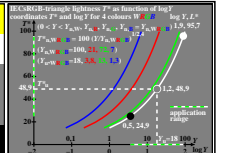


see similar files of the whole serie: <http://farbe.li.tu-berlin.de/eec/eec.htm>
 technical information: <http://farbe.li.tu-berlin.de/ftp/color/li.tu-berlin.de>

TUB registration: 20230801-eec0/eec010n1.txt /ps
 application for evaluation and measurement of display or print output

TUB material: code=th4ta

sensation scaling functions
lightness L^* and tristimulus value Y
adaptation on surround white W
 $L^*_W = 100 (Y / 100)^{1/2,0}$
adaptation on surround grey U
 $L^*_U = 100 (Y / 100)^{1/2,4}$
description with CIELAB 1976
 $L^*_{CIELAB} = 116 (Y / 100)^{1/3,0} - 16$
adaptation on surround black N
 $L^*_N = 100 (Y / 100)^{1/3,0}$



Viewing situations of adjacent greys

1A $R_1 \rightarrow R$ $F_1 \rightarrow Y$ $L_1 \rightarrow M$
 $R_1 = 0.18$ $Y_1 = 18$ $L_1 = 28 \text{ cd/m}^2$
 1A Reflection 2A Y-tristimulus value 3A L-emittance

Viewing situations of separated greys

1B $R_1 \rightarrow R$ $F_1 \rightarrow Y$ $L_1 \rightarrow M$
 $R_1 = 0.18$ $Y_1 = 18$ $L_1 = 28 \text{ cd/m}^2$
 1B Reflection 2B Y-tristimulus value 3B L-emittance

Viewing situations of adjacent greys

2A $L_1 \rightarrow M$ $L_2 \rightarrow M$ $L_3 \rightarrow M$
 $Y_1 = 36$ $Y_2 = 18$ $Y_3 = 90$

Viewing situations of separated greys

2B $L_1 \rightarrow M$ $L_2 \rightarrow M$ $L_3 \rightarrow M$
 $Y_1 = 36$ $Y_2 = 18$ $Y_3 = 90$

Dynamic range conversion of images with equally spaced rgb^* data
 Equally spaced visual output and lightness L^* output with Gamma/adjutor

raw image data (RGB):
 $R \ll r_{rgb^*} \ll 1$ (Photo-CD)
 not equally spaced
 search: $R \ll r_{rgb^*} \ll 1$,
 and: $R \ll r_{rgb^*} \ll 1$

16 gray steps
 ISO/EBC 15775
 ISO 9241-306
 standard range

Gamma/adjutor
 $(r_{rgb^*})^{\gamma} = 2.4$
 $(r_{rgb^*})^{\gamma} = 2.4$
 SDR display
 SDR range

Alternate image
 $R \ll r_{rgb^*} \ll 1$
 not equally spaced
 $r_{rgb^*} = 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0$
 not equally spaced

Visual image (SdR):
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Visual definition of L^* by test-chart output on display
 according to ISO 9241-306 with 16 values $0.5 \leq L^* \leq 2$

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