

Input: Colorimetric Television Luminous System TLS70

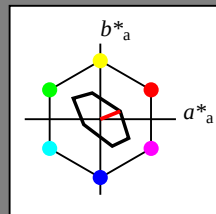
for hue  $h^* = lab \cdot h = 22/360 = 0.061$

LAB\*LCH, LAB\*NCH

D65: hue O

LCH\*Ma: 76 28 22

olv\*Ma: 1.0 0.0 0.0



TLS70; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| Y <sub>Ma</sub>  | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| L <sub>Ma</sub>  | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| C <sub>Ma</sub>  | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| V <sub>Ma</sub>  | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| M <sub>Ma</sub>  | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| N <sub>Ma</sub>  | 69.7        | 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          |

CIELAB lightness  $L^*$

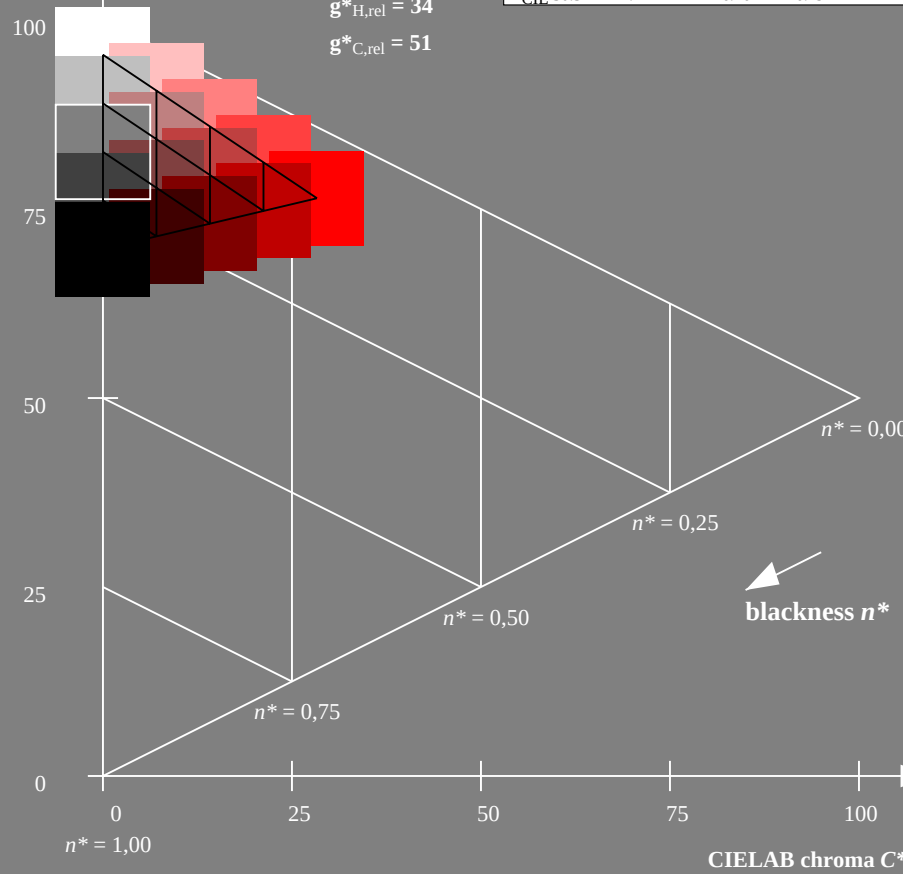
%Gamut

$u^*_{rel} = 16$

%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$



NE380-7, 5 step scales for constant CIELAB hue 22/360 = 0.061 (left)

Output: Colorimetric Television Luminous System TLS00

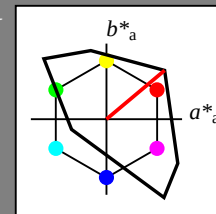
for hue  $h^* = lab \cdot h = 40/360 = 0.111$

LAB\*LCH, LAB\*NCH

D65: hue O

LCH\*Ma: 51 100 40

olv\*Ma: 1.0 0.0 0.0



TLS00; 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          |

CIELAB lightness  $L^*$

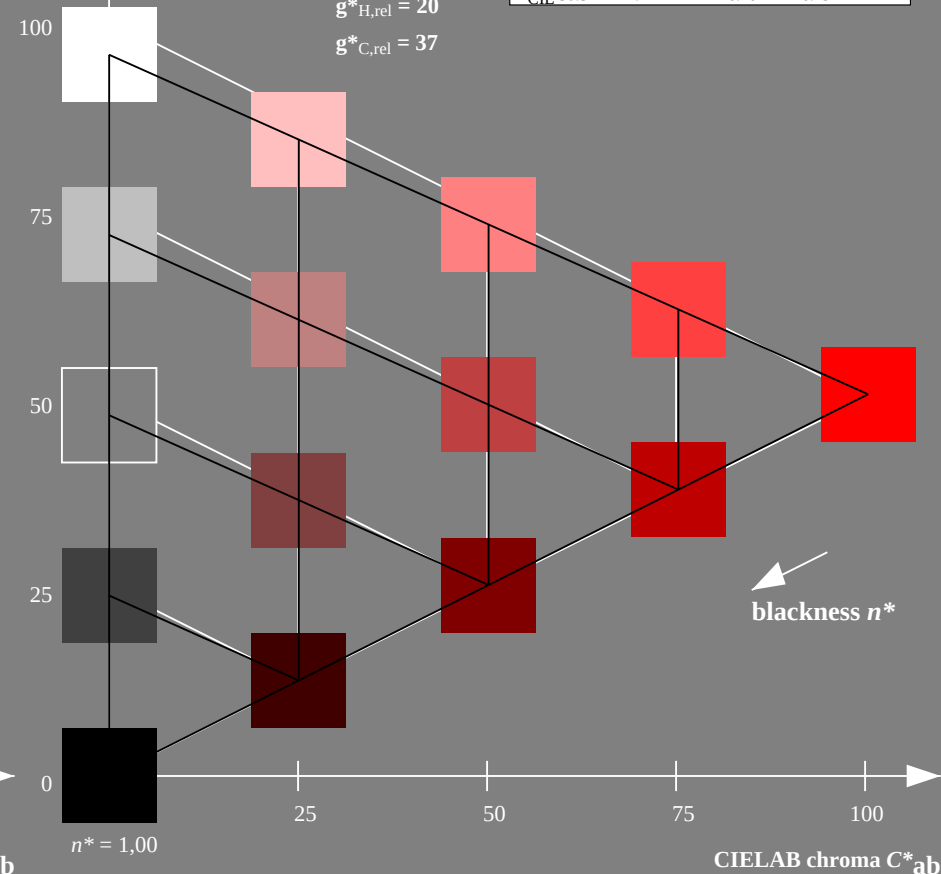
%Gamut

$u^*_{rel} = 158$

%Regularity

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

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



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

BAM-test chart NE38; Colorimetric systems TLS70 & TLS00

D65: Coordinate systems of 5 step colour scales for 10 hues

input: `olv* setrgbcolor`

output: `olv* setrgbcolor / w* setgray`

Input: Colorimetric Television Luminous System TLS70

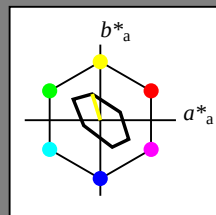
for hue  $h^* = lab \cdot h = 107/360 = 0.298$

LAB\*LCH, LAB\*NCH

D65: hue Y

LCH\*Ma: 94 36 107

olv\*Ma: 1.0 1.0 0.0



TLS70; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| Y <sub>Ma</sub>  | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| L <sub>Ma</sub>  | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| C <sub>Ma</sub>  | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| V <sub>Ma</sub>  | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| M <sub>Ma</sub>  | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| N <sub>Ma</sub>  | 69.7        | 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          |

CIELAB lightness  $L^*$

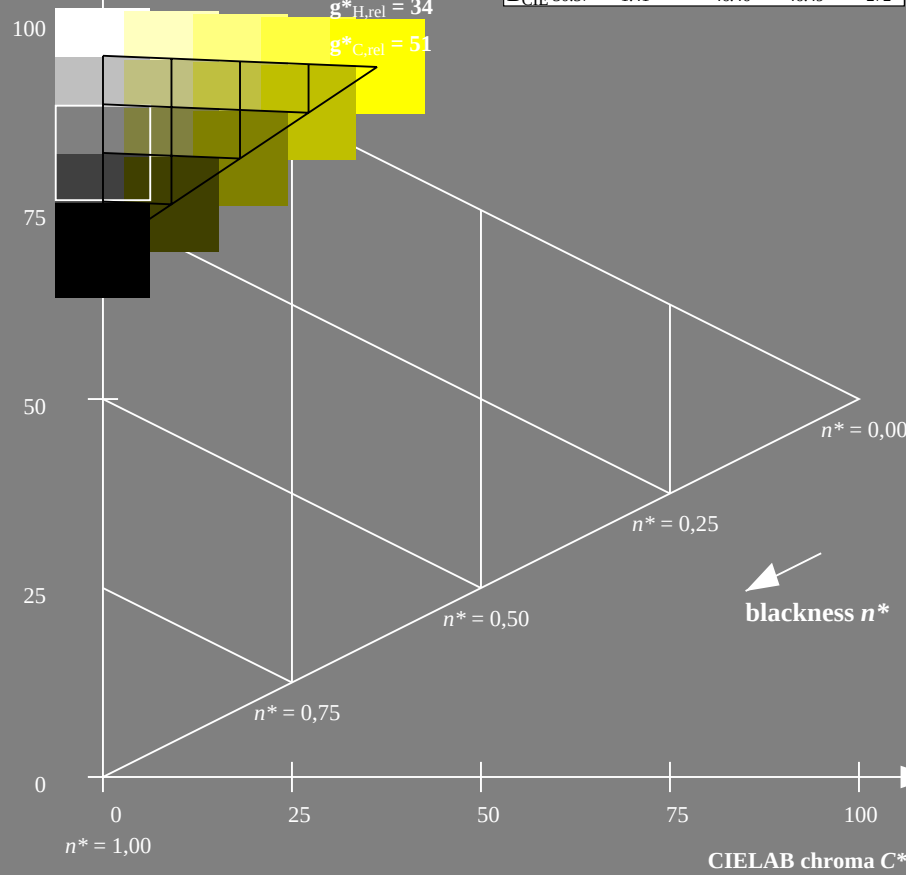
%Gamut

$u^*_{rel} = 16$

%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$



NE380-7, 5 step scales for constant CIELAB hue 107/360 = 0.298 (left)

Output: Colorimetric Television Luminous System TLS00

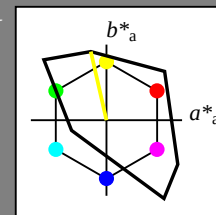
for hue  $h^* = lab \cdot h = 103/360 = 0.286$

LAB\*LCH, LAB\*NCH

D65: hue Y

LCH\*Ma: 93 93 103

olv\*Ma: 1.0 1.0 0.0



TLS00; 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          |

CIELAB lightness  $L^*$

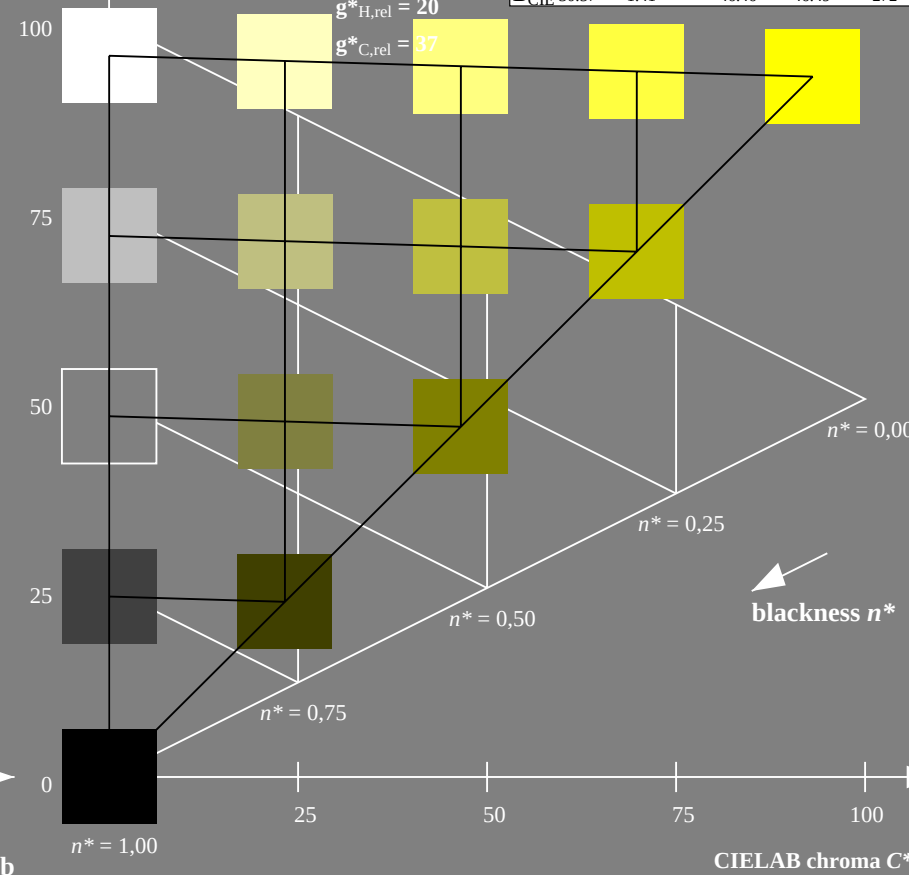
%Gamut

$u^*_{rel} = 158$

%Regularity

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

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



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

BAM-test chart NE38; Colorimetric systems TLS70 & TLS00  
D65: Coordinate systems of 5 step colour scales for 10 hues

input: `olv* setrgbcolor`  
output: `olv* setrgbcolor / w* setgray`

Input: Colorimetric Television Luminous System TLS70

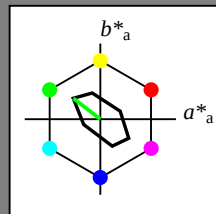
for hue  $h^* = lab \cdot h = 142/360 = 0.395$

LAB\*LCH, LAB\*NCH

D65: hue L

LCH\*Ma: 89 45 142

olv\*Ma: 0.0 1.0 0.0



TLS70; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| Y <sub>Ma</sub>  | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| L <sub>Ma</sub>  | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| C <sub>Ma</sub>  | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| V <sub>Ma</sub>  | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| M <sub>Ma</sub>  | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| N <sub>Ma</sub>  | 69.7        | 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          |

CIELAB lightness  $L^*$

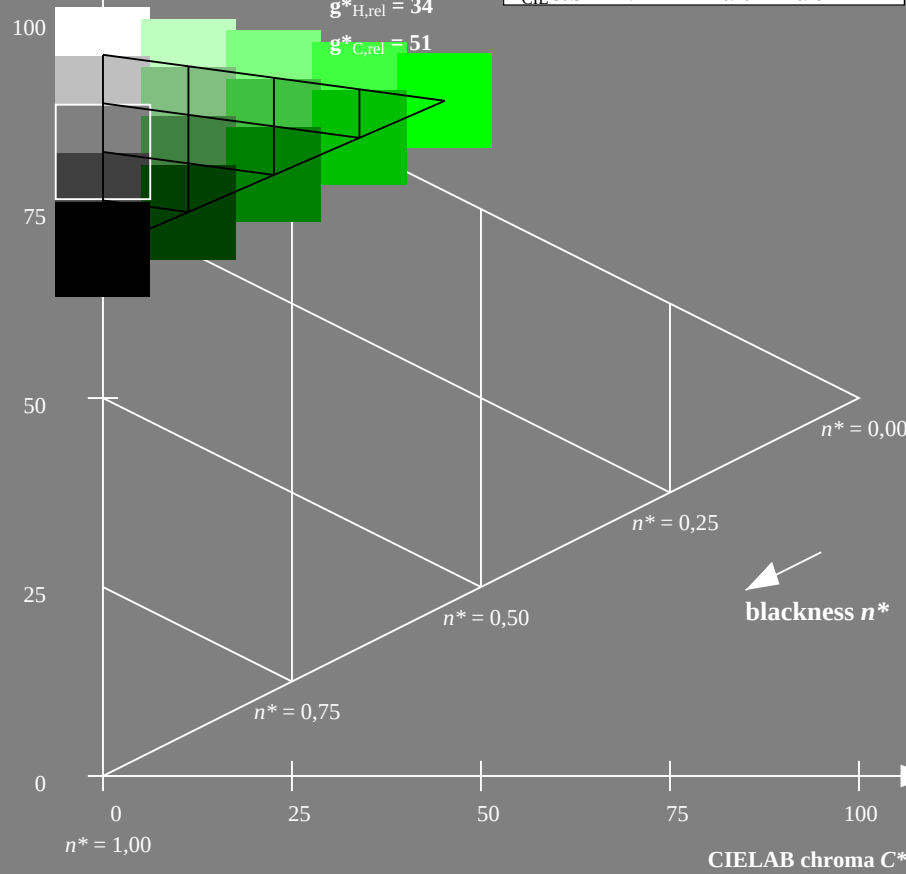
%Gamut

$u^*_{rel} = 16$

%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$



NE380-7, 5 step scales for constant CIELAB hue 142/360 = 0.395 (left)

Output: Colorimetric Television Luminous System TLS00

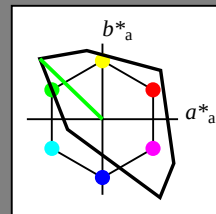
for hue  $h^* = lab \cdot h = 136/360 = 0.378$

LAB\*LCH, LAB\*NCH

D65: hue L

LCH\*Ma: 84 115 136

olv\*Ma: 0.0 1.0 0.0



TLS00; 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          |

CIELAB lightness  $L^*$

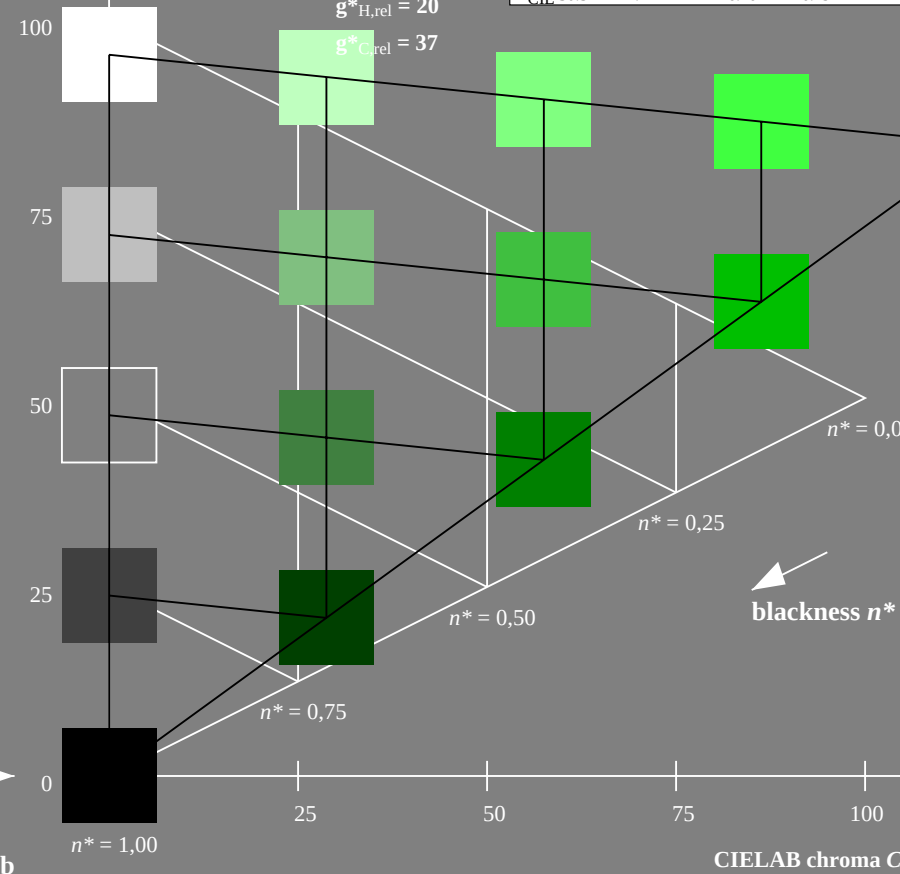
%Gamut

$u^*_{rel} = 158$

%Regularity

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

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



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

BAM-test chart NE38; Colorimetric systems TLS70 & TLS00

D65: Coordinate systems of 5 step colour scales for 10 hues

input: `olv* setrgbcolor`

output: `olv* setrgbcolor / w* setgray`

Input: Colorimetric Television Luminous System TLS70

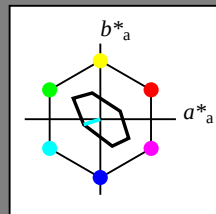
for hue  $h^* = lab \cdot h = 198/360 = 0.55$

LAB\*LCH, LAB\*NCH

D65: hue C

LCH\*Ma: 91 23 198

olv\*Ma: 0.0 1.0 1.0



TLS70; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| Y <sub>Ma</sub>  | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| L <sub>Ma</sub>  | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| C <sub>Ma</sub>  | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| V <sub>Ma</sub>  | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| M <sub>Ma</sub>  | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| N <sub>Ma</sub>  | 69.7        | 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          |

CIELAB lightness  $L^*$

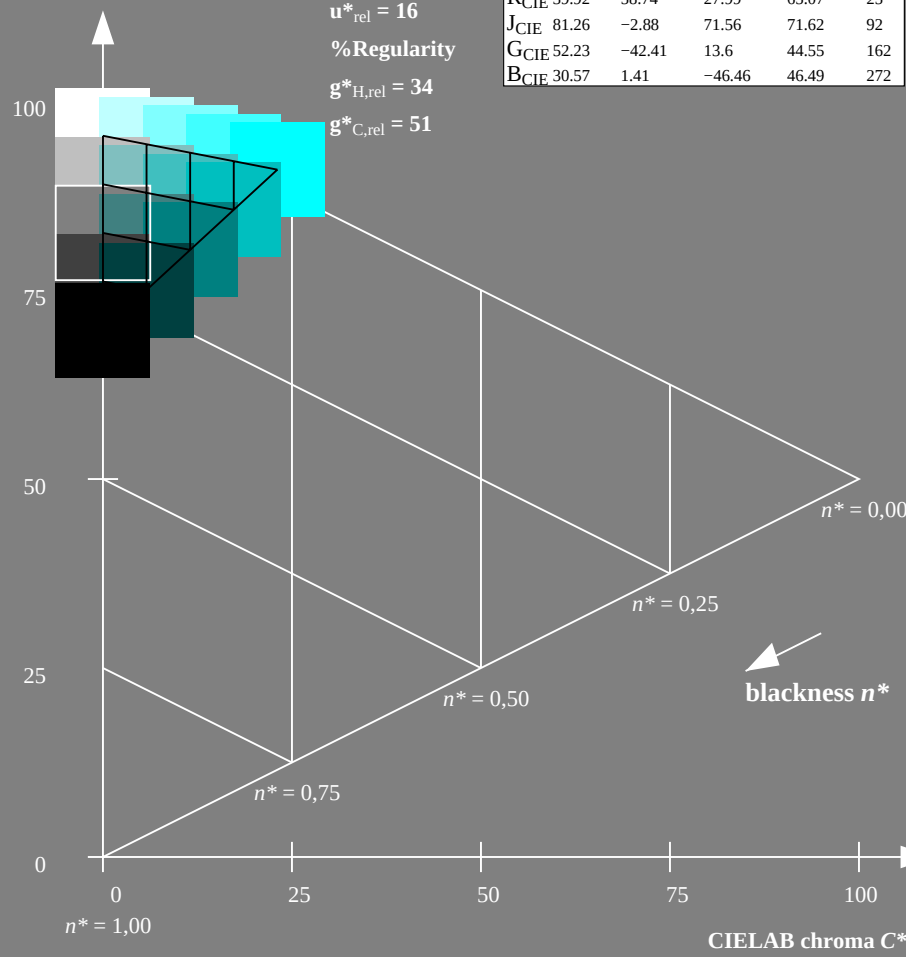
%Gamut

$u^*_{rel} = 16$

%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$



NE380-7, 5 step scales for constant CIELAB hue 198/360 = 0.55 (left)

Output: Colorimetric Television Luminous System TLS00

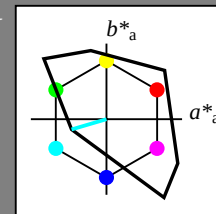
for hue  $h^* = lab \cdot h = 196/360 = 0.545$

LAB\*LCH, LAB\*NCH

D65: hue C

LCH\*Ma: 87 48 196

olv\*Ma: 0.0 1.0 1.0



TLS00; 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          |

CIELAB lightness  $L^*$

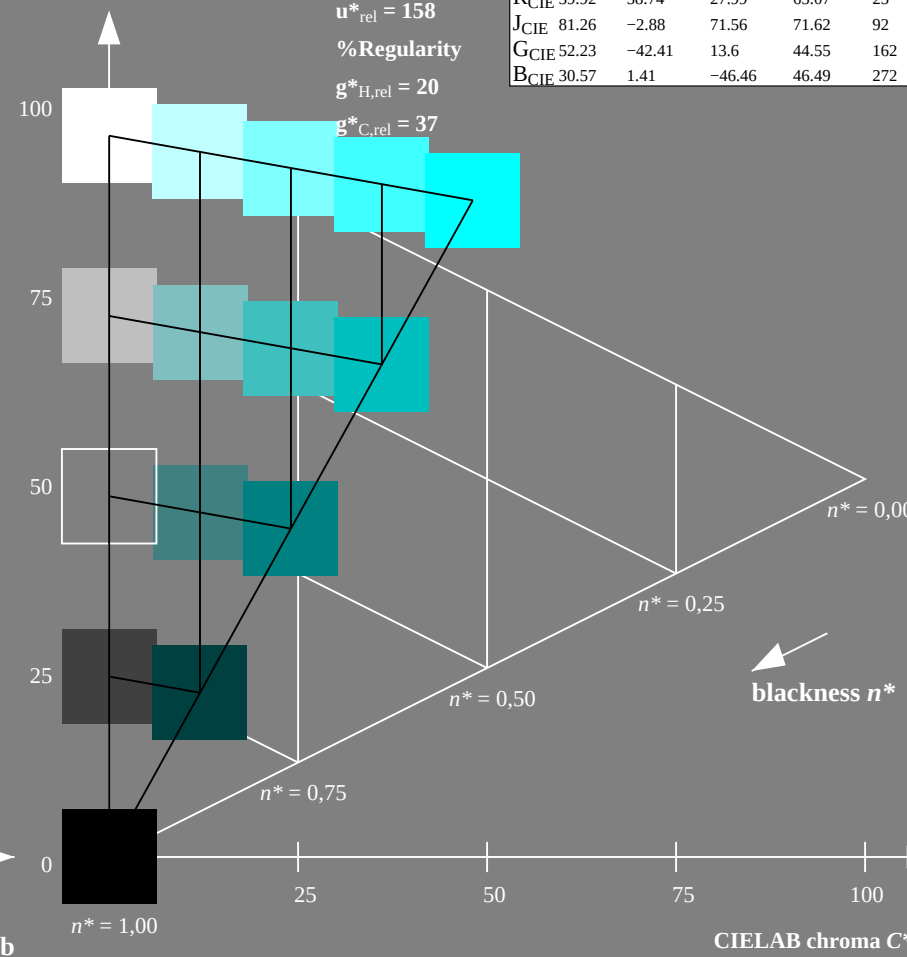
%Gamut

$u^*_{rel} = 158$

%Regularity

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

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



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

BAM-test chart NE38; Colorimetric systems TLS70 & TLS00  
D65: Coordinate systems of 5 step colour scales for 10 hues

input: `olv* setrgbcolor`  
output: `olv* setrgbcolor / w* setgray`

Input: Colorimetric Television Luminous System TLS70

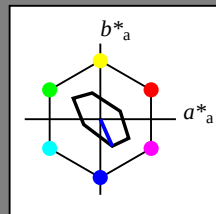
for hue  $h^* = lab \cdot h = 294/360 = 0.816$

LAB\*LCH, LAB\*NCH

D65: hue V

LCH\*Ma: 72 39 294

olv\*Ma: 0.0 0.0 1.0



TLS70; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| Y <sub>Ma</sub>  | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| L <sub>Ma</sub>  | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| C <sub>Ma</sub>  | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| V <sub>Ma</sub>  | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| M <sub>Ma</sub>  | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| N <sub>Ma</sub>  | 69.7        | 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          |

CIELAB lightness  $L^*$

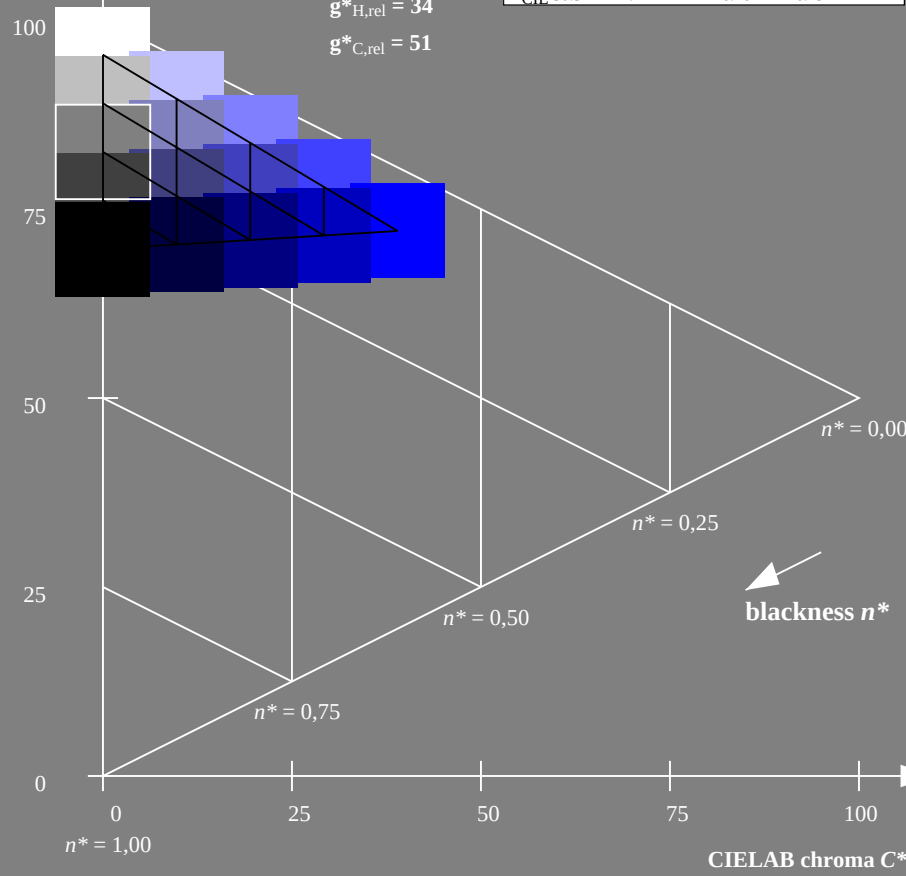
%Gamut

$u^*_{rel} = 16$

%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$



NE380-7, 5 step scales for constant CIELAB hue 294/360 = 0.816 (left)

Output: Colorimetric Television Luminous System TLS00

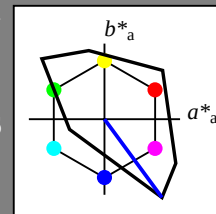
for hue  $h^* = lab \cdot h = 306/360 = 0.851$

LAB\*LCH, LAB\*NCH

D65: hue V

LCH\*Ma: 30 129 306

olv\*Ma: 0.0 0.0 1.0



TLS00; 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          |

CIELAB lightness  $L^*$

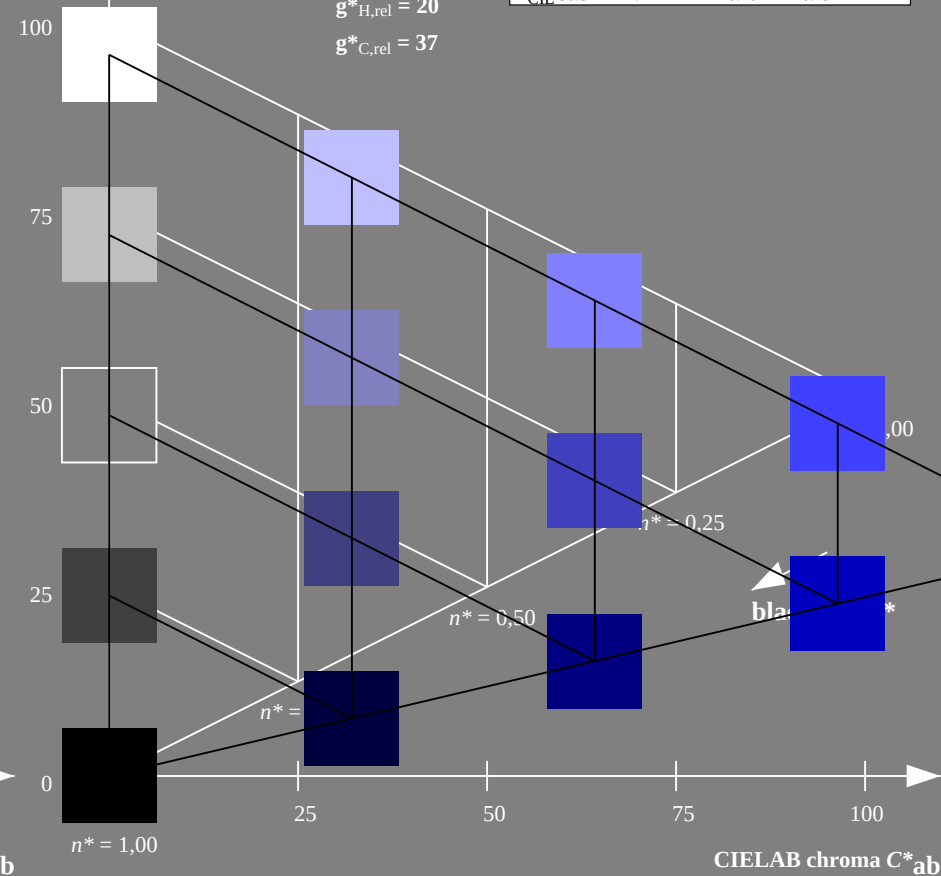
%Gamut

$u^*_{rel} = 158$

%Regularity

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

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



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

BAM-test chart NE38; Colorimetric systems TLS70 & TLS00

D65: Coordinate systems of 5 step colour scales for 10 hues

input: `olv* setrgbcolor`

output: `olv* setrgbcolor / w* setgray`

Input: Colorimetric Television Luminous System TLS70

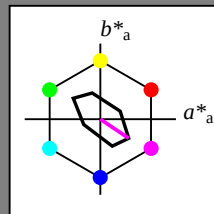
for hue  $h^* = lab \cdot h = 326/360 = 0.906$

LAB\*LCH, LAB\*NCH

D65: hue M

LCH\*Ma: 79 45 326

olv\*Ma: 1.0 0.0 1.0



TLS70; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| Y <sub>Ma</sub>  | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| L <sub>Ma</sub>  | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| C <sub>Ma</sub>  | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| V <sub>Ma</sub>  | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| M <sub>Ma</sub>  | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| N <sub>Ma</sub>  | 69.7        | 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          |

CIELAB lightness  $L^*$

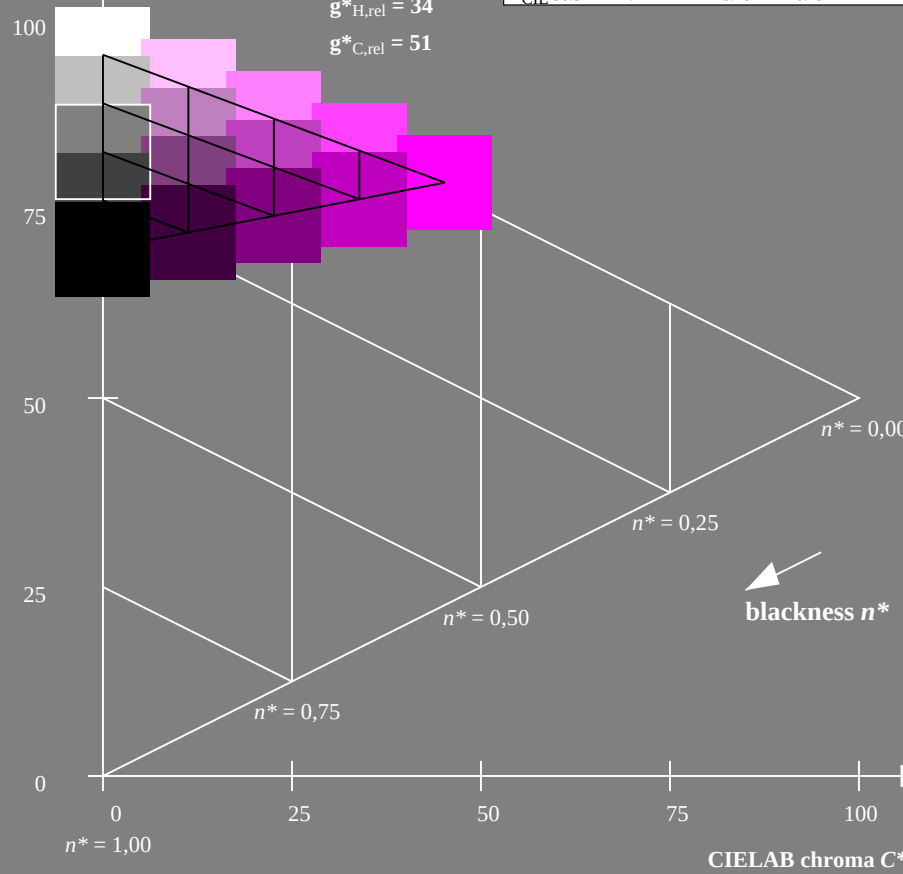
%Gamut

$u^*_{rel} = 16$

%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$



NE380-7, 5 step scales for constant CIELAB hue 326/360 = 0.906 (left)

Output: Colorimetric Television Luminous System TLS00

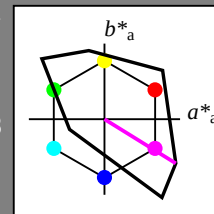
for hue  $h^* = lab \cdot h = 328/360 = 0.912$

LAB\*LCH, LAB\*NCH

D65: hue M

LCH\*Ma: 57 111 328

olv\*Ma: 1.0 0.0 1.0



TLS00; 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          |

CIELAB lightness  $L^*$

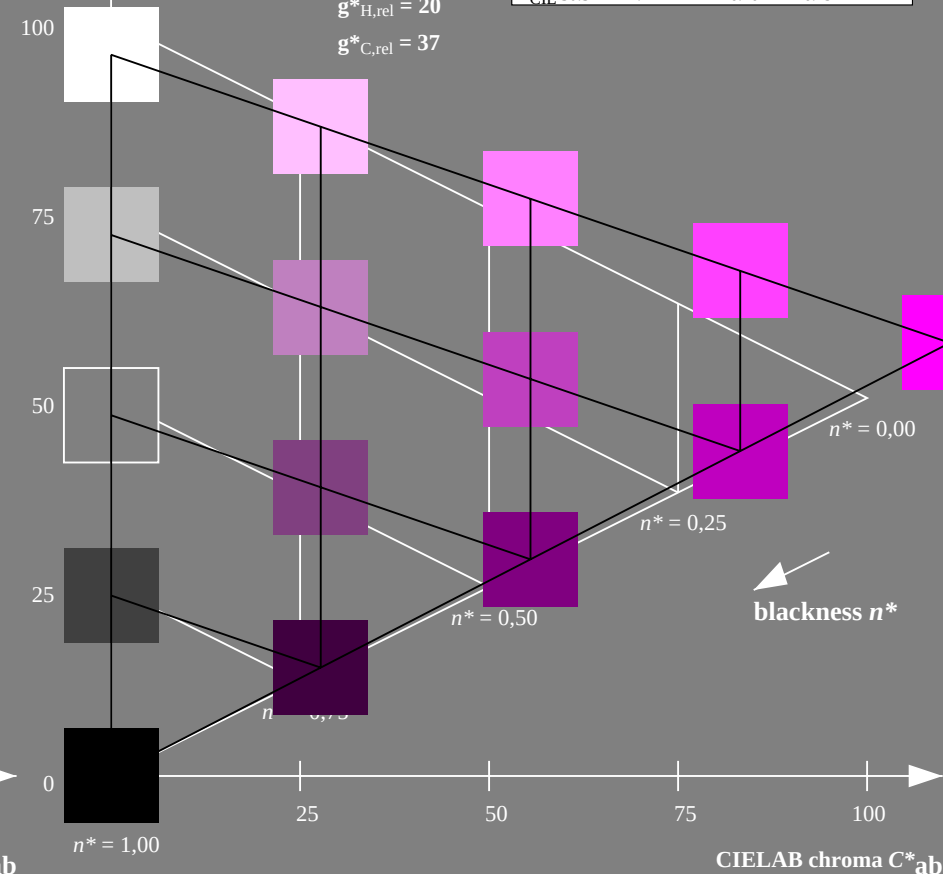
%Gamut

$u^*_{rel} = 158$

%Regularity

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

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



5 step scales for constant CIELAB hue 328/360 = 0.912 (right)

BAM-test chart NE38; Colorimetric systems TLS70 & TLS00  
D65: Coordinate systems of 5 step colour scales for 10 hues

input: `olv* setrgbcolor`  
output: `olv* setrgbcolor / w* setgray`

Input: Colorimetric Television Luminous System TLS70

for hue  $h^* = lab \cdot h = 25/360 = 0.071$

LAB\*LCH, LAB\*NCH

D65: hue R

LCH\*Ma: 77 27 25

olv\*Ma: 1.0 0.05 0.0

CIELAB lightness  $L^*$

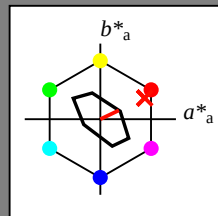
%Gamut

$u^*_{rel} = 16$

%Regularity

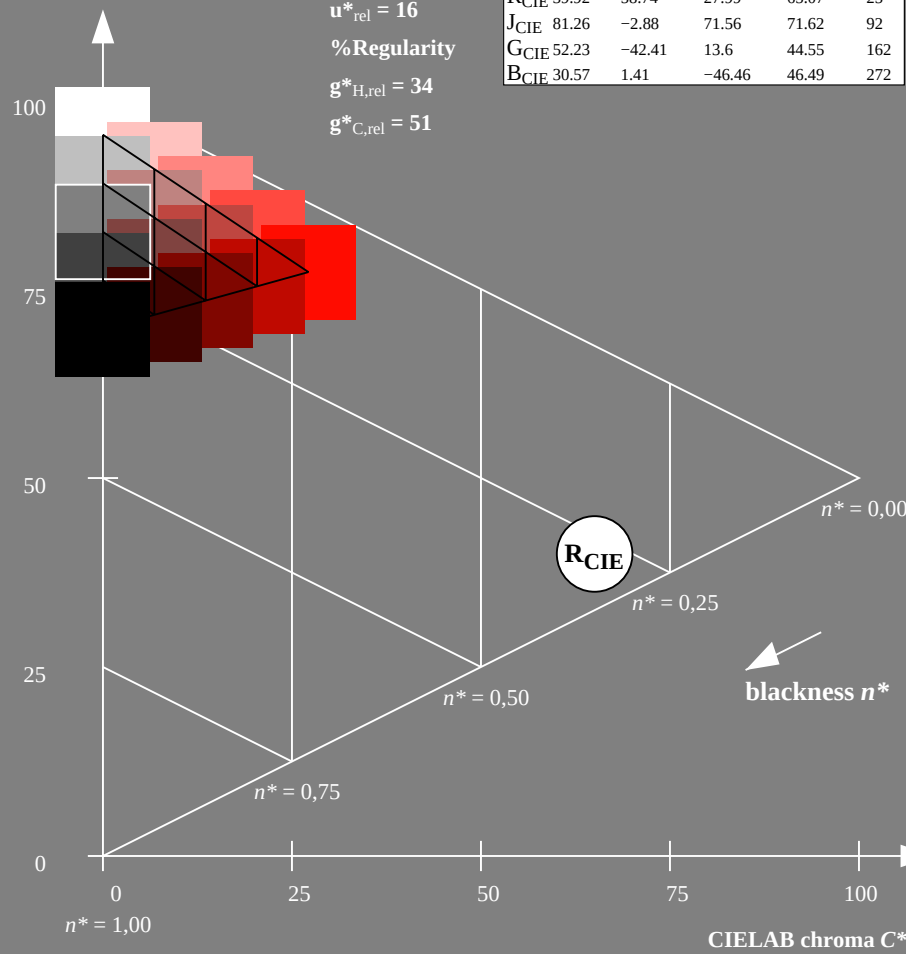
$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$



TLS70; adapted (a) CIELAB data

|                  | $L^* = L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|---------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 76.43         | 26.27   | 10.57   | 28.32        | 22           |
| Y <sub>Ma</sub>  | 93.93         | -10.76  | 34.63   | 36.27        | 107          |
| L <sub>Ma</sub>  | 89.32         | -35.8   | 27.64   | 45.24        | 142          |
| C <sub>Ma</sub>  | 90.93         | -21.95  | -7.07   | 23.07        | 198          |
| V <sub>Ma</sub>  | 72.1          | 15.76   | -35.63  | 38.97        | 294          |
| M <sub>Ma</sub>  | 78.5          | 37.52   | -25.23  | 45.22        | 326          |
| N <sub>Ma</sub>  | 69.7          | 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          |



NE380-7, 5 step scales for constant CIELAB hue 25/360 = 0.071 (left)

Output: Colorimetric Television Luminous System TLS00

for hue  $h^* = lab \cdot h = 25/360 = 0.071$

LAB\*LCH, LAB\*NCH

D65: hue R

LCH\*Ma: 52 89 25

olv\*Ma: 1.0 0.0 0.21

CIELAB lightness  $L^*$

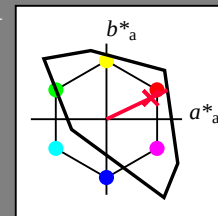
%Gamut

$u^*_{rel} = 158$

%Regularity

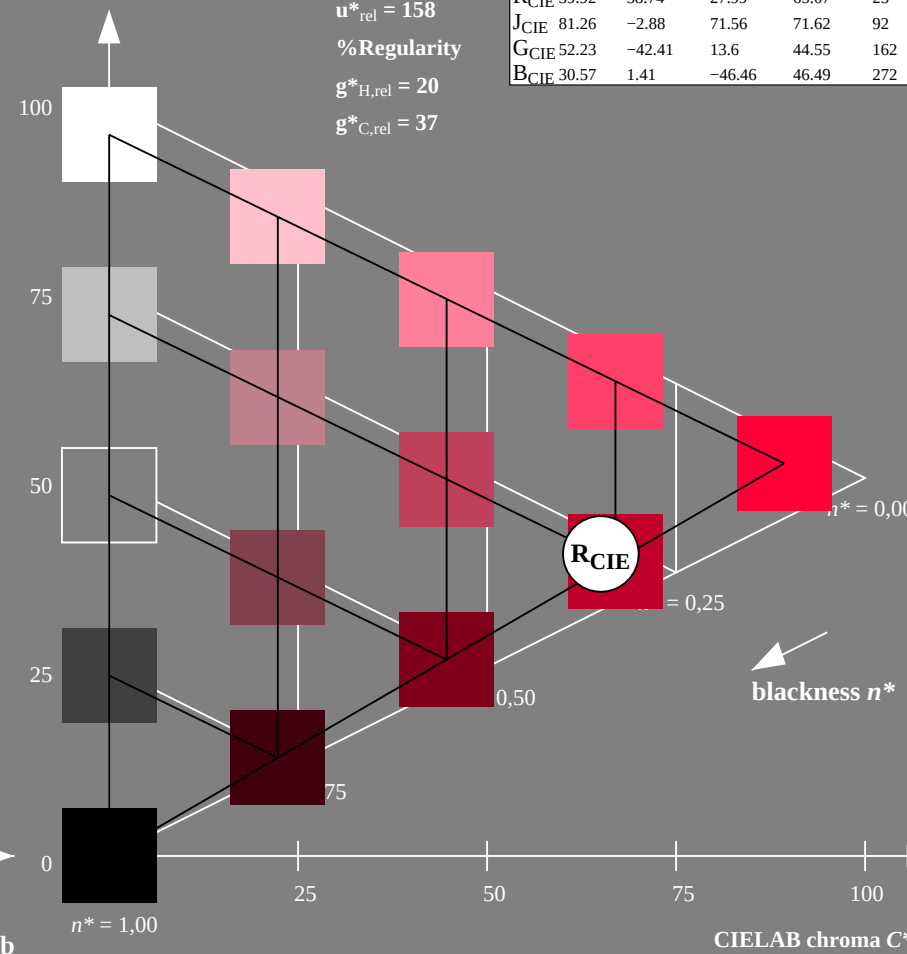
$g^*_{H,rel} = 20$

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



TLS00; 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          |



5 step scales for constant CIELAB hue 25/360 = 0.071 (right)

BAM-test chart NE38; Colorimetric systems TLS70 & TLS00

D65: Coordinate systems of 5 step colour scales for 10 hues

input: `olv* setrgbcolor`

output: `olv* setrgbcolor / w* setgray`



Input: Colorimetric Television Luminous System TLS70

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

LAB\*LCH, LAB\*NCH

D65: hue J

LCH\*Ma: 89 28 92

olv\*Ma: 1.0 0.74 0.0

CIELAB lightness  $L^*$

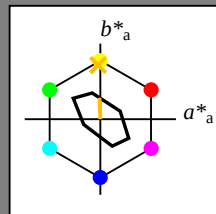
%Gamut

$u^*_{rel} = 16$

%Regularity

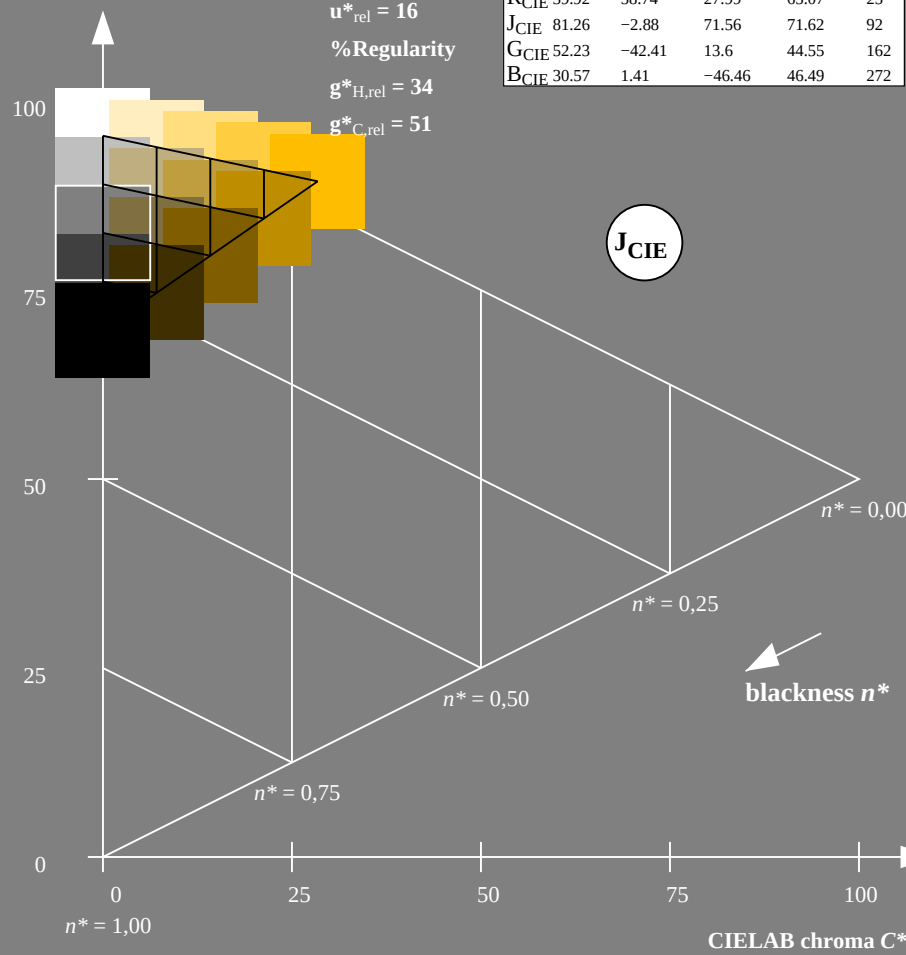
$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$



TLS70; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| Y <sub>Ma</sub>  | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| L <sub>Ma</sub>  | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| C <sub>Ma</sub>  | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| V <sub>Ma</sub>  | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| M <sub>Ma</sub>  | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| N <sub>Ma</sub>  | 69.7        | 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          |



NE380-7, 5 step scales for constant CIELAB hue 92/360 = 0.256 (left)

Output: Colorimetric Television Luminous System TLS00

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

LAB\*LCH, LAB\*NCH

D65: hue J

LCH\*Ma: 85 86 92

olv\*Ma: 1.0 0.82 0.0

CIELAB lightness  $L^*$

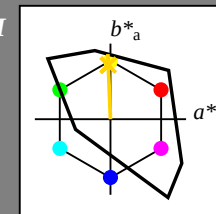
%Gamut

$u^*_{rel} = 158$

%Regularity

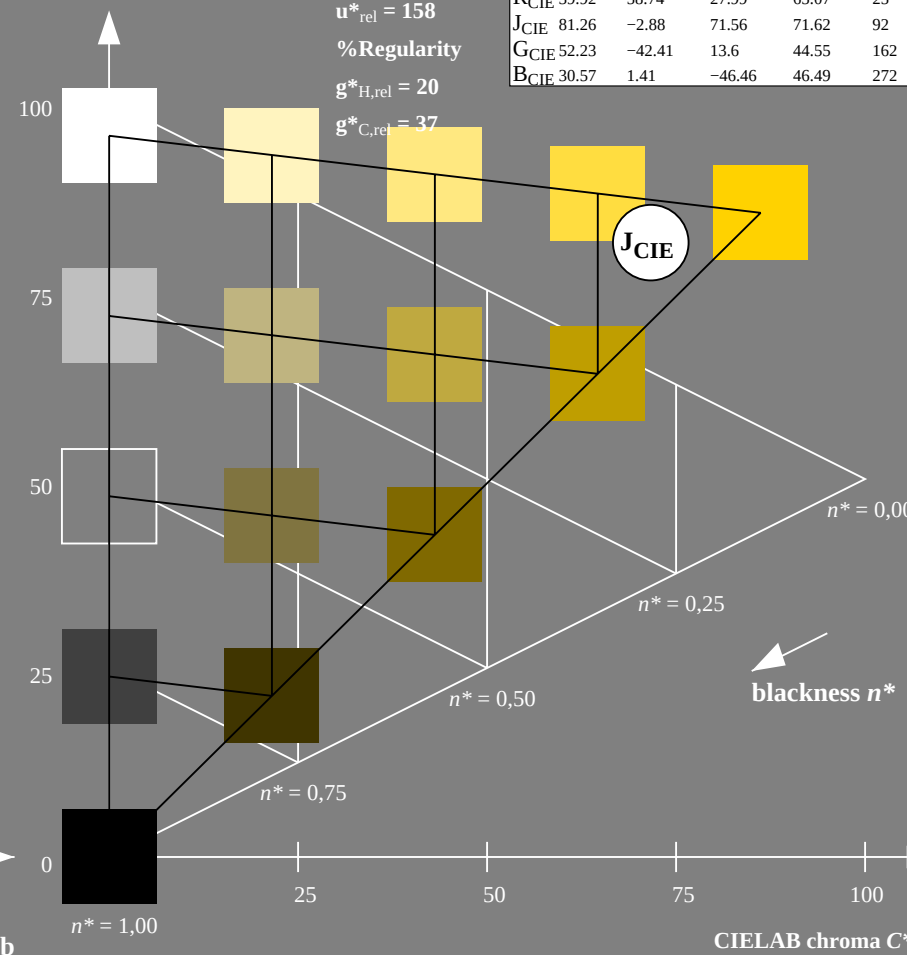
$g^*_{H,rel} = 20$

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



TLS00; 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          |



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

BAM-test chart NE38; Colorimetric systems TLS70 & TLS00  
D65: Coordinate systems of 5 step colour scales for 10 hues

input: `olv* setrgbcolor`  
output: `olv* setrgbcolor / w* setgray`



Input: Colorimetric Television Luminous System TLS70

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

LAB\*LCH, LAB\*NCH

D65: hue G

LCH\*Ma: 90 30 162

olv\*Ma: 0.0 1.0 0.53

CIE LAB lightness  $L^*$

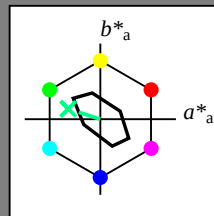
% Gamut

$u^*_{rel} = 16$

% Regularity

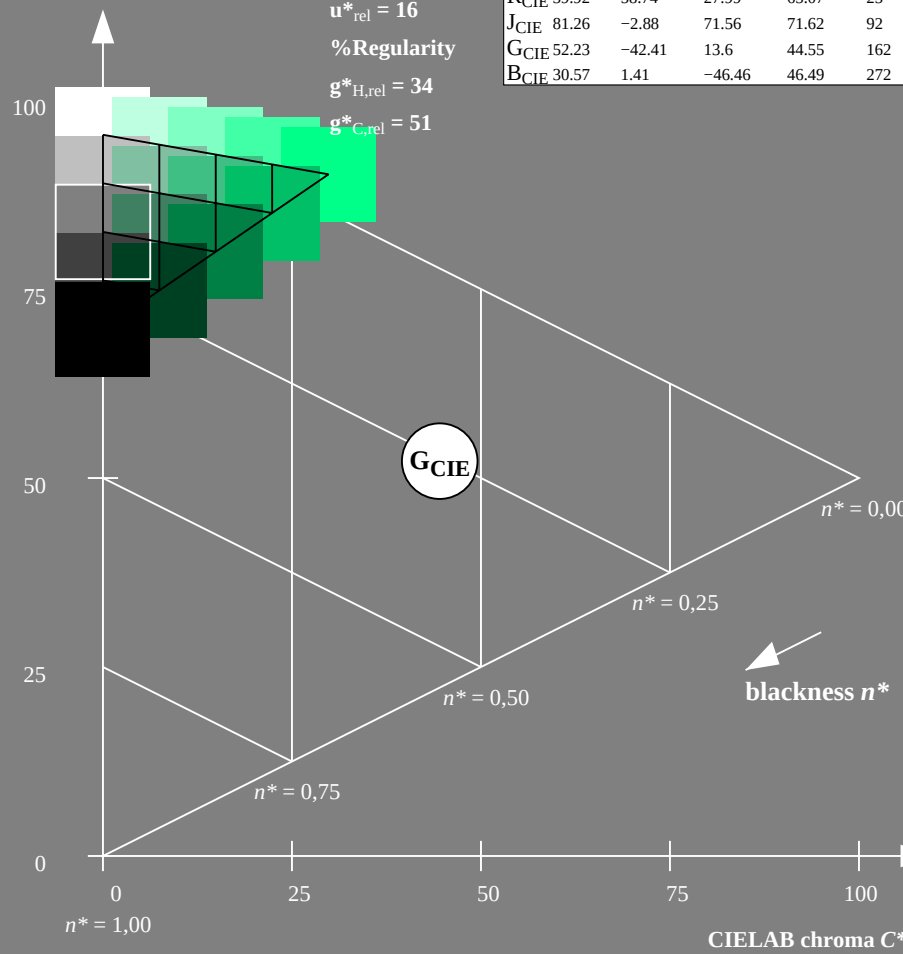
$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$



TLS70; adapted (a) CIE LAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| O <sub>Ma</sub>  | 76.43       | 26.27   | 10.57   | 28.32        | 22           |
| Y <sub>Ma</sub>  | 93.93       | -10.76  | 34.63   | 36.27        | 107          |
| L <sub>Ma</sub>  | 89.32       | -35.8   | 27.64   | 45.24        | 142          |
| C <sub>Ma</sub>  | 90.93       | -21.95  | -7.07   | 23.07        | 198          |
| V <sub>Ma</sub>  | 72.1        | 15.76   | -35.63  | 38.97        | 294          |
| M <sub>Ma</sub>  | 78.5        | 37.52   | -25.23  | 45.22        | 326          |
| N <sub>Ma</sub>  | 69.7        | 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          |



NE380-7, 5 step scales for constant CIE LAB hue 162/360 = 0.451 (left)

Output: Colorimetric Television Luminous System TLS00

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

LAB\*LCH, LAB\*NCH

D65: hue G

LCH\*Ma: 86 62 162

olv\*Ma: 0.0 1.0 0.65

CIE LAB lightness  $L^*$

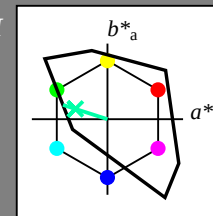
% Gamut

$u^*_{rel} = 158$

% Regularity

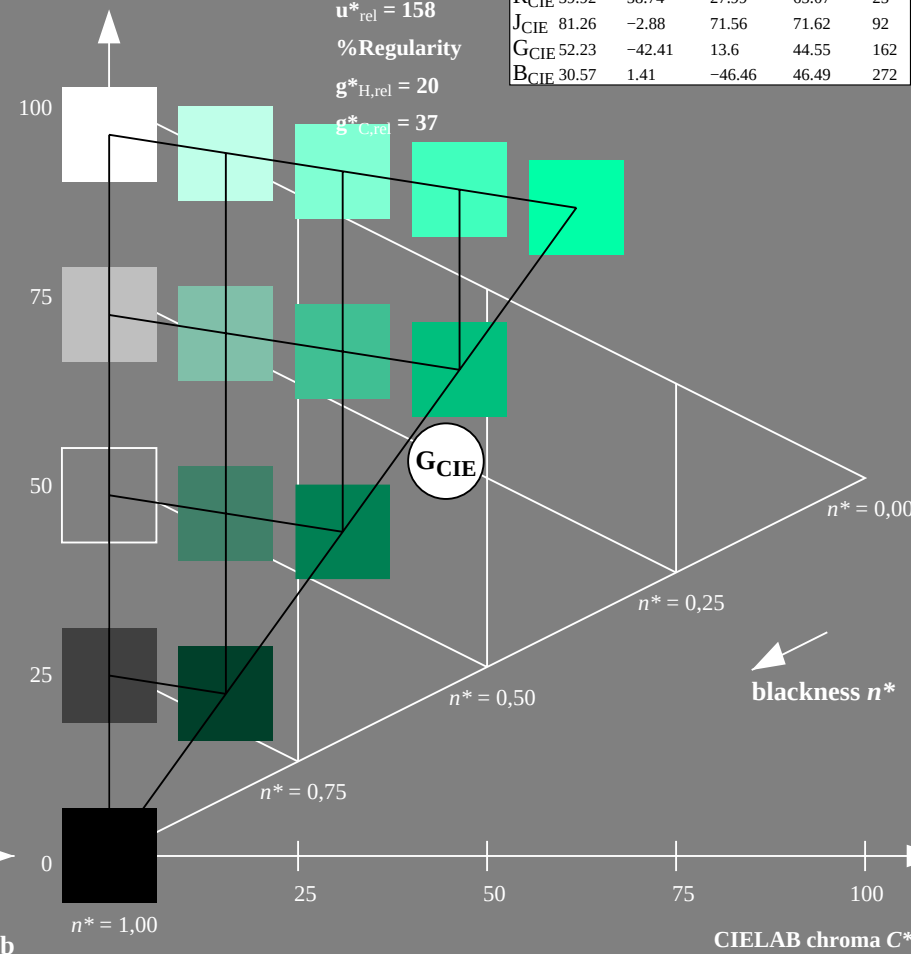
$g^*_{H,rel} = 20$

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



TLS00; adapted (a) CIE LAB 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          |



5 step scales for constant CIE LAB hue 162/360 = 0.451 (right)

BAM-test chart NE38; Colorimetric systems TLS70 & TLS00  
D65: Coordinate systems of 5 step colour scales for 10 hues

input: `olv* setrgbcolor`  
output: `olv* setrgbcolor / w* setgray`

Input: Colorimetric Television Luminous System TLS70

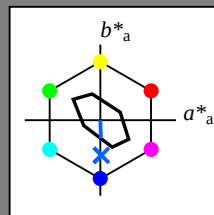
for hue  $h^* = lab \cdot h = 272/360 = 0.755$

LAB\*LCH, LAB\*NCH

D65: hue B

LCH\*Ma: 80 24 272

olv\*Ma: 0.0 0.4 1.0



| TLS70; adapted (a) CIELAB data |         |         |              |              |     |
|--------------------------------|---------|---------|--------------|--------------|-----|
| $L^*=L^*_a$                    | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |     |
| O <sub>Ma</sub>                | 76.43   | 26.27   | 10.57        | 28.32        | 22  |
| Y <sub>Ma</sub>                | 93.93   | -10.76  | 34.63        | 36.27        | 107 |
| L <sub>Ma</sub>                | 89.32   | -35.8   | 27.64        | 45.24        | 142 |
| C <sub>Ma</sub>                | 90.93   | -21.95  | -7.07        | 23.07        | 198 |
| V <sub>Ma</sub>                | 72.1    | 15.76   | -35.63       | 38.97        | 294 |
| M <sub>Ma</sub>                | 78.5    | 37.52   | -25.23       | 45.22        | 326 |
| N <sub>Ma</sub>                | 69.7    | 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 |

CIELAB lightness  $L^*$

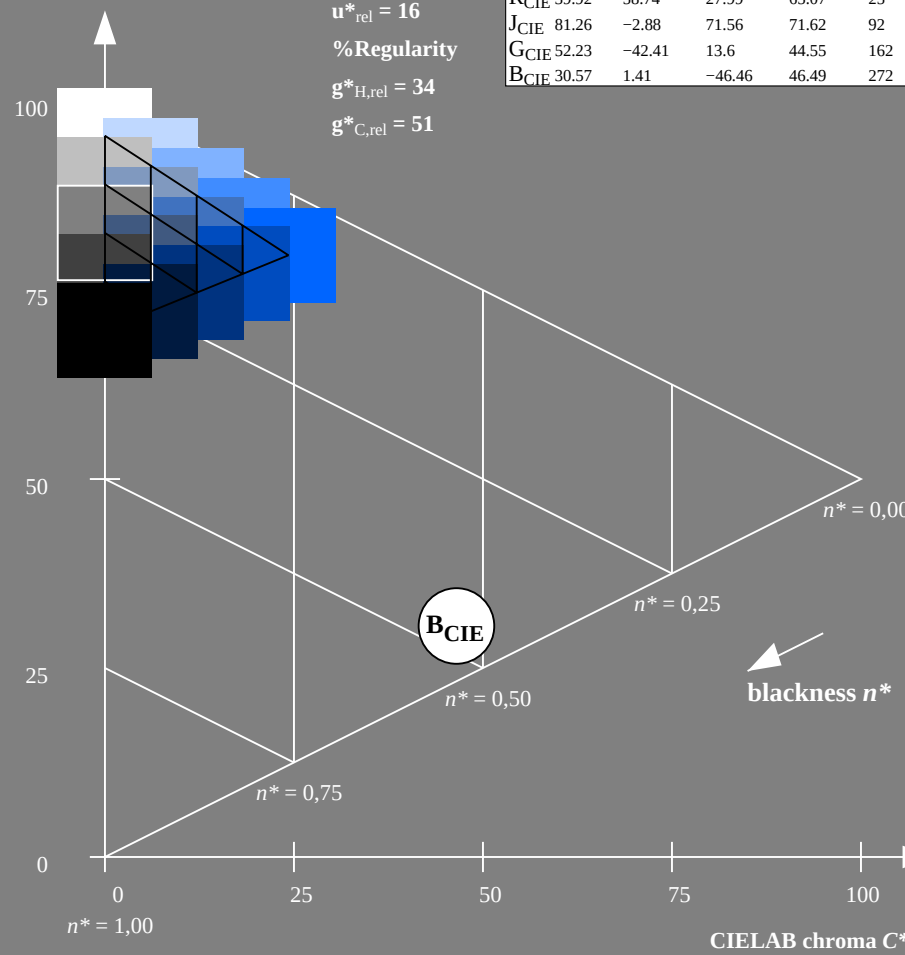
%Gamut

$u^*_{rel} = 16$

%Regularity

$g^*_{H,rel} = 34$

$g^*_{C,rel} = 51$



NE380-7, 5 step scales for constant CIELAB hue 272/360 = 0.755 (left)

Output: Colorimetric Television Luminous System TLS00

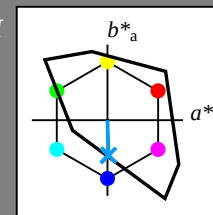
for hue  $h^* = lab \cdot h = 272/360 = 0.755$

LAB\*LCH, LAB\*NCH

D65: hue B

LCH\*Ma: 65 49 272

olv\*Ma: 0.0 0.61 1.0



| TLS00; 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 |

CIELAB lightness  $L^*$

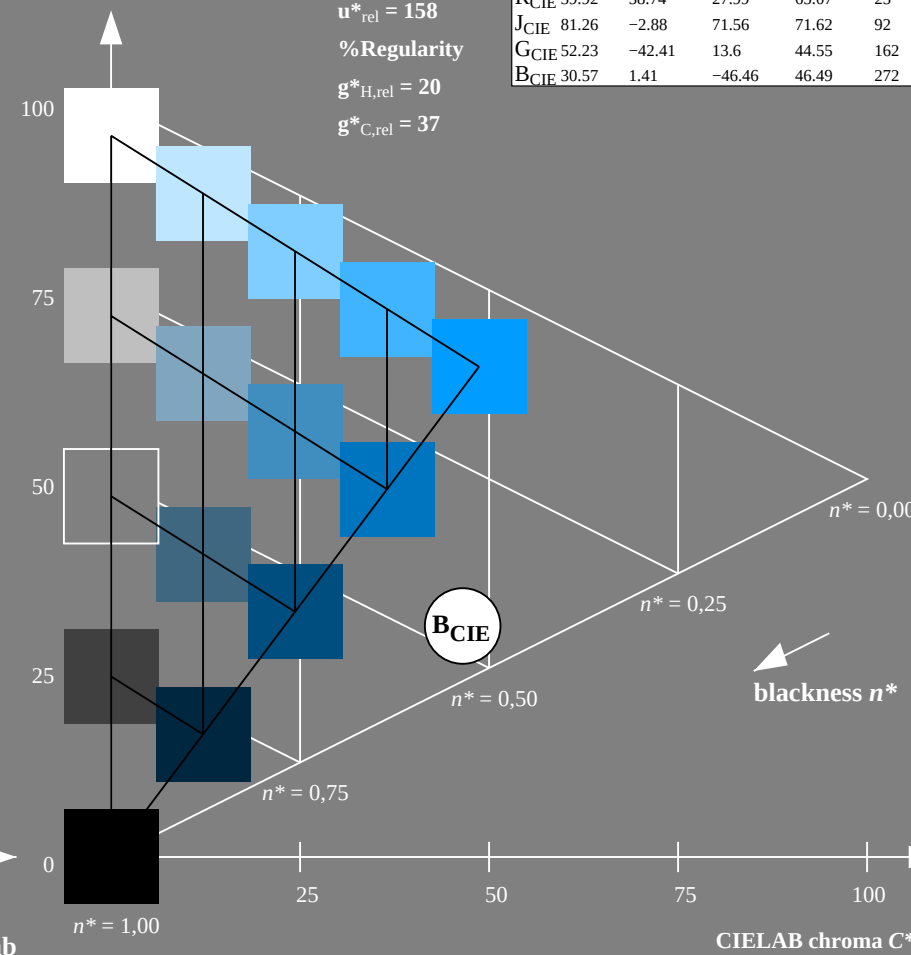
%Gamut

$u^*_{rel} = 158$

%Regularity

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

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



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

BAM-test chart NE38; Colorimetric systems TLS70 & TLS00

D65: Coordinate systems of 5 step colour scales for 10 hues

input: `olv* setrgbcolor`

output: `olv* setrgbcolor / w* setgray`