

Data of Maximum color M in colorimetric system LCD projector 1, no separation, D65 for input or output; Six hue angles of the 60 degree standard colours  $s$ :  $h_{ab,s} = 30.0, 90.0, 150.0, 210.0, 270.0, 330.0$ ;  
Six hue angles of the device colours  $d$ :  $h_{ab,d} = 43.7, 101.6, 126.2, 201.3, 300.4, 319.8$ ; Six hue angles of the elementary colours  $e$ :  $h_{ab,e} = 25.5, 92.3, 162.2, 217.0, 271.7, 328.6$

$Y=J_d$  Yellow

$LCH^*_{1d} = 82.0 \ 84.8 \ 101.6$   
 $LAB^*_{1d} = 82.0 \ -17.1 \ 83.1$   
 $rgb^*_{1d} = 1.0 \ 1.0 \ 0.0$

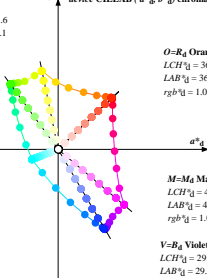
$L=G_d$  Leaf green

$LCH^*_{1d} = 70.6 \ 85.4 \ 126.2$   
 $LAB^*_{1d} = 70.6 \ -50.5 \ 68.9$   
 $rgb^*_{1d} = 0.0 \ 1.0 \ 0.0$

$C=C_d$  Cyan blue

$LCH^*_{1d} = 75.3 \ 29.5 \ 201.3$   
 $LAB^*_{1d} = 75.3 \ -27.5 \ -10.7$   
 $rgb^*_{1d} = 0.0 \ 1.0 \ 1.0$

$b^*_{1d}$



$O=R_d$  Orange red

$LCH^*_{1d} = 36.0 \ 79.1 \ 43.6$   
 $LAB^*_{1d} = 36.0 \ 57.2 \ 54.6$   
 $rgb^*_{1d} = 1.0 \ 0.0 \ 0.0$

$M=M_d$  Magenta red

$LCH^*_{1d} = 46.8 \ 91.3 \ 319.8$   
 $LAB^*_{1d} = 46.8 \ 69.7 \ -58.9$   
 $rgb^*_{1d} = 1.0 \ 0.0 \ 1.0$

$V=B_d$  Violet blue

$LCH^*_{1d} = 29.1 \ 97.9 \ 300.3$   
 $LAB^*_{1d} = 29.1 \ 49.5 \ -84.4$   
 $rgb^*_{1d} = 0.0 \ 1.0 \ 1.0$

$J_e$  Yellow

$LCH^*_{1e} = 67.1 \ 71.4 \ 92.0$   
 $LAB^*_{1e} = 67.1 \ -2.4 \ 71.4$   
 $rgb^*_{1e} = 1.0 \ 0.872 \ 0.0$

$G_e$  Green

$LCH^*_{1e} = 73.2 \ 40.0 \ 162.0$   
 $LAB^*_{1e} = 73.2 \ -38.0 \ 12.3$   
 $rgb^*_{1e} = 0.0 \ 1.0 \ 0.818$

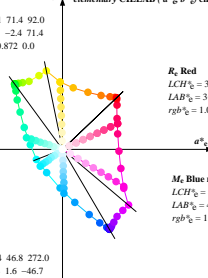
$C_e$  Blue green

$LCH^*_{1e} = 71.1 \ 29.6 \ 217.0$   
 $LAB^*_{1e} = 71.1 \ -23.6 \ -17.8$   
 $rgb^*_{1e} = 0.0 \ 0.942 \ 1.0$

$B_e$  Blue

$LCH^*_{1e} = 52.4 \ 46.8 \ 272.0$   
 $LAB^*_{1e} = 52.4 \ 1.6 \ -46.7$   
 $rgb^*_{1e} = 0.0 \ 0.706 \ 1.0$

$b^*_{1e}$



$R_e$  Red

$LCH^*_{1e} = 36.4 \ 64.5 \ 25.0$   
 $LAB^*_{1e} = 36.4 \ 58.4 \ 27.2$   
 $rgb^*_{1e} = 1.0 \ 0.0 \ 0.415$

$M_e$  Blue red

$LCH^*_{1e} = 42.3 \ 75.6 \ 329.0$   
 $LAB^*_{1e} = 42.3 \ 64.8 \ -38.9$   
 $rgb^*_{1e} = 1.0 \ 0.0 \ 0.861$

$J_s$  Yellow

$LCH^*_{1s} = 65.6 \ 70.5 \ 90.0$   
 $LAB^*_{1s} = 65.6 \ 0.0 \ 70.5$   
 $rgb^*_{1s} = 1.0 \ 0.851 \ 0.0$

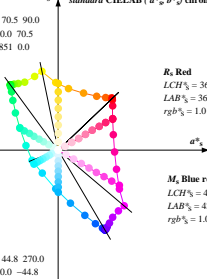
$G_s$  Green

$LCH^*_{1s} = 72.5 \ 47.0 \ 150.0$   
 $LAB^*_{1s} = 72.5 \ -40.7 \ 23.5$   
 $rgb^*_{1s} = 0.0 \ 1.0 \ 0.747$

$C_s$  Blue green

$LCH^*_{1s} = 73.0 \ 29.5 \ 210.0$   
 $LAB^*_{1s} = 73.0 \ -25.6 \ -14.7$   
 $rgb^*_{1s} = 0.0 \ 0.968 \ 1.0$

$b^*_{1s}$



$R_s$  Red

$LCH^*_{1s} = 36.2 \ 66.6 \ 30.0$   
 $LAB^*_{1s} = 36.2 \ 57.7 \ 33.3$   
 $rgb^*_{1s} = 1.0 \ 0.0 \ 0.37$

$M_s$  Blue red

$LCH^*_{1s} = 42.1 \ 74.7 \ 330.0$   
 $LAB^*_{1s} = 42.1 \ 64.7 \ -37.3$   
 $rgb^*_{1s} = 1.0 \ 0.0 \ 0.852$

Notes to the CIELAB chroma diagrams ( $a^*_{1d}, b^*_{1d}$ ), ( $a^*_{1e}, b^*_{1e}$ ), ( $a^*_{1s}, b^*_{1s}$ )

- For the  $rgb^*_{1d}$ -input values the CIELAB data  $LCH^*_{1d}$  and  $LAB^*_{1d}$  have been measured.
- For the calculation of the standard hue angle  $h_{ab,s}$  use for any device values  $rgb^*_{1d}$  the equation:  
$$h_{ab,s} = \text{atan} \left( \frac{r^*_{1d} \cos(30) + g^*_{1d} \cos(150)}{r^*_{1d} \sin(30) + g^*_{1d} \sin(150)} \right) / \left( \frac{r^*_{1d} \sin(30) + g^*_{1d} \sin(150)}{b^*_{1d} \sin(270)} \right)$$
 (1)
- For the 48 or 360 equally spaced standard hue angles  $h_{ab,s}$  of the colours of maximum chroma use the seven hue angles of the 60 degree colours  $s$ :  $h_{ab,s} = 30.0, 90.0, 150.0, 210.0, 270.0, 330.0, 390.0$  ( $i=0,5$ ) and the equations for a 48 and 360 step hue circle:  
$$h_{ab,ab,sj} = h_{ab,s} + j \left[ \frac{h_{ab,s+1} - h_{ab,s}}{360} \right] \quad (i = 0, 1, \dots, S; j = 0, 1, \dots, 7)$$
 (2)  
$$h_{360ab,sj} = h_{ab,s} + j \left[ \frac{h_{ab,s+1} - h_{ab,s}}{360} \right] \quad (i = 0, 1, \dots, S; j = 0, 1, \dots, 59)$$
 (3)
- For the 48 or 360 elementary hue angles  $h_{ab,e}$  of the colours of maximum chroma use the seven hue angles of the elementary colours  $e$ :  $h_{ab,e} = 25.5, 92.3, 162.2, 217.0, 271.7, 328.6, 385.5$  ( $i=0,5$ ) and the equations for a 48 and 360 step elementary hue circle:  
$$h_{ab,ab,ej} = h_{ab,e} + j \left[ \frac{h_{ab,e+1} - h_{ab,e}}{360} \right] \quad (i = 0, 1, \dots, S; j = 0, 1, \dots, 7)$$
 (4)  
$$h_{360ab,ab,ej} = h_{ab,e} + j \left[ \frac{h_{ab,e+1} - h_{ab,e}}{360} \right] \quad (i = 0, 1, \dots, S; j = 0, 1, \dots, 59)$$
 (5)
- For any elementary hue angle  $h_{ab,e}$  there is a well defined device hue angle  $h_{ab,d}$  see the following tables, columns 1 to 3.
- The values  $rgb^*_{1de}$  produce the output of the device-independent elementary hues