

http://130.149.60.45/~farbmethik/OE32/OE32L0N1.TXT/.PS; start output  
N: No Output Linearization (OL) data in File (F), Startup (S) or Device (D)

Data of Maximum color M in colorimetric system laser printer HRS16\_96; separation cmyn6\*, D65 and D50 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:  $h_{ab,d} = 319.9, 99.3, 151.6, 229.0, 299.3, 349.7$ ; Six hue angles of the elementary colours e:  $h_{ab,e} = 25.5, 92.3, 162.2, 217.0, 271.7, 328.6$

**Y-d Yellow**  
 $LCH^*d = 91.3 \quad 85.8 \quad 99.3$   
 $LAB^*d = 91.3 \quad -13.9 \quad 84.7$   
 $rgb^*d = 1.0 \quad 1.0 \quad 0.0$

**L-G<sub>d</sub> Leaf green**  
 $LCH^*d = 56.7 \quad 73.8 \quad 151.6$   
 $LAB^*d = 56.7 \quad -64.9 \quad 35.0$   
 $rgb^*d = 0.0 \quad 1.0 \quad 0.0$

**C-C<sub>d</sub> Cyan blue**  
 $LCH^*d = 51.7 \quad 51.7 \quad 229.0$   
 $LAB^*d = 51.7 \quad -33.9 \quad -39.0$   
 $rgb^*d = 0.0 \quad 1.0 \quad 1.0$

**V-B<sub>d</sub> Violet blue (very similar to elementary Blue)**  
 $LCH^*d = 31.3 \quad 49.2 \quad 299.3$   
 $LAB^*d = 31.3 \quad 24.1 \quad -42.9$   
 $rgb^*d = 0.0 \quad 0.0 \quad 1.0$

**standard CIELAB (  $a^*_{sb}$ ,  $b^*_{sb}$  ) chroma diagram**

**J<sub>s</sub> Yellow**

$LCH^*_s = 82.7 \quad 77.8 \quad 90.0$

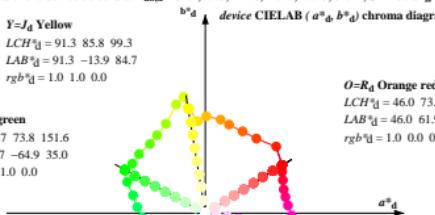
$LAB^*_s = 82.7 \quad 0.0 \quad 77.8$

$rgb^*_s = 1.0 \quad 0.762 \quad 0.0$

**G<sub>s</sub> Green**  
 $LCH^*_s = 57.6 \quad 73.0 \quad 150.0$   
 $LAB^*_s = 57.6 \quad -63.2 \quad 36.5$   
 $rgb^*_s = 0.035 \quad 1.0 \quad 0.0$

**C<sub>s</sub> Blue green**  
 $LCH^*_s = 55.7 \quad 47.2 \quad 210.0$   
 $LAB^*_s = 55.7 \quad -40.9 \quad -23.6$   
 $rgb^*_s = 0.0 \quad 1.0 \quad 0.832$

**B<sub>s</sub> Blue**  
 $LCH^*_s = 36.6 \quad 48.5 \quad 270.0$   
 $LAB^*_s = 36.6 \quad 0.0 \quad -48.5$   
 $rgb^*_s = 0.0 \quad 0.308 \quad 1.0$



**O-R<sub>d</sub> Orange red**

$LCH^*d = 46.0 \quad 73.0 \quad 31.8$

$LAB^*d = 46.0 \quad 61.9 \quad 38.5$

$rgb^*d = 1.0 \quad 0.0 \quad 0.0$

**M-M<sub>d</sub> Magenta red**

$LCH^*d = 45.3 \quad 72.2 \quad 349.6$

$LAB^*d = 45.3 \quad 71.0 \quad -12.9$

$rgb^*d = 1.0 \quad 0.0 \quad 1.0$

**V-B<sub>d</sub> Violet blue (very similar to elementary Blue)**

$LCH^*d = 31.3 \quad 49.2 \quad 299.3$

$LAB^*d = 31.3 \quad 24.1 \quad -42.9$

$rgb^*d = 0.0 \quad 0.0 \quad 1.0$

**elementary CIELAB (  $a^*_{se}$ ,  $b^*_{se}$  ) chroma diagram**

**J<sub>e</sub> Yellow**

$LCH^*e = 84.5 \quad 76.2 \quad 92.0$

$LAB^*e = 84.5 \quad -2.6 \quad 76.2$

$rgb^*e = 1.0 \quad 0.811 \quad 0.0$

**G<sub>e</sub> Green**

$LCH^*e = 56.4 \quad 64.1 \quad 162.0$

$LAB^*e = 56.4 \quad -60.9 \quad 19.8$

$rgb^*e = 0.0 \quad 1.0 \quad 0.183$

**C<sub>e</sub> Blue green**

$LCH^*e = 54.3 \quad 48.6 \quad 217.0$

$LAB^*e = 54.3 \quad -38.8 \quad -29.2$

$rgb^*e = 0.0 \quad 1.0 \quad 0.903$

**B<sub>e</sub> Blue**

$LCH^*e = 35.7 \quad 48.5 \quad 272.0$

$LAB^*e = 35.7 \quad 1.6 \quad -48.5$

$rgb^*e = 0.0 \quad 0.284 \quad 1.0$

**R<sub>e</sub> Red**

$LCH^*e = 45.3 \quad 68.4 \quad 25.0$

$LAB^*e = 45.3 \quad 62.0 \quad 28.9$

$rgb^*e = 1.0 \quad 0.0 \quad 0.204$

**M<sub>e</sub> Blue red**

$LCH^*e = 34.1 \quad 57.6 \quad 329.0$

$LAB^*e = 34.1 \quad 49.3 \quad -29.6$

$rgb^*e = 0.477 \quad 0.0 \quad 1.0$

Notes to the CIELAB chroma diagrams (  $a^*_{sb}$ ,  $b^*_{sb}$  ), (  $a^*_{se}$ ,  $b^*_{se}$  ), (  $a^*_{ce}$ ,  $b^*_{ce}$  )

1. For the  $rgb^*$ -input values the CIELAB data  $LCH^*d$  and  $LAB^*d$  have been measured.

2. For the calculation of the standard hue angle  $h_{ab,s}$  use for any device values  $rgb^*d$  the equation:

$$h_{ab,s} = atan( r^*d \cos(30^\circ) + g^*d \cos(150^\circ) ) / ( r^*d \sin(30^\circ) + g^*d \sin(150^\circ) + b^*d \sin(270^\circ) ) \quad (1)$$

3. 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:  $h_{ab,s1} = 30.0, 90.0, 150.0, 210.0, 270.0, 330.0, 390.0$  (i=0,6) and the equations for a 48 and 360 step hue circle:

$$h_{48ab,sij} = h_{ab,s1} + j [ h_{ab,s(i+1)} - h_{ab,s1} ] / 8 \quad (i = 0, 1, \dots, 5; j = 0, 1, \dots, 7) \quad (2)$$

$$h_{360ab,sij} = h_{ab,s1} + j [ h_{ab,s(i+1)} - h_{ab,s1} ] / 60 \quad (i = 0, 1, \dots, 5; j = 0, 1, \dots, 59) \quad (3)$$

4. 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:  $h_{ab,e1} = 25.5, 92.3, 162.2, 217.0, 271.7, 328.6, 385.5$  (i=0,6) and the equations for a 48 and 360 step elementary hue circle:

$$h_{48ab,ei} = h_{ab,e1} + j [ h_{ab,e(i+1)} - h_{ab,e1} ] / 8 \quad (i = 0, 1, \dots, 5; j = 0, 1, \dots, 7) \quad (4)$$

$$h_{360ab,ei} = h_{ab,e1} + j [ h_{ab,e(i+1)} - h_{ab,e1} ] / 60 \quad (i = 0, 1, \dots, 5; j = 0, 1, \dots, 59) \quad (5)$$

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.

6. The values  $rgb^*$  produce the output of the device-independent elementary hues