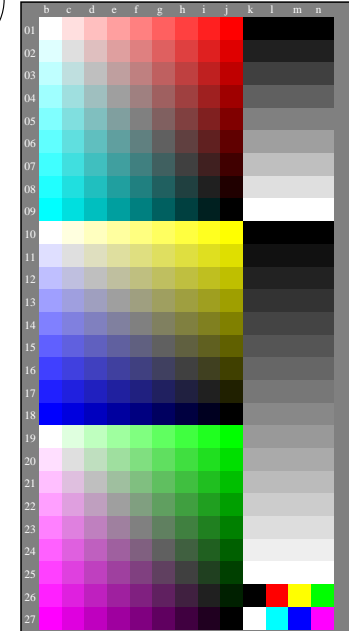


see similar files: http://farbe.li.tu-berlin.de/AE49/AE49.HTM
technical information: http://farbe.li.tu-berlin.de/ or http://farbe.li.tu-berlin.de/AE.HTM

TUB Registration: 20190301-AE49/AE49L0NP.PDF /.PS
application for measurement or viewing of display and print output
TUB material: code=rha4ta



Discriminability of chromatic colours
Remarks: This test uses many colour scales of 9 steps

Hue plane Red - Cyan blue (rows 01 to 09, column b to j)
Discriminability of 81 chromatic colours
Are all the 81 colours different? **Yes/No**
Only in case of "No": How many are different? Of the 81 are different

Hue plane Yellow - Blue (rows 10 to 18, column b to j)
Discriminability of 81 chromatic colours
Are all the 81 colours different? **Yes/No**
Only in case of "No": How many are different? Of the 81 are different

Hue plane Green - Magenta red (rows 19 to 27, column b to j)
Discriminability of 81 chromatic colours
Are all the 81 colours different? **Yes/No**
Only in case of "No": How many are different? Of the 81 are different

Result: Of the 243 (=3x81) colours are different

Artifacts, please describe if visible:
.....
.....

Remarks about the creation and content of the PDF files:
Sometimes "colour smoothing" is a default setting.
In this case the 9 steps are often not visible and may be counted as one step.
Sometimes "optimizing the PDF output for the web" is a default setting.
For example this setting may reduce the 1080 colours on a page to 256 colours.

AE490-71 Part of test chart AE49 with 1080 colours; 9 or 16 step colour scales; data in column (b-n); rgb 1-003110-L0 cmy6



Agreement with elementary colours
Remarks: This test uses many colour scales of 9 steps
Red R_e and Green G_e are defined by the visual criteria: *neither yellowish nor blueish*.
Yellow Y_e and Blue B_e are defined by the visual criteria: *neither reddish nor greenish*.

Hue plane Red - Cyan blue (rows 01 to 09, column b to j)
Agreement with elementary colours
Is the colour at the position (j,01) the elementary colour Red R_e ? **Yes/No**
Only in case of "No": The colour at this position appears: yellowish/blueish

Hue plane Yellow - Blue Y_e (rows 10 to 18, column b to j)
Agreement with elementary colours
Is the colour at the position (j,10) the elementary colour Yellow Y_e ? **Yes/No**
Only in case of "No": The colour at this position appears: reddish/greenish

Hue plane Green - Magenta red (rows 19 to 27, column b to j)
Agreement with elementary colours
Is the colour at the position (j,19) the elementary colour Green G_e ? **Yes/No**
Only in case of "No": The colour at this position appears: yellowish/blueish

Result: Of the 4 elementary colours (e. g. 3) are acceptable as elementary colours.

Discriminability of 9 and 16 grey steps
Discriminability of 9 steps (rows 01 to 09, column k to n)
Are the 9 steps distinguishable? **Yes/No**
If No: How many can be distinguished? of 9 greys are distinguishable.

Discriminability of 16 steps (rows 10 to 27, column k to n)
Are the 16 steps distinguishable? **Yes/No**
If No: How many can be distinguished? of 16 greys are distinguishable.

Artifacts, please describe if visible:
.....
.....

Remarks about the creation and content of the PDF files:
Sometimes "colour smoothing" is a default setting.
In this case the 9 steps are often not visible and may be counted as one step.
Sometimes "optimizing the PDF output for the web" is a default setting.
For example this setting may reduce the 1080 colours on a page to 256 colours.

AE490-71 Part of test chart AE49 with 1080 colours; 9 or 16 step colour scales; data in column (b-n); rgb 1-003110-L0 cmy6

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

PDF file:
http://farbe.li.tu-berlin.de/AE49/AE49F0PX_CY8_1.PDF **underline: Yes/No**

PS file:
http://farbe.li.tu-berlin.de/AE49/AE49F0PX_CY8_1.PS **underline: Yes/No**

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

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

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

For output with PDF file AE49F0PX_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 output with PS file AE49F0PX_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: e. g. output of Landscape (L)
.....
.....

part 3, AE490-7dd: 00301

Documentation of assessor colour-vision properties for visual assessment

The assessor has **normal** colour vision according to one test:
either according to DIN 6160:1996 with Anomaloskop of Nagel **underline: Yes/No**
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/AE49/AE49F0PX_CY8_3.PDF **underline: Yes/No**

PS file: http://farbe.li.tu-berlin.de/AE49/AE49F0PX_CY8_3.PS **underline: Yes/No**

picture A7_{dd} 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: Yes/No**
*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/AE49/AE49F0PX_CY8_3.PDF **underline: Yes/No**

PS file: http://farbe.li.tu-berlin.de/AE49/AE49F0PX_CY8_3.PS **underline: Yes/No**

picture A7_{dd} **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, AE491-7dd: 00301

see similar files: <http://farbe.li.tu-berlin.de/AE49/AE49L0NP.PDF> / .PS
 technical information: <http://farbe.li.tu-berlin.de/> or <http://farbe.li.tu-berlin.de/AE49.HTM>

TUB Registration: 20190301-AE49/AE49L0NP.PDF /.PS
 application for measurement or viewing of display and print output
 TUB material: code=rh4ta

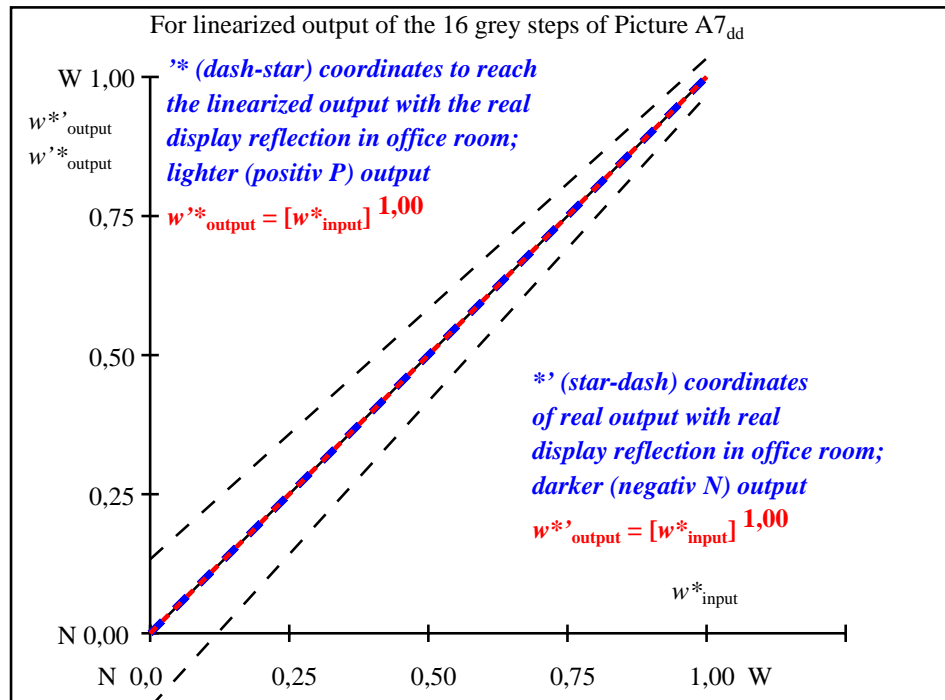
<i>i</i>	LAB^*_{ref}	l^*_{out}	LAB^*_{out}	$LAB^*_{out-ref}$	ΔE^*	Start output S1
1	0,00	0,00	0,00	0,00	0,00	Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G
2	6,36	0,00	0,00	0,06	6,36	
3	12,72	0,00	0,00	0,13	12,72	
4	19,08	0,00	0,00	0,20	19,08	
5	25,44	0,00	0,00	0,26	25,44	
6	31,80	0,00	0,00	0,33	31,80	
7	38,16	0,00	0,00	0,40	38,16	
8	44,52	0,00	0,00	0,46	44,52	
9	50,88	0,00	0,00	0,53	50,88	
10	57,24	0,00	0,00	0,60	57,24	
11	63,60	0,00	0,00	0,66	63,60	
12	69,96	0,00	0,00	0,73	69,96	
13	76,32	0,00	0,00	0,80	76,32	
14	82,68	0,00	0,00	0,86	82,68	
15	89,04	0,00	0,00	0,93	89,04	
16	95,41	0,00	0,00	1,00	95,41	
17	0,00	0,00	0,00	0,00	0,00	
18	23,85	0,00	0,00	0,25	23,85	
19	47,70	0,00	0,00	0,50	47,70	
20	71,55	0,00	0,00	0,75	71,55	
21	95,41	0,00	0,00	1,00	95,41	

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, AE490-3dd: 00302



part 2, AE491-3dd: 00302

$L^*/Y_{intended}$ (absolute)	0,0/0,0	6,3/0,7	12,7/1,5	19,0/2,7	25,4/4,5	31,8/6,9	38,1/10,1	44,5/14,2	50,8/19,1	57,2/25,1	63,6/32,3	69,9/40,7	76,3/50,4	82,6/61,5	89,0/74,2	95,4/88,5
$w^* w^* w^*$ setrgb																
$g_p=1,000$																
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
$w^*=l^*_{CIELAB, r}$ (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^*_{output}	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

part 3, picture A7dd: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor AE490-7dd: 00302

In-out: Test chart AE49 similar to test chart 1 of DIN 33872-6
 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