

see similar files: <http://130.149.60.45/~farbmefrik/VE61/VE61L0NP.PDF/.PS>  
technical information: <http://130.149.60.45/~farbmefrik/VE61/VE61.HTML> or <http://www.ps.bam.de>

### log(L\*) CIELAB lightness

$\log(L^*/L^*)$

CIELAB lightness for all colours,  $L^*_{W=100}$ :

$$L^* = 116(Y/Y_n)^{1/3} - 16 \quad (Y_n=100, Y>1)$$

$\log(L^*_u)=1.69, m_u=0.43$

application range

VE610-1N\_1

### log(L\*/L^\*) CIELAB lightness

$L^*/L^*$  relative normalized CIELAB data

CIELAB lightness for all colours,  $L^*_{W=100}$ :

$$L^* = 116(Y/Y_n)^{1/3} - 16 \quad (Y_n=100, Y>1)$$

$\log((L^*)/(L^*_u))=0, m_u=0.43$

application range

VE610-2N\_1

### log(L\*) LINYAB lightness

$\log(L^*/L^*)$  LINYAB lightness for all colours,  $L^*_{W=100}$ :

$$L^* = 100[1+1/(1+W_2(Y/Y_u)^k)] \quad (Y_u=100, Y>1)$$

$k_1=1.0 \log(e), k_2=1.4 \log(e), W_2=1.4$

$\log(L^*_u)=2.0, m_u=0.98$

$\log(L^*_v)=2.0, m_u=-0.69$

$\log(L^*_g)=2.0, m_u=0.29$

application range

VE611-1N\_1

### log(L\*/L^\*\_u) LINYAB lightness

$L^*/L^*_u$  LINYAB lightness for all colours,  $L^*_{W=100}$ :

$$L^* = 100[1+1/(1+W_2(Y/Y_u)^k)] \quad (Y_u=100, Y>1)$$

$k_1=1.0 \log(e), k_2=1.4 \log(e), W_2=1.4$

$\log((L^*)/(L^*_u))=0, m_u=0.98$

$\log((L^*)/(L^*_u))=0, m_u=-0.69$

$\log((L^*)/(L^*_u))=0, m_u=0.29$

application range

VE611-2N\_1

### log(ΔY) CIE tristimulus value difference

$\log(\Delta Y/\Delta Y)$

$L^* = 116(Y/Y_n)^{1/3} - 16$

$$\log(dY) = \log(3(Y_n/116)) + (2/3)\log(Y/Y_n)$$

$$= \log(3(Y_n^{1/3}/116)) + (2/3)\log(Y)$$

$\log(dY)=0.82, m_u=0.66$

application range

VE610-3N\_1

### log(ΔY/ΔY\_u) CIE tristimulus difference

$\Delta Y/\Delta Y_u$  relative normalized CIELAB data

$L^* = 116(Y/Y_n)^{1/3} - 16$

$$\log(dY) = \log(3(Y_n/116)) + (2/3)\log(Y/Y_n)$$

$$= \log(3(Y_n^{1/3}/116)) + (2/3)\log(Y)$$

$\log((dY)/(dY_u))=0, m_u=0.66$

application range

VE610-4N\_1

### log(ΔY/Y) CIE tristimulus values

$\log(S_r)=\log(\Delta Y/Y)$

CIELAB sensitivity:

$$\log((\Delta Y/Y)) = \log(3(Y_n^{1/3}/116)) - (1/3)\log(Y)$$

$\log((dY)/Y)=-1.33, m_u=-0.33$

application range

VE610-5N\_1

### log([(ΔY/Y) / (ΔY\_u/Y\_u)]) CIE values

$S_r/S_{ru}=(\Delta Y/Y)/(\Delta Y_u/Y_u)$  relative normalized CIELAB sensitivity

$$\log((\Delta Y/Y)/(\Delta Y_u/Y_u)) = \log(Y/Y_u)^{-1/3}$$

$\log((dY_u)/Y_u)=0, m_u=-0.33$

application range

VE610-6N\_1

### log(Y/ΔY) CIE contrast

$\log(C_p)=\log(Y/ΔY)$

$$2-100 \log(Y/dY) = \log((1/3)(116(Y/Y_n)^{1/3}) + (1/3)\log(Y/Y_n))$$

$$= \log((1/3)(116(Y_n^{1/3}/116)) + (1/3)\log(Y))$$

$\log(dY)=1.33, m_u=0.33$

application range

VE610-7N\_1

### log([(Y/ΔY) / (Y\_u/ΔY\_u)]) CIE contrast

$C_p/C_{pu}=(Y/ΔY)/(Y_u/ΔY_u)$  relative normalized CIELAB contrast sensitivity

$$\log((Y/ΔY)/(Y_u/ΔY_u)) = \log(Y/Y_u)^{1/3}$$

$L^*_{u=50}, Y_{u=18}, dY_u=0.83$

$\log((Y_dY)/(Y_u/dY_u))=0, m_u=0.33$

application range

VE610-8N\_1

### log(ΔY/Y) CIE tristimulus values

$\log(S_r)=\log(\Delta Y/Y)$

LINYAB sensitivity:

$$\log(dY) = -k W_2 Y_u [1+W_2 x^{k-2}]^{-2} x^{(k-1)}$$

$k_1=1.0 \log(e), k_2=1.4 \log(e), W_2=1.4$

$$\log(dY_u) = -k W_2 Y_u [1+W_2]^{-2}$$

$\log((dY)/Y)=-1.02, m_u=0.07$

$\log((dY_u)/Y_u)=-1.02, m_u=-3.07$

$\log((dY_u)/Y_u)=0, m_u=-3.07$

application range

VE611-5N\_1

### log(Y/ΔY) CIE contrast

$\log(C_p)=\log(Y/ΔY)$

$$2-100 \log(Y/dY) = 1.02, m_u=-0.07$$

$$1-10 \log(Y/dY) = 1.02, m_u=-3.07$$

$\log(Y/dY)=1.02, m_u=11.89$

$\log(Y/dY)=1.02, m_u=-0.07$

$\log(Y/dY)=1.02, m_u=-3.07$

relative normalized LINYAB contrast sensitivity

$$\log(dY) = -k W_2 Y_u [1+W_2 x^{k-2}]^{-2} x^{(k-1)}$$

$k_1=1.0 \log(e), k_2=1.4 \log(e), W_2=1.4$

$$\log(dY_u) = -k W_2 Y_u [1+W_2]^{-2}$$

application range

VE611-7N\_1

### log [(Y/ΔY) / (Y\_u/ΔY\_u)] CIE contrast

$C_p/C_{pu}=(Y/ΔY)/(Y_u/ΔY_u)$  relative normalized LINYAB contrast sensitivity

$$\log((Y/ΔY)/(Y_u/ΔY_u))=0, m_u=-0.07$$

$$\log((Y/ΔY)/(Y_u/ΔY_u))=0, m_u=-3.07$$

$\log((Y/ΔY)/(Y_u/ΔY_u))=0, m_u=-3.07$

$\log((Y/ΔY)/(Y_u/ΔY_u))=0, m_u=-11.89$

relative normalized LINYAB contrast sensitivity

$$\log(dY) = -k W_2 Y_u [1+W_2 x^{k-2}]^{-2} x^{(k-1)}$$

$k_1=1.0 \log(e), k_2=1.4 \log(e), W_2=1.4$

$$\log(dY_u) = -k W_2 Y_u [1+W_2]^{-2}$$

application range

VE611-8N\_1

TUB-test chart VE61; Colour difference formulae  
CIELAB and LINYAB formula (chromatic)

input: w/rgb/cmyk -> w/rgb/cmyk-