

see similar files: <http://130.149.60.45/~farbmefrik/SE15/SE15.HTM>  
technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmefrik>

1-113030-L0 SE150-7N  
TUB-test chart SE15; 1080 colours, offset standard paper  
Test chart according to DIN 33872

Test chart G with 40x27=1080 colours; digital equidistant 9 or 16 step colour scales; Colour data in column (A–n):  $rgb + cmy0(A..j + k26..n27)$ ,  $0000n(k, w(l), nnn0(m), www(n), 3D = 1$

input:  $rgb/cmyk \rightarrow rgb/cmyk$   
output: no change

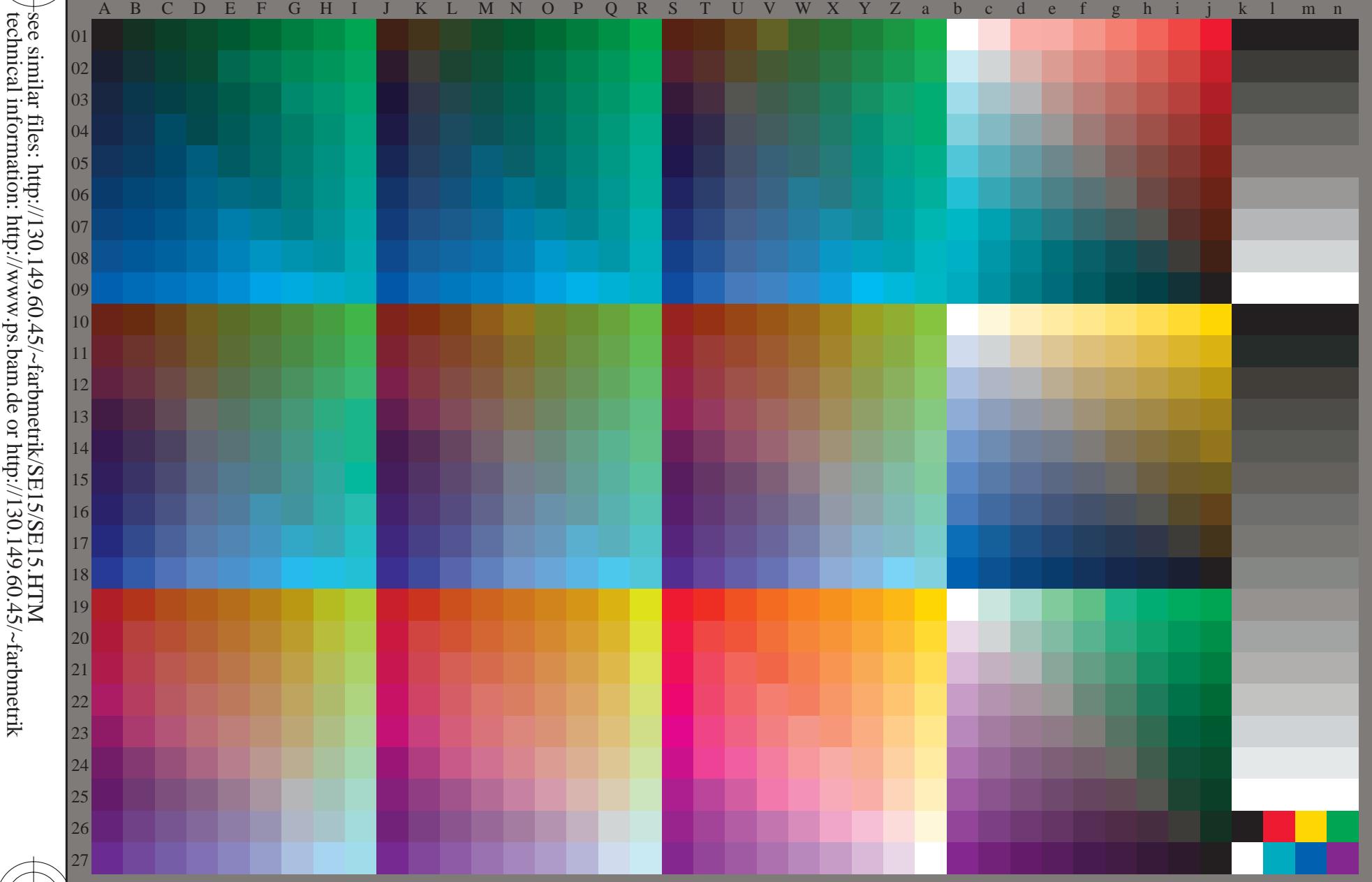
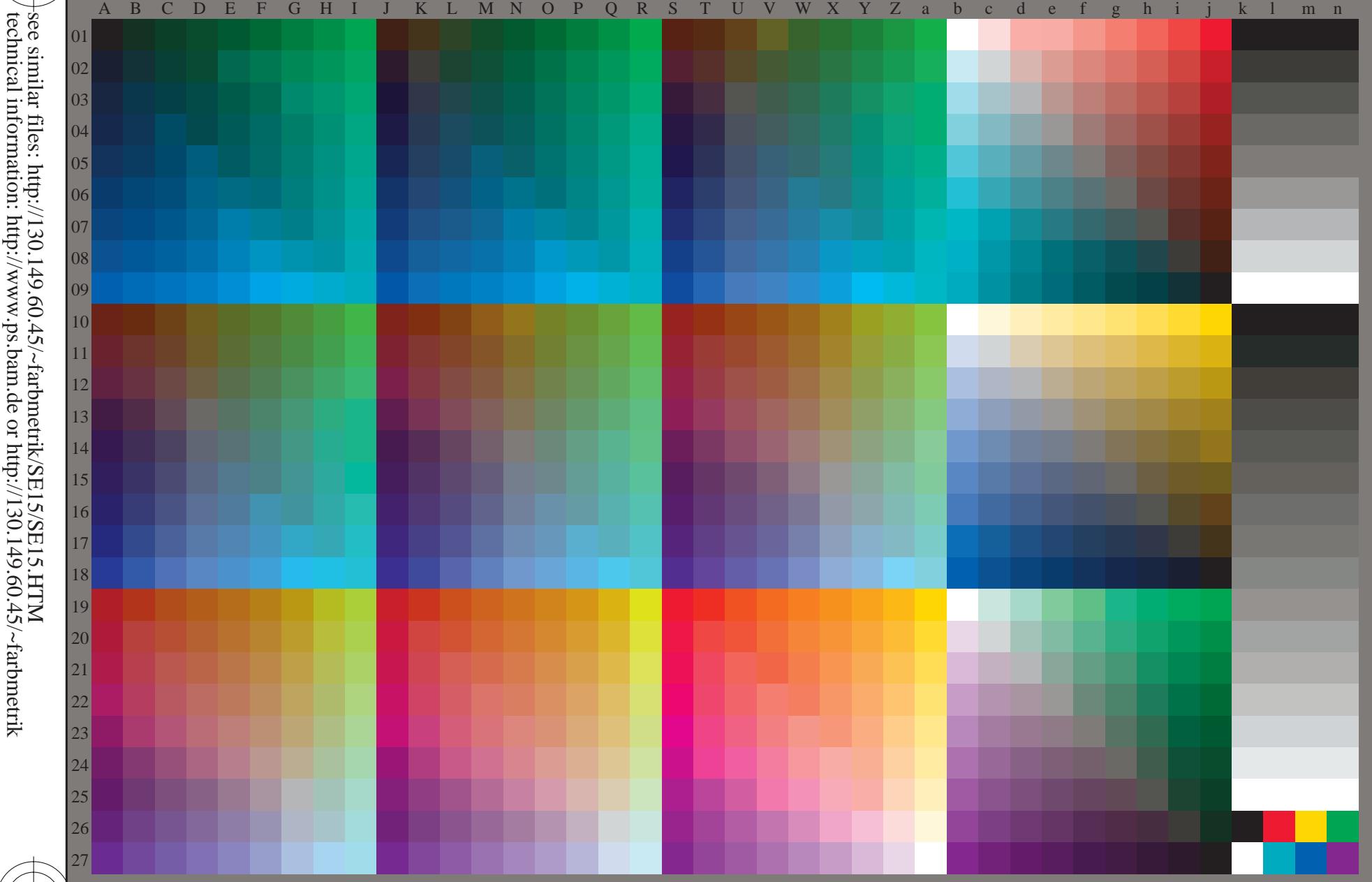
C M Y O L V

TUB registration: 20130201-SE15/SE15L0FP.PDF/.PS  
 application for measurement of offset print output, separation cmyn6\* (CMYK)

TUB material: code=rha4ta  
 Test chart G with 40x27=1080 colours; digital equidistant 9 or 16 step colour scales; Colour data in column (A-n): rgb (A-n), 3D = 1

1-113130-L0 SE150-73  
 TUB-test chart SE15; 1080 colours, offset standard paper  
 Test chart according to DIN 33872, 3D=1, de=1, cmyk\*

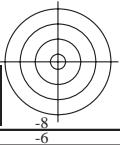
input:  $rgb/cmyk \rightarrow rgb_{de}$   
 output: 3D-linearization to  $cmyk^*_{de}$



SE1511A

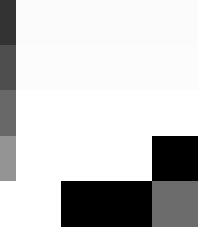
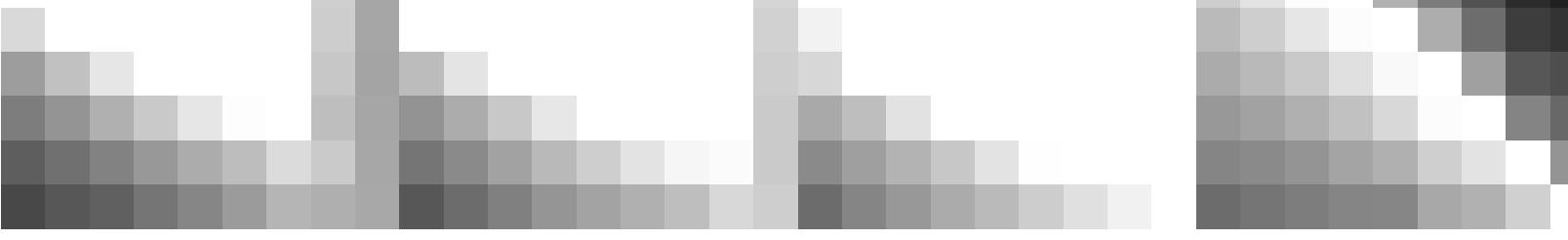
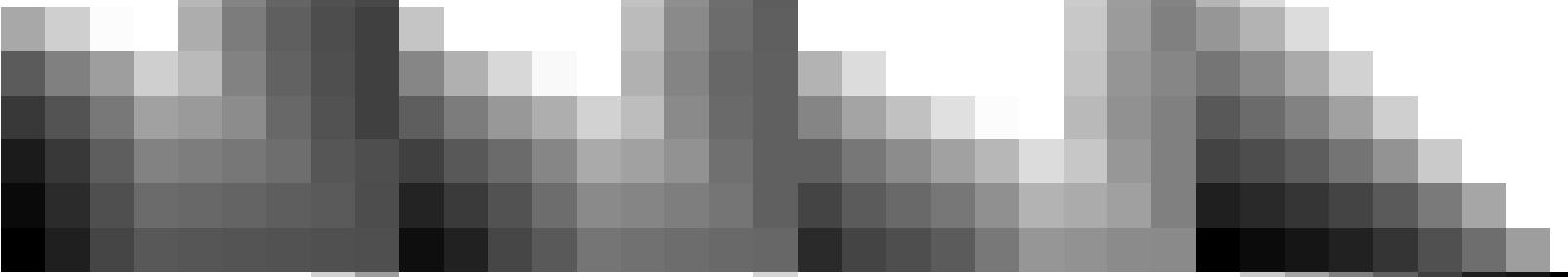
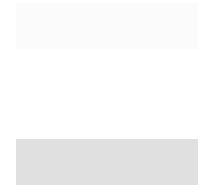
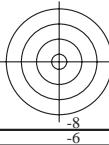
TUB registration: 20130201-SE15/SE15L0FP.PDF/.PS  
application for measurement of offset print output, separation cmyn6\* (CMYK)

TUB material: code=rha4ta  
TUB material: code=rha4ta



v L o Y M C  
http://130.149.60.45/~farbmefrik/SE15/SE15L0FP.PDF/.PS; 3D-linearization  
F: 3D-linearization SE15/SE15LE30FP.DAT in file (F), page 3/33

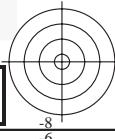
see similar files: <http://130.149.60.45/~farbmefrik/SE15/SE15.HTM>  
technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmefrik>



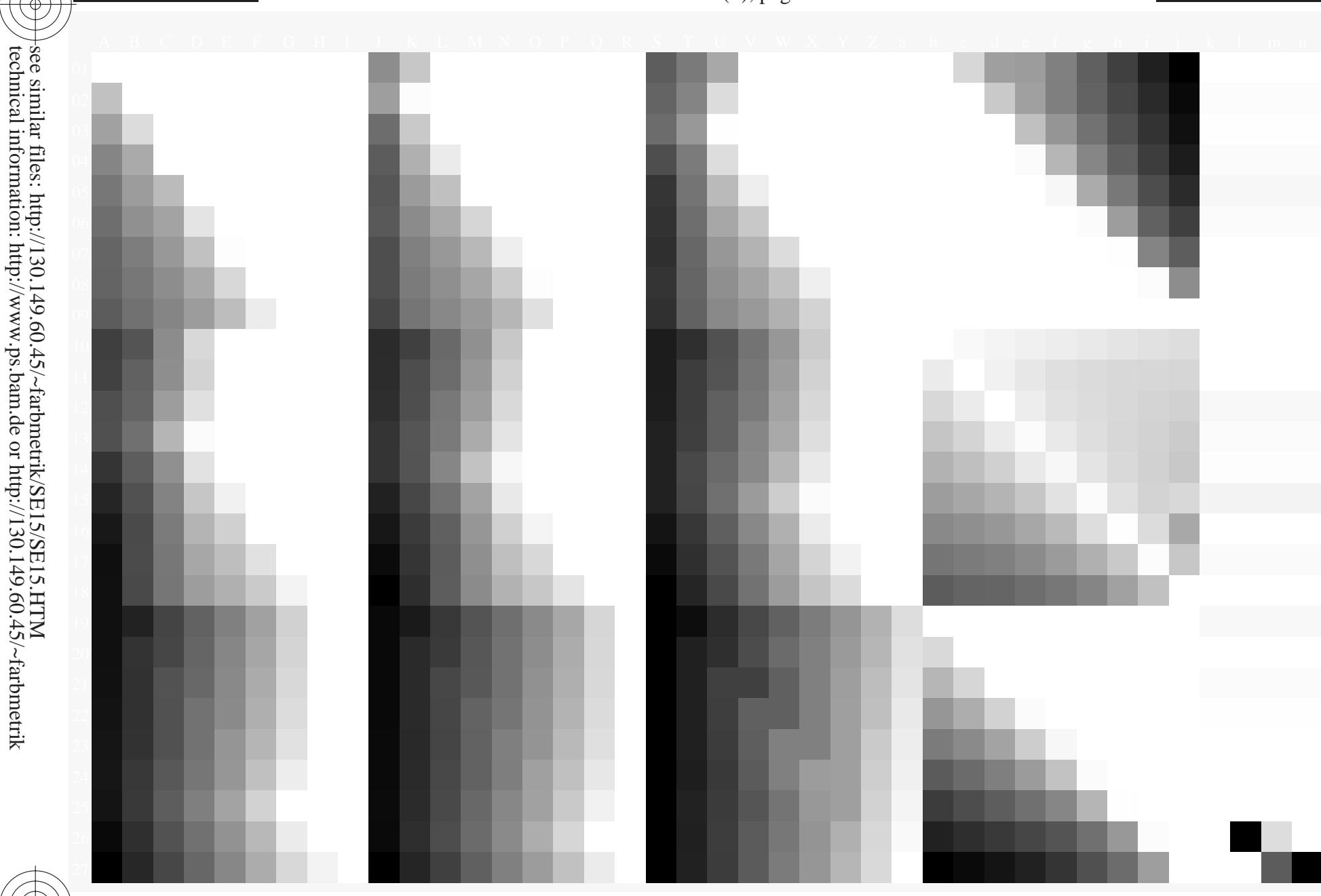
1-113230-L0  
1-113230-F0  
C M Y O L V  
SE150-73  
TUB-test chart SE15; 1080 colours, offset standard paper  
Test chart according to DIN 33872, 3D=1, de=1, cmyk\*

input:  $rgb/cmky \rightarrow rbg_{de}$   
output: 3D-linearization to  $cmyk^*_{de}$





v L o Y M C  
<http://130.149.60.45/~farbmefrik/SE15/SE15L0FP.PDF/.PS>; 3D-linearization  
 F: 3D-linearization SE15/SE15LE30FP.DAT in file (F), page 4/33

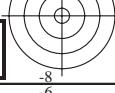


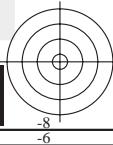
see similar files: <http://130.149.60.45/~farbmefrik/SE15/SE15.HTM>  
 technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmefrik>



1-113330-L0 SE150-73  
 TUB-test chart SE15; 1080 colours, offset standard paper  
 Test chart according to DIN 33872, 3D=1, de=1, cmyk\*

input:  $rgb/cm\text{y}k \rightarrow rg\text{b}_{de}$   
 output: 3D-linearization to  $cm\text{y}k^*_{de}$

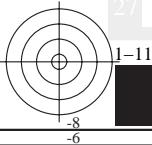




v L o Y M C  
<http://130.149.60.45/~farbm/SE15/SE15L0FP.PDF/.PS>; 3D-linearization  
 F: 3D-linearization SE15/SE15LE30FP.DAT in file (F), page 5/33



see similar files: <http://130.149.60.45/~farbm/SE15/SE15.HTM>  
 technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbm>

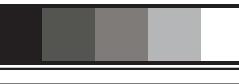


SE150-73

TUB-test chart SE15; 1080 colours, offset standard paper  
 Test chart according to DIN 33872, 3D=1, de=1, cmyk\*



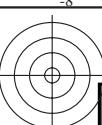
input:  $rgb/cm\text{y}k \rightarrow rg\text{b}_{de}$   
 output: 3D-linearization to  $cm\text{y}k^*_{de}$



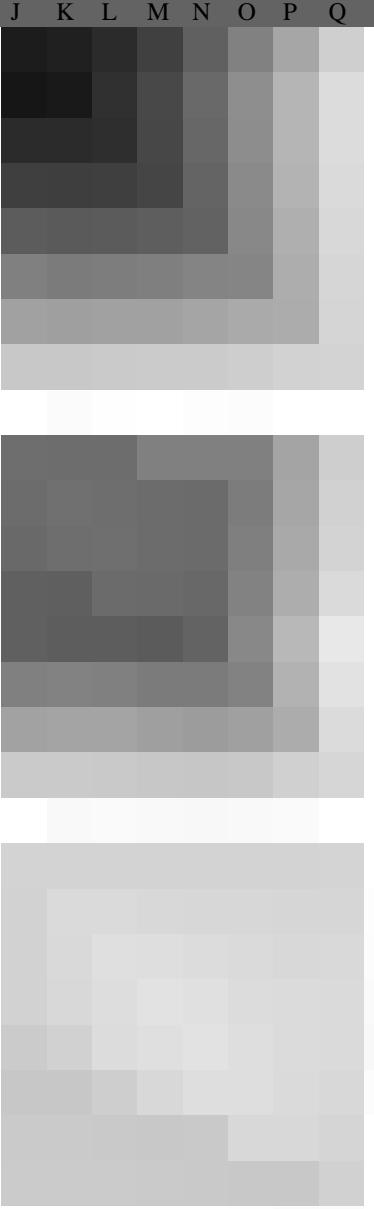
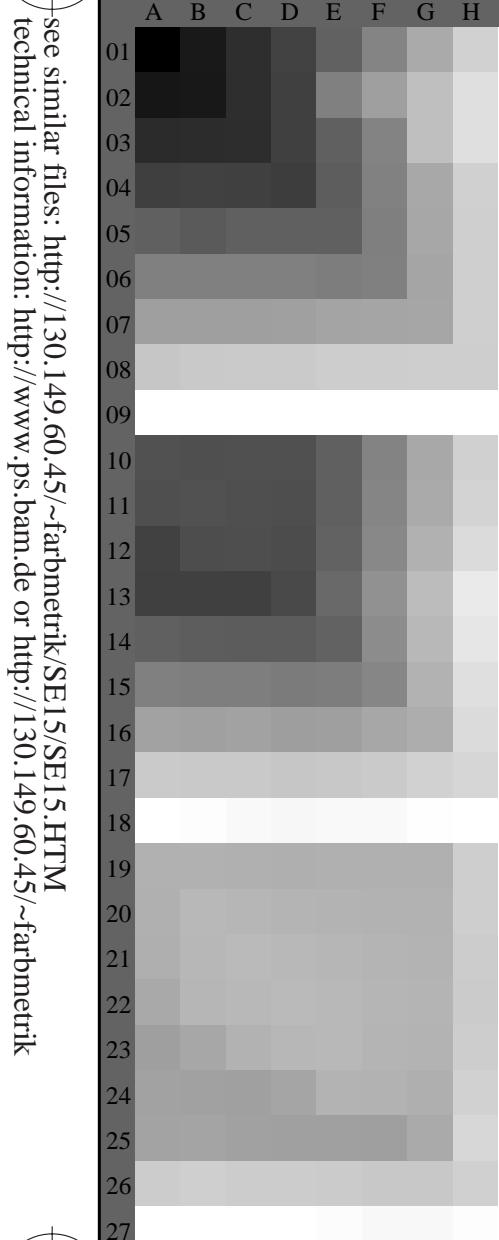
TUB registration: 20130201-SE15/SE15L0FP.PDF/.PS  
application for measurement of offset print output, separation cmykn6\* (CMYK)

TUB material: code=rha4ta  
TUB material: code=rha4ta

v L o Y M C  
http://130.149.60.45/~farbmefrik/SE15/SE15L0FP.PDF/.PS; 3D-linearization  
F: 3D-linearization SE15/SE15LE30FP.DAT in file (F), page 6/33



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1-113530-L0

SE150-73

C

Test chart G with 40x27=1080 colours; digital equidistant 9 or 16 step colour scales; Colour data in column (A-n); 3D = 1

M

Y

O

L

V

TUB-test chart SE15; 1080 colours, offset standard paper  
Test chart according to DIN 33872, 3D=1, de=1, cmyk\*

input:  $rgb/cmyk \rightarrow rgb_{de}$   
output: 3D-linearization to  $cmyk^*_{de}$

1-113530-F0

C

M

Y

O

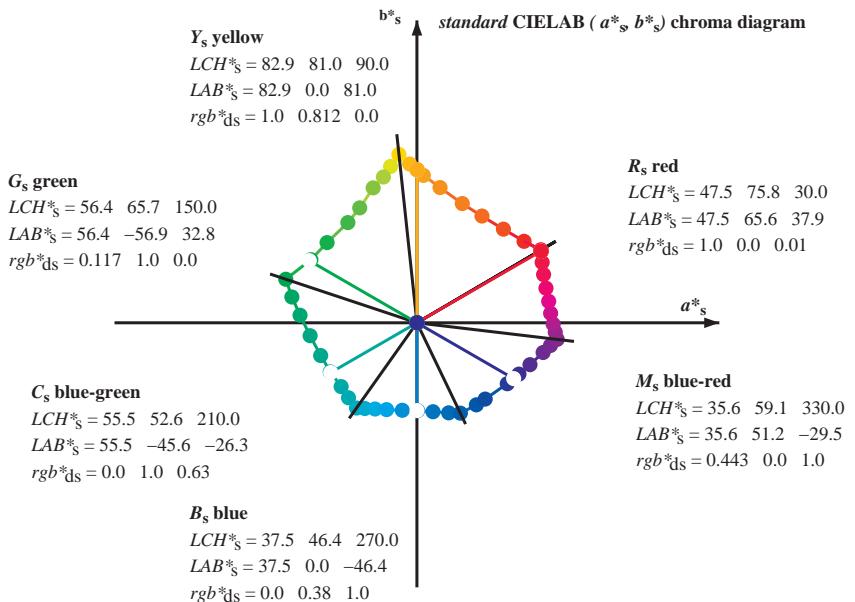
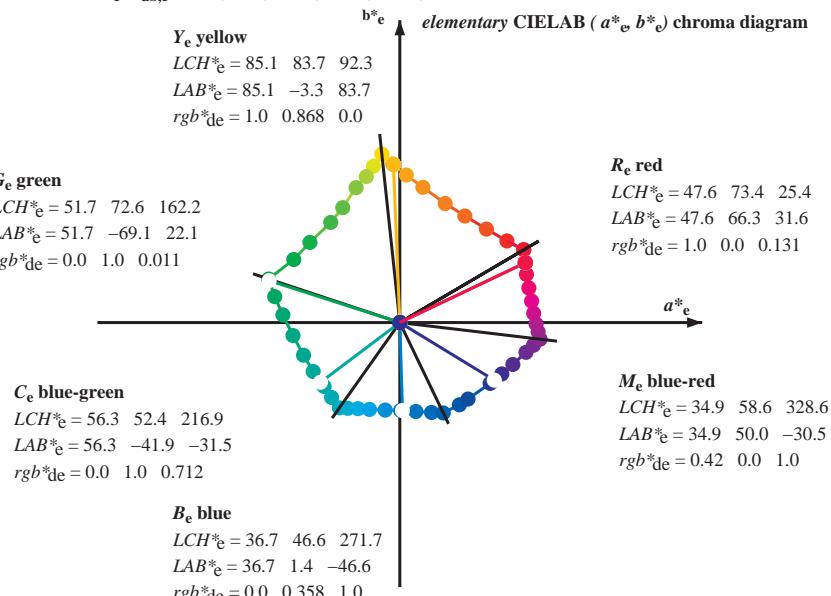
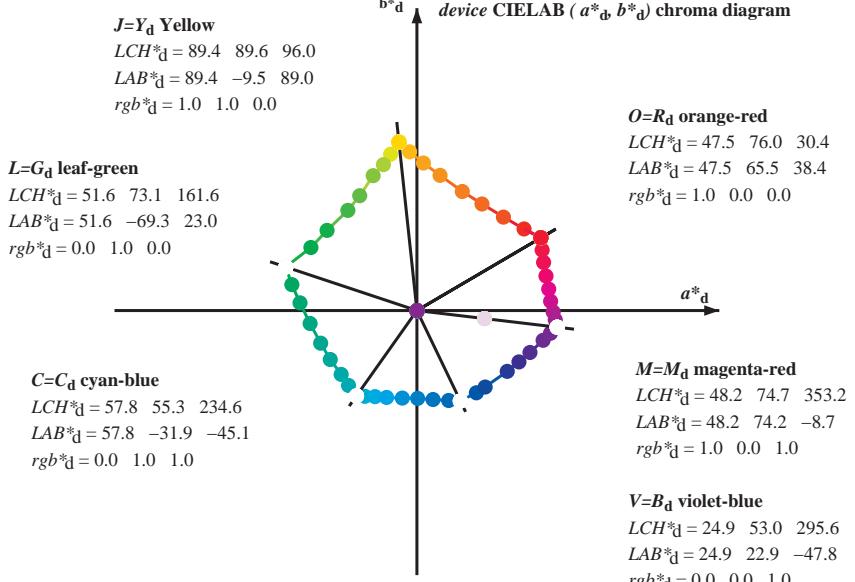
L

V



see similar files: <http://130.149.60.45/~farbmefrik/SE15/SE15.HTM>  
technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmefrik>

Data of Maximum color M in colorimetric system Offset standard print; separation cmyn6\*, D65 for input or output; Six hue angles of the 60 degree standard colours RYGCBM<sub>s</sub>:  $h_{ab,ds} = 30.0, 90.0, 150.0, 210.0, 270.0, 330.0$ ; Six hue angles of the device colours RYGCBM<sub>d</sub>:  $h_{ab,d} = 30.4, 96.1, 161.6, 234.7, 295.7, 353.2$ ; Six hue angles of the elementary colours RYGCBM<sub>e</sub>:  $h_{ab,e} = 25.5, 92.3, 162.2, 217.0, 271.7, 328.6$



#### Notes to the CIELAB chroma diagrams ( $a^*_d, b^*_d$ ), ( $a^*_s, b^*_s$ ), ( $a^*_e, b^*_e$ )

- For the  $rgb^*_d$ -input values the CIELAB data  $LCH^*_d$  and  $LAB^*_d$  have been calculated.
- For the calculation of the standard hue angle  $h_{ab,s}$  use for any device values  $rgb^*_d$  the equation:  

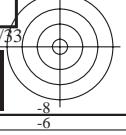
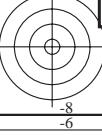
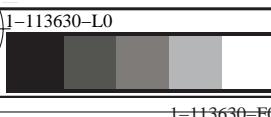
$$h_{ab,s} = atan [ r^*_d \cos(30) + g^*_d \cos(150) ] / [ r^*_d \sin(30) + g^*_d \sin(150) + b^*_d \sin(270) ] \quad (1)$$
- For the 48 or 360 equally spaced standard hue angles  $h_{ab,s}$  of the colours of maximum chroma use the seven hue angles of the 60 degree colours  $s$ :  $h_{ab,s} = 30.0, 90.0, 150.0, 210.0, 270.0, 330.0, 390.0$  (i=0,6) and the equations for a 48 and 360 step hue circle:  

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

$$h_{360ab,si,j} = h_{ab,si} + j [ h_{ab,si+1} - h_{ab,si} ] / 60 \quad (i = 0, 1, \dots, 5; j = 0, 1, \dots, 59) \quad (3)$$
- 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=0,6) and the equations for a 48 and 360 step elementary hue circle:  

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

$$h_{360ab,ei,j} = h_{ab,ei} + j [ h_{ab,ei+1} - h_{ab,ei} ] / 60 \quad (i = 0, 1, \dots, 5; j = 0, 1, \dots, 59) \quad (5)$$
- 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 5 or 1 to 4.
- The values  $rgb^*_d$  produce the output of the device-independent elementary hues































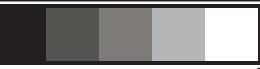












http://130.149.60.45/~farbmefrik/SE15/SE15L0FP.PDF /PS; 3D-linearization  
F: 3D-linearization SE15/SE15LE30FP.DAT in file (F), page 27/33

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technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmefrik>











<i>n</i>	HIC*Fde	rgb_Fde	ict_Fde	hsI_Fde	rgb*Fde	LabCh*Fde	cmyn*sep.Fde	hsIMde	rgb*Mde	LabCh*Mde
1053	NW_086de	0.866	0.866	0.866	0.866	85.9	0.0	0.0	0.0	0.0
1054	NW_093de	0.933	0.933	0.933	0.933	91.1	0.0	0.0	0.003	0.095
1055	NW_100de	1.0	1.0	1.0	1.0	96.3	0.0	0.0	0.0	0.0
1056	NW_000de	0.0	0.0	0.0	0.0	360	0.0	0.0	0.0	0.0
1057	NW_006de	0.066	0.066	0.066	0.066	360	0.066	0.066	23.6	0.0
1058	NW_013de	0.133	0.133	0.133	0.133	360	0.133	0.133	28.8	0.0
1059	NW_020de	0.2	0.2	0.2	0.2	360	0.2	0.2	34.1	0.0
1060	NW_026de	0.266	0.266	0.266	0.266	360	0.266	0.266	39.2	0.0
1061	NW_033de	0.333	0.333	0.333	0.333	360	0.333	0.333	44.4	0.0
1062	NW_040de	0.4	0.4	0.4	0.4	360	0.4	0.4	49.6	0.0
1063	NW_046de	0.466	0.466	0.466	0.466	360	0.466	0.466	54.8	0.0
1064	NW_053de	0.533	0.533	0.533	0.533	360	0.533	0.533	60.0	0.0
1065	NW_060de	0.6	0.6	0.6	0.6	360	0.6	0.6	65.2	0.0
1066	NW_066de	0.666	0.666	0.666	0.666	360	0.666	0.666	70.3	0.0
1067	NW_073de	0.734	0.734	0.734	0.734	360	0.734	0.734	75.6	0.0
1068	NW_080de	0.8	0.8	0.8	0.8	360	0.8	0.8	80.8	0.0
1069	NW_086de	0.866	0.866	0.866	0.866	360	0.866	0.866	85.9	0.0
1070	NW_093de	0.933	0.933	0.933	0.933	360	0.933	0.933	91.1	0.0
1071	NW_100de	1.0	1.0	1.0	1.0	360	1.0	1.0	96.3	0.0
1072	NW_000de	0.0	0.0	0.0	0.0	360	0.0	0.0	18.5	0.0
1073	NW_100de	1.0	1.0	1.0	1.0	360	1.0	1.0	96.3	0.0
1074	RO0Y_100_100de	1.0	0.0	0.0	1.0	1.0	0.5	390	1.0	0.0
1075	G50B_100_100de	0.0	1.0	1.0	1.0	1.0	0.5	210	0.0	1.0
1076	Y00G_100_100de	1.0	1.0	0.0	1.0	1.0	0.5	90	1.0	0.868
1077	B00R_100_100de	0.0	0.0	1.0	1.0	1.0	0.5	270	0.0	0.358
1078	G00B_100_100de	0.0	1.0	0.0	1.0	1.0	0.5	150	0.0	1.0
1079	B50R_100_100de	1.0	0.0	1.0	1.0	1.0	0.5	330	0.42	0.0

Mean color difference of this page:

delta

1-1133230-F0

SE150-7N, Page 33/33-F

TUB-test chart SE15; 1080 colours, offset standard paper  
colors and differences,  $\Delta E^*$ , 3D=1, de=1, cmyk\*input:  $rgb/cmyk \rightarrow rgb_{de}$   
output: 3D-linearization to  $cmyk^*_{de}$ 

1-1133230-F0

1-1133230-F0