



See for similar files: <http://www.ps.bam.de/ZE63>; [www.ps.bam.de/ZE.HTM](http://www.ps.bam.de/ZE.HTM)  
 Technical information: <http://www.ps.bam.de> Version 2.1, io=1,1

BAM registration: 20071001-ZE6310/L63E00NP.PS/.PDF BAM material: code=rh4ta  
application for evaluation and measurement of printer or monitor systems

**Input: Colorimetric Offset Reflective System ORS18**

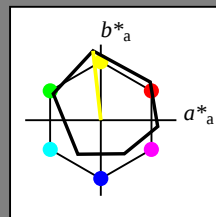
**for hue  $h^* = lab^*h = 96/360 = 0.268$**

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

D65: hue Y

**LCH\*Ma: 90 92 96**

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



## %Gamut

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

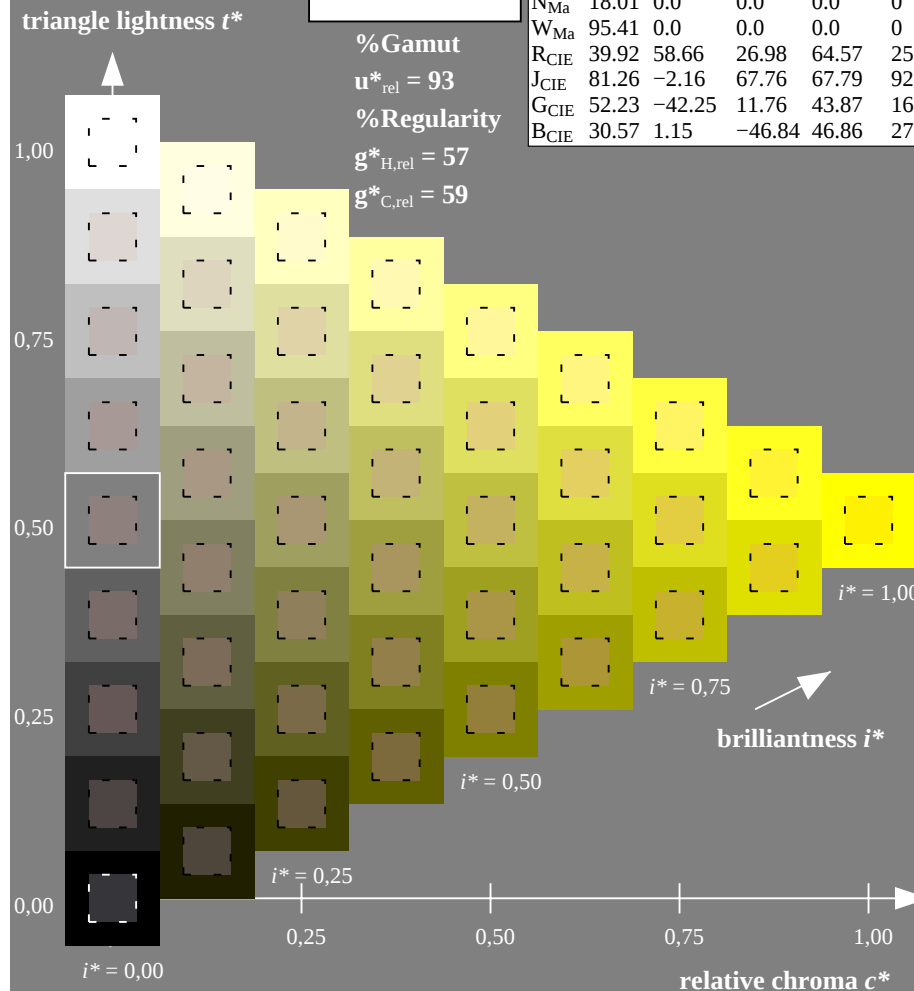
### %Regularity

$$g^*_{H_{rel}} = 57$$

**■  $g^*_{C,rel} = 59$**

ORS18; adapted (a) CIELAB data

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



ZE630-7N, 9 step scales for constant CIELAB hue 96/360 = 0.268 (left)

BAM-test chart ZE63; Colorimetric systems, Page 2/10  
D65: 9 and 16 step colour scales for 10 hues

### Output: Colorimetric Offset Reflective System ORS18

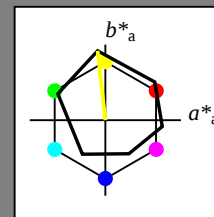
for hue  $h^* = lab^*h = 96/360 = 0.268$

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

D65: hue Y

**LCH\*Ma: 90 92 96**

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



## % Gamut

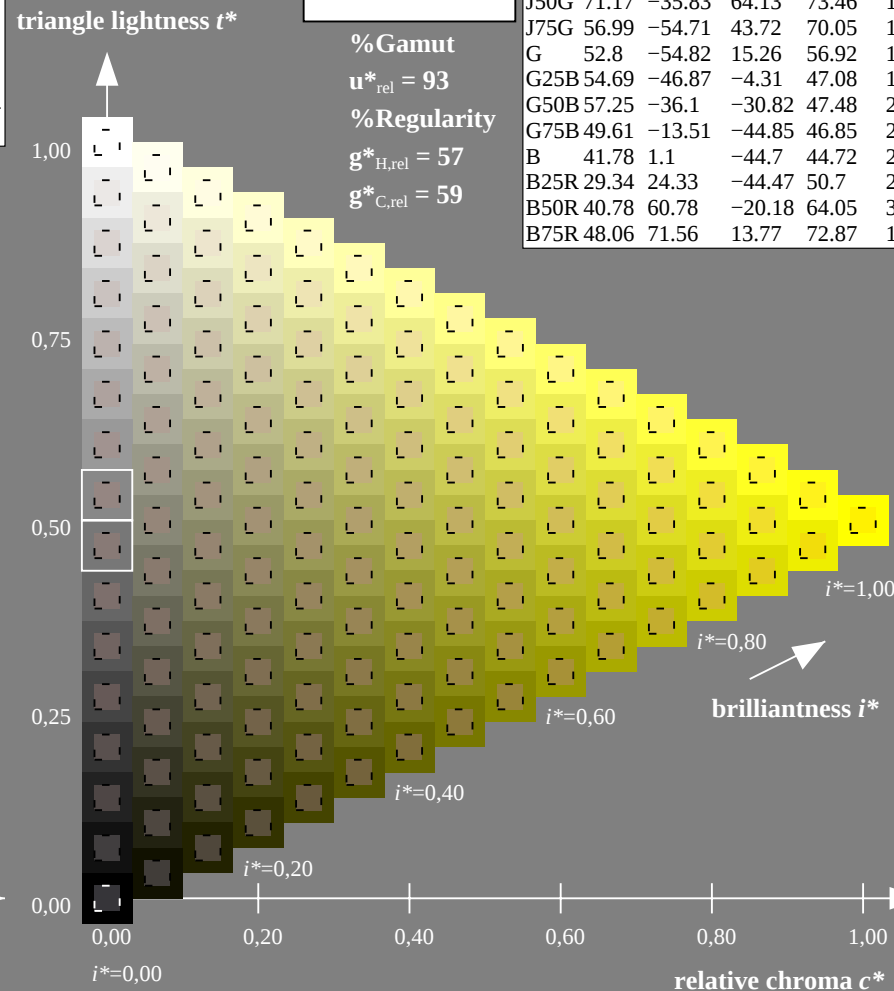
$$\mathbf{u}_{\text{rel}}^* = 93$$

### %Regularity

$$g^*_{H\text{ rel}} = 57$$
$$g^*_{C_{rel}} = 59$$

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| R    | 48.0        | 68.58   | 31.54   | 75.48        | 25           |
| R25J | 50.11       | 61.52   | 52.63   | 80.96        | 41           |
| R50J | 62.87       | 38.77   | 65.02   | 75.71        | 59           |
| R75J | 74.87       | 17.37   | 76.69   | 78.63        | 77           |
| J    | 86.19       | -2.8    | 87.69   | 87.73        | 92           |
| J25G | 84.01       | -18.73  | 82.6    | 84.7         | 103          |
| J50G | 71.17       | -35.83  | 64.13   | 73.46        | 119          |
| J75G | 56.99       | -54.71  | 43.72   | 70.05        | 141          |
| G    | 52.8        | -54.82  | 15.26   | 56.92        | 164          |
| G25B | 54.69       | -46.87  | -4.31   | 47.08        | 185          |
| G50B | 57.25       | -36.1   | -30.82  | 47.48        | 220          |
| G75B | 49.61       | -13.51  | -44.85  | 46.85        | 253          |
| B    | 41.78       | 1.1     | -44.7   | 44.72        | 271          |
| B25R | 29.34       | 24.33   | -44.47  | 50.7         | 299          |
| B50R | 40.78       | 60.78   | -20.18  | 64.05        | 342          |
| B75R | 48.06       | 71.56   | 13.77   | 72.87        | 11           |



ZE630-7N, 16 step scales for constant CIELAB hue 96/360 = 0.268 (right)

input: *rgb / cmy0 set(rgb/cmyk)color*  
output: no change compared to input

Input: Colorimetric Offset Reflective System ORS18

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

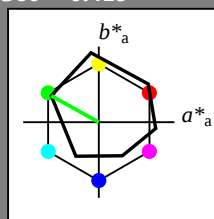
$lab^*tch$  and  $lab^*nch$

D65: hue L

LCH\*Ma: 51 72 151

olv\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

ORS18; adapted (a) CIELAB data

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

Output: Colorimetric Offset Reflective System ORS18

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

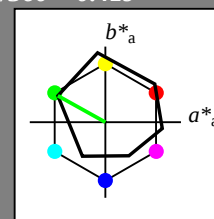
$lab^*tch$  and  $lab^*nch$

D65: hue L

LCH\*Ma: 51 72 151

olv\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| R    | 48.0        | 68.58   | 31.54   | 75.48        | 25           |
| R25J | 50.11       | 61.52   | 52.63   | 80.96        | 41           |
| R50J | 62.87       | 38.77   | 65.02   | 75.71        | 59           |
| R75J | 74.87       | 17.37   | 76.69   | 78.63        | 77           |
| J    | 86.19       | -2.8    | 87.69   | 87.73        | 92           |
| J25G | 84.01       | -18.73  | 82.6    | 84.7         | 103          |
| J50G | 71.17       | -35.83  | 64.13   | 73.46        | 119          |
| J75G | 56.99       | -54.71  | 43.72   | 70.05        | 141          |
| G    | 52.8        | -54.82  | 15.26   | 56.92        | 164          |
| G25B | 54.69       | -46.87  | -4.31   | 47.08        | 185          |
| G50B | 57.25       | -36.1   | -30.82  | 47.48        | 220          |
| G75B | 49.61       | -13.51  | -44.85  | 46.85        | 253          |
| B    | 41.78       | 1.1     | -44.7   | 44.72        | 271          |
| B25R | 29.34       | 24.33   | -44.47  | 50.7         | 299          |
| B50R | 40.78       | 60.78   | -20.18  | 64.05        | 342          |
| B75R | 48.06       | 71.56   | 13.77   | 72.87        | 11           |

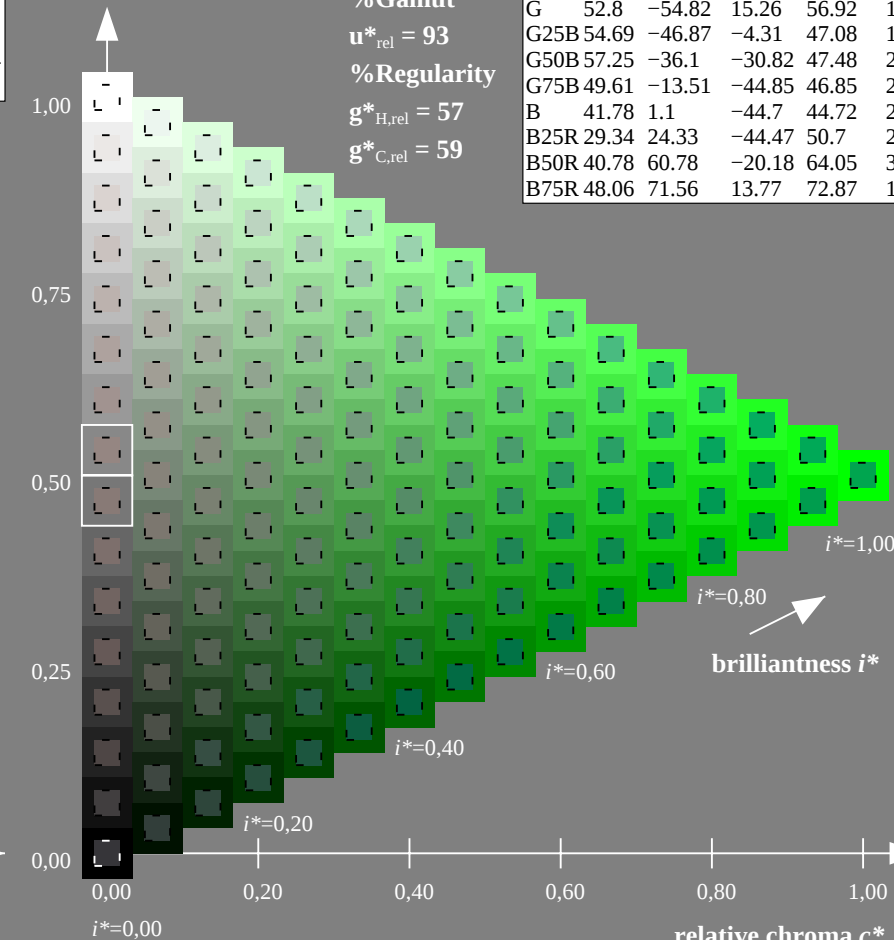
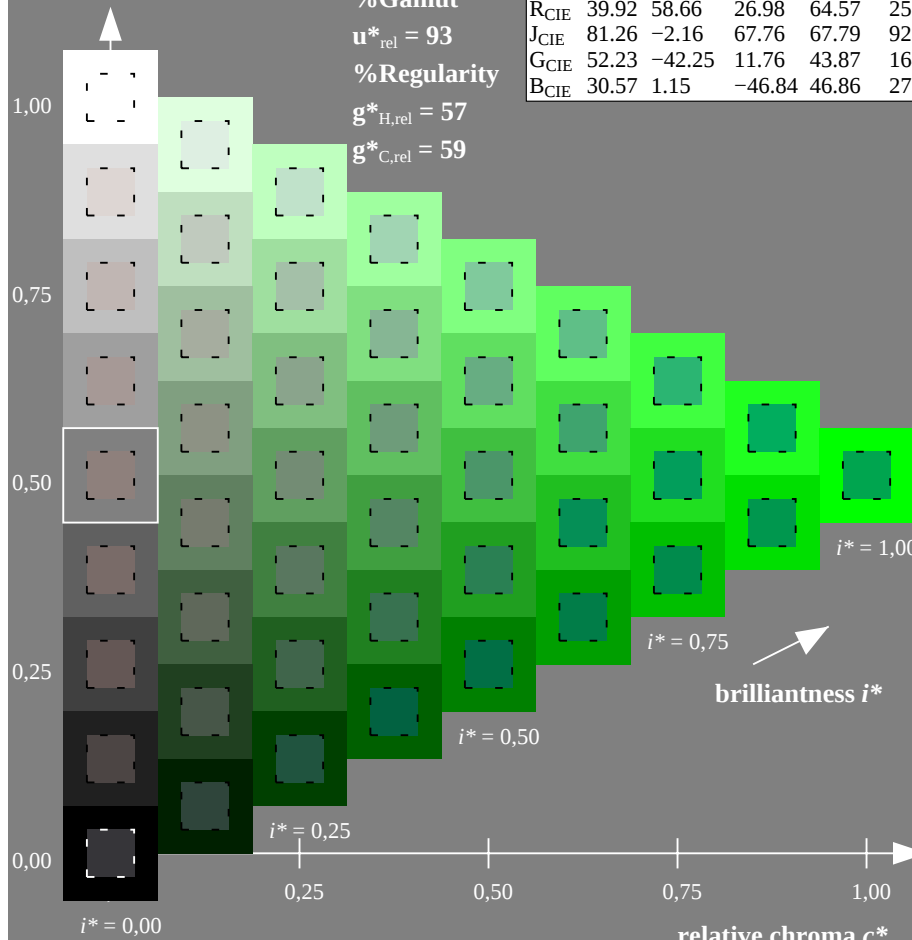
%Gamut

$u^*_{rel} = 93$

%Regularity

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

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



ZE630-7N, 9 step scales for constant CIELAB hue 151/360 = 0.419 (left)

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ZE630-7N, 16 step scales for constant CIELAB hue 151/360 = 0.419 (right)

BAM-test chart ZE63; Colorimetric systems, Page 3/10

D65: 9 and 16 step colour scales for 10 hues

input:  $rgb / cmy0$  set( $rgb/cmyk$ )color

output: no change compared to input

Input: Colorimetric Offset Reflective System ORS18

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

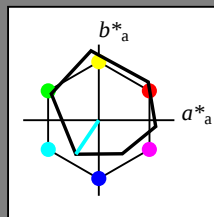
$lab^*tch$  and  $lab^*nch$

D65: hue C

LCH\*Ma: 59 54 236

olv\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

ORS18; adapted (a) CIELAB data

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

Output: Colorimetric Offset Reflective System ORS18

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

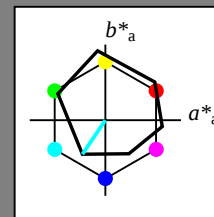
$lab^*tch$  and  $lab^*nch$

D65: hue C

LCH\*Ma: 59 54 236

olv\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| R    | 48.0        | 68.58   | 31.54   | 75.48        | 25           |
| R25J | 50.11       | 61.52   | 52.63   | 80.96        | 41           |
| R50J | 62.87       | 38.77   | 65.02   | 75.71        | 59           |
| R75J | 74.87       | 17.37   | 76.69   | 78.63        | 77           |
| J    | 86.19       | -2.8    | 87.69   | 87.73        | 92           |
| J25G | 84.01       | -18.73  | 82.6    | 84.7         | 103          |
| J50G | 71.17       | -35.83  | 64.13   | 73.46        | 119          |
| J75G | 56.99       | -54.71  | 43.72   | 70.05        | 141          |
| G    | 52.8        | -54.82  | 15.26   | 56.92        | 164          |
| G25B | 54.69       | -46.87  | -4.31   | 47.08        | 185          |
| G50B | 57.25       | -36.1   | -30.82  | 47.48        | 220          |
| G75B | 49.61       | -13.51  | -44.85  | 46.85        | 253          |
| B    | 41.78       | 1.1     | -44.7   | 44.72        | 271          |
| B25R | 29.34       | 24.33   | -44.47  | 50.7         | 299          |
| B50R | 40.78       | 60.78   | -20.18  | 64.05        | 342          |
| B75R | 48.06       | 71.56   | 13.77   | 72.87        | 11           |

triangle lightness  $t^*$

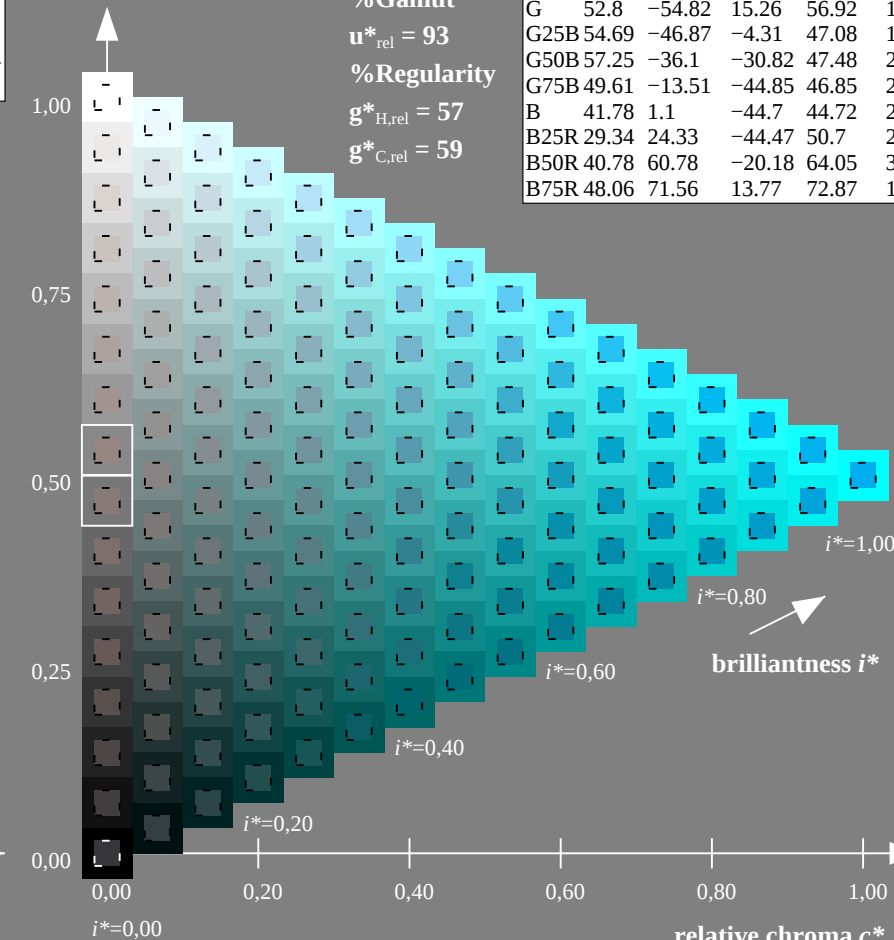
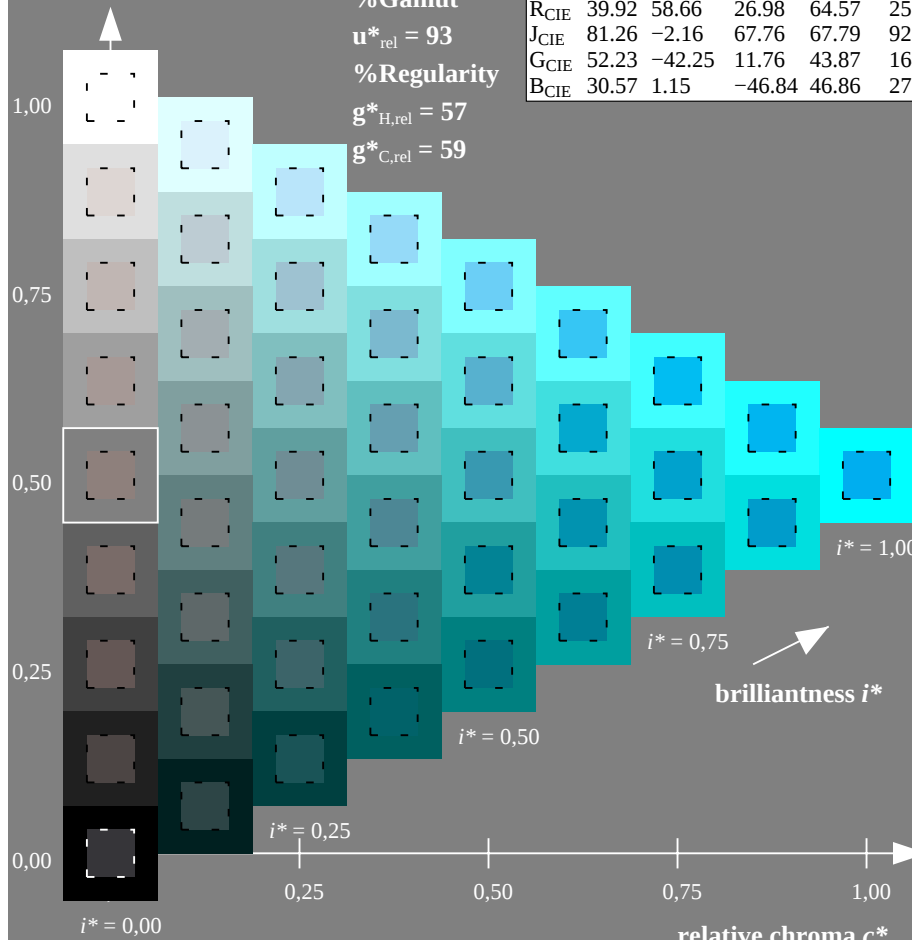
%Gamut

$u^*_{rel} = 93$

%Regularity

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

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



ZE630-7N, 9 step scales for constant CIELAB hue 236/360 = 0.656 (left)

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ZE630-7N, 16 step scales for constant CIELAB hue 236/360 = 0.656 (right)

BAM-test chart ZE63; Colorimetric systems, Page 4/10

D65: 9 and 16 step colour scales for 10 hues

input:  $rgb / cmy0$  set( $rgb/cmyk$ )color

output: no change compared to input

Input: Colorimetric Offset Reflective System ORS18

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

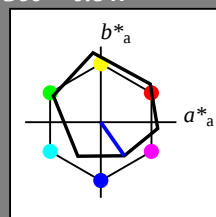
$lab^*tch$  and  $lab^*nch$

D65: hue V

LCH\*Ma: 26 54 305

olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

ORS18; adapted (a) CIELAB data

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

Output: Colorimetric Offset Reflective System ORS18

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

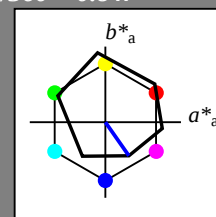
$lab^*tch$  and  $lab^*nch$

D65: hue V

LCH\*Ma: 26 54 305

olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| R    | 48.0        | 68.58   | 31.54   | 75.48        | 25           |
| R25J | 50.11       | 61.52   | 52.63   | 80.96        | 41           |
| R50J | 62.87       | 38.77   | 65.02   | 75.71        | 59           |
| R75J | 74.87       | 17.37   | 76.69   | 78.63        | 77           |
| J    | 86.19       | -2.8    | 87.69   | 87.73        | 92           |
| J25G | 84.01       | -18.73  | 82.6    | 84.7         | 103          |
| J50G | 71.17       | -35.83  | 64.13   | 73.46        | 119          |
| J75G | 56.99       | -54.71  | 43.72   | 70.05        | 141          |
| G    | 52.8        | -54.82  | 15.26   | 56.92        | 164          |
| G25B | 54.69       | -46.87  | -4.31   | 47.08        | 185          |
| G50B | 57.25       | -36.1   | -30.82  | 47.48        | 220          |
| G75B | 49.61       | -13.51  | -44.85  | 46.85        | 253          |
| B    | 41.78       | 1.1     | -44.7   | 44.72        | 271          |
| B25R | 29.34       | 24.33   | -44.47  | 50.7         | 299          |
| B50R | 40.78       | 60.78   | -20.18  | 64.05        | 342          |
| B75R | 48.06       | 71.56   | 13.77   | 72.87        | 11           |

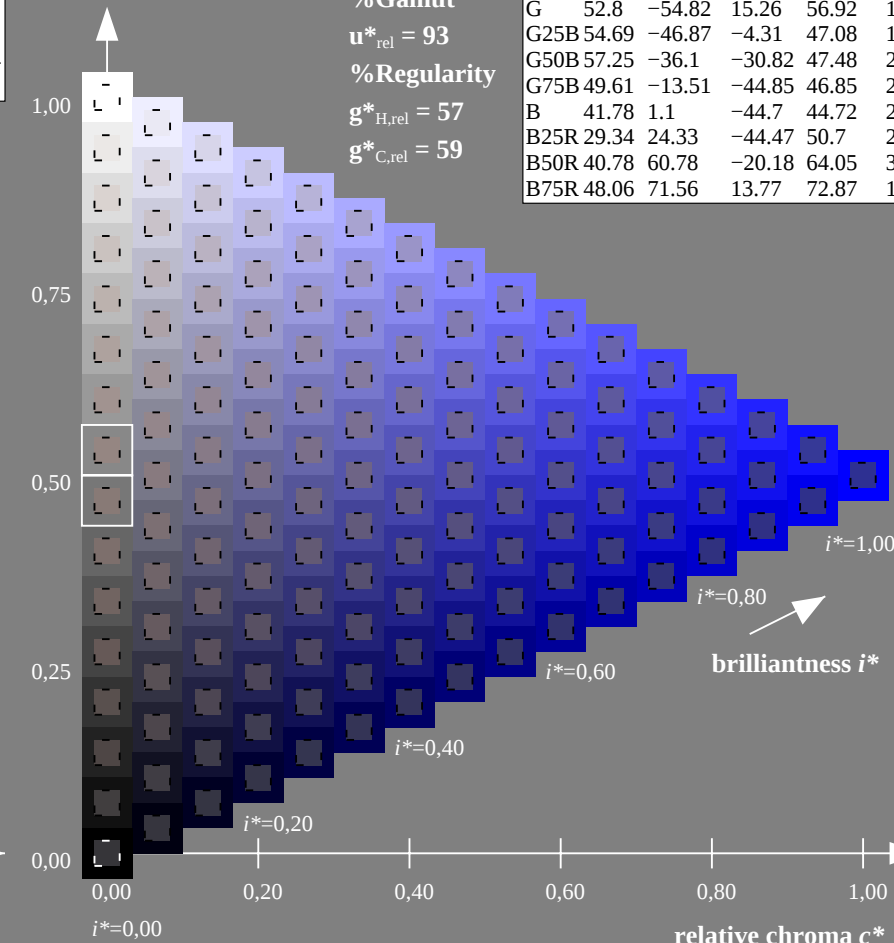
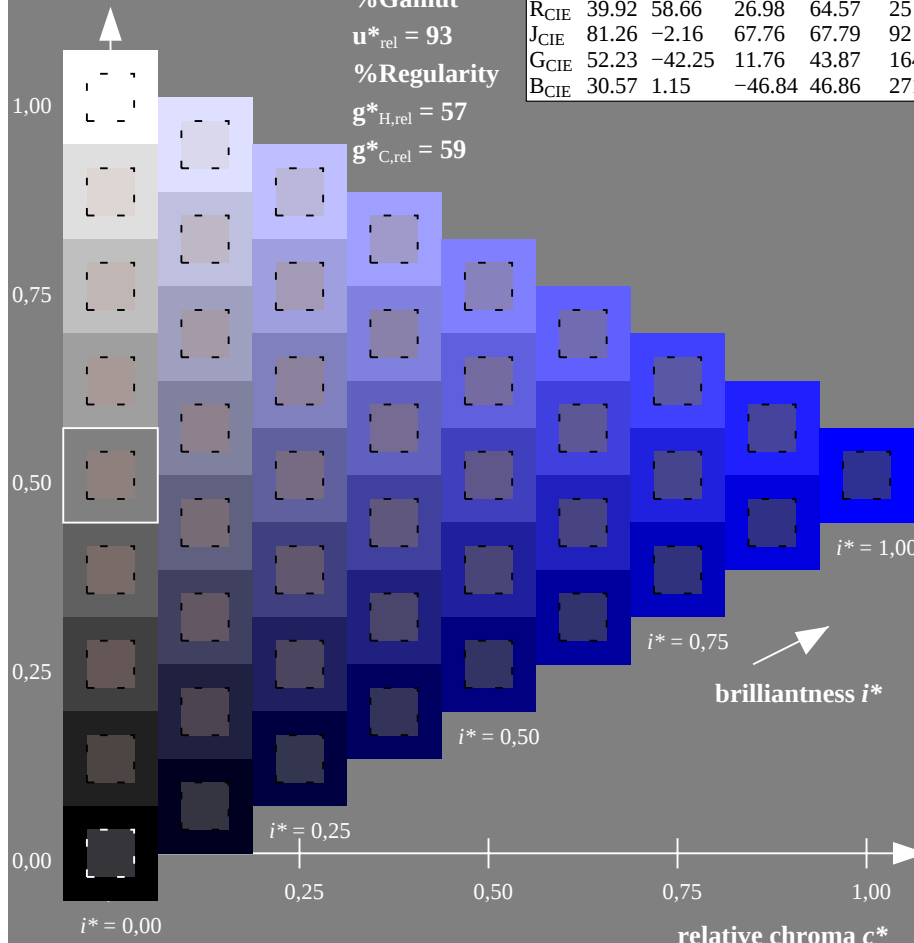
%Gamut

$u^*_{rel} = 93$

%Regularity

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

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



ZE630-7N, 9 step scales for constant CIELAB hue 305/360 = 0.847 (left)

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ZE630-7N, 16 step scales for constant CIELAB hue 305/360 = 0.847 (right)

BAM-test chart ZE63; Colorimetric systems, Page 5/10

D65: 9 and 16 step colour scales for 10 hues

input:  $rgb / cmy0$  set( $rgb/cmyk$ )color

output: no change compared to input

**Input: Colorimetric Offset Reflective System ORS18**

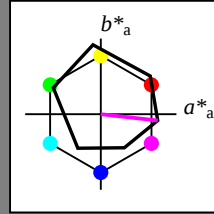
**for hue  $h^* = lab^*h = 354/360 = 0.982$**

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

D65: hue M

LCH\*Ma: 48 76 354

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



## %Gamut

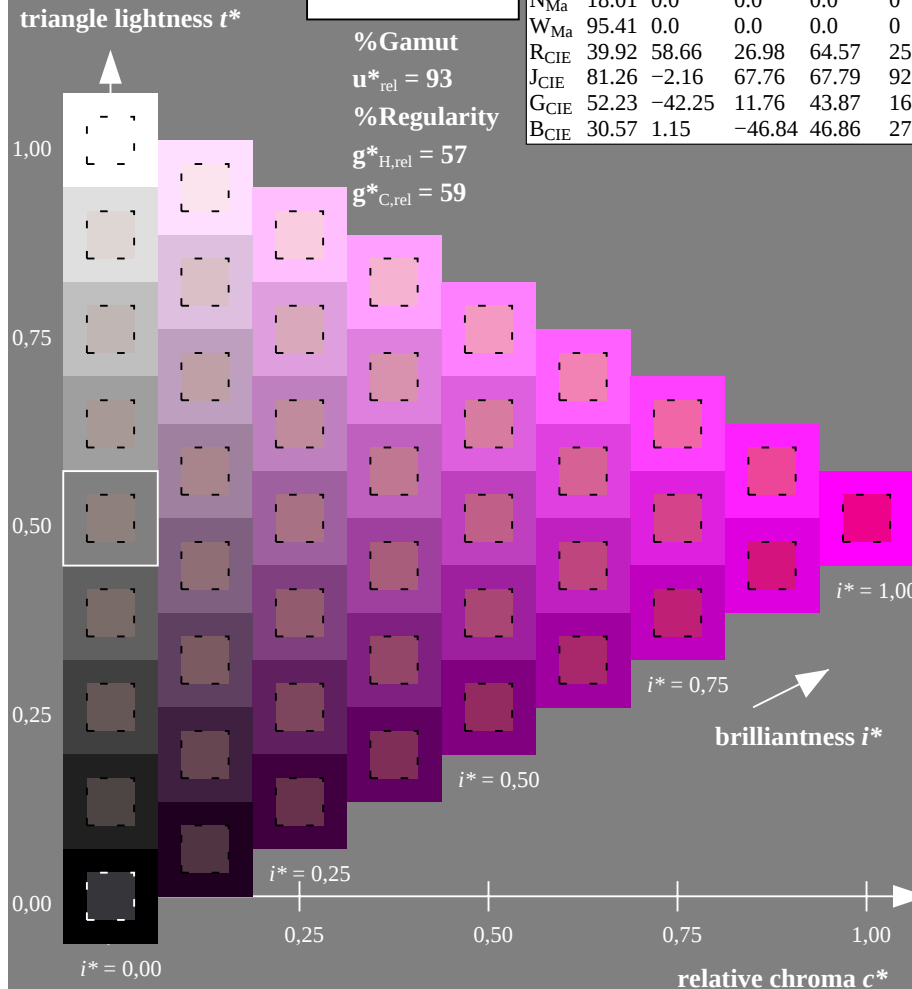
$$\mathbf{u}_{\text{rel}}^* = 93$$

### %Regularity

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

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

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



ZE630-7N, 9 step scales for constant CIELAB hue 354/360 = 0.982 (left)

BAM-test chart ZE63; Colorimetric systems, Page 6/10  
D65: 9 and 16 step colour scales for 10 hues

## Output: Colorimetric Offset Reflective System ORS18

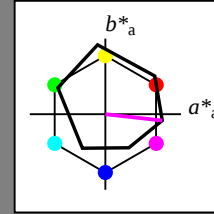
for hue  $h^* = lab^*h = 354/360 = 0.982$

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

D65: hue M

LCH\*Ma: 48 76 354

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



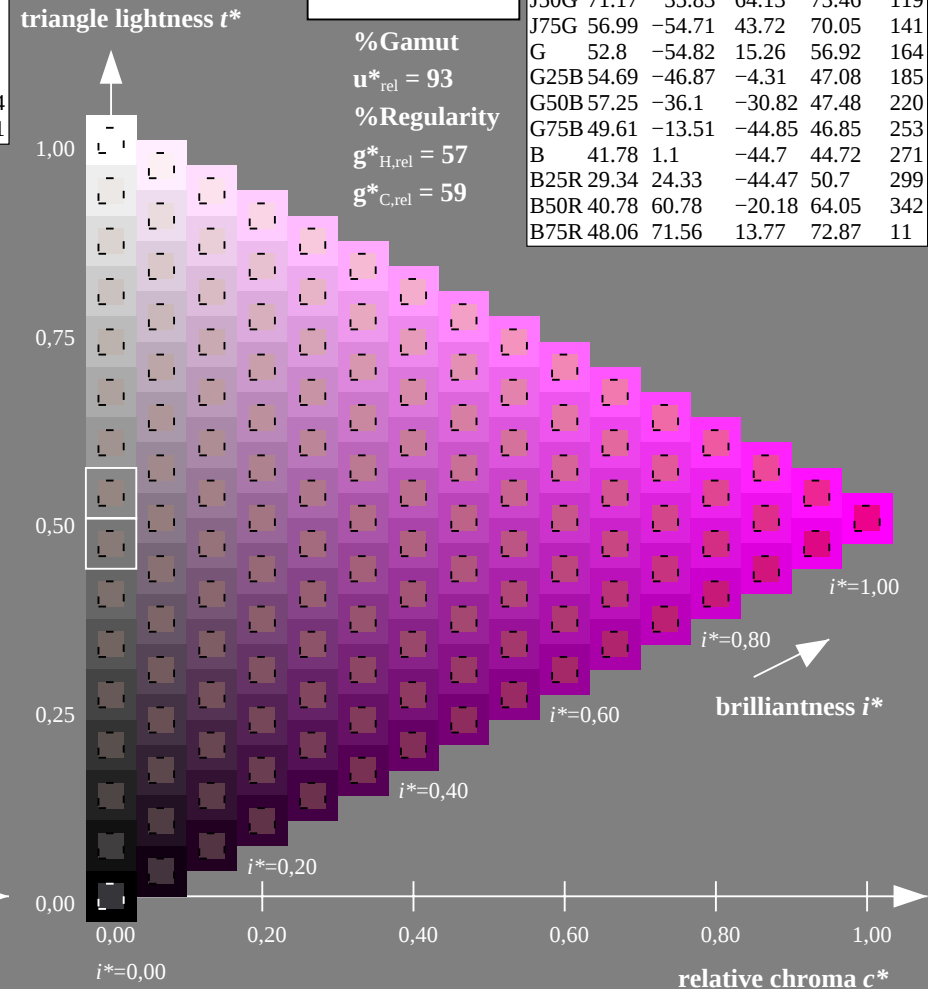
## %Gamut

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

### %Regularity

$$\mathbf{g}_{\text{H,rel}}^* = 57$$
$$\mathbf{g}_{\text{C,rel}}^* = 59$$

| ORS18; adapted (a) CIELAB data |                |         |         |              |              |
|--------------------------------|----------------|---------|---------|--------------|--------------|
|                                | $L^*_{*}L^*_a$ | $c^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| R                              | 48.0           | 68.58   | 31.54   | 75.48        | 25           |
| R25J                           | 50.11          | 61.52   | 52.63   | 80.96        | 41           |
| R50J                           | 62.87          | 38.77   | 65.02   | 75.71        | 59           |
| R75J                           | 74.87          | 17.37   | 76.69   | 78.63        | 77           |
| J                              | 86.19          | -2.8    | 87.69   | 87.73        | 92           |
| J25G                           | 84.01          | -18.73  | 82.6    | 84.7         | 103          |
| J50G                           | 71.17          | -35.83  | 64.13   | 73.46        | 119          |
| J75G                           | 56.99          | -54.71  | 43.72   | 70.05        | 141          |
| G                              | 52.8           | -54.82  | 15.26   | 56.92        | 164          |
| G25B                           | 54.69          | -46.87  | -4.31   | 47.08        | 185          |
| G50B                           | 57.25          | -36.1   | -30.82  | 47.48        | 220          |
| G75B                           | 49.61          | -13.51  | -44.85  | 46.85        | 253          |
| B                              | 41.78          | 1.1     | -44.7   | 44.72        | 271          |
| B25R                           | 29.34          | 24.33   | -44.47  | 50.7         | 299          |
| B50R                           | 40.78          | 60.78   | -20.18  | 64.05        | 342          |
| B75R                           | 48.06          | 71.56   | 13.77   | 72.87        | 11           |



ZE630-7N, 16 step scales for constant CIELAB hue 354/360 = 0.982 (right)

input: *rgb / cmy0 set(rgb/cmyk)color*  
output: no change compared to input

Input: Colorimetric Offset Reflective System ORS18

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

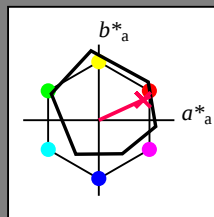
$lab^*tch$  and  $lab^*nch$

D65: hue R

LCH\*Ma: 48 75 25

olv\*Ma: 1.0 0.0 0.32

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

ORS18; adapted (a) CIELAB data

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

Output: Colorimetric Offset Reflective System ORS18

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

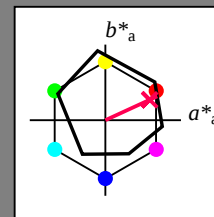
$lab^*tch$  and  $lab^*nch$

D65: hue R

LCH\*Ma: 48 75 25

olv\*Ma: 1.0 0.0 0.32

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 93$

%Regularity

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

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

ORS18; adapted (a) CIELAB data

|      | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|-------------|---------|---------|--------------|--------------|
| R    | 48.0        | 68.58   | 31.54   | 75.48        | 25           |
| R25J | 50.11       | 61.52   | 52.63   | 80.96        | 41           |
| R50J | 62.87       | 38.77   | 65.02   | 75.71        | 59           |
| R75J | 74.87       | 17.37   | 76.69   | 78.63        | 77           |
| J    | 86.19       | -2.8    | 87.69   | 87.73        | 92           |
| J25G | 84.01       | -18.73  | 82.6    | 84.7         | 103          |
| J50G | 71.17       | -35.83  | 64.13   | 73.46        | 119          |
| J75G | 56.99       | -54.71  | 43.72   | 70.05        | 141          |
| G    | 52.8        | -54.82  | 15.26   | 56.92        | 164          |
| G25B | 54.69       | -46.87  | -4.31   | 47.08        | 185          |
| G50B | 57.25       | -36.1   | -30.82  | 47.48        | 220          |
| G75B | 49.61       | -13.51  | -44.85  | 46.85        | 253          |
| B    | 41.78       | 1.1     | -44.7   | 44.72        | 271          |
| B25R | 29.34       | 24.33   | -44.47  | 50.7         | 299          |
| B50R | 40.78       | 60.78   | -20.18  | 64.05        | 342          |
| B75R | 48.06       | 71.56   | 13.77   | 72.87        | 11           |

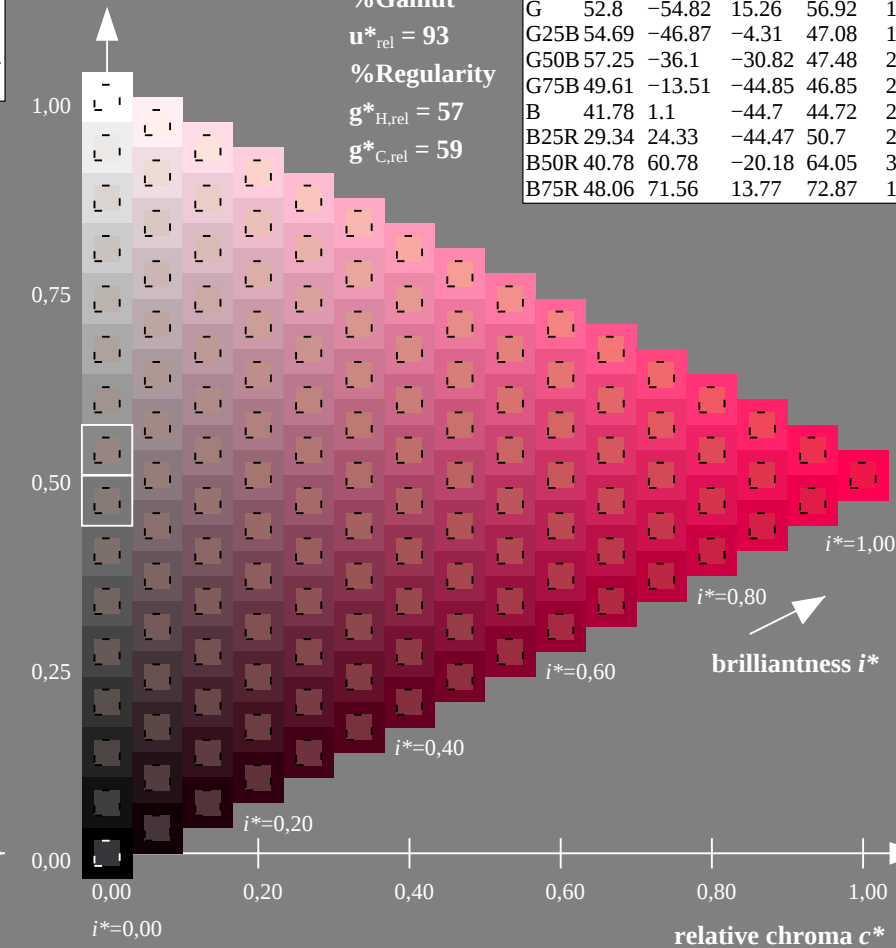
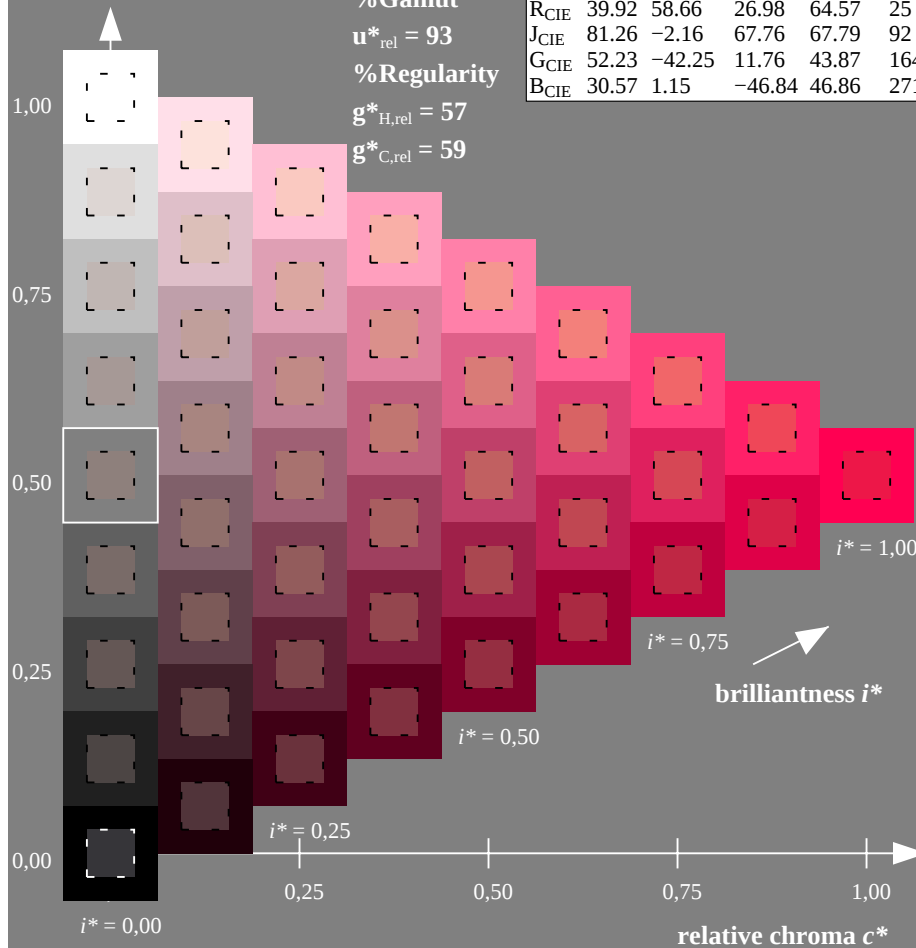
%Gamut

$u^*_{rel} = 93$

%Regularity

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

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



ZE630-7N, 9 step scales for constant CIELAB hue 25/360 = 0.069 (left)

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ZE630-7N, 16 step scales for constant CIELAB hue 25/360 = 0.069 (right)

BAM-test chart ZE63; Colorimetric systems, Page 7/10

D65: 9 and 16 step colour scales for 10 hues

input:  $rgb / cmy0$  set( $rgb/cmyk$ )color

output: no change compared to input



**Input: Colorimetric Offset Reflective System ORS18**

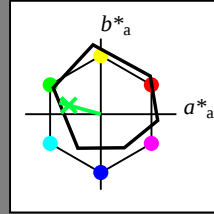
for hue  $h^* = lab^*h = 164/360 = 0.457$

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

D65: hue G

LCH\*Ma: 53 57 164

olv\*Ma: 0.0 1.0 0.25



## %Gamut

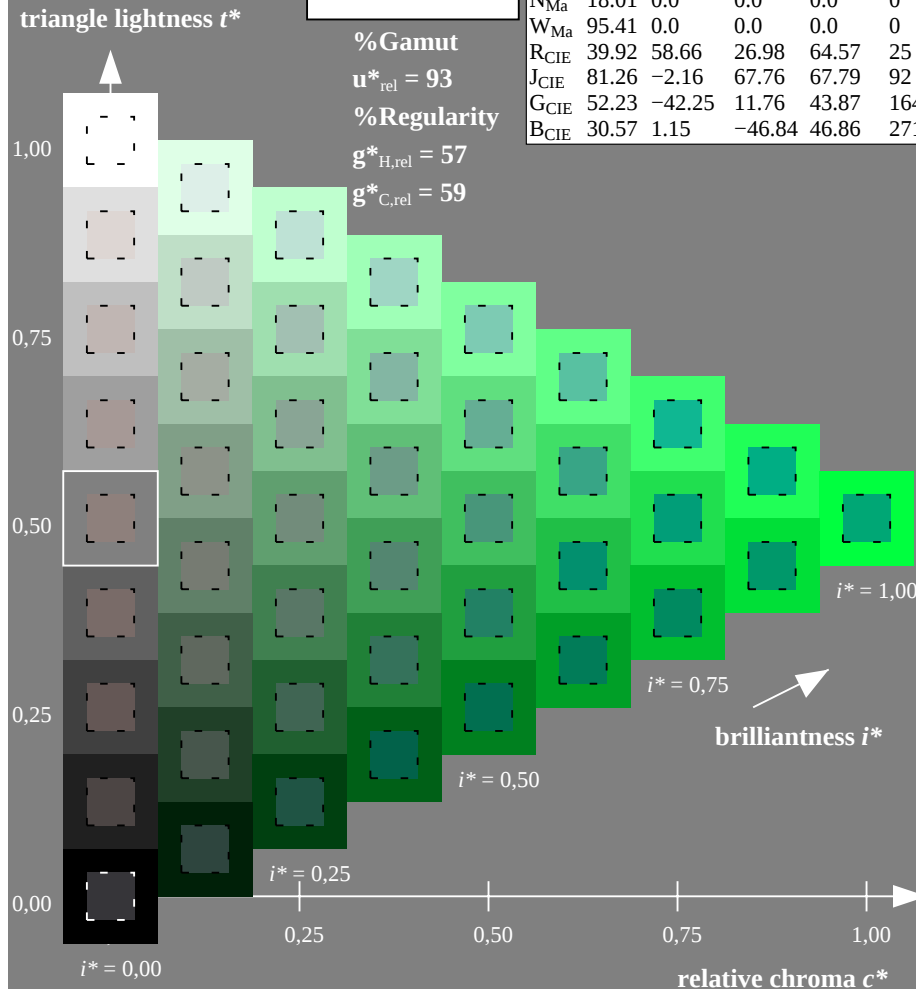
$$\mathbf{u}_{\text{rel}}^* = 93$$

## %Regularity

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

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

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



ZE630-7N, 9 step scales for constant CIELAB hue  $164/360 = 0.457$  (left)

BAM-test chart ZE63; Colorimetric systems, Page 9/10  
D65: 9 and 16 step colour scales for 10 hues

## Output: Colorimetric Offset Reflective System ORS18

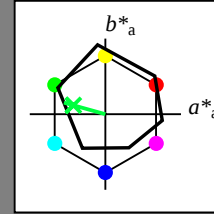
for hue  $h^* = lab^*h = 164/360 = 0.457$

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

D65: hue G

LCH\*Ma: 53 57 164

**olv\*Ma: 0.0 1.0 0.25**



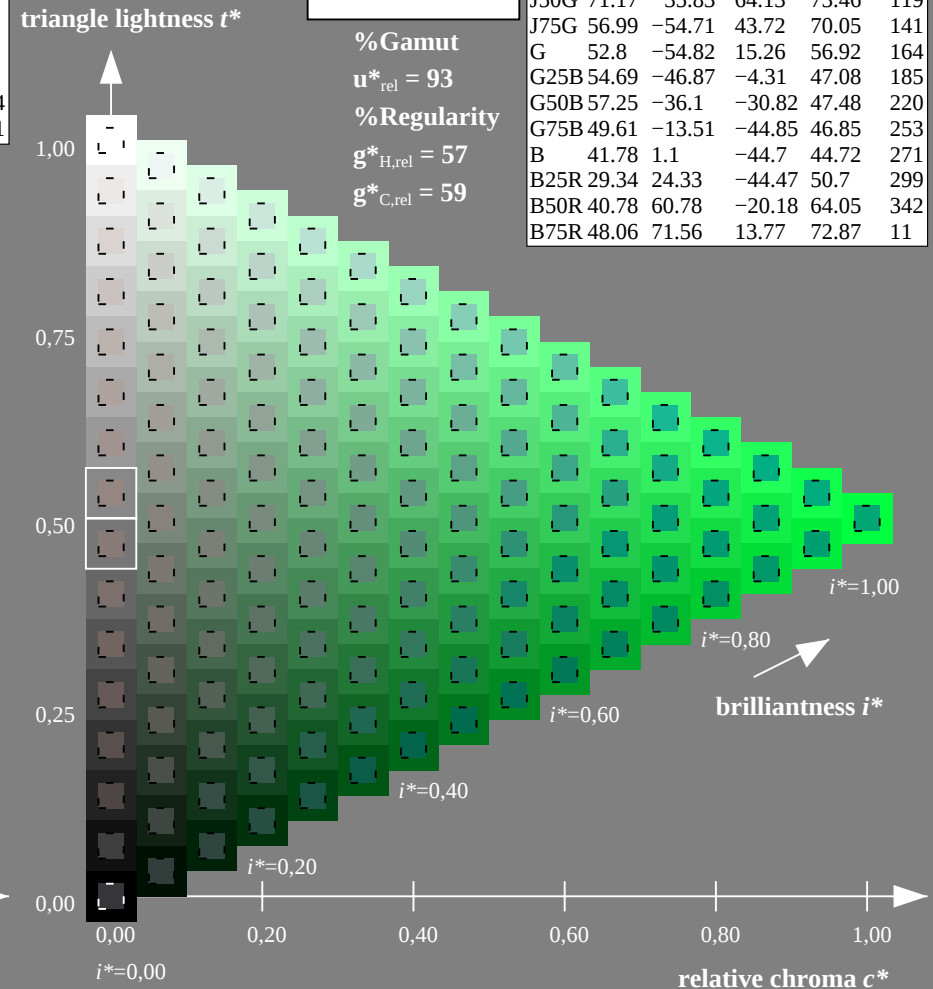
## %Gamut

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

### %Regularity

$$g^*_{H,rel} = 57$$
$$g^*_{C,rel} = 59$$

|      | $L^*_{*}L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------|----------------|---------|---------|--------------|--------------|
| R    | 48.0           | 68.58   | 31.54   | 75.48        | 25           |
| R25J | 50.11          | 61.52   | 52.63   | 80.96        | 41           |
| R50J | 62.87          | 38.77   | 65.02   | 75.71        | 59           |
| R75J | 74.87          | 17.37   | 76.69   | 78.63        | 77           |
| J    | 86.19          | -2.8    | 87.69   | 87.73        | 92           |
| J25G | 84.01          | -18.73  | 82.6    | 84.7         | 103          |
| J50G | 71.17          | -35.83  | 64.13   | 73.46        | 119          |
| J75G | 56.99          | -54.71  | 43.72   | 70.05        | 141          |
| G    | 52.8           | -54.82  | 15.26   | 56.92        | 164          |
| G25B | 54.69          | -46.87  | -4.31   | 47.08        | 185          |
| G50B | 57.25          | -36.1   | -30.82  | 47.48        | 220          |
| G75B | 49.61          | -13.51  | -44.85  | 46.85        | 253          |
| B    | 41.78          | 1.1     | -44.7   | 44.72        | 271          |
| B25R | 29.34          | 24.33   | -44.47  | 50.7         | 299          |
| B50R | 40.78          | 60.78   | -20.18  | 64.05        | 342          |
| B75R | 48.06          | 71.56   | 13.77   | 72.87        | 11           |



ZE630-7N, 16 step scales for constant CIELAB hue 164/360 = 0.457 (right)

input: *rgb / cmy0 set(rgb/cmyk)color*  
output: no change compared to input

