

Input and Output: Offset Reflective System ORS18a for relative CIELAB hue  $h_{ab,a,rel} = h_{ab}/360 = 96/360 = 0.26$

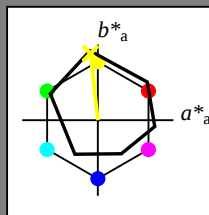
Data for any device (d) or elementary (e) colour:

$HIC^*$

hue text for the colours  
of this page:

$H^*_ = Y00G_-$

triangle lightness  $T^*$



ORS18a; adapted (a) CIELAB data

| name               | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------------------|-------------|---------|---------|--------------|--------------|
| R <sub>-,Ma</sub>  | 47.9        | 65.3    | 50.5    | 82.6         | 37           |
| Y <sub>-,Ma</sub>  | 90.3        | -10.2   | 91.7    | 92.3         | 96           |
| G <sub>-,Ma</sub>  | 50.9        | -62.8   | 34.9    | 71.9         | 150          |
| C <sub>-,Ma</sub>  | 58.6        | -30.3   | -45.0   | 54.2         | 236          |
| B <sub>-,Ma</sub>  | 25.7        | 31.0    | -44.4   | 54.2         | 305          |
| M <sub>-,Ma</sub>  | 48.1        | 75.2    | -8.3    | 75.7         | 353          |
| N <sub>-,Ma</sub>  | 18.0        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>-,Ma</sub>  | 95.4        | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>-,CIE</sub> | 39.9        | 58.7    | 27.9    | 65.0         | 25           |
| Y <sub>-,CIE</sub> | 81.2        | -2.8    | 71.5    | 71.6         | 92           |
| G <sub>-,CIE</sub> | 52.2        | -42.4   | 13.6    | 44.5         | 162          |
| B <sub>-,CIE</sub> | 30.5        | 1.4     | -46.4   | 46.4         | 271          |

Data for maximum colour (Ma):

$LabCh^*_{-,Ma}$ : 90 -9 88 88 96

$HIC^*_{-,Ma}$ : Y00G\_100\_100\_

$rgbic^*_{-,Ma}$ :

1.0 1.0 0.0 1.0 1.0

triangle lightness  $T^*$

% Gamut

$u^*_{rel} = 92$

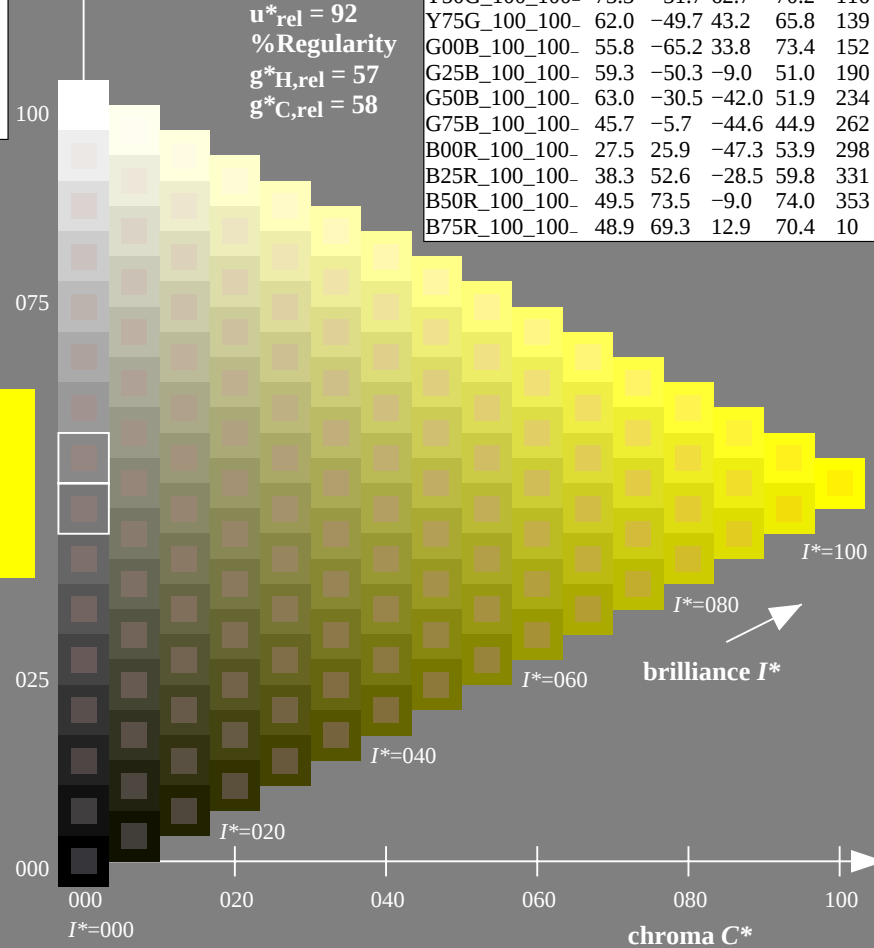
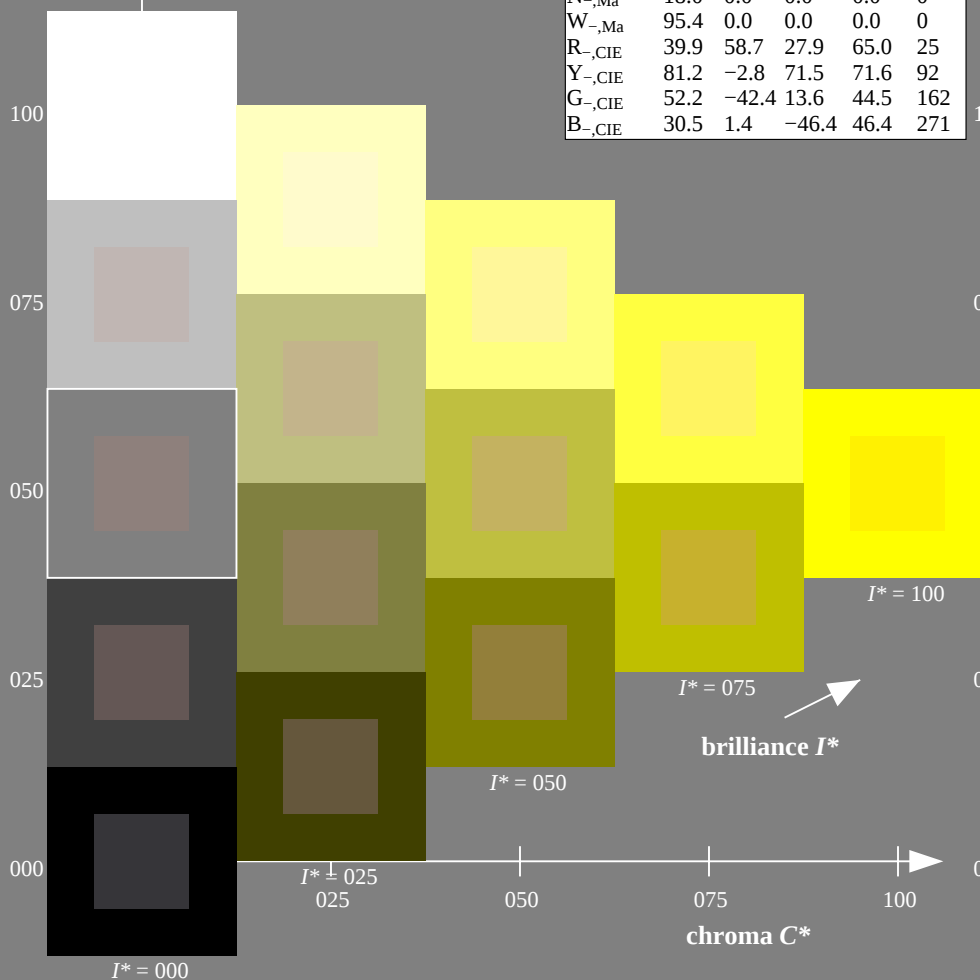
% Regularity

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

$g^*_{C,rel} = 58$

ORS20a; adapted (a) CIELAB data

| $H^*_$        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|---------------|-------------|---------|---------|--------------|--------------|
| R00Y_100_100_ | 48.4        | 66.1    | 40.2    | 77.3         | 31           |
| R25Y_100_100_ | 56.8        | 48.0    | 50.5    | 69.6         | 46           |
| R50Y_100_100_ | 68.6        | 25.0    | 63.9    | 68.6         | 68           |
| R75Y_100_100_ | 80.6        | 4.8     | 77.2    | 77.3         | 86           |
| Y00G_100_100_ | 90.2        | -9.6    | 88.2    | 88.7         | 96           |
| Y25G_100_100_ | 83.2        | -18.4   | 79.9    | 81.9         | 102          |
| Y50G_100_100_ | 73.3        | -31.7   | 62.7    | 70.2         | 116          |
| Y75G_100_100_ | 62.0        | -49.7   | 43.2    | 65.8         | 139          |
| G00B_100_100_ | 55.8        | -65.2   | 33.8    | 73.4         | 152          |
| G25B_100_100_ | 59.3        | -50.3   | -9.0    | 51.0         | 190          |
| G50B_100_100_ | 63.0        | -30.5   | -42.0   | 51.9         | 234          |
| G75B_100_100_ | 45.7        | -5.7    | -44.6   | 44.9         | 262          |
| B00R_100_100_ | 27.5        | 25.9    | -47.3   | 53.9         | 298          |
| B25R_100_100_ | 38.3        | 52.6    | -28.5   | 59.8         | 331          |
| B50R_100_100_ | 49.5        | 73.5    | -9.0    | 74.0         | 353          |
| B75R_100_100_ | 48.9        | 69.3    | 12.9    | 70.4         | 10           |



TUB-test chart QE37; hue code:  $H^*_ = Y00G_-$   
Test chart according to DIN 33872, 3D=1, de=0,  $cm y0^*$

input:  $rgb/cmyk \rightarrow rgb/cmyk$   
output: no change

Input and Output: Offset Reflective System ORS18a for relative CIELAB hue  $h_{ab,a,rel} = h_{ab}/360 = 96/360 = 0.26$

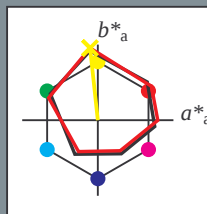
Data for any device (d) or elementary (e) colour:

$HIC^*_d$

hue text for the colours  
of this page:

$H^*_d = Y00G_d$

triangle lightness  $T^*$



ORS20a; adapted (a) CIELAB data

| name               | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------------------|-------------|---------|---------|--------------|--------------|
| R <sub>d,Ma</sub>  | 45.4        | 70.9    | 44.8    | 83.9         | 32           |
| Y <sub>d,Ma</sub>  | 87.8        | -10.2   | 95.4    | 96.0         | 96           |
| G <sub>d,Ma</sub>  | 50.0        | -65.0   | 29.6    | 71.4         | 155          |
| C <sub>d,Ma</sub>  | 56.8        | -25.5   | -41.5   | 48.7         | 238          |
| B <sub>d,Ma</sub>  | 25.0        | 29.5    | -40.4   | 50.0         | 306          |
| M <sub>d,Ma</sub>  | 46.1        | 79.3    | -0.2    | 79.3         | 359          |
| N <sub>d,Ma</sub>  | 24.3        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>d,Ma</sub>  | 95.6        | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>d,CIE</sub> | 39.9        | 58.7    | 27.9    | 65.0         | 25           |
| Y <sub>d,CIE</sub> | 81.2        | -2.8    | 71.5    | 71.6         | 92           |
| G <sub>d,CIE</sub> | 52.2        | -42.4   | 13.6    | 44.5         | 162          |
| B <sub>d,CIE</sub> | 30.5        | 1.4     | -46.4   | 46.4         | 271          |

Data for maximum colour (Ma):

$LabCh^*_d, Ma$ : 87 -10 95 96 96

$HIC^*_d, Ma$ : Y00G\_100\_100d

$rgbic^*_d, Ma$ :

1.0 1.0 0.0 1.0 1.0

triangle lightness  $T^*$

% Gamut

$u^*_{rel} = 92$

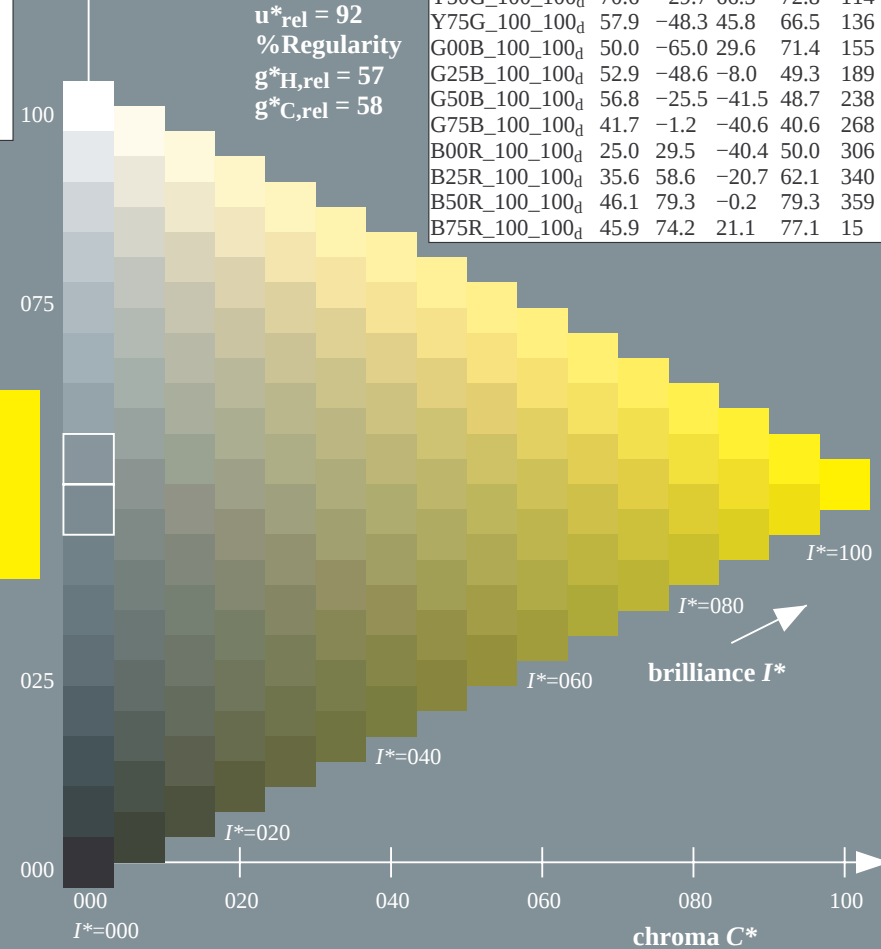
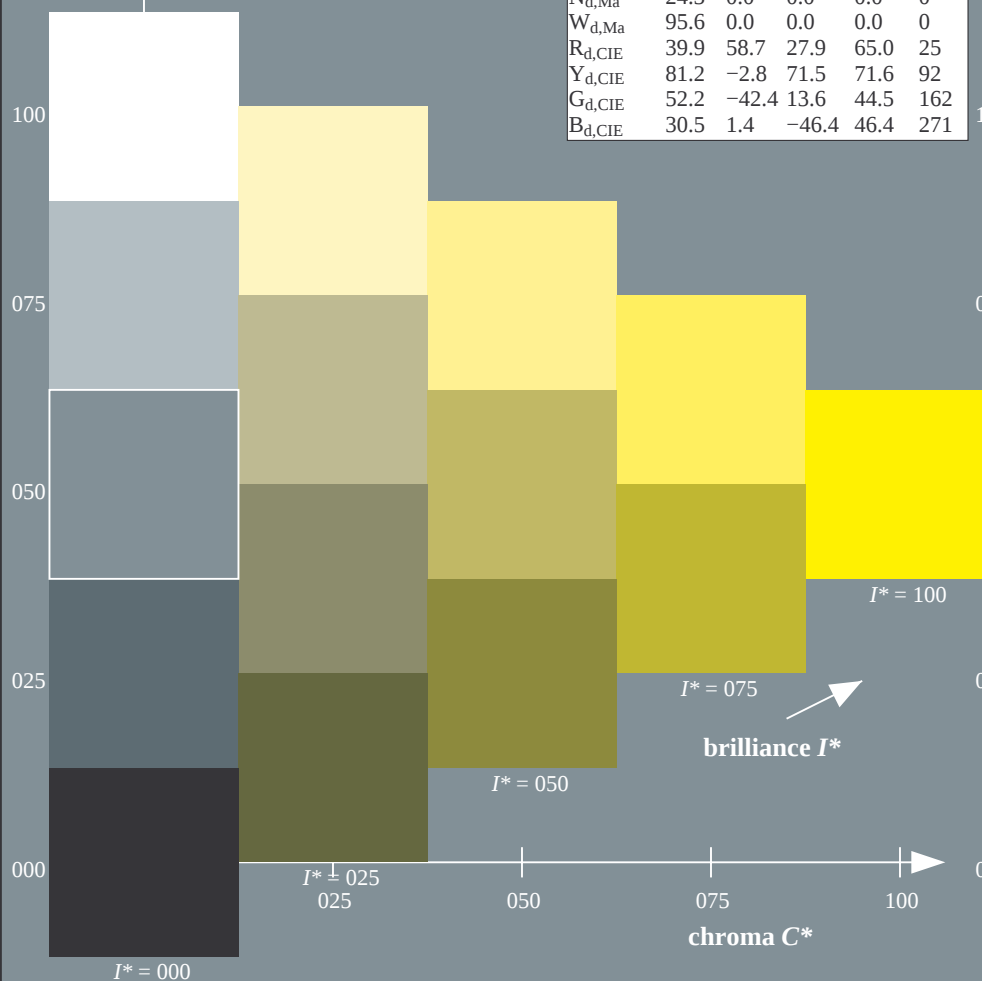
% Regularity

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

$g^*_{C,rel} = 58$

ORS20a; adapted (a) CIELAB data

| $H^*_d$       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|---------------|-------------|---------|---------|--------------|--------------|
| R00Y_100_100d | 45.4        | 70.9    | 44.8    | 83.9         | 32           |
| R25Y_100_100d | 53.0        | 53.4    | 54.8    | 76.5         | 45           |
| R50Y_100_100d | 64.9        | 28.9    | 68.6    | 74.5         | 67           |
| R75Y_100_100d | 78.6        | 4.3     | 84.7    | 84.8         | 87           |
| Y00G_100_100d | 87.8        | -10.2   | 95.4    | 96.0         | 96           |
| Y25G_100_100d | 81.2        | -17.0   | 84.3    | 86.0         | 101          |
| Y50G_100_100d | 70.6        | -29.7   | 66.5    | 72.8         | 114          |
| Y75G_100_100d | 57.9        | -48.3   | 45.8    | 66.5         | 136          |
| G00B_100_100d | 50.0        | -65.0   | 29.6    | 71.4         | 155          |
| G25B_100_100d | 52.9        | -48.6   | -8.0    | 49.3         | 189          |
| G50B_100_100d | 56.8        | -25.5   | -41.5   | 48.7         | 238          |
| G75B_100_100d | 41.7        | -1.2    | -40.6   | 40.6         | 268          |
| B00R_100_100d | 25.0        | 29.5    | -40.4   | 50.0         | 306          |
| B25R_100_100d | 35.6        | 58.6    | -20.7   | 62.1         | 340          |
| B50R_100_100d | 46.1        | 79.3    | -0.2    | 79.3         | 359          |
| B75R_100_100d | 45.9        | 74.2    | 21.1    | 77.1         | 15           |



TUB-test chart QE37; hue code:  $H^*_d = Y00G_d$   
Test chart according to DIN 33872, 3D=1, de=0,  $cmY0^*$

input:  $rgb/cmyk \rightarrow rgb_{dd}$   
output: 3D-linearization to  $cmY0^*_{dd}$

Input and Output: Offset Reflective System ORS18a for relative CIELAB hue  $h_{ab,a,rel} = h_{ab}/360 = 96/360 = 0.26$

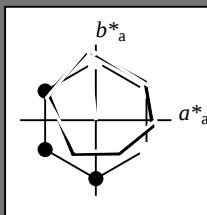
Data for any device (d) or elementary (e) colour:

$HIC^*_d$

hue text for the colours  
of this page:

$H^*_d = Y00G_d$

triangle lightness  $T^*$



**ORS20a; adapted (a) CIELAB data**

| name               | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|--------------------|-------------|---------|---------|--------------|--------------|
| R <sub>d,Ma</sub>  | 45.4        | 70.9    | 44.8    | 83.9         | 32           |
| Y <sub>d,Ma</sub>  | 87.8        | -10.2   | 95.4    | 96.0         | 96           |
| G <sub>d,Ma</sub>  | 50.0        | -65.0   | 29.6    | 71.4         | 155          |
| C <sub>d,Ma</sub>  | 56.8        | -25.5   | -41.5   | 48.7         | 238          |
| B <sub>d,Ma</sub>  | 25.0        | 29.5    | -40.4   | 50.0         | 306          |
| M <sub>d,Ma</sub>  | 46.1        | 79.3    | -0.2    | 79.3         | 359          |
| N <sub>d,Ma</sub>  | 24.3        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>d,Ma</sub>  | 95.6        | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>d,CIE</sub> | 39.9        | 58.7    | 27.9    | 65.0         | 25           |
| Y <sub>d,CIE</sub> | 81.2        | -2.8    | 71.5    | 71.6         | 92           |
| G <sub>d,CIE</sub> | 52.2        | -42.4   | 13.6    | 44.5         | 162          |
| B <sub>d,CIE</sub> | 30.5        | 1.4     | -46.4   | 46.4         | 271          |

Data for maximum colour (Ma):

$LabCh^*_{d,Ma}$ : 87 -10 95 96 96

$HIC^*_{d,Ma}$ : Y00G\_100\_100d

$rgbic^*_{d,Ma}$ :

1.0 1.0 0.0 1.0 1.0

triangle lightness  $T^*$

% Gamut

$u^*_{rel} = 92$

% Regularity

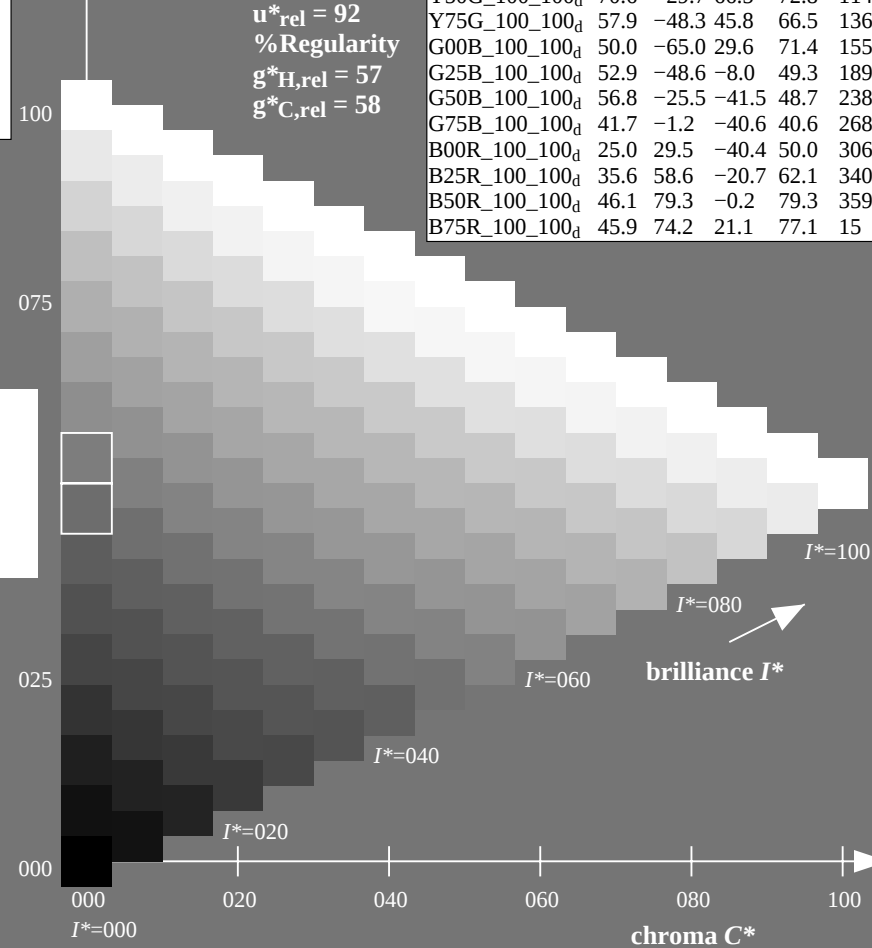
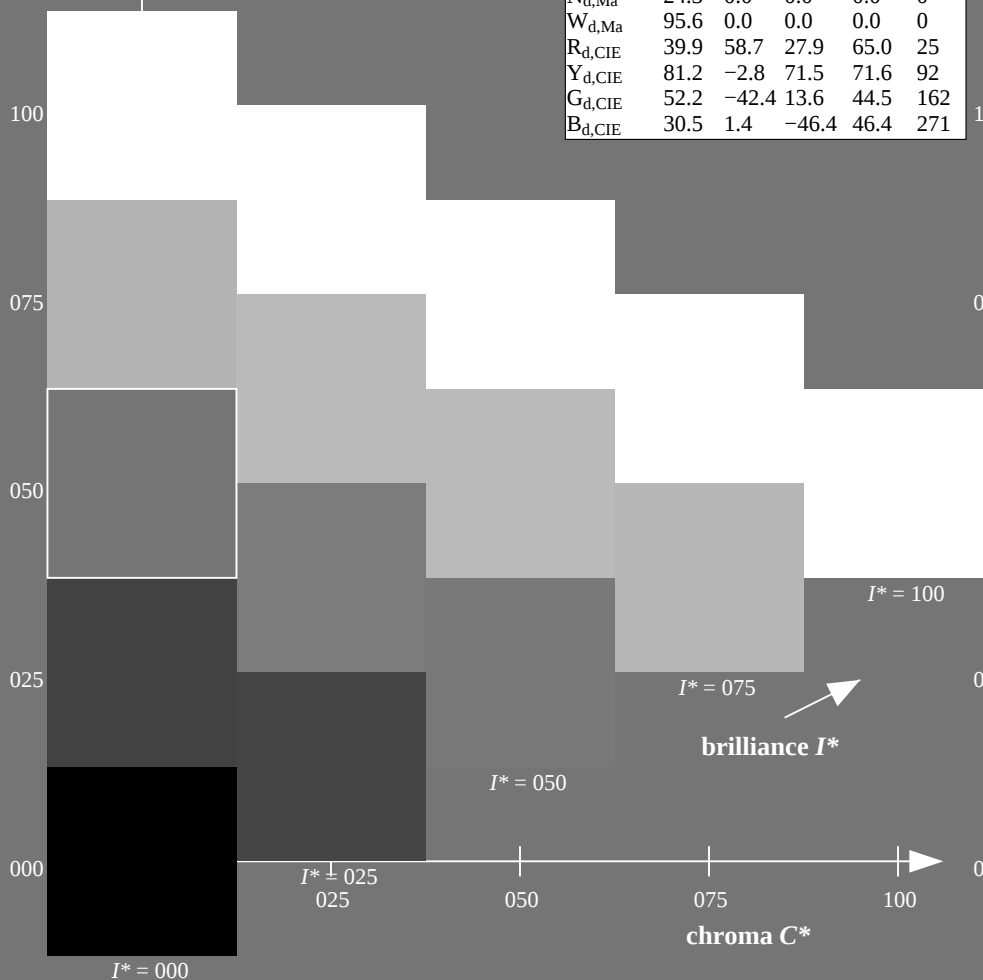
$g^*_{H,rel} = 57$

$g^*_{C,rel} = 58$

$H^*_d = Y00G_d$

**ORS20a; adapted (a) CIELAB data**

| $H^*_d$       | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|---------------|-------------|---------|---------|--------------|--------------|
| R00Y_100_100d | 45.4        | 70.9    | 44.8    | 83.9         | 32           |
| R25Y_100_100d | 53.0        | 53.4    | 54.8    | 76.5         | 45           |
| R50Y_100_100d | 64.9        | 28.9    | 68.6    | 74.5         | 67           |
| R75Y_100_100d | 78.6        | 4.3     | 84.7    | 84.8         | 87           |
| Y00G_100_100d | 87.8        | -10.2   | 95.4    | 96.0         | 96           |
| Y25G_100_100d | 81.2        | -17.0   | 84.3    | 86.0         | 101          |
| Y50G_100_100d | 70.6        | -29.7   | 66.5    | 72.8         | 114          |
| Y75G_100_100d | 57.9        | -48.3   | 45.8    | 66.5         | 136          |
| G00B_100_100d | 50.0        | -65.0   | 29.6    | 71.4         | 155          |
| G25B_100_100d | 52.9        | -48.6   | -8.0    | 49.3         | 189          |
| G50B_100_100d | 56.8        | -25.5   | -41.5   | 48.7         | 238          |
| G75B_100_100d | 41.7        | -1.2    | -40.6   | 40.6         | 268          |
| B00R_100_100d | 25.0        | 29.5    | -40.4   | 50.0         | 306          |
| B25R_100_100d | 35.6        | 58.6    | -20.7   | 62.1         | 340          |
| B50R_100_100d | 46.1        | 79.3    | -0.2    | 79.3         | 359          |
| B75R_100_100d | 45.9        | 74.2    | 21.1    | 77.1         | 15           |



1-103231-L0 QE370-72

TUB-test chart QE37; hue code:  $H^*_d=Y00G_d$

Test chart according to DIN 33872, 3D=1, de=0,  $cmY0^*$

input:  $rgb/cmyk \rightarrow rgb_{dd}$

output: 3D-linearization to  $cmY0^*_{dd}$

Input and Output: Offset Reflective System ORS18a for relative CIELAB hue  $h_{ab,a,rel} = h_{ab}/360 = 96/360 = 0.26$

$H^*_d = Y00G_d$

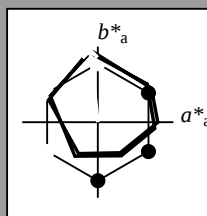
Data for any device (d) or elementary (e) colour:

$HIC^*_d$

hue text for the colours of this page:

$H^*_d = Y00G_d$

triangle lightness  $T^*$



ORS20a; adapted (a) CIELAB data

| name        | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------------|-------------|---------|---------|--------------|--------------|
| $R_{d,Ma}$  | 45.4        | 70.9    | 44.8    | 83.9         | 32           |
| $Y_{d,Ma}$  | 87.8        | -10.2   | 95.4    | 96.0         | 96           |
| $G_{d,Ma}$  | 50.0        | -65.0   | 29.6    | 71.4         | 155          |
| $C_{d,Ma}$  | 56.8        | -25.5   | -41.5   | 48.7         | 238          |
| $B_{d,Ma}$  | 25.0        | 29.5    | -40.4   | 50.0         | 306          |
| $M_{d,Ma}$  | 46.1        | 79.3    | -0.2    | 79.3         | 359          |
| $N_{d,Ma}$  | 24.3        | 0.0     | 0.0     | 0.0          | 0            |
| $W_{d,Ma}$  | 95.6        | 0.0     | 0.0     | 0.0          | 0            |
| $R_{d,CIE}$ | 39.9        | 58.7    | 27.9    | 65.0         | 25           |
| $Y_{d,CIE}$ | 81.2        | -2.8    | 71.5    | 71.6         | 92           |
| $G_{d,CIE}$ | 52.2        | -42.4   | 13.6    | 44.5         | 162          |
| $B_{d,CIE}$ | 30.5        | 1.4     | -46.4   | 46.4         | 271          |

Data for maximum colour (Ma):

$LabCh^*_{d,Ma}$ : 87 -10 95 96 96

$HIC^*_{d,Ma}$ : Y00G\_100\_100d

$rgbic^*_{d,Ma}$ :

1.0 1.0 0.0 1.0 1.0

triangle lightness  $T^*$

% Gamut

$u^*_{rel} = 92$

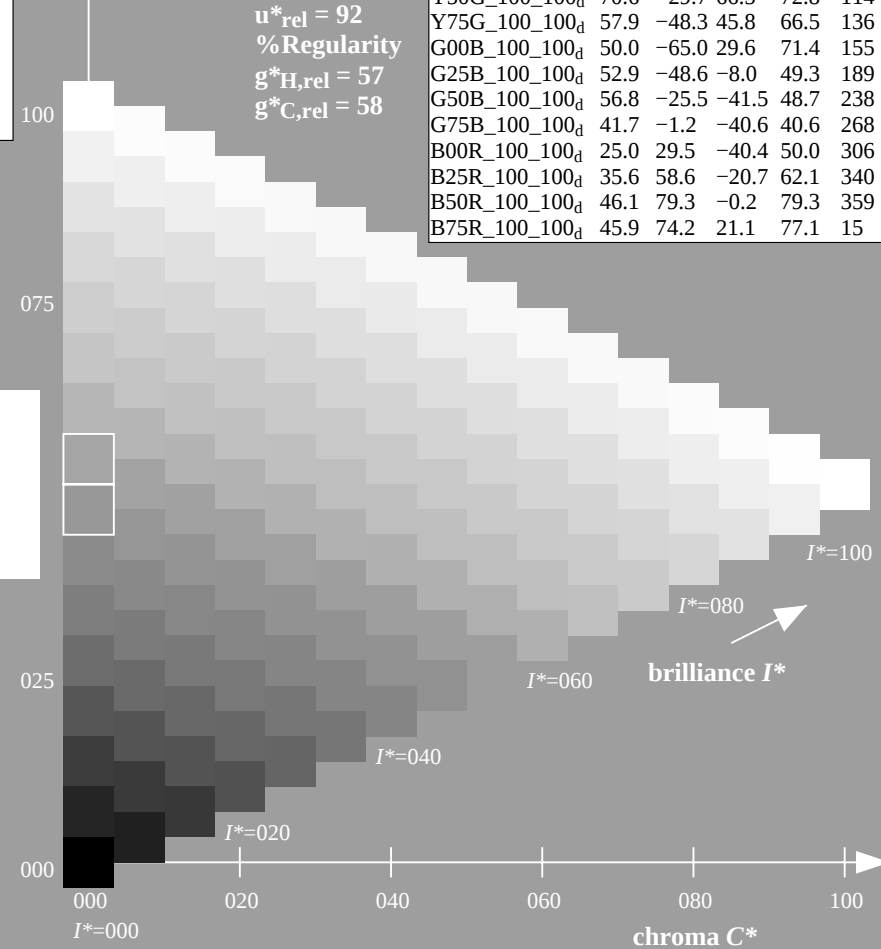
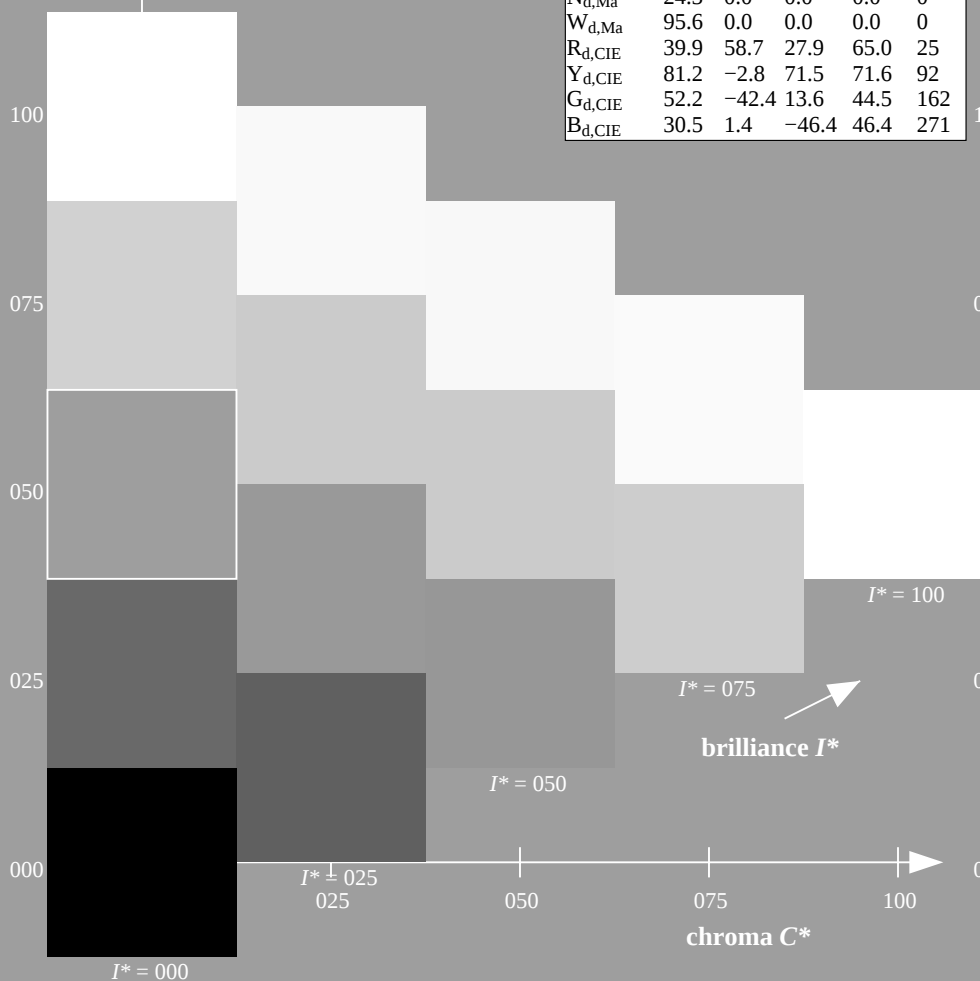
% Regularity

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

$g^*_{C,rel} = 58$

ORS20a; adapted (a) CIELAB data

| $H^*_d$           | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|-------------------|-------------|---------|---------|--------------|--------------|
| $R00Y_{100_100d}$ | 45.4        | 70.9    | 44.8    | 83.9         | 32           |
| $R25Y_{100_100d}$ | 53.0        | 53.4    | 54.8    | 76.5         | 45           |
| $R50Y_{100_100d}$ | 64.9        | 28.9    | 68.6    | 74.5         | 67           |
| $R75Y_{100_100d}$ | 78.6        | 4.3     | 84.7    | 84.8         | 87           |
| $Y00G_{100_100d}$ | 87.8        | -10.2   | 95.4    | 96.0         | 96           |
| $Y25G_{100_100d}$ | 81.2        | -17.0   | 84.3    | 86.0         | 101          |
| $Y50G_{100_100d}$ | 70.6        | -29.7   | 66.5    | 72.8         | 114          |
| $Y75G_{100_100d}$ | 57.9        | -48.3   | 45.8    | 66.5         | 136          |
| $G00B_{100_100d}$ | 50.0        | -65.0   | 29.6    | 71.4         | 155          |
| $G25B_{100_100d}$ | 52.9        | -48.6   | -8.0    | 49.3         | 189          |
| $G50B_{100_100d}$ | 56.8        | -25.5   | -41.5   | 48.7         | 238          |
| $G75B_{100_100d}$ | 41.7        | -1.2    | -40.6   | 40.6         | 268          |
| $B00R_{100_100d}$ | 25.0        | 29.5    | -40.4   | 50.0         | 306          |
| $B25R_{100_100d}$ | 35.6        | 58.6    | -20.7   | 62.1         | 340          |
| $B50R_{100_100d}$ | 46.1        | 79.3    | -0.2    | 79.3         | 359          |
| $B75R_{100_100d}$ | 45.9        | 74.2    | 21.1    | 77.1         | 15           |



1-103331-L0 QE370-72

TUB-test chart QE37; hue code:  $H^*_d=Y00G_d$

Test chart according to DIN 33872, 3D=1, de=0,  $cmY0^*$

input:  $rgb/cmyk \rightarrow rgb_{dd}$

output: 3D-linearization to  $cmY0^*_{dd}$

Input and Output: Offset Reflective System ORS18a for relative CIELAB hue  $h_{ab,a,rel} = h_{ab}/360 = 96/360 = 0.26$

$H^*_d = Y00G_d$

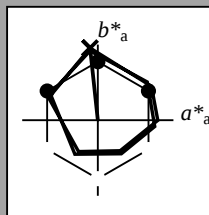
Data for any device (d) or elementary (e) colour:

$HIC^*_d$

hue text for the colours of this page:

$H^*_d = Y00G_d$

triangle lightness  $T^*$



| ORS20a; adapted (a) CIELAB data |             |         |         |              |              |
|---------------------------------|-------------|---------|---------|--------------|--------------|
| name                            | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| $R_{d,Ma}$                      | 45.4        | 70.9    | 44.8    | 83.9         | 32           |
| $Y_{d,Ma}$                      | 87.8        | -10.2   | 95.4    | 96.0         | 96           |
| $G_{d,Ma}$                      | 50.0        | -65.0   | 29.6    | 71.4         | 155          |
| $C_{d,Ma}$                      | 56.8        | -25.5   | -41.5   | 48.7         | 238          |
| $B_{d,Ma}$                      | 25.0        | 29.5    | -40.4   | 50.0         | 306          |
| $M_{d,Ma}$                      | 46.1        | 79.3    | -0.2    | 79.3         | 359          |
| $N_{d,Ma}$                      | 24.3        | 0.0     | 0.0     | 0.0          | 0            |
| $W_{d,Ma}$                      | 95.6        | 0.0     | 0.0     | 0.0          | 0            |
| $R_{d,CIE}$                     | 39.9        | 58.7    | 27.9    | 65.0         | 25           |
| $Y_{d,CIE}$                     | 81.2        | -2.8    | 71.5    | 71.6         | 92           |
| $G_{d,CIE}$                     | 52.2        | -42.4   | 13.6    | 44.5         | 162          |
| $B_{d,CIE}$                     | 30.5        | 1.4     | -46.4   | 46.4         | 271          |

Data for maximum colour (Ma):

$LabCh^*_{d,Ma}$ : 87 -10 95 96 96

$HIC^*_{d,Ma}$ : Y00G\_100\_100d

$rgbic^*_{d,Ma}$ :

1.0 1.0 0.0 1.0 1.0

triangle lightness  $T^*$

% Gamut

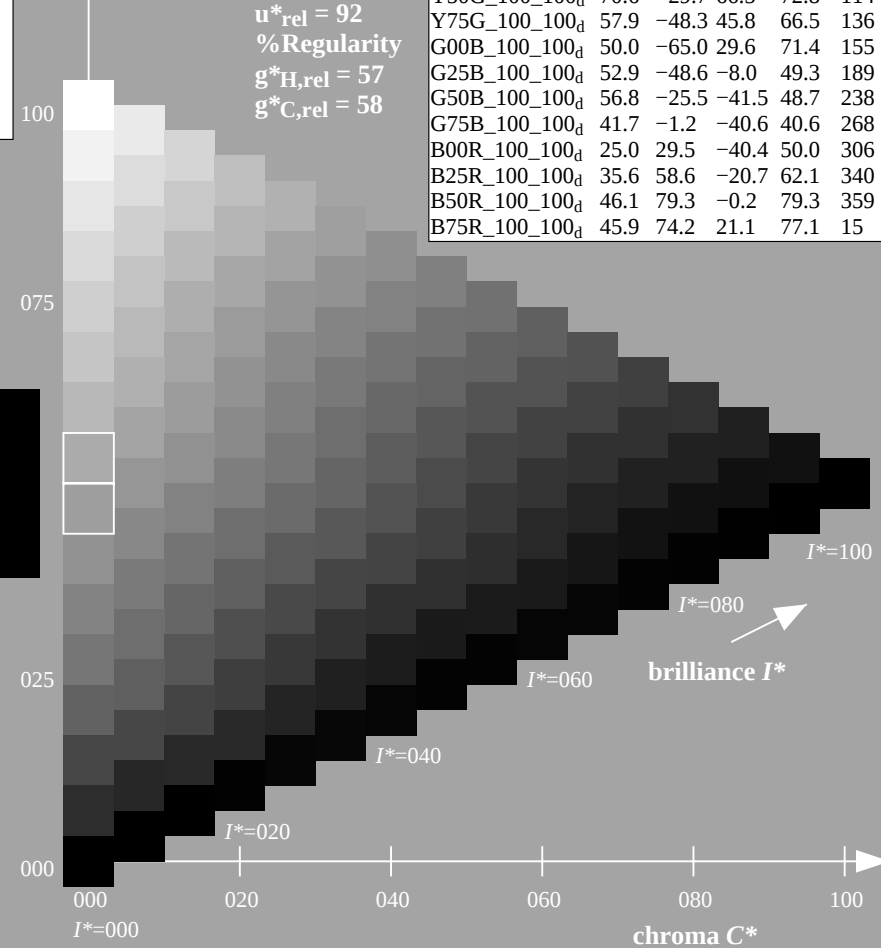
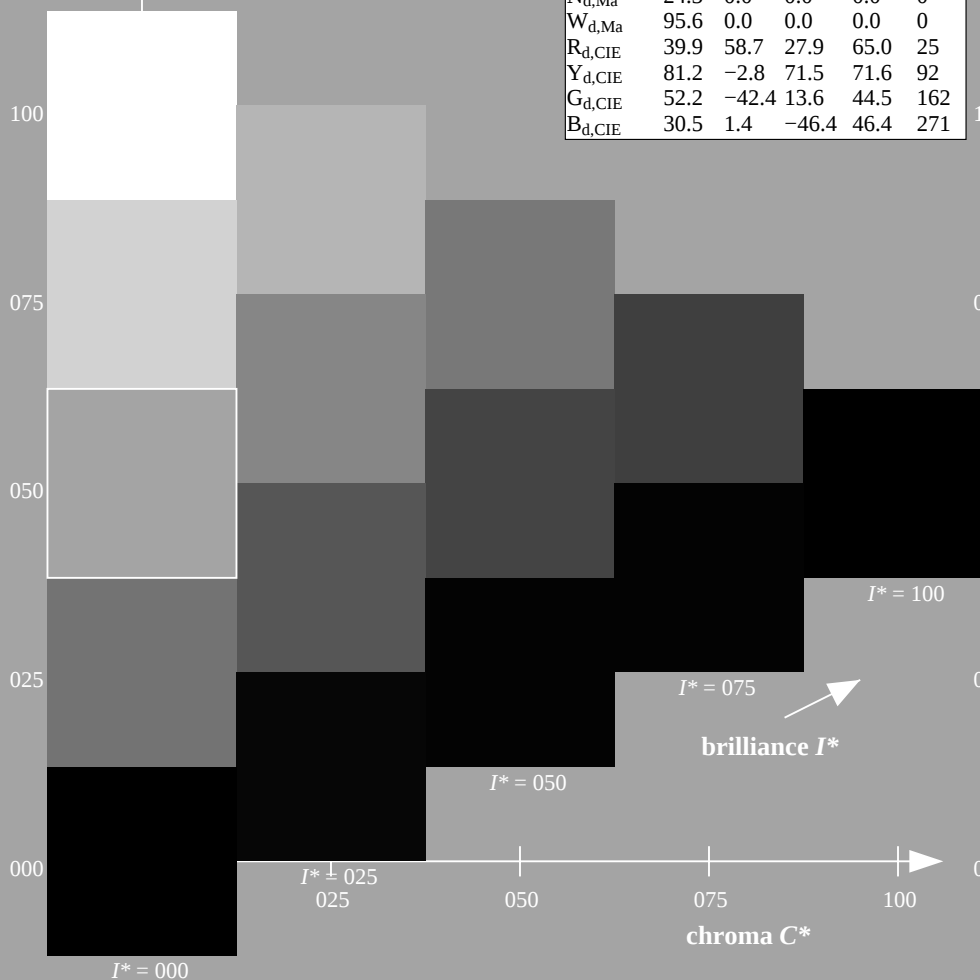
$u^*_{rel} = 92$

% Regularity

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

$g^*_{C,rel} = 58$

| ORS20a; adapted (a) CIELAB data |             |         |         |              |              |
|---------------------------------|-------------|---------|---------|--------------|--------------|
| $H^*_d$                         | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| $R00Y_{100_100d}$               | 45.4        | 70.9    | 44.8    | 83.9         | 32           |
| $R25Y_{100_100d}$               | 53.0        | 53.4    | 54.8    | 76.5         | 45           |
| $R50Y_{100_100d}$               | 64.9        | 28.9    | 68.6    | 74.5         | 67           |
| $R75Y_{100_100d}$               | 78.6        | 4.3     | 84.7    | 84.8         | 87           |
| $Y00G_{100_100d}$               | 87.8        | -10.2   | 95.4    | 96.0         | 96           |
| $Y25G_{100_100d}$               | 81.2        | -17.0   | 84.3    | 86.0         | 101          |
| $Y50G_{100_100d}$               | 70.6        | -29.7   | 66.5    | 72.8         | 114          |
| $Y75G_{100_100d}$               | 57.9        | -48.3   | 45.8    | 66.5         | 136          |
| $G00B_{100_100d}$               | 50.0        | -65.0   | 29.6    | 71.4         | 155          |
| $G25B_{100_100d}$               | 52.9        | -48.6   | -8.0    | 49.3         | 189          |
| $G50B_{100_100d}$               | 56.8        | -25.5   | -41.5   | 48.7         | 238          |
| $G75B_{100_100d}$               | 41.7        | -1.2    | -40.6   | 40.6         | 268          |
| $B00R_{100_100d}$               | 25.0        | 29.5    | -40.4   | 50.0         | 306          |
| $B25R_{100_100d}$               | 35.6        | 58.6    | -20.7   | 62.1         | 340          |
| $B50R_{100_100d}$               | 46.1        | 79.3    | -0.2    | 79.3         | 359          |
| $B75R_{100_100d}$               | 45.9        | 74.2    | 21.1    | 77.1         | 15           |



TUB-test chart QE37; hue code:  $H^*_d=Y00G_d$   
Test chart according to DIN 33872, 3D=1, de=0,  $cmY0^*$

input:  $rgb/cmyk \rightarrow rgb_{dd}$   
output: 3D-linearization to  $cmY0^*_{dd}$



Data of Maximum color M in colorimetric system Offset standard print; separation cmy0\*, D65 for input or output; Six hue angles of the 60 degree standard colours  $RYGCBM_s$ :  $h_{ab,ds} = 30.0, 90.0, 150.0, 210.0, 270.0, 330.0$ ;  
Six hue angles of the device colours  $RYGCBM_d$ :  $h_{ab,d} = 32.3, 96.1, 155.5, 238.4, 306.2, 359.8$ ; Six hue angles of the elementary colours  $RYGCBM_e$ :  $h_{ab,e} = 25.5, 92.3, 162.2, 217.0, 271.7, 328.6$

$J=Y_d$  Yellow

$LCH^*_d = 87.8 \ 96.0 \ 96.1$   
 $LAB^*_d = 87.8 \ -10.2 \ 95.4$   
 $rgb^*_d = 1.0 \ 1.0 \ 0.0$

$L=G_d$  leaf-green

$LCH^*_d = 50.0 \ 71.4 \ 155.5$   
 $LAB^*_d = 50.0 \ -65.0 \ 29.6$   
 $rgb^*_d = 0.0 \ 1.0 \ 0.0$

$C=C_d$  cyan-blue

$LCH^*_d = 56.8 \ 48.7 \ 238.4$   
 $LAB^*_d = 56.8 \ -25.5 \ -41.5$   
 $rgb^*_d = 0.0 \ 1.0 \ 1.0$

$O=R_d$  orange-red

$LCH^*_d = 45.4 \ 83.9 \ 32.3$   
 $LAB^*_d = 45.4 \ 70.9 \ 44.8$   
 $rgb^*_d = 1.0 \ 0.0 \ 0.0$

$M=M_d$  magenta-red

$LCH^*_d = 46.1 \ 79.3 \ 359.8$   
 $LAB^*_d = 46.1 \ 79.3 \ -0.2$   
 $rgb^*_d = 1.0 \ 0.0 \ 1.0$

$V=B_d$  violet-blue

$LCH^*_d = 25.0 \ 50.0 \ 306.2$   
 $LAB^*_d = 25.0 \ 29.5 \ -40.4$   
 $rgb^*_d = 0.0 \ 0.0 \ 1.0$

$Y_e$  yellow

$LCH^*_e = 83.6 \ 90.4 \ 92.3$   
 $LAB^*_e = 83.6 \ -3.6 \ 90.4$   
 $rgb^*_{de} = 1.0 \ 0.878 \ 0.0$

$G_e$  green

$LCH^*_e = 50.6 \ 65.2 \ 162.2$   
 $LAB^*_e = 50.6 \ -62.1 \ 19.9$   
 $rgb^*_{de} = 0.0 \ 1.0 \ 0.151$

$C_e$  blue-green

$LCH^*_e = 55.0 \ 45.3 \ 216.9$   
 $LAB^*_e = 55.0 \ -36.2 \ -27.2$   
 $rgb^*_{de} = 0.0 \ 1.0 \ 0.747$

$B_e$  blue

$LCH^*_e = 40.2 \ 40.6 \ 271.7$   
 $LAB^*_e = 40.2 \ 1.2 \ -40.6$   
 $rgb^*_{de} = 0.0 \ 0.458 \ 1.0$

$R_e$  red

$LCH^*_e = 45.6 \ 80.0 \ 25.4$   
 $LAB^*_e = 45.6 \ 72.2 \ 34.4$   
 $rgb^*_{de} = 1.0 \ 0.0 \ 0.254$

$M_e$  blue-red

$LCH^*_e = 31.1 \ 55.9 \ 328.6$   
 $LAB^*_e = 31.1 \ 47.7 \ -29.1$   
 $rgb^*_{de} = 0.321 \ 0.0 \ 1.0$

$Y_s$  yellow

$LCH^*_s = 81.4 \ 87.9 \ 90.0$   
 $LAB^*_s = 81.4 \ 0.0 \ 87.9$   
 $rgb^*_{ds} = 1.0 \ 0.828 \ 0.0$

$G_s$  green

$LCH^*_s = 52.3 \ 68.9 \ 150.0$   
 $LAB^*_s = 52.3 \ -59.6 \ 34.4$   
 $rgb^*_{ds} = 0.062 \ 1.0 \ 0.0$

$C_s$  blue-green

$LCH^*_s = 54.5 \ 45.7 \ 210.0$   
 $LAB^*_s = 54.5 \ -39.6 \ -22.8$   
 $rgb^*_{ds} = 0.0 \ 1.0 \ 0.685$

$B_s$  blue

$LCH^*_s = 40.9 \ 40.6 \ 270.0$   
 $LAB^*_s = 40.9 \ 0.0 \ -40.6$   
 $rgb^*_{ds} = 0.0 \ 0.479 \ 1.0$

$R_s$  red

$LCH^*_s = 45.5 \ 82.4 \ 30.0$   
 $LAB^*_s = 45.5 \ 71.3 \ 41.2$   
 $rgb^*_{ds} = 1.0 \ 0.0 \ 0.096$

$M_s$  blue-red

$LCH^*_s = 31.6 \ 56.5 \ 330.0$   
 $LAB^*_s = 31.6 \ 49.0 \ -28.2$   
 $rgb^*_{ds} = 0.337 \ 0.0 \ 1.0$

Notes to the CIELAB chroma diagrams ( $a^*_d, b^*_d$ ), ( $a^*_s, b^*_s$ ), ( $a^*_e, b^*_e$ )

1. For the  $rgb^*$ -input values the CIELAB data  $LCH^*$  and  $LAB^*$  have been calculated.

2. For the calculation of the standard hue angle  $h_{ab,s}$  use for any device values  $rgb^*$  the equation:

$$h_{ab,s} = \text{atan} [ r^*_d \cos(30) + g^*_d \cos(150) ] / [ r^*_d \sin(30) + g^*_d \sin(150) + b^*_d \sin(270) ] \quad (1)$$

3. For the 48 or 360 equally spaced standard hue angles  $h_{ab,s}$  of the colours of maximum chroma use the seven hue angles of the 60 degree colours  $s$ :  $h_{ab,si} = 30.0, 90.0, 150.0, 210.0, 270.0, 330.0, 390.0$  ( $i=0,6$ ) and the equations for a 48 and 360 step hue circle:

$$h_{48ab,sij} = h_{ab,si} + j [h_{ab,si+1} - h_{ab,si}] / 8 \quad (i = 0, 1, \dots, 5; j = 0, 1, \dots, 7) \quad (2)$$

$$h_{360ab,sij} = h_{ab,si} + j [h_{ab,si+1} - h_{ab,si}] / 60 \quad (i = 0, 1, \dots, 5; j = 0, 1, \dots, 59) \quad (3)$$

4. For the 48 or 360 elementary hue angles  $h_{ab,e}$  of the colours of maximum chroma use the seven hue angles of the elementary colours  $e$ :  $h_{ab,ei} = 25.5, 92.3, 162.2, 217.0, 271.7, 328.6, 385.5$  ( $i=0,6$ ) and the equations for a 48 and 360 step elementary hue circle:

$$h_{48ab,eij} = h_{ab,ei} + j [h_{ab,ei+1} - h_{ab,ei}] / 8 \quad (i = 0, 1, \dots, 5; j = 0, 1, \dots, 7) \quad (4)$$

$$h_{360ab,eij} = h_{ab,ei} + j [h_{ab,ei+1} - h_{ab,ei}] / 60 \quad (i = 0, 1, \dots, 5; j = 0, 1, \dots, 59) \quad (5)$$

5. For any elementary hue angle  $h_{ab,e}$  there is a well defined device hue angle  $h_{ab,d}$  see the following tables, columns 1 to 5 or 1 to 4.

6. The values  $rgb^*_{de}$  produce the output of the device-independent elementary hues

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QE370-72

$LAB^*_{la0}, YN=0\%$ ,  $XYZ_{nw}=3.6, 4.2, 6.1, 85.4, 89.1, 104.8$ ,  $LAB^*_{nw}=24.4, 0.0, 0.0, 95.6, 0.0, 0.0$

TUB-test chart QE37; hue code:  $H^*_d=Y00G_d$   
48 step hue circles;  $rgb-LabCh^*$ -tables

input:  $rgb/cmyk \rightarrow rgb_{dd}$   
output: 3D-linearization to  $cmy0^*_{dd}$

Output: Offset standard print; separation cmy0\*, D65, page 7/33

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Data of Maximum color M in colorimetric system Offset standard print; separation cmy0\*, D65 for input or output; Six hue angles of the 60 degree standard colours  $RYGCBM_s$ :  $h_{ab,ds} = 30.0, 90.0, 150.0, 210.0, 270.0, 330.0$ ;  
Six hue angles of the device colours  $RYGCBM_d$ :  $h_{ab,d} = 32.3, 96.1, 155.5, 238.4, 306.2, 359.8$ ; Six hue angles of the elementary colours  $RYGCBM_e$ :  $h_{ab,e} = 25.5, 92.3, 162.2, 217.0, 271.7, 328.6$

| $h_{ab,d}$ | $h_{ab,s}$ | $h_{ab,e}$ | $rgb^*_{dd64M}$ | $LAB^*_{dd64M}$ | $LAB^*_{dd64M}$ | $rgb^*_{dex361M}$ | $LAB^*_{dex361M}$ | $rgb^*_{dd}$ | $rgb^*_{ds}$ | $rgb^*_{de}$ |
|------------|------------|------------|-----------------|-----------------|-----------------|-------------------|-------------------|--------------|--------------|--------------|
| 32.3       | 30.0       | 25.4       | 1.0             | 0.0             | 0.0             | 45.4              | 70.9              | 44.8         | 83.9         | 32.3         |
| 38.1       | 37.5       | 33.8       | 1.0             | 0.125           | 0.0             | 48.9              | 62.8              | 49.4         | 79.9         | 38.1         |
| 46.8       | 45.0       | 42.1       | 1.0             | 0.25            | 0.0             | 53.6              | 51.9              | 55.5         | 76.0         | 46.8         |
| 56.9       | 52.5       | 50.5       | 1.0             | 0.375           | 0.0             | 59.1              | 40.3              | 62.0         | 74.0         | 56.9         |
| 67.1       | 60.0       | 58.8       | 1.0             | 0.5             | 0.0             | 64.9              | 28.9              | 68.6         | 74.5         | 67.1         |
| 78.6       | 67.5       | 67.2       | 1.0             | 0.625           | 0.0             | 72.1              | 15.4              | 77.1         | 78.6         | 78.6         |
| 86.2       | 75.0       | 75.6       | 1.0             | 0.75            | 0.0             | 77.9              | 5.4               | 83.8         | 84.0         | 86.2         |
| 92.1       | 82.5       | 83.9       | 1.0             | 0.875           | 0.0             | 83.4              | -3.4              | 90.2         | 90.2         | 92.1         |
| 96.1       | 90.0       | 92.3       | 1.0             | 1.0             | 0.0             | 87.8              | -10.2             | 95.4         | 96.0         | 96.1         |
| 98.8       | 97.5       | 101.0      | 0.875           | 1.0             | 0.0             | 84.3              | -13.9             | 89.2         | 90.3         | 98.8         |
| 101.8      | 105.0      | 109.7      | 0.75            | 1.0             | 0.0             | 80.7              | -17.5             | 83.5         | 85.3         | 101.8        |
| 107.6      | 112.5      | 118.5      | 0.625           | 1.0             | 0.0             | 75.3              | -24.0             | 75.7         | 79.4         | 107.6        |
| 114.0      | 120.0      | 127.2      | 0.5             | 1.0             | 0.0             | 70.6              | -29.7             | 66.5         | 72.8         | 114.0        |
| 121.4      | 127.5      | 136.0      | 0.375           | 1.0             | 0.0             | 65.7              | -35.6             | 58.3         | 68.3         | 121.4        |
| 135.3      | 135.0      | 144.7      | 0.25            | 1.0             | 0.0             | 58.4              | -47.3             | 46.8         | 66.6         | 135.3        |
| 144.4      | 142.5      | 153.4      | 0.125           | 1.0             | 0.0             | 54.7              | -53.9             | 38.5         | 66.3         | 144.4        |
| 155.5      | 150.0      | 162.2      | 0.0             | 1.0             | 0.0             | 50.0              | -65.0             | 29.6         | 71.4         | 155.5        |
| 160.7      | 157.5      | 169.0      | 0.0             | 1.0             | 0.125           | 50.5              | -62.8             | 21.9         | 66.5         | 160.7        |
| 167.7      | 165.0      | 175.9      | 0.0             | 1.0             | 0.25            | 51.2              | -58.9             | 12.7         | 60.3         | 167.7        |
| 176.7      | 172.5      | 182.7      | 0.0             | 1.0             | 0.375           | 52.0              | -54.5             | 3.1          | 54.6         | 176.7        |
| 189.3      | 180.0      | 189.6      | 0.0             | 1.0             | 0.5             | 52.9              | -48.6             | -8.0         | 49.3         | 189.3        |
| 203.2      | 187.5      | 196.4      | 0.0             | 1.0             | 0.625           | 54.0              | -42.3             | -18.1        | 46.1         | 203.2        |
| 217.2      | 195.0      | 203.2      | 0.0             | 1.0             | 0.75            | 55.0              | -36.0             | -27.4        | 45.3         | 217.2        |
| 228.3      | 202.5      | 210.1      | 0.0             | 1.0             | 0.875           | 55.8              | -30.7             | -34.5        | 46.2         | 228.3        |
| 238.4      | 210.0      | 216.9      | 0.0             | 1.0             | 1.0             | 56.8              | -25.5             | -41.5        | 48.7         | 238.4        |
| 242.9      | 217.5      | 223.8      | 0.0             | 0.875           | 1.0             | 54.1              | -21.1             | -41.3        | 46.4         | 242.9        |
| 249.3      | 225.0      | 230.6      | 0.0             | 0.75            | 1.0             | 50.4              | -15.5             | -41.1        | 43.9         | 249.3        |
| 256.9      | 232.5      | 237.5      | 0.0             | 0.625           | 1.0             | 46.5              | -9.4              | -40.8        | 41.9         | 256.9        |
| 268.2      | 240.0      | 244.3      | 0.0             | 0.5             | 1.0             | 41.7              | -1.2              | -40.6        | 40.6         | 268.2        |
| 278.6      | 247.5      | 251.2      | 0.0             | 0.375           | 1.0             | 37.3              | 6.1               | -40.2        | 40.7         | 278.6        |
| 289.6      | 255.0      | 258.0      | 0.0             | 0.25            | 1.0             | 32.8              | 14.3              | -40.2        | 42.7         | 289.6        |
| 299.0      | 262.5      | 264.8      | 0.0             | 0.125           | 1.0             | 28.6              | 22.4              | -40.2        | 46.1         | 299.0        |
| 306.2      | 270.0      | 271.7      | 0.0             | 0.0             | 1.0             | 25.0              | 29.5              | -40.4        | 50.0         | 306.2        |
| 314.7      | 277.5      | 278.8      | 0.125           | 0.0             | 1.0             | 27.9              | 36.0              | -36.4        | 51.2         | 314.7        |
| 322.1      | 285.0      | 285.9      | 0.25            | 0.0             | 1.0             | 28.8              | 41.9              | -32.5        | 53.1         | 322.1        |
| 333.3      | 292.5      | 293.0      | 0.375           | 0.0             | 1.0             | 32.7              | 51.8              | -26.0        | 58.0         | 333.3        |
| 340.5      | 300.0      | 300.1      | 0.5             | 0.0             | 1.0             | 35.6              | 58.6              | -20.7        | 62.1         | 340.5        |
| 347.9      | 307.5      | 307.2      | 0.625           | 0.0             | 1.0             | 38.1              | 65.4              | -14.0        | 66.9         | 347.9        |
| 352.5      | 315.0      | 314.3      | 0.75            | 0.0             | 1.0             | 41.8              | 71.0              | -9.2         | 71.6         | 352.5        |
| 356.1      | 322.5      | 321.4      | 0.875           | 0.0             | 1.0             | 44.2              | 75.2              | -5.0         | 75.3         | 356.1        |
| 359.8      | 330.0      | 328.6      | 1.0             | 0.0             | 1.0             | 46.1              | 79.3              | -0.2         | 79.3         | 359.8        |
| 363.0      | 337.5      | 335.7      | 1.0             | 0.0             | 0.875           | 45.9              | 78.2              | 4.1          | 78.3         | 363.0        |
| 366.4      | 345.0      | 342.8      | 1.0             | 0.0             | 0.75            | 45.9              | 77.1              | 8.6          | 77.6         | 366.4        |
| 371.1      | 352.5      | 349.9      | 1.0             | 0.0             | 0.625           | 46.0              | 75.6              | 14.8         | 77.0         | 371.1        |
| 375.9      | 360.0      | 357.0      | 1.0             | 0.0             | 0.5             | 45.9              | 74.2              | 21.1         | 77.1         | 375.9        |
| 381.2      | 367.5      | 364.1      | 1.0             | 0.0             | 0.375           | 45.8              | 72.9              | 28.3         | 78.3         | 381.2        |
| 385.6      | 375.0      | 371.2      | 1.0             | 0.0             | 0.25            | 45.6              | 72.1              | 34.6         | 80.0         | 385.6        |
| 389.3      | 382.5      | 378.3      | 1.0             | 0.0             | 0.125           | 45.5              | 71.4              | 40.1         | 81.9         | 389.3        |
| 392.3      | 390.0      | 385.4      | 1.0             | 0.0             | 0.0             | 45.4              | 70.9              | 44.8         | 83.9         | 392.3        |

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QE370-72

LAB\*la0, YN=0%, XYZnw=3.6, 4.2, 6.1, 85.4, 89.1, 104.8, LAB\*nw=24.4, 0.0, 0.0, 95.6, 0.0, 0.0

Output: Offset standard print; separation cmy0\*, D65, page 9/33

TUB-test chart QE37; hue code:  $H^*_d=Y00G_d$   
48 step hue circles;  $rgb-LabCh^*$  tables

input:  $rgb/cmyk \rightarrow rgb_{dd}$   
output: 3D-linearization to  $cmy0^*_{dd}$

TUB registration: 20130201-QE37/QE37L0FP.PDF /.PS  
application for measurement of offset print output, separation cmy0\* (CMY0)

TUB material: code=rha4ta

Data of Maximum color M in colorimetric system Offset standard print; separation cmy0\*, D65 for input or output; Six hue angles of the 60 degree standard colours RYGBM<sub>s</sub>:  $h_{ab,ds} = 30.0, 90.0, 150.0, 210.0, 270.0, 330.0$ ;  
Six hue angles of the device colours RYGBM<sub>d</sub>:  $h_{ab,d} = 32.3, 96.1, 155.5, 238.4, 306.2, 359.8$ ; Six hue angles of the elementary colours RYGBM<sub>e</sub>:  $h_{ab,e} = 25.5, 92.3, 162.2, 217.0, 271.7, 328.6$

| Six hue angles of the device colours RYGBM <sub>d</sub> : $h_{ab,d} = 32.3, 96.1, 155.5, 238.4, 306.2, 359.8$ ; Six hue angles of the elementary colours RYGBM <sub>e</sub> : $h_{ab,e} = 25.5, 92.3, 162.2, 217.0, 271.7, 328.6$ |            |            |                  |                             |       |                   |                             |       |                   |                   |                             |       |                   |              |              |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------------|-----------------------------|-------|-------------------|-----------------------------|-------|-------------------|-------------------|-----------------------------|-------|-------------------|--------------|--------------|--------------|
| $h_{ab,d}$                                                                                                                                                                                                                        | $h_{ab,s}$ | $h_{ab,e}$ | $rgb^*_{dd361M}$ | $LAB^*_{ddx361Mi}(x=LabCh)$ | $R_d$ | $rgb^*_{ds361Mi}$ | $LAB^*_{dsx361Mi}(x=LabCh)$ | $R_s$ | $rgb^*_{dd361Mi}$ | $rgb^*_{de361Mi}$ | $LAB^*_{dex361Mi}(x=LabCh)$ | $R_e$ | $rgb^*_{dd361Mi}$ | $rgb^*_{da}$ | $rgb^*_{ds}$ | $rgb^*_{de}$ |
| 32                                                                                                                                                                                                                                | 30         | 25         | 1.0              | 0.0                         | 0.0   | 45.4              | 70.9                        | 44.8  | 83.9              | 32                | 1.0                         | 0.0   | 0.0               | 0.0          |              |              |
| 33                                                                                                                                                                                                                                | 31         | 26         | 1.0              | 0.016                       | 0.0   | 45.9              | 69.8                        | 45.5  | 83.4              | 33                | 1.0                         | 0.0   | 0.017             | 0.0          |              |              |
| 33                                                                                                                                                                                                                                | 32         | 27         | 1.0              | 0.033                       | 0.0   | 46.3              | 68.8                        | 46.1  | 82.8              | 33                | 1.0                         | 0.0   | 0.033             | 0.0          |              |              |
| 34                                                                                                                                                                                                                                | 33         | 28         | 1.0              | 0.05                        | 0.0   | 46.8              | 67.7                        | 46.8  | 82.3              | 34                | 1.0                         | 0.0   | 0.05              | 0.0          |              |              |
| 35                                                                                                                                                                                                                                | 34         | 29         | 1.0              | 0.066                       | 0.0   | 47.3              | 66.6                        | 47.4  | 81.8              | 35                | 1.0                         | 0.0   | 0.067             | 0.0          |              |              |
| 36                                                                                                                                                                                                                                | 35         | 31         | 1.0              | 0.083                       | 0.0   | 47.7              | 65.5                        | 48.0  | 81.2              | 36                | 1.0                         | 0.0   | 0.083             | 0.0          |              |              |
| 36                                                                                                                                                                                                                                | 36         | 32         | 1.0              | 0.1                         | 0.0   | 48.2              | 64.4                        | 48.5  | 80.7              | 36                | 1.0                         | 0.0   | 0.1               | 0.0          |              |              |
| 37                                                                                                                                                                                                                                | 37         | 33         | 1.0              | 0.116                       | 0.0   | 48.6              | 63.3                        | 49.1  | 80.2              | 37                | 1.0                         | 0.021 | 0.0               | 0.117        | 0.0          |              |
| 38                                                                                                                                                                                                                                | 38         | 34         | 1.0              | 0.133                       | 0.0   | 49.2              | 62.1                        | 49.8  | 79.6              | 38                | 1.0                         | 0.044 | 0.0               | 0.133        | 0.0          |              |
| 39                                                                                                                                                                                                                                | 39         | 35         | 1.0              | 0.15                        | 0.0   | 49.8              | 60.7                        | 50.7  | 79.1              | 39                | 1.0                         | 0.068 | 0.0               | 0.15         | 0.0          |              |
| 41                                                                                                                                                                                                                                | 40         | 36         | 1.0              | 0.166                       | 0.0   | 50.5              | 59.2                        | 51.6  | 78.6              | 41                | 1.0                         | 0.092 | 0.0               | 0.167        | 0.0          |              |
| 42                                                                                                                                                                                                                                | 41         | 37         | 1.0              | 0.183                       | 0.0   | 51.1              | 57.8                        | 52.5  | 78.1              | 42                | 1.0                         | 0.116 | 0.0               | 0.183        | 0.0          |              |
| 43                                                                                                                                                                                                                                | 42         | 38         | 1.0              | 0.2                         | 0.0   | 51.7              | 56.3                        | 53.3  | 77.5              | 43                | 1.0                         | 0.135 | 0.0               | 0.2          | 0.0          |              |
| 44                                                                                                                                                                                                                                | 43         | 39         | 1.0              | 0.216                       | 0.0   | 52.4              | 54.9                        | 54.0  | 77.0              | 44                | 1.0                         | 0.151 | 0.0               | 0.217        | 0.0          |              |
| 45                                                                                                                                                                                                                                | 44         | 41         | 1.0              | 0.233                       | 0.0   | 53.0              | 53.4                        | 54.8  | 76.5              | 45                | 1.0                         | 0.167 | 0.0               | 0.233        | 0.0          |              |
| 46                                                                                                                                                                                                                                | 45         | 42         | 1.0              | 0.25                        | 0.0   | 53.6              | 51.9                        | 55.5  | 76.0              | 46                | 1.0                         | 0.183 | 0.0               | 0.25         | 0.0          |              |
| 48                                                                                                                                                                                                                                | 46         | 43         | 1.0              | 0.266                       | 0.0   | 54.4              | 50.4                        | 56.5  | 75.7              | 48                | 1.0                         | 0.198 | 0.0               | 0.267        | 0.0          |              |
| 49                                                                                                                                                                                                                                | 47         | 44         | 1.0              | 0.283                       | 0.0   | 55.1              | 48.9                        | 57.4  | 75.4              | 49                | 1.0                         | 0.214 | 0.0               | 0.283        | 0.0          |              |
| 50                                                                                                                                                                                                                                | 48         | 45         | 1.0              | 0.3                         | 0.0   | 55.8              | 47.4                        | 58.4  | 75.2              | 50                | 1.0                         | 0.23  | 0.0               | 0.3          | 0.0          |              |
| 52                                                                                                                                                                                                                                | 49         | 46         | 1.0              | 0.316                       | 0.0   | 56.6              | 45.8                        | 59.2  | 74.9              | 52                | 1.0                         | 0.246 | 0.0               | 0.317        | 0.0          |              |
| 53                                                                                                                                                                                                                                | 50         | 47         | 1.0              | 0.333                       | 0.0   | 57.3              | 44.2                        | 60.1  | 74.6              | 53                | 1.0                         | 0.261 | 0.0               | 0.333        | 0.0          |              |
| 54                                                                                                                                                                                                                                | 51         | 48         | 1.0              | 0.35                        | 0.0   | 58.0              | 42.7                        | 60.9  | 74.4              | 54                | 1.0                         | 0.274 | 0.0               | 0.35         | 0.0          |              |
| 56                                                                                                                                                                                                                                | 52         | 49         | 1.0              | 0.366                       | 0.0   | 58.8              | 41.1                        | 61.7  | 74.1              | 56                | 1.0                         | 0.288 | 0.0               | 0.367        | 0.0          |              |
| 57                                                                                                                                                                                                                                | 53         | 51         | 1.0              | 0.383                       | 0.0   | 59.5              | 39.5                        | 62.5  | 74.0              | 57                | 1.0                         | 0.302 | 0.0               | 0.383        | 0.0          |              |
| 59                                                                                                                                                                                                                                | 54         | 52         | 1.0              | 0.4                         | 0.0   | 60.3              | 38.1                        | 63.5  | 74.1              | 59                | 1.0                         | 0.316 | 0.0               | 0.4          | 0.0          |              |
| 60                                                                                                                                                                                                                                | 55         | 53         | 1.0              | 0.416                       | 0.0   | 61.0              | 36.6                        | 64.5  | 74.1              | 60                | 1.0                         | 0.33  | 0.0               | 0.417        | 0.0          |              |
| 61                                                                                                                                                                                                                                | 56         | 54         | 1.0              | 0.433                       | 0.0   | 61.8              | 35.1                        | 65.4  | 74.2              | 61                | 1.0                         | 0.343 | 0.0               | 0.433        | 0.0          |              |
| 63                                                                                                                                                                                                                                | 57         | 55         | 1.0              | 0.45                        | 0.0   | 62.6              | 33.6                        | 66.2  | 74.3              | 63                | 1.0                         | 0.357 | 0.0               | 0.45         | 0.0          |              |
| 64                                                                                                                                                                                                                                | 58         | 56         | 1.0              | 0.466                       | 0.0   | 63.3              | 32.0                        | 67.1  | 74.4              | 64                | 1.0                         | 0.371 | 0.0               | 0.467        | 0.0          |              |
| 65                                                                                                                                                                                                                                | 59         | 57         | 1.0              | 0.483                       | 0.0   | 64.1              | 30.5                        | 67.9  | 74.4              | 65                | 1.0                         | 0.385 | 0.0               | 0.483        | 0.0          |              |
| 67                                                                                                                                                                                                                                | 60         | 58         | 1.0              | 0.5                         | 0.0   | 64.9              | 28.9                        | 68.6  | 74.5              | 67                | 1.0                         | 0.398 | 0.0               | 0.5          | 0.0          |              |
| 68                                                                                                                                                                                                                                | 61         | 60         | 1.0              | 0.516                       | 0.0   | 65.8              | 27.2                        | 69.9  | 75.0              | 68                | 1.0                         | 0.412 | 0.0               | 0.517        | 0.0          |              |
| 70                                                                                                                                                                                                                                | 62         | 61         | 1.0              | 0.533                       | 0.0   | 66.8              | 25.5                        | 71.1  | 75.6              | 70                | 1.0                         | 0.426 | 0.0               | 0.533        | 0.0          |              |
| 71                                                                                                                                                                                                                                | 63         | 62         | 1.0              | 0.55                        | 0.0   | 67.7              | 23.8                        | 72.3  | 76.1              | 71                | 1.0                         | 0.439 | 0.0               | 0.55         | 0.0          |              |
| 73                                                                                                                                                                                                                                | 64         | 63         | 1.0              | 0.566                       | 0.0   | 68.7              | 22.0                        | 73.5  | 76.7              | 73                | 1.0                         | 0.453 | 0.0               | 0.567        | 0.0          |              |
| 74                                                                                                                                                                                                                                | 65         | 64         | 1.0              | 0.583                       | 0.0   | 69.7              | 20.2                        | 74.6  | 77.3              | 74                | 1.0                         | 0.467 | 0.0               | 0.583        | 0.0          |              |
| 76                                                                                                                                                                                                                                | 66         | 65         | 1.0              | 0.6                         | 0.0   | 70.6              | 18.3                        | 75.6  | 77.8              | 76                | 1.0                         | 0.48  | 0.0               | 0.6          | 0.0          |              |
| 77                                                                                                                                                                                                                                | 67         | 66         | 1.0              | 0.616                       | 0.0   | 71.6              | 16.4                        | 76.6  | 78.4              | 77                | 1.0                         | 0.494 | 0.0               | 0.617        | 0.0          |              |
| 79                                                                                                                                                                                                                                | 68         | 67         | 1.0              | 0.633                       | 0.0   | 72.5              | 14.8                        | 77.6  | 79.0              | 79                | 1.0                         | 0.507 | 0.0               | 0.633        | 0.0          |              |
| 80                                                                                                                                                                                                                                | 69         | 68         | 1.0              | 0.65                        | 0.0   | 73.2              | 13.6                        | 78.5  | 79.7              | 80                | 1.0                         | 0.519 | 0.0               | 0.65         | 0.0          |              |
| 81                                                                                                                                                                                                                                | 70         | 70         | 1.0              | 0.666                       | 0.0   | 74.0              | 12.3                        | 79.5  | 80.4              | 81                | 1.0                         | 0.531 | 0.0               | 0.667        | 0.0          |              |
| 82                                                                                                                                                                                                                                | 71         | 71         | 1.0              | 0.683                       | 0.0   | 74.8              | 11.0                        | 80.4  | 81.1              | 82                | 1.0                         | 0.543 | 0.0               | 0.683        | 0.0          |              |
| 83                                                                                                                                                                                                                                | 72         | 72         | 1.0              | 0.7                         | 0.0   | 75.6              | 9.6                         | 81.3  | 81.9              | 83                | 1.0                         | 0.555 | 0.0               | 0.7          | 0.0          |              |
| 84                                                                                                                                                                                                                                | 73         | 73         | 1.0              | 0.716                       | 0.0   | 76.3              | 8.3                         | 82.2  | 82.6              | 84                | 1.0                         | 0.568 | 0.0               | 0.717        | 0.0          |              |
| 85                                                                                                                                                                                                                                | 74         | 74         | 1.0              | 0.733                       | 0.0   | 77.1              | 6.9                         | 83.0  | 83.3              | 85                | 1.0                         | 0.58  | 0.0               | 0.733        | 0.0          |              |
| 86                                                                                                                                                                                                                                | 75         | 75         | 1.0              | 0.75                        | 0.0   | 77.9              | 5.4                         | 83.8  | 84.0              | 86                | 1.0                         | 0.592 | 0.0               | 0.75         | 0.0          |              |

1-103931-L0

QE370-72

LAB\*la0, YN=0%, XYZnw=3.6, 4.2, 6.1, 85.4, 89.1, 104.8, LAB\*lw=24.4, 0.0, 0.0, 95.6, 0.0, 0.0

TUB-test chart QE37; hue code: H\*d=Y00Gd  
48 step hue circles; rgb-LabCh\*tables

input: rgb/cmyk -> rgb<sub>dd</sub>

output: 3D-linearization to cmy0\*<sub>dd</sub>

Output: Offset standard print; separation cmy0\*, D65, page 10/33

TUB registration: 20130201-QE37/QE37L0FP.PDF /.PS  
application for measurement of offset print output, separation cmy0\* (CMY0)

TUB material: code=rha4ta

Data of Maximum color M in colorimetric system Offset standard print; separation cmy0\*, D65 for input or output; Six hue angles of the 60 degree standard colours RYGBM<sub>s</sub>:  $h_{ab,ds} = 30.0, 90.0, 150.0, 210.0, 270.0, 330.0$ ;  
Six hue angles of the device colours RYGBM<sub>d</sub>:  $h_{ab,d} = 32.3, 96.1, 155.5, 238.4, 306.2, 359.8$ ; Six hue angles of the elementary colours RYGBM<sub>e</sub>:  $h_{ab,e} = 25.5, 92.3, 162.2, 217.0, 271.7, 328.6$

| $h_{ab,d}$ | $h_{ab,s}$ | $h_{ab,e}$ | $rgb^*_{dd361M}$ | $LAB^*_{d361M}$ | $LAB^*_{ds361Mi}$ | $LAB^*_{ds361Mi}$ | $rgb^*_{dd361Mi}$ | $rgb^*_{de361Mi}$ | $LAB^*_{dex361Mi}$ | $rgb^*_{dd361Mi}$ | $rgb^*_{ds361Mi}$ | $rgb^*_{ds361Mi}$ | $rgb^*_{ds361Mi}$ |
|------------|------------|------------|------------------|-----------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| 86         | 75         | 75         | 1.0              | 0.75            | 0.0               | 77.9              | 5.4               | 83.8              | 84.0               | 86                | 1.0               | 0.585             | 0.0               |
| 87         | 76         | 76         | 1.0              | 0.766           | 0.0               | 78.6              | 4.3               | 84.7              | 84.8               | 87                | 1.0               | 0.596             | 0.0               |
| 87         | 77         | 77         | 1.0              | 0.783           | 0.0               | 79.4              | 3.2               | 85.6              | 85.7               | 87                | 1.0               | 0.607             | 0.0               |
| 88         | 78         | 78         | 1.0              | 0.8             | 0.0               | 80.1              | 2.0               | 86.5              | 86.5               | 88                | 1.0               | 0.618             | 0.0               |
| 89         | 79         | 80         | 1.0              | 0.816           | 0.0               | 80.8              | 0.8               | 87.3              | 87.3               | 89                | 1.0               | 0.631             | 0.0               |
| 90         | 80         | 81         | 1.0              | 0.833           | 0.0               | 81.6              | -0.3              | 88.2              | 88.2               | 90                | 1.0               | 0.647             | 0.0               |
| 91         | 81         | 82         | 1.0              | 0.85            | 0.0               | 82.3              | -1.5              | 89.0              | 89.0               | 91                | 1.0               | 0.664             | 0.0               |
| 91         | 82         | 83         | 1.0              | 0.866           | 0.0               | 83.1              | -2.8              | 89.8              | 89.8               | 91                | 1.0               | 0.68              | 0.0               |
| 92         | 83         | 84         | 1.0              | 0.883           | 0.0               | 83.7              | -3.8              | 90.5              | 90.6               | 92                | 1.0               | 0.697             | 0.0               |
| 92         | 84         | 85         | 1.0              | 0.9             | 0.0               | 84.3              | -4.7              | 91.3              | 91.4               | 92                | 1.0               | 0.713             | 0.0               |
| 93         | 85         | 86         | 1.0              | 0.916           | 0.0               | 84.9              | -5.6              | 92.0              | 92.2               | 93                | 1.0               | 0.729             | 0.0               |
| 94         | 86         | 87         | 1.0              | 0.933           | 0.0               | 85.5              | -6.5              | 92.7              | 92.9               | 94                | 1.0               | 0.746             | 0.0               |
| 94         | 87         | 88         | 1.0              | 0.95            | 0.0               | 86.0              | -7.4              | 93.4              | 93.7               | 94                | 1.0               | 0.766             | 0.0               |
| 95         | 88         | 90         | 1.0              | 0.966           | 0.0               | 86.6              | -8.3              | 94.1              | 94.5               | 95                | 1.0               | 0.787             | 0.0               |
| 95         | 89         | 91         | 1.0              | 0.983           | 0.0               | 87.2              | -9.2              | 94.8              | 95.2               | 95                | 1.0               | 0.808             | 0.0               |
| 96         | 90         | 92         | 1.0              | 1.0             | 0.0               | 87.8              | -10.2             | 95.4              | 96.0               | 96                | 1.0               | 0.829             | 0.0               |
| 96         | 91         | 93         | 0.983            | 1.0             | 0.0               | 87.3              | -10.7             | 94.6              | 95.2               | 96                | 1.0               | 0.85              | 0.0               |
| 96         | 92         | 94         | 0.966            | 1.0             | 0.0               | 86.8              | -11.2             | 93.8              | 94.5               | 96                | 1.0               | 0.871             | 0.0               |
| 97         | 93         | 95         | 0.95             | 1.0             | 0.0               | 86.4              | -11.7             | 93.0              | 93.7               | 97                | 1.0               | 0.901             | 0.0               |
| 97         | 94         | 96         | 0.933            | 1.0             | 0.0               | 85.9              | -12.2             | 92.2              | 93.0               | 97                | 1.0               | 0.933             | 0.0               |
| 97         | 95         | 98         | 0.916            | 1.0             | 0.0               | 85.5              | -12.7             | 91.3              | 92.2               | 97                | 1.0               | 0.965             | 0.0               |
| 98         | 96         | 99         | 0.9              | 1.0             | 0.0               | 85.0              | -13.2             | 90.5              | 91.5               | 98                | 1.0               | 0.997             | 0.0               |
| 98         | 97         | 100        | 0.883            | 1.0             | 0.0               | 84.5              | -13.6             | 89.7              | 90.7               | 98                | 0.959             | 1.0               | 0.0               |
| 99         | 98         | 101        | 0.866            | 1.0             | 0.0               | 84.1              | -14.1             | 88.9              | 90.0               | 99                | 0.914             | 1.0               | 0.0               |
| 99         | 99         | 102        | 0.85             | 1.0             | 0.0               | 83.6              | -14.6             | 88.1              | 89.3               | 99                | 0.869             | 1.0               | 0.0               |
| 99         | 100        | 103        | 0.833            | 1.0             | 0.0               | 83.1              | -15.1             | 87.4              | 88.7               | 99                | 0.827             | 1.0               | 0.0               |
| 100        | 101        | 105        | 0.816            | 1.0             | 0.0               | 82.6              | -15.6             | 86.6              | 88.0               | 100               | 0.785             | 1.0               | 0.0               |
| 100        | 102        | 106        | 0.8              | 1.0             | 0.0               | 82.2              | -16.1             | 85.8              | 87.3               | 100               | 0.747             | 1.0               | 0.0               |
| 101        | 103        | 107        | 0.783            | 1.0             | 0.0               | 81.7              | -16.6             | 85.1              | 86.7               | 101               | 0.725             | 1.0               | 0.0               |
| 101        | 104        | 108        | 0.766            | 1.0             | 0.0               | 81.2              | -17.0             | 84.3              | 86.0               | 101               | 0.703             | 1.0               | 0.0               |
| 101        | 105        | 109        | 0.75             | 1.0             | 0.0               | 80.7              | -17.5             | 83.5              | 85.3               | 101               | 0.682             | 1.0               | 0.0               |
| 102        | 106        | 110        | 0.733            | 1.0             | 0.0               | 80.0              | -18.4             | 82.5              | 84.6               | 102               | 0.66              | 1.0               | 0.0               |
| 103        | 107        | 112        | 0.716            | 1.0             | 0.0               | 79.3              | -19.3             | 81.5              | 83.8               | 103               | 0.638             | 1.0               | 0.0               |
| 104        | 108        | 113        | 0.7              | 1.0             | 0.0               | 78.5              | -20.2             | 80.5              | 83.0               | 104               | 0.617             | 1.0               | 0.0               |
| 104        | 109        | 114        | 0.683            | 1.0             | 0.0               | 77.8              | -21.1             | 79.4              | 82.2               | 104               | 0.598             | 1.0               | 0.0               |
| 105        | 110        | 115        | 0.666            | 1.0             | 0.0               | 77.1              | -22.0             | 78.4              | 81.4               | 105               | 0.579             | 1.0               | 0.0               |
| 106        | 111        | 116        | 0.65             | 1.0             | 0.0               | 76.4              | -22.8             | 77.3              | 80.6               | 106               | 0.559             | 1.0               | 0.0               |
| 107        | 112        | 117        | 0.633            | 1.0             | 0.0               | 75.6              | -23.6             | 76.2              | 79.8               | 107               | 0.54              | 1.0               | 0.0               |
| 108        | 113        | 119        | 0.616            | 1.0             | 0.0               | 75.0              | -24.4             | 75.1              | 79.0               | 108               | 0.521             | 1.0               | 0.0               |
| 108        | 114        | 120        | 0.6              | 1.0             | 0.0               | 74.3              | -25.3             | 73.9              | 78.1               | 108               | 0.501             | 1.0               | 0.0               |
| 109        | 115        | 121        | 0.583            | 1.0             | 0.0               | 73.7              | -26.1             | 72.7              | 77.2               | 109               | 0.484             | 1.0               | 0.0               |
| 110        | 116        | 122        | 0.566            | 1.0             | 0.0               | 73.1              | -26.9             | 71.4              | 76.3               | 110               | 0.467             | 1.0               | 0.0               |
| 111        | 117        | 123        | 0.55             | 1.0             | 0.0               | 72.4              | -27.6             | 70.2              | 75.5               | 111               | 0.45              | 1.0               | 0.0               |
| 112        | 118        | 124        | 0.533            | 1.0             | 0.0               | 71.8              | -28.3             | 69.0              | 74.6               | 112               | 0.433             | 1.0               | 0.0               |
| 113        | 119        | 126        | 0.516            | 1.0             | 0.0               | 71.2              | -29.0             | 67.7              | 73.7               | 113               | 0.416             | 1.0               | 0.0               |
| 114        | 120        | 127        | 0.5              | 1.0             | 0.0               | 70.6              | -29.7             | 66.5              | 72.8               | 114               | 0.399             | 1.0               | 0.0               |

1-1031031-L0 QE370-72 LAB\*la0, YN=0%, XYZnw=3.6, 4.2, 6.1, 85.4, 89.1, 104.8, LAB\*nw=24.4, 0.0, 0.0, 95.6, 0.0, 0.0

Output: Offset standard print; separation cmy0\*, D65, page 11/33

TUB-test chart QE37; hue code:  $H^*_d=Y00G_d$   
48 step hue circles;  $rgb-LabCh^*$  tables

input:  $rgb/cmyk \rightarrow rgb_{dd}$   
output: 3D-linearization to  $cmy0^*_{dd}$

TUB registration: 20130201-QE37/QE37L0FP.PDF /.PS  
application for measurement of offset print output, separation cmy0\* (CMY0)  
TUB material: code=rha4ta



Output: Offset standard print; separation cmy0\*, D65, page 13/33

Output: Offset standard print; separation cmy0\*, D65, page 14/33

input:  $rgb/cmyk \rightarrow rgb_{dd}$   
output: 3D-linearization to  $cmy0^*_{dd}$

Output: Offset standard print; separation cmy0\*, D65, page 15/33

input:  $rgb/cmyk \rightarrow rgb_{dd}$   
output: 3D-linearization to  $cmy0^*_{dd}$

Data of Maximum color M in colorimetric system Offset standard print; separation cmy0\*, D65 for input or output; Six hue angles of the 60 degree standard colours  $RYGCBM_s$ :  $h_{ab,ds} = 30.0, 90.0, 150.0, 210.0, 270.0, 330.0$ ;  
Six hue angles of the device colours  $RYGCBM_d$ :  $h_{ab,d} = 32.3, 96.1, 155.5, 238.4, 306.2, 359.8$ ; Six hue angles of the elementary colours  $RYGCBM_e$ :  $h_{ab,e} = 25.5, 92.3, 162.2, 217.0, 271.7, 328.6$

| $h_{ab,d}$ | $h_{ab,s}$ | $h_{ab,e}$ | $rgb^*_{dd361M}$ | $LAB^*_{d361M}$ | $LAB^*_{ds361Mi}$ | $LAB^*_{ds361Mi}$ | $rgb^*_{ds361Mi}$ | $LAB^*_{ds361Mi}$ | $LAB^*_{ds361Mi}$ | $rgb^*_{dd361Mi}$ | $LAB^*_{de361Mi}$ | $LAB^*_{dex361Mi}$ | $rgb^*_{dd361Mi}$ | $LAB^*_{de361Mi}$ | $LAB^*_{dex361Mi}$ | $rgb^*_{dd361Mi}$ | $rgb^*_{dd}$ | $rgb^*_{ds}$ | $rgb^*_{de}$ |     |     |     |       |     |      |      |       |      |     |       |     |     |     |       |     |      |      |       |      |     |       |     |     |     |       |     |      |      |       |      |     |      |     |     |     |       |     |      |      |       |      |     |       |     |     |     |       |     |      |      |       |      |     |       |     |     |     |       |     |      |      |       |      |     |     |     |     |     |       |     |     |      |      |       |      |     |       |     |     |       |     |     |      |      |       |      |     |       |     |     |       |     |     |      |      |       |      |     |      |     |     |       |     |     |      |      |       |      |     |       |     |     |      |     |     |      |      |       |      |     |       |     |     |       |     |     |      |      |       |      |     |     |     |     |     |     |     |      |      |       |      |     |       |     |     |       |     |     |      |      |       |      |     |       |     |     |      |     |     |      |      |       |      |     |      |     |     |       |     |     |      |      |       |      |     |       |     |     |       |     |     |      |      |       |      |     |       |     |     |      |     |     |      |      |       |      |     |     |     |     |       |     |     |      |      |       |      |     |       |     |     |       |     |     |      |      |       |      |     |       |     |     |      |     |     |      |      |       |      |     |      |     |     |       |     |     |      |      |       |      |     |       |     |     |       |     |     |      |      |       |      |     |       |     |     |      |     |     |      |      |       |      |     |     |     |     |       |     |     |      |      |       |      |     |       |     |     |       |     |     |      |      |       |      |     |       |     |     |       |     |     |      |      |       |      |     |      |     |     |       |     |     |      |      |       |      |     |       |     |     |       |     |     |      |      |       |      |     |       |     |     |       |     |     |      |      |       |      |     |       |     |     |     |       |     |     |      |      |       |      |     |       |     |     |     |       |     |     |      |      |       |      |     |     |     |       |       |     |     |      |      |       |      |     |     |     |       |      |     |     |      |      |       |      |     |     |     |       |       |     |     |      |      |       |      |     |     |     |      |       |     |     |      |      |       |      |     |     |     |       |       |     |     |      |      |       |      |     |     |     |       |       |     |     |      |      |       |      |     |     |     |     |       |     |     |      |      |       |      |     |     |     |       |       |     |     |      |      |       |      |     |     |     |       |       |     |     |      |      |       |      |     |     |     |      |       |     |     |      |      |       |      |     |     |     |       |       |     |     |      |      |       |      |     |     |     |       |       |     |     |      |      |       |      |     |     |     |     |       |     |     |      |      |       |      |     |     |     |       |       |     |     |      |      |       |      |     |     |     |       |       |     |     |      |      |       |      |     |     |     |      |       |     |     |      |      |       |      |     |     |     |      |
|------------|------------|------------|------------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|-------------------|--------------------|-------------------|--------------|--------------|--------------|-----|-----|-----|-------|-----|------|------|-------|------|-----|-------|-----|-----|-----|-------|-----|------|------|-------|------|-----|-------|-----|-----|-----|-------|-----|------|------|-------|------|-----|------|-----|-----|-----|-------|-----|------|------|-------|------|-----|-------|-----|-----|-----|-------|-----|------|------|-------|------|-----|-------|-----|-----|-----|-------|-----|------|------|-------|------|-----|-----|-----|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|-------|-----|-----|------|------|-------|------|-----|------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|------|-----|-----|------|------|-------|------|-----|-------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-----|-----|-----|-----|-----|-----|------|------|-------|------|-----|-------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|------|-----|-----|------|------|-------|------|-----|------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|------|-----|-----|------|------|-------|------|-----|-----|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|------|-----|-----|------|------|-------|------|-----|------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|------|-----|-----|------|------|-------|------|-----|-----|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|-------|-----|-----|------|------|-------|------|-----|------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|-----|-------|-----|-----|------|------|-------|------|-----|-------|-----|-----|-----|-------|-----|-----|------|------|-------|------|-----|-----|-----|-------|-------|-----|-----|------|------|-------|------|-----|-----|-----|-------|------|-----|-----|------|------|-------|------|-----|-----|-----|-------|-------|-----|-----|------|------|-------|------|-----|-----|-----|------|-------|-----|-----|------|------|-------|------|-----|-----|-----|-------|-------|-----|-----|------|------|-------|------|-----|-----|-----|-------|-------|-----|-----|------|------|-------|------|-----|-----|-----|-----|-------|-----|-----|------|------|-------|------|-----|-----|-----|-------|-------|-----|-----|------|------|-------|------|-----|-----|-----|-------|-------|-----|-----|------|------|-------|------|-----|-----|-----|------|-------|-----|-----|------|------|-------|------|-----|-----|-----|-------|-------|-----|-----|------|------|-------|------|-----|-----|-----|-------|-------|-----|-----|------|------|-------|------|-----|-----|-----|-----|-------|-----|-----|------|------|-------|------|-----|-----|-----|-------|-------|-----|-----|------|------|-------|------|-----|-----|-----|-------|-------|-----|-----|------|------|-------|------|-----|-----|-----|------|-------|-----|-----|------|------|-------|------|-----|-----|-----|------|
| 340        | 300        | 300        | 0.5              | 0.0             | 1.0               | 35.6              | 58.6              | -20.7             | 62.1              | 340               | 0.0               | 0.109              | 1.0               | 28.2              | 23.3               | -40.3             | 46.6         | 300          | 0.5          | 0.0 | 1.0 | 0.0 | 0.089 | 1.0 | 27.6 | 24.4 | -40.3 | 47.2 | 301 | 0.517 | 0.0 | 1.0 | 0.0 | 0.073 | 1.0 | 27.2 | 25.4 | -40.4 | 47.8 | 302 | 0.533 | 0.0 | 1.0 | 0.0 | 0.056 | 1.0 | 26.7 | 26.3 | -40.4 | 48.3 | 303 | 0.55 | 0.0 | 1.0 | 0.0 | 0.039 | 1.0 | 26.2 | 27.3 | -40.4 | 48.9 | 304 | 0.567 | 0.0 | 1.0 | 0.0 | 0.023 | 1.0 | 25.7 | 28.2 | -40.4 | 49.4 | 304 | 0.583 | 0.0 | 1.0 | 0.0 | 0.004 | 1.0 | 25.2 | 29.4 | -40.3 | 50.0 | 306 | 0.6 | 0.0 | 1.0 | 0.0 | 0.009 | 0.0 | 1.0 | 25.3 | 30.1 | -40.1 | 50.2 | 306 | 0.617 | 0.0 | 1.0 | 0.026 | 0.0 | 1.0 | 25.7 | 31.0 | -39.6 | 50.3 | 308 | 0.633 | 0.0 | 1.0 | 0.041 | 0.0 | 1.0 | 26.0 | 31.8 | -39.1 | 50.5 | 309 | 0.65 | 0.0 | 1.0 | 0.056 | 0.0 | 1.0 | 26.3 | 32.5 | -38.7 | 50.6 | 310 | 0.667 | 0.0 | 1.0 | 0.07 | 0.0 | 1.0 | 26.7 | 33.3 | -38.2 | 50.8 | 311 | 0.683 | 0.0 | 1.0 | 0.085 | 0.0 | 1.0 | 27.0 | 34.1 | -37.7 | 50.9 | 312 | 0.7 | 0.0 | 1.0 | 0.1 | 0.0 | 1.0 | 27.3 | 34.8 | -37.2 | 51.0 | 313 | 0.717 | 0.0 | 1.0 | 0.114 | 0.0 | 1.0 | 27.7 | 35.5 | -36.7 | 51.2 | 314 | 0.733 | 0.0 | 1.0 | 0.13 | 0.0 | 1.0 | 27.9 | 36.3 | -36.2 | 51.3 | 315 | 0.75 | 0.0 | 1.0 | 0.146 | 0.0 | 1.0 | 28.1 | 37.1 | -35.7 | 51.6 | 316 | 0.767 | 0.0 | 1.0 | 0.163 | 0.0 | 1.0 | 28.2 | 37.9 | -35.3 | 51.8 | 317 | 0.783 | 0.0 | 1.0 | 0.18 | 0.0 | 1.0 | 28.3 | 38.7 | -34.8 | 52.1 | 318 | 0.8 | 0.0 | 1.0 | 0.197 | 0.0 | 1.0 | 28.5 | 39.5 | -34.2 | 52.4 | 319 | 0.817 | 0.0 | 1.0 | 0.213 | 0.0 | 1.0 | 28.6 | 40.3 | -33.7 | 52.6 | 320 | 0.833 | 0.0 | 1.0 | 0.23 | 0.0 | 1.0 | 28.7 | 41.1 | -33.2 | 52.9 | 321 | 0.85 | 0.0 | 1.0 | 0.247 | 0.0 | 1.0 | 28.9 | 41.9 | -32.6 | 53.1 | 322 | 0.867 | 0.0 | 1.0 | 0.259 | 0.0 | 1.0 | 29.2 | 42.7 | -32.1 | 53.5 | 323 | 0.883 | 0.0 | 1.0 | 0.27 | 0.0 | 1.0 | 29.5 | 43.7 | -31.6 | 54.0 | 324 | 0.9 | 0.0 | 1.0 | 0.282 | 0.0 | 1.0 | 29.9 | 44.6 | -31.1 | 54.4 | 325 | 0.917 | 0.0 | 1.0 | 0.293 | 0.0 | 1.0 | 30.2 | 45.5 | -30.6 | 54.8 | 326 | 0.933 | 0.0 | 1.0 | 0.304 | 0.0 | 1.0 | 30.6 | 46.4 | -30.0 | 55.3 | 327 | 0.95 | 0.0 | 1.0 | 0.315 | 0.0 | 1.0 | 30.9 | 47.2 | -29.4 | 55.7 | 328 | 0.967 | 0.0 | 1.0 | 0.326 | 0.0 | 1.0 | 31.3 | 48.1 | -28.8 | 56.1 | 329 | 0.983 | 0.0 | 1.0 | 0.337 | 0.0 | 1.0 | 31.6 | 49.0 | -28.2 | 56.6 | 330 | $M_s$ | 1.0 | 0.0 | 1.0 | 0.322 | 0.0 | 1.0 | 31.1 | 47.8 | -29.1 | 56.0 | 328 | $M_e$ | 1.0 | 0.0 | 1.0 | 0.349 | 0.0 | 1.0 | 32.0 | 49.9 | -27.5 | 57.0 | 331 | 1.0 | 0.0 | 0.983 | 0.332 | 0.0 | 1.0 | 31.5 | 48.6 | -28.5 | 56.4 | 329 | 1.0 | 0.0 | 0.983 | 0.36 | 0.0 | 1.0 | 32.3 | 50.7 | -26.9 | 57.5 | 332 | 1.0 | 0.0 | 0.967 | 0.371 | 0.0 | 1.0 | 32.7 | 51.6 | -26.2 | 57.9 | 333 | 1.0 | 0.0 | 0.95 | 0.386 | 0.0 | 1.0 | 33.0 | 52.5 | -25.5 | 58.4 | 334 | 1.0 | 0.0 | 0.933 | 0.404 | 0.0 | 1.0 | 33.4 | 53.5 | -24.8 | 59.0 | 335 | 1.0 | 0.0 | 0.917 | 0.421 | 0.0 | 1.0 | 33.8 | 54.4 | -24.1 | 59.6 | 336 | 1.0 | 0.0 | 0.9 | 0.438 | 0.0 | 1.0 | 34.2 | 55.4 | -23.4 | 60.1 | 337 | 1.0 | 0.0 | 0.883 | 0.456 | 0.0 | 1.0 | 34.6 | 56.3 | -22.6 | 60.7 | 338 | 1.0 | 0.0 | 0.867 | 0.473 | 0.0 | 1.0 | 35.0 | 57.2 | -21.9 | 61.3 | 339 | 1.0 | 0.0 | 0.85 | 0.491 | 0.0 | 1.0 | 35.4 | 58.1 | -21.1 | 61.9 | 340 | 1.0 | 0.0 | 0.833 | 0.508 | 0.0 | 1.0 | 35.8 | 59.1 | -20.2 | 62.5 | 341 | 1.0 | 0.0 | 0.817 | 0.525 | 0.0 | 1.0 | 36.1 | 60.0 | -19.4 | 63.1 | 342 | 1.0 | 0.0 | 0.8 | 0.542 | 0.0 | 1.0 | 36.4 | 61.0 | -18.5 | 63.8 | 343 | 1.0 | 0.0 | 0.783 | 0.559 | 0.0 | 1.0 | 36.8 | 61.9 | -17.7 | 64.4 | 344 | 1.0 | 0.0 | 0.767 | 0.576 | 0.0 | 1.0 | 37.1 | 62.9 | -16.7 | 65.1 | 345 | 1.0 | 0.0 | 0.75 | 0.539 | 0.0 | 1.0 | 36.4 | 60.8 | -18.7 | 63.7 | 342 | 1.0 | 0.0 | 0.75 |

1-1031531-L0 QE370-72 LAB\*la0, YN=0%, XYZnw=3.6, 4.2, 6.1, 85.4, 89.1, 104.8, LAB\*nw=24.4, 0.0, 0.0, 95.6, 0.0, 0.0

Output: Offset standard print; separation cmy0\*, D65, page 16/33

TUB-test chart QE37; hue code:  $H^*_d=Y00G_d$   
48 step hue circles;  $rgb-LabCh$ \*tables

input:  $rgb/cmyk \rightarrow rgb_{dd}$   
output: 3D-linearization to  $cmy0^*_{dd}$

TUB registration: 20130201-QE37/QE37L0FP.PDF /.PS  
application for measurement of offset print output, separation cmy0\* (CMY0)

TUB material: code=rha4ta

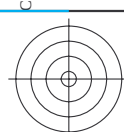
TUB registration: 20130201-QE37/QE37L0FP.PDF / .PS  
application for measurement of offset print output, separa-

Output: Offset standard print; separation cmv0\*, D65, page 17/3

input:  $rgb/cmyk \rightarrow rgb_{dd}$   
output: 3D-linearization to  $cmy0^*_{dd}$







http://130.149.60.45/~farbmatrik/QE37/QE37L0FP.PDF /PS; 3D-linearization  
F: 3D-linearization QE37/QE37LE30FP.DAT in file (F), page 20/33

| n-j | HfC_Fid        | rgb_Fid | lcr_Fid | hsa_Fid | rgb*_Fid | LabCh*_Fid | cmyn*_sep_Fid | hsa_id | rgb*_id | LabCh*_id | delta |
|-----|----------------|---------|---------|---------|----------|------------|---------------|--------|---------|-----------|-------|
| 0   | 0              | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 1   | NW_000_00      | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 2   | B00R_012_0124d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 3   | B00R_025_0254d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 4   | B00R_037_0374d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 5   | B00R_050_0504d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 6   | B00R_062_0624d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 7   | B00R_075_0754d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 8   | B00R_087_0874d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 9   | B00R_100_1004d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 10  | G00B_012_0124d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 11  | G00B_025_0254d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 12  | G00B_037_0374d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 13  | G00B_050_0504d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 14  | G00B_062_0624d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 15  | G00B_075_0754d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 16  | G00B_087_0874d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 17  | G00B_100_1004d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 18  | G00B_025_0254d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 19  | G00B_037_0374d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 20  | G00B_050_0504d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 21  | G00B_062_0624d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 22  | G00B_075_0754d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 23  | G00B_087_0874d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 24  | G00B_100_1004d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 25  | G00B_012_0124d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 26  | G00B_025_0254d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 27  | G00B_037_0374d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 28  | G00B_050_0504d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 29  | G00B_062_0624d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 30  | G00B_075_0754d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 31  | G00B_087_0874d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 32  | G00B_100_1004d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 33  | G00B_012_0124d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 34  | G00B_025_0254d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 35  | G00B_037_0374d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 36  | G00B_050_0504d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 37  | G00B_062_0624d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 38  | G00B_075_0754d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 39  | G00B_087_0874d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 40  | G00B_100_1004d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 41  | G00B_012_0124d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 42  | G00B_025_0254d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 43  | G00B_037_0374d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 44  | G00B_050_0504d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 45  | G00B_062_0624d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 46  | G00B_075_0754d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 47  | G00B_087_0874d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 48  | G00B_100_1004d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 49  | G00B_012_0124d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 50  | G00B_025_0254d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 51  | G00B_037_0374d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 52  | G00B_050_0504d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 53  | G00B_062_0624d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 54  | G00B_075_0754d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 55  | G00B_087_0874d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 56  | G00B_100_1004d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 57  | G00B_012_0124d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 58  | G00B_025_0254d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 59  | G00B_037_0374d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 60  | G00B_050_0504d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 61  | G00B_062_0624d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 62  | G00B_075_0754d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 63  | G00B_087_0874d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 64  | G00B_100_1004d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 65  | G00B_012_0124d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 66  | G00B_025_0254d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 67  | G00B_037_0374d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 68  | G00B_050_0504d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 69  | G00B_062_0624d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 70  | G00B_075_0754d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 71  | G00B_087_0874d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 72  | G00B_100_1004d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 73  | G00B_012_0124d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 74  | G00B_025_0254d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 75  | G00B_037_0374d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 76  | G00B_050_0504d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 77  | G00B_062_0624d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 78  | G00B_075_0754d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 79  | G00B_087_0874d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |
| 80  | G00B_100_1004d | 0       | 0       | 0       | 0        | 0          | 0             | 0      | 0       | 0         | 0     |

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QE370-7N, Page 20/33-F

TUB-test chart QE37; hue code: H\*\_d=Y00Gd  
colors and differences, ΔE,\*

input: rgb/cmyk -> rgbdd  
output: 3D-linearization to cmy0\*dd











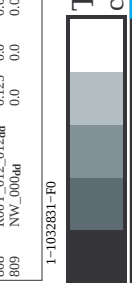
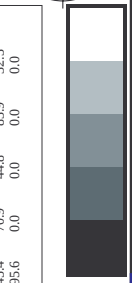
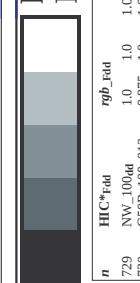






TUB registration: 20130201-QE37/QE37L0FP.PDF /.PS application for measurement of offset print output, separation cmy0\* (CMY0)

see similar files: <http://130.149.60.45/~farbmatrik/QE37/QE37L0FP.PDF> /.PS; 3D-linearization technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmatrik>



http://130.149.60.45/~farbmatrik/QE37/QE37L0FP.PDF /.PS; 3D-linearization F: 3D-linearization QE37/QE37L0FP.DAT in file (F), page 29/33

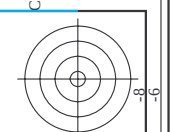
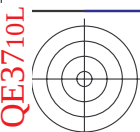
input: *rgb/cmyk* -> *rgbbd*  
output: 3D-linearization to *cmy0\**dd

| n   | HC*Field       | rgb_Field | lcr_Field | hsa_Field | rgb*Field | LabCh*Field | cmy0*sep_Field | hax_id | rgbb*Field | LabCh*Mid | delta |
|-----|----------------|-----------|-----------|-----------|-----------|-------------|----------------|--------|------------|-----------|-------|
| 729 | NW_100Ad       | 0.875     | 1.0       | 1.0       | 1.0       | 95.6        | 0.0            | 360    | 1.0        | 95.6      | 0.0   |
| 730 | G50B_100.012Ad | 0.875     | 1.0       | 1.0       | 1.0       | 90.7        | -3.1           | 210    | 1.0        | 56.8      | -25.5 |
| 731 | G50B_100.025Ad | 0.875     | 1.0       | 1.0       | 1.0       | 85.9        | -6.3           | 210    | 1.0        | 56.8      | -25.5 |
| 732 | G50B_100.037Ad | 0.875     | 1.0       | 1.0       | 1.0       | 81.1        | -9.5           | 210    | 1.0        | 56.8      | -25.5 |
| 733 | G50B_100.050Ad | 0.875     | 1.0       | 1.0       | 1.0       | 76.2        | -12.7          | 210    | 1.0        | 56.8      | -25.5 |
| 734 | G50B_100.062Ad | 0.875     | 1.0       | 1.0       | 1.0       | 71.3        | -15.9          | 210    | 1.0        | 56.8      | -25.5 |
| 735 | G50B_100.075Ad | 0.875     | 1.0       | 1.0       | 1.0       | 66.5        | -19.1          | 210    | 1.0        | 56.8      | -25.5 |
| 736 | G50B_100.087Ad | 0.875     | 1.0       | 1.0       | 1.0       | 61.6        | -22.3          | 210    | 1.0        | 56.8      | -25.5 |
| 737 | G50B_100.100Ad | 0.875     | 1.0       | 1.0       | 1.0       | 56.8        | -25.5          | 210    | 1.0        | 56.8      | -25.5 |
| 738 | ROY_100.012Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 89.3        | 8.8            | 360    | 1.0        | 95.6      | 0.0   |
| 739 | ROY_100.025Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 84.4        | 5.6            | 360    | 1.0        | 95.6      | 0.0   |
| 740 | ROY_100.037Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 79.5        | 2.4            | 360    | 1.0        | 95.6      | 0.0   |
| 741 | ROY_100.050Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 74.6        | 0.0            | 360    | 1.0        | 95.6      | 0.0   |
| 742 | ROY_100.062Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 69.7        | -2.8           | 360    | 1.0        | 95.6      | 0.0   |
| 743 | ROY_100.075Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 64.8        | -5.6           | 360    | 1.0        | 95.6      | 0.0   |
| 744 | ROY_100.087Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 59.9        | -8.4           | 360    | 1.0        | 95.6      | 0.0   |
| 745 | ROY_100.100Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 55.0        | -11.2          | 360    | 1.0        | 95.6      | 0.0   |
| 746 | ROY_100.012Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 50.1        | -14.0          | 360    | 1.0        | 95.6      | 0.0   |
| 747 | ROY_100.025Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 45.2        | -16.8          | 360    | 1.0        | 95.6      | 0.0   |
| 748 | ROY_100.037Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 40.3        | -19.6          | 360    | 1.0        | 95.6      | 0.0   |
| 749 | ROY_100.050Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 35.4        | -22.4          | 360    | 1.0        | 95.6      | 0.0   |
| 750 | ROY_100.062Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 30.5        | -25.2          | 360    | 1.0        | 95.6      | 0.0   |
| 751 | ROY_100.075Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 25.6        | -28.0          | 360    | 1.0        | 95.6      | 0.0   |
| 752 | ROY_100.087Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 20.7        | -30.8          | 360    | 1.0        | 95.6      | 0.0   |
| 753 | ROY_100.100Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 15.8        | -33.6          | 360    | 1.0        | 95.6      | 0.0   |
| 754 | ROY_100.012Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 10.9        | -36.4          | 360    | 1.0        | 95.6      | 0.0   |
| 755 | ROY_100.025Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 6.0         | -39.2          | 360    | 1.0        | 95.6      | 0.0   |
| 756 | ROY_100.037Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 1.1         | -42.0          | 360    | 1.0        | 95.6      | 0.0   |
| 757 | ROY_100.050Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -44.8          | 360    | 1.0        | 95.6      | 0.0   |
| 758 | ROY_100.062Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -47.6          | 360    | 1.0        | 95.6      | 0.0   |
| 759 | ROY_100.075Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -50.4          | 360    | 1.0        | 95.6      | 0.0   |
| 760 | ROY_100.087Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -53.2          | 360    | 1.0        | 95.6      | 0.0   |
| 761 | ROY_100.100Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -56.0          | 360    | 1.0        | 95.6      | 0.0   |
| 762 | ROY_100.012Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -58.8          | 360    | 1.0        | 95.6      | 0.0   |
| 763 | ROY_100.025Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -61.6          | 360    | 1.0        | 95.6      | 0.0   |
| 764 | ROY_100.037Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -64.4          | 360    | 1.0        | 95.6      | 0.0   |
| 765 | ROY_100.050Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -67.2          | 360    | 1.0        | 95.6      | 0.0   |
| 766 | ROY_100.062Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -70.0          | 360    | 1.0        | 95.6      | 0.0   |
| 767 | ROY_100.075Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -72.8          | 360    | 1.0        | 95.6      | 0.0   |
| 768 | ROY_100.087Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -75.6          | 360    | 1.0        | 95.6      | 0.0   |
| 769 | ROY_100.100Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -78.4          | 360    | 1.0        | 95.6      | 0.0   |
| 770 | ROY_100.012Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -81.2          | 360    | 1.0        | 95.6      | 0.0   |
| 771 | ROY_100.025Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -84.0          | 360    | 1.0        | 95.6      | 0.0   |
| 772 | ROY_100.037Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -86.8          | 360    | 1.0        | 95.6      | 0.0   |
| 773 | ROY_100.050Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -89.6          | 360    | 1.0        | 95.6      | 0.0   |
| 774 | ROY_100.062Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -92.4          | 360    | 1.0        | 95.6      | 0.0   |
| 775 | ROY_100.075Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -95.2          | 360    | 1.0        | 95.6      | 0.0   |
| 776 | ROY_100.087Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -98.0          | 360    | 1.0        | 95.6      | 0.0   |
| 777 | ROY_100.100Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -100.8         | 360    | 1.0        | 95.6      | 0.0   |
| 778 | ROY_100.012Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -103.6         | 360    | 1.0        | 95.6      | 0.0   |
| 779 | ROY_100.025Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -106.4         | 360    | 1.0        | 95.6      | 0.0   |
| 780 | ROY_100.037Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -109.2         | 360    | 1.0        | 95.6      | 0.0   |
| 781 | ROY_100.050Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -112.0         | 360    | 1.0        | 95.6      | 0.0   |
| 782 | ROY_100.062Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -114.8         | 360    | 1.0        | 95.6      | 0.0   |
| 783 | ROY_100.075Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -117.6         | 360    | 1.0        | 95.6      | 0.0   |
| 784 | ROY_100.087Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -120.4         | 360    | 1.0        | 95.6      | 0.0   |
| 785 | ROY_100.100Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -123.2         | 360    | 1.0        | 95.6      | 0.0   |
| 786 | ROY_100.012Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -126.0         | 360    | 1.0        | 95.6      | 0.0   |
| 787 | ROY_100.025Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -128.8         | 360    | 1.0        | 95.6      | 0.0   |
| 788 | ROY_100.037Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -131.6         | 360    | 1.0        | 95.6      | 0.0   |
| 789 | ROY_100.050Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -134.4         | 360    | 1.0        | 95.6      | 0.0   |
| 790 | ROY_100.062Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -137.2         | 360    | 1.0        | 95.6      | 0.0   |
| 791 | ROY_100.075Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -140.0         | 360    | 1.0        | 95.6      | 0.0   |
| 792 | ROY_100.087Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -142.8         | 360    | 1.0        | 95.6      | 0.0   |
| 793 | ROY_100.100Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -145.6         | 360    | 1.0        | 95.6      | 0.0   |
| 794 | ROY_100.012Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -148.4         | 360    | 1.0        | 95.6      | 0.0   |
| 795 | ROY_100.025Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -151.2         | 360    | 1.0        | 95.6      | 0.0   |
| 796 | ROY_100.037Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -154.0         | 360    | 1.0        | 95.6      | 0.0   |
| 797 | ROY_100.050Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -156.8         | 360    | 1.0        | 95.6      | 0.0   |
| 798 | ROY_100.062Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -159.6         | 360    | 1.0        | 95.6      | 0.0   |
| 799 | ROY_100.075Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -162.4         | 360    | 1.0        | 95.6      | 0.0   |
| 800 | ROY_100.087Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -165.2         | 360    | 1.0        | 95.6      | 0.0   |
| 801 | ROY_100.100Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -168.0         | 360    | 1.0        | 95.6      | 0.0   |
| 802 | ROY_100.012Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -170.8         | 360    | 1.0        | 95.6      | 0.0   |
| 803 | ROY_100.025Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -173.6         | 360    | 1.0        | 95.6      | 0.0   |
| 804 | ROY_100.037Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -176.4         | 360    | 1.0        | 95.6      | 0.0   |
| 805 | ROY_100.050Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -179.2         | 360    | 1.0        | 95.6      | 0.0   |
| 806 | ROY_100.062Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -182.0         | 360    | 1.0        | 95.6      | 0.0   |
| 807 | ROY_100.075Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -184.8         | 360    | 1.0        | 95.6      | 0.0   |
| 808 | ROY_100.087Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -187.6         | 360    | 1.0        | 95.6      | 0.0   |
| 809 | ROY_100.100Ad  | 0.875     | 1.0       | 1.0       | 1.0       | 0.0         | -190.4         | 360    | 1.0        | 95.6      | 0.0   |

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TUB-test chart QE37; hue code: H\*d=Y00Gd colors and differences, ΔE\*





| n   | HVC-Fid        | rgb-Fid | icr-Fid | hsa-Fid | rgb*Fid | LabCh*Fid | cmyk*sep-Fid | rgb*Mid | hsa*Mid | LabCh*Mid | delta |
|-----|----------------|---------|---------|---------|---------|-----------|--------------|---------|---------|-----------|-------|
| 891 | NW_1000ad      | 1.0     | 1.0     | 1.0     | 1.0     | 95.6      | 0.0          | 1.0     | 360     | 95.6      | 0.0   |
| 892 | B50R_100.012ad | 0.875   | 1.0     | 0.875   | 1.0     | 89.4      | 0.0          | 1.0     | 330     | 89.4      | 0.0   |
| 893 | B50R_100.025ad | 0.75    | 1.0     | 0.75    | 1.0     | 83.2      | 0.0          | 1.0     | 330     | 83.2      | 0.0   |
| 894 | B50R_100.037ad | 0.625   | 1.0     | 0.625   | 1.0     | 77.0      | 0.0          | 1.0     | 330     | 77.0      | 0.0   |
| 895 | B50R_100.050ad | 0.5     | 1.0     | 0.5     | 1.0     | 70.8      | 0.0          | 1.0     | 330     | 70.8      | 0.0   |
| 896 | B50R_100.062ad | 0.375   | 1.0     | 0.375   | 1.0     | 64.6      | 0.0          | 1.0     | 330     | 64.6      | 0.0   |
| 897 | B50R_100.075ad | 0.25    | 1.0     | 0.25    | 1.0     | 58.4      | 0.0          | 1.0     | 330     | 58.4      | 0.0   |
| 898 | B50R_100.087ad | 0.125   | 1.0     | 0.125   | 1.0     | 52.3      | 0.0          | 1.0     | 330     | 52.3      | 0.0   |
| 899 | B50R_100.100ad | 0.0     | 1.0     | 0.0     | 1.0     | 46.1      | 0.0          | 1.0     | 330     | 46.1      | 0.0   |
| 900 | GOB_100.012ad  | 0.875   | 1.0     | 0.875   | 1.0     | 89.4      | 0.0          | 1.0     | 360     | 89.4      | 0.0   |
| 901 | NW_087ad       | 0.875   | 0.875   | 0.875   | 0.875   | 86.7      | 0.0          | 0.875   | 360     | 86.7      | 0.0   |
| 902 | B50R_087.012ad | 0.875   | 0.75    | 0.875   | 0.75    | 80.5      | 0.0          | 0.75    | 360     | 80.5      | 0.0   |
| 903 | B50R_087.025ad | 0.875   | 0.625   | 0.875   | 0.625   | 74.3      | 0.0          | 0.625   | 360     | 74.3      | 0.0   |
| 904 | B50R_087.037ad | 0.875   | 0.5     | 0.875   | 0.5     | 68.1      | 0.0          | 0.5     | 360     | 68.1      | 0.0   |
| 905 | B50R_087.050ad | 0.875   | 0.375   | 0.875   | 0.375   | 61.9      | 0.0          | 0.375   | 360     | 61.9      | 0.0   |
| 906 | B50R_087.062ad | 0.875   | 0.25    | 0.875   | 0.25    | 55.7      | 0.0          | 0.25    | 360     | 55.7      | 0.0   |
| 907 | B50R_087.075ad | 0.875   | 0.125   | 0.875   | 0.125   | 49.5      | 0.0          | 0.125   | 360     | 49.5      | 0.0   |
| 908 | B50R_087.100ad | 0.875   | 0.0     | 0.875   | 0.0     | 43.4      | 0.0          | 0.0     | 360     | 43.4      | 0.0   |
| 909 | GOB_100.025ad  | 0.75    | 1.0     | 0.75    | 1.0     | 84.2      | 0.0          | 1.0     | 360     | 84.2      | 0.0   |
| 910 | GOB_100.037ad  | 0.625   | 1.0     | 0.625   | 1.0     | 78.0      | 0.0          | 1.0     | 360     | 78.0      | 0.0   |
| 911 | NW_075ad       | 0.75    | 0.75    | 0.75    | 0.75    | 71.8      | 0.0          | 0.75    | 360     | 71.8      | 0.0   |
| 912 | B50R_075.012ad | 0.75    | 0.625   | 0.75    | 0.625   | 65.6      | 0.0          | 0.625   | 360     | 65.6      | 0.0   |
| 913 | B50R_075.025ad | 0.75    | 0.5     | 0.75    | 0.5     | 59.4      | 0.0          | 0.5     | 360     | 59.4      | 0.0   |
| 914 | B50R_075.037ad | 0.75    | 0.375   | 0.75    | 0.375   | 53.2      | 0.0          | 0.375   | 360     | 53.2      | 0.0   |
| 915 | B50R_075.050ad | 0.75    | 0.25    | 0.75    | 0.25    | 47.0      | 0.0          | 0.25    | 360     | 47.0      | 0.0   |
| 916 | B50R_075.062ad | 0.75    | 0.125   | 0.75    | 0.125   | 40.8      | 0.0          | 0.125   | 360     | 40.8      | 0.0   |
| 917 | B50R_075.100ad | 0.75    | 0.0     | 0.75    | 0.0     | 34.6      | 0.0          | 0.0     | 360     | 34.6      | 0.0   |
| 918 | GOB_100.037ad  | 0.625   | 1.0     | 0.625   | 1.0     | 78.0      | 0.0          | 1.0     | 360     | 78.0      | 0.0   |
| 919 | GOB_100.050ad  | 0.5     | 1.0     | 0.5     | 1.0     | 71.8      | 0.0          | 1.0     | 360     | 71.8      | 0.0   |
| 920 | GOB_075.012ad  | 0.625   | 0.75    | 0.625   | 0.75    | 65.6      | 0.0          | 0.75    | 360     | 65.6      | 0.0   |
| 921 | NW_062ad       | 0.625   | 0.625   | 0.625   | 0.625   | 62.9      | 0.0          | 0.625   | 360     | 62.9      | 0.0   |
| 922 | B50R_062.012ad | 0.625   | 0.5     | 0.625   | 0.5     | 56.7      | 0.0          | 0.5     | 360     | 56.7      | 0.0   |
| 923 | B50R_062.025ad | 0.625   | 0.375   | 0.625   | 0.375   | 50.5      | 0.0          | 0.375   | 360     | 50.5      | 0.0   |
| 924 | B50R_062.037ad | 0.625   | 0.25    | 0.625   | 0.25    | 44.3      | 0.0          | 0.25    | 360     | 44.3      | 0.0   |
| 925 | B50R_062.050ad | 0.625   | 0.125   | 0.625   | 0.125   | 38.1      | 0.0          | 0.125   | 360     | 38.1      | 0.0   |
| 926 | B50R_062.100ad | 0.625   | 0.0     | 0.625   | 0.0     | 31.9      | 0.0          | 0.0     | 360     | 31.9      | 0.0   |
| 927 | GOB_100.050ad  | 0.5     | 1.0     | 0.5     | 1.0     | 71.8      | 0.0          | 1.0     | 360     | 71.8      | 0.0   |
| 928 | GOB_087.037ad  | 0.5     | 0.875   | 0.5     | 0.875   | 69.6      | 0.0          | 0.875   | 360     | 69.6      | 0.0   |
| 929 | GOB_075.025ad  | 0.5     | 0.75    | 0.5     | 0.75    | 63.4      | 0.0          | 0.75    | 360     | 63.4      | 0.0   |
| 930 | GOB_062.012ad  | 0.5     | 0.625   | 0.5     | 0.625   | 57.2      | 0.0          | 0.625   | 360     | 57.2      | 0.0   |
| 931 | NW_050ad       | 0.5     | 0.5     | 0.5     | 0.5     | 51.0      | 0.0          | 0.5     | 360     | 51.0      | 0.0   |
| 932 | B50R_050.012ad | 0.5     | 0.375   | 0.5     | 0.375   | 44.8      | 0.0          | 0.375   | 360     | 44.8      | 0.0   |
| 933 | B50R_050.025ad | 0.5     | 0.25    | 0.5     | 0.25    | 38.6      | 0.0          | 0.25    | 360     | 38.6      | 0.0   |
| 934 | B50R_050.037ad | 0.5     | 0.125   | 0.5     | 0.125   | 32.4      | 0.0          | 0.125   | 360     | 32.4      | 0.0   |
| 935 | B50R_050.100ad | 0.5     | 0.0     | 0.5     | 0.0     | 26.2      | 0.0          | 0.0     | 360     | 26.2      | 0.0   |
| 936 | GOB_100.062ad  | 0.375   | 1.0     | 0.375   | 1.0     | 67.1      | 0.0          | 1.0     | 360     | 67.1      | 0.0   |
| 937 | GOB_087.050ad  | 0.375   | 0.875   | 0.375   | 0.875   | 63.9      | 0.0          | 0.875   | 360     | 63.9      | 0.0   |
| 938 | GOB_075.037ad  | 0.375   | 0.75    | 0.375   | 0.75    | 57.7      | 0.0          | 0.75    | 360     | 57.7      | 0.0   |
| 939 | GOB_062.025ad  | 0.375   | 0.625   | 0.375   | 0.625   | 51.5      | 0.0          | 0.625   | 360     | 51.5      | 0.0   |
| 940 | NW_037ad       | 0.375   | 0.5     | 0.375   | 0.5     | 45.3      | 0.0          | 0.5     | 360     | 45.3      | 0.0   |
| 941 | B50R_037.012ad | 0.375   | 0.375   | 0.375   | 0.375   | 41.1      | 0.0          | 0.375   | 360     | 41.1      | 0.0   |
| 942 | B50R_037.025ad | 0.375   | 0.25    | 0.375   | 0.25    | 34.9      | 0.0          | 0.25    | 360     | 34.9      | 0.0   |
| 943 | B50R_037.037ad | 0.375   | 0.125   | 0.375   | 0.125   | 28.7      | 0.0          | 0.125   | 360     | 28.7      | 0.0   |
| 944 | B50R_037.100ad | 0.375   | 0.0     | 0.375   | 0.0     | 22.5      | 0.0          | 0.0     | 360     | 22.5      | 0.0   |
| 945 | GOB_100.075ad  | 0.25    | 1.0     | 0.25    | 1.0     | 61.4      | 0.0          | 1.0     | 360     | 61.4      | 0.0   |
| 946 | GOB_087.062ad  | 0.25    | 0.875   | 0.25    | 0.875   | 58.2      | 0.0          | 0.875   | 360     | 58.2      | 0.0   |
| 947 | GOB_075.050ad  | 0.25    | 0.75    | 0.25    | 0.75    | 52.0      | 0.0          | 0.75    | 360     | 52.0      | 0.0   |
| 948 | GOB_062.037ad  | 0.25    | 0.625   | 0.25    | 0.625   | 45.8      | 0.0          | 0.625   | 360     | 45.8      | 0.0   |
| 949 | GOB_050.025ad  | 0.25    | 0.5     | 0.25    | 0.5     | 39.6      | 0.0          | 0.5     | 360     | 39.6      | 0.0   |
| 950 | GOB_037.012ad  | 0.25    | 0.375   | 0.25    | 0.375   | 35.4      | 0.0          | 0.375   | 360     | 35.4      | 0.0   |
| 951 | NW_025ad       | 0.25    | 0.25    | 0.25    | 0.25    | 31.2      | 0.0          | 0.25    | 360     | 31.2      | 0.0   |
| 952 | B50R_025.012ad | 0.25    | 0.125   | 0.25    | 0.125   | 25.0      | 0.0          | 0.125   | 360     | 25.0      | 0.0   |
| 953 | B50R_025.025ad | 0.25    | 0.0     | 0.25    | 0.0     | 18.8      | 0.0          | 0.0     | 360     | 18.8      | 0.0   |
| 954 | GOB_100.087ad  | 0.125   | 1.0     | 0.125   | 1.0     | 55.7      | 0.0          | 1.0     | 360     | 55.7      | 0.0   |
| 955 | GOB_087.075ad  | 0.125   | 0.875   | 0.125   | 0.875   | 52.5      | 0.0          | 0.875   | 360     | 52.5      | 0.0   |
| 956 | GOB_075.062ad  | 0.125   | 0.75    | 0.125   | 0.75    | 46.3      | 0.0          | 0.75    | 360     | 46.3      | 0.0   |
| 957 | GOB_062.050ad  | 0.125   | 0.625   | 0.125   | 0.625   | 40.1      | 0.0          | 0.625   | 360     | 40.1      | 0.0   |
| 958 | GOB_050.037ad  | 0.125   | 0.5     | 0.125   | 0.5     | 33.9      | 0.0          | 0.5     | 360     | 33.9      | 0.0   |
| 959 | GOB_037.025ad  | 0.125   | 0.375   | 0.125   | 0.375   | 29.7      | 0.0          | 0.375   | 360     | 29.7      | 0.0   |
| 960 | GOB_025.012ad  | 0.125   | 0.25    | 0.125   | 0.25    | 23.5      | 0.0          | 0.25    | 360     | 23.5      | 0.0   |
| 961 | NW_012ad       | 0.125   | 0.125   | 0.125   | 0.125   | 17.3      | 0.0          | 0.125   | 360     | 17.3      | 0.0   |
| 962 | B50R_012.012ad | 0.125   | 0.0     | 0.125   | 0.0     | 11.1      | 0.0          | 0.0     | 360     | 11.1      | 0.0   |
| 963 | GOB_100.100ad  | 0.0     | 1.0     | 0.0     | 1.0     | 50.0      | 0.0          | 1.0     | 360     | 50.0      | 0.0   |
| 964 | GOB_087.087ad  | 0.0     | 0.875   | 0.0     | 0.875   | 46.8      | 0.0          | 0.875   | 360     | 46.8      | 0.0   |
| 965 | GOB_075.075ad  | 0.0     | 0.75    | 0.0     | 0.75    | 40.6      | 0.0          | 0.75    | 360     | 40.6      | 0.0   |
| 966 | GOB_062.062ad  | 0.0     | 0.625   | 0.0     | 0.625   | 34.4      | 0.0          | 0.625   | 360     | 34.4      | 0.0   |
| 967 | GOB_050.050ad  | 0.0     | 0.5     | 0.0     | 0.5     | 28.2      | 0.0          | 0.5     | 360     | 28.2      | 0.0   |
| 968 | GOB_037.037ad  | 0.0     | 0.375   | 0.0     | 0.375   | 22.0      | 0.0          | 0.375   | 360     | 22.0      | 0.0   |
| 969 | GOB_025.025ad  | 0.0     | 0.25    | 0.0     | 0.25    | 15.8      | 0.0          | 0.25    | 360     | 15.8      | 0.0   |
| 970 | GOB_012.012ad  | 0.0     | 0.125   | 0.0     | 0.125   | 9.6       | 0.0          | 0.125   | 360     | 9.6       | 0.0   |
| 971 | NW_000ad       | 0.0     | 0.0     | 0.0     | 0.0     | 24.3      | 0.0          | 0.0     | 360     | 24.3      | 0.0   |

Mean color difference of this page:



TUB registration: 20130201-QE37/QE37L0FP.PDF /.PS  
application for measurement of offset print output, separ

TUB material: code=rha4ta  
my0\* (CMY0)

[illegible]

-1033131-E0

QE370-7N, Page 32/33-F

TUB-test chart QE37; hue code: H<sub>d</sub><sup>\*</sup>=Y00G<sub>d</sub>

input: *rgb/cmyk*  $\rightarrow$  *rgb<sub>add</sub>*  
output: 3D-linearization to *cmv0\**<sub>add</sub>



TUB registration: 20130201-QE37/QE37L0FP.PDF /.PS TUB material: code=rha4ta  
application for measurement of offset print output, separation cmy0\* (CMY0)

| n    | HC*Fid         | rgb_Fid           | lcr_Fid           | hsa_Fid           | rgb*Fid           | LabCh*Fid      | cmy0*_sep_Fid     | hsv*_dd     | rgb*_dd     | LabCh*_dd      | delta             |
|------|----------------|-------------------|-------------------|-------------------|-------------------|----------------|-------------------|-------------|-------------|----------------|-------------------|
| 1053 | NW_086dd       | 0.866 0.866 0.866 | 0.866 0.866 0.866 | 0.866 0.866 0.866 | 0.866 0.866 0.866 | 86.6 86.6 86.6 | 0.173 0.108 0.099 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1054 | NW_093dd       | 0.933 0.933 0.933 | 0.933 0.933 0.933 | 0.933 0.933 0.933 | 0.933 0.933 0.933 | 90.8 90.8 90.8 | 0.09 0.054 0.05   | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1055 | NW_100dd       | 1.0 1.0 1.0       | 1.0 1.0 1.0       | 1.0 1.0 1.0       | 1.0 1.0 1.0       | 95.6 95.6 95.6 | 0.0 0.0 0.0       | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1056 | NW_006dd       | 0.066 0.066 0.066 | 0.066 0.066 0.066 | 0.066 0.066 0.066 | 0.066 0.066 0.066 | 29.0 29.0 29.0 | 0.935 0.855 0.825 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1057 | NW_013dd       | 0.133 0.133 0.133 | 0.133 0.133 0.133 | 0.133 0.133 0.133 | 0.133 0.133 0.133 | 33.8 33.8 33.8 | 0.879 0.763 0.725 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1058 | NW_020dd       | 0.2 0.2 0.2       | 0.2 0.2 0.2       | 0.2 0.2 0.2       | 0.2 0.2 0.2       | 38.6 38.6 38.6 | 0.799 0.661 0.614 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1059 | NW_026dd       | 0.266 0.266 0.266 | 0.266 0.266 0.266 | 0.266 0.266 0.266 | 0.266 0.266 0.266 | 43.3 43.3 43.3 | 0.731 0.571 0.537 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1060 | NW_033dd       | 0.333 0.333 0.333 | 0.333 0.333 0.333 | 0.333 0.333 0.333 | 0.333 0.333 0.333 | 48.1 48.1 48.1 | 0.682 0.507 0.485 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1061 | NW_040dd       | 0.4 0.4 0.4       | 0.4 0.4 0.4       | 0.4 0.4 0.4       | 0.4 0.4 0.4       | 52.8 52.8 52.8 | 0.636 0.454 0.433 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1062 | NW_046dd       | 0.466 0.466 0.466 | 0.466 0.466 0.466 | 0.466 0.466 0.466 | 0.466 0.466 0.466 | 57.5 57.5 57.5 | 0.574 0.404 0.381 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1063 | NW_053dd       | 0.533 0.533 0.533 | 0.533 0.533 0.533 | 0.533 0.533 0.533 | 0.533 0.533 0.533 | 62.3 62.3 62.3 | 0.509 0.354 0.33  | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1064 | NW_059dd       | 0.59 0.59 0.59    | 0.59 0.59 0.59    | 0.59 0.59 0.59    | 0.59 0.59 0.59    | 67.1 67.1 67.1 | 0.442 0.285 0.278 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1065 | NW_066dd       | 0.666 0.666 0.666 | 0.666 0.666 0.666 | 0.666 0.666 0.666 | 0.666 0.666 0.666 | 71.8 71.8 71.8 | 0.377 0.228 0.228 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1066 | NW_073dd       | 0.734 0.734 0.734 | 0.734 0.734 0.734 | 0.734 0.734 0.734 | 0.734 0.734 0.734 | 76.6 76.6 76.6 | 0.314 0.191 0.186 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1067 | NW_080dd       | 0.8 0.8 0.8       | 0.8 0.8 0.8       | 0.8 0.8 0.8       | 0.8 0.8 0.8       | 81.3 81.3 81.3 | 0.252 0.153 0.146 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1068 | NW_086dd       | 0.866 0.866 0.866 | 0.866 0.866 0.866 | 0.866 0.866 0.866 | 0.866 0.866 0.866 | 86.0 86.0 86.0 | 0.173 0.108 0.099 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1069 | NW_093dd       | 0.933 0.933 0.933 | 0.933 0.933 0.933 | 0.933 0.933 0.933 | 0.933 0.933 0.933 | 90.8 90.8 90.8 | 0.09 0.054 0.05   | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1070 | NW_100dd       | 1.0 1.0 1.0       | 1.0 1.0 1.0       | 1.0 1.0 1.0       | 1.0 1.0 1.0       | 95.6 95.6 95.6 | 0.0 0.0 0.0       | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1071 | NW_006dd       | 0.0 0.0 0.0       | 0.0 0.0 0.0       | 0.0 0.0 0.0       | 0.0 0.0 0.0       | 29.0 29.0 29.0 | 0.935 0.855 0.825 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1072 | NW_013dd       | 0.1 0.1 0.1       | 0.1 0.1 0.1       | 0.1 0.1 0.1       | 0.1 0.1 0.1       | 33.8 33.8 33.8 | 0.879 0.763 0.725 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1073 | NW_020dd       | 0.2 0.2 0.2       | 0.2 0.2 0.2       | 0.2 0.2 0.2       | 0.2 0.2 0.2       | 38.6 38.6 38.6 | 0.799 0.661 0.614 | 0.0 0.0 0.0 | 1.0 1.0 1.0 | 95.6 95.6 95.6 | 0.0 0.0 0.0       |
| 1074 | ROY_100_100dd  | 1.0 0.0 0.0       | 1.0 1.0 0.0       | 1.0 0.0 0.0       | 1.0 0.0 0.0       | 44.8 44.8 44.8 | 0.0 0.0 0.0       | 0.0 0.0 0.0 | 1.0 0.0 0.0 | 45.4 45.4 45.4 | 83.9 32.3 32.3    |
| 1075 | G50B_100_100dd | 0.0 1.0 0.0       | 0.0 0.0 1.0       | 0.0 1.0 0.0       | 0.0 1.0 0.0       | 56.8 56.8 56.8 | 0.0 0.0 0.0       | 0.0 0.0 0.0 | 0.0 1.0 0.0 | 56.8 56.8 56.8 | 48.7 238.4 238.4  |
| 1076 | Y06B_100_100dd | 0.0 0.0 1.0       | 0.0 0.0 0.0       | 0.0 0.0 1.0       | 0.0 0.0 1.0       | 96.1 96.1 96.1 | 0.0 0.0 0.0       | 0.0 0.0 0.0 | 0.0 0.0 1.0 | 96.1 96.1 96.1 | 96.1 96.1 96.1    |
| 1077 | B06B_100_100dd | 1.0 0.0 0.0       | 0.0 1.0 0.0       | 0.0 0.0 0.0       | 0.0 1.0 0.0       | 50.0 50.0 50.0 | 0.999 0.0 0.0     | 0.0 0.0 0.0 | 1.0 0.0 0.0 | 50.0 50.0 50.0 | 366.2 366.2 366.2 |
| 1078 | B06B_100_100dd | 0.0 1.0 0.0       | 0.0 0.0 1.0       | 0.0 0.0 0.0       | 0.0 0.0 1.0       | 71.4 71.4 71.4 | 0.0 0.0 0.0       | 0.0 0.0 0.0 | 0.0 1.0 0.0 | 71.4 71.4 71.4 | 355.3 355.3 355.3 |
| 1079 | B50B_100_100dd | 1.0 0.0 0.0       | 0.0 1.0 0.0       | 0.0 0.0 1.0       | 0.0 1.0 0.0       | 46.1 46.1 46.1 | 0.0 0.0 0.0       | 0.0 0.0 0.0 | 0.0 0.0 1.0 | 46.1 46.1 46.1 | 79.3 79.3 79.3    |

input: rgb/cmyk -> rgbdd  
output: 3D-linearization to cmy0\*dd

TUB-test chart QE37; hue code: H\*\_d=Y00G\_d  
colors and differences, ΔE\*\*