. Technology (IT)**  
 $olv3^* 0.0 0.0 0.0 (1.0)$   
 $cmyn3^* 1.0 1.0 1.0 (0.0)$   
 $olv4^* 1.0 1.0 1.0 0.0$   
 $cmyn4^* 0.0 0.0 1.0 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB 18.02 0.5 -0.46$   
 $LAB^*LABa 18.02 0.0 0.0$   
 $LAB^*TCHa 0.01 0.01 -$

**relative CIELAB lab\***  
 $lab^*lab 0.0 0.0 0.0$   
 $lab^*tch 0.0 0.0 -$   
 $lab^*nch 1.0 0.0 -$

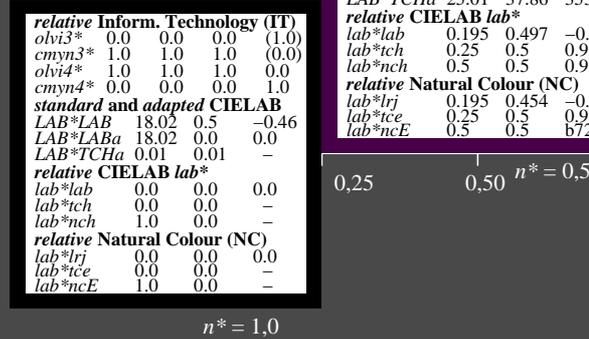
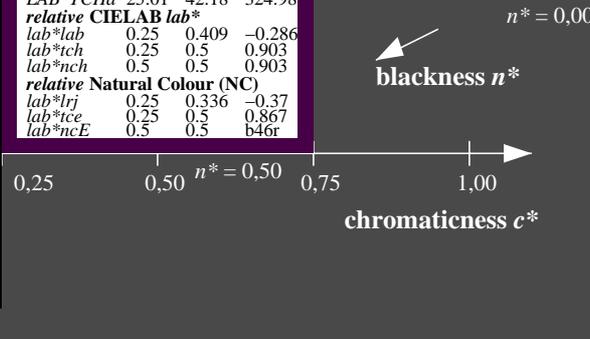
**relative Natural Colour (NC)**  
 $lab^*lrj 0.0 0.0 0.0$   
 $lab^*tce 0.0 0.0 -$   
 $lab^*nce 1.0 0.0 -$

**relative Inform. Technology (IT)**  
 $olv3^* 0.0 1.0 0.0 (1.0)$   
 $cmyn3^* 1.0 0.0 0.0 (0.0)$   
 $olv4^* 1.0 1.0 1.0 0.0$   
 $cmyn4^* 0.0 0.0 1.0 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB 11.01 0.07 0.01$   
 $LAB^*LABa 11.01 0.0 0.0$   
 $LAB^*TCHa 0.01 0.01 -$

**relative CIELAB lab\***  
 $lab^*lab 0.0 0.0 0.0$   
 $lab^*tch 0.0 0.0 -$   
 $lab^*nch 1.0 0.0 -$

**relative Natural Colour (NC)**  
 $lab^*lrj 0.0 0.0 0.0$   
 $lab^*tce 0.0 0.0 -$   
 $lab^*nce 1.0 0.0 -$



UE170-7, 3 step scales for constant CIELAB hue 325/360 = 0.903 (left)

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

BAM-test chart UE17; Colorimetric systems NRS11 & ORS18  
 D65: 2 coordinate data of 3 step colour scales for 10 hues

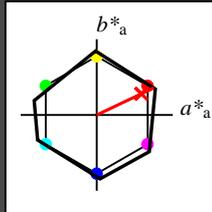
input:  $cmv0^* setcmykcolor$   
 output:  $olv^* setrgbcolor / w^* setgray$

**Input: Colorimetric Reflective System NRS11**

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

D65: hue R  
 LCH\*Ma: 53 83 25  
 olv\*Ma: 1.0 0.03 0.0

triangle lightness  $t^*$



**NRS11; adapted (a) CIELAB data**

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 53.2        | 77.06   | 34.32   | 84.36        | 24           |
| JMa    | 53.2        | -1.51   | 84.38   | 84.39        | 91           |
| GMa    | 53.2        | -82.27  | 18.98   | 84.44        | 167          |
| G50BMa | 53.2        | -77.72  | -32.98  | 84.44        | 203          |
| BMa    | 53.2        | 4.37    | -84.28  | 84.41        | 273          |
| B50RMa | 53.2        | 69.09   | -48.41  | 84.37        | 325          |
| NMa    | 10.99       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 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          |

%Gamut  
 $u^*_{rel} = 119$   
 %Regularity  
 $g^*_{H,rel} = 47$   
 $g^*_{C,rel} = 100$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$   
 $cmyn^*3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 95.41 \ 0.0 \ -0.01$   
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 1.0 \ 0.0 \ 0.0$   
 $lab^*tch = 1.0 \ 0.0 \ -$   
 $lab^*nch = 0.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 1.0 \ 0.0 \ 0.0$   
 $lab^*tce = 1.0 \ 0.0 \ -$   
 $lab^*nce = 0.0 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 1.0 \ 0.514 \ 0.5 \ (1.0)$   
 $cmyn^*3^* = 0.0 \ 0.486 \ 0.5 \ (0.0)$   
 $olv^*4^* = 1.0 \ 0.514 \ 0.5 \ 1.0$   
 $cmyn^*4^* = 0.0 \ 0.486 \ 0.5 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 74.3 \ 37.46 \ 17.85$   
 $LAB^*LABa = 74.3 \ 37.44 \ 17.85$   
 $LAB^*TCHa = 75.0 \ 41.47 \ 25.49$

**relative CIELAB lab\***  
 $lab^*lab = 0.75 \ 0.451 \ 0.215$   
 $lab^*tch = 0.75 \ 0.5 \ 0.071$   
 $lab^*nch = 0.0 \ 0.5 \ 0.071$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.75 \ 0.5 \ 0.0$   
 $lab^*tce = 0.75 \ 0.5 \ 0.0$   
 $lab^*nce = 0.0 \ 0.5 \ r00j$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.5 \ 0.5 \ 0.5 \ (1.0)$   
 $cmyn^*3^* = 0.5 \ 0.5 \ 0.5 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 0.5$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 53.21 \ 0.04 \ 0.0$   
 $LAB^*LABa = 53.21 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.5 \ 0.0 \ 0.0$   
 $lab^*tch = 0.5 \ 0.0 \ -$   
 $lab^*nch = 0.5 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.5 \ 0.0 \ 0.0$   
 $lab^*tce = 0.5 \ 0.0 \ -$   
 $lab^*nce = 0.5 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 1.0 \ 1.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 11.01 \ 0.07 \ 0.01$   
 $LAB^*LABa = 11.01 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.0 \ 0.0 \ 0.0$   
 $lab^*tch = 0.0 \ 0.0 \ -$   
 $lab^*nch = 1.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$   
 $lab^*tce = 0.0 \ 0.0 \ -$   
 $lab^*nce = 1.0 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.5 \ 0.014 \ 0.0 \ (1.0)$   
 $cmyn^*3^* = 0.5 \ 0.986 \ 1.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 0.514 \ 0.5 \ 0.5$   
 $cmyn^*4^* = 0.0 \ 0.486 \ 0.5 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 32.1 \ 37.51 \ 17.86$   
 $LAB^*LABa = 32.1 \ 37.45 \ 17.84$   
 $LAB^*TCHa = 25.01 \ 41.48 \ 25.48$

**relative CIELAB lab\***  
 $lab^*lab = 0.25 \ 0.451 \ 0.215$   
 $lab^*tch = 0.25 \ 0.5 \ 0.071$   
 $lab^*nch = 0.5 \ 0.5 \ 0.071$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.25 \ 0.5 \ 0.0$   
 $lab^*tce = 0.25 \ 0.5 \ 1.0$   
 $lab^*nce = 0.5 \ 0.5 \ b99r$

**blackness  $n^* = 0.00$**

**chromaticness  $c^* = 0.25$**

**chromaticness  $c^* = 0.50$**

**chromaticness  $c^* = 0.75$**

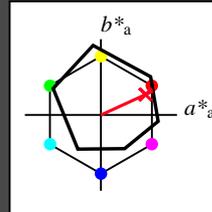
**chromaticness  $c^* = 1.00$**

**Output: Colorimetric Reflective System ORS18**

for hue  $h^* = lab^*h = 25/360 = 0.069$   
 $lab^*tch$  and  $lab^*nch$

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

triangle lightness  $t^*$



**ORS18; adapted (a) CIELAB data**

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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

**relative Inform. Technology (IT)**  
 $olv^*3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$   
 $cmyn^*3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 95.41 \ -0.97 \ 4.75$   
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 1.0 \ 0.0 \ 0.0$   
 $lab^*tch = 1.0 \ 0.0 \ -$   
 $lab^*nch = 0.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 1.0 \ 0.0 \ 0.0$   
 $lab^*tce = 1.0 \ 0.0 \ -$   
 $lab^*nce = 0.0 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 1.0 \ 0.5 \ 0.661 \ (1.0)$   
 $cmyn^*3^* = 0.0 \ 0.5 \ 0.339 \ (0.0)$   
 $olv^*4^* = 1.0 \ 0.5 \ 0.661 \ 1.0$   
 $cmyn^*4^* = 0.0 \ 0.5 \ 0.339 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 71.7 \ 33.75 \ 18.92$   
 $LAB^*LABa = 71.7 \ 34.27 \ 15.76$   
 $LAB^*TCHa = 75.0 \ 37.72 \ 24.69$

**relative CIELAB lab\***  
 $lab^*lab = 0.694 \ 0.454 \ 0.209$   
 $lab^*tch = 0.75 \ 0.5 \ 0.069$   
 $lab^*nch = 0.0 \ 0.5 \ 0.069$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.694 \ 0.5 \ 0.0$   
 $lab^*tce = 0.75 \ 0.5 \ 1.0$   
 $lab^*nce = 0.0 \ 0.5 \ b99r$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.5 \ 0.5 \ 0.5 \ (1.0)$   
 $cmyn^*3^* = 0.5 \ 0.5 \ 0.5 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 0.5$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 56.71 \ -0.23 \ 2.14$   
 $LAB^*LABa = 56.71 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 50.0 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.5 \ 0.0 \ 0.0$   
 $lab^*tch = 0.5 \ 0.0 \ -$   
 $lab^*nch = 0.5 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.5 \ 0.0 \ 0.0$   
 $lab^*tce = 0.5 \ 0.0 \ -$   
 $lab^*nce = 0.5 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.5 \ 0.0 \ 0.161 \ (1.0)$   
 $cmyn^*3^* = 0.5 \ 1.0 \ 0.839 \ (0.0)$   
 $olv^*4^* = 1.0 \ 0.5 \ 0.661 \ 0.5$   
 $cmyn^*4^* = 0.0 \ 0.5 \ 0.339 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 33.01 \ 34.49 \ 16.31$   
 $LAB^*LABa = 33.01 \ 34.27 \ 15.77$   
 $LAB^*TCHa = 25.01 \ 37.73 \ 24.7$

**relative CIELAB lab\***  
 $lab^*lab = 0.194 \ 0.454 \ 0.209$   
 $lab^*tch = 0.25 \ 0.5 \ 0.069$   
 $lab^*nch = 0.5 \ 0.5 \ 0.069$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.194 \ 0.5 \ 0.0$   
 $lab^*tce = 0.25 \ 0.5 \ 0.0$   
 $lab^*nce = 0.5 \ 0.5 \ r00j$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 1.0 \ 1.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 18.02 \ 0.5 \ -0.46$   
 $LAB^*LABa = 18.02 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.0 \ 0.0 \ 0.0$   
 $lab^*tch = 0.0 \ 0.0 \ -$   
 $lab^*nch = 1.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$   
 $lab^*tce = 0.0 \ 0.0 \ -$   
 $lab^*nce = 1.0 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 1.0 \ 1.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 11.01 \ 0.07 \ 0.01$   
 $LAB^*LABa = 11.01 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.0 \ 0.0 \ 0.0$   
 $lab^*tch = 0.0 \ 0.0 \ -$   
 $lab^*nch = 1.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$   
 $lab^*tce = 0.0 \ 0.0 \ -$   
 $lab^*nce = 1.0 \ 0.0 \ -$

**blackness  $n^* = 0.00$**

**chromaticness  $c^* = 0.25$**

**chromaticness  $c^* = 0.50$**

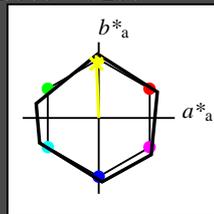
**chromaticness  $c^* = 0.75$**

**chromaticness  $c^* = 1.00$**

Input: Colorimetric Reflective System NRS11

for hue  $h^* = lab^*h = 92/360 = 0.256$   
 $lab^*tch$  and  $lab^*nch$

D65: hue J  
 LCH\*Ma: 53 83 92  
 olv\*Ma: 0.98 1.0 0.0  
 triangle lightness  $t^*$



**NRS11; adapted (a) CIELAB data**

|        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------------|---------|---------|--------------|--------------|
| RMa    | 53.2        | 77.06   | 34.32   | 84.36        | 24           |
| JMa    | 53.2        | -1.51   | 84.38   | 84.39        | 91           |
| GMa    | 53.2        | -82.27  | 18.98   | 84.44        | 167          |
| G50BMa | 53.2        | -77.72  | -32.98  | 84.44        | 203          |
| BMa    | 53.2        | 4.37    | -84.28  | 84.41        | 273          |
| B50RMa | 53.2        | 69.09   | -48.41  | 84.37        | 325          |
| NMa    | 10.99       | 0.0     | 0.0     | 0.0          | 0            |
| WMa    | 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          |

%Gamut  
 $u^*_{rel} = 119$   
 %Regularity  
 $g^*_{H,rel} = 47$   
 $g^*_{C,rel} = 100$

**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*TCHa | 99.99 | 0.01 | -     |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 1.0 | 0.0 | 0.0 |
| lab*tch | 1.0 | 0.0 | -   |
| lab*nch | 0.0 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 1.0 | 0.0 | 0.0 |
| lab*tce | 1.0 | 0.0 | -   |
| lab*nce | 0.0 | 0.0 | -   |

**relative Inform. Technology (IT)**

|        |       |     |     |       |
|--------|-------|-----|-----|-------|
| olvi3* | 0.989 | 1.0 | 0.5 | (1.0) |
| cmyn3* | 0.011 | 0.0 | 0.5 | (0.0) |
| olvi4* | 0.989 | 1.0 | 0.5 | 1.0   |
| cmyn4* | 0.011 | 0.0 | 0.5 | 0.0   |

**standard and adapted CIELAB**

|          |      |       |       |
|----------|------|-------|-------|
| LAB*LAB  | 74.3 | -1.64 | 41.44 |
| LAB*LABa | 74.3 | -1.67 | 41.44 |
| LAB*TCHa | 75.0 | 41.47 | 92.32 |

**relative CIELAB lab\***

|         |      |        |       |
|---------|------|--------|-------|
| lab*lab | 0.75 | -0.019 | 0.499 |
| lab*tch | 0.75 | 0.5    | 0.256 |
| lab*nch | 0.0  | 0.5    | 0.256 |

**relative Natural Colour (NC)**

|         |      |     |      |
|---------|------|-----|------|
| lab*lrj | 0.75 | 0.0 | 0.5  |
| lab*tce | 0.75 | 0.5 | 0.25 |
| lab*nce | 0.0  | 0.5 | r99j |

**relative Inform. Technology (IT)**

|        |       |     |     |       |
|--------|-------|-----|-----|-------|
| olvi3* | 0.977 | 1.0 | 0.0 | (1.0) |
| cmyn3* | 0.023 | 0.0 | 1.0 | (0.0) |
| olvi4* | 0.977 | 1.0 | 0.0 | 1.0   |
| cmyn4* | 0.023 | 0.0 | 1.0 | 0.0   |

**standard and adapted CIELAB**

|          |      |       |       |
|----------|------|-------|-------|
| LAB*LAB  | 53.2 | -3.31 | 82.87 |
| LAB*LABa | 53.2 | -3.35 | 82.86 |
| LAB*TCHa | 50.0 | 82.93 | 92.32 |

**relative CIELAB lab\***

|         |     |       |       |
|---------|-----|-------|-------|
| lab*lab | 0.5 | -0.04 | 0.999 |
| lab*tch | 0.5 | 1.0   | 0.256 |
| lab*nch | 0.0 | 1.0   | 0.256 |

**relative Natural Colour (NC)**

|         |     |     |      |
|---------|-----|-----|------|
| lab*lrj | 0.5 | 0.0 | 1.0  |
| lab*tce | 0.5 | 1.0 | 0.25 |
| lab*nce | 0.0 | 1.0 | r99j |

**relative Inform. Technology (IT)**

|        |       |     |     |       |
|--------|-------|-----|-----|-------|
| olvi3* | 0.489 | 0.5 | 0.0 | (1.0) |
| cmyn3* | 0.511 | 0.5 | 1.0 | (0.0) |
| olvi4* | 0.989 | 1.0 | 0.5 | 0.5   |
| cmyn4* | 0.011 | 0.0 | 0.5 | 0.5   |

**standard and adapted CIELAB**

|          |       |       |       |
|----------|-------|-------|-------|
| LAB*LAB  | 32.1  | -1.62 | 41.45 |
| LAB*LABa | 32.1  | -1.68 | 41.43 |
| LAB*TCHa | 25.01 | 41.46 | 92.33 |

**relative CIELAB lab\***

|         |      |        |       |
|---------|------|--------|-------|
| lab*lab | 0.25 | -0.019 | 0.499 |
| lab*tch | 0.25 | 0.5    | 0.256 |
| lab*nch | 0.5  | 0.5    | 0.256 |

**relative Natural Colour (NC)**

|         |      |     |      |
|---------|------|-----|------|
| lab*lrj | 0.25 | 0.0 | 0.5  |
| lab*tce | 0.25 | 0.5 | 0.25 |
| lab*nce | 0.5  | 0.5 | 100g |

**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 | 1.0   |

**standard and adapted CIELAB**

|          |       |      |      |
|----------|-------|------|------|
| LAB*LAB  | 11.01 | 0.07 | 0.01 |
| LAB*LABa | 11.01 | 0.0  | 0.0  |
| LAB*TCHa | 0.01  | 0.01 | -    |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.0 | 0.0 | 0.0 |
| lab*tch | 0.0 | 0.0 | -   |
| lab*nch | 1.0 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.0 | 0.0 | 0.0 |
| lab*tce | 0.0 | 0.0 | -   |
| lab*nce | 1.0 | 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 | 1.0   |

**standard and adapted CIELAB**

|          |       |      |       |
|----------|-------|------|-------|
| LAB*LAB  | 18.02 | 0.5  | -0.46 |
| LAB*LABa | 18.02 | 0.0  | 0.0   |
| LAB*TCHa | 0.01  | 0.01 | -     |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.0 | 0.0 | 0.0 |
| lab*tch | 0.0 | 0.0 | -   |
| lab*nch | 1.0 | 0.0 | -   |

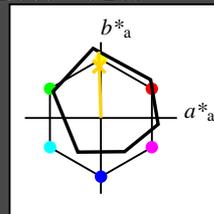
**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.0 | 0.0 | 0.0 |
| lab*tce | 0.0 | 0.0 | -   |
| lab*nce | 1.0 | 0.0 | -   |

Output: Colorimetric Reflective System ORS18

for hue  $h^* = lab^*h = 92/360 = 0.255$   
 $lab^*tch$  and  $lab^*nch$

D65: hue J  
 LCH\*Ma: 86 88 92  
 olv\*Ma: 1.0 0.9 0.0  
 triangle lightness  $t^*$



**ORS18; adapted (a) CIELAB data**

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| OMa  | 47.94       | 65.37   | 50.52   | 82.62        | 38           |
| YMa  | 90.37       | -10.27  | 91.77   | 92.34        | 96           |
| LMa  | 50.9        | -62.79  | 34.95   | 71.87        | 151          |
| CMa  | 58.62       | -30.35  | -45.01  | 54.3         | 236          |
| VMa  | 25.71       | 31.11   | -44.42  | 54.24        | 305          |
| MMa  | 48.13       | 75.27   | -8.35   | 75.73        | 354          |
| NMa  | 18.01       | 0.0     | 0.0     | 0.0          | 0            |
| WMa  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| RCIE | 39.92       | 58.66   | 26.98   | 64.56        | 25           |
| JCIE | 81.26       | -2.17   | 67.76   | 67.79        | 92           |
| GCIE | 52.23       | -42.26  | 11.75   | 43.87        | 164          |
| BCIE | 30.57       | 1.15    | -46.84  | 46.87        | 271          |

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

**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 | -0.97 | 4.75 |
| LAB*LABa | 95.41 | 0.0   | 0.0  |
| LAB*TCHa | 99.99 | 0.01  | -    |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 1.0 | 0.0 | 0.0 |
| lab*tch | 1.0 | 0.0 | -   |
| lab*nch | 0.0 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 1.0 | 0.0 | 0.0 |
| lab*tce | 1.0 | 0.0 | -   |
| lab*nce | 0.0 | 0.0 | -   |

**relative Inform. Technology (IT)**

|        |     |       |     |       |
|--------|-----|-------|-----|-------|
| olvi3* | 1.0 | 0.951 | 0.5 | (1.0) |
| cmyn3* | 0.0 | 0.049 | 0.5 | (0.0) |
| olvi4* | 1.0 | 0.951 | 0.5 | 1.0   |
| cmyn4* | 0.0 | 0.049 | 0.5 | 0.0   |

**standard and adapted CIELAB**

|          |      |       |       |
|----------|------|-------|-------|
| LAB*LAB  | 90.8 | -2.3  | 48.29 |
| LAB*LABa | 90.8 | -1.41 | 43.85 |
| LAB*TCHa | 75.0 | 43.87 | 91.85 |

**relative CIELAB lab\***

|         |      |        |       |
|---------|------|--------|-------|
| lab*lab | 0.94 | -0.015 | 0.5   |
| lab*tch | 0.75 | 0.5    | 0.255 |
| lab*nch | 0.0  | 0.5    | 0.255 |

**relative Natural Colour (NC)**

|         |      |     |      |
|---------|------|-----|------|
| lab*lrj | 0.94 | 0.0 | 0.5  |
| lab*tce | 0.75 | 0.5 | 0.25 |
| lab*nce | 0.0  | 0.5 | j00g |

**relative Inform. Technology (IT)**

|        |     |       |     |       |
|--------|-----|-------|-----|-------|
| olvi3* | 1.0 | 0.901 | 0.0 | (1.0) |
| cmyn3* | 0.0 | 0.099 | 1.0 | (0.0) |
| olvi4* | 1.0 | 0.902 | 0.0 | 1.0   |
| cmyn4* | 0.0 | 0.098 | 1.0 | 0.0   |

**standard and adapted CIELAB**

|          |       |       |       |
|----------|-------|-------|-------|
| LAB*LAB  | 86.19 | -3.62 | 91.83 |
| LAB*LABa | 86.19 | -2.82 | 87.69 |
| LAB*TCHa | 50.0  | 87.73 | 91.85 |

**relative CIELAB lab\***

|         |       |        |       |
|---------|-------|--------|-------|
| lab*lab | 0.881 | -0.031 | 0.999 |
| lab*tch | 0.5   | 1.0    | 0.255 |
| lab*nch | 0.0   | 1.0    | 0.255 |

**relative Natural Colour (NC)**

|         |       |     |      |
|---------|-------|-----|------|
| lab*lrj | 0.881 | 0.0 | 1.0  |
| lab*tce | 0.5   | 1.0 | 0.25 |
| lab*nce | 0.0   | 1.0 | j00g |

**relative Inform. Technology (IT)**

|        |     |       |     |       |
|--------|-----|-------|-----|-------|
| olvi3* | 0.5 | 0.451 | 0.0 | (1.0) |
| cmyn3* | 0.5 | 0.549 | 1.0 | (0.0) |
| olvi4* | 1.0 | 0.951 | 0.5 | 0.5   |
| cmyn4* | 0.0 | 0.049 | 0.5 | 0.5   |

**standard and adapted CIELAB**

|          |       |       |       |
|----------|-------|-------|-------|
| LAB*LAB  | 52.1  | -1.55 | 45.68 |
| LAB*LABa | 52.1  | -1.4  | 43.84 |
| LAB*TCHa | 25.01 | 43.87 | 91.84 |

**relative CIELAB lab\***

|         |      |        |       |
|---------|------|--------|-------|
| lab*lab | 0.44 | -0.015 | 0.5   |
| lab*tch | 0.25 | 0.5    | 0.255 |
| lab*nch | 0.5  | 0.5    | 0.255 |

**relative Natural Colour (NC)**

|         |      |     |      |
|---------|------|-----|------|
| lab*lrj | 0.44 | 0.0 | 0.5  |
| lab*tce | 0.25 | 0.5 | 0.25 |
| lab*nce | 0.5  | 0.5 | r99j |

**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 | 1.0   |

**standard and adapted CIELAB**

|          |       |      |       |
|----------|-------|------|-------|
| LAB*LAB  | 18.02 | 0.5  | -0.46 |
| LAB*LABa | 18.02 | 0.0  | 0.0   |
| LAB*TCHa | 0.01  | 0.01 | -     |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.0 | 0.0 | 0.0 |
| lab*tch | 0.0 | 0.0 | -   |
| lab*nch | 1.0 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.0 | 0.0 | 0.0 |
| lab*tce | 0.0 | 0.0 | -   |
| lab*nce | 1.0 | 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 | 1.0   |

**standard and adapted CIELAB**

|          |       |      |       |
|----------|-------|------|-------|
| LAB*LAB  | 18.02 | 0.5  | -0.46 |
| LAB*LABa | 18.02 | 0.0  | 0.0   |
| LAB*TCHa | 0.01  | 0.01 | -     |

**relative CIELAB lab\***

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lab | 0.0 | 0.0 | 0.0 |
| lab*tch | 0.0 | 0.0 | -   |
| lab*nch | 1.0 | 0.0 | -   |

**relative Natural Colour (NC)**

|         |     |     |     |
|---------|-----|-----|-----|
| lab*lrj | 0.0 | 0.0 | 0.0 |
| lab*tce | 0.0 | 0.0 | -   |
| lab*nce | 1.0 | 0.0 | -   |

See for similar files: <http://www.ps.bam.de/UE17/>  
 Technical information: <http://www.ps.bam.de>

Version 2.1, io=0.1, CIEXYZ

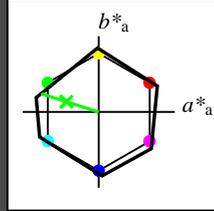
BAM registration: 20060101-UE17/10S/S17E07FP.PS/.PDF BAM material: code=rh4da  
 application for evaluation and measurement of printer or monitor systems, Yr=2.5, XYZ  
 /UE17/ Form: 8/10, Serie: 1/1, Page: 8 Page count: 8

**Input: Colorimetric Reflective System NRS11**

for hue  $h^* = lab^*h = 162/360 = 0.451$   
 $lab^*tch$  and  $lab^*nch$

D65: hue G  
 LCH\*Ma: 53 80 162  
 olv\*Ma: 0.08 1.0 0.0

triangle lightness  $t^*$



**NRS11; adapted (a) CIELAB data**

|        | $L^*$ | $a^*$  | $b^*$  | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------|--------|--------|--------------|--------------|
| RMa    | 53.2  | 77.06  | 34.32  | 84.36        | 24           |
| JMa    | 53.2  | -1.51  | 84.38  | 84.39        | 91           |
| GMa    | 53.2  | -82.27 | 18.98  | 84.44        | 167          |
| G50BMa | 53.2  | -77.72 | -32.98 | 84.44        | 203          |
| BMa    | 53.2  | 4.37   | -84.28 | 84.41        | 273          |
| B50RMa | 53.2  | 69.09  | -48.41 | 84.37        | 325          |
| NMa    | 10.99 | 0.0    | 0.0    | 0.0          | 0            |
| WMa    | 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          |

%Gamut  
 $u^*_{rel} = 119$   
 %Regularity  
 $g^*_{H,rel} = 47$   
 $g^*_{C,rel} = 100$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 1.0, 1.0, 1.0, (1.0)$   
 $cmyn3^* = 0.0, 0.0, 0.0, (0.0)$   
 $olv_i4^* = 1.0, 1.0, 1.0, 1.0$   
 $cmyn4^* = 0.0, 0.0, 0.0, 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 95.41, 0.0, -0.01$   
 $LAB^*LABa = 95.41, 0.0, 0.0$   
 $LAB^*TCHa = 99.99, 0.01, -$

**relative CIELAB lab\***  
 $lab^*lab = 1.0, 0.0, 0.0$   
 $lab^*tch = 1.0, 0.0, -$   
 $lab^*nch = 0.0, 0.0, -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 1.0, 0.0, 0.0$   
 $lab^*tce = 1.0, 0.0, -$   
 $lab^*nce = 0.0, 0.0, -$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.5, 0.5, 0.5, (1.0)$   
 $cmyn3^* = 0.5, 0.5, 0.5, (0.0)$   
 $olv_i4^* = 1.0, 1.0, 1.0, 0.5$   
 $cmyn4^* = 0.0, 0.0, 0.0, 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 53.21, 0.04, 0.0$   
 $LAB^*LABa = 53.21, 0.0, 0.0$   
 $LAB^*TCHa = 50.0, 0.01, -$

**relative CIELAB lab\***  
 $lab^*lab = 0.5, 0.0, 0.0$   
 $lab^*tch = 0.5, 0.0, -$   
 $lab^*nch = 0.5, 0.0, -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.5, 0.0, 0.0$   
 $lab^*tce = 0.5, 0.0, -$   
 $lab^*nce = 0.5, 0.0, -$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.0, 0.0, 0.0, (1.0)$   
 $cmyn3^* = 1.0, 1.0, 1.0, (0.0)$   
 $olv_i4^* = 1.0, 1.0, 1.0, 0.0$   
 $cmyn4^* = 0.0, 0.0, 0.0, 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 11.01, 0.07, 0.01$   
 $LAB^*LABa = 11.01, 0.0, 0.0$   
 $LAB^*TCHa = 0.01, 0.01, -$

**relative CIELAB lab\***  
 $lab^*lab = 0.0, 0.0, 0.0$   
 $lab^*tch = 0.0, 0.0, -$   
 $lab^*nch = 1.0, 0.0, -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.0, 0.0, 0.0$   
 $lab^*tce = 0.0, 0.0, -$   
 $lab^*nce = 1.0, 0.0, -$

$n^* = 1.0$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.54, 1.0, 0.5, (1.0)$   
 $cmyn3^* = 0.46, 0.0, 0.5, (0.0)$   
 $olv_i4^* = 0.54, 1.0, 0.5, 1.0$   
 $cmyn4^* = 0.46, 0.0, 0.5, 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 74.3, -37.84, 12.13$   
 $LAB^*LABa = 74.3, -37.87, 12.12$   
 $LAB^*TCHa = 75.0, 39.77, 162.25$

**relative CIELAB lab\***  
 $lab^*lab = 0.75, -0.475, 0.152$   
 $lab^*tch = 0.75, 0.5, 0.451$   
 $lab^*nch = 0.0, 0.5, 0.451$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.75, -0.499, 0.0$   
 $lab^*tce = 0.75, 0.5, 0.5$   
 $lab^*nce = 0.0, 0.5, 199g$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.04, 0.5, 0.0, (1.0)$   
 $cmyn3^* = 0.96, 0.5, 1.0, (0.0)$   
 $olv_i4^* = 0.54, 1.0, 0.5, 0.5$   
 $cmyn4^* = 0.46, 0.0, 0.5, 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 32.1, -37.81, 12.13$   
 $LAB^*LABa = 32.1, -37.87, 12.12$   
 $LAB^*TCHa = 25.01, 39.77, 162.27$

**relative CIELAB lab\***  
 $lab^*lab = 0.25, -0.475, 0.152$   
 $lab^*tch = 0.25, 0.5, 0.451$   
 $lab^*nch = 0.5, 0.5, 0.451$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.25, -0.499, 0.0$   
 $lab^*tce = 0.25, 0.5, 0.5$   
 $lab^*nce = 0.5, 0.5, g00b$

$n^* = 0.50$

$n^* = 0.75$

$n^* = 1.00$

blackness  $n^*$

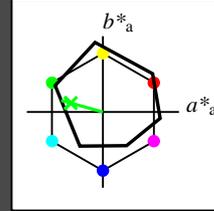
chromaticness  $c^*$

**Output: Colorimetric Reflective System ORS18**

for hue  $h^* = lab^*h = 164/360 = 0.457$   
 $lab^*tch$  and  $lab^*nch$

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

triangle lightness  $t^*$



**ORS18; adapted (a) CIELAB data**

|      | $L^*$ | $a^*$  | $b^*$  | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------|--------|--------|--------------|--------------|
| OMa  | 47.94 | 65.37  | 50.52  | 82.62        | 38           |
| YMa  | 90.37 | -10.27 | 91.77  | 92.34        | 96           |
| LMa  | 50.9  | -62.79 | 34.95  | 71.87        | 151          |
| CMa  | 58.62 | -30.35 | -45.01 | 54.3         | 236          |
| VMa  | 25.71 | 31.11  | -44.42 | 54.24        | 305          |
| MMa  | 48.13 | 75.27  | -8.35  | 75.73        | 354          |
| NMa  | 18.01 | 0.0    | 0.0    | 0.0          | 0            |
| WMa  | 95.41 | 0.0    | 0.0    | 0.0          | 0            |
| RCIE | 39.92 | 58.66  | 26.98  | 64.56        | 25           |
| JCIE | 81.26 | -2.17  | 67.76  | 67.79        | 92           |
| GCIE | 52.23 | -42.26 | 11.75  | 43.87        | 164          |
| BCIE | 30.57 | 1.15   | -46.84 | 46.87        | 271          |

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

**relative Inform. Technology (IT)**  
 $olv_i3^* = 1.0, 1.0, 1.0, (1.0)$   
 $cmyn3^* = 0.0, 0.0, 0.0, (0.0)$   
 $olv_i4^* = 1.0, 1.0, 1.0, 1.0$   
 $cmyn4^* = 0.0, 0.0, 0.0, 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 95.41, -0.97, 4.75$   
 $LAB^*LABa = 95.41, 0.0, 0.0$   
 $LAB^*TCHa = 99.99, 0.01, -$

**relative CIELAB lab\***  
 $lab^*lab = 1.0, 0.0, 0.0$   
 $lab^*tch = 1.0, 0.0, -$   
 $lab^*nch = 0.0, 0.0, -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 1.0, 0.0, 0.0$   
 $lab^*tce = 1.0, 0.0, -$   
 $lab^*nce = 0.0, 0.0, -$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.5, 0.5, 0.5, (1.0)$   
 $cmyn3^* = 0.5, 0.5, 0.5, (0.0)$   
 $olv_i4^* = 1.0, 1.0, 1.0, 0.5$   
 $cmyn4^* = 0.0, 0.0, 0.0, 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 56.71, -0.23, 2.14$   
 $LAB^*LABa = 56.71, 0.0, 0.0$   
 $LAB^*TCHa = 50.0, 0.01, -$

**relative CIELAB lab\***  
 $lab^*lab = 0.5, 0.0, 0.0$   
 $lab^*tch = 0.5, 0.0, -$   
 $lab^*nch = 0.5, 0.0, -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.5, 0.0, 0.0$   
 $lab^*tce = 0.5, 0.0, -$   
 $lab^*nce = 0.5, 0.0, -$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.5, 1.0, 0.623, (1.0)$   
 $cmyn3^* = 0.5, 0.0, 0.377, (0.0)$   
 $olv_i4^* = 0.5, 1.0, 0.623, 1.0$   
 $cmyn4^* = 0.5, 0.0, 0.377, 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 74.1, -27.96, 10.94$   
 $LAB^*LABa = 74.1, -27.39, 7.62$   
 $LAB^*TCHa = 75.0, 28.44, 164.46$

**relative CIELAB lab\***  
 $lab^*lab = 0.725, -0.481, 0.134$   
 $lab^*tch = 0.725, 0.5, 0.457$   
 $lab^*nch = 0.0, 0.5, 0.457$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.725, -0.499, 0.0$   
 $lab^*tce = 0.725, 0.5, 0.5$   
 $lab^*nce = 0.0, 0.5, g00b$

**relative Inform. Technology (IT)**  
 $olv_i3^* = 0.0, 0.5, 0.123, (1.0)$   
 $cmyn3^* = 1.0, 0.5, 0.877, (0.0)$   
 $olv_i4^* = 0.5, 1.0, 0.623, 0.5$   
 $cmyn4^* = 0.5, 0.0, 0.377, 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 35.41, -27.22, 8.34$   
 $LAB^*LABa = 35.41, -27.39, 7.63$   
 $LAB^*TCHa = 25.01, 28.44, 164.45$

**relative CIELAB lab\***  
 $lab^*lab = 0.225, -0.481, 0.134$   
 $lab^*tch = 0.225, 0.5, 0.457$   
 $lab^*nch = 0.5, 0.5, 0.457$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.225, -0.499, 0.0$   
 $lab^*tce = 0.225, 0.5, 0.5$   
 $lab^*nce = 0.5, 0.5, 199g$

$n^* = 0.50$

$n^* = 0.75$

$n^* = 1.00$

blackness  $n^*$

chromaticness  $c^*$

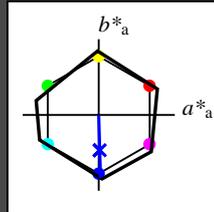
$n^* = 1.0$

**Input: Colorimetric Reflective System NRS11**

for hue  $h^* = lab^*h = 272/360 = 0.755$   
 $lab^*tch$  and  $lab^*nch$

D65: hue B  
 LCH\*Ma: 53 83 272  
 olv\*Ma: 0.0 0.02 1.0

triangle lightness  $t^*$



**NRS11; adapted (a) CIELAB data**

|        | $L^*$ | $a^*$  | $b^*$  | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------|-------|--------|--------|--------------|--------------|
| RMa    | 53.2  | 77.06  | 34.32  | 84.36        | 24           |
| JMa    | 53.2  | -1.51  | 84.38  | 84.39        | 91           |
| GMa    | 53.2  | -82.27 | 18.98  | 84.44        | 167          |
| G50BMa | 53.2  | -77.72 | -32.98 | 84.44        | 203          |
| BMa    | 53.2  | 4.37   | -84.28 | 84.41        | 273          |
| B50RMa | 53.2  | 69.09  | -48.41 | 84.37        | 325          |
| NMa    | 10.99 | 0.0    | 0.0    | 0.0          | 0            |
| WMa    | 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          |

**%Gamut**  
 $u^*_{rel} = 119$   
**%Regularity**  
 $g^*_{H,rel} = 47$   
 $g^*_{C,rel} = 100$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$   
 $cmyn^*3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 95.41 \ 0.0 \ -0.01$   
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 1.0 \ 0.0 \ 0.0$   
 $lab^*tch = 1.0 \ 0.0 \ -$   
 $lab^*nch = 0.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 1.0 \ 0.0 \ 0.0$   
 $lab^*tce = 1.0 \ 0.0 \ -$   
 $lab^*nce = 0.0 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.5 \ 0.512 \ 1.0 \ (1.0)$   
 $cmyn^*3^* = 0.5 \ 0.488 \ 0.0 \ (0.0)$   
 $olv^*4^* = 0.5 \ 0.512 \ 1.0 \ 1.0$   
 $cmyn^*4^* = 0.5 \ 0.488 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 74.3 \ 1.23 \ -41.51$   
 $LAB^*LABa = 74.3 \ 1.2 \ -41.52$   
 $LAB^*TCHa = 75.0 \ 41.54 \ 271.66$

**relative CIELAB lab\***  
 $lab^*lab = 0.75 \ 0.014 \ -0.499$   
 $lab^*tch = 0.75 \ 0.5 \ 0.755$   
 $lab^*nch = 0.0 \ 0.5 \ 0.755$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.75 \ 0.0 \ -0.499$   
 $lab^*tce = 0.75 \ 0.5 \ 0.75$   
 $lab^*nce = 0.0 \ 0.5 \ g99b$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.024 \ 1.0 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 0.976 \ 0.0 \ (0.0)$   
 $olv^*4^* = 0.0 \ 0.024 \ 1.0 \ 1.0$   
 $cmyn^*4^* = 1.0 \ 0.976 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 53.2 \ 2.46 \ -83.04$   
 $LAB^*LABa = 53.2 \ 2.42 \ -83.05$   
 $LAB^*TCHa = 50.0 \ 83.09 \ 271.67$

**relative CIELAB lab\***  
 $lab^*lab = 0.5 \ 0.029 \ -0.998$   
 $lab^*tch = 0.5 \ 1.0 \ 0.755$   
 $lab^*nch = 0.0 \ 1.0 \ 0.755$

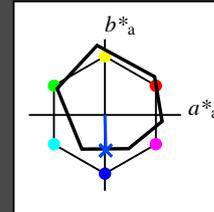
**relative Natural Colour (NC)**  
 $lab^*lrj = 0.5 \ 0.0 \ -0.999$   
 $lab^*tce = 0.5 \ 1.0 \ 0.75$   
 $lab^*nce = 0.0 \ 1.0 \ b00r$

**Output: Colorimetric Reflective System ORS18**

for hue  $h^* = lab^*h = 271/360 = 0.754$   
 $lab^*tch$  and  $lab^*nch$

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

triangle lightness  $t^*$



**ORS18; adapted (a) CIELAB data**

|      | $L^*$ | $a^*$  | $b^*$  | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------|--------|--------|--------------|--------------|
| OMa  | 47.94 | 65.37  | 50.52  | 82.62        | 38           |
| YMa  | 90.37 | -10.27 | 91.77  | 92.34        | 96           |
| LMa  | 50.9  | -62.79 | 34.95  | 71.87        | 151          |
| CMa  | 58.62 | -30.35 | -45.01 | 54.3         | 236          |
| VMa  | 25.71 | 31.11  | -44.42 | 54.24        | 305          |
| MMa  | 48.13 | 75.27  | -8.35  | 75.73        | 354          |
| NMa  | 18.01 | 0.0    | 0.0    | 0.0          | 0            |
| WMa  | 95.41 | 0.0    | 0.0    | 0.0          | 0            |
| RCIE | 39.92 | 58.66  | 26.98  | 64.56        | 25           |
| JCIE | 81.26 | -2.17  | 67.76  | 67.79        | 92           |
| GCIE | 52.23 | -42.26 | 11.75  | 43.87        | 164          |
| BCIE | 30.57 | 1.15   | -46.84 | 46.87        | 271          |

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

**relative Inform. Technology (IT)**  
 $olv^*3^* = 1.0 \ 1.0 \ 1.0 \ (1.0)$   
 $cmyn^*3^* = 0.0 \ 0.0 \ 0.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 1.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 95.41 \ -0.97 \ 4.75$   
 $LAB^*LABa = 95.41 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 99.99 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 1.0 \ 0.0 \ 0.0$   
 $lab^*tch = 1.0 \ 0.0 \ -$   
 $lab^*nch = 0.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 1.0 \ 0.0 \ 0.0$   
 $lab^*tce = 1.0 \ 0.0 \ -$   
 $lab^*nce = 0.0 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.5 \ 0.744 \ 1.0 \ (1.0)$   
 $cmyn^*3^* = 0.5 \ 0.256 \ 0.0 \ (0.0)$   
 $olv^*4^* = 0.5 \ 0.744 \ 1.0 \ 1.0$   
 $cmyn^*4^* = 0.5 \ 0.256 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 68.59 \ 0.08 \ -19.4$   
 $LAB^*LABa = 68.59 \ 0.54 \ -22.35$   
 $LAB^*TCHa = 75.0 \ 22.36 \ 271.4$

**relative CIELAB lab\***  
 $lab^*lab = 0.654 \ 0.012 \ -0.499$   
 $lab^*tch = 0.75 \ 0.5 \ 0.754$   
 $lab^*nch = 0.0 \ 0.5 \ 0.754$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.654 \ 0.0 \ -0.499$   
 $lab^*tce = 0.75 \ 0.5 \ 0.75$   
 $lab^*nce = 0.0 \ 0.5 \ g99b$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.488 \ 1.0 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 0.512 \ 0.0 \ (0.0)$   
 $olv^*4^* = 0.0 \ 0.488 \ 1.0 \ 1.0$   
 $cmyn^*4^* = 1.0 \ 0.512 \ 0.0 \ 0.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 41.79 \ 1.14 \ -43.56$   
 $LAB^*LABa = 41.79 \ 1.1 \ -44.7$   
 $LAB^*TCHa = 50.0 \ 44.73 \ 271.4$

**relative CIELAB lab\***  
 $lab^*lab = 0.307 \ 0.024 \ -0.998$   
 $lab^*tch = 0.5 \ 1.0 \ 0.754$   
 $lab^*nch = 0.0 \ 1.0 \ 0.754$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.307 \ 0.0 \ -0.999$   
 $lab^*tce = 0.5 \ 1.0 \ 0.75$   
 $lab^*nce = 0.0 \ 1.0 \ b00r$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.244 \ 0.5 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 0.756 \ 0.5 \ (0.0)$   
 $olv^*4^* = 0.5 \ 0.744 \ 1.0 \ 0.5$   
 $cmyn^*4^* = 0.5 \ 0.256 \ 0.0 \ 0.5$

**standard and adapted CIELAB**  
 $LAB^*LAB = 29.9 \ 0.83 \ -22.01$   
 $LAB^*LABa = 29.9 \ 0.55 \ -22.35$   
 $LAB^*TCHa = 25.01 \ 22.36 \ 271.41$

**relative CIELAB lab\***  
 $lab^*lab = 0.154 \ 0.012 \ -0.499$   
 $lab^*tch = 0.25 \ 0.5 \ 0.754$   
 $lab^*nch = 0.5 \ 0.5 \ 0.754$

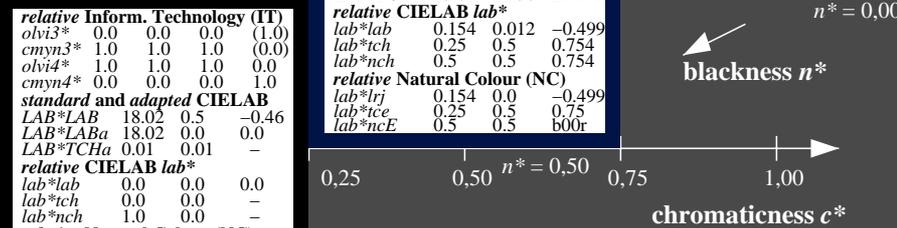
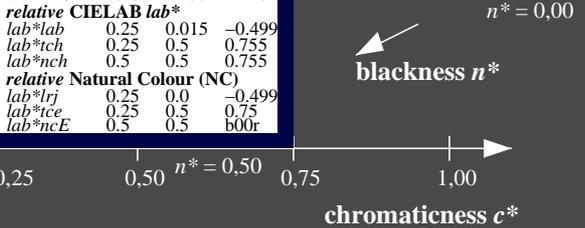
**relative Natural Colour (NC)**  
 $lab^*lrj = 0.154 \ 0.0 \ -0.499$   
 $lab^*tce = 0.25 \ 0.5 \ 0.75$   
 $lab^*nce = 0.5 \ 0.5 \ b00r$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 1.0 \ 0.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 1.0 \ 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 18.02 \ 0.5 \ -0.46$   
 $LAB^*LABa = 18.02 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.0 \ 0.0 \ 0.0$   
 $lab^*tch = 0.0 \ 0.0 \ -$   
 $lab^*nch = 1.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$   
 $lab^*tce = 0.0 \ 0.0 \ -$   
 $lab^*nce = 1.0 \ 0.0 \ -$



**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 1.0 \ 1.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 0.0 \ 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 11.01 \ 0.07 \ 0.01$   
 $LAB^*LABa = 11.01 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.0 \ 0.0 \ 0.0$   
 $lab^*tch = 0.0 \ 0.0 \ -$   
 $lab^*nch = 1.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$   
 $lab^*tce = 0.0 \ 0.0 \ -$   
 $lab^*nce = 1.0 \ 0.0 \ -$

**relative Inform. Technology (IT)**  
 $olv^*3^* = 0.0 \ 0.0 \ 0.0 \ (1.0)$   
 $cmyn^*3^* = 1.0 \ 1.0 \ 0.0 \ (0.0)$   
 $olv^*4^* = 1.0 \ 1.0 \ 1.0 \ 0.0$   
 $cmyn^*4^* = 0.0 \ 0.0 \ 1.0 \ 1.0$

**standard and adapted CIELAB**  
 $LAB^*LAB = 18.02 \ 0.5 \ -0.46$   
 $LAB^*LABa = 18.02 \ 0.0 \ 0.0$   
 $LAB^*TCHa = 0.01 \ 0.01 \ -$

**relative CIELAB lab\***  
 $lab^*lab = 0.0 \ 0.0 \ 0.0$   
 $lab^*tch = 0.0 \ 0.0 \ -$   
 $lab^*nch = 1.0 \ 0.0 \ -$

**relative Natural Colour (NC)**  
 $lab^*lrj = 0.0 \ 0.0 \ 0.0$   
 $lab^*tce = 0.0 \ 0.0 \ -$   
 $lab^*nce = 1.0 \ 0.0 \ -$