



See original or copy: http://web.me.com/klaus.richter/ME35/ME35LONP.PDF /.PS
Technical information: http://www.ps.bam.de or http://130.149.60.45/~farbmetrik

TUB registration: 20101101-ME35/ME35LONP.PDF /.PS
application for measurement of printer or monitor systems

PSL2-program code: raster cell threshold data (24 x 24, 8 bit, horizontal)

%!PS-Adobe-3.0 B7211-7n.eps mit h24n721.for, 20.10.94
%%BoundingBox: 72 90 226 204
/FS {findfont exch scalefont setfont} bind def
/MM {72 25.4 div mul} def /str {8 string} bind def
/languagelevel where {pop languagelevel} {1} ifelse
2 ge {[/HalfToneType 3 /Width 24 /Height 24 /Thresholds

ME350-7, B8_29

digital image processing
with Adobe PostScript Level 2
CIEBasedABC-color space

The ABC-color data represent
zone theory of colorvision
in two non linear steps:

- 1. non linear trichromatic step
2. non linear opponent color step

ME351-1, B8_33_1

CIE 1931 XYZ-color space in PSL2

[/CIEBasedABC<< %Dict PostScript Level 2
/MatrixABC [1 0 0 1 0 0 1] % default
/DecodeABC [{ } { }] % default, empty function
/RangeABC [0 0.9505 0 1 0 1.0890] % D65

ME351-3, B8_33_3

EBU-RGB*-color space in PSL2

[/CIEBasedABC<< %Dict PostScript Level 2
/MatrixABC [1 0 0 1 0 0 1] % default
/DecodeABC [{ } { }] % default, empty function
/RangeABC [0 0.9505 0 1 0 1.0890] % D65

ME351-5, B8_34_2

CIELAB 1976 L*a*b*-color space
definition and reversal

L* = 116 (Y/Yn)^(1/3) - 16
a* = 500 [(X/Xn)^(1/3) - (Y/Yn)^(1/3)]
b* = 200 [(Y/Yn)^(1/3) - (Z/Zn)^(1/3)]
X = Xn [(L* + 16) / 116 + a*/500]^3
Y = Yn [(L* + 16) / 116]^3
Z = Zn [(L* + 16) / 116 - b*/200]^3

ME351-7, B8_35_1

CIEBasedABC-color space in PSL2
transformation ABC* -> XYZ
three colorness -> tristimulus values

[L*] = [3 x 3 MatrixABC] x [D(A*)]
[M*] = [3 x 3 MatrixLMN] x [D(L*)]
[N*] = [3 x 3 MatrixLMN] x [D(M*)]
[X] = [3 x 3 MatrixLMN] x [D(L*)]
[Y] = [3 x 3 MatrixLMN] x [D(M*)]
[Z] = [3 x 3 MatrixLMN] x [D(N*)]

ME351-2, B8_33_2

CIEBasedABC-color space in PSL2
LMN* / OL* / RGB* -> XYZ
EBU-screen phosphors, D65

L = DecodeL* = {2.2 exp}
M = DecodeM* = {2.2 exp}
N = DecodeN* = {2.2 exp}
[X] = [0.4303 0.3416 0.1782] x [L]
[Y] = [0.2219 0.7068 0.0713] x [M]
[Z] = [0.0202 0.1296 0.9387] x [N]

ME351-4, B8_34_1

CIEBasedABC-color space in PSL2
LMN* / OL* / RGB* -> XYZ
NTSC-screen phosphors, D65

L = DecodeL* = {1.8 exp}
M = DecodeM* = {1.8 exp}
N = DecodeN* = {1.8 exp}
[X] = [0.4497 0.3163 0.1845] x [L]
[Y] = [0.2446 0.6720 0.0833] x [M]
[Z] = [0.0252 0.1412 0.9227] x [N]

ME351-6, B8_34_3

CIELAB 1976 L*a*b*-color space
and CIEBasedABC-transformation

X = Xn [(L* + 16) / 116 + a*/500]^3
Y = Yn [(L* + 16) / 116]^3
Z = Zn [(L* + 16) / 116 - b*/200]^3
A = DecodeL* = {16 add 116 div}
B = Decodea* = {500 div}
C = Decodeb* = {200 div}

ME351-8, B8_35_2

