

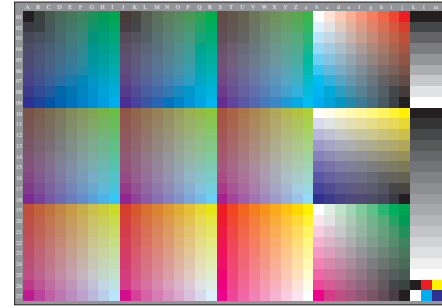
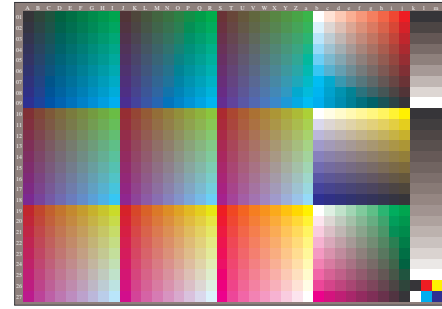
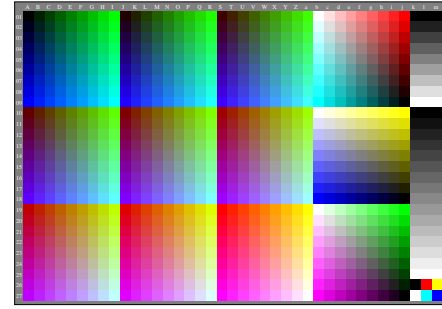
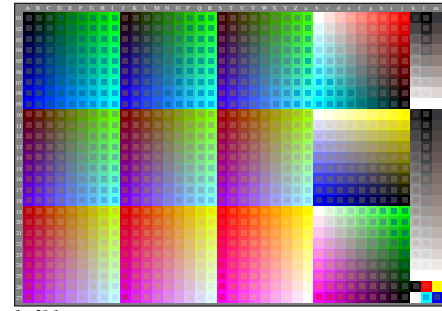
<http://farbe.li.tu-berlin.de/fem2/fem210np.pdf> / .ps; only vector graphic VG; start output
see separate images of this page: <http://farbe.li.tu-berlin.de/fem2/fem2.htm>

PostScript-Colour Parameters and 1-Minus-Relation (1MR) of *rgb* and *cmk*
01 Colour parameters *setgray*, *setrgbcolor*, and *setcmykcolor* in PostScript.
02
03 *k setgray* with $0 \leq k \leq 1$ defines colours in the space *DeviceGray*.
04 For $k=0$ the colour is black, for $k=1$ the colour is white.
05 For $0 \leq k \leq 1$ a grey colour is defined between black and white.
06
07 *r g b setrgbcolor* with $0 \leq r, g, b \leq 1$ defines colors in the space *DeviceRGB*.
08 For $r=g=b=0$ the colour is black, for $r=g=b=1$ the colour is white.
09 For $0 \leq r, g, b \leq 1$ many colours including greys are defined.
10
11 *c m y k setcmykcolor* mit $0 \leq c, m, y, k \leq 1$ defines colours in the space *DeviceCMYK*.
12 If $k=0$ and $c=m=y=1$ the colour is black, for $c=m=y=0$ the colour is white.
13 If $c=m=y=0$ and $k=1$ the colour is black, for $k=0$ the colour is white.
14 For $0 \leq c, m, y, k \leq 1$ and $k=0$ many colours including greys are defined.
15
16 For $0 \leq c, m, y \leq 1$ and $k=0$ the minimum of $\{c, m, y\}$ can be changed by *k*.
17 In this case the new parameters of *setcmykcolor* are $\{c-k, m-k, y-k, k\}$.
18 Lines 16 and 17 define the 1-Minus-Relation for the *cmk* values.
19 The 1-Minus-Relation for values of *rgb* and *cmk* is $r=1-c, g=1-m, b=1-y$.
Lines 03 to 14: parameters of *setgray*, *setrgbcolor*, and *setcmykcolor*.
Lines 16 to 19: 1-Minus-Relation between $\{c, m, y, 0\}$, $\{c, m, y, k\}$, and $\{r, g, b\}$.

Frame File PostScript Code for 1-Minus-Relation (1MR) to *setrgbcolor*
and line 05 to 07 for change of *setgray* to *setrgbcolor*
and line 09 to 13 for change of *setcmykcolor* to *setrgbcolor*
01 %!PS-Adobe-3.0 EPSF-3.0, 1MR for change to setrgbcolor
02 /1MR-000 {%BEG procedure 1MR-000
03 %MR-Transform of setgray and setcmykcolor to FFM_setrgbcolor
04
05 /setgray {%BEG procedure setgray to setrgbcolor
06 dup dup FFM_setrgbcolor
07 } def %END procedure setgray to setrgbcolor
08
09 /setcmykcolor {%BEG procedure setcmykcolor to setrgbcolor
10 /FFM_k exch def /FFM_y exch def /FFM_m exch def /FFM_c exch def
11 /FFM_k 0 eq {1 FFM_c sub 1 FFM_m sub 1 FFM_y sub FFM_setrgbcolor}
12 {1 FFM_k sub dup dup FFM_setrgbcolor} ifelse
13 } def %END procedure setcmykcolor to setrgbcolor
14
15 } def %END procedure 1MR-000
16 %%Trailer %END 1-Minus-Relation (1MR) to setrgbcolor
Remarks:
The FF_PS code includes: /FFM_setrgbcolor [setrgbcolor] bind def
Then *setgray* and *setcmykcolor* is changed to standard *setrgbcolor*

Frame File PostScript-code for 1-Minus-Relation (1MR) to *cmk* *setcmykcolor*
01 %!PS-Adobe-3.0 EPSF-3.0, 1MR-0002 for change to cmy0 setcmykcolor
02 /1MR-0002 {%BEG procedure 1MR-0002 to cmy0 setcmykcolor
03 %BEG setgray, setrgbcolor, cmyk setcmykcolor to cmy0 setcmykcolor
04 /setgray {%BEG procedure setgray to cmy0 setcmykcolor
05 /Mw exch def 1 Mw sub dup dup 0 FFM_setcmykcolor
06 } def %END procedure setgray to cmy0 setcmykcolor
07 /setrgbcolor {%BEG procedure setrgbcolor to cmy0 setcmykcolor
08 /Mr exch def /My exch def /Mg exch def /Mc exch def
09 1 Mr sub 1 Mg sub 1 Mb sub 0 FFM_setcmykcolor
10 } def %END procedure setrgbcolor to cmy0 setcmykcolor
11 /setcmykcolor {%BEG procedure cmyk to cmy0 setcmykcolor
12 /Mk exch def /My exch def /Mg exch def /Mc exch def
13 Mk 0 ne {Mc Mk add Mk Mr add My Mk add 0}
14 {Mc Mk My 0} ifelse FFM_setcmykcolor
15 } def %END procedure cmyk to cmy0 setcmykcolor
16 %%Trailer %END procedure (1MR-0002) to cmy0 setcmykcolor
Remarks:
line 04 to 10: change of *setgray*, *setrgbcolor* to *cmk* *setcmykcolor*
line 11 to 15: change of *cmk* *setcmykcolor* to *cmk* *setcmykcolor*
The FF_PS-code includes: /FFM_setcmykcolor [setcmykcolor] bind def

Frame File PostScript-code for 1-Minus-Relation (1MR) to *cmk* *setcmykcolor*
01 %!PS-Adobe-3.0 EPSF-3.0, 1MR-0003 for change to cmyk setcmykcolor
02 /1MR-0003 {%BEG procedure 1MR-0003 to cmyk setcmykcolor
03 /Mind {/Min Mc def %procedure to define Minimum of Mc, Mm, My
04 Mc Mm le Mc My le and /Min Mc def} if
05 Mm My le Mm Mc le and /Min Mm def} if
06 My Mc le My Mm le and /Min My def} if} bind def
07 /setgray {%BEG procedure setgray to 000k setcmykcolor
08 /Mc exch def 0 0 0 1 Mk sub FFM_setcmykcolor
09 } def %END procedure setgray to 000k setcmykcolor
10 /setrgbcolor {%BEG procedure setrgbcolor to cmyk setcmykcolor
11 /Mr exch def /My exch def /Mg exch def
12 /Mc 1 Mr sub def /Mm 1 Mr sub def /My 1 Mr sub def Mind
13 Mc Min sub Mm Min sub My Min sub Min FFM_setcmykcolor
14 } def %END procedure setrgbcolor to cmyk setcmykcolor
15 /setcmykcolor {%BEG procedure cmy0 to cmyk setcmykcolor
16 /Mk exch def /My exch def /Mg exch def /Mc exch def Mind
17 Mk 0 eq {Mc Min sub Mm Min sub My Min sub Min}
18 {Mc Mm My Mk} ifelse FFM_setcmykcolor
19 } def %END procedure cmy0 to cmyk setcmykcolor
20 %%Trailer %END procedure (1MR-0003) to cmyk setcmykcolor
Assumption: only *cmk* *setcmykcolor* or *cmk* *setcmykcolor* is in file



TUB-test chart fem2; Frame-File PS-code (FF_PS) Definition of PS-color spaces
DeviceGray, *DeviceRGB*, *DeviceCMYK* Output and steering of test chart AE49 of ISO 9241-306

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

TUB registration: 202240201-fem2/fem210np.pdf / .ps
application for evaluation and measurement of display or print output
TUB material: code=rh4ta