

| 5 steps of grey series black – white ($N_d - W_d$) | Colour space, colour space coordinates and PostScript operator calculations according to ISO/IEC 15775:1999-12 | | | | | | | | |
|---|---|---|---|---|--|--|--|--|--|
| Linear mixture between black and white in CIELAB colour space | relative CIELAB | | | | | | | | |
| | lab^*w_d setgray | $lab^*000n_d=000n_d$ 000n_d setcmykcolor | $lab^*cmy0_d=cmy0_d$ cmy0_d setcmykcolor | $lab^*rgb_d=rgb_d$ rgb_d setrgbcolor | | | | | |
| 1,00 N_d +0,00 W_d (Black N_d) | 0,00 | 0,00 0,00 0,00 1,00 | 1,00 1,00 1,00 0,00 | 0,00 0,00 0,00 | | | | | |
| 0,75 N_d +0,25 W_d | 0,25 | 0,00 0,00 0,00 0,75 | 0,75 0,75 0,75 0,00 | 0,25 0,25 0,25 | | | | | |
| 0,50 N_d +0,50 W_d | 0,50 | 0,00 0,00 0,00 0,50 | 0,50 0,50 0,50 0,00 | 0,50 0,50 0,50 | | | | | |
| 0,25 N_d +0,75 W_d | 0,75 | 0,00 0,00 0,00 0,25 | 0,25 0,25 0,25 0,00 | 0,75 0,75 0,75 | | | | | |
| 0,00 N_d +1,00 W_d (white W_d) | 1,00 | 0,00 0,00 0,00 0,00 | 0,00 0,00 0,00 0,00 | 1,00 1,00 1,00 | | | | | |

SI250-1

| 5 steps of grey series black – white ($N_d - W_d$) | Colour space, colour space coordinates and PostScript operator calculations according to ISO/IEC 15775:1999-12 | | | | | | | | |
|---|---|-------|-------|--|------|------|---|------|-------------------|
| Linear mixture between black and white in CIELAB colour space | Standard CIELAB $LAB^*LAB^*_d = LAB^*_d$ LAB^*_d setcolor | | | adapted CIELAB $LAB^*LAB^*_{a,d} = LAB^*_{a,d}$ $LAB^*_{a,d}$ setcolor | | | relative CIELAB $lab^*ncu^*_d = ncu^*_d$ ncu^*_d setcolor | | |
| | | | | | | | | | |
| 1,00 N_d +0,00 W_d (Black N_d) | 18,01 | 0,50 | -0,40 | 18,01 | 0,00 | 0,00 | 1,00 | 0,00 | R00Y _d |
| 0,75 N_d +0,25 W_d | 37,35 | 0,10 | 0,80 | 37,35 | 0,00 | 0,00 | 0,75 | 0,00 | R00Y _d |
| 0,50 N_d +0,50 W_d | 56,70 | -0,10 | 2,10 | 56,70 | 0,00 | 0,00 | 0,50 | 0,00 | R00Y _d |
| 0,25 N_d +0,75 W_d | 76,05 | -0,50 | -3,40 | 76,05 | 0,00 | 0,00 | 0,25 | 0,00 | R00Y _d |
| 0,00 N_d +1,00 W_d (white W_d) | 95,41 | -0,98 | 4,76 | 95,41 | 0,00 | 0,00 | 0,00 | 0,00 | R00Y _d |

SI250-3

| 5 steps of colour series cyan blue – white ($C_d - W_d$) | Colour space, colour space coordinates and PostScript operator calculations according to ISO/IEC 15775:1999-12 | | | | | | | | |
|---|---|--------|--------|--|------|-----------|--|------|------|
| Linear mixture between cyan blue and white in CIELAB colour space | Standard CIELAB $LAB^*LAB^*_d = LAB^*_d$ LAB^*_d setcolor | | | relative CIELAB $lab^*cmy0_d = cmy0_d$ $cmy0_d$ setcmykcolor | | | relative CIELAB $lab^*rgb_d = rgb_d$ rgb_d setrgbcolor | | |
| | | | | | | | | | |
| 1,00 C_d +0,00 W_d (cyan blue C_d) | 58,62 | -30,62 | -42,74 | 1,00 | 0,00 | 0,00 0,00 | 0,00 | 1,00 | 1,00 |
| 0,75 C_d +0,25 W_d | 67,82 | -23,21 | -30,86 | 0,75 | 0,00 | 0,00 0,00 | 0,25 | 1,00 | 1,00 |
| 0,50 C_d +0,50 W_d | 77,02 | -15,80 | -18,98 | 0,50 | 0,00 | 0,00 0,00 | 0,50 | 1,00 | 1,00 |
| 0,25 C_d +0,75 W_d | 86,21 | -8,39 | -7,11 | 0,25 | 0,00 | 0,00 0,00 | 0,75 | 1,00 | 1,00 |
| 0,00 C_d +1,00 W_d (white W_d) | 95,41 | -0,98 | 4,76 | 0,00 | 0,00 | 0,00 0,00 | 1,00 | 1,00 | 1,00 |

SI250-5

| 5 steps of colour series cyan blue – white ($C_d - W_d$) | Colour space, colour space coordinates and PostScript operator calculations according to ISO/IEC 15775:1999-12 | | | | | | | | |
|---|---|--------|--------|---|-------|-------|---|-------|-------------------|
| Linear mixture between cyan blue and white in CIELAB colour space | adapted CIELAB $LAB^*LAB^*_{a,d}=LAB^*_{a,d}$ $LAB^*_{a,d}$ setcolor | | | relative CIELAB $lab^*tch^*_d = tch^*_d$ tch^*_d setcolor | | | relative CIELAB $lab^*ncu^*_d = ncu^*_d$ ncu^*_d setcolor | | |
| | | | | | | | | | |
| 1,00 C_d +0,00 W_d (cyan blue C_d) | 58,62 | -30,34 | -45,01 | 0,500 | 1,000 | 0,656 | 0,000 | 1,000 | G42C _d |
| 0,75 C_d +0,25 W_d | 67,82 | -22,75 | -33,75 | 0,625 | 0,750 | 0,656 | 0,000 | 0,750 | G42C _d |
| 0,50 C_d +0,50 W_d | 77,02 | -15,17 | -22,50 | 0,750 | 0,500 | 0,656 | 0,000 | 0,500 | G42C _d |
| 0,25 C_d +0,75 W_d | 86,21 | -7,58 | -11,25 | 0,875 | 0,250 | 0,656 | 0,000 | 0,250 | G42C _d |
| 0,00 C_d +1,00 W_d (white W_d) | 95,41 | 0,00 | 0,00 | 1,000 | 0,000 | 0,000 | 0,000 | 0,000 | R00Y _d |

SI250-7

grafico TUB-SI25; colour space and coordinates
5 step colour scales and user friendly coordinates

Application of colour in daily life or in Colour Information Technology (IT)

| Design, architecture, art, industrial products Measured for CIE standard illuminant D65 | Colour Information Technology Measured for CIE illuminants D65 and D50 |
|---|---|
| colour order system; name and coordinates: <i>RAL Design System (CIELAB)</i> $L^*C^*ab_{hab}$, lightness, chroma, hue angle <i>Munsell Colour System</i> VCH, lightness (Value), Chroma, Hue text <i>Natural Colour System (NCS)</i> ncu^*_e : relative blackness, relative chroma relative elementary hue text | Device system name and coordinates: Printer system (illuminants D50 or D65): cmy_d , content of "cyan, magenta, yellow" Display system (standard illuminant D65): $rgb_d/sRGB_d$, content of "red, green, blue" <i>No user friendly colour coordinates</i> <i>Nearly no connection to colour order systems</i> |

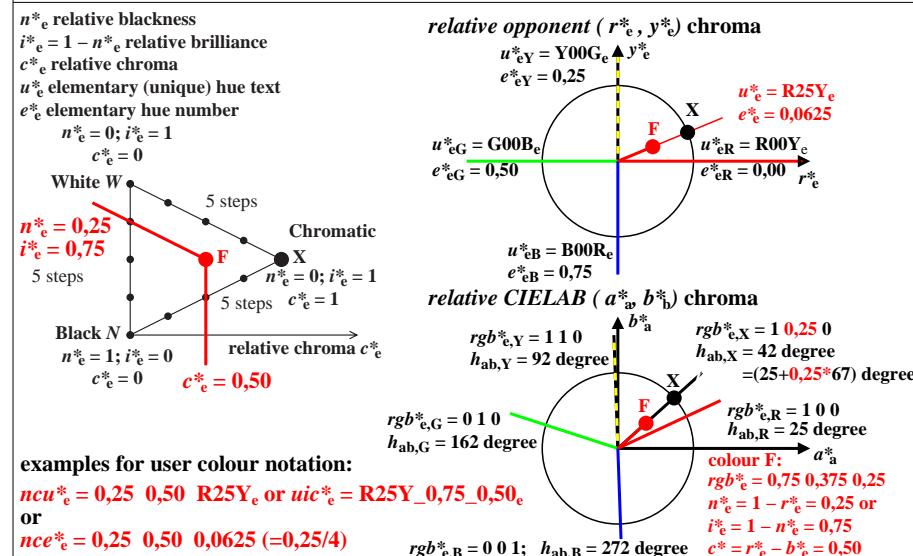
Aim: define user friendly connection

New: Interpretation of the rgb colour data in the range 0 to 1 as elementary colour data rgb^*_e

Linear relations between *relative* and *absolute* coordinates $lab^*_d - LAB^*_d$ and $lab^*_e - LAB^*_e$
 $rgb^*_d - (L^*a^*b^*C^*ab_{hab})_d$ and $rgb^*_e - (L^*a^*b^*C^*ab_{hab})_e$ (CIELAB)
 $rgb_d - cmy_d$, $rgb^*_d - cmy^*_d$ and $rgb_e - cmy_e$, $rgb^*_e - cmy^*_e$ ("1-minus"-relation)
 $rgb^*_d - nce^*_d$, $rgb^*_d - ncu^*_d$ and $rgb^*_e - nce^*_e$, $rgb^*_e - ncu^*_e$
relative coordinates lab^*_e : elementary redness r^*_e , greenness g^*_e , blueness b^*_e , blackness n^*_e
chroma c^*_d , elementary hue e^*_e , elementary hue text u^*_e

SI251-3

User friendly colorimetric CIE colour notation ncu^*_e or uic^*_e or nce^*_e and linear relation to rgb^*_e data



SI251-7

immettere: w/rgb/cmyk -> w/rgb/cmyk_d
uscita: nessun cambiamento