

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	<i>relative CIELAB</i> $lab^*w_d^a \quad lab^*000n_d^a=000n_d^a \quad lab^*cm\gamma\theta_d^a=cm\gamma\theta_d^a \quad lab^*rgb^a_d=rgb^a_d$ $setgray \quad 000n_d^a \quad setcmycolor \quad cm\gamma\theta_d^a \quad setcmycolor \quad rgb^a_d \quad setrgbcolor$
1.00 $N_d+0.00W_d$ (Black N_d)	0.00 0.00 0.00 1.00 1.00 1.00 0.00 0.00 0.00
0.75 $N_d+0.25W_d$	0.25 0.00 0.00 0.00 0.75 0.75 0.75 0.00 0.25 0.25 0.25
0.50 $N_d+0.50W_d$	0.50 0.00 0.00 0.00 0.50 0.50 0.50 0.00 0.50 0.50 0.50
0.25 $N_d+0.75W_d$	0.75 0.00 0.00 0.00 0.25 0.25 0.25 0.00 0.75 0.75 0.75
0.00 $N_d+1.00W_d$ (white W_d)	1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 1.00 1.00 1.00

SN250-1

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	<i>Standard CIELAB</i> $LAB^*LAB^*_d = LAB^*_d$ $LAB^*_d \quad setcolor$
1.00 $N_d+0.00W_d$ (Black N_d)	18.01 0.50 -0.40 18.01 0.00 0.00 1.00 0.00 R00Yd
0.75 $N_d+0.25W_d$	37.35 0.10 0.80 37.35 0.00 0.00 0.75 0.00 R00Yd
0.50 $N_d+0.50W_d$	56.70 -0.10 2.10 56.70 0.00 0.00 0.50 0.00 R00Yd
0.25 $N_d+0.75W_d$	76.05 -0.50 -3.40 76.05 0.00 0.00 0.25 0.00 R00Yd
0.00 $N_d+1.00W_d$ (white W_d)	95.41 -0.98 4.76 95.41 0.00 0.00 0.00 0.00 R00Yd

SN250-3

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	<i>Standard CIELAB</i> $LAB^*LAB^*_d = LAB^*_d$ $LAB^*_d \quad setcolor$
1.00 $C_d+0.00W_d$ (cyan blue C_d)	58.62 -30.62 -42.74 1.00 0.00 0.00 0.00 0.00 1.00
0.75 $C_d+0.25W_d$	67.82 -23.21 -30.86 0.75 0.00 0.00 0.00 0.25 1.00
0.50 $C_d+0.50W_d$	77.02 -15.80 -18.98 0.50 0.00 0.00 0.00 0.50 1.00
0.25 $C_d+0.75W_d$	86.21 -8.39 -7.11 0.25 0.00 0.00 0.00 0.75 1.00
0.00 $C_d+1.00W_d$ (white W_d)	95.41 -0.98 4.76 0.00 0.00 0.00 0.00 1.00 1.00

SN250-5

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	<i>adapted CIELAB</i> $LAB^*LAB^*_d = LAB^*_d$ $LAB^*_d \quad setcolor$
1.00 $C_d+0.00W_d$ (cyan blue C_d)	58.62 -30.34 -45.01 0.500 1.000 0.656 0.000 1.000 G42C _d
0.75 $C_d+0.25W_d$	67.82 -22.75 -33.75 0.625 0.750 0.656 0.000 0.750 G42C _d
0.50 $C_d+0.50W_d$	77.02 -15.17 -22.50 0.750 0.500 0.656 0.000 0.500 G42C _d
0.25 $C_d+0.75W_d$	86.21 -7.58 -11.25 0.875 0.250 0.656 0.000 0.250 G42C _d
0.00 $C_d+1.00W_d$ (white W_d)	95.41 0.00 0.00 1.000 0.000 0.000 0.000 0.000 R00Yd

SN250-7

TUB-test chart SN25; colour space and coordinates
5 step colour scales and user friendly coordinates

Application of colour in daily life or in Colour Information Technology (IT)	Colour Information Technology Measured for CIE illuminant D65 and D50
Design, architecture, art, industrial products Measured for CIE standard illuminant D65	Device system name and coordinates: Printer system (illuminants D50 or D65): $cm\gamma_d$, content of "cyan, magenta, yellow"
colour order system; name and coordinates: RAL Design System (CIELAB) $L^*C^*a^*b^*$, lightness, chroma, hue angle Munsell Colour System VCH, lightness (Value), Chroma, Hue text Natural Colour System (NCS) ncu^* : relative blackness, relative chroma relative elementary hue text	Display system (standard illuminant D65): rgb^a_d/RGB^a_d , content of "red, green, blue" <i>No user friendly colour coordinates</i> <i>Nearly no connection to colour order systems</i>

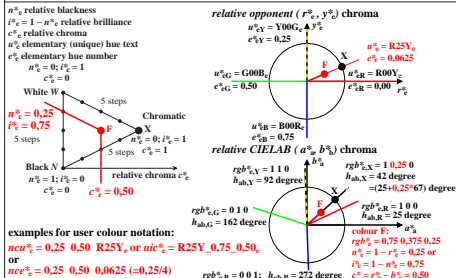
Aim: define user friendly connection

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

Linear relations between *relative* and *absolute* coordinates $lab^*_a - LAB^*_a$ and $lab^*_e - LAB^*_e$
 $rgb^a_d - (L^*a^*b^*C^*_{ab}/ab)_{ab}$ and $rgb^a_e - (L^*a^*b^*C^*_{ab}/ab)_{ab}$ (CIELAB)
 $rgb^a_d - cm\gamma_d, rgb^a_d - cm\gamma_e$ and $rgb^a_e - cm\gamma_e$ ("1-minus"-relation)
 $rgb^a_d - nce^*_d, rgb^a_d - ncu^*_d$ and $rgb^a_e - nce^*_e, rgb^a_e - ncu^*_e$
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

SN251-3

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



input: w/rgb/cmyk → w/rgb/cmyk_d
output: no change compared