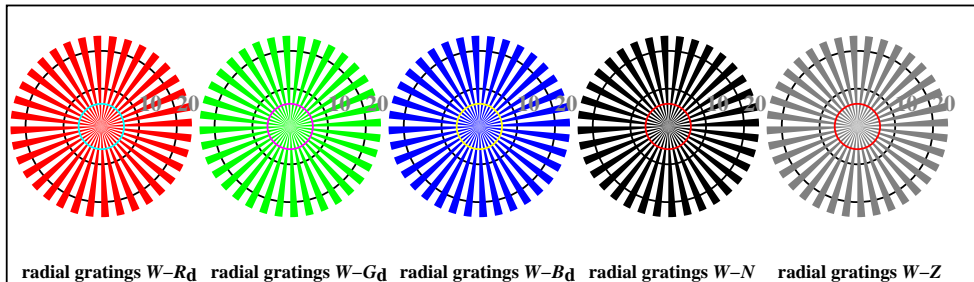
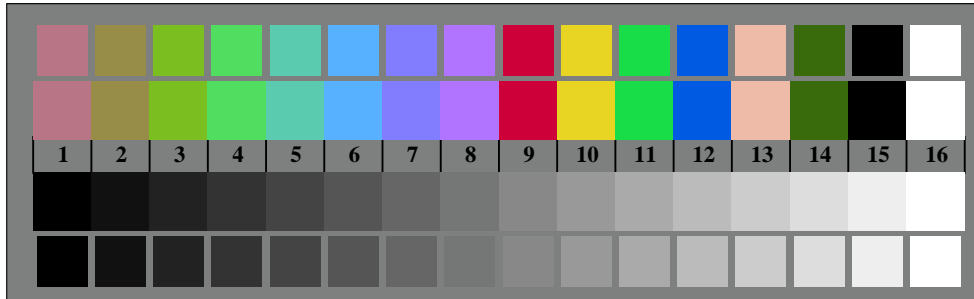




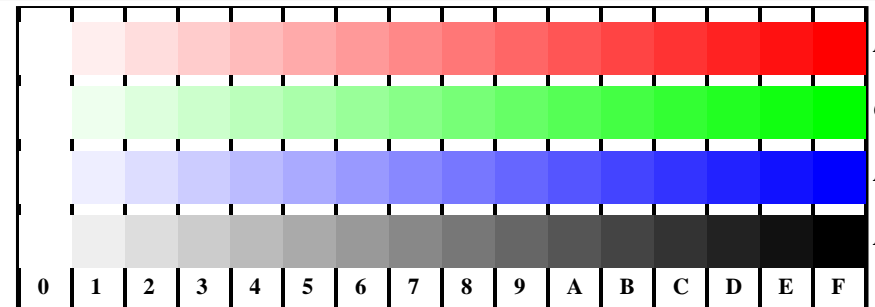
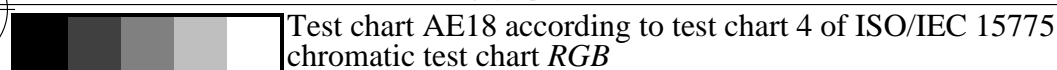
AE180-3, Picture D1W\*dd: Flower motif, 14 CIE-test colours and 2 + 16 grey steps (sf); PS operators *settransfer*, 3 colorimage



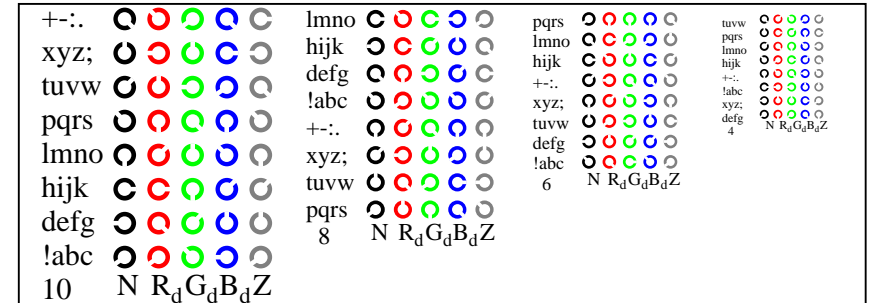
AE180-5, Picture D2W\*dd: radial gratings W-Rd; W-Gd; W-Bd; W-N; PS operator *rgb*->*rgb\*dd* *setrgbcolor*



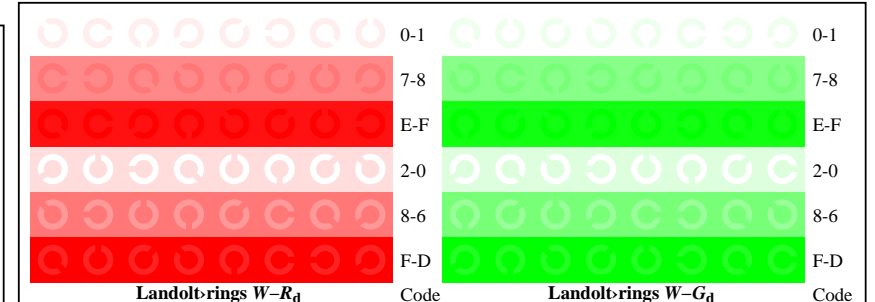
AE180-7, Picture D3W\*dd: 14 CIE-test colours and 2 + 16 grey steps (sf); *rgb/cmy0*->*rgb\*dd* *setrgbcolor*



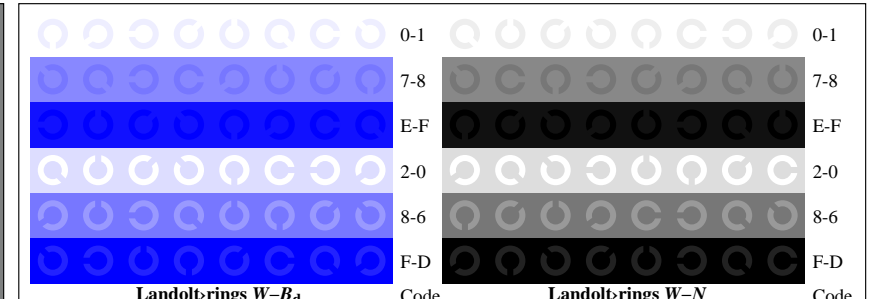
AE181-1, Picture D4W\*dd: 16 equidistant steps W-Rd; W-Gd; W-Bd; W-N; *rgb/cmy0*->*rgb\*dd* *setrgbcolor*



AE181-3, Picture D5W\*dd: Sript and Landolt-rings N; Rd; Gd; Bd; Z; PS operator *rgb*->*rgb\*dd* *setrgbcolor*



AE181-5, Picture D6W\*dd: Landolt-rings W-Rd; W-Gd; PS operator *rgb*->*rgb\*dd* *setrgbcolor*



AE181-7, Picture D7W\*dd: Landolt-rings W-Bd; W-N; PS operator *rgb*->*rgb\*dd* *setrgbcolor*

input: *rgb/cmy0/000n/w* *set...*  
output: ->*rgb\*dd* *setrgbcolor*

Test for the visual linearized output of pictures D1Wdd to D3Wdd

Output test with the computer display ( ) or the external display ( ) please mark by (x)!

#### Test of the (flower) image according to picture D1Wdd

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
Subjective remarks about the colour reproduction of the (flower) image, the CIE-test colours and the 16 grey steps within the image, for example "less contrast":  
.....  
.....  
.....

#### Test of the resolution of radial gratings $W-R_d$ , $W-G_d$ , $W-B_d$ according to picture D2Wdd

|   | $W-R_d$  | $W-G_d$  | $W-B_d$  | $W-N$    | $W-Z$    |
|---|----------|----------|----------|----------|----------|
| Is the resolution diameter < 6 mm?                    | Yes/No   | Yes/No   | Yes/No   | Yes/No   | Yes/No   |
| Test with magnifying glass (6x), Resolution diameter: | ..... mm | ..... mm | ..... mm | ..... mm | ..... mm |

#### Test of the 14 CIE-test colours according to picture D3Wdd

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
If Yes: How many colours have clear differences? of the given 14 steps: **..... Steps**

#### Test of 16 visual equidistant $L^*$ -grey steps according to picture D3Wdd

Are the 16 steps on the upper rows distinguishable? **Yes/No**  
If No: How many steps can be distinguished? of the given 16 steps: **..... Steps**

part 1

AE180-3dd: 01001

#### Documentation of file format, hardware and software for this test:

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY8\\_1.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY8_1.PDF) **underline Yes/No**

PS-File: [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY8\\_1.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY8_1.PS) **or underline Yes/No**

#### Used computer operating system:

either one of Windows/Mac/Unix/other and version:.....

This evaluation is for the device output: **underline monitor/data projector/printer**

Device model, driver and version:.....

Device output with PDF/PS-file: **underline PDF/PS-file**

#### For device output with PDF-file AE18F0NX\_CY8\_1.PDF

either PDF-file transfer "download, copy" to PDF device.....  
or with computer system interpretation by "Display-PDF":.....  
or with software. e. g. Adobe-Reader/-Acrobat and version:.....  
or with software e. g. Ghostscript and version:.....

#### For device output with PS-file AE18F0NX\_CY8\_1.PS

either PS-file transfer "download, copy" to PS device.....  
or with computer system interpretation by "Display-PS":.....  
or with software e. g. Ghostscript and version:.....  
or with software e. g. Mac-Yap and version:.....

Special remarks: Special remarks, e. g. output of Landscape (L)  
.....  
.....

part 3

AE180-7N\*dd-01001

Form A: Test chart AE18 according to test chart 4 of ISO/IEC 15775 input:  $rgb/cmy0/000n/w$  set...  
chromatic test chart RGB output:  $->rgb_{dd}$  setrgbcolor

Test of 16 visually equally spaced steps of the colour rows  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$ , and  $W-N$  according to picture D4Wdd

| Colour row             | Test                                  | Are all the 16 steps distinguishable? | If No: How many steps can be distinguished? | of the given 16 steps | ..... Steps |
|------------------------|---------------------------------------|---------------------------------------|---|-----------------------|-------------|
| $W-R_d$ White - Red:   | Are all the 16 steps distinguishable? | <b>Yes/No</b>                         |   |                       |             |
| $W-G_d$ White - Green: | Are all the 16 steps distinguishable? | <b>Yes/No</b>                         |   |                       |             |
| $W-B_d$ White - Blue:  | Are all the 16 steps distinguishable? | <b>Yes/No</b>                         |   |                       |             |
| $W-N$ White - Black:   | Are all the 16 steps distinguishable? | <b>Yes/No</b>                         |   |                       |             |

#### Test of characters and Landolt-rings in four sizes according to picture D5Wdd

Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

| Relative size | Letters | Ring $N$ | Ring $R_d$ | Ring $G_d$ | Ring $B_d$ |
|---------------|---------|----------|------------|------------|------------|
| 10            | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 8             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 6             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 4             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |

#### Test of recognition frequency of Landolt-rings $W-R_d$ , $W-G_d$ , $W-B_d$ , and $W-N$ according to pictures D6Wdd, and D7Wdd

Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

| Colour row $W-R_d$ | Colour row $W-G_d$ | Colour row $W-B_d$ | Colour row $W-N$  |
|--------------------|--------------------|--------------------|-------------------|
| background - ring  | background - ring  | background - ring  | background - ring |
| 0 - 1              | 0 - 1              | 0 - 1              | 0 - 1             |
| 7 - 8              | 7 - 8              | 7 - 8              | 7 - 8             |
| E - F              | E - F              | E - F              | E - F             |
| 2 - 0              | 2 - 0              | 2 - 0              | 2 - 0             |
| 8 - 6              | 8 - 6              | 8 - 6              | 8 - 6             |
| F - D              | F - D              | F - D              | F - D             |

part 2

AE181-3Ndd: 01001

#### Documentation of assessor colour vision properties for visual assessment

The assessor has **normal** colour vision according to one test: **underline Yes/No**  
either according to DIN 6160:1996 with Anomaloskop of Nagel **underline Yes/unknown**  
or with test charts using colour points according to Ishihara **underline Yes/unknown**  
or tested with, please specify: ..... **underline Yes/unknown**

#### For visual evaluation of the display (monitor, data projector) output

Office workplace illumination is daylight (clouded/north sky) **underline Yes/No**

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY8\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY8_3.PDF) **underline Yes/No**

PS file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY8\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY8_3.PS) **underline Yes/No**

Picture A7dd contrast range: (>F:0) (F:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)

compare standard print output according to ISO/IEC 15775 with range F:0 **underline range**

Remark: In daylighted offices the contrast range is in many cases:  
on display between: >F:0 and E:0 (monitor), D:0 and 3:0 (data projector)

#### Only for optional colorimetric specification with PDF/PS file output

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY8\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY8_3.PDF)

picture A7dd **underline Yes/No**

PS file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY8\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY8_3.PS)

picture A7dd **or underline Yes/No**

#### colour measurement and specification for:

CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: **underline Yes/No**

If No, please give other parameters: .....

Colorimetric specification for 17 step colours of <http://farbe.li.tu-berlin.de/OE70/OE70L1NP.PDF>

Exchange of CIELAB data in file <http://farbe.li.tu-berlin.de/AE82/AE82L0NP.TXT> and transfer of the PS file AE82L0NP.PS (= .TXT) to the PDF-file AE82L0NP.PDF **underline Yes/No**

If No, please describe other method: .....

part 4

AE181-7dd: 01001

TUB Registration: 20191001-AE18/AE18L0FA.TXT /PS  
application for measurement or viewing of the output on display and print

TUB material: code=th4ta

see similar files: <http://farbe.li.tu-berlin.de/AE18/AE18F0NX.PDF> / .PS; 3D-linearization, page 3/24  
technical information: <http://farbe.li.tu-berlin.de/AE18/AE18LF0NX.PDF> / .PS in file (F)

TUB Registration: 20191001-AE18/AE18L0FA.TXT /.PS  
application for measurement or viewing of the output on display and print  
TUB material: code=th4ta

| i  | LAB*ref | l*out | LAB*out | LAB*out-ref | ΔE*  |
|----|---------|-------|---------|-------------|------|
| 1  | 0,00    | 0,00  | 0,00    | 0,00        | 0,01 |
| 2  | 6,36    | 0,00  | 0,06    | 6,36        | 0,00 |
| 3  | 12,72   | 0,00  | 0,13    | 12,72       | 0,00 |
| 4  | 19,08   | 0,00  | 0,20    | 19,08       | 0,00 |
| 5  | 25,44   | 0,00  | 0,26    | 25,44       | 0,00 |
| 6  | 31,80   | 0,00  | 0,33    | 31,80       | 0,00 |
| 7  | 38,16   | 0,00  | 0,40    | 38,16       | 0,00 |
| 8  | 44,52   | 0,00  | 0,46    | 44,52       | 0,00 |
| 9  | 50,88   | 0,00  | 0,53    | 50,88       | 0,00 |
| 10 | 57,24   | 0,00  | 0,60    | 57,24       | 0,00 |
| 11 | 63,60   | 0,00  | 0,66    | 63,60       | 0,00 |
| 12 | 69,96   | 0,00  | 0,73    | 69,96       | 0,00 |
| 13 | 76,32   | 0,00  | 0,80    | 76,32       | 0,00 |
| 14 | 82,68   | 0,00  | 0,86    | 82,68       | 0,00 |
| 15 | 89,04   | 0,00  | 0,93    | 89,04       | 0,00 |
| 16 | 95,41   | 0,00  | 1,00    | 95,41       | 0,00 |
| 17 | 0,00    | 0,00  | 0,00    | 0,00        | 0,01 |
| 18 | 23,85   | 0,00  | 0,25    | 23,85       | 0,00 |
| 19 | 47,70   | 0,00  | 0,50    | 47,70       | 0,00 |
| 20 | 71,55   | 0,00  | 0,75    | 71,55       | 0,00 |
| 21 | 95,41   | 0,00  | 1,00    | 95,41       | 0,00 |

**Start output S1**  
**Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G**

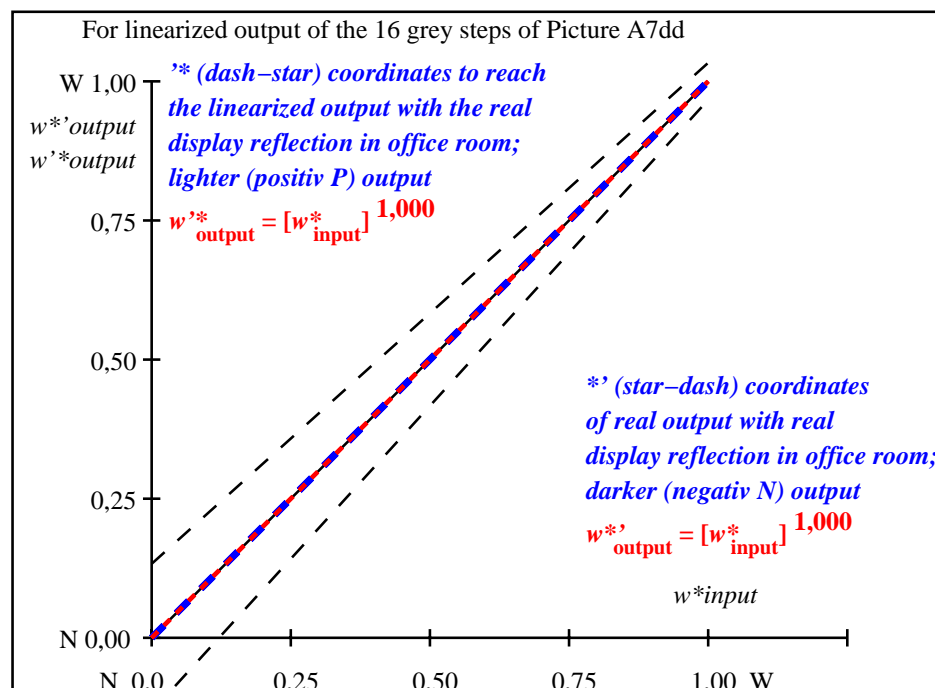
Mean lightness difference (16 steps)  
 $\Delta E^*_{CIELAB} = 0,0$

Mean lightness difference (5 steps)  
 $\Delta L^*_{CIELAB} = 0,0$

Mean colour reproduction index:  $R^*_{ab,m} = 99,9$

part 1; Measure: unknown; Device: unknown; Date: unknown

AE180-3dd: 01002



part 2; Measure: unknown; Device: unknown; Date: unknown

AE181-3dd: 01002

| $L^*/Y_{intended}$<br>(absolute)                     | 0.0/0.0      | 6.4/0.7        | 12.7/1.5       | 19.1/2.8     | 25.4/4.6       | 31.8/7.0       | 38.2/10.2    | 44.5/14.2      | 50.9/19.2      | 57.2/25.2    | 63.6/32.3      | 70.0/40.7      | 76.3/50.4    | 82.7/61.6      | 89.0/74.3      | 95.4/88.6    |
|--|--------------|----------------|----------------|--------------|----------------|----------------|--------------|----------------|----------------|--------------|----------------|----------------|--------------|----------------|----------------|--------------|
| $000n^*$<br>setcmyk<br>gp=1.0<br>No. and<br>Hex code | 00;F         | 01;E           | 02;D           | 03;C         | 04;B           | 05;A           | 06;9         | 07;8           | 08;7           | 09;6         | 10;5           | 11;4           | 12;3         | 13;2           | 14;1           | 15;0         |
| $w^*=l^*_{CIELAB,r}$<br>(relative)                   | 0,000        | 0,067          | 0,133          | 0,200        | 0,267          | 0,333          | 0,400        | 0,467          | 0,533          | 0,600        | 0,667          | 0,733          | 0,800        | 0,867          | 0,933          | 1,000        |
| $w^*_{intended}$<br>$w^*_{out}$                      | 0,000<br>0,0 | 0,067<br>0,067 | 0,133<br>0,133 | 0,200<br>0,2 | 0,267<br>0,267 | 0,333<br>0,333 | 0,400<br>0,4 | 0,467<br>0,467 | 0,533<br>0,533 | 0,600<br>0,6 | 0,667<br>0,667 | 0,733<br>0,733 | 0,800<br>0,8 | 0,867<br>0,867 | 0,933<br>0,933 | 1,000<br>1,0 |

AE180-7N, Picture A7\*dd: 16 visual equidistant  $L^*$ -grey steps; PS operator: 000n\* setcmykcolor

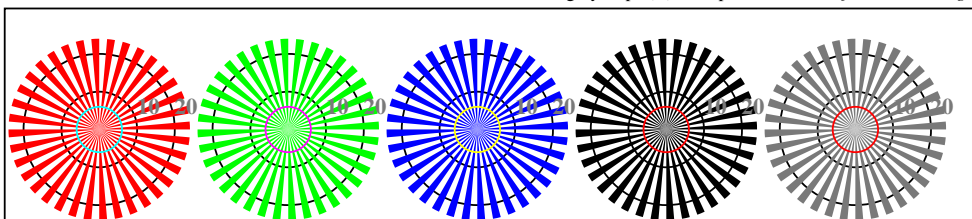
In-out: Test chart AE18 according to test chart 4 of ISO/IEC 15775  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:0,31$ ;  $Y_N$ -range 0,0 to <0,46

input:  $rgb/cmy0/000n/w$  set...  
output:  $->rgb_{dd}$  setrgbcolor



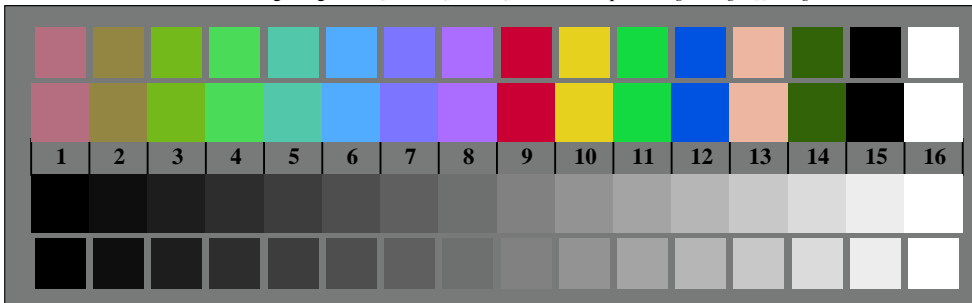


AE180-3, Picture D1W\*dd: Flower motif, 14 CIE-test colours and 2 + 16 grey steps (sf); PS operators *settransfer*, 3 colorimage

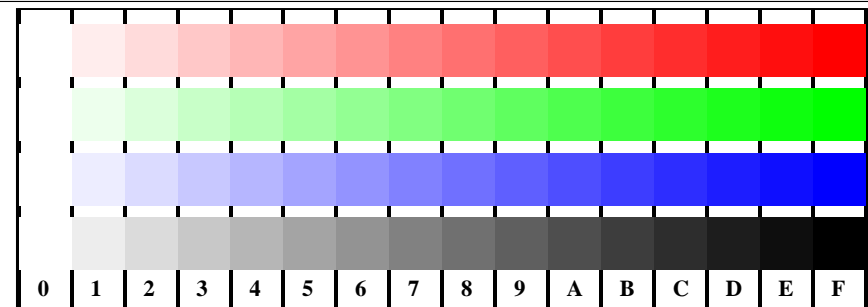
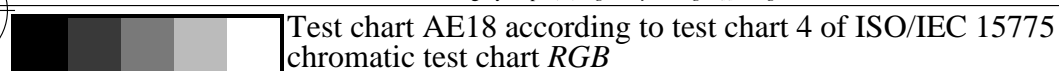


radial gratings  $W-R_d$  radial gratings  $W-G_d$  radial gratings  $W-B_d$  radial gratings  $W-N$  radial gratings  $W-Z$

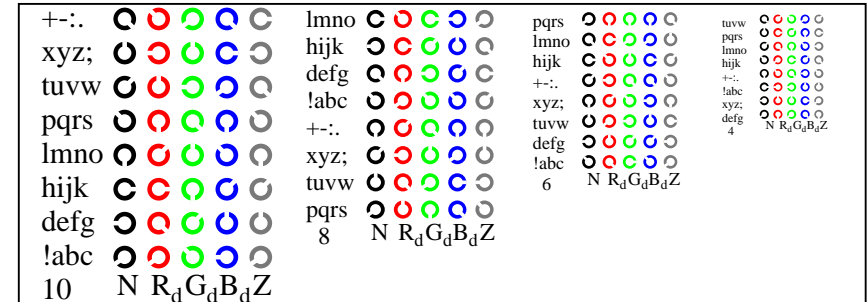
AE180-5, Picture D2W\*dd: radial gratings  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



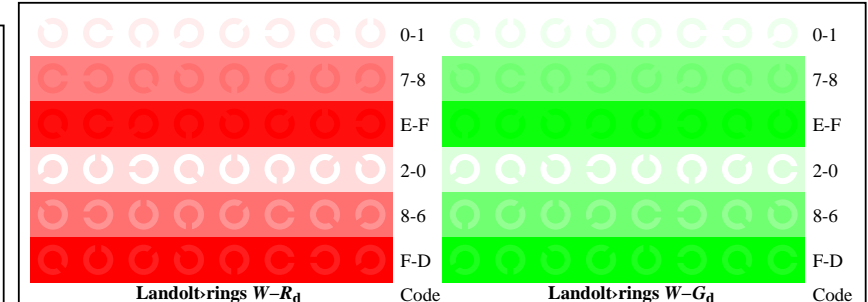
AE180-7, Picture D3W\*dd: 14 CIE-test colours and 2 + 16 grey steps (sf);  $rgb/cmy0 \rightarrow rgb_{dd}$  *setrgbcolor*



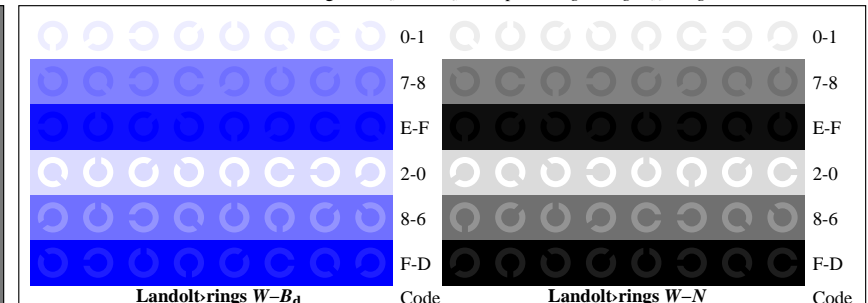
AE181-1, Picture D4W\*dd: 16 equidistant steps  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ;  $rgb/cmy0 \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-3, Picture D5W\*dd: Sript and Landolt-rings  $N$ ;  $R_d$ ;  $G_d$ ;  $B_d$ ;  $Z$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-5, Picture D6W\*dd: Landolt-rings  $W-R_d$ ;  $W-G_d$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-7, Picture D7W\*dd: Landolt-rings  $W-B_d$ ;  $W-N$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*

input:  $rgb/cmy0/000n/w$  *set...*  
output:  $\rightarrow rgb_{dd}$  *setrgbcolor*



Test for the visual linearized output of pictures D1Wdd to D3Wdd

Output test with the computer display ( ) or the external display ( ) please mark by (x)!

#### Test of the (flower) image according to picture D1Wdd

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
Subjective remarks about the colour reproduction of the (flower) image, the CIE-test colours and the 16 grey steps within the image, for example "less contrast":  
.....  
.....  
.....

#### Test of the resolution of radial gratings $W-R_d$ , $W-G_d$ , $W-B_d$ according to picture D2Wdd

|   | $W-R_d$  | $W-G_d$  | $W-B_d$  | $W-N$    | $W-Z$    |
|---|----------|----------|----------|----------|----------|
| Is the resolution diameter < 6 mm?                    | Yes/No   | Yes/No   | Yes/No   | Yes/No   | Yes/No   |
| Test with magnifying glass (6x), Resolution diameter: | ..... mm | ..... mm | ..... mm | ..... mm | ..... mm |

#### Test of the 14 CIE-test colours according to picture D3Wdd

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
If Yes: How many colours have clear differences? of the given 14 steps: **..... Steps**

#### Test of 16 visual equidistant $L^*$ -grey steps according to picture D3Wdd

Are the 16 steps on the upper rows distinguishable? **Yes/No**  
If No: How many steps can be distinguished? of the given 16 steps: **..... Steps**

part 1

AE180-3dd: 01081

#### Documentation of file format, hardware and software for this test:

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY7\\_1.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY7_1.PDF) **underline Yes/No**

PS-File: [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY7\\_1.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY7_1.PS) **or underline Yes/No**

#### Used computer operating system:

either one of Windows/Mac/Unix/other and version:.....

This evaluation is for the device output: **underline monitor/data projector/printer**

Device model, driver and version:.....

Device output with PDF/PS-file: **underline PDF/PS-file**

#### For device output with PDF-file AE18F0NX\_CY7\_1.PDF

either PDF-file transfer "download, copy" to PDF device.....  
or with computer system interpretation by "Display-PDF":.....  
or with software. e. g. Adobe-Reader/-Acrobat and version:.....  
or with software e. g. Ghostscript and version:.....

#### For device output with PS-file AE18F0NX\_CY7\_1.PS

either PS-file transfer "download, copy" to PS device.....  
or with computer system interpretation by "Display-PS":.....  
or with software e. g. Ghostscript and version:.....  
or with software e. g. Mac-Yap and version:.....

Special remarks: Special remarks, e. g. output of Landscape (L)  
.....  
.....

part 3

AE180-7N\*dd-01081

Form A: Test chart AE18 according to test chart 4 of ISO/IEC 15775 input:  $rgb/cmy0/000n/w$  set...  
chromatic test chart RGB output:  $->rgb_{dd}$  setrgbcolor

Test of 16 visually equally spaced steps of the colour rows  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$ , and  $W-N$  according to picture D4Wdd

| Colour row             | Are all the 16 steps distinguishable? | If No: How many steps can be distinguished? | of the given 16 steps | <b>Yes/No</b> |
|------------------------|---------------------------------------|---|-----------------------|---------------|
| $W-R_d$ White - Red:   | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |
| $W-G_d$ White - Green: | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |
| $W-B_d$ White - Blue:  | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |
| $W-N$ White - Black:   | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |

#### Test of characters and Landolt-rings in four sizes according to picture D5Wdd

Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

| Relative size | Letters | Ring $N$ | Ring $R_d$ | Ring $G_d$ | Ring $B_d$ |
|---------------|---------|----------|------------|------------|------------|
| 10            | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 8             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 6             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 4             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |

#### Test of recognition frequency of Landolt-rings $W-R_d$ , $W-G_d$ , $W-B_d$ , and $W-N$ according to pictures D6Wdd, and D7Wdd

Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

| Colour row $W-R_d$ | Colour row $W-G_d$ | Colour row $W-B_d$ | Colour row $W-N$  |
|--------------------|--------------------|--------------------|-------------------|
| background - ring  | background - ring  | background - ring  | background - ring |
| 0 - 1              | 0 - 1              | 0 - 1              | 0 - 1             |
| 7 - 8              | 7 - 8              | 7 - 8              | 7 - 8             |
| E - F              | E - F              | E - F              | E - F             |
| 2 - 0              | 2 - 0              | 2 - 0              | 2 - 0             |
| 8 - 6              | 8 - 6              | 8 - 6              | 8 - 6             |
| F - D              | F - D              | F - D              | F - D             |

part 2

AE181-3Ndd: 01081

#### Documentation of assessor colour vision properties for visual assessment

The assessor has **normal** colour vision according to one test: **underline Yes/No**  
either according to DIN 6160:1996 with Anomaloskop of Nagel **underline Yes/unknown**  
or with test charts using colour points according to Ishihara **underline Yes/unknown**  
or tested with, please specify: ..... **underline Yes/unknown**

#### For visual evaluation of the display (monitor, data projector) output

Office workplace illumination is daylight (clouded/north sky) **underline Yes/No**

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY7\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY7_3.PDF) **underline Yes/No**

PS file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY7\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY7_3.PS) **underline Yes/No**

Picture A7dd contrast range: (>F:0) (F:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)

compare standard print output according to ISO/IEC 15775 with range F:0 **underline range**

Remark: In daylighted offices the contrast range is in many cases:  
on display between: >F:0 and E:0 (monitor), D:0 and 3:0 (data projector)

#### Only for optional colorimetric specification with PDF/PS file output

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY7\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY7_3.PDF)

picture A7dd **underline Yes/No**

PS file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY7\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY7_3.PS)

picture A7dd **or underline Yes/No**

#### colour measurement and specification for:

CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: **underline Yes/No**

If No, please give other parameters: .....

Colorimetric specification for 17 step colours of <http://farbe.li.tu-berlin.de/OE70/OE70L1NP.PDF>

Exchange of CIELAB data in file <http://farbe.li.tu-berlin.de/AE82/AE82L0NP.TXT> and transfer of the PS file AE82L0NP.PS (= .TXT) to the PDF-file AE82L0NP.PDF **underline Yes/No**

If No, please describe other method: .....

part 4

AE181-7dd: 01081

TUB Registration: 20191001-AE18/AE18L0FA.TXT /PS  
application for measurement or viewing of the output on display and print

TUB material: code=th4ta

see similar files: <http://farbe.li.tu-berlin.de/AE18/AE18L0FA.TXT/.PS>  
technical information: <http://farbe.li.tu-berlin.de/> or <http://farbe.li.tu-berlin.de/AE18.HTM>

| i  | LAB*ref | l*out | LAB*out | LAB*out-ref | ΔE*  |
|----|---------|-------|---------|-------------|------|
| 1  | 5,69    | 0,00  | 0,00    | 0,00        | 0,00 |
| 2  | 11,67   | 0,00  | 0,04    | 9,36        | 0,00 |
| 3  | 17,65   | 0,00  | 0,09    | 14,01       | 0,00 |
| 4  | 23,63   | 0,00  | 0,14    | 19,12       | 0,00 |
| 5  | 29,61   | 0,00  | 0,21    | 24,55       | 0,00 |
| 6  | 35,59   | 0,00  | 0,27    | 30,23       | 0,00 |
| 7  | 41,57   | 0,00  | 0,33    | 36,12       | 0,00 |
| 8  | 47,55   | 0,00  | 0,40    | 42,19       | 0,00 |
| 9  | 53,54   | 0,00  | 0,47    | 48,42       | 0,00 |
| 10 | 59,52   | 0,00  | 0,54    | 54,79       | 0,00 |
| 11 | 65,50   | 0,00  | 0,61    | 61,29       | 0,00 |
| 12 | 71,48   | 0,00  | 0,69    | 67,91       | 0,00 |
| 13 | 77,46   | 0,00  | 0,76    | 74,64       | 0,00 |
| 14 | 83,44   | 0,00  | 0,84    | 81,47       | 0,00 |
| 15 | 89,42   | 0,00  | 0,92    | 88,39       | 0,00 |
| 16 | 95,41   | 0,00  | 1,00    | 95,41       | 0,00 |
| 17 | 5,69    | 0,00  | 0,00    | 5,69        | 0,00 |
| 18 | 28,12   | 0,00  | 0,19    | 23,16       | 0,00 |
| 19 | 50,55   | 0,00  | 0,44    | 45,28       | 0,00 |
| 20 | 72,98   | 0,00  | 0,71    | 69,58       | 0,00 |
| 21 | 95,41   | 0,00  | 1,00    | 95,41       | 0,00 |

**Start output S1**  
**Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G**

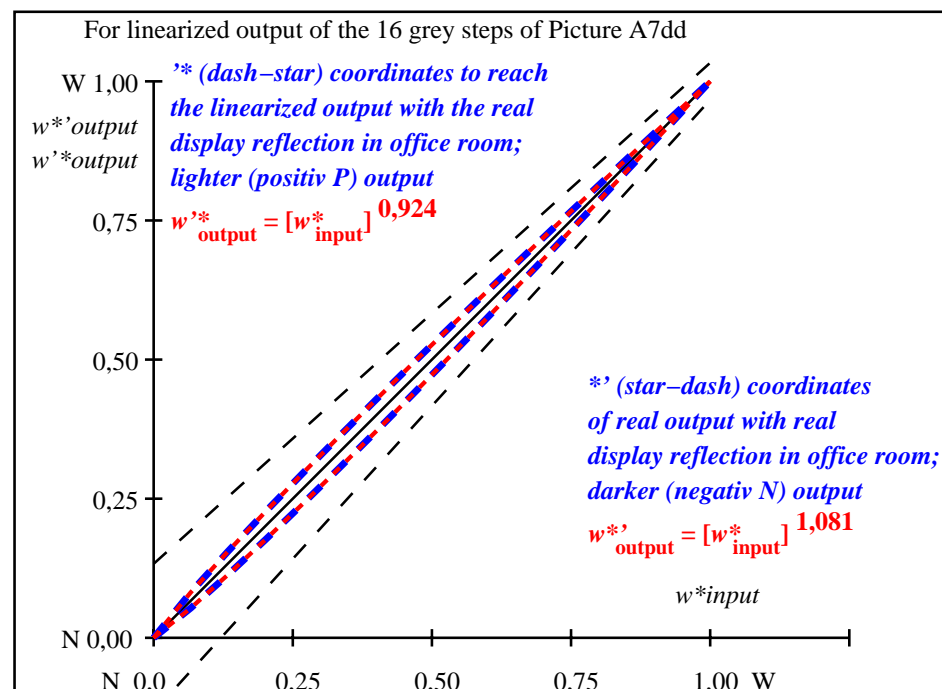
Mean lightness difference (16 steps)  
 $\Delta E^*_{CIELAB} = 3,4$

Mean lightness difference (5 steps)  
 $\Delta L^*_{CIELAB} = 2,7$

Mean colour reproduction index:  $R^*_{ab,m} = 84,9$

part 1; Measure: unknown; Device: unknown; Date: unknown

AE180-3dd: 01082



part 2; Measure: unknown; Device: unknown; Date: unknown

AE181-3dd: 01082

| $L^*/Y_{intended}$<br>(absolute)   | 5.7/0.6 | 11.7/1.4 | 17.7/2.4 | 23.6/4.0 | 29.6/6.1 | 35.6/8.8 | 41.6/12.2 | 47.6/16.5 | 53.5/21.5 | 59.5/27.6 | 65.5/34.7 | 71.5/42.9 | 77.5/52.3 | 83.4/63.0 | 89.4/75.1 | 95.4/88.6 |
|------------------------------------|---------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0 0 0 n*                           |         |          |          |          |          |          |           |           |           |           |           |           |           |           |           |           |
| setcmyk                            |         |          |          |          |          |          |           |           |           |           |           |           |           |           |           |           |
| gN=1.08                            |         |          |          |          |          |          |           |           |           |           |           |           |           |           |           |           |
| No. and Hex code                   | 00;F    | 01;E     | 02;D     | 03;C     | 04;B     | 05;A     | 06;9      | 07;8      | 08;7      | 09;6      | 10;5      | 11;4      | 12;3      | 13;2      | 14;1      | 15;0      |
| $w^*=l^*_{CIELAB,r}$<br>(relative) |         |          |          |          |          |          |           |           |           |           |           |           |           |           |           |           |
| $w^*_{intended}$                   | 0,000   | 0,067    | 0,133    | 0,200    | 0,267    | 0,333    | 0,400     | 0,467     | 0,533     | 0,600     | 0,667     | 0,733     | 0,800     | 0,867     | 0,933     | 1,000     |
| $w^*_{out}$                        | 0,0     | 0,054    | 0,113    | 0,176    | 0,24     | 0,305    | 0,371     | 0,439     | 0,506     | 0,576     | 0,645     | 0,715     | 0,786     | 0,857     | 0,928     | 1,0       |

AE180-7N, Picture A7\*dd: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

In-out: Test chart AE18 according to test chart 4 of ISO/IEC 15775  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:0,62$ ;  $Y_N$ -range 0,46 to <0,93

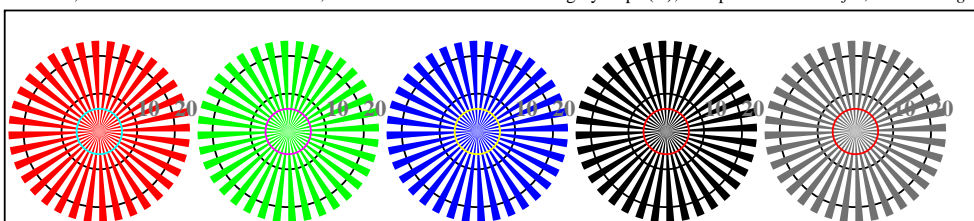
input:  $rgb/cmy0/000n/w$  set...  
output:  $->rgb_{dd}$  setrgbcolor

TUB Registration: 20191001-AE18/AE18L0FA.TXT /.PS  
application for measurement or viewing of the output on display and print  
TUB material: code=thata4ta



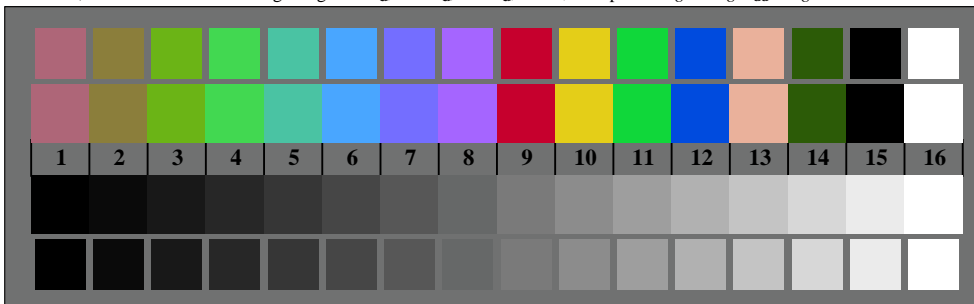


AE180-3, Picture D1W\*dd: Flower motif, 14 CIE-test colours and 2 + 16 grey steps (sf); PS operators *settransfer*, 3 colorimage

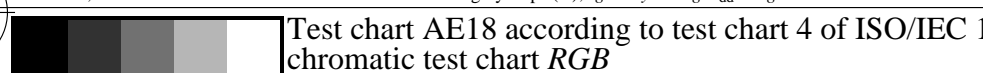


radial gratings  $W-R_d$  radial gratings  $W-G_d$  radial gratings  $W-B_d$  radial gratings  $W-N$  radial gratings  $W-Z$

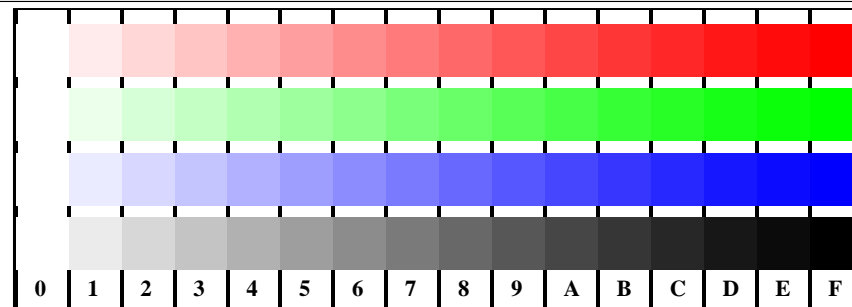
AE180-5, Picture D2W\*dd: radial gratings  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



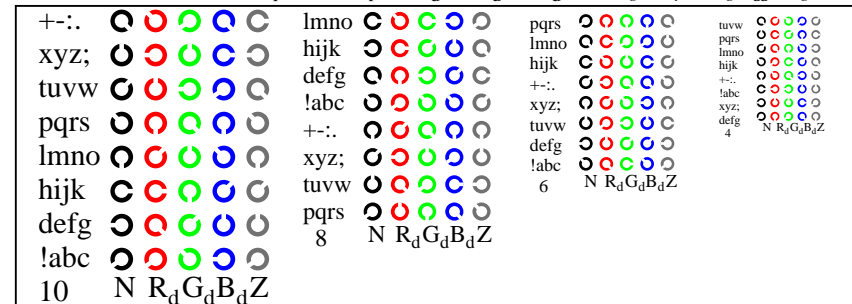
AE180-7, Picture D3W\*dd: 14 CIE-test colours and 2 + 16 grey steps (sf);  $rgb/cmy0 \rightarrow rgb_{dd}$  *setrgbcolor*



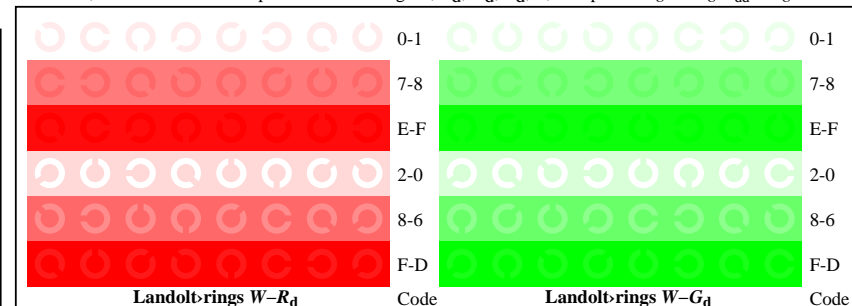
Test chart AE18 according to test chart 4 of ISO/IEC 15775  
chromatic test chart RGB



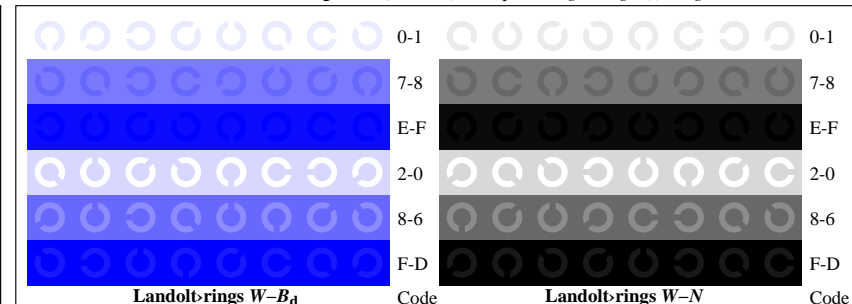
AE181-1, Picture D4W\*dd: 16 equidistant steps  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ;  $rgb/cmy0 \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-3, Picture D5W\*dd: Sript and Landolt-rings  $N$ ;  $R_d$ ;  $G_d$ ;  $B_d$ ;  $Z$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-5, Picture D6W\*dd: Landolt-rings  $W-R_d$ ;  $W-G_d$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-7, Picture D7W\*dd: Landolt-rings  $W-B_d$ ;  $W-N$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*

input:  $rgb/cmy0/000n/w$  *set...*  
output:  $\rightarrow rgb_{dd}$  *setrgbcolor*

Test for the visual linearized output of pictures D1Wdd to D3Wdd

Output test with the computer display ( ) or the external display ( ) please mark by (x)!

#### Test of the (flower) image according to picture D1Wdd

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
Subjective remarks about the colour reproduction of the (flower) image, the CIE-test colours and the 16 grey steps within the image, for example "less contrast":  
.....  
.....  
.....

#### Test of the resolution of radial gratings $W-R_d$ , $W-G_d$ , $W-B_d$ according to picture D2Wdd

|   | $W-R_d$  | $W-G_d$  | $W-B_d$  | $W-N$    | $W-Z$    |
|---|----------|----------|----------|----------|----------|
| Is the resolution diameter < 6 mm?                    | Yes/No   | Yes/No   | Yes/No   | Yes/No   | Yes/No   |
| Test with magnifying glass (6x), Resolution diameter: | ..... mm | ..... mm | ..... mm | ..... mm | ..... mm |

#### Test of the 14 CIE-test colours according to picture D3Wdd

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
If Yes: How many colours have clear differences? of the given 14 steps: **..... Steps**

#### Test of 16 visual equidistant $L^*$ -grey steps according to picture D3Wdd

Are the 16 steps on the upper rows distinguishable? **Yes/No**  
If No: How many steps can be distinguished? of the given 16 steps: **..... Steps**

part 1

AE180-3dd: 010161

#### Documentation of file format, hardware and software for this test:

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY6\\_1.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY6_1.PDF) **underline Yes/No**

PS-File: [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY6\\_1.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY6_1.PS) **or underline Yes/No**

#### Used computer operating system:

either one of Windows/Mac/Unix/other and version:.....

This evaluation is for the device output: **underline monitor/data projector/printer**

Device model, driver and version:.....

Device output with PDF/PS-file: **underline PDF/PS-file**

#### For device output with PDF-file AE18F0NX\_CY6\_1.PDF

either PDF-file transfer "download, copy" to PDF device.....  
or with computer system interpretation by "Display-PDF":.....  
or with software e. g. Adobe-Reader/-Acrobat and version:.....  
or with software e. g. Ghostscript and version:.....

#### For device output with PS-file AE18F0NX\_CY6\_1.PS

either PS-file transfer "download, copy" to PS device.....  
or with computer system interpretation by "Display-PS":.....  
or with software e. g. Ghostscript and version:.....  
or with software e. g. Mac-Yap and version:.....

Special remarks: Special remarks, e. g. output of Landscape (L)  
.....  
.....

part 3

AE180-7N\*dd:010161

Form A: Test chart AE18 according to test chart 4 of ISO/IEC 15775 input:  $rgb/cmy0/000n/w$  set...  
chromatic test chart RGB output:  $\rightarrow rgb_{dd}$  setrgbcolor

Test of 16 visually equally spaced steps of the colour rows  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$ , and  $W-N$  according to picture D4Wdd

| Colour row | Test           | Are all the 16 steps distinguishable? | If No: How many steps can be distinguished? | of the given 16 steps | Yes/No        |
|------------|----------------|---------------------------------------|---|-----------------------|---------------|
| $W-R_d$    | White - Red:   | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |
| $W-G_d$    | White - Green: | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |
| $W-B_d$    | White - Blue:  | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |
| $W-N$      | White - Black: | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |

#### Test of characters and Landolt-rings in four sizes according to picture D5Wdd

Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

| Relative size | Letters | Ring $N$ | Ring $R_d$ | Ring $G_d$ | Ring $B_d$ |
|---------------|---------|----------|------------|------------|------------|
| 10            | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 8             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 6             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 4             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |

#### Test of recognition frequency of Landolt-rings $W-R_d$ , $W-G_d$ , $W-B_d$ , and $W-N$ according to pictures D6Wdd, and D7Wdd

Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

| Colour row $W-R_d$ | Colour row $W-G_d$ | Colour row $W-B_d$ | Colour row $W-N$  |
|--------------------|--------------------|--------------------|-------------------|
| background - ring  | background - ring  | background - ring  | background - ring |
| 0 - 1              | Yes/No             | 0 - 1              | Yes/No            |
| 7 - 8              | Yes/No             | 7 - 8              | Yes/No            |
| E - F              | Yes/No             | E - F              | Yes/No            |
| 2 - 0              | Yes/No             | 2 - 0              | Yes/No            |
| 8 - 6              | Yes/No             | 8 - 6              | Yes/No            |
| F - D              | Yes/No             | F - D              | Yes/No            |

part 2

AE181-3Ndd: 010161

#### Documentation of assessor colour vision properties for visual assessment

The assessor has **normal** colour vision according to one test: **underline Yes/No**  
either according to DIN 6160:1996 with Anomaloskop of Nagel **underline Yes/unknown**  
or with test charts using colour points according to Ishihara **underline Yes/unknown**  
or tested with, please specify: ..... **underline Yes/unknown**

#### For visual evaluation of the display (monitor, data projector) output

Office workplace illumination is daylight (clouded/north sky) **underline Yes/No**

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY6\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY6_3.PDF) **underline Yes/No**

PS file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY6\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY6_3.PS) **underline Yes/No**

Picture A7dd contrast range: (>F:0) (F:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)

compare standard print output according to ISO/IEC 15775 with range F:0 **underline range**

Remark: In daylighted offices the contrast range is in many cases:  
on display between: >F:0 and E:0 (monitor), D:0 and 3:0 (data projector)

#### Only for optional colorimetric specification with PDF/PS file output

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY6\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY6_3.PDF)

picture A7dd **underline Yes/No**

PS file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY6\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY6_3.PS)

picture A7dd **or underline Yes/No**

#### colour measurement and specification for:

CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: **underline Yes/No**

If No, please give other parameters: .....

Colorimetric specification for 17 step colours of <http://farbe.li.tu-berlin.de/OE70/OE70L1NP.PDF>

Exchange of CIELAB data in file <http://farbe.li.tu-berlin.de/AE82/AE82L0NP.TXT> and transfer of the PS file AE82L0NP.PS (= .TXT) to the PDF-file AE82L0NP.PDF **underline Yes/No**

If No, please describe other method: .....

part 4

AE181-7dd: 010161

TUB Registration: 20191001-AE18/AE18L0FA.TXT /PS  
application for measurement or viewing of the output on display and print

TUB material: code=th4ta



see similar files: <http://farbe.li.tu-berlin.de/AE18/AE18F0NX.PDF> / .PS; 3D-linearization, page 9/24  
technical information: <http://farbe.li.tu-berlin.de/AE18/AE18LF0NX.PDF> / .PS in file (F)

TUB Registration: 20191001-AE18/AE18L0FA.TXT /.PS  
application for measurement or viewing of the output on display and print  
TUB material: code=thata4ta

| i  | LAB*ref | l*out | LAB*out | LAB*out-ref | ΔE*  | Start output S1 |
|----|---------|-------|---------|-------------|------|-----------------|
| 1  | 10,99   | 0,00  | 0,00    | 0,00        | 0,00 | 0,01            |
| 2  | 16,62   | 0,00  | 0,02    | 13,11       | 0,00 | 3,50            |
| 3  | 22,24   | 0,00  | 0,06    | 16,44       | 0,00 | 5,80            |
| 4  | 27,87   | 0,00  | 0,11    | 20,45       | 0,00 | 7,42            |
| 5  | 33,50   | 0,00  | 0,16    | 24,98       | 0,00 | 8,52            |
| 6  | 39,13   | 0,00  | 0,22    | 29,94       | 0,00 | 9,19            |
| 7  | 44,75   | 0,00  | 0,28    | 35,27       | 0,00 | 9,48            |
| 8  | 50,38   | 0,00  | 0,35    | 40,93       | 0,00 | 9,45            |
| 9  | 56,01   | 0,00  | 0,42    | 46,89       | 0,00 | 9,11            |
| 10 | 61,64   | 0,00  | 0,49    | 53,13       | 0,00 | 8,50            |
| 11 | 67,27   | 0,00  | 0,57    | 59,62       | 0,00 | 7,64            |
| 12 | 72,89   | 0,00  | 0,65    | 66,35       | 0,00 | 6,54            |
| 13 | 78,52   | 0,00  | 0,73    | 73,31       | 0,00 | 5,21            |
| 14 | 84,15   | 0,00  | 0,82    | 80,48       | 0,00 | 3,67            |
| 15 | 89,78   | 0,00  | 0,91    | 87,84       | 0,00 | 1,93            |
| 16 | 95,41   | 0,00  | 1,00    | 95,41       | 0,00 | 0,01            |
| 17 | 10,99   | 0,00  | 0,00    | 10,99       | 0,00 | 0,01            |
| 18 | 32,09   | 0,00  | 0,15    | 23,80       | 0,00 | 8,29            |
| 19 | 53,20   | 0,00  | 0,38    | 43,88       | 0,00 | 9,32            |
| 20 | 74,30   | 0,00  | 0,67    | 68,07       | 0,00 | 6,22            |
| 21 | 95,41   | 0,00  | 1,00    | 95,41       | 0,00 | 0,01            |

Specification according to  
ISO/IEC 15775 Annex G  
and DIN 33866-1 Annex G

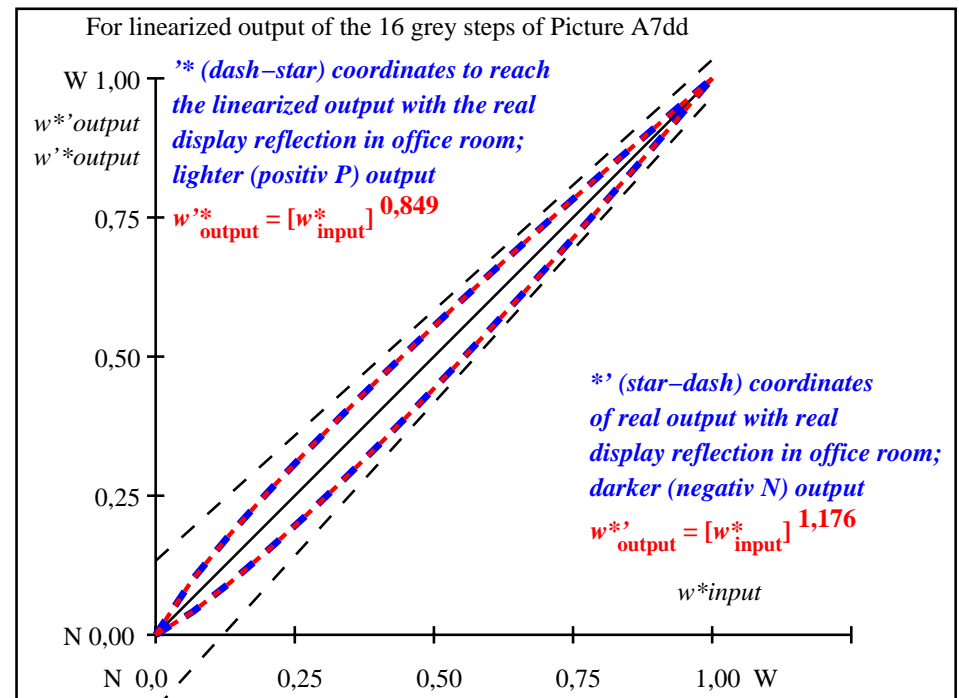
Mean lightness difference (16 steps)  
 $\Delta E^*_{CIELAB} = 6,0$

Mean lightness difference (5 steps)  
 $\Delta L^*_{CIELAB} = 4,7$

Mean colour reproduction index:  
 $R^*_{ab,m} = 73,7$

part 1; Measure: unknown; Device: unknown; Date: unknown

AE180-3dd: 010162



part 2; Measure: unknown; Device: unknown; Date: unknown

AE181-3dd: 010162

| $L^*/Y_{intended}$<br>(absolute)   | 11.0/1.3 | 16.6/2.2 | 22.2/3.6 | 27.9/5.4 | 33.5/7.8 | 39.1/10.7 | 44.8/14.4 | 50.4/18.7 | 56.0/23.9 | 61.6/30.0 | 67.3/37.0 | 72.9/45.0 | 78.5/54.1 | 84.2/64.4 | 89.8/75.8 | 95.4/88.6 |
|------------------------------------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0 0 0 n*                           |          |          |          |          |          |           |           |           |           |           |           |           |           |           |           |           |
| setcmyk                            |          |          |          |          |          |           |           |           |           |           |           |           |           |           |           |           |
| $g_N=1.18$                         |          |          |          |          |          |           |           |           |           |           |           |           |           |           |           |           |
| No. and Hex code                   | 00;F     | 01;E     | 02;D     | 03;C     | 04;B     | 05;A      | 06;9      | 07;8      | 08;7      | 09;6      | 10;5      | 11;4      | 12;3      | 13;2      | 14;1      | 15;0      |
| $w^*=l^*_{CIELAB,r}$<br>(relative) |          |          |          |          |          |           |           |           |           |           |           |           |           |           |           |           |
| $w^*_{intended}$                   | 0,000    | 0,067    | 0,133    | 0,200    | 0,267    | 0,333     | 0,400     | 0,467     | 0,533     | 0,600     | 0,667     | 0,733     | 0,800     | 0,867     | 0,933     | 1,000     |
| $w^*_{out}$                        | 0,0      | 0,042    | 0,093    | 0,151    | 0,211    | 0,274     | 0,34      | 0,408     | 0,533     | 0,600     | 0,621     | 0,694     | 0,769     | 0,845     | 0,922     | 1,0       |

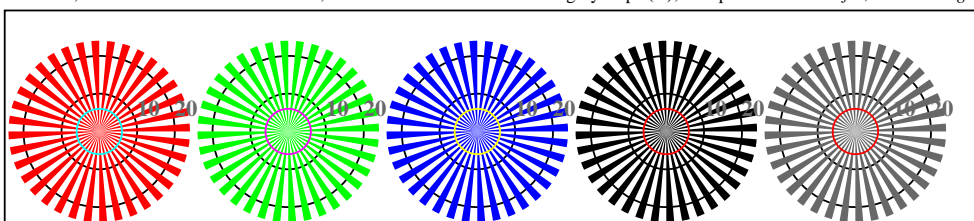
AE180-7N, Picture A7\*dd: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

In-out: Test chart AE18 according to test chart 4 of ISO/IEC 15775  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:1,25$ ;  $Y_N$ -range 0,93 to <1,87

input:  $rgb/cmy0/000n/w$  set...  
output:  $->rgb_{dd}$  setrgbcolor

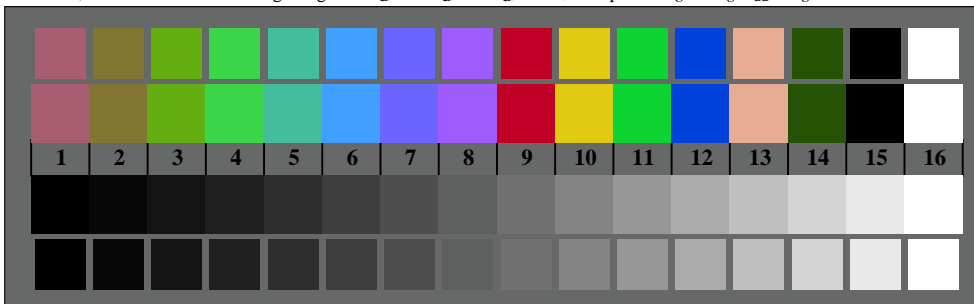


AE180-3, Picture D1W\*dd: Flower motif, 14 CIE-test colours and 2 + 16 grey steps (sf); PS operators *settransfer*, 3 colorimage

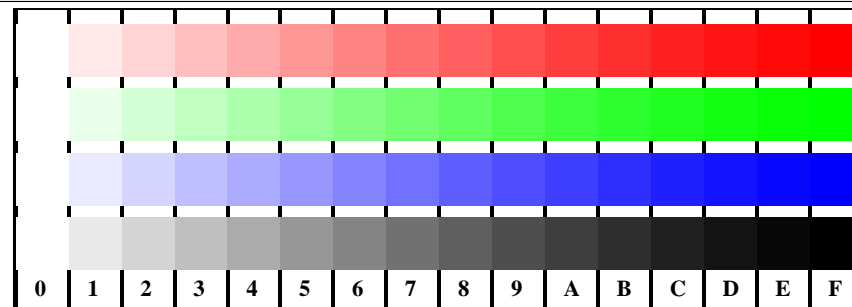
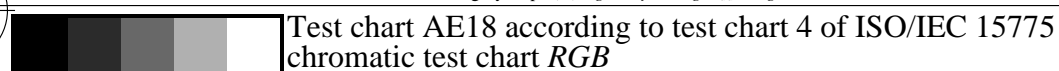


radial gratings  $W-R_d$  radial gratings  $W-G_d$  radial gratings  $W-B_d$  radial gratings  $W-N$  radial gratings  $W-Z$

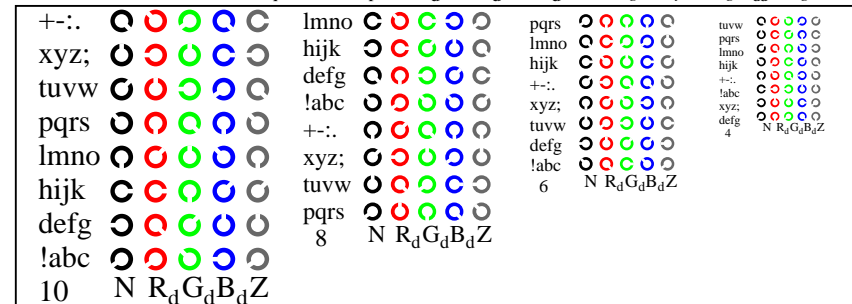
AE180-5, Picture D2W\*dd: radial gratings  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



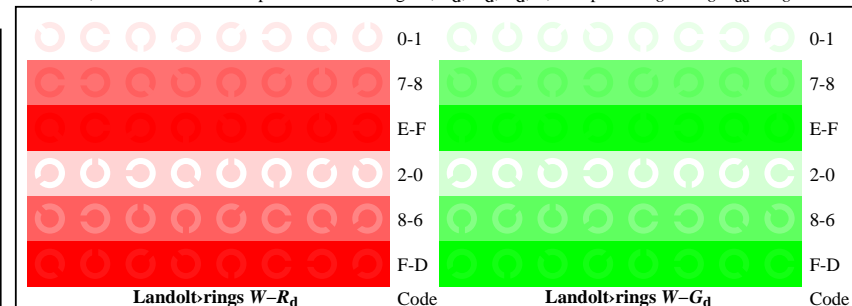
AE180-7, Picture D3W\*dd: 14 CIE-test colours and 2 + 16 grey steps (sf);  $rgb/cmy0 \rightarrow rgb_{dd}$  *setrgbcolor*



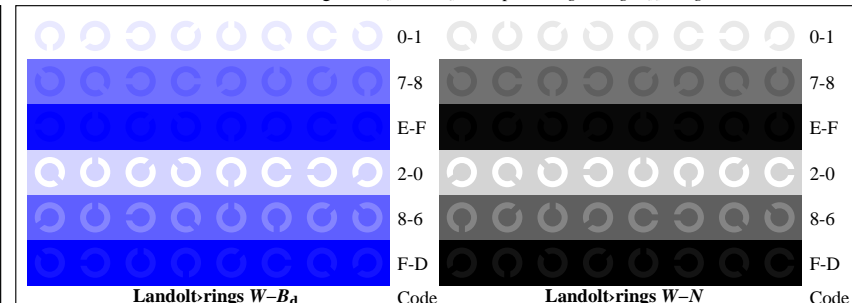
AE181-1, Picture D4W\*dd: 16 equidistant steps  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ;  $rgb/cmy0 \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-3, Picture D5W\*dd: Sript and Landolt-rings  $N$ ;  $R_d$ ;  $G_d$ ;  $B_d$ ;  $Z$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-5, Picture D6W\*dd: Landolt-rings  $W-R_d$ ;  $W-G_d$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-7, Picture D7W\*dd: Landolt-rings  $W-B_d$ ;  $W-N$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*

input:  $rgb/cmy0/000n/w$  *set...*  
output:  $\rightarrow rgb_{dd}$  *setrgbcolor*



Test for the visual linearized output of pictures D1Wdd to D3Wdd

Output test with the computer display ( ) or the external display ( ) please mark by (x)!

#### Test of the (flower) image according to picture D1Wdd

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
Subjective remarks about the colour reproduction of the (flower) image, the CIE-test colours and the 16 grey steps within the image, for example "less contrast":  
.....  
.....  
.....

#### Test of the resolution of radial gratings $W-R_d$ , $W-G_d$ , $W-B_d$ according to picture D2Wdd

|   | $W-R_d$  | $W-G_d$  | $W-B_d$  | $W-N$    | $W-Z$    |
|---|----------|----------|----------|----------|----------|
| Is the resolution diameter < 6 mm?                    | Yes/No   | Yes/No   | Yes/No   | Yes/No   | Yes/No   |
| Test with magnifying glass (6x), Resolution diameter: | ..... mm | ..... mm | ..... mm | ..... mm | ..... mm |

#### Test of the 14 CIE-test colours according to picture D3Wdd

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
If Yes: How many colours have clear differences? of the given 14 steps: **..... Steps**

#### Test of 16 visual equidistant $L^*$ -grey steps according to picture D3Wdd

Are the 16 steps on the upper rows distinguishable? **Yes/No**  
If No: How many steps can be distinguished? of the given 16 steps: **..... Steps**

part 1 AE180-3dd: 010241

#### Documentation of file format, hardware and software for this test:

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY5\\_1.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY5_1.PDF) **underline Yes/No**

PS-File: [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY5\\_1.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY5_1.PS) **or underline Yes/No**

#### Used computer operating system:

either one of Windows/Mac/Unix/other and version:.....

This evaluation is for the device output: **underline monitor/data projector/printer**

Device model, driver and version:.....

Device output with PDF/PS-file: **underline PDF/PS-file**

#### For device output with PDF-file AE18F0NX\_CY5\_1.PDF

either PDF-file transfer "download, copy" to PDF device.....  
or with computer system interpretation by "Display-PDF":.....  
or with software e. g. Adobe-Reader/-Acrobat and version:.....  
or with software e. g. Ghostscript and version:.....

#### For device output with PS-file AE18F0NX\_CY5\_1.PS

either PS-file transfer "download, copy" to PS device.....  
or with computer system interpretation by "Display-PS":.....  
or with software e. g. Ghostscript and version:.....  
or with software e. g. Mac-Yap and version:.....

Special remarks: Special remarks, e. g. output of Landscape (L)  
.....  
.....

part 3 AE180-7N\*dd-010241

Form A: Test chart AE18 according to test chart 4 of ISO/IEC 15775 input:  $rgb/cmy0/000n/w$  set...  
chromatic test chart RGB output:  $->rgb_{dd}$  setrgbcolor

Test of 16 visually equally spaced steps of the colour rows  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$ , and  $W-N$  according to picture D4Wdd

| Colour row             | Are all the 16 steps distinguishable? | If No: How many steps can be distinguished? | of the given 16 steps | <b>Yes/No</b> |
|------------------------|---------------------------------------|---|-----------------------|---------------|
| $W-R_d$ White - Red:   | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |
| $W-G_d$ White - Green: | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |
| $W-B_d$ White - Blue:  | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |
| $W-N$ White - Black:   | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |

#### Test of characters and Landolt-rings in four sizes according to picture D5Wdd

Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

| Relative size | Letters | Ring $N$ | Ring $R_d$ | Ring $G_d$ | Ring $B_d$ |
|---------------|---------|----------|------------|------------|------------|
| 10            | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 8             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 6             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 4             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |

#### Test of recognition frequency of Landolt-rings $W-R_d$ , $W-G_d$ , $W-B_d$ , and $W-N$ according to pictures D6Wdd, and D7Wdd

Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

| Colour row $W-R_d$ | Colour row $W-G_d$ | Colour row $W-B_d$ | Colour row $W-N$  |
|--------------------|--------------------|--------------------|-------------------|
| background - ring  | background - ring  | background - ring  | background - ring |
| 0 - 1              | Yes/No             | 0 - 1              | Yes/No            |
| 7 - 8              | Yes/No             | 7 - 8              | Yes/No            |
| E - F              | Yes/No             | E - F              | Yes/No            |
| 2 - 0              | Yes/No             | 2 - 0              | Yes/No            |
| 8 - 6              | Yes/No             | 8 - 6              | Yes/No            |
| F - D              | Yes/No             | F - D              | Yes/No            |

part 2 AE181-3Ndd: 010241

#### Documentation of assessor colour vision properties for visual assessment

The assessor has **normal** colour vision according to one test: **underline Yes/No**  
either according to DIN 6160:1996 with Anomaloskop of Nagel **underline Yes/unknown**  
or with test charts using colour points according to Ishihara **underline Yes/unknown**  
or tested with, please specify: ..... **underline Yes/unknown**

#### For visual evaluation of the display (monitor, data projector) output

Office workplace illumination is daylight (clouded/north sky) **underline Yes/No**

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY5\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY5_3.PDF) **underline Yes/No**

PS file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY5\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY5_3.PS) **underline Yes/No**

Picture A7dd contrast range: (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)

compare standard print output according to ISO/IEC 15775 with range F:0 **underline range**

Remark: In daylighted offices the contrast range is in many cases:  
on display between: >F:0 and E:0 (monitor), D:0 and 3:0 (data projector)

#### Only for optional colorimetric specification with PDF/PS file output

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY5\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY5_3.PDF)

picture A7dd **underline Yes/No**

PS file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY5\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY5_3.PS)

picture A7dd **or underline Yes/No**

#### colour measurement and specification for:

CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: **underline Yes/No**

If No, please give other parameters: .....

Colorimetric specification for 17 step colours of <http://farbe.li.tu-berlin.de/OE70/OE70L1NP.PDF>

Exchange of CIELAB data in file <http://farbe.li.tu-berlin.de/AE82/AE82L0NP.TXT> and transfer of the PS file AE82L0NP.PS (= .TXT) to the PDF-file AE82L0NP.PDF **underline Yes/No**

If No, please describe other method: .....

part 4 AE181-7dd: 010241

TUB Registration: 20191001-AE18/AE18L0FA.TXT /PS  
application for measurement or viewing of the output on display and print

TUB material: code=th4ta

see similar files: <http://farbe.li.tu-berlin.de/AE18/AE18L0FA.TXT/.PS>  
technical information: <http://farbe.li.tu-berlin.de/> or <http://farbe.li.tu-berlin.de/AE18.HTM>

| i  | LAB*ref | l*out | LAB*out | LAB*out-ref | ΔE*   | Start output S1 |
|----|---------|-------|---------|-------------|-------|-----------------|
| 1  | 18,00   | 0,00  | 0,00    | 0,00        | 0,00  | 0,01            |
| 2  | 23,16   | 0,00  | 0,00    | 0,01        | 19,20 | 0,00            |
| 3  | 28,32   | 0,00  | 0,00    | 0,04        | 21,48 | 0,00            |
| 4  | 33,48   | 0,00  | 0,00    | 0,08        | 24,50 | 0,00            |
| 5  | 38,64   | 0,00  | 0,00    | 0,13        | 28,11 | 0,00            |
| 6  | 43,80   | 0,00  | 0,00    | 0,18        | 32,26 | 0,00            |
| 7  | 48,96   | 0,00  | 0,00    | 0,24        | 36,88 | 0,00            |
| 8  | 54,12   | 0,00  | 0,00    | 0,30        | 41,94 | 0,00            |
| 9  | 59,28   | 0,00  | 0,00    | 0,37        | 47,40 | 0,00            |
| 10 | 64,44   | 0,00  | 0,00    | 0,45        | 53,25 | 0,00            |
| 11 | 69,60   | 0,00  | 0,00    | 0,53        | 59,46 | 0,00            |
| 12 | 74,76   | 0,00  | 0,00    | 0,62        | 66,01 | 0,00            |
| 13 | 79,92   | 0,00  | 0,00    | 0,70        | 72,90 | 0,00            |
| 14 | 85,08   | 0,00  | 0,00    | 0,80        | 80,10 | 0,00            |
| 15 | 90,24   | 0,00  | 0,00    | 0,89        | 87,60 | 0,00            |
| 16 | 95,41   | 0,00  | 0,00    | 1,00        | 95,41 | 0,00            |
| 17 | 18,00   | 0,00  | 0,00    | 0,00        | 0,00  | 0,01            |
| 18 | 37,35   | 0,00  | 0,00    | 0,11        | 27,16 | 0,00            |
| 19 | 56,70   | 0,00  | 0,00    | 0,34        | 44,62 | 0,00            |
| 20 | 76,05   | 0,00  | 0,00    | 0,64        | 67,70 | 0,00            |
| 21 | 95,41   | 0,00  | 0,00    | 1,00        | 95,41 | 0,00            |

**Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G**

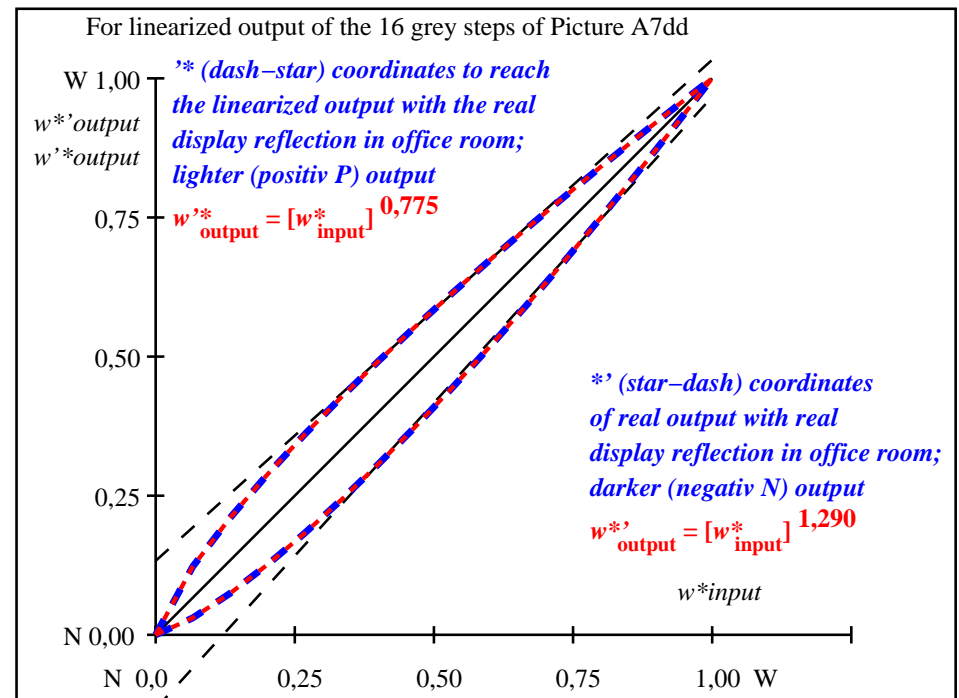
Mean lightness difference (16 steps)  
 $\Delta E^*_{\text{CIELAB}} = 7,6$

Mean lightness difference (5 steps)  
 $\Delta L^*_{\text{CIELAB}} = 6,1$

Mean colour reproduction index:  $R^*_{\text{ab,m}} = 66,3$

part 1; Measure: unknown; Device: unknown; Date: unknown

AE180-3dd: 010242



part 2; Measure: unknown; Device: unknown; Date: unknown

AE181-3dd: 010242

| $L^*/Y_{\text{intended}}$<br>(absolute)   | 18.0/2.5 | 23.2/3.8 | 28.3/5.6 | 33.5/7.8 | 38.6/10.5 | 43.8/13.7 | 49.0/17.6 | 54.1/22.1 | 59.3/27.3 | 64.4/33.4 | 69.6/40.2 | 74.8/47.9 | 79.9/56.6 | 85.1/66.2 | 90.2/76.8 | 95.4/88.6 |
|---|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0 0 0 n*                                  |          |          |          |          |           |           |           |           |           |           |           |           |           |           |           |           |
| setcmyk                                   |          |          |          |          |           |           |           |           |           |           |           |           |           |           |           |           |
| $g_N=1.29$                                |          |          |          |          |           |           |           |           |           |           |           |           |           |           |           |           |
| No. and Hex code                          | 00;F     | 01;E     | 02;D     | 03;C     | 04;B      | 05;A      | 06;9      | 07;8      | 08;7      | 09;6      | 10;5      | 11;4      | 12;3      | 13;2      | 14;1      | 15;0      |
| $w^*=l^*_{\text{CIELAB},r}$<br>(relative) |          |          |          |          |           |           |           |           |           |           |           |           |           |           |           |           |
| $w^*_{\text{intended}}$                   | 0,000    | 0,067    | 0,133    | 0,200    | 0,267     | 0,333     | 0,400     | 0,467     | 0,533     | 0,600     | 0,667     | 0,733     | 0,800     | 0,867     | 0,933     | 1,000     |
| $w^*_{\text{out}}$                        | 0,0      | 0,031    | 0,074    | 0,125    | 0,182     | 0,242     | 0,307     | 0,374     | 0,444     | 0,517     | 0,593     | 0,67      | 0,75      | 0,832     | 0,914     | 1,0       |

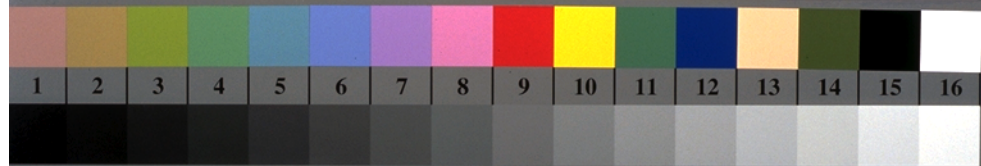
AE180-7N, Picture A7\*dd: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

In-out: Test chart AE18 according to test chart 4 of ISO/IEC 15775  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:2,5$ ;  $Y_N$ -range 1,87 to <3,75

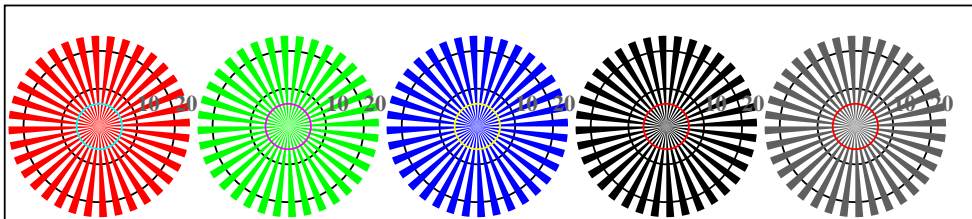
input:  $rgb/cmy0/000n/w$  set...  
output:  $->rgb_{\text{dd}}$  setrgbcolor

TUB Registration: 20191001-AE18/AE18L0FA.TXT /.PS  
application for measurement or viewing of the output on display and print  
TUB material: code=th4ta



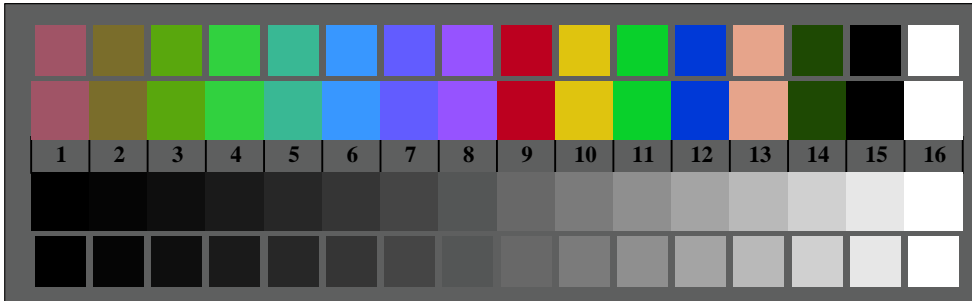


AE180-3, Picture D1W\*dd: Flower motif, 14 CIE-test colours and 2 + 16 grey steps (sf); PS operators *settransfer*, 3 colorimage

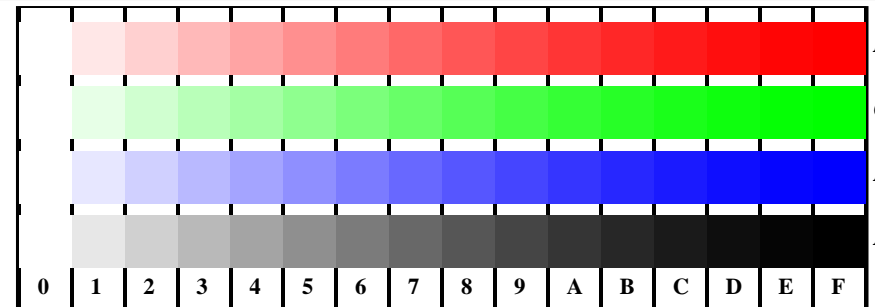
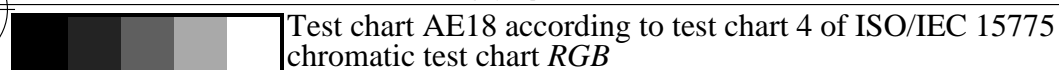


radial gratings  $W-R_d$  radial gratings  $W-G_d$  radial gratings  $W-B_d$  radial gratings  $W-N$  radial gratings  $W-Z$

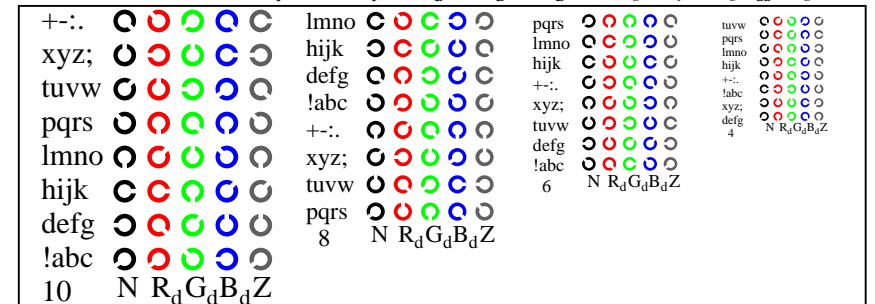
AE180-5, Picture D2W\*dd: radial gratings  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



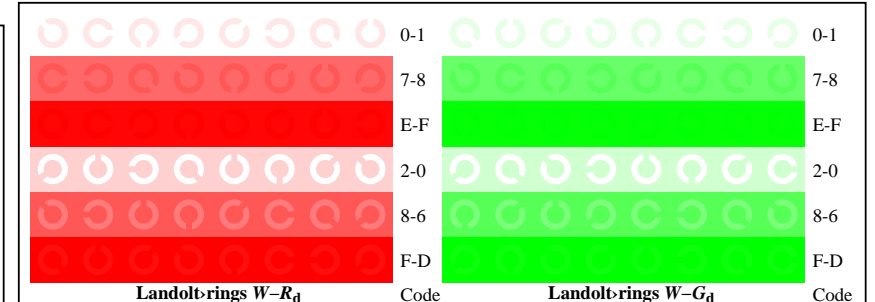
AE180-7, Picture D3W\*dd: 14 CIE-test colours and 2 + 16 grey steps (sf);  $rgb/cmy0 \rightarrow rgb_{dd}$  *setrgbcolor*



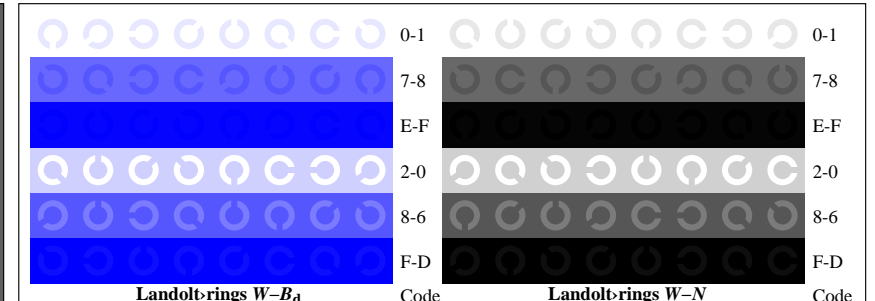
AE181-1, Picture D4W\*dd: 16 equidistant steps  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ;  $rgb/cmy0 \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-3, Picture D5W\*dd: Sript and Landolt-rings  $N$ ;  $R_d$ ;  $G_d$ ;  $B_d$ ;  $Z$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-5, Picture D6W\*dd: Landolt-rings  $W-R_d$ ;  $W-G_d$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-7, Picture D7W\*dd: Landolt-rings  $W-B_d$ ;  $W-N$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*

input:  $rgb/cmy0/000n/w$  *set...*  
output:  $\rightarrow rgb_{dd}$  *setrgbcolor*

Test for the visual linearized output of pictures D1Wdd to D3Wdd

Output test with the computer display ( ) or the external display ( ) please mark by (x)!

#### Test of the (flower) image according to picture D1Wdd

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
Subjective remarks about the colour reproduction of the (flower) image, the CIE-test colours and the 16 grey steps within the image, for example "less contrast":  
.....  
.....  
.....

#### Test of the resolution of radial gratings $W-R_d$ , $W-G_d$ , $W-B_d$ according to picture D2Wdd

|   | $W-R_d$  | $W-G_d$  | $W-B_d$  | $W-N$    | $W-Z$    |
|---|----------|----------|----------|----------|----------|
| Is the resolution diameter < 6 mm?                    | Yes/No   | Yes/No   | Yes/No   | Yes/No   | Yes/No   |
| Test with magnifying glass (6x), Resolution diameter: | ..... mm | ..... mm | ..... mm | ..... mm | ..... mm |

#### Test of the 14 CIE-test colours according to picture D3Wdd

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
If Yes: How many colours have clear differences? of the given 14 steps: **..... Steps**

#### Test of 16 visual equidistant $L^*$ -grey steps according to picture D3Wdd

Are the 16 steps on the upper rows distinguishable? **Yes/No**  
If No: How many steps can be distinguished? of the given 16 steps: **..... Steps**

part 1

AE180-3dd: 010321

#### Documentation of file format, hardware and software for this test:

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY4\\_1.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY4_1.PDF) **underline Yes/No**

PS-File: [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY4\\_1.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY4_1.PS) **or underline Yes/No**

#### Used computer operating system:

either one of Windows/Mac/Unix/other and version:.....

This evaluation is for the device output: **underline monitor/data projector/printer**

Device model, driver and version:.....

Device output with PDF/PS-file: **underline PDF/PS-file**

#### For device output with PDF-file AE18F0NX\_CY4\_1.PDF

either PDF-file transfer "download, copy" to PDF device.....  
or with computer system interpretation by "Display-PDF":.....  
or with software e. g. Adobe-Reader/-Acrobat and version:.....  
or with software e. g. Ghostscript and version:.....

#### For device output with PS-file AE18F0NX\_CY4\_1.PS

either PS-file transfer "download, copy" to PS device.....  
or with computer system interpretation by "Display-PS":.....  
or with software e. g. Ghostscript and version:.....  
or with software e. g. Mac-Yap and version:.....

Special remarks: Special remarks, e. g. output of Landscape (L)  
.....  
.....

part 3

AE180-7N\*dd-010321

Form A: Test chart AE18 according to test chart 4 of ISO/IEC 15775 input:  $rgb/cmy0/000n/w$  set...  
chromatic test chart RGB output:  $->rgb_{dd}$  setrgbcolor

Test of 16 visually equally spaced steps of the colour rows  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$ , and  $W-N$  according to picture D4Wdd

| Colour row             | Are all the 16 steps distinguishable? | If No: How many steps can be distinguished? | of the given 16 steps | <b>Yes/No</b> |
|------------------------|---------------------------------------|---|-----------------------|---------------|
| $W-R_d$ White - Red:   | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |
| $W-G_d$ White - Green: | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |
| $W-B_d$ White - Blue:  | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |
| $W-N$ White - Black:   | Are all the 16 steps distinguishable? | .....                                       | Steps                 | <b>Yes/No</b> |

#### Test of characters and Landolt-rings in four sizes according to picture D5Wdd

Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

| Relative size | Letters | Ring $N$ | Ring $R_d$ | Ring $G_d$ | Ring $B_d$ |
|---------------|---------|----------|------------|------------|------------|
| 10            | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 8             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 6             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 4             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |

#### Test of recognition frequency of Landolt-rings $W-R_d$ , $W-G_d$ , $W-B_d$ , and $W-N$ according to pictures D6Wdd, and D7Wdd

Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

| Colour row $W-R_d$ | Colour row $W-G_d$ | Colour row $W-B_d$ | Colour row $W-N$  |
|--------------------|--------------------|--------------------|-------------------|
| background - ring  | background - ring  | background - ring  | background - ring |
| 0 - 1              | Yes/No             | 0 - 1              | Yes/No            |
| 7 - 8              | Yes/No             | 7 - 8              | Yes/No            |
| E - F              | Yes/No             | E - F              | Yes/No            |
| 2 - 0              | Yes/No             | 2 - 0              | Yes/No            |
| 8 - 6              | Yes/No             | 8 - 6              | Yes/No            |
| F - D              | Yes/No             | F - D              | Yes/No            |

part 2

AE181-3Ndd: 010321

#### Documentation of assessor colour vision properties for visual assessment

The assessor has **normal** colour vision according to one test: **underline Yes/No**  
either according to DIN 6160:1996 with Anomaloskop of Nagel **underline Yes/unknown**  
or with test charts using colour points according to Ishihara **underline Yes/unknown**  
or tested with, please specify: ..... **underline Yes/unknown**

#### For visual evaluation of the display (monitor, data projector) output

Office workplace illumination is daylight (clouded/north sky) **underline Yes/No**

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY4\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY4_3.PDF) **underline Yes/No**

PS file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY4\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY4_3.PS) **underline Yes/No**

Picture A7dd contrast range: (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)

compare standard print output according to ISO/IEC 15775 with range F:0 **underline range**

Remark: In daylighted offices the contrast range is in many cases:  
on display between: >F:0 and E:0 (monitor), D:0 and 3:0 (data projector)

#### Only for optional colorimetric specification with PDF/PS file output

PDF file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY4\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY4_3.PDF)

picture A7dd **underline Yes/No**

PS file: [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY4\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY4_3.PS)

picture A7dd **or underline Yes/No**

#### colour measurement and specification for:

CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: **underline Yes/No**

If No, please give other parameters: .....

Colorimetric specification for 17 step colours of <http://farbe.li.tu-berlin.de/OE70/OE70L1NP.PDF>

Exchange of CIELAB data in file <http://farbe.li.tu-berlin.de/AE82/AE82L0NP.TXT> and transfer of the PS file AE82L0NP.PS (= .TXT) to the PDF-file AE82L0NP.PDF **underline Yes/No**

If No, please describe other method: .....

part 4

AE181-7dd: 010321

TUB Registration: 20191001-AE18/AE18L0FA.TXT /PS  
application for measurement or viewing of the output on display and print

TUB material: code=rh4ta

see similar files: <http://farbe.li.tu-berlin.de/AE18/AE18F0NX.PDF> / .PS; 3D-linearization, page 15/24  
technical information: <http://farbe.li.tu-berlin.de/AE18/AE18LF0NX.PDF> / .PS in file (F)

TUB Registration: 20191001-AE18/AE18L0FA.TXT /.PS  
application for measurement or viewing of the output on display and print  
TUB material: code=rh4ta

| i  | LAB*ref | l*out | LAB*out | LAB*out-ref | ΔE*  | Start output S1 |
|----|---------|-------|---------|-------------|------|-----------------|
| 1  | 26,84   | 0,00  | 0,00    | 0,00        | 0,00 | 0,01            |
| 2  | 31,41   | 0,00  | 0,00    | 0,00        | 0,00 | 3,92            |
| 3  | 35,98   | 0,00  | 0,03    | 0,00        | 0,00 | 6,99            |
| 4  | 40,56   | 0,00  | 0,06    | 0,00        | 0,00 | 9,40            |
| 5  | 45,13   | 0,00  | 0,10    | 0,00        | 0,00 | 11,22           |
| 6  | 49,70   | 0,00  | 0,15    | 0,00        | 0,00 | 12,49           |
| 7  | 54,27   | 0,00  | 0,20    | 0,00        | 0,00 | 13,24           |
| 8  | 58,84   | 0,00  | 0,26    | 0,00        | 0,00 | 13,51           |
| 9  | 63,41   | 0,00  | 0,33    | 0,00        | 0,00 | 13,31           |
| 10 | 67,98   | 0,00  | 0,41    | 0,00        | 0,00 | 12,65           |
| 11 | 72,55   | 0,00  | 0,49    | 0,00        | 0,00 | 11,57           |
| 12 | 77,12   | 0,00  | 0,58    | 0,00        | 0,00 | 10,06           |
| 13 | 81,69   | 0,00  | 0,68    | 0,00        | 0,00 | 8,14            |
| 14 | 86,26   | 0,00  | 0,78    | 0,00        | 0,00 | 5,81            |
| 15 | 90,83   | 0,00  | 0,88    | 0,00        | 0,00 | 3,10            |
| 16 | 95,41   | 0,00  | 1,00    | 0,00        | 0,00 | 0,01            |
| 17 | 26,84   | 0,00  | 0,00    | 0,00        | 0,00 | 0,01            |
| 18 | 43,98   | 0,00  | 0,09    | 0,00        | 0,00 | 10,82           |
| 19 | 61,12   | 0,00  | 0,30    | 0,00        | 0,00 | 13,46           |
| 20 | 78,26   | 0,00  | 0,60    | 0,00        | 0,00 | 9,62            |
| 21 | 95,41   | 0,00  | 1,00    | 0,00        | 0,00 | 0,01            |

Specification according to  
ISO/IEC 15775 Annex G  
and DIN 33866-1 Annex G

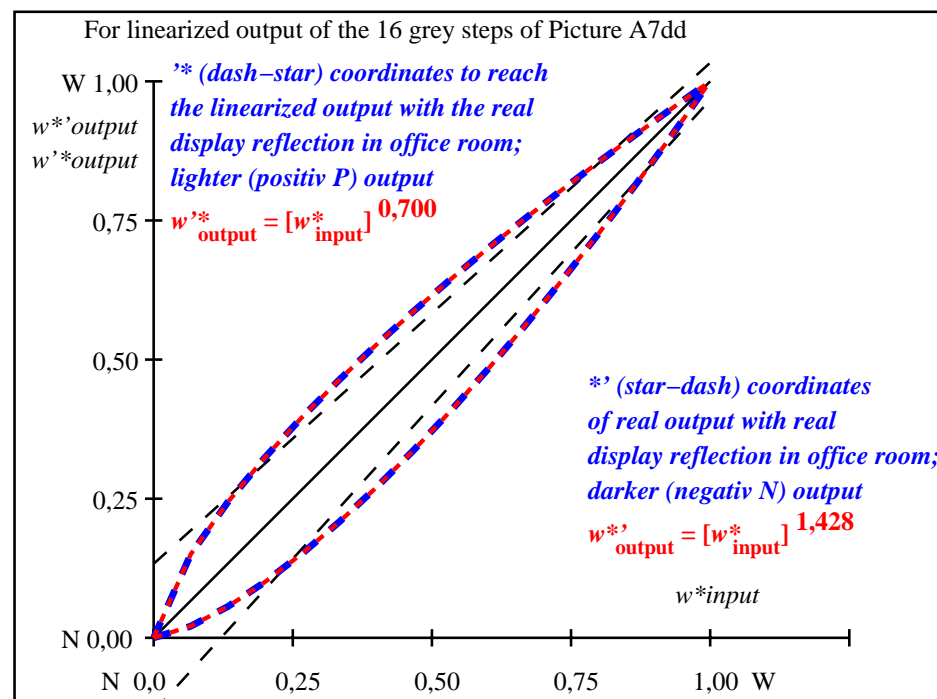
Mean lightness difference (16 steps)  
 $\Delta E^*_{\text{CIELAB}} = 8,4$

Mean lightness difference (5 steps)  
 $\Delta L^*_{\text{CIELAB}} = 6,7$

Mean colour reproduction index:  
 $R^*_{\text{ab,m}} = 62,8$

part 1; Measure: unknown; Device: unknown; Date: unknown

AE180-3dd: 010322



part 2; Measure: unknown; Device: unknown; Date: unknown

AE181-3dd: 010322

| $L^*/Y_{\text{intended}}$<br>(absolute)      | 26.8/5.0 | 31.4/6.8 | 36.0/9.0 | 40.6/11.6 | 45.1/14.6 | 49.7/18.2 | 54.3/22.2 | 58.8/26.9 | 63.4/32.1 | 68.0/38.0 | 72.6/44.5 | 77.1/51.7 | 81.7/59.7 | 86.3/68.5 | 90.8/78.1 | 95.4/88.6 |
|--|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0 0 0 n*                                     |          |          |          |           |           |           |           |           |           |           |           |           |           |           |           |           |
| setcmyk                                      |          |          |          |           |           |           |           |           |           |           |           |           |           |           |           |           |
| gN=1.43                                      |          |          |          |           |           |           |           |           |           |           |           |           |           |           |           |           |
| No. and Hex code                             | 00;F     | 01;E     | 02;D     | 03;C      | 04;B      | 05;A      | 06;9      | 07;8      | 08;7      | 09;6      | 10;5      | 11;4      | 12;3      | 13;2      | 14;1      | 15;0      |
| $w^* = l^*_{\text{CIELAB}, r}$<br>(relative) |          |          |          |           |           |           |           |           |           |           |           |           |           |           |           |           |
| $w^*_{\text{intended}}$                      | 0,000    | 0,067    | 0,133    | 0,200     | 0,267     | 0,333     | 0,400     | 0,467     | 0,533     | 0,600     | 0,667     | 0,733     | 0,800     | 0,867     | 0,933     | 1,000     |
| $w^*_{\text{out}}$                           | 0,0      | 0,021    | 0,056    | 0,1       | 0,152     | 0,208     | 0,27      | 0,467     | 0,533     | 0,600     | 0,667     | 0,733     | 0,800     | 0,867     | 0,933     | 1,000     |

AE180-7N, Picture A7\*dd: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

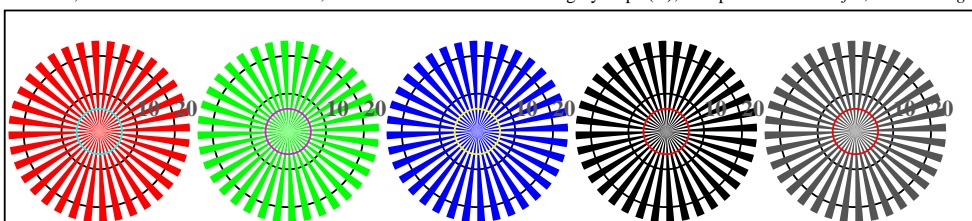
In-out: Test chart AE18 according to test chart 4 of ISO/IEC 15775  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:5$ ;  $Y_N$ -range 3,75 to <7,5

input:  $rgb/cmy0/000n/w$  set...  
output:  $->rgb_{\text{dd}}$  setrgbcolor





AE180-3, Picture D1W\*dd: Flower motif, 14 CIE-test colours and 2 + 16 grey steps (sf); PS operators *settransfer*, 3 colorimage

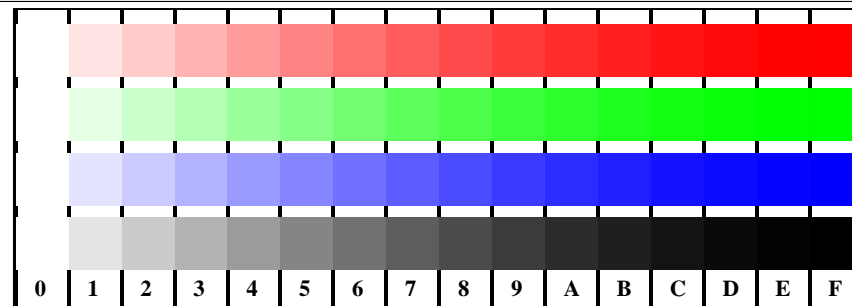
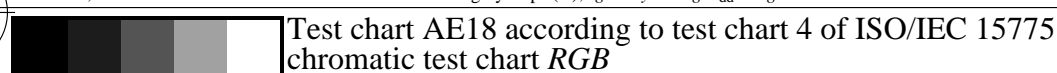


radial gratings  $W-R_d$  radial gratings  $W-G_d$  radial gratings  $W-B_d$  radial gratings  $W-N$  radial gratings  $W-Z$

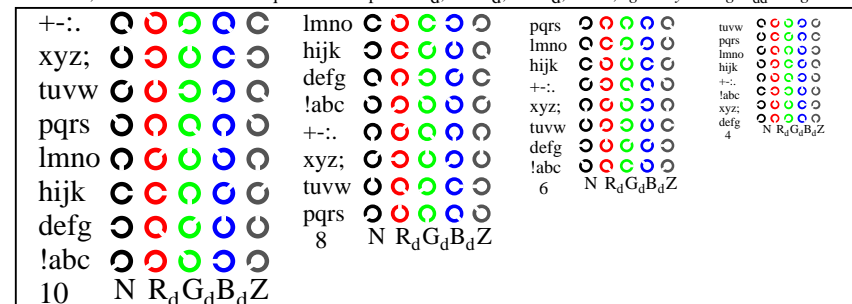
AE180-5, Picture D2W\*dd: radial gratings  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ; PS operator *rgb*->*rgb\*dd* *setrgbcolor*



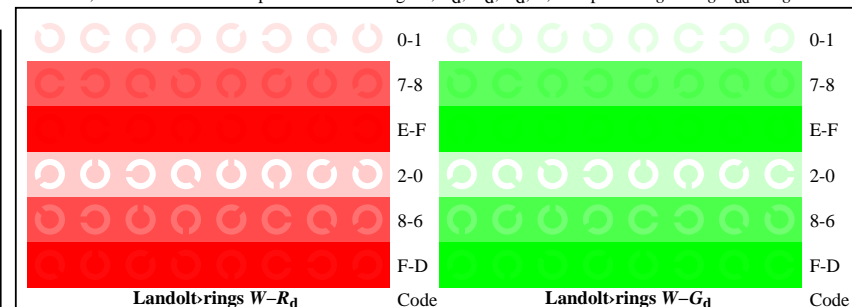
AE180-7, Picture D3W\*dd: 14 CIE-test colours and 2 + 16 grey steps (sf); *rgb/cmy0*->*rgb\*dd* *setrgbcolor*



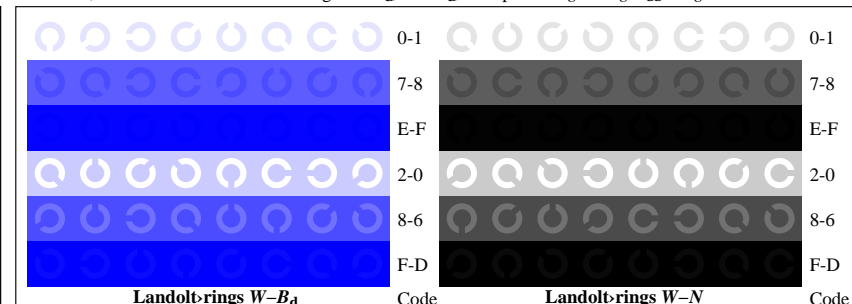
AE181-1, Picture D4W\*dd: 16 equidistant steps  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ; *rgb/cmy0*->*rgb\*dd* *setrgbcolor*



AE181-3, Picture D5W\*dd: Sript and Landolt-rings  $N$ ;  $R_d$ ;  $G_d$ ;  $B_d$ ;  $Z$ ; PS operator *rgb*->*rgb\*dd* *setrgbcolor*



AE181-5, Picture D6W\*dd: Landolt-rings  $W-R_d$ ;  $W-G_d$ ; PS operator *rgb*->*rgb\*dd* *setrgbcolor*



AE181-7, Picture D7W\*dd: Landolt-rings  $W-B_d$ ;  $W-N$ ; PS operator *rgb*->*rgb\*dd* *setrgbcolor*

input: *rgb/cmy0/000n/w* *set...*  
output: ->*rgb\*dd* *setrgbcolor*

Test for the visual linearized output of pictures D1Wdd to D3Wdd

Output test with the computer display ( ) or the external display ( ) please mark by (x)!

**Test of the (flower) image according to picture D1Wdd**

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
Subjective remarks about the colour reproduction of the (flower) image, the CIE-test colours and the 16 grey steps within the image, for example "less contrast":  
.....  
.....  
.....

**Test of the resolution of radial gratings  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$  according to picture D2Wdd**

|   | $W-R_d$  | $W-G_d$  | $W-B_d$  | $W-N$    | $W-Z$    |
|---|----------|----------|----------|----------|----------|
| Is the resolution diameter < 6 mm?                    | Yes/No   | Yes/No   | Yes/No   | Yes/No   | Yes/No   |
| Test with magnifying glass (6x), Resolution diameter: | ..... mm | ..... mm | ..... mm | ..... mm | ..... mm |

**Test of the 14 CIE-test colours according to picture D3Wdd**

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
If Yes: How many colours have clear differences? of the given 14 steps: **..... Steps**

**Test of 16 visual equidistant  $L^*$ -grey steps according to picture D3Wdd**

Are the 16 steps on the upper rows distinguishable? **Yes/No**  
If No: How many steps can be distinguished? of the given 16 steps: **..... Steps**

part 1 AE180-3dd: 010401

**Documentation of file format, hardware and software for this test:**

**PDF file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY3\\_1.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY3_1.PDF) **underline Yes/No**

**PS-File:** [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY3\\_1.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY3_1.PS) **or underline Yes/No**

**Used computer operating system:**

either one of Windows/Mac/Unix/other and version:.....

**This evaluation is for the device output:** **underline monitor/data projector/printer**

Device model, driver and version:.....

**Device output with PDF/PS-file:** **underline PDF/PS-file**

**For device output with PDF-file AE18F0NX\_CY3\_1.PDF**

either PDF-file transfer "download, copy" to PDF device.....  
or with computer system interpretation by "Display-PDF":.....  
or with software e. g. Adobe-Reader/-Acrobat and version:.....  
or with software e. g. Ghostscript and version:.....

**For device output with PS-file AE18F0NX\_CY3\_1.PS**

either PS-file transfer "download, copy" to PS device.....  
or with computer system interpretation by "Display-PS":.....  
or with software e. g. Ghostscript and version:.....  
or with software e. g. Mac-Yap and version:.....

Special remarks: Special remarks, e. g. output of Landscape (L)  
.....  
.....

part 3 AE180-7N\*dd-010401

Test of 16 visually equally spaced steps of the colour rows  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$ , and  $W-N$  according to picture D4Wdd

|                        | Are all the 16 steps distinguishable?                             | Yes/No        |
|------------------------|---|---------------|
| $W-R_d$ White – Red:   | If No: How many steps can be distinguished? of the given 16 steps | ..... Steps   |
| $W-G_d$ White – Green: | Are all the 16 steps distinguishable?                             | <b>Yes/No</b> |
|                        | If No: How many steps can be distinguished? of the given 16 steps | ..... Steps   |
| $W-B_d$ White – Blue:  | Are all the 16 steps distinguishable?                             | <b>Yes/No</b> |
|                        | If No: How many steps can be distinguished? of the given 16 steps | ..... Steps   |
| $W-N$ White – Black:   | Are all the 16 steps distinguishable?                             | <b>Yes/No</b> |
|                        | If No: How many steps can be distinguished? of the given 16 steps | ..... Steps   |

**Test of characters and Landolt-rings in four sizes according to picture D5Wdd**

Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

| Relative size | Letters | Ring $N$ | Ring $R_d$ | Ring $G_d$ | Ring $B_d$ |
|---------------|---------|----------|------------|------------|------------|
| 10            | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 8             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 6             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 4             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |

**Test of recognition frequency of Landolt-rings  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$ , and  $W-N$  according to pictures D6Wdd, and D7Wdd**

Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

| Colour row $W-R_d$ | Colour row $W-G_d$ | Colour row $W-B_d$ | Colour row $W-N$  |
|--------------------|--------------------|--------------------|-------------------|
| background – ring  | background – ring  | background – ring  | background – ring |
| 0 – 1              | 0 – 1              | 0 – 1              | 0 – 1             |
| 7 – 8              | 7 – 8              | 7 – 8              | 7 – 8             |
| E – F              | E – F              | E – F              | E – F             |
| 2 – 0              | 2 – 0              | 2 – 0              | 2 – 0             |
| 8 – 6              | 8 – 6              | 8 – 6              | 8 – 6             |
| F – D              | F – D              | F – D              | F – D             |

part 2 AE181-3Ndd: 010401

**Documentation of assessor colour vision properties for visual assessment**

The assessor has **normal** colour vision according to one test: **underline Yes/No**  
either according to DIN 6160:1996 with Anomaloskop of Nagel **underline Yes/unknown**  
or with test charts using colour points according to Ishihara **underline Yes/unknown**  
or tested with, please specify: ..... **underline Yes/unknown**

**For visual evaluation of the display (monitor, data projector) output**

Office workplace illumination is daylight (clouded/north sky) **underline Yes/No**

**PDF file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY3\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY3_3.PDF) **underline Yes/No**

**PS file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY3\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY3_3.PS) **underline Yes/No**

**Picture A7dd contrast range:** (>F:0) (F:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)

compare standard print output according to ISO/IEC 15775 with range F:0 **underline range**

*Remark: In daylighted offices the contrast range is in many cases:  
on display between: >F:0 and E:0 (monitor), D:0 and 3:0 (data projector)*

**Only for optional colorimetric specification with PDF/PS file output**

**PDF file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY3\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY3_3.PDF)

**picture A7dd** **underline Yes/No**

**PS file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY3\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY3_3.PS)

**picture A7dd** **or underline Yes/No**

**colour measurement and specification for:**

CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: **underline Yes/No**

If No, please give other parameters: .....

**Colorimetric specification for 17 step colours of** <http://farbe.li.tu-berlin.de/OE70/OE70L1NP.PDF>

Exchange of CIELAB data in file <http://farbe.li.tu-berlin.de/AE82/AE82L0NP.TXT> and transfer of the PS file AE82L0NP.PS (= .TXT) to the PDF-file AE82L0NP.PDF **underline Yes/No**

If No, please describe other method: .....

part 4 AE181-7dd: 010401

see similar files: <http://farbe.li.tu-berlin.de/AE18/AE18F0NX.PDF> / .PS; 3D-linearization, page 18/24  
technical information: <http://farbe.li.tu-berlin.de/AE18/AE18LF0NX.PDF> / .PS in file (F)

TUB Registration: 20191001-AE18/AE18L0FA.TXT /.PS  
application for measurement or viewing of the output on display and print  
TUB material: code=th4ta

| i  | LAB*ref | l*out | LAB*out | LAB*out-ref | ΔE*  | Start output S1 |
|----|---------|-------|---------|-------------|------|-----------------|
| 1  | 37,98   | 0,00  | 0,00    | 37,98       | 0,00 | 0,00            |
| 2  | 41,81   | 0,00  | 0,00    | 38,32       | 0,00 | 0,00            |
| 3  | 45,64   | 0,00  | 0,02    | 39,23       | 0,00 | 0,00            |
| 4  | 49,47   | 0,00  | 0,04    | 40,68       | 0,00 | 0,00            |
| 5  | 53,29   | 0,00  | 0,08    | 42,64       | 0,00 | 0,00            |
| 6  | 57,12   | 0,00  | 0,12    | 45,10       | 0,00 | 0,00            |
| 7  | 60,95   | 0,00  | 0,17    | 48,05       | 0,00 | 0,00            |
| 8  | 64,78   | 0,00  | 0,23    | 51,48       | 0,00 | 0,00            |
| 9  | 68,61   | 0,00  | 0,30    | 55,37       | 0,00 | 0,00            |
| 10 | 72,44   | 0,00  | 0,37    | 59,74       | 0,00 | 0,00            |
| 11 | 76,26   | 0,00  | 0,46    | 64,56       | 0,00 | 0,00            |
| 12 | 80,09   | 0,00  | 0,55    | 69,83       | 0,00 | 0,00            |
| 13 | 83,92   | 0,00  | 0,65    | 75,56       | 0,00 | 0,00            |
| 14 | 87,75   | 0,00  | 0,76    | 81,73       | 0,00 | 0,00            |
| 15 | 91,58   | 0,00  | 0,87    | 88,35       | 0,00 | 0,00            |
| 16 | 95,41   | 0,00  | 1,00    | 95,41       | 0,00 | 0,00            |
| 17 | 37,98   | 0,00  | 0,00    | 37,98       | 0,00 | 0,00            |
| 18 | 52,34   | 0,00  | 0,07    | 42,10       | 0,00 | 0,00            |
| 19 | 66,69   | 0,00  | 0,26    | 53,37       | 0,00 | 0,00            |
| 20 | 81,05   | 0,00  | 0,57    | 71,22       | 0,00 | 0,00            |
| 21 | 95,41   | 0,00  | 1,00    | 95,41       | 0,00 | 0,00            |

Specification according to  
ISO/IEC 15775 Annex G  
and DIN 33866-1 Annex G

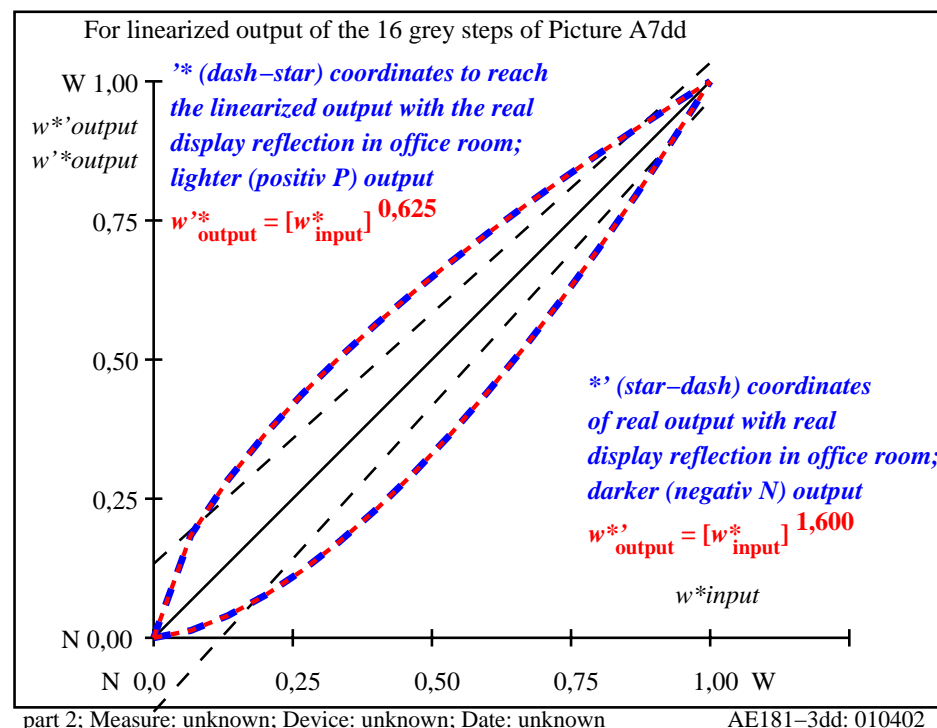
Mean lightness difference (16 steps)  
 $\Delta E^*_{CIE\text{LAB}} = 8,3$

Mean lightness difference (5 steps)  
 $\Delta L^*_{CIE\text{LAB}} = 6,6$

Mean colour reproduction index:  
 $R^*_{ab,m} = 63,5$

part 1; Measure: unknown; Device: unknown; Date: unknown

AE180-3dd: 010402



| $L^*/Y_{\text{intended}}$<br>(absolute)      | 38.0/10.1 | 41.8/12.4 | 45.6/15.0 | 49.5/18.0 | 53.3/21.3 | 57.1/25.1 | 61.0/29.2 | 64.8/33.8 | 68.6/38.8 | 72.4/44.3 | 76.3/50.3 | 80.1/56.9 | 83.9/63.9 | 87.8/71.6 | 91.6/79.8 | 95.4/88.6 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0 0 0 n*                                     |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| setcmyk                                      |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| gN=1.6                                       |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| No. and<br>Hex code                          | 00;F      | 01;E      | 02;D      | 03;C      | 04;B      | 05;A      | 06;9      | 07;8      | 08;7      | 09;6      | 10;5      | 11;4      | 12;3      | 13;2      | 14;1      | 15;0      |
| $w^* = l^*_{CIE\text{LAB}, r}$<br>(relative) |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| $w^*_{\text{intended}}$                      | 0,000     | 0,067     | 0,133     | 0,200     | 0,267     | 0,333     | 0,400     | 0,467     | 0,533     | 0,600     | 0,667     | 0,733     | 0,800     | 0,867     | 0,933     | 1,000     |
| $w^*_{\text{out}}$                           | 0,0       | 0,013     | 0,04      | 0,076     | 0,121     | 0,172     | 0,231     | 0,296     | 0,365     | 0,442     | 0,523     | 0,608     | 0,7       | 0,796     | 0,895     | 1,0       |

AE180-7N, Picture A7\*dd: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

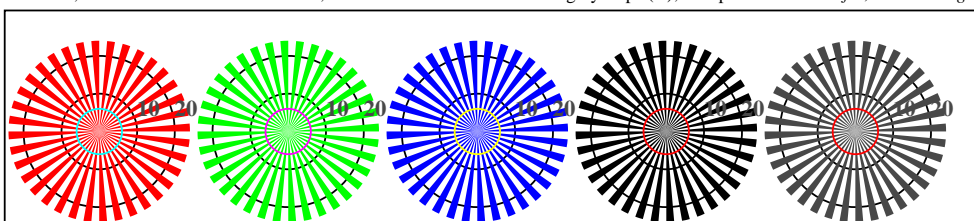
In-out: Test chart AE18 according to test chart 4 of ISO/IEC 15775  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:10$ ;  $Y_N$ -range 7,5 to <15

input:  $rgb/cmy0/000n/w$  set...  
output:  $\rightarrow rgb_{dd}$  setrgbcolor





AE180-3, Picture D1W\*dd: Flower motif, 14 CIE-test colours and 2 + 16 grey steps (sf); PS operators *settransfer*, 3 colorimage

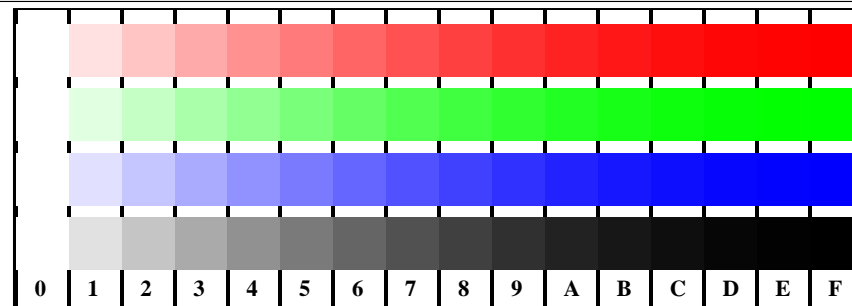
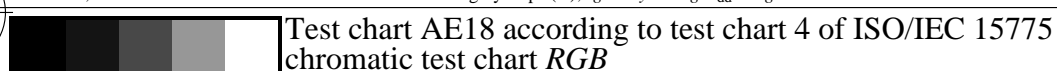


radial gratings  $W-R_d$  radial gratings  $W-G_d$  radial gratings  $W-B_d$  radial gratings  $W-N$  radial gratings  $W-Z$

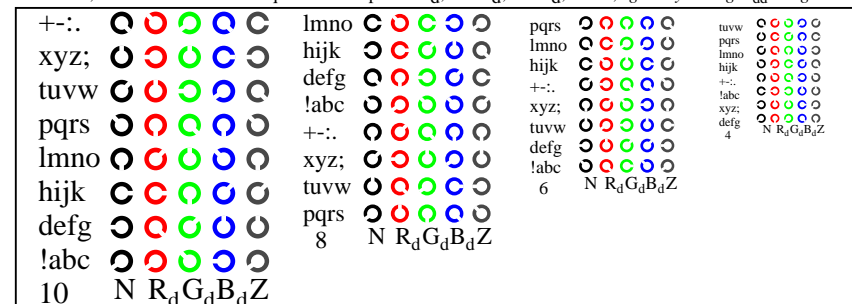
AE180-5, Picture D2W\*dd: radial gratings  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



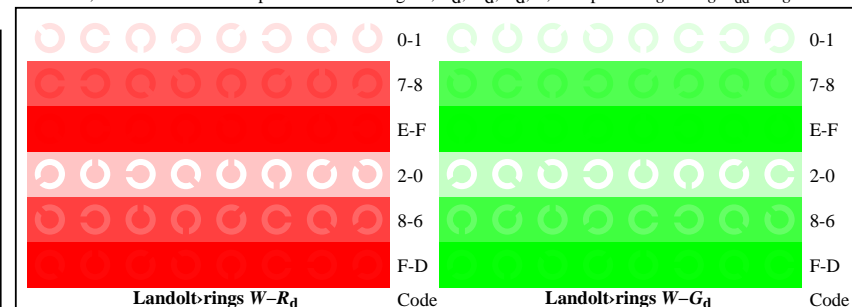
AE180-7, Picture D3W\*dd: 14 CIE-test colours and 2 + 16 grey steps (sf);  $rgb/cmy0 \rightarrow rgb_{dd}$  *setrgbcolor*



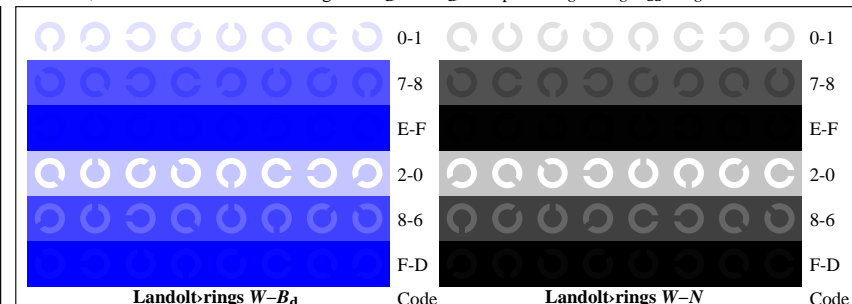
AE181-1, Picture D4W\*dd: 16 equidistant steps  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ;  $rgb/cmy0 \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-3, Picture D5W\*dd: Sript and Landolt-rings  $N$ ;  $R_d$ ;  $G_d$ ;  $B_d$ ;  $Z$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-5, Picture D6W\*dd: Landolt-rings  $W-R_d$ ;  $W-G_d$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*



AE181-7, Picture D7W\*dd: Landolt-rings  $W-B_d$ ;  $W-N$ ; PS operator  $rgb \rightarrow rgb_{dd}$  *setrgbcolor*

input:  $rgb/cmy0/000n/w$  *set...*  
output:  $\rightarrow rgb_{dd}$  *setrgbcolor*

see similar files: [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY2\\_1.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY2_1.PDF) /PS; 3D-linearization, page 20/24  
technical information: <http://farbe.li.tu-berlin.de/> or <http://farbe.li.tu-berlin.de/AE18.HTM>

<http://farbe.li.tu-berlin.de/AE18/AE18F0NX.PDF> /PS; 3D-linearization, page 20/24  
F: 3D-linearization AE18/AE18LF0NX.PDF /PS in file (F)

**Test for the visual linearized output of pictures D1Wdd to D3Wdd**  
**Output test with the computer display ( ) or the external display ( )** please mark by (x)!

**Test of the (flower) image according to picture D1Wdd**  
Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
Subjective remarks about the colour reproduction of the (flower) image, the CIE-test colours and the 16 grey steps within the image, for example "less contrast":  
.....  
.....  
.....

**Test of the resolution of radial gratings  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$  according to picture D2Wdd**  
Is the resolution diameter < 6 mm? **Yes/No**  
Test with magnifying glass (6x),  
Resolution diameter: ..... mm ..... mm ..... mm ..... mm ..... mm

**Test of the 14 CIE-test colours according to picture D3Wdd**  
Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
If Yes: How many colours have clear differences? of the given 14 steps: ..... Steps

**Test of 16 visual equidistant  $L^*$ -grey steps according to picture D3Wdd**  
Are the 16 steps on the upper rows distinguishable? **Yes/No**  
If No: How many steps can be distinguished? of the given 16 steps: ..... Steps

part 1 AE180-3dd: 010481

**Documentation of file format, hardware and software for this test:**  
**PDF file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY2\\_1.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY2_1.PDF) **underline Yes/No**  
**PS-File:** [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY2\\_1.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY2_1.PS) **or underline Yes/No**

**Used computer operating system:**  
either one of Windows/Mac/Unix/other and version:.....

**This evaluation is for the device output:** **underline monitor/data projector/printer**  
Device model, driver and version:.....

**Device output with PDF/PS-file:** **underline PDF/PS-file**  
**For device output with PDF-file AE18F0NX\_CY2\_1.PDF**  
either PDF-file transfer "download, copy" to PDF device.....  
or with computer system interpretation by "Display-PDF":.....  
or with software e. g. Adobe-Reader/-Acrobat and version:.....  
or with software e. g. Ghostscript and version:.....

**For device output with PS-file AE18F0NX\_CY2\_1.PS**  
either PS-file transfer "download, copy" to PS device.....  
or with computer system interpretation by "Display-PS":.....  
or with software e. g. Ghostscript and version:.....  
or with software e. g. Mac-Yap and version:.....

Special remarks: Special remarks, e. g. output of Landscape (L)  
.....  
.....  
.....

part 3 AE180-7N\*dd-010481

**Test of 16 visually equally spaced steps of the colour rows  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$ , and  $W-N$  according to picture D4Wdd**  
 **$W-R_d$  White – Red:** Are all the 16 steps distinguishable? **Yes/No**  
If No: How many steps can be distinguished? of the given 16 steps ..... Steps  
 **$W-G_d$  White – Green:** Are all the 16 steps distinguishable? **Yes/No**  
If No: How many steps can be distinguished? of the given 16 steps ..... Steps  
 **$W-B_d$  White – Blue:** Are all the 16 steps distinguishable? **Yes/No**  
If No: How many steps can be distinguished? of the given 16 steps ..... Steps  
 **$W-N$  White – Black:** Are all the 16 steps distinguishable? **Yes/No**  
If No: How many steps can be distinguished? of the given 16 steps ..... Steps

**Test of characters and Landolt-rings in four sizes according to picture D5Wdd**  
Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

| Relative size | Letters | Ring $N$ | Ring $R_d$ | Ring $G_d$ | Ring $B_d$ |
|---------------|---------|----------|------------|------------|------------|
| 10            | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 8             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 6             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 4             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |

**Test of recognition frequency of Landolt-rings  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$ , and  $W-N$  according to pictures D6Wdd, and D7Wdd**  
Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

| Colour row $W-R_d$ | Colour row $W-G_d$ | Colour row $W-B_d$ | Colour row $W-N$  |
|--------------------|--------------------|--------------------|-------------------|
| background – ring  | background – ring  | background – ring  | background – ring |
| 0 – 1              | Yes/No             | 0 – 1              | Yes/No            |
| 7 – 8              | Yes/No             | 7 – 8              | Yes/No            |
| E – F              | Yes/No             | E – F              | Yes/No            |
| 2 – 0              | Yes/No             | 2 – 0              | Yes/No            |
| 8 – 6              | Yes/No             | 8 – 6              | Yes/No            |
| F – D              | Yes/No             | F – D              | Yes/No            |

part 2 AE181-3Ndd: 010481

**Documentation of assessor colour vision properties for visual assessment**  
The assessor has **normal** colour vision according to one test: **underline Yes/No**  
either according to DIN 6160:1996 with Anomaloskop of Nagel **underline Yes/unknown**  
or with test charts using colour points according to Ishihara **underline Yes/unknown**  
or tested with, please specify: ..... **underline Yes/unknown**

**For visual evaluation of the display (monitor, data projector) output**  
Office workplace illumination is daylight (clouded/north sky) **underline Yes/No**  
**PDF file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY2\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY2_3.PDF) **underline Yes/No**  
**PS file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY2\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY2_3.PS) **underline Yes/No**  
**Picture A7dd contrast range:** (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)  
compare standard print output according to ISO/IEC 15775 with range F:0 **underline range**  
*Remark: In daylighted offices the contrast range is in many cases:  
on display between: >F:0 and E:0 (monitor), D:0 and 3:0 (data projector)*

**Only for optional colorimetric specification with PDF/PS file output**  
**PDF file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY2\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY2_3.PDF) **underline Yes/No**  
**PS file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY2\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY2_3.PS) **underline Yes/No**  
**picture A7dd** **underline Yes/No**  
**or underline Yes/No**

**colour measurement and specification for:**  
CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: **underline Yes/No**  
If No, please give other parameters: .....

**Colorimetric specification for 17 step colours of <http://farbe.li.tu-berlin.de/OE70/OE70L1NP.PDF>**  
Exchange of CIELAB data in file <http://farbe.li.tu-berlin.de/AE82/AE82L0NP.TXT> and transfer of the PS file AE82L0NP.PS (= .TXT) to the PDF-file AE82L0NP.PDF **underline Yes/No**  
If No, please describe other method: .....

part 4 AE181-7dd: 010481

Form A: Test chart AE18 according to test chart 4 of ISO/IEC 15775 input: *rgb/cmy0/000n/w set...*  
chromatic test chart RGB output: *->rgb<sub>dd</sub> setrgbcolor*

TUB Registration: 20191001-AE18/AE18L0FA.TXT /PS  
application for measurement or viewing of the output on display and print  
TUB material: code=th4ta

see similar files: <http://farbe.li.tu-berlin.de/AE18/AE18L0FA.TXT> / .PS  
technical information: <http://farbe.li.tu-berlin.de/> or <http://farbe.li.tu-berlin.de/AE18.HTM>

| i  | LAB*ref | l*out | LAB*out | LAB*out-ref | ΔE*  | Start output S1 |
|----|---------|-------|---------|-------------|------|-----------------|
| 1  | 52,01   | 0,00  | 0,00    | 0,00        | 0,00 | 0,01            |
| 2  | 54,91   | 0,00  | 0,00    | 0,00        | 0,00 | 2,73            |
| 3  | 57,80   | 0,00  | 0,01    | 0,00        | 0,00 | 5,12            |
| 4  | 60,69   | 0,00  | 0,03    | 0,00        | 0,00 | 7,15            |
| 5  | 63,58   | 0,00  | 0,06    | 0,00        | 0,00 | 8,79            |
| 6  | 66,48   | 0,00  | 0,10    | 0,00        | 0,00 | 10,04           |
| 7  | 69,37   | 0,00  | 0,14    | 0,00        | 0,00 | 10,90           |
| 8  | 72,26   | 0,00  | 0,20    | 0,00        | 0,00 | 11,35           |
| 9  | 75,16   | 0,00  | 0,27    | 0,00        | 0,00 | 11,40           |
| 10 | 78,05   | 0,00  | 0,34    | 0,00        | 0,00 | 11,03           |
| 11 | 80,94   | 0,00  | 0,43    | 0,00        | 0,00 | 10,25           |
| 12 | 83,83   | 0,00  | 0,52    | 0,00        | 0,00 | 9,05            |
| 13 | 86,73   | 0,00  | 0,62    | 0,00        | 0,00 | 7,43            |
| 14 | 89,62   | 0,00  | 0,74    | 0,00        | 0,00 | 5,38            |
| 15 | 92,51   | 0,00  | 0,86    | 0,00        | 0,00 | 2,90            |
| 16 | 95,41   | 0,00  | 1,00    | 0,00        | 0,00 | 0,01            |
| 17 | 52,01   | 0,00  | 0,00    | 0,00        | 0,00 | 0,01            |
| 18 | 62,86   | 0,00  | 0,05    | 0,00        | 0,00 | 8,42            |
| 19 | 73,71   | 0,00  | 0,23    | 0,00        | 0,00 | 11,43           |
| 20 | 84,56   | 0,00  | 0,54    | 0,00        | 0,00 | 8,69            |
| 21 | 95,41   | 0,00  | 1,00    | 0,00        | 0,00 | 0,01            |

**Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G**

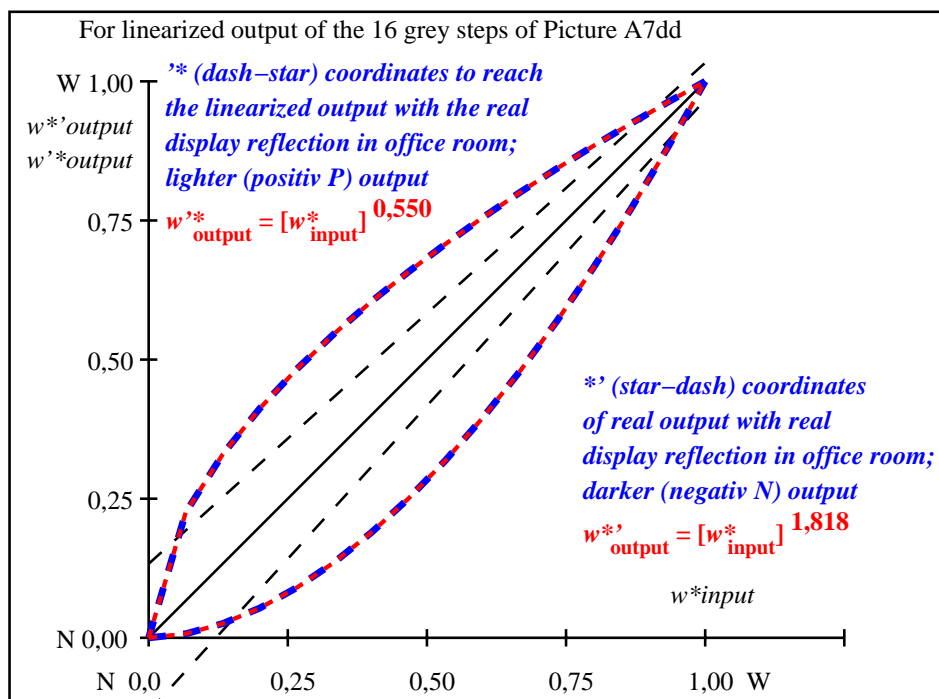
Mean lightness difference (16 steps)  
 $\Delta E^*_{\text{CIELAB}} = 7,1$

Mean lightness difference (5 steps)  
 $\Delta L^*_{\text{CIELAB}} = 5,7$

Mean colour reproduction index:  $R^*_{\text{ab,m}} = 68,8$

part 1; Measure: unknown; Device: unknown; Date: unknown

AE180-3dd: 010482



part 2; Measure: unknown; Device: unknown; Date: unknown

AE181-3dd: 010482

| $L^*/Y_{\text{intended}}$<br>(absolute)   | 52.0/20.2 | 54.9/22.8 | 57.8/25.8 | 60.7/28.9 | 63.6/32.3 | 66.5/36.0 | 69.4/39.9 | 72.3/44.1 | 75.2/48.5 | 78.1/53.3 | 80.9/58.4 | 83.8/63.8 | 86.7/69.5 | 89.6/75.5 | 92.5/81.9 | 95.4/88.6 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0 0 0 n*                                  |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| setcmyk                                   |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| $g_N=1.82$                                |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| No. and Hex code                          | 00;F      | 01;E      | 02;D      | 03;C      | 04;B      | 05;A      | 06;9      | 07;8      | 08;7      | 09;6      | 10;5      | 11;4      | 12;3      | 13;2      | 14;1      | 15;0      |
| $w^*=l^*_{\text{CIELAB},r}$<br>(relative) |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| $w^*_{\text{intended}}$                   | 0,000     | 0,067     | 0,133     | 0,200     | 0,267     | 0,333     | 0,400     | 0,467     | 0,533     | 0,600     | 0,667     | 0,733     | 0,800     | 0,867     | 0,933     | 1,000     |
| $w^*_{\text{out}}$                        | 0,0       | 0,007     | 0,026     | 0,054     | 0,091     | 0,135     | 0,189     | 0,25      | 0,319     | 0,395     | 0,479     | 0,569     | 0,666     | 0,771     | 0,882     | 1,0       |

AE180-7N, Picture A7\*dd: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

In-out: Test chart AE18 according to test chart 4 of ISO/IEC 15775  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:20$ ;  $Y_N$ -range 15 to <30

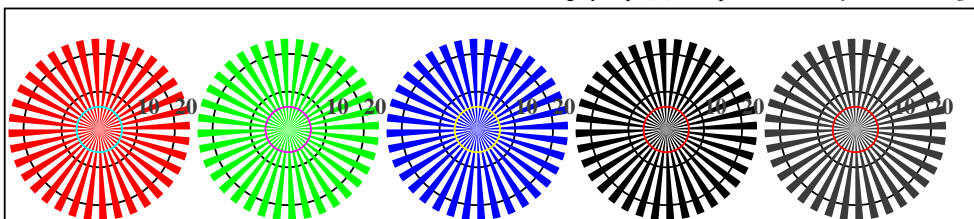
input:  $rgb/cmy0/000n/w$  set...  
output:  $->rgb_{\text{dd}}$  setrgbcolor

TUB Registration: 20191001-AE18/AE18L0FA.TXT / .PS  
application for measurement or viewing of the output on display and print  
TUB material: code=rh4ta





AE180-3, Picture D1W\*dd: Flower motif, 14 CIE-test colours and 2 + 16 grey steps (sf); PS operators *settransfer*, 3 colorimage

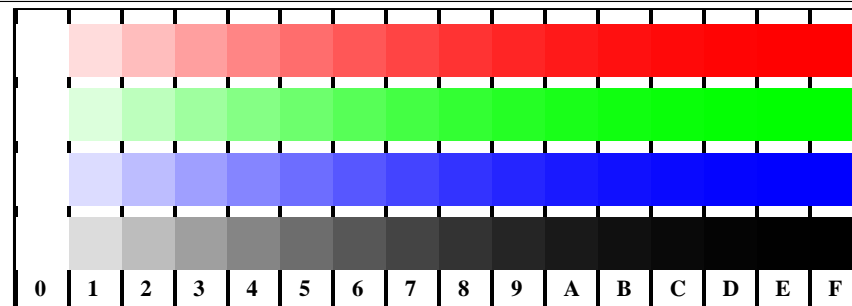
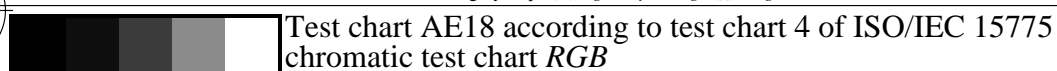


radial gratings  $W-R_d$  radial gratings  $W-G_d$  radial gratings  $W-B_d$  radial gratings  $W-N$  radial gratings  $W-Z$

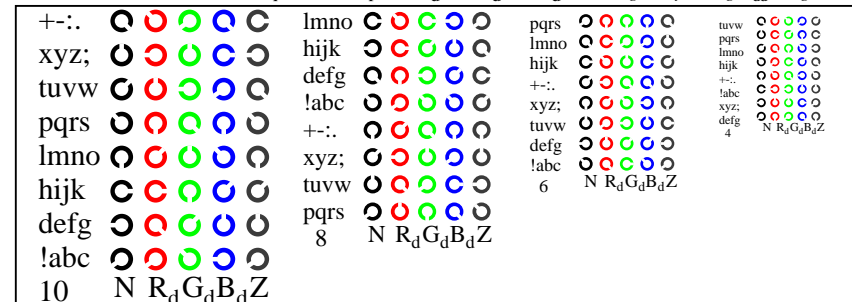
AE180-5, Picture D2W\*dd: radial gratings  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ; PS operator *rgb*->*rgb\*dd* *setrgbcolor*



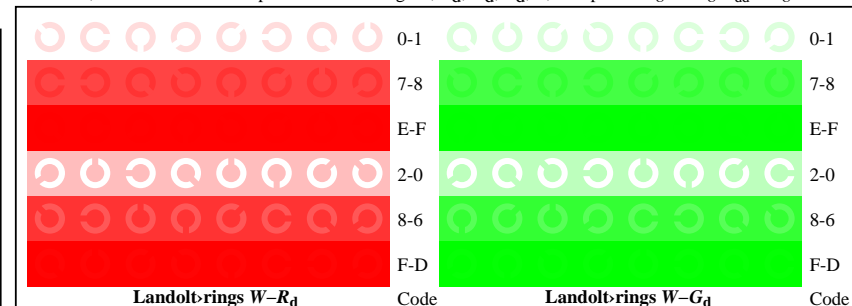
AE180-7, Picture D3W\*dd: 14 CIE-test colours and 2 + 16 grey steps (sf); *rgb/cmy0*->*rgb\*dd* *setrgbcolor*



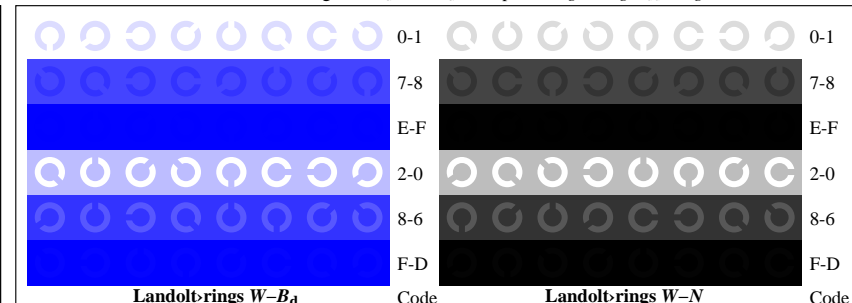
AE181-1, Picture D4W\*dd: 16 equidistant steps  $W-R_d$ ;  $W-G_d$ ;  $W-B_d$ ;  $W-N$ ; *rgb/cmy0*->*rgb\*dd* *setrgbcolor*



AE181-3, Picture D5W\*dd: Sript and Landolt-rings  $N$ ;  $R_d$ ;  $G_d$ ;  $B_d$ ;  $Z$ ; PS operator *rgb*->*rgb\*dd* *setrgbcolor*



AE181-5, Picture D6W\*dd: Landolt-rings  $W-R_d$ ;  $W-G_d$ ; PS operator *rgb*->*rgb\*dd* *setrgbcolor*



AE181-7, Picture D7W\*dd: Landolt-rings  $W-B_d$ ;  $W-N$ ; PS operator *rgb*->*rgb\*dd* *setrgbcolor*

input: *rgb/cmy0/000n/w* *set...*  
output: ->*rgb\*dd* *setrgbcolor*

Test for the visual linearized output of pictures D1Wdd to D3Wdd

Output test with the computer display ( ) or the external display ( ) please mark by (x)!

**Test of the (flower) image according to picture D1Wdd**

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
Subjective remarks about the colour reproduction of the (flower) image, the CIE-test colours and the 16 grey steps within the image, for example "less contrast":  
.....  
.....  
.....

**Test of the resolution of radial gratings  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$  according to picture D2Wdd**

|   | $W-R_d$  | $W-G_d$  | $W-B_d$  | $W-N$    | $W-Z$    |
|---|----------|----------|----------|----------|----------|
| Is the resolution diameter < 6 mm?                    | Yes/No   | Yes/No   | Yes/No   | Yes/No   | Yes/No   |
| Test with magnifying glass (6x), Resolution diameter: | ..... mm | ..... mm | ..... mm | ..... mm | ..... mm |

**Test of the 14 CIE-test colours according to picture D3Wdd**

Are clear (immediately conspicuous) differences recognized between reproduction and test chart? **Yes/No**  
If Yes: How many colours have clear differences? of the given 14 steps: **..... Steps**

**Test of 16 visual equidistant  $L^*$ -grey steps according to picture D3Wdd**

Are the 16 steps on the upper rows distinguishable? **Yes/No**  
If No: How many steps can be distinguished? of the given 16 steps: **..... Steps**

part 1 AE180-3dd: 010561

**Documentation of file format, hardware and software for this test:**

**PDF file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY1\\_1.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY1_1.PDF) **underline Yes/No**

**PS-File:** [http://farbe.li.tu-berlin.de/AE18/AE18F0NX\\_CY1\\_1.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0NX_CY1_1.PS) **or underline Yes/No**

**Used computer operating system:**

either one of Windows/Mac/Unix/other and version:.....

**This evaluation is for the device output:** **underline monitor/data projector/printer**

Device model, driver and version:.....

**Device output with PDF/PS-file:** **underline PDF/PS-file**

**For device output with PDF-file AE18F0NX\_CY1\_1.PDF**

either PDF-file transfer "download, copy" to PDF device.....  
or with computer system interpretation by "Display-PDF":.....  
or with software. e. g. Adobe-Reader/-Acrobat and version:.....  
or with software e. g. Ghostscript and version:.....

**For device output with PS-file AE18F0NX\_CY1\_1.PS**

either PS-file transfer "download, copy" to PS device.....  
or with computer system interpretation by "Display-PS":.....  
or with software e. g. Ghostscript and version:.....  
or with software e. g. Mac-Yap and version:.....

Special remarks: Special remarks, e. g. output of Landscape (L)  
.....  
.....

part 3 AE180-7N\*dd: 010561

Test of 16 visually equally spaced steps of the colour rows  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$ , and  $W-N$  according to picture D4Wdd

|                        | Are all the 16 steps distinguishable?                             | Yes/No        |
|------------------------|---|---------------|
| $W-R_d$ White – Red:   | If No: How many steps can be distinguished? of the given 16 steps | ..... Steps   |
| $W-G_d$ White – Green: | Are all the 16 steps distinguishable?                             | <b>Yes/No</b> |
|                        | If No: How many steps can be distinguished? of the given 16 steps | ..... Steps   |
| $W-B_d$ White – Blue:  | Are all the 16 steps distinguishable?                             | <b>Yes/No</b> |
|                        | If No: How many steps can be distinguished? of the given 16 steps | ..... Steps   |
| $W-N$ White – Black:   | Are all the 16 steps distinguishable?                             | <b>Yes/No</b> |
|                        | If No: How many steps can be distinguished? of the given 16 steps | ..... Steps   |

**Test of characters and Landolt-rings in four sizes according to picture D5Wdd**

Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

| Relative size | Letters | Ring $N$ | Ring $R_d$ | Ring $G_d$ | Ring $B_d$ |
|---------------|---------|----------|------------|------------|------------|
| 10            | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 8             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 6             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |
| 4             | Yes/No  | Yes/No   | Yes/No     | Yes/No     | Yes/No     |

**Test of recognition frequency of Landolt-rings  $W-R_d$ ,  $W-G_d$ ,  $W-B_d$ , and  $W-N$  according to pictures D6Wdd, and D7Wdd**

Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

| Colour row $W-R_d$ | Colour row $W-G_d$ | Colour row $W-B_d$ | Colour row $W-N$  |
|--------------------|--------------------|--------------------|-------------------|
| background – ring  | background – ring  | background – ring  | background – ring |
| 0 – 1              | 0 – 1              | 0 – 1              | 0 – 1             |
| 7 – 8              | 7 – 8              | 7 – 8              | 7 – 8             |
| E – F              | E – F              | E – F              | E – F             |
| 2 – 0              | 2 – 0              | 2 – 0              | 2 – 0             |
| 8 – 6              | 8 – 6              | 8 – 6              | 8 – 6             |
| F – D              | F – D              | F – D              | F – D             |

part 2 AE181-3Ndd: 010561

**Documentation of assessor colour vision properties for visual assessment**

The assessor has **normal** colour vision according to one test: **underline Yes/No**  
either according to DIN 6160:1996 with Anomaloskop of Nagel **underline Yes/unknown**  
or with test charts using colour points according to Ishihara **underline Yes/unknown**  
or tested with, please specify: ..... **underline Yes/unknown**

**For visual evaluation of the display (monitor, data projector) output**

Office workplace illumination is daylight (clouded/north sky) **underline Yes/No**

**PDF file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY1\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY1_3.PDF) **underline Yes/No**

**PS file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY1\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY1_3.PS) **underline Yes/No**

**Picture A7dd contrast range:** (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)

compare standard print output according to ISO/IEC 15775 with range F:0 **underline range**

*Remark: In daylighted offices the contrast range is in many cases:  
on display between: >F:0 and E:0 (monitor), D:0 and 3:0 (data projector)*

**Only for optional colorimetric specification with PDF/PS file output**

**PDF file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY1\\_3.PDF](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY1_3.PDF)

**picture A7dd** **underline Yes/No**

**PS file:** [http://farbe.li.tu-berlin.de/AE18/AE18F0PX\\_CY1\\_3.PS](http://farbe.li.tu-berlin.de/AE18/AE18F0PX_CY1_3.PS)

**picture A7dd** **or underline Yes/No**

**colour measurement and specification for:**

CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: **underline Yes/No**

If No, please give other parameters: .....

**Colorimetric specification for 17 step colours of** <http://farbe.li.tu-berlin.de/OE70/OE70L1NP.PDF>

Exchange of CIELAB data in file <http://farbe.li.tu-berlin.de/AE82/AE82L0NP.TXT> and transfer of the PS file AE82L0NP.PS (= .TXT) to the PDF-file AE82L0NP.PDF **underline Yes/No**

If No, please describe other method: .....

part 4 AE181-7dd: 010561

Form A: Test chart AE18 according to test chart 4 of ISO/IEC 15775 input: *rgb/cmy0/000n/w set...*  
chromatic test chart RGB output: *->rgb<sub>dd</sub> setrgbcolor*

TUB Registration: 20191001-AE18/AE18L0FA.TXT /PS  
application for measurement or viewing of the output on display and print

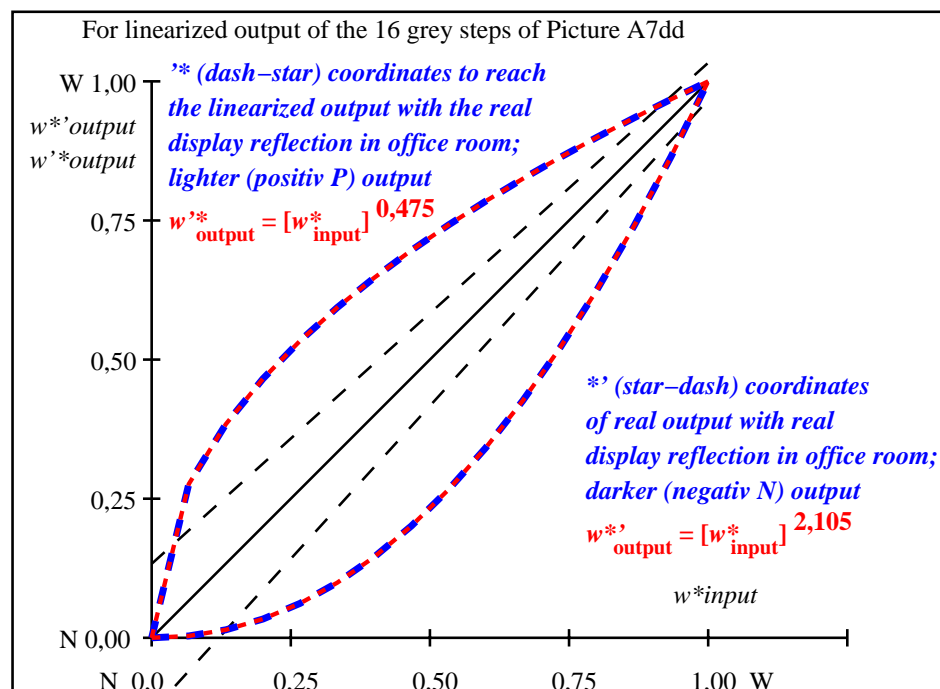
TUB material: code=th4ta

see similar files: <http://farbe.li.tu-berlin.de/AE18/AE18L0FA.TXT/.PS>  
technical information: <http://farbe.li.tu-berlin.de/> or <http://farbe.li.tu-berlin.de/AE18.HTM>

| i                               | LAB*ref         | l*out          | LAB*out         | LAB*out-ref    | ΔE*                       | Start output S1   |
|---------------------------------|-----------------|----------------|-----------------|----------------|---------------------------|---|
| 1                               | 69,69 0,00 0,00 | 0,00 0,00 0,00 | 69,69 0,00 0,00 | 0,00 0,00 0,00 | 0,01                      | <b>Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G</b> |
| 2                               | 71,41 0,00 0,00 | 0,00 0,00 0,00 | 69,75 0,00 0,00 | -1, 0,00 0,00  | 1,65                      |   |
| 3                               | 73,12 0,00 0,00 | 0,01 0,00 0,00 | 69,96 0,00 0,00 | -3, 0,00 0,00  | 3,15                      |   |
| 4                               | 74,83 0,00 0,00 | 0,02 0,00 0,00 | 70,37 0,00 0,00 | -4, 0,00 0,00  | 4,46                      |   |
| 5                               | 76,55 0,00 0,00 | 0,05 0,00 0,00 | 70,99 0,00 0,00 | -5, 0,00 0,00  | 5,56                      |   |
| 6                               | 78,26 0,00 0,00 | 0,08 0,00 0,00 | 71,84 0,00 0,00 | -6, 0,00 0,00  | 6,42                      |   |
| 7                               | 79,98 0,00 0,00 | 0,12 0,00 0,00 | 72,93 0,00 0,00 | -7, 0,00 0,00  | 7,04                      |   |
| 8                               | 81,69 0,00 0,00 | 0,17 0,00 0,00 | 74,28 0,00 0,00 | -7, 0,00 0,00  | 7,40                      |   |
| 9                               | 83,41 0,00 0,00 | 0,24 0,00 0,00 | 75,90 0,00 0,00 | -7, 0,00 0,00  | 7,50                      |   |
| 10                              | 85,12 0,00 0,00 | 0,31 0,00 0,00 | 77,80 0,00 0,00 | -7, 0,00 0,00  | 7,32                      |   |
| 11                              | 86,83 0,00 0,00 | 0,39 0,00 0,00 | 79,98 0,00 0,00 | -6, 0,00 0,00  | 6,85                      |   |
| 12                              | 88,55 0,00 0,00 | 0,49 0,00 0,00 | 82,45 0,00 0,00 | -6, 0,00 0,00  | 6,09                      |   |
| 13                              | 90,26 0,00 0,00 | 0,60 0,00 0,00 | 85,22 0,00 0,00 | -5, 0,00 0,00  | 5,04                      |   |
| 14                              | 91,98 0,00 0,00 | 0,72 0,00 0,00 | 88,30 0,00 0,00 | -3, 0,00 0,00  | 3,67                      |   |
| 15                              | 93,69 0,00 0,00 | 0,85 0,00 0,00 | 91,69 0,00 0,00 | -1, 0,00 0,00  | 1,99                      | Mean lightness difference (16 steps)  |
| 16                              | 95,41 0,00 0,00 | 1,00 0,00 0,00 | 95,41 0,00 0,00 | 0,00 0,00 0,00 | 0,01                      | ΔE* <sub>CIELAB</sub> = 4,6   |
| 17                              | 69,69 0,00 0,00 | 0,00 0,00 0,00 | 69,69 0,00 0,00 | 0,00 0,00 0,00 | 0,01                      |   |
| 18                              | 76,12 0,00 0,00 | 0,04 0,00 0,00 | 70,81 0,00 0,00 | -5, 0,00 0,00  | 5,30                      |   |
| 19                              | 82,55 0,00 0,00 | 0,20 0,00 0,00 | 75,06 0,00 0,00 | -7, 0,00 0,00  | 7,48                      |   |
| 20                              | 88,98 0,00 0,00 | 0,52 0,00 0,00 | 83,11 0,00 0,00 | -5, 0,00 0,00  | 5,86                      | Mean lightness difference (5 steps)   |
| 21                              | 95,41 0,00 0,00 | 1,00 0,00 0,00 | 95,41 0,00 0,00 | 0,00 0,00 0,00 | 0,01                      | ΔL* <sub>CIELAB</sub> = 3,7   |
| Mean colour reproduction index: |                 |                |                 |                | R* <sub>ab,m</sub> = 79,6 |   |

part 1; Measure: unknown; Device: unknown; Date: unknown

AE180-3dd: 010562



part 2; Measure: unknown; Device: unknown; Date: unknown

AE181-3dd: 010562

| $L^*/Y_{\text{intended}}$<br>(absolute)      | 69.7/40.3 | 71.4/42.8 | 73.1/45.4 | 74.8/48.0 | 76.6/50.8 | 78.3/53.7 | 80.0/56.6 | 81.7/59.7 | 83.4/62.9 | 85.1/66.3 | 86.8/69.7 | 88.6/73.2 | 90.3/76.9 | 92.0/80.7 | 93.7/84.6 | 95.4/88.6 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0 0 0 n*<br>setcmyk                          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| gN=2.11<br>No. and<br>Hex code               | 00;F      | 01;E      | 02;D      | 03;C      | 04;B      | 05;A      | 06;9      | 07;8      | 08;7      | 09;6      | 10;5      | 11;4      | 12;3      | 13;2      | 14;1      | 15;0      |
| $w^* = l^*_{\text{CIELAB}, r}$<br>(relative) |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| $w^*_{\text{intended}}$                      | 0,000     | 0,067     | 0,133     | 0,200     | 0,267     | 0,333     | 0,400     | 0,467     | 0,533     | 0,600     | 0,667     | 0,733     | 0,800     | 0,867     | 0,933     | 1,000     |
| $w^*_{\text{out}}$                           | 0,0       | 0,003     | 0,014     | 0,034     | 0,062     | 0,099     | 0,145     | 0,201     | 0,266     | 0,341     | 0,426     | 0,52      | 0,625     | 0,74      | 0,864     | 1,0       |

AE180-7N, Picture A7\*dd: 16 visual equidistant L\*-grey steps; PS operator: 0 0 0 n\* setcmykcolor

In-out: Test chart AE18 according to test chart 4 of ISO/IEC 15775  
Viewing Y contrast  $Y_W:Y_N=88,9:40$ ;  $Y_N$ -range 30 to <60

input: *rgb/cmy0/000n/w set...*  
output: *->rgb<sub>dd</sub> setrgbcolor*

TUB Registration: 20191001-AE18/AE18L0FA.TXT /.PS  
application for measurement or viewing of the output on display and print  
TUB material: code=rh4ta