

Input: Colorimetric Television Luminous System TLS00a

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

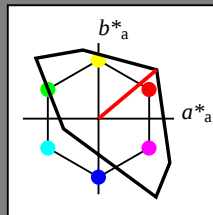
$lab^*tch$  and  $lab^*nch$

D65: hue O

LCH\*Ma: 51 100 40

olv\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

%Regularity

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

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

TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

Output: Colorimetric Television Luminous System TLS00a

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

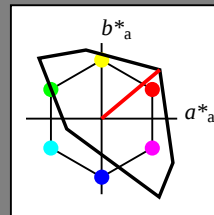
$lab^*tch$  and  $lab^*nch$

D65: hue O

LCH\*Ma: 51 100 40

olv\*Ma: 1.0 0.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

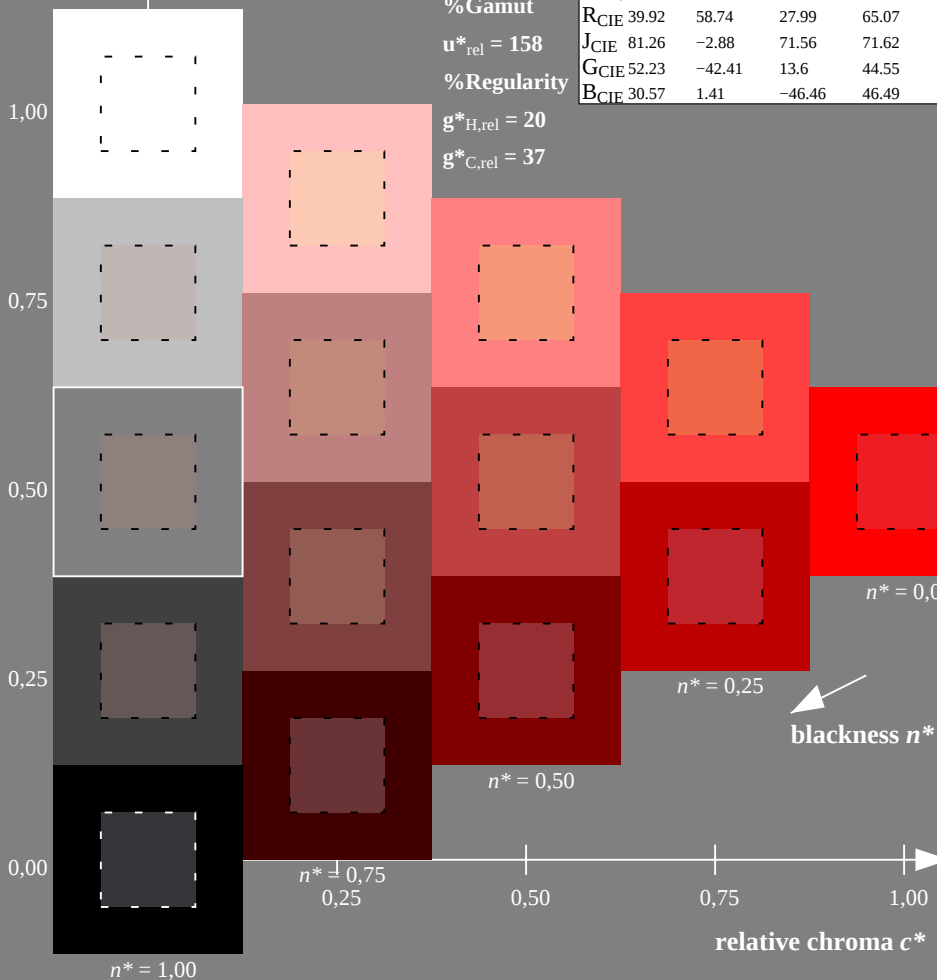
%Regularity

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

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

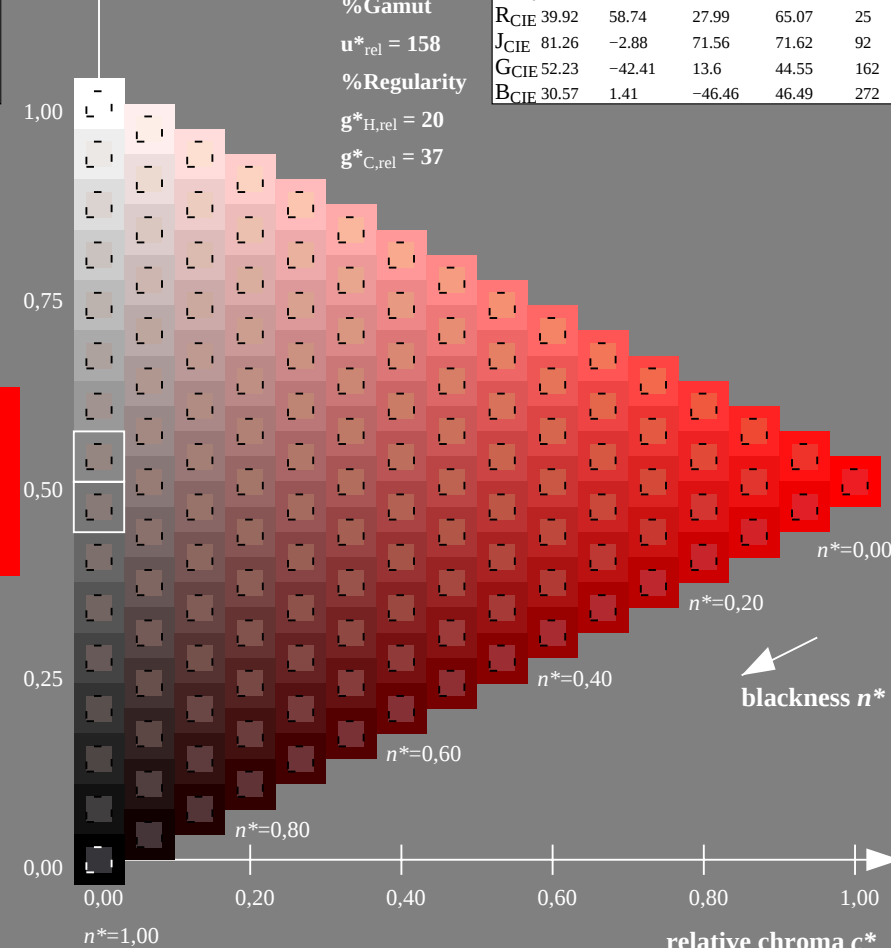
TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



OE750-7N-030-0: 5 step scales for constant CIELAB hue 40/360 = 0.111 (left)

OE75: Test chart 1 according to DIN 33872-4, Hue O; DH  
Equality for two colour definitions



16 step scales for constant CIELAB hue 40/360 = 0.111 (right)

input: cmy0-center, rgb-backgr.d  
output 030-0: no change

Input: Colorimetric Television Luminous System TLS00a

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

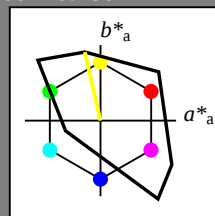
$lab^*tch$  and  $lab^*nch$

D65: hue Y

LCH\*Ma: 93 93 103

olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

%Regularity

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

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

TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

Output: Colorimetric Television Luminous System TLS00a

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

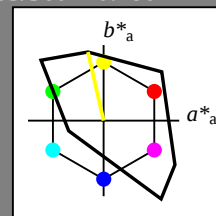
$lab^*tch$  and  $lab^*nch$

D65: hue Y

LCH\*Ma: 93 93 103

olv\*Ma: 1.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

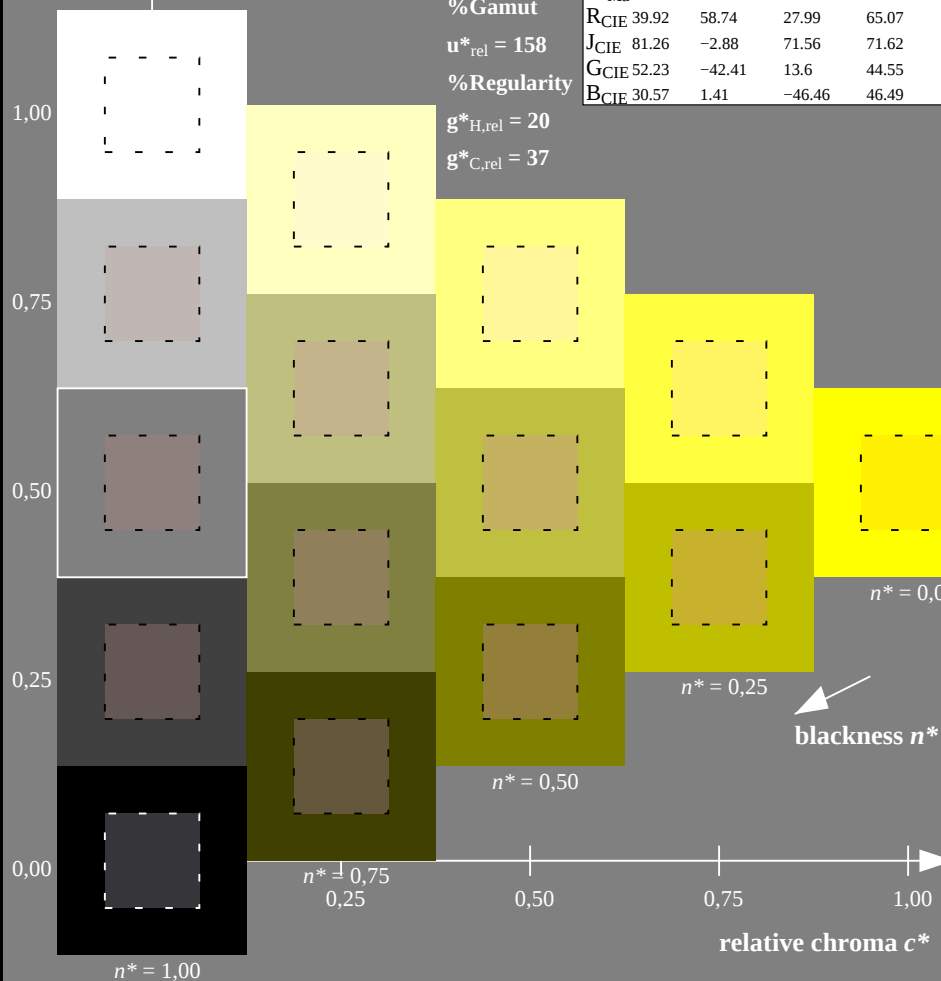
%Regularity

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

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

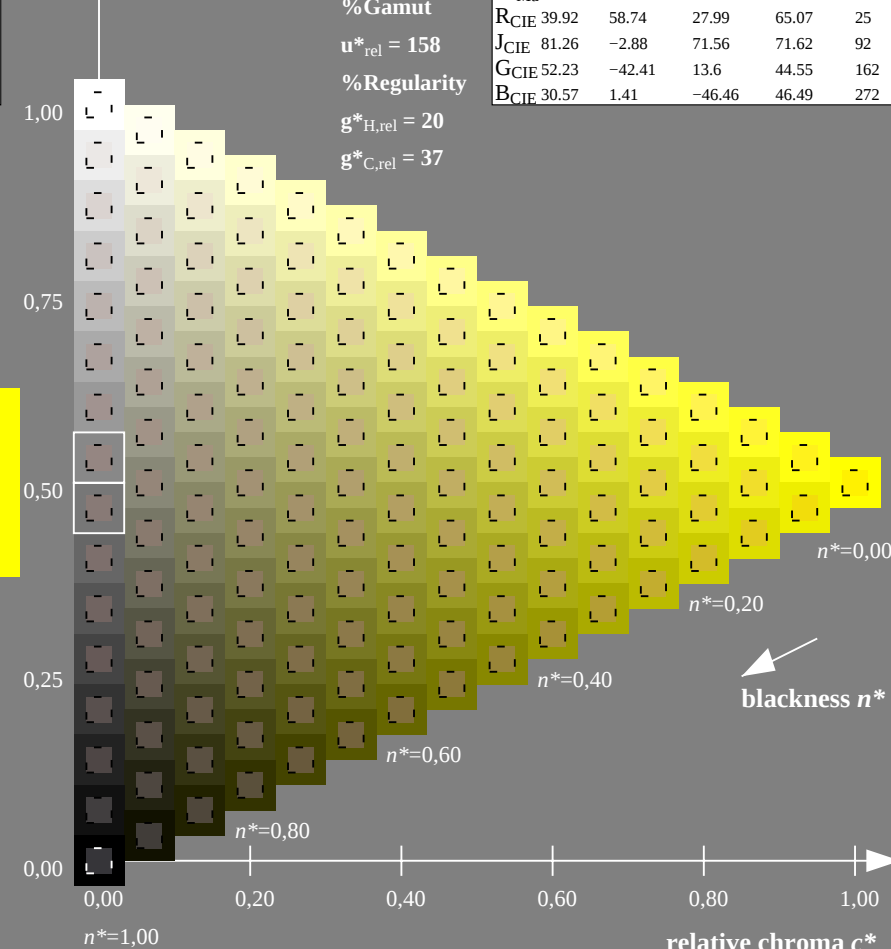
TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



OE750-7N-030-1: 5 step scales for constant CIELAB hue 103/360 = 0.286 (left)

OE75: Test chart 1 according to DIN 33872-4, Hue Y; DH  
Equality for two colour definitions



16 step scales for constant CIELAB hue 103/360 = 0.286 (right)

input: cmy0-center, rgb-backgr.d  
output 030-1: no change

TUB registration: 20110801-OE75/OE75L0NP.PDF /.PS  
application for output of displays: monitor systems or data projector systems

TUB material: code=rha4ta

Input: Colorimetric Television Luminous System TLS00a

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

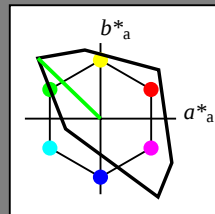
$lab^*tch$  and  $lab^*nch$

D65: hue L

LCH\*Ma: 84 115 136

olv\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

%Regularity

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

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

TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

Output: Colorimetric Television Luminous System TLS00a

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

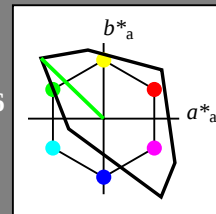
$lab^*tch$  and  $lab^*nch$

D65: hue L

LCH\*Ma: 84 115 136

olv\*Ma: 0.0 1.0 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

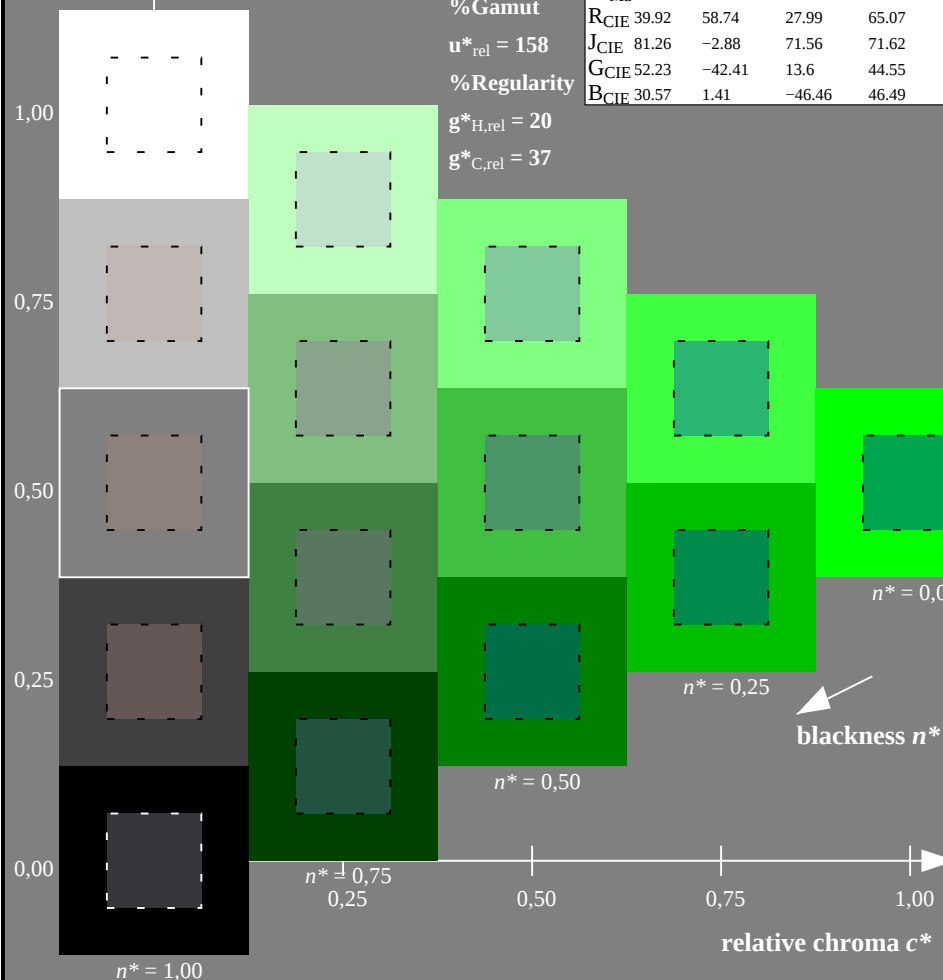
%Regularity

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

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

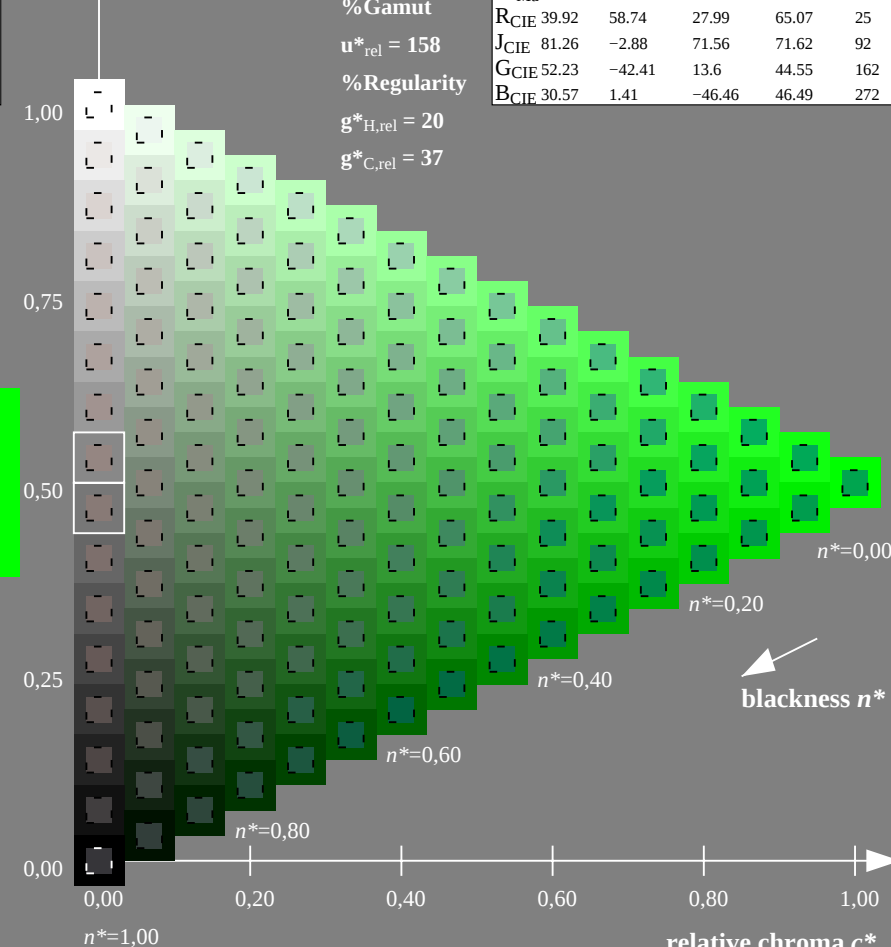
TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



OE750-7N-030-2: 5 step scales for constant CIELAB hue 136/360 = 0.378 (left)

OE75: Test chart 1 according to DIN 33872-4, Hue L; DH  
Equality for two colour definitions



16 step scales for constant CIELAB hue 136/360 = 0.378 (right)

input: cmy0-center, rgb-backgr.d  
output 030-2: no change

Input: Colorimetric Television Luminous System TLS00a

for hue  $h^* = lab^*h = 196/360 = 0.545$

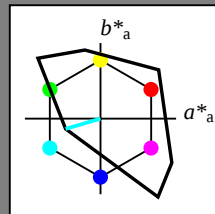
$lab^*tch$  and  $lab^*nch$

D65: hue C

LCH\*Ma: 87 48 196

olv\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

%Regularity

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

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

TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

Output: Colorimetric Television Luminous System TLS00a

for hue  $h^* = lab^*h = 196/360 = 0.545$

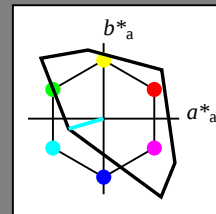
$lab^*tch$  and  $lab^*nch$

D65: hue C

LCH\*Ma: 87 48 196

olv\*Ma: 0.0 1.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

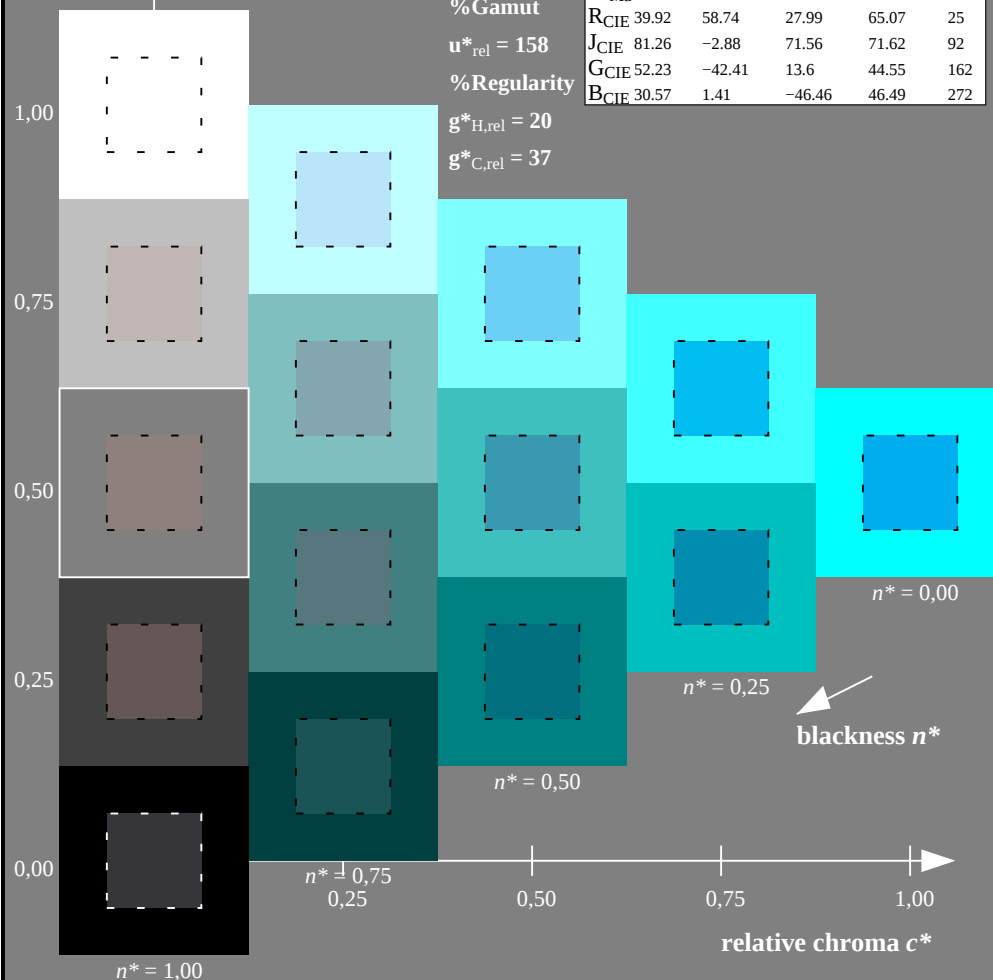
%Regularity

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

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

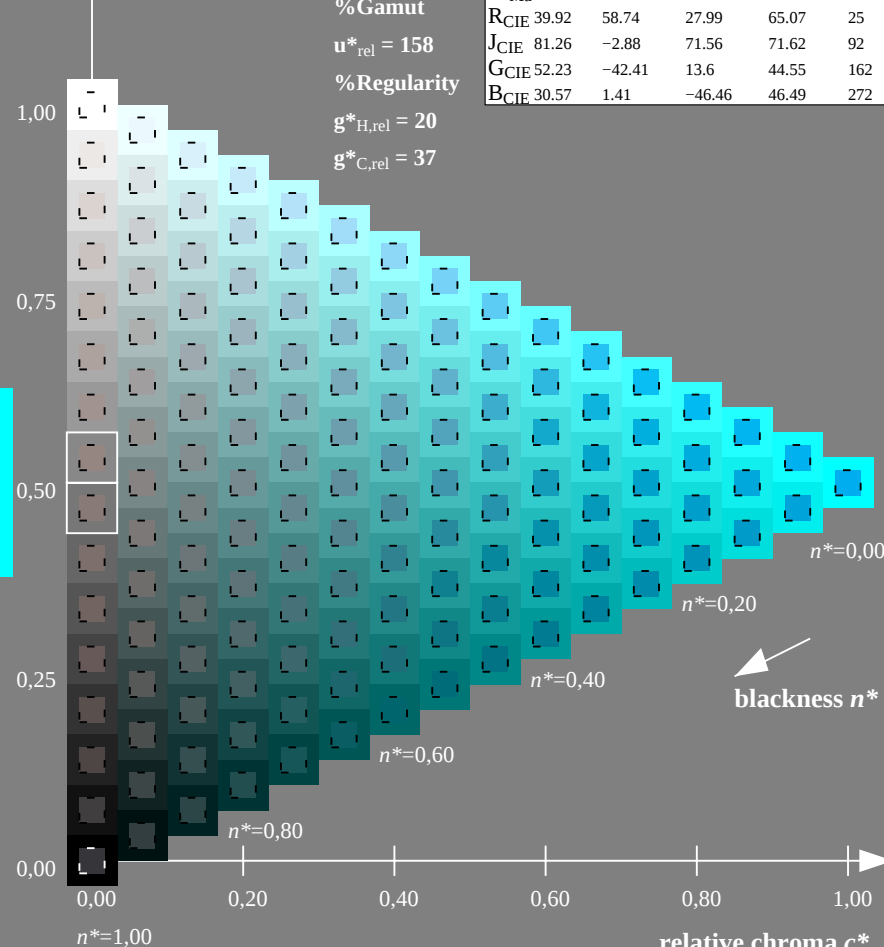
TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



OE750-7N-030-3: 5 step scales for constant CIELAB hue 196/360 = 0.545 (left)

OE75: Test chart 1 according to DIN 33872-4, Hue C; DH  
Equality for two colour definitions



16 step scales for constant CIELAB hue 196/360 = 0.545 (right)

input: cmy0-center, rgb-backgr.d  
output 030-3: no change

Input: Colorimetric Television Luminous System TLS00a

for hue  $h^* = lab^*h = 306/360 = 0.851$

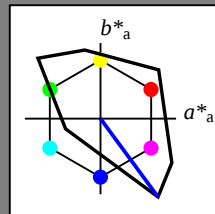
$lab^*tch$  and  $lab^*nch$

D65: hue V

LCH\*Ma: 30 129 306

olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

%Regularity

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

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

TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

Output: Colorimetric Television Luminous System TLS00a

for hue  $h^* = lab^*h = 306/360 = 0.851$

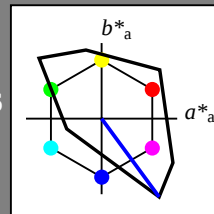
$lab^*tch$  and  $lab^*nch$

D65: hue V

LCH\*Ma: 30 129 306

olv\*Ma: 0.0 0.0 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

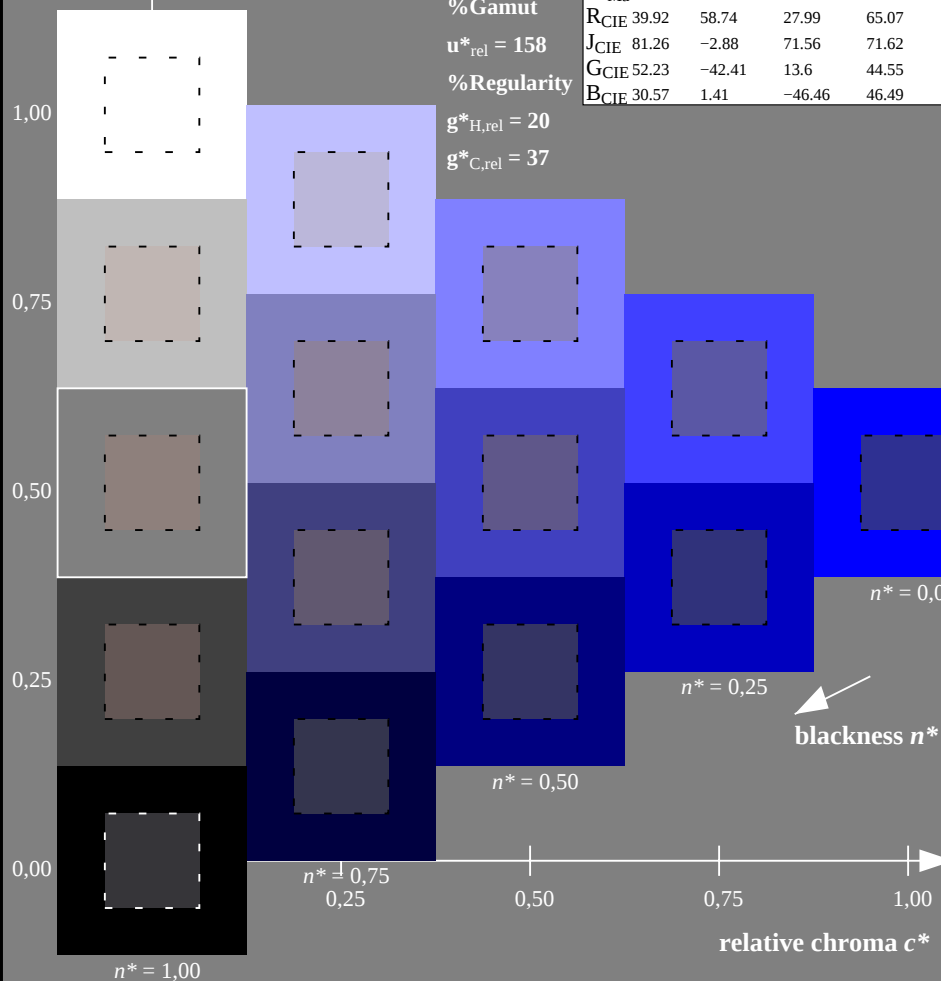
%Regularity

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

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

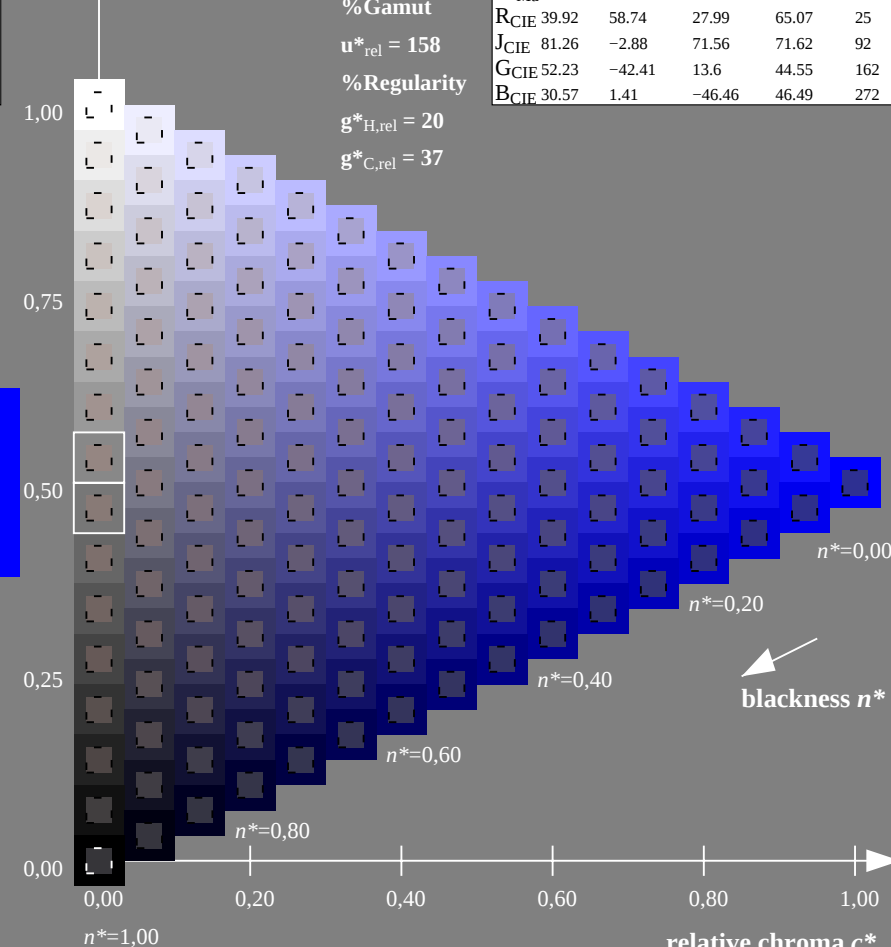
TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



OE750-7N-030-4: 5 step scales for constant CIELAB hue 306/360 = 0.851 (left)

OE75: Test chart 1 according to DIN 33872-4, Hue V; DH  
Equality for two colour definitions

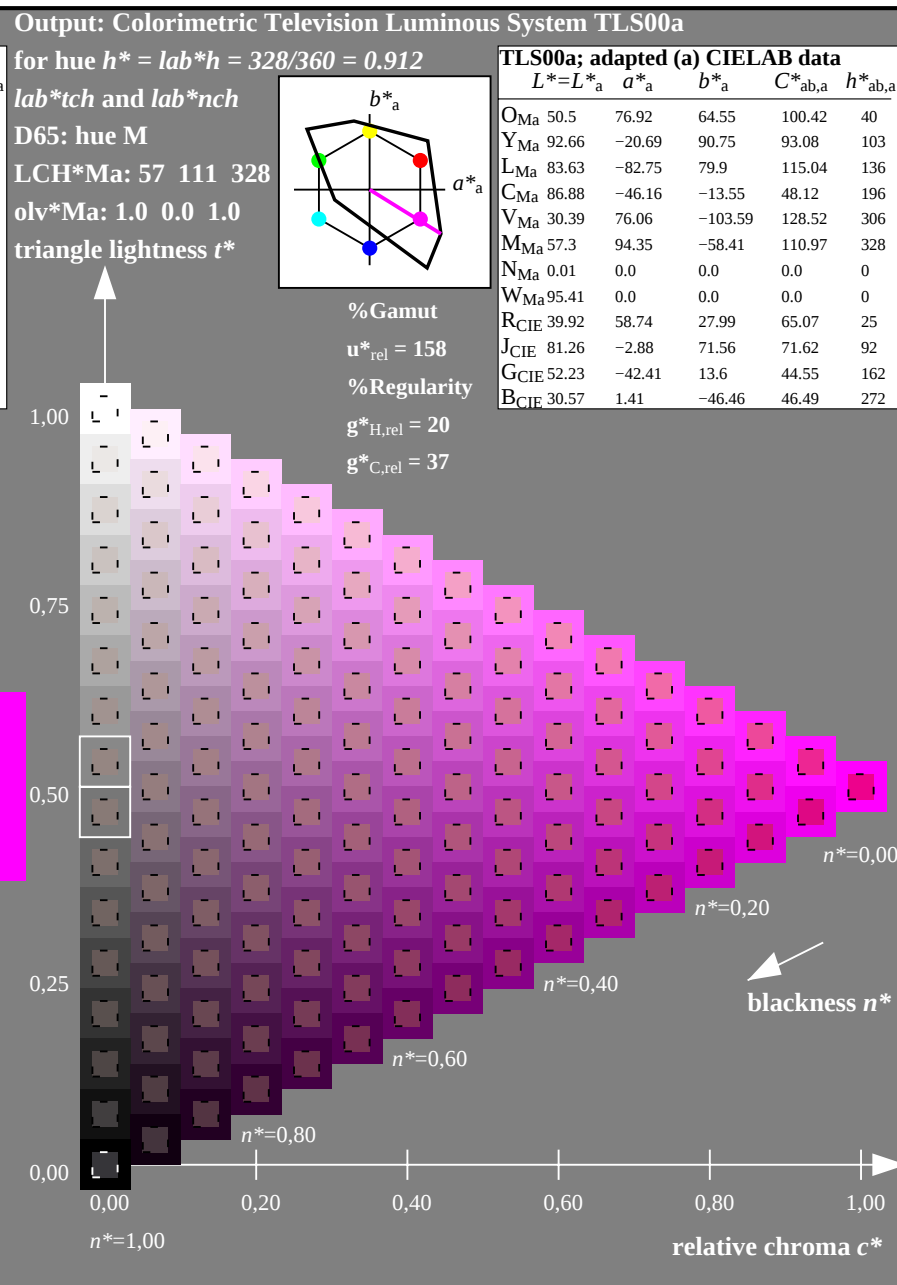


16 step scales for constant CIELAB hue 306/360 = 0.851 (right)

input: cmy0-center, rgb-backgr.d  
output 030-4: no change

TUB registration: 20110801-OE75/OE75L0NP.PDF /.PS  
application for output of displays: monitor systems or data projector systems

TUB material: code=rha4ta





Input: Colorimetric Television Luminous System TLS00a

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

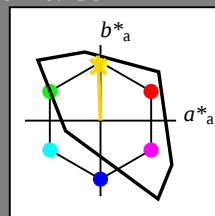
$lab^*tch$  and  $lab^*nch$

D65: hue J

LCH\*Ma: 85 86 92

olv\*Ma: 1.0 0.82 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

%Regularity

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

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

TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

Output: Colorimetric Television Luminous System TLS00a

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

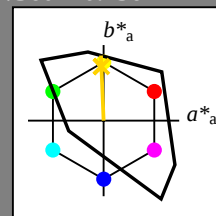
$lab^*tch$  and  $lab^*nch$

D65: hue J

LCH\*Ma: 85 86 92

olv\*Ma: 1.0 0.82 0.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

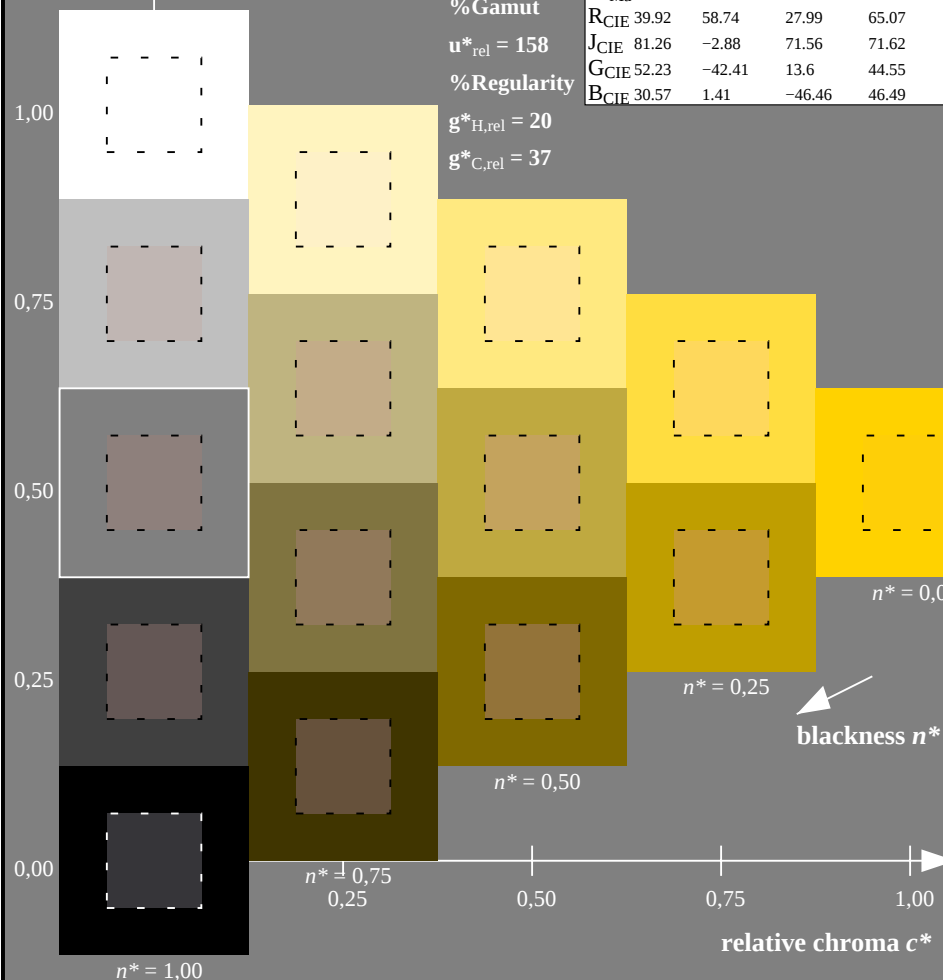
%Regularity

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

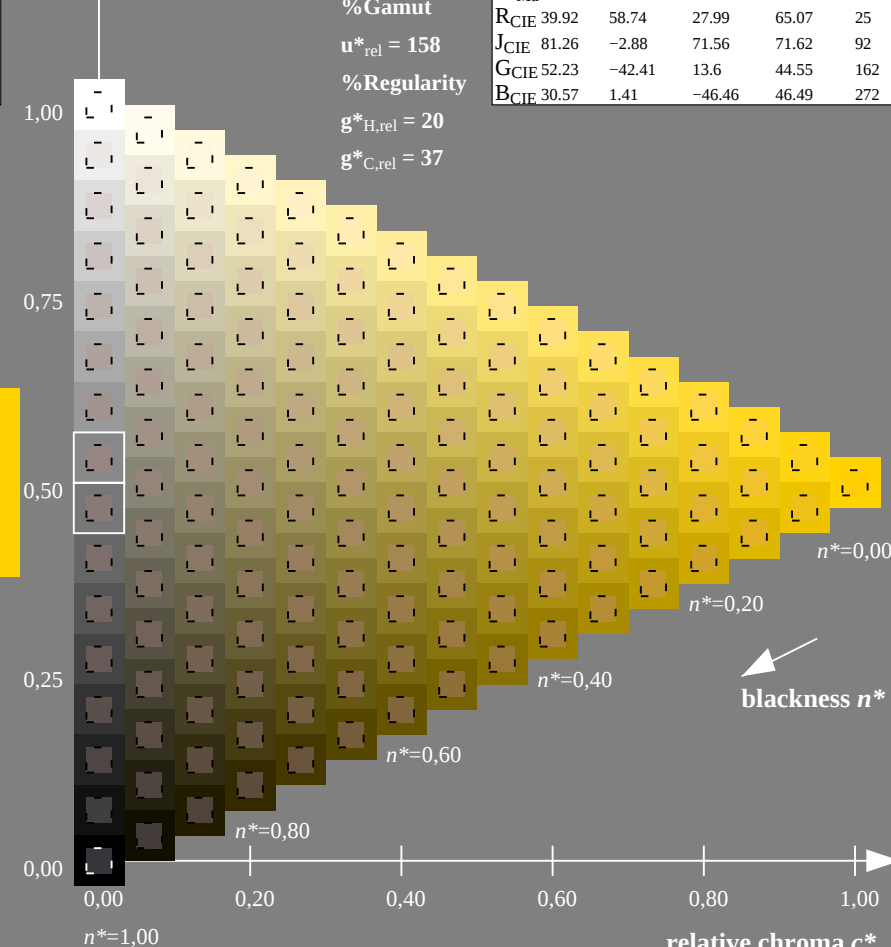
$g^*_{C,rel} = 37$

TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



OE750-7N-030-7: 5 step scales for constant CIELAB hue 92/360 = 0.256 (left)



16 step scales for constant CIELAB hue 92/360 = 0.256 (right)

OE75: Test chart 1 according to DIN 33872-4, Hue J; DEH  
Equality for two colour definitions

input: cmy0-center, rgb-backgr.de  
output 030-7: no change

### Input: Colorimetric Television Luminous System TLS00a

for hue  $h^* = lab \cdot h = 162/360 = 0.451$

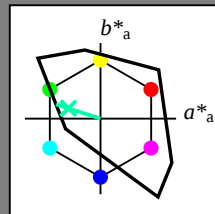
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue G

LCH\*Ma: 86 62 162

olv\*Ma: 0.0 1.0 0.65

triangle lightness  $t^*$



### TLS00a; adapted (a) CIELAB data

|                  | $L^* = L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|---------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5          | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66         | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63         | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88         | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39         | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3          | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01          | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41         | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92         | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26         | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23         | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57         | 1.41    | -46.46  | 46.49        | 272          |

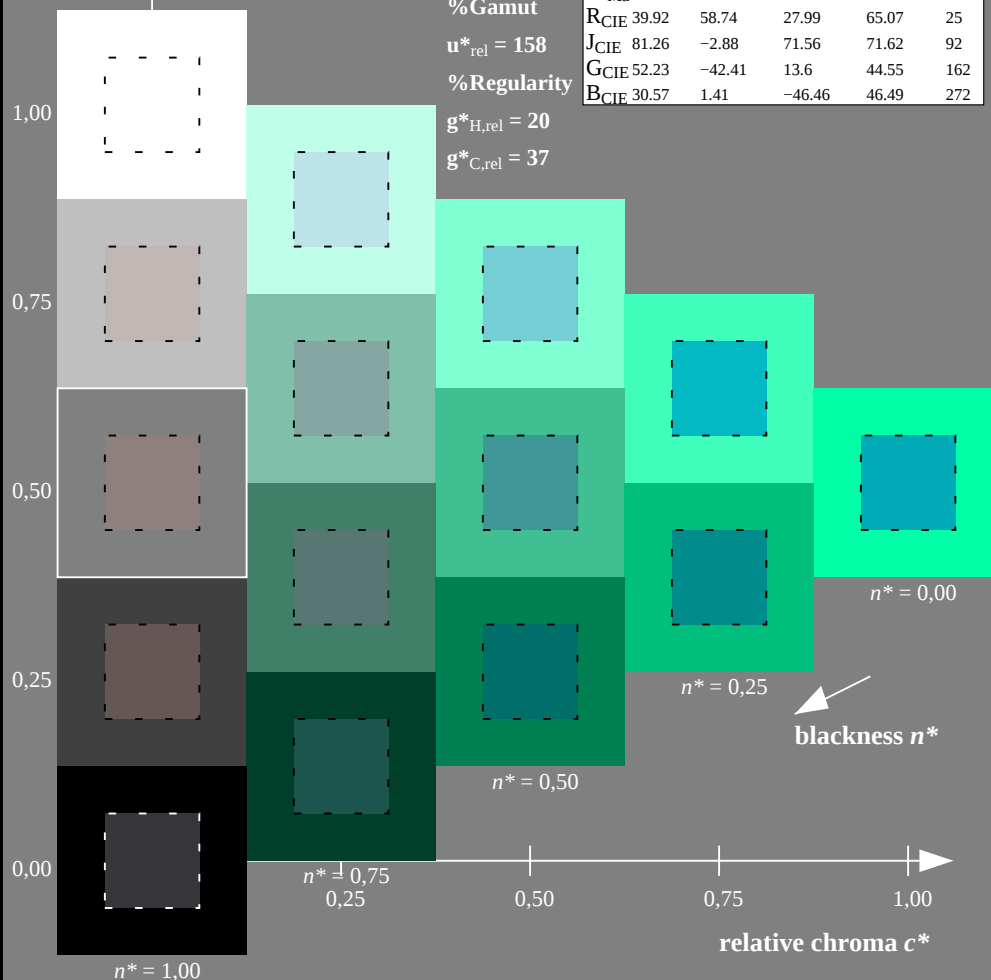
%Gamut

$u^*_{rel} = 158$

%Regularity

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

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



OE750-7N-030-8: 5 step scales for constant CIELAB hue 162/360 = 0.451 (left)

OE75: Test chart 1 according to DIN 33872-4, Hue G; DEH  
Equality for two colour definitions

### Output: Colorimetric Television Luminous System TLS00a

for hue  $h^* = lab \cdot h = 162/360 = 0.451$

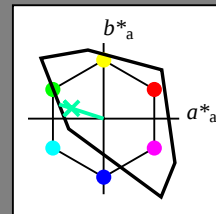
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue G

LCH\*Ma: 86 62 162

olv\*Ma: 0.0 1.0 0.65

triangle lightness  $t^*$



### TLS00a; adapted (a) CIELAB data

|                  | $L^* = L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|---------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5          | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66         | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63         | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88         | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39         | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3          | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01          | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41         | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92         | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26         | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23         | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57         | 1.41    | -46.46  | 46.49        | 272          |

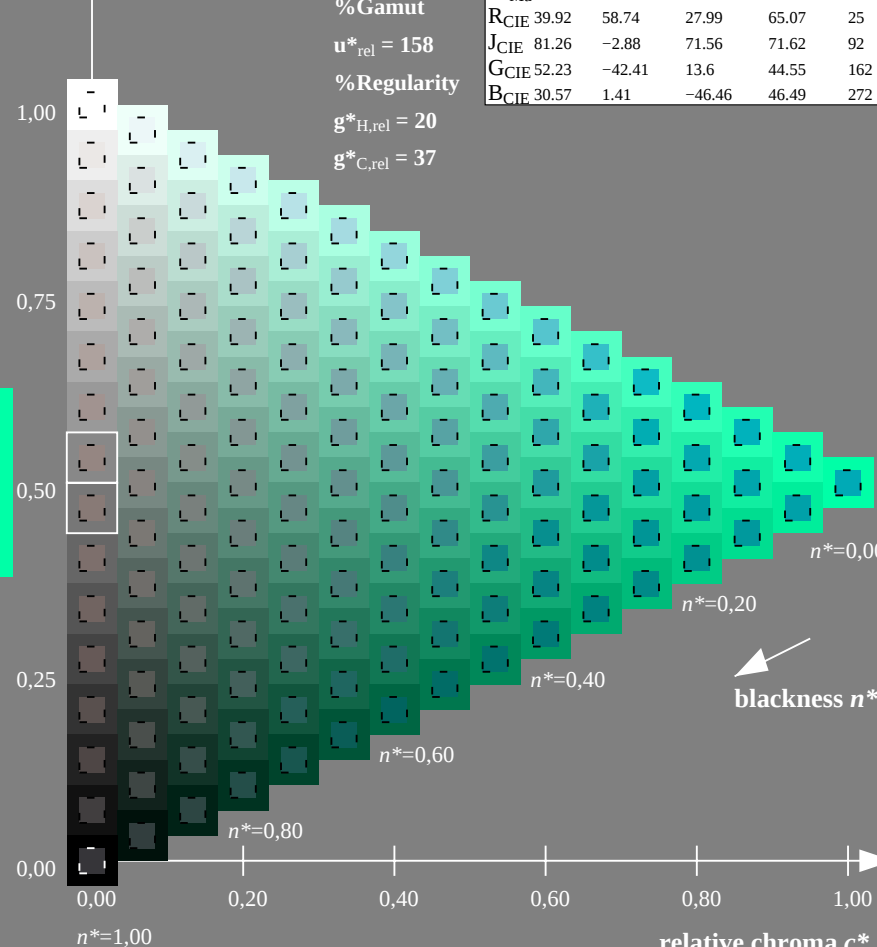
%Gamut

$u^*_{rel} = 158$

%Regularity

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

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



16 step scales for constant CIELAB hue 162/360 = 0.451 (right)

input: cmy0-center, rgb-backgr.de  
output 030-8: no change

Input: Colorimetric Television Luminous System TLS00a

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

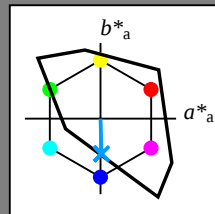
$lab^*tch$  and  $lab^*nch$

D65: hue B

LCH\*Ma: 65 49 272

olv\*Ma: 0.0 0.61 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

%Regularity

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

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

TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |

Output: Colorimetric Television Luminous System TLS00a

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

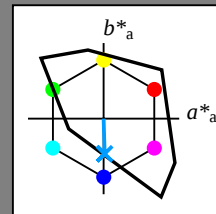
$lab^*tch$  and  $lab^*nch$

D65: hue B

LCH\*Ma: 65 49 272

olv\*Ma: 0.0 0.61 1.0

triangle lightness  $t^*$



%Gamut

$u^*_{rel} = 158$

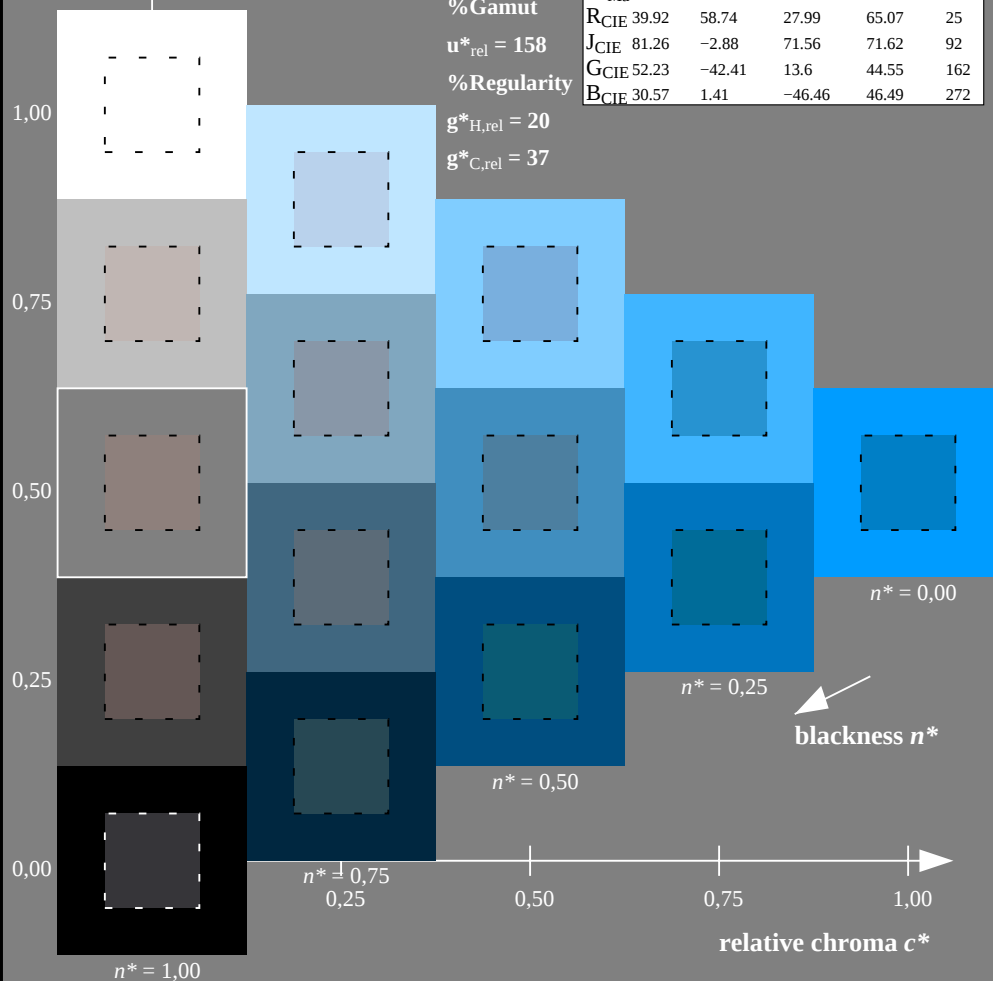
%Regularity

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

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

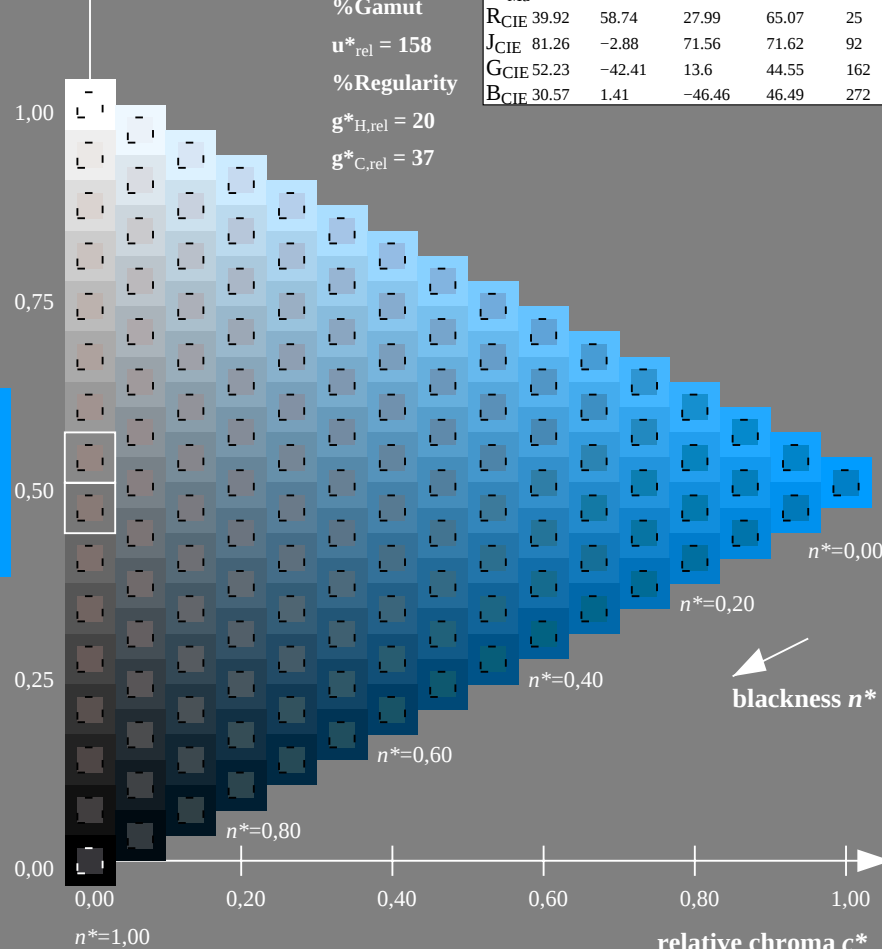
TLS00a; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 50.5        | 76.92   | 64.55   | 100.42       | 40           |
| Y <sub>Ma</sub>  | 92.66       | -20.69  | 90.75   | 93.08        | 103          |
| L <sub>Ma</sub>  | 83.63       | -82.75  | 79.9    | 115.04       | 136          |
| C <sub>Ma</sub>  | 86.88       | -46.16  | -13.55  | 48.12        | 196          |
| V <sub>Ma</sub>  | 30.39       | 76.06   | -103.59 | 128.52       | 306          |
| M <sub>Ma</sub>  | 57.3        | 94.35   | -58.41  | 110.97       | 328          |
| N <sub>Ma</sub>  | 0.01        | 0.0     | 0.0     | 0.0          | 0            |
| W <sub>Ma</sub>  | 95.41       | 0.0     | 0.0     | 0.0          | 0            |
| R <sub>CIE</sub> | 39.92       | 58.74   | 27.99   | 65.07        | 25           |
| J <sub>CIE</sub> | 81.26       | -2.88   | 71.56   | 71.62        | 92           |
| G <sub>CIE</sub> | 52.23       | -42.41  | 13.6    | 44.55        | 162          |
| B <sub>CIE</sub> | 30.57       | 1.41    | -46.46  | 46.49        | 272          |



OE750-7N-030-9: 5 step scales for constant CIELAB hue 272/360 = 0.755 (left)

OE75: Test chart 1 according to DIN 33872-4, Hue B; DEH  
Equality for two colour definitions



16 step scales for constant CIELAB hue 272/360 = 0.755 (right)

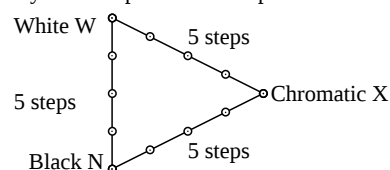
input: cmy0-center, rgb-backgr.de  
output 030-9: no change

TUB registration: 20110801-OE75/OE75L0NP.PDF /.PS  
application for output of displays: monitor systems or data projector systems

TUB material: code=rha4ta

### Equality of 5 step colour series by two definitions (Yes/No decision)

Layout example: three 5 step colour series



There are three basic colours on each page:  
Black N, White W and Chromatic X  
Ten pages include 10 hue planes  
X = OYLCVM and RJGB  
Any colour is defined by two different  
PS-operators in center and surround field

All colours of the three series N-W, W-X and X-N should equal on all pages

Are the center and surround field colours equal on all pages? underline: Yes/No  
only if No:

How many of the 3x4=12 steps are equal?

- Page 1: equal are out of 12 steps: ..... steps of O = Orange Red  
Page 2: equal are out of 12 steps: ..... steps of Y = Yellow  
Page 3: equal are out of 12 steps: ..... steps of L = Leaf Green  
Page 4: equal are out of 12 steps: ..... steps of C = Cyan Blue  
Page 5: equal are out of 12 steps: ..... steps of V = Violet Blue  
Page 6: equal are out of 12 steps: ..... steps of M = Magenta Red  
Page 7: equal are out of 12 steps: ..... steps of R = Elementary Red  
Page 8: equal are out of 12 steps: ..... steps of J = Elementary Yellow  
Page 9: equal are out of 12 steps: ..... steps of G = Elementary Green  
Page 10: equal are out of 12 steps: ..... steps of B = Elementary Blue

Sum: Of the given 3x4x10=120 steps ..... steps are equal

Part 1

OE750-3N-030-10

### Documentation of file format, hardware and software for this test:

PDF-File: http://130.149.60.45/farbmetrik/OE75/OE75L0NP.PDF underline Yes/No

PS-File: http://130.149.60.45/farbmetrik/OE75/OE75L0NA.PS or underline Yes/No

#### Used computer operating system:

either one of Windows/Mac/Unix/other and version:.....

This evaluation is for the device output: underline monitor/data projector/printer

Device model, driver and version:.....

Device output with PDF/PS-file: underline PDF/PS-file

#### For device output with PDF-file OE75L0NP.PDF:

- either PDF-file transfer "download, copy" to PDF device.....  
or with computer system interpretation by "Display-PDF":.....  
or with software. e. g. Adobe-Reader-/Acrobat and version:.....  
or with software e. g. Ghostscript and version:.....

#### For device output with PS-file OE75L0NA.PS:

- either PS-file transfer "download, copy" to PS device.....  
or with computer system interpretation by "Display-PS":.....  
or with software e. g. Ghostscript and version:.....  
or with software e. g. Mac-Yap and version:.....

Special remarks: Special remarks, e. g. output of Landscape (L)

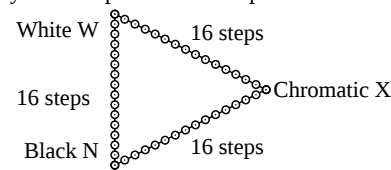
Part 3

OE750-7N-030-10

OE75: Form A for test chart 1 according to DIN 33872-4; DH  
Equality for two colour definitions (Yes/No decision)

### Equality of 16 step colour series by two definitions (Yes/No decision)

Layout example: three 16 step colour series



There are three basic colours on each page:  
Black N, White W and Chromatic X  
Ten pages include 10 hue planes  
X = OYLCVM and RJGB  
Any colour is defined by two different  
PS-operators in center and surround field

All colours of the three series N-W, W-X and X-N should equal on all pages

Are the center and surround field colours equal on all pages? underline: Yes/No  
only if No:

How many of the 3x15=45 steps are equal?

- Page 1: equal are out of 45 steps: ..... steps of O = Orange Red  
Page 2: equal are out of 45 steps: ..... steps of Y = Yellow  
Page 3: equal are out of 45 steps: ..... steps of L = Leaf Green  
Page 4: equal are out of 45 steps: ..... steps of C = Cyan Blue  
Page 5: equal are out of 45 steps: ..... steps of V = Violet Blue  
Page 6: equal are out of 45 steps: ..... steps of M = Magenta Red  
Page 7: equal are out of 45 steps: ..... steps of R = Elementary Red  
Page 8: equal are out of 45 steps: ..... steps of J = Elementary Yellow  
Page 9: equal are out of 45 steps: ..... steps of G = Elementary Green  
Page 10: equal are out of 45 steps: ..... steps of B = Elementary Blue

Sum: Of the given 3x15x10=450 steps ..... steps are equal

Part 2

OE751-3N-030-10

### Documentation of assessor colour vision properties for visual assessment

The assessor has **normal** colour vision according to one test:  
either according to DIN 6160:1996 with Anomaloskop of Nagel  
or with test charts using colour points according to Ishihara  
or tested with, please specify: .....

underline Yes/No  
underline Yes/unknown  
underline Yes/unknown  
underline Yes/unknown

#### For visual evaluation of the display (monitor, data projector) output

Office workplace illumination is daylight (clouded/north sky)

underline Yes/No

PDF file: http://130.149.60.45/farbmetrik/OE75/OE75F1P2.PDF

underline Yes/No

PS file: http://130.149.60.45/farbmetrik/OE75/OE75F1P2.PS

underline Yes/No

Picture A7-030-2: **contrast range:** (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)

underline range

Remark: In daylighted offices the contrast range is in many cases:

on display between: >F:0 and E:0 (monitor), D:0 and 3:0 (data projector)

#### Only for optional colorimetric specification with PDF/PS file output

PDF-File: http://130.149.60.45/farbmetrik/OE75/OE75F1P2.PDF

underline Yes/No

picture A7-030-2

PS-File: http://130.149.60.45/farbmetrik/OE75/OE75F1P2.PS

or underline Yes/No

picture A7-030-2

#### colour measurement and specification for:

CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry:

underline Yes/No

If No, please give other parameters: .....

#### Colorimetric specification with PS file for colours in the columns A to T

Exchange of CIELAB data in file www.ps.bam.de/De17/10L/L17e00NP.PS and transfer  
of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF

underline Yes/No

If No, please describe other method: .....

Part 4

OE751-7N-030-10

input: cmy0-center, rgb-backgr.d  
output 030-10: no change

See similar ISO test charts: <http://www.ps.bam.de/24705ITE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1

| i  | LAB*ref | L*out | LAB*out | LAB*out/c-ref | ΔE*  |
|----|---------|-------|---------|---------------|------|
| 1  | 0.0     | 0.0   | 0.0     | 0.0           | 0.01 |
| 2  | 6.36    | 0.0   | 0.07    | 6.36          | 0.01 |
| 3  | 12.72   | 0.0   | 0.13    | 12.72         | 0.01 |
| 4  | 19.08   | 0.0   | 0.2     | 19.08         | 0.01 |
| 5  | 25.44   | 0.0   | 0.27    | 25.44         | 0.01 |
| 6  | 31.8    | 0.0   | 0.33    | 31.8          | 0.01 |
| 7  | 38.16   | 0.0   | 0.4     | 38.16         | 0.01 |
| 8  | 44.52   | 0.0   | 0.47    | 44.52         | 0.01 |
| 9  | 50.89   | 0.0   | 0.53    | 50.89         | 0.01 |
| 10 | 57.25   | 0.0   | 0.6     | 57.25         | 0.01 |
| 11 | 63.61   | 0.0   | 0.67    | 63.61         | 0.01 |
| 12 | 69.97   | 0.0   | 0.73    | 69.97         | 0.01 |
| 13 | 76.33   | 0.0   | 0.8     | 76.33         | 0.01 |
| 14 | 82.69   | 0.0   | 0.87    | 82.69         | 0.01 |
| 15 | 89.05   | 0.0   | 0.93    | 89.05         | 0.01 |
| 16 | 95.41   | 0.0   | 1.0     | 95.41         | 0.01 |
| 17 | 0.0     | 0.0   | 0.0     | 0.0           | 0.01 |
| 18 | 23.85   | 0.0   | 0.25    | 23.85         | 0.01 |
| 19 | 47.71   | 0.0   | 0.5     | 47.71         | 0.01 |
| 20 | 71.56   | 0.0   | 0.75    | 71.56         | 0.01 |
| 21 | 95.41   | 0.0   | 1.0     | 95.41         | 0.01 |

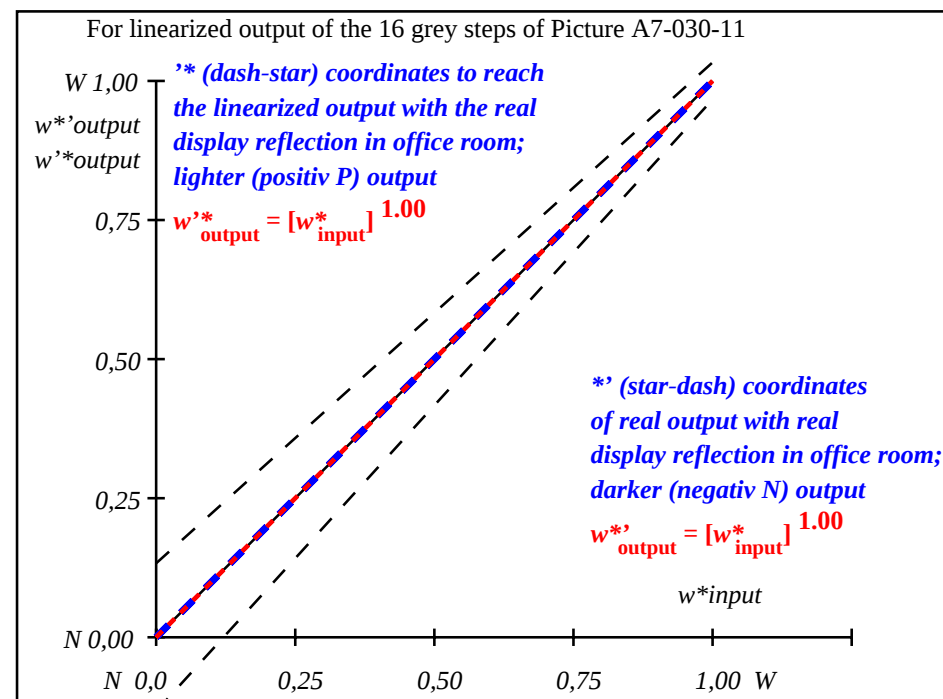
Start output S1  
Specification according to  
ISO/IEC 15775 Annex G  
and DIN 33866-1 Annex G

Mean lightness difference (16 steps)  
 $\Delta E^*_{CIELAB} = 0.0$

Mean lightness difference (5 steps)  
 $\Delta L^*_{CIELAB} = 0.0$

Mean colour reproduction index:  $R^*_{ab,m} = 100$

OE750-3N-030-11: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE751-3N-030-11: File: Measure unknown; Device: Device unknown; Date: Date unknown

| $L^*/Y_{intended}$<br>(absolute)           | 0.0/0.0 | 6.4/0.7 | 12.7/1.5 | 19.1/2.8 | 25.4/4.6 | 31.8/7.0 | 38.2/10.2 | 44.5/14.2 | 50.9/19.2 | 57.2/25.2 | 63.6/32.3 | 70.0/40.7 | 76.3/50.4 | 82.7/61.6 | 89.0/74.3 | 95.4/88.6 |
|--------------------------------------------|---------|---------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| $w^* w^* w^*$<br>setrgb<br>$g_p=1.00$      |         |         |          |          |          |          |           |           |           |           |           |           |           |           |           |           |
| No. and<br>Hex code                        | 00;F    | 01;E    | 02;D     | 03;C     | 04;B     | 05;A     | 06;9      | 07;8      | 08;7      | 09;6      | 10;5      | 11;4      | 12;3      | 13;2      | 14;1      | 15;0      |
| $w^*=L^*/$<br>$CIE_{LAB}, r$<br>(relative) |         |         |          |          |          |          |           |           |           |           |           |           |           |           |           |           |
| $w^*_{intended}$                           | 0,000   | 0,067   | 0,133    | 0,200    | 0,267    | 0,333    | 0,400     | 0,467     | 0,533     | 0,600     | 0,667     | 0,733     | 0,800     | 0,867     | 0,933     | 1,000     |
| $w^*_{out}$                                | 0,0     | 0,067   | 0,133    | 0,2      | 0,267    | 0,333    | 0,4       | 0,467     | 0,533     | 0,6       | 0,667     | 0,733     | 0,8       | 0,867     | 0,933     | 1,0       |

OE750-7N, Picture A7-030-11: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*$  setrgbcolor

OE75: In-output relation according to ISO 9241-306; DH  
Viewing Y contrast  $Y_W:Y_N=88,9:0,31$ ;  $Y_N$  range 0,0 to <0,46

input: cmy0-center, rgb-backgr.d  
output 030-11: no change