

Input: Colorimetric Television Luminous System TLS00

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

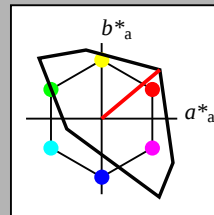
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue O

LCH\*Ma: 51 100 40

olv\*Ma: 1.0 0.0 0.0

triangle lightness



$u^*_{rel} = 158$

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          |

%Regularity

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

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

Output: Colorimetric Television Luminous System TLS70

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

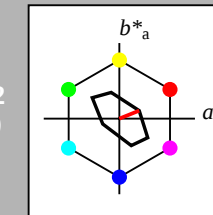
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue O

LCH\*Ma: 76 28 22

olv\*Ma: 1.0 0.0 0.0

triangle lightness



$u^*_{rel} = 16$

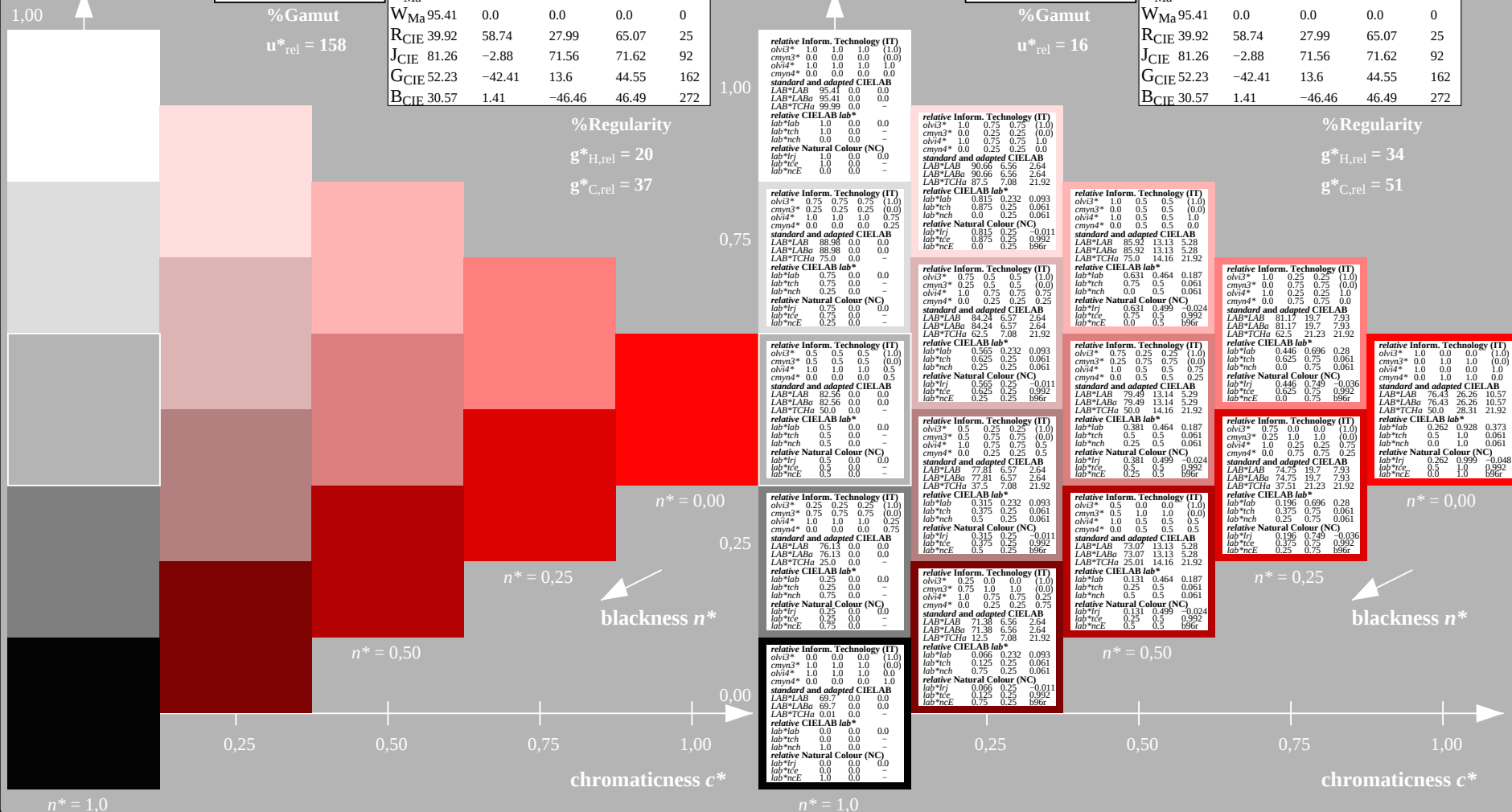
TLS70; adapted (a) CIELAB data

|                  | $L^* = L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|---------------|---------|---------|--------------|--------------|
| 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          |

%Regularity

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

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



NE43-7, 5 step scales for constant CIELAB hue 40/360 = 0.111 (left)

5 step scales for constant CIELAB hue 22/360 = 0.061 (right)

BAM-test chart NE43; Colorimetric systems TLS00 & TLS70

D65: 5 step colour scales and coordinate data for 10 hues

input: `olv* setrgbcolor`

output: `olv* setrgbcolor / w* setgray`

Input: Colorimetric Television Luminous System TLS00

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

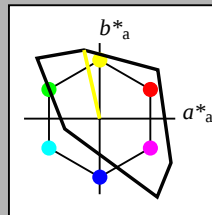
$lab^*tch$  and  $lab^*nch$

D65: hue Y

LCH\*Ma: 93 93 103

olv\*Ma: 1.0 1.0 0.0

triangle lightness



| 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          |

%Regularity

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

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

Output: Colorimetric Television Luminous System TLS70

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

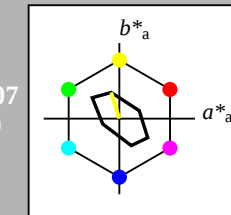
$lab^*tch$  and  $lab^*nch$

D65: hue Y

LCH\*Ma: 94 36 107

olv\*Ma: 1.0 1.0 0.0

triangle lightness

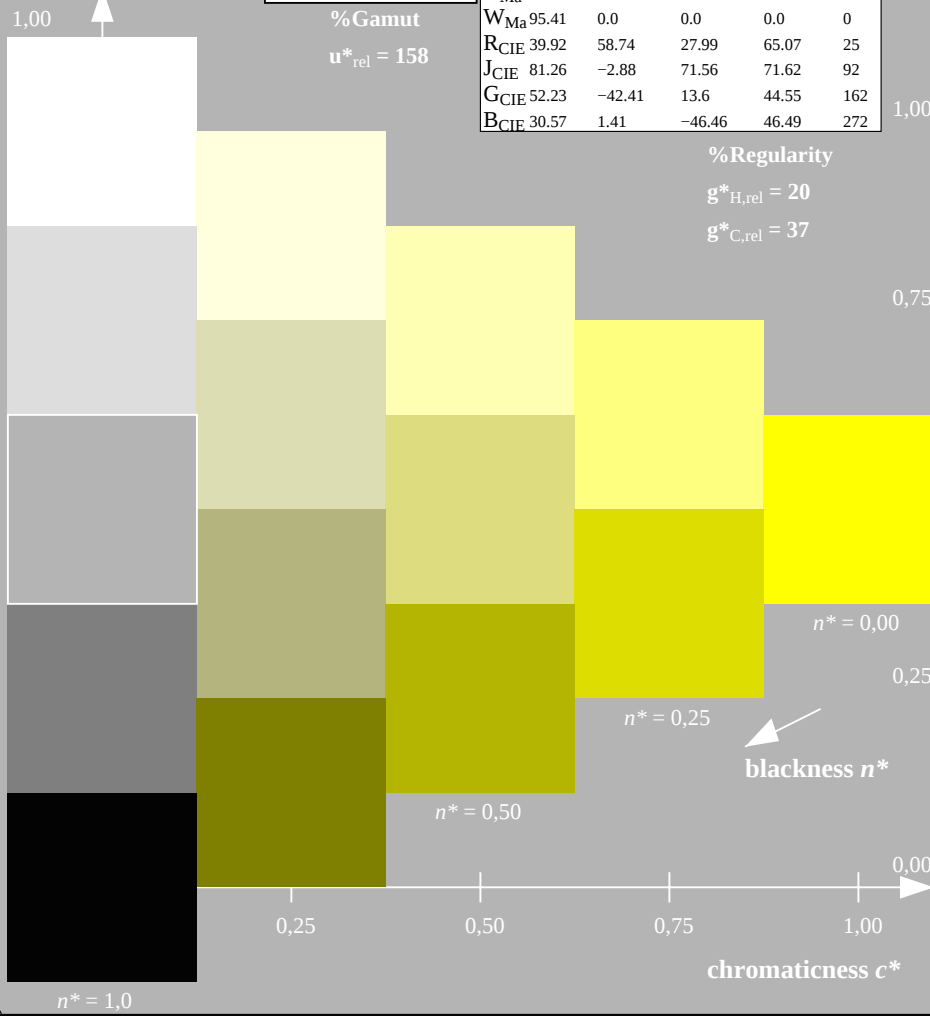


| TLS70; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <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          |

%Regularity

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

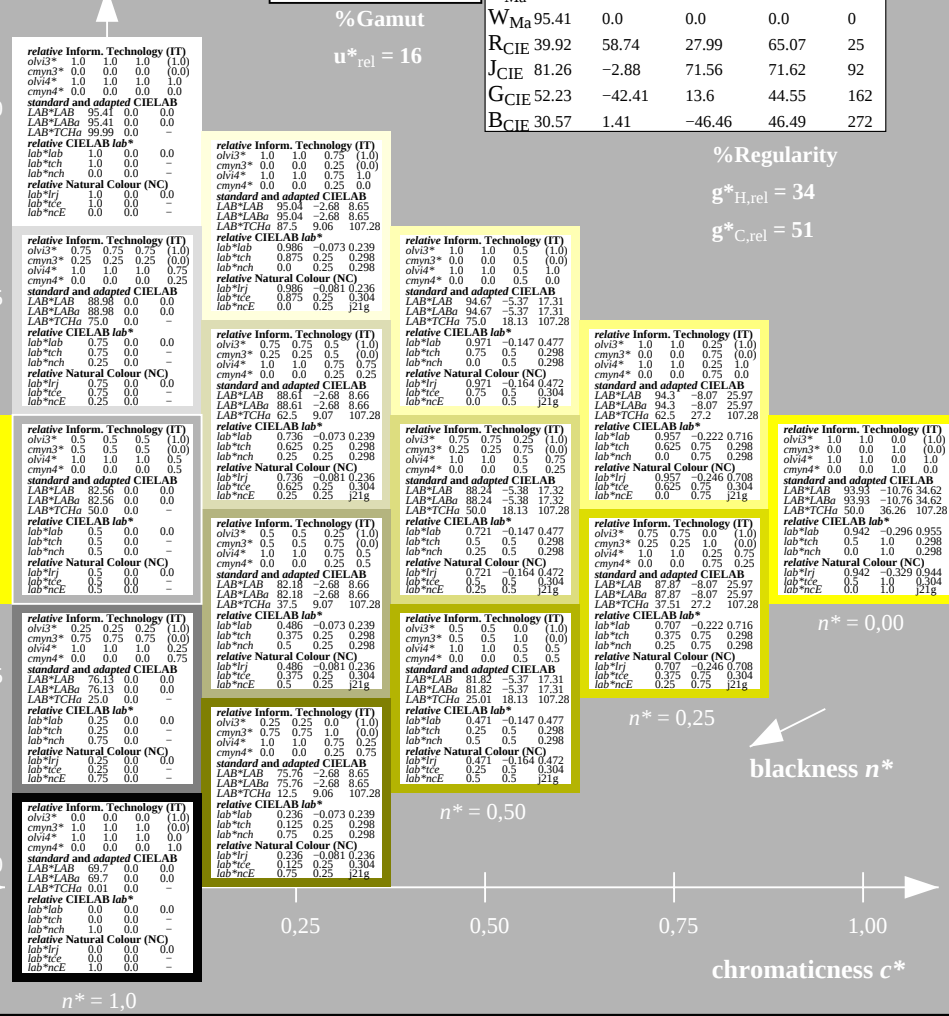
$g^*_{C,rel} = 51$



NE430-7, 5 step scales for constant CIELAB hue 103/360 = 0.286 (left)

BAM-test chart NE43; Colorimetric systems TLS00 & TLS70

D65: 5 step colour scales and coordinate data for 10 hues



5 step scales for constant CIELAB hue 107/360 = 0.298 (right)

input:  $olv^* setrgbcolor$

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

Input: Colorimetric Television Luminous System TLS00

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

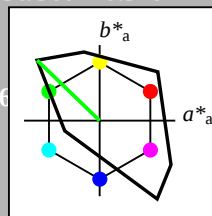
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue L

LCH\*Ma: 84 115 136

olv\*Ma: 0.0 1.0 0.0

triangle lightness



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          |

%Regularity

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

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

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

$n^* = 1,0$

chromaticness  $c^*$

Output: Colorimetric Television Luminous System TLS70

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

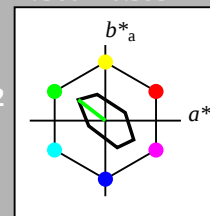
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue L

LCH\*Ma: 89 45 142

olv\*Ma: 0.0 1.0 0.0

triangle lightness



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          |

%Regularity

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

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

1,00

0,75

$n^* = 0,00$

0,25

$n^* = 0,25$

$n^* = 0,50$

chromaticness  $c^*$

NE430-7, 5 step scales for constant CIELAB hue 136/360 = 0.378 (left)

5 step scales for constant CIELAB hue 142/360 = 0.395 (right)

BAM-test chart NE43; Colorimetric systems TLS00 & TLS70

D65: 5 step colour scales and coordinate data for 10 hues

input:  $olv^* \text{ setrgbcolor}$

output:  $olv^* \text{ setrgbcolor} / w^* \text{ setgray}$

Input: Colorimetric Television Luminous System TLS00

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

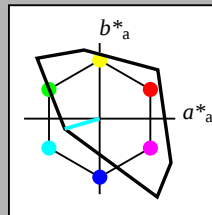
$lab^*tch$  and  $lab^*nch$

D65: hue C

LCH\*Ma: 87 48 196

olv\*Ma: 0.0 1.0 1.0

triangle lightness



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          |

%Regularity

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

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

Output: Colorimetric Television Luminous System TLS70

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

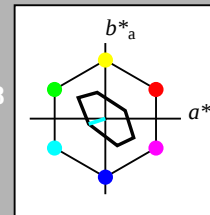
$lab^*tch$  and  $lab^*nch$

D65: hue C

LCH\*Ma: 91 23 198

olv\*Ma: 0.0 1.0 1.0

triangle lightness



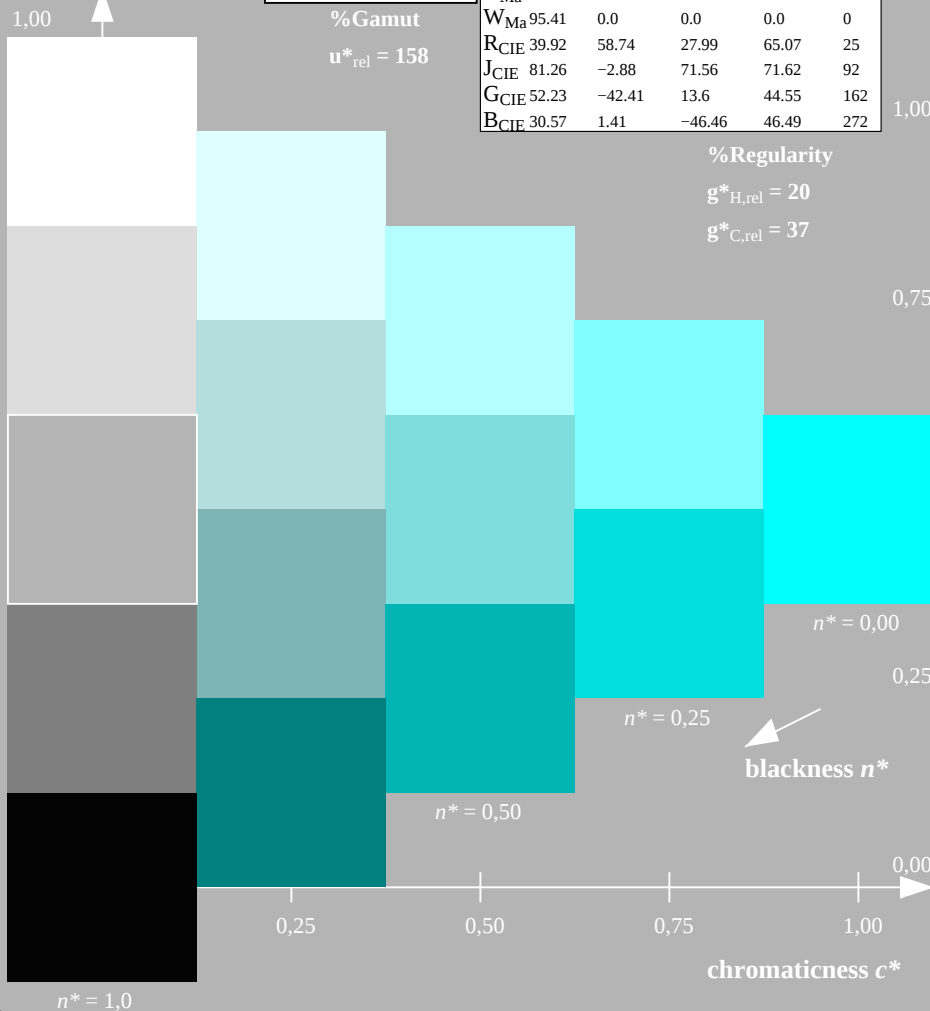
TLS70; adapted (a) CIELAB data

|                  | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
|------------------|-------------|---------|---------|--------------|--------------|
| 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          |

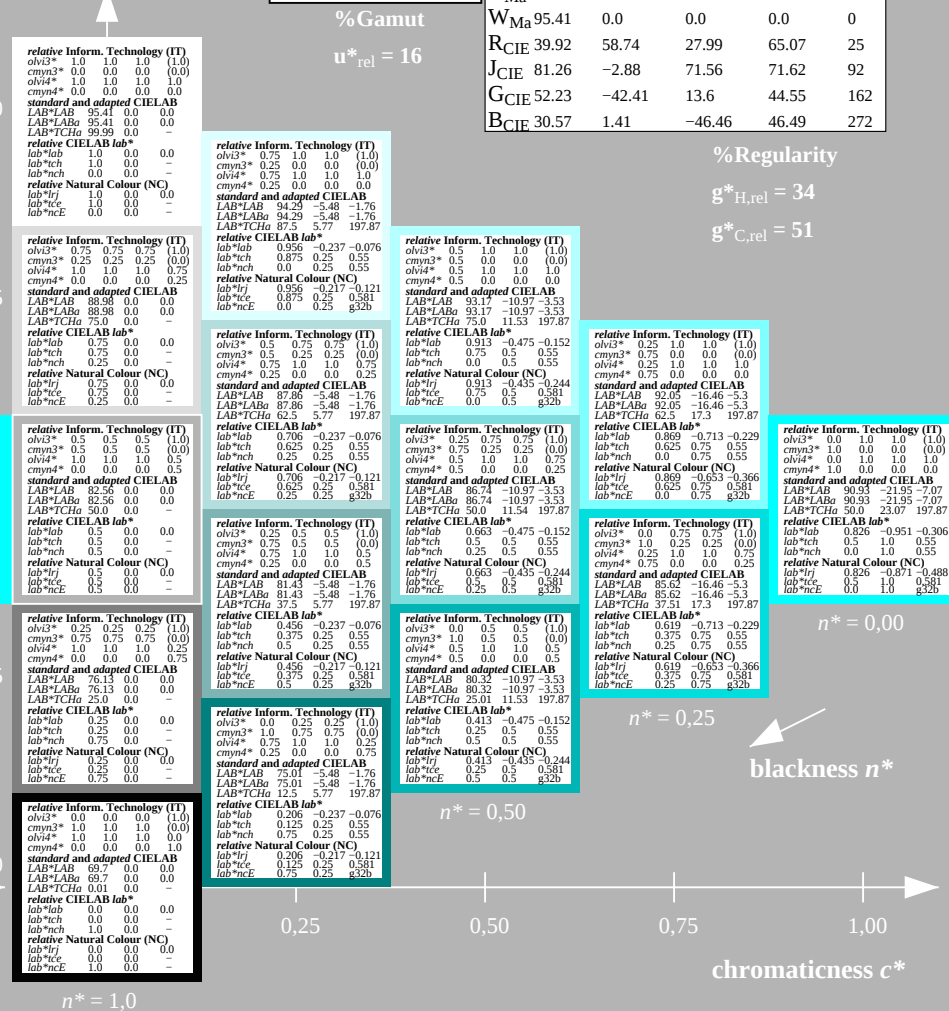
%Regularity

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

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



NE430-7, 5 step scales for constant CIELAB hue 196/360 = 0.545 (left)



5 step scales for constant CIELAB hue 198/360 = 0.55 (right)

BAM-test chart NE43; Colorimetric systems TLS00 & TLS70

D65: 5 step colour scales and coordinate data for 10 hues

input: `olv* setrgbcolor`

output: `olv* setrgbcolor / w* setgray`

Input: Colorimetric Television Luminous System TLS00

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

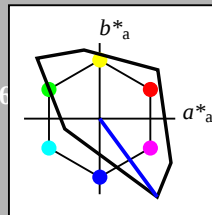
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue V

LCH\*Ma: 30 129 306

olv\*Ma: 0.0 0.0 1.0

triangle lightness



| 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          |

%Regularity

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

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

Output: Colorimetric Television Luminous System TLS70

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

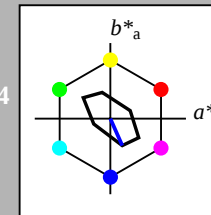
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue V

LCH\*Ma: 72 39 294

olv\*Ma: 0.0 0.0 1.0

triangle lightness

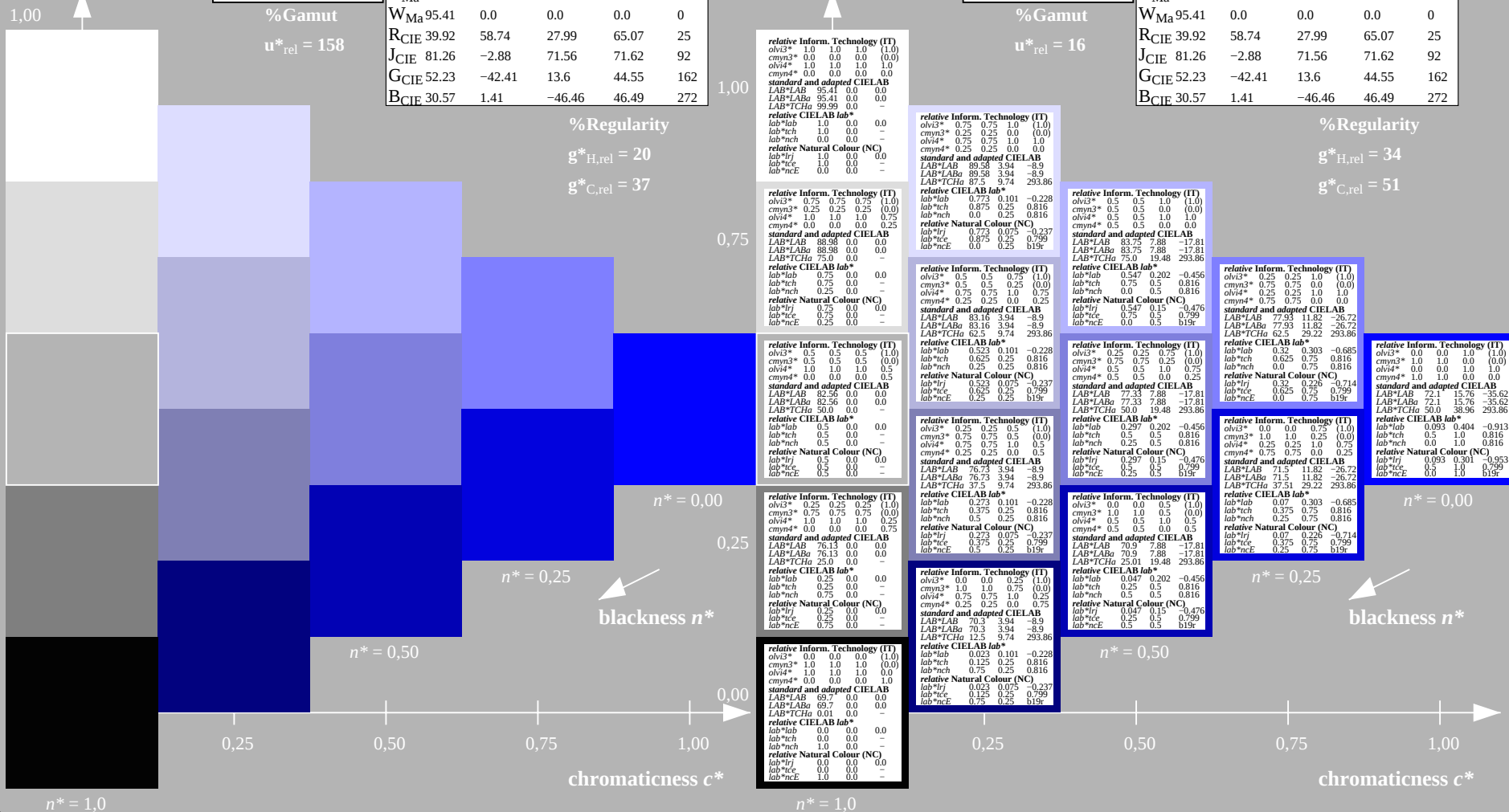


| TLS70; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <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          |

%Regularity

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

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



NE430-7, 5 step scales for constant CIELAB hue 306/360 = 0.851 (left)

5 step scales for constant CIELAB hue 294/360 = 0.816 (right)

BAM-test chart NE43; Colorimetric systems TLS00 & TLS70

D65: 5 step colour scales and coordinate data for 10 hues

input: olv\* setrgbcolor

output: olv\* setrgbcolor / w\* setgray

Input: Colorimetric Television Luminous System TLS00

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

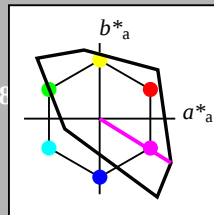
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue M

LCH\*Ma: 57 111 328

olv\*Ma: 1.0 0.0 1.0

triangle lightness



$u^*_{rel} = 158$

| 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          |

%Regularity

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

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

Output: Colorimetric Television Luminous System TLS70

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

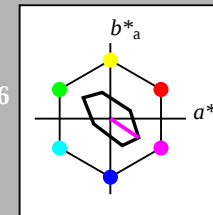
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue M

LCH\*Ma: 79 45 326

olv\*Ma: 1.0 0.0 1.0

triangle lightness



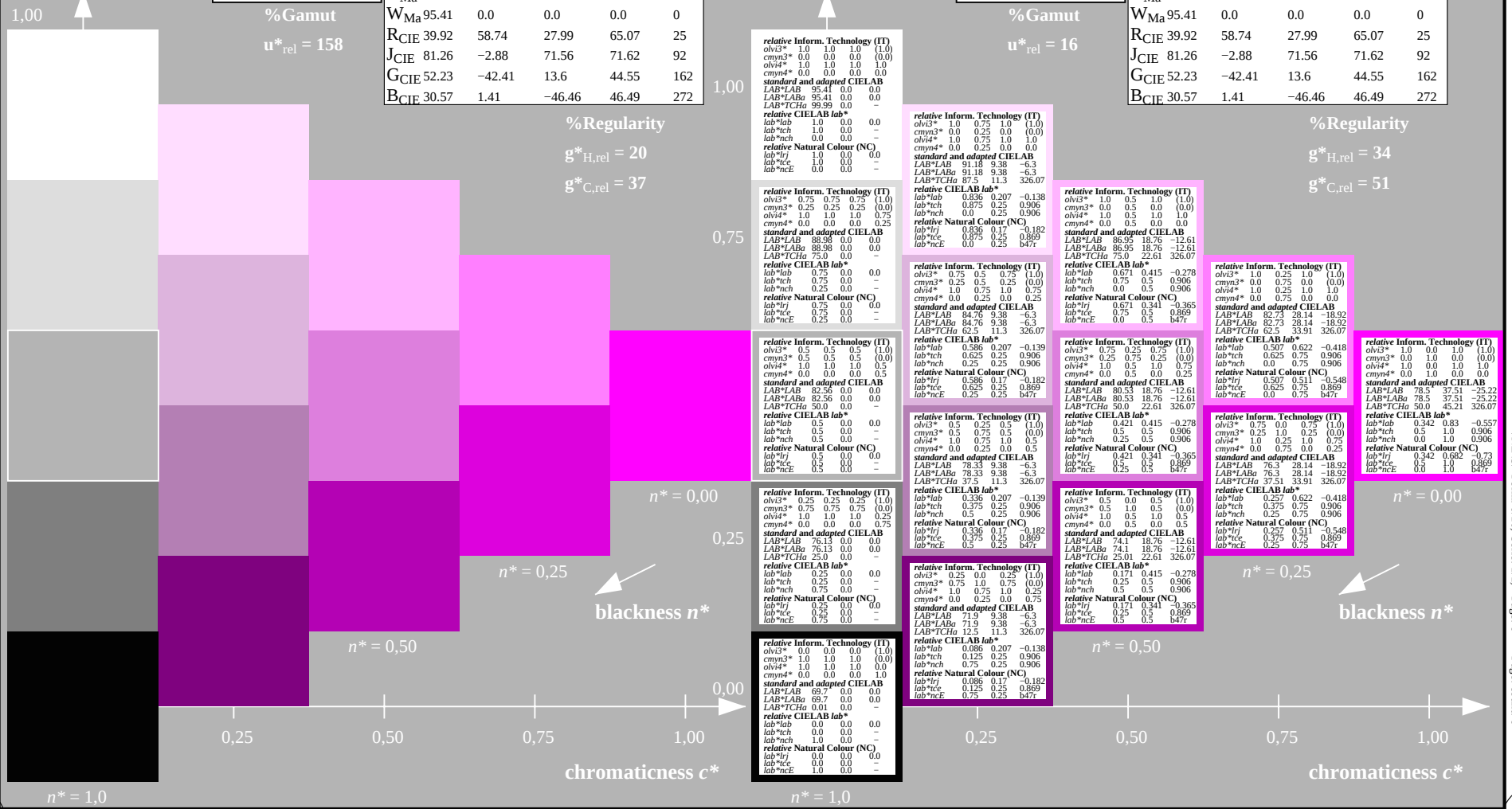
$u^*_{rel} = 16$

| 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          |

%Regularity

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

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



NE430-7, 5 step scales for constant CIELAB hue 328/360 = 0.912 (left)

5 step scales for constant CIELAB hue 326/360 = 0.906 (right)

BAM-test chart NE43; Colorimetric systems TLS00 & TLS70

D65: 5 step colour scales and coordinate data for 10 hues

input:  $olv \cdot setrgbcolor$

output:  $olv \cdot setrgbcolor / w \cdot setgray$

Input: Colorimetric Television Luminous System TLS00

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

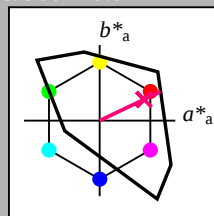
$lab^*tch$  and  $lab^*nch$

D65: hue R

LCH\*Ma: 52 89 25

olv\*Ma: 1.0 0.0 0.21

triangle lightness



| 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          |

%Regularity

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

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

Output: Colorimetric Television Luminous System TLS70

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

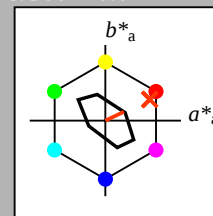
$lab^*tch$  and  $lab^*nch$

D65: hue R

LCH\*Ma: 77 27 25

olv\*Ma: 1.0 0.05 0.0

triangle lightness

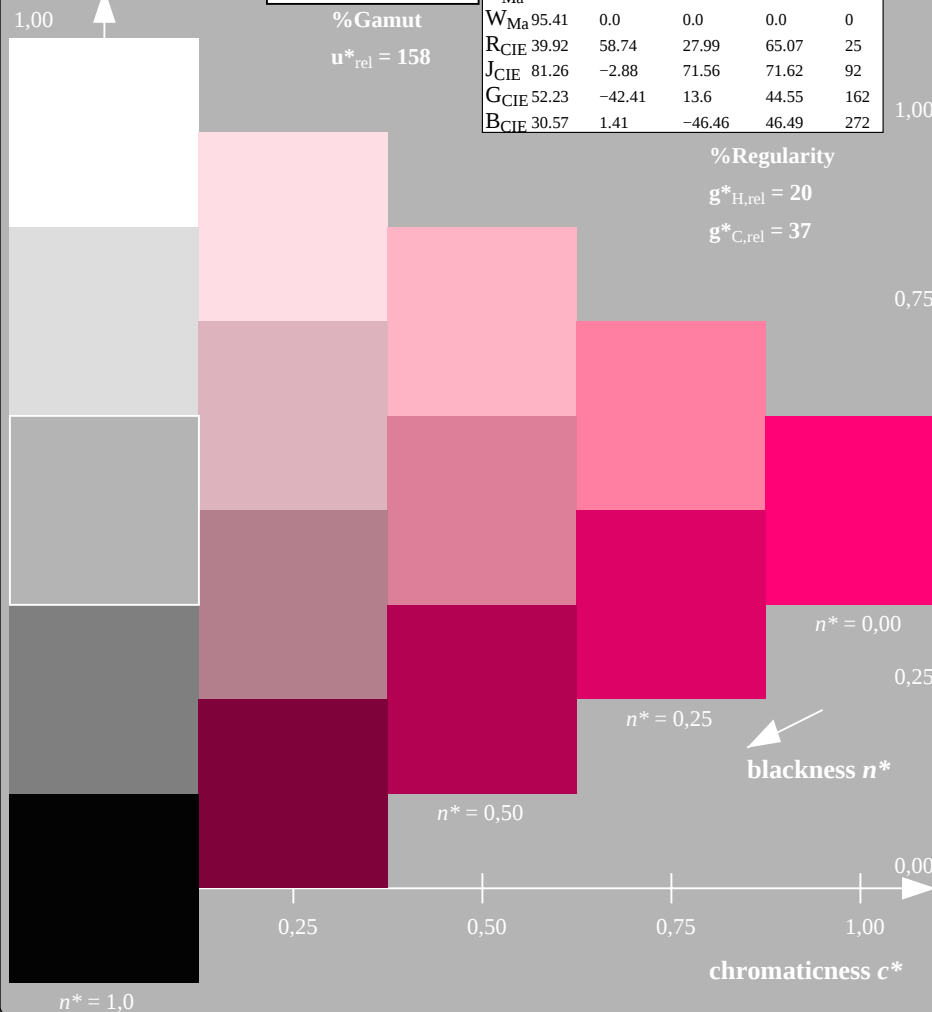


| TLS70; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <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          |

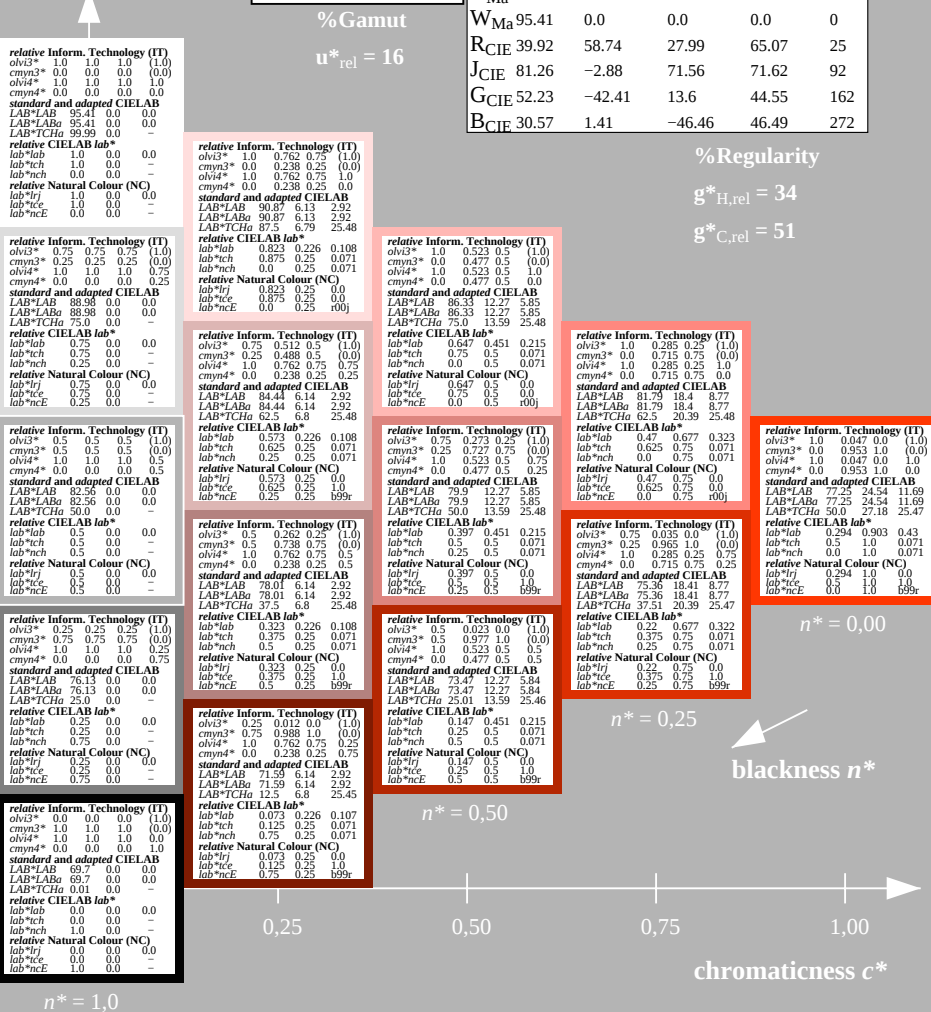
%Regularity

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

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



NE430-7, 5 step scales for constant CIELAB hue 25/360 = 0.071 (left)



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

BAM-test chart NE43; Colorimetric systems TLS00 & TLS70

D65: 5 step colour scales and coordinate data for 10 hues

input:  $olv^* setrgbcolor$

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

Input: Colorimetric Television Luminous System TLS00

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

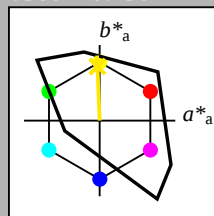
$lab^*tch$  and  $lab^*nch$

D65: hue J

LCH\*Ma: 85 86 92

olv\*Ma: 1.0 0.82 0.0

triangle lightness



| 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          |

%Regularity

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

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

Output: Colorimetric Television Luminous System TLS70

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

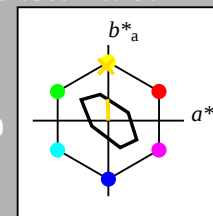
$lab^*tch$  and  $lab^*nch$

D65: hue J

LCH\*Ma: 89 28 92

olv\*Ma: 1.0 0.74 0.0

triangle lightness

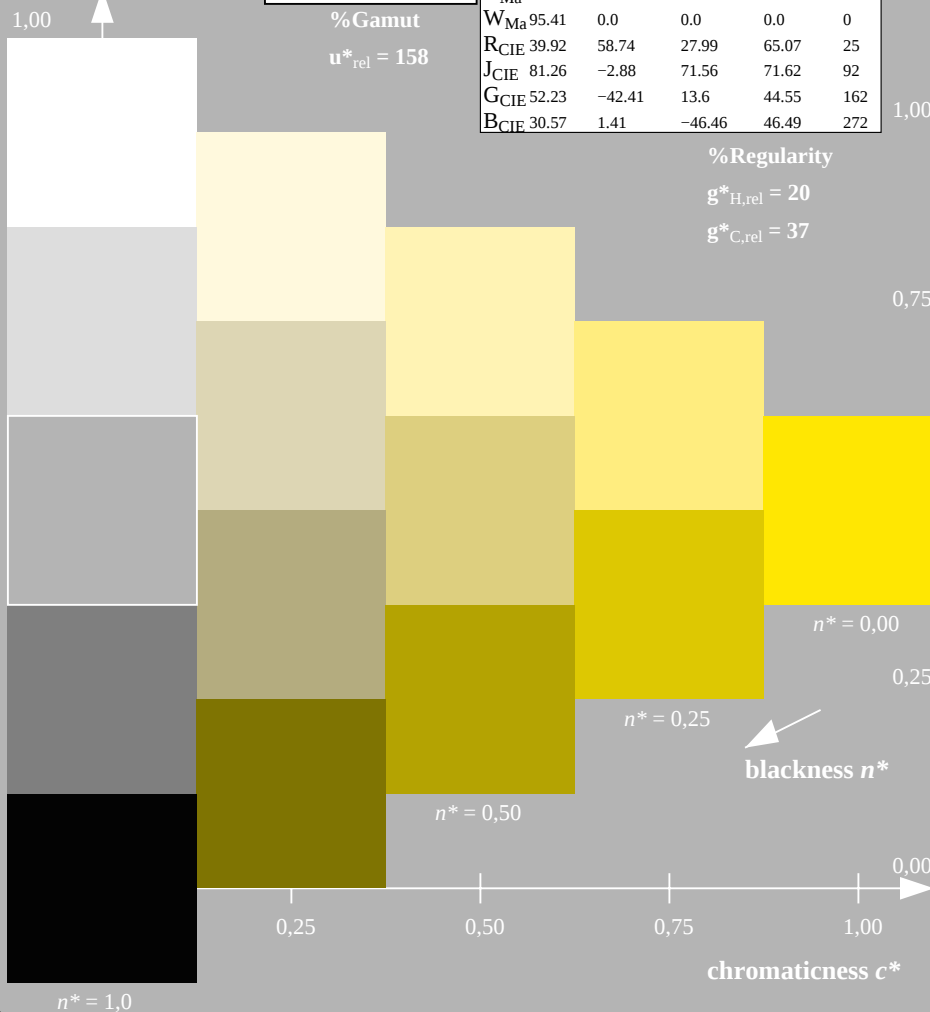


| TLS70; adapted (a) CIELAB data |             |         |         |              |              |
|--------------------------------|-------------|---------|---------|--------------|--------------|
|                                | $L^*=L^*_a$ | $a^*_a$ | $b^*_a$ | $C^*_{ab,a}$ | $h^*_{ab,a}$ |
| O <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          |

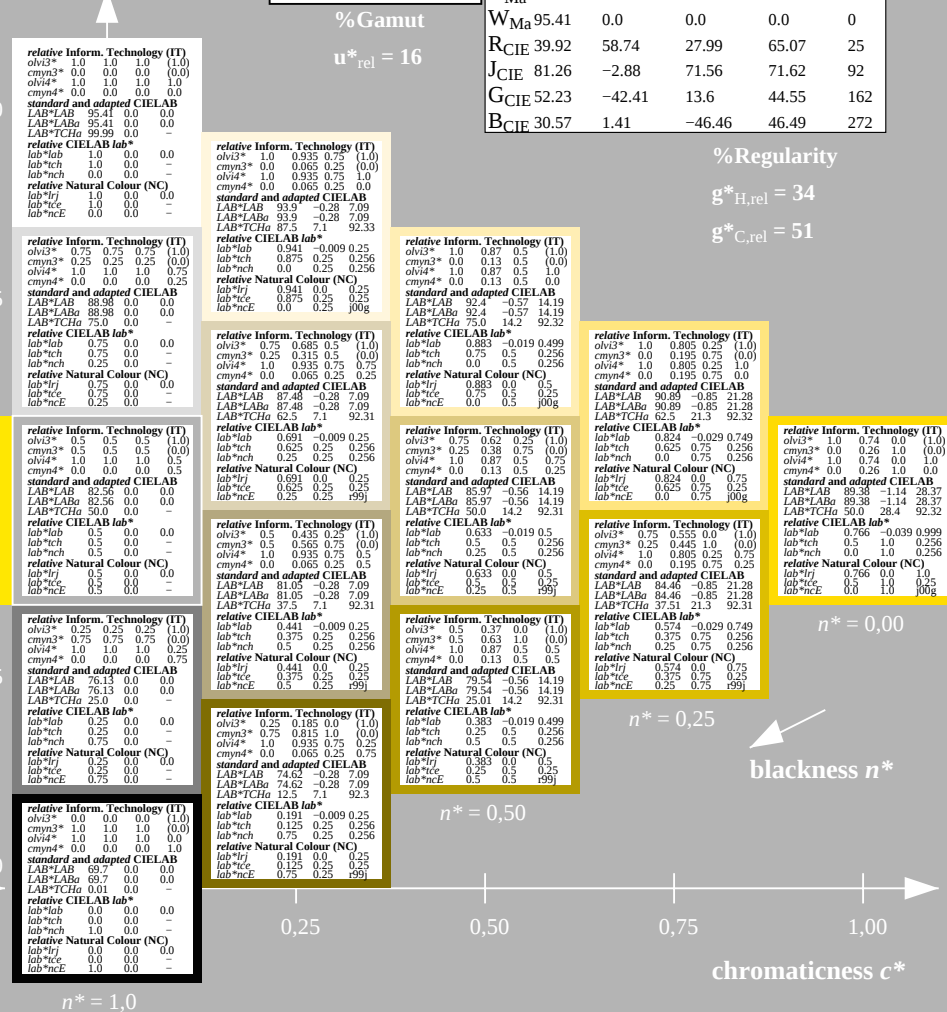
%Regularity

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

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



NE430-7, 5 step scales for constant CIELAB hue 92/360 = 0.256 (left)



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

BAM-test chart NE43; Colorimetric systems TLS00 & TLS70

D65: 5 step colour scales and coordinate data for 10 hues

input:  $olv^* setrgbcolor$

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

Input: Colorimetric Television Luminous System TLS00

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

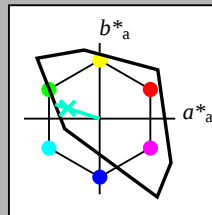
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue G

LCH\*Ma: 86 62 162

olv\*Ma: 0.0 1.0 0.65

triangle lightness



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          |

%Regularity

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

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

1,00

0,75

0,25

0,00

blackness  $n^*$

chromaticness  $c^*$

NE430-7, 5 step scales for constant CIELAB hue 162/360 = 0.451 (left)



BAM-test chart NE43; Colorimetric systems TLS00 & TLS70

D65: 5 step colour scales and coordinate data for 10 hues

Output: Colorimetric Television Luminous System TLS70

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

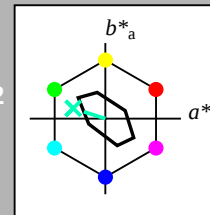
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue G

LCH\*Ma: 90 30 162

olv\*Ma: 0.0 1.0 0.53

triangle lightness



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          |

%Regularity

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

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

1,00

0,75

0,25

0,00

blackness  $n^*$

chromaticness  $c^*$

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

input:  $olv^* \text{ setrgbcolor}$

output:  $olv^* \text{ setrgbcolor} / w^* \text{ setgray}$

Input: Colorimetric Television Luminous System TLS00

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

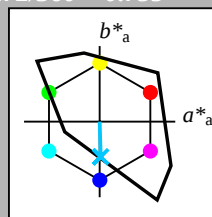
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue B

LCH\*Ma: 65 49 272

olv\*Ma: 0.0 0.61 1.0

triangle lightness



$u^*_{rel} = 158$

| 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          |

%Regularity

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

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

1,00

0,75

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

chromaticness  $c^*$

NE430-7, 5 step scales for constant CIELAB hue 272/360 = 0.755 (left)

BAM-test chart NE43; Colorimetric systems TLS00 & TLS70

D65: 5 step colour scales and coordinate data for 10 hues

Output: Colorimetric Television Luminous System TLS70

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

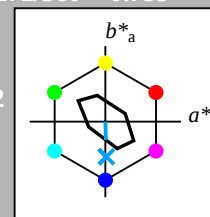
$lab \cdot tch$  and  $lab \cdot nch$

D65: hue B

LCH\*Ma: 80 24 272

olv\*Ma: 0.0 0.4 1.0

triangle lightness



$u^*_{rel} = 16$

| 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          |

%Regularity

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

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

$n^* = 0,00$

$n^* = 0,25$

$n^* = 0,50$

chromaticness  $c^*$

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

input:  $olv^* \cdot setrgbcolor$

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