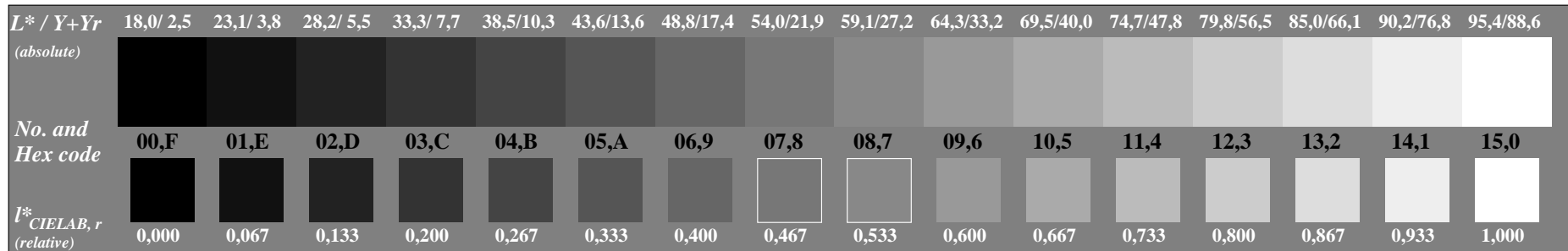
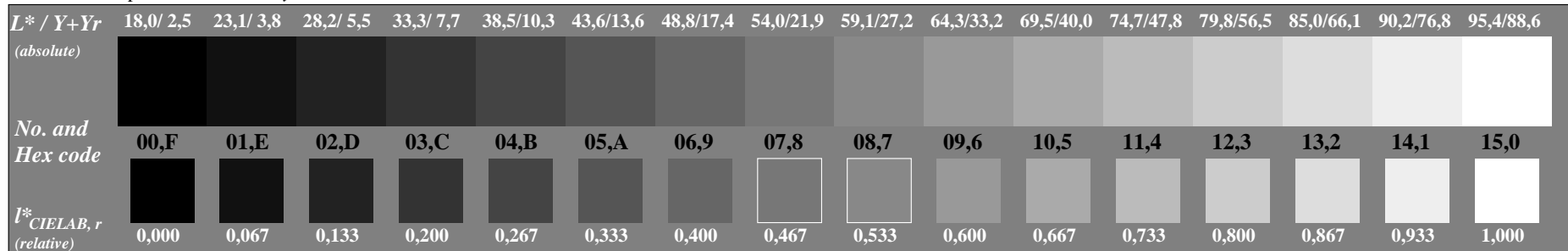


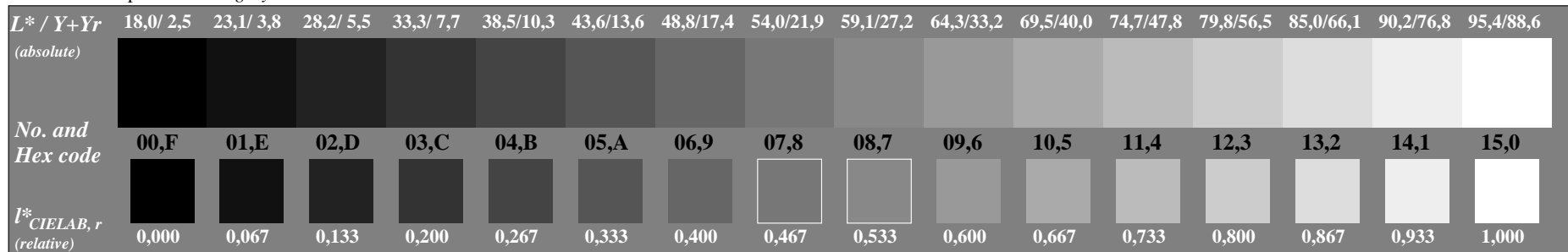
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



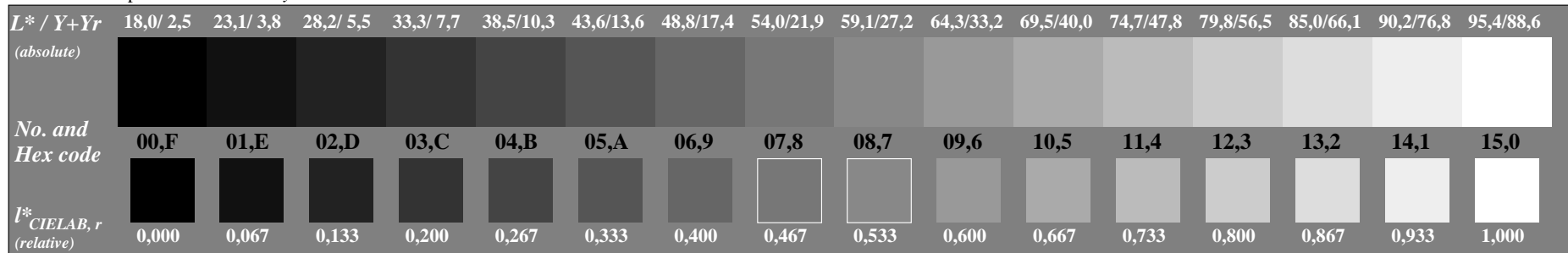
Use of the PS operator 000n\* setcmykcolor



Use of the PS operator w\* setgray



Use of the PS operator nnn0\* setcmykcolor



Use of the PS operator www\* setrgbcolor

OE740-7N-130-0: Use of four different equivalent PS operators



OE74: Test chart 1 according to DIN 33872-3; 1MR, DH  
Equality; Discriminability with 4 colour definitions,

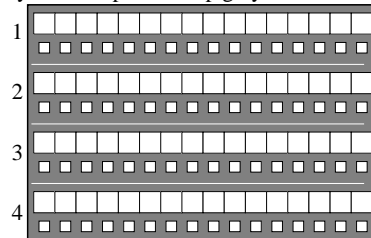
input: 000n/w/cmy0/rgb(->rgb\*d)  
output 130-0: g<sub>P</sub>=1.0; g<sub>N</sub>=1.0



TUB registration: 20110801-OE74/OE74L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta

### Equality of grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps White W

There are two basic colours on each page:  
Black N and White W in mean grey background.  
There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.  
In each column the four adjacent greys  
should be equal.  
The four grey series are defined by four  
different PS-operators.

This test uses only the four upper adjacent grey series N–W.

For the upper grey series and in each column the four greys should be equal for **all** the 16 steps.

**Are in each column the four greys for all the 16 steps equal?** underline: Yes/No

**Only in case of "No":**

Is row no. 3 most different compared to all others ?

underline: Yes/No

Are the series no. 1, no. 2, and no. 4 equal?

underline: Yes/No

**Only in case of "No":**

Are the rows no. 2 and no. 4 equal ?

underline: Yes/No

Remarks, e. q. other equality: .....

.....

Part 1

OE740–3N-130-1

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NP.PDF> underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NA.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 OE74L0NP.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 OE74L0NA.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)

.....

.....

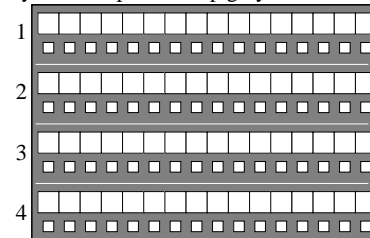
.....

Part 3

OE740–7N-130-1

### Discriminability of 16 step grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps, 15 differences White W

There are two basic colours on each page:  
Black N and White W in mean grey background.  
There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.  
The adjacent and separated are identical.  
Separated greys are less distinguishable.  
Any grey colour is defined by four different  
PS-operators in four rows

**All the 16 steps of the eight series N–W should be distinguishable**

**Are all 15 grey differences of the eight rows distinguishable?** underline: Yes/No

Only in case of "No":

Test of adjacent grey samples (four upper rows):

Are the 15 grey differences of the four series distinguishable?

underline: Yes/No

Only in case of "No":

Are the 15 grey differences of series no. 1 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 2 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 3 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 4 distinguishable?

underline: Yes/No

Remarks: .....

Part 2

OE741–3-130-1

### 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

or with test charts using colour points according to Ishihara

or tested with, please specify: .....

underline: Yes/No

underline: Yes/unknown

underline: Yes/unknown

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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

underline: Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

underline: Yes/No

**Picture A7-130-2: 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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

**picture A7-130-2**

underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

**picture A7-130-2**

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 with PS file for colours in the columns A to T

Exchange of CIELAB data in file [www.ps.bam.de/De17/10L/L17e00NP.PS](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer

of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF

underline: Yes/No

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

Part 4

OE741–7N-130-1

OE74: Form A for test chart 1 according to DIN 33872-3; 1MR, DHinput: 000n/w/cmy0/rgb(->rgb\*d  
Equality and Discriminability (Yes/No decision) output 130-1: g<sub>P</sub>=1.0; g<sub>N</sub>=1.0

See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB

i	LAB*ref	l*out	LAB*out	LAB*out/c-ref	ΔE*
1	0.0	0.0	0.0	0.0	0.01
2	6.36	0.0	0.07	6.36	0.01
3	12.72	0.0	0.13	12.72	0.01
4	19.08	0.0	0.2	19.08	0.01
5	25.44	0.0	0.27	25.44	0.01
6	31.8	0.0	0.33	31.8	0.01
7	38.16	0.0	0.4	38.16	0.01
8	44.52	0.0	0.47	44.52	0.01
9	50.89	0.0	0.53	50.89	0.01
10	57.25	0.0	0.6	57.25	0.01
11	63.61	0.0	0.67	63.61	0.01
12	69.97	0.0	0.73	69.97	0.01
13	76.33	0.0	0.8	76.33	0.01
14	82.69	0.0	0.87	82.69	0.01
15	89.05	0.0	0.93	89.05	0.01
16	95.41	0.0	1.0	95.41	0.01
17	0.0	0.0	0.0	0.0	0.01
18	23.85	0.0	0.25	23.85	0.01
19	47.71	0.0	0.5	47.71	0.01
20	71.56	0.0	0.75	71.56	0.01
21	95.41	0.0	1.0	95.41	0.01

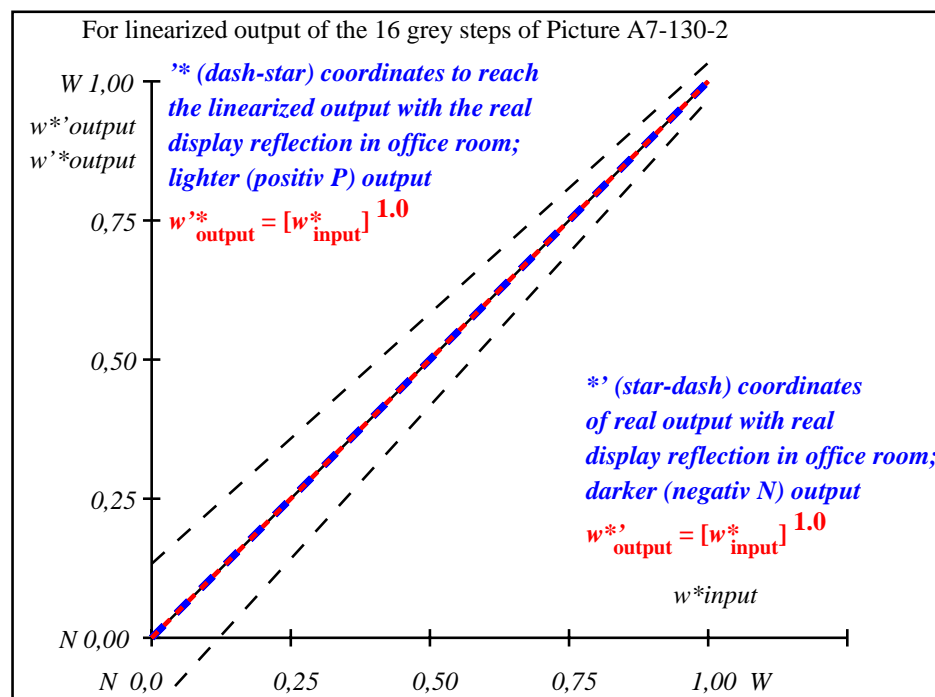
**Start output S1**  
**Specification according to**  
**ISO/IEC 15775 Annex G**  
**and DIN 33866-1 Annex G**

Mean lightness difference (16 steps)  
 $\Delta E^*_{\text{CIELAB}} = 0.0$

Mean lightness difference (5 steps)  
 $\Delta L^*_{\text{CIELAB}} = 0.0$

Mean colour reproduction index:  $R^*_{ab,m} = 100$

OE740-3N-130-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE741-3N-130-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

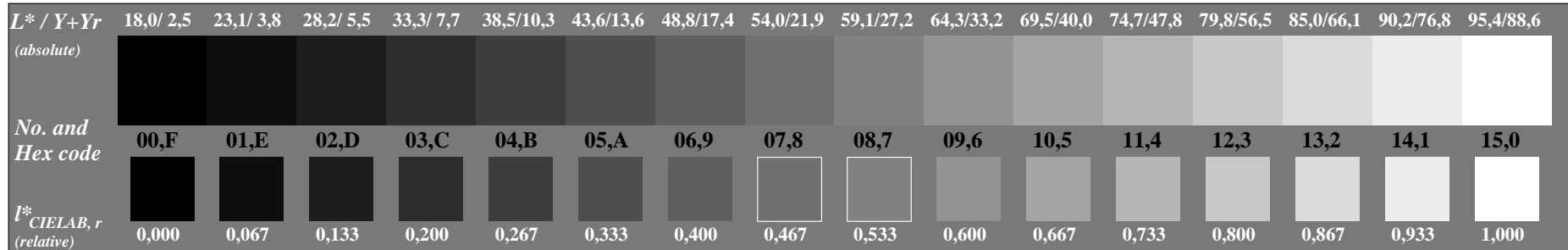
$L^*/Y_{\text{intended}}$ (absolute)	0.0/0.0	6.4/0.7	12.7/1.5	19.1/2.8	25.4/4.6	31.8/7.0	38.2/10.2	44.5/14.2	50.9/19.2	57.2/25.2	63.6/32.3	70.0/40.7	76.3/50.4	82.7/61.6	89.0/74.3	95.4/88.6
$w^* w^* w^*$ setrgb gp=1.0																
No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^* = l^*$ CIELAB, r (relative)																
$w^*_{\text{intended}}$	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	0.067	0.133	0.2	0.267	0.333	0.4	0.467	0.533	0.6	0.667	0.733	0.8	0.867	0.933	1.0

OE740-7N, Picture A7-130-2: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*$  setrgbcolor

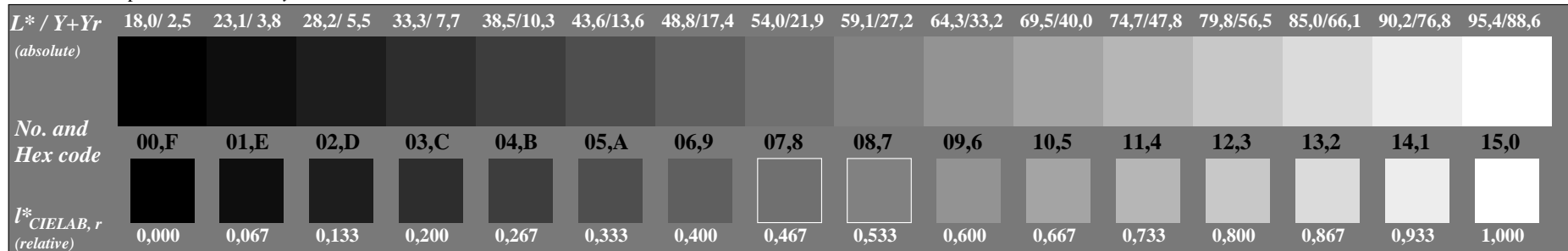
OE74: In-output relation according to ISO 9241-306; 1MR, DH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:0,31$ ;  $Y_N$  range 0,0 to <0,46

input: 000n/w/cmy0/rgb(->rgb\*d  
output 130-2: gp=1.0; gN=1.0

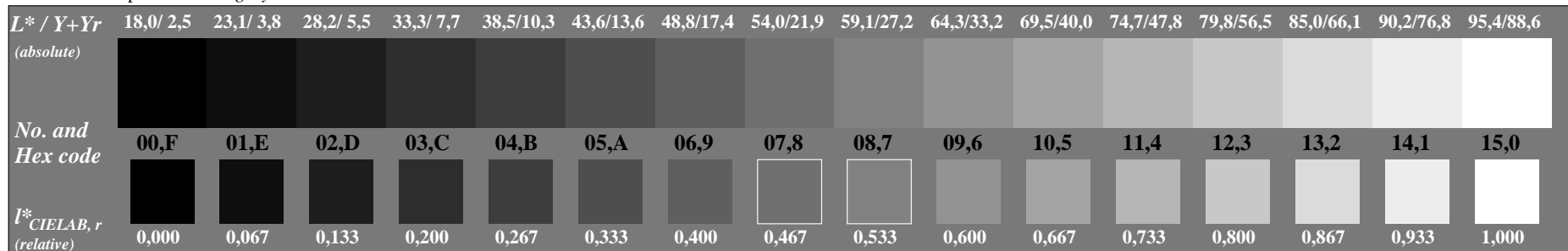
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



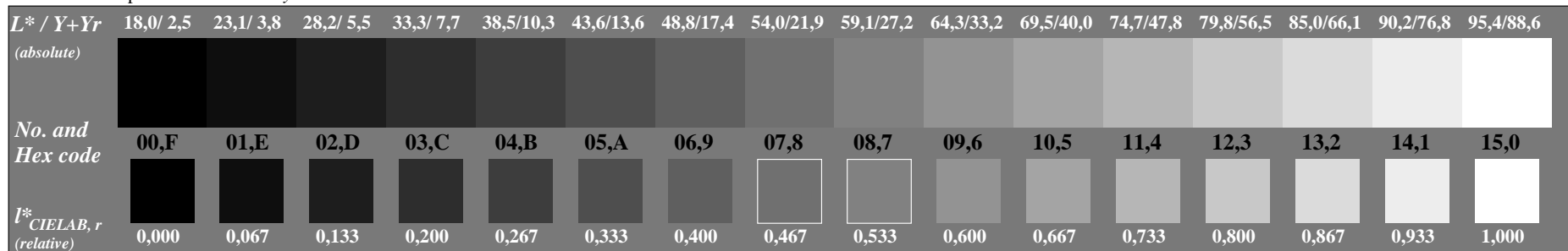
Use of the PS operator 000n\* setcmykcolor



Use of the PS operator w\* setgray



Use of the PS operator nnn0\* setcmykcolor



Use of the PS operator www\* setrgbcolor

OE740-7N-131-0: Use of four different equivalent PS operators

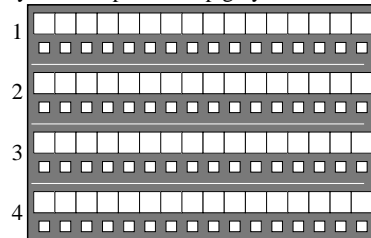
OE74: Test chart 1 according to DIN 33872-3; 1MR, DH  
Equality; Discriminability with 4 colour definitions,

input: 000n/w/cmy0/rgb(->rgb\*\_d  
output 130-0: g<sub>P</sub>=1.0; g<sub>N</sub>=1.08

TUB registration: 20110801-OE74/OE74L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta

### Equality of grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps White W

There are two basic colours on each page:  
Black N and White W in mean grey background.

There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.

In each column the four adjacent greys  
should be equal.

The four grey series are defined by four  
different PS-operators.

This test uses only the four upper adjacent grey series N-W.

For the upper grey series and in each column the four greys should be equal for **all** the 16 steps.

**Are in each column the four greys for all the 16 steps equal?** underline: Yes/No

**Only in case of "No":**

Is row no. 3 most different compared to all others ?

underline: Yes/No

Are the series no. 1, no. 2, and no. 4 equal?

underline: Yes/No

**Only in case of "No":**

Are the rows no. 2 and no. 4 equal ?

underline: Yes/No

Remarks, e. q. other equality: .....

.....

Part 1

OE740-3N-131-1

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NP.PDF> underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NA.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 OE74L0NP.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 OE74L0NA.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)

.....

.....

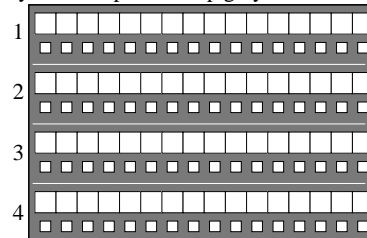
.....

Part 3

OE740-7N-131-1

### Discriminability of 16 step grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps, 15 differences White W

There are two basic colours on each page:  
Black N and White W in mean grey background.

There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.

The adjacent and separated are identical.  
Separated greys are less distinguishable.

Any grey colour is defined by four different  
PS-operators in four rows

**All the 16 steps of the eight series N-W should be distinguishable**

**Are all 15 grey differences of the eight rows distinguishable?** underline: Yes/No

Only in case of "No":

Test of adjacent grey samples (four upper rows):

Are the 15 grey differences of the four series distinguishable?

underline: Yes/No

Only in case of "No":

Are the 15 grey differences of series no. 1 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 2 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 3 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 4 distinguishable?

underline: Yes/No

Remarks: .....

Part 2

OE741-3-131-1

### 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

or with test charts using colour points according to Ishihara

or tested with, please specify: .....

underline: Yes/No

underline: Yes/unknown

underline: Yes/unknown

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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

underline: Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

underline: Yes/No

**Picture A7-131-2: 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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

**picture A7-131-2**

underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

**picture A7-131-2**

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 with PS file for colours in the columns A to T

Exchange of CIELAB data in file [www.ps.bam.de/De17/10L/L17e00NP.PS](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer

of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF

underline: Yes/No

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

Part 4

OE741-7N-131-1

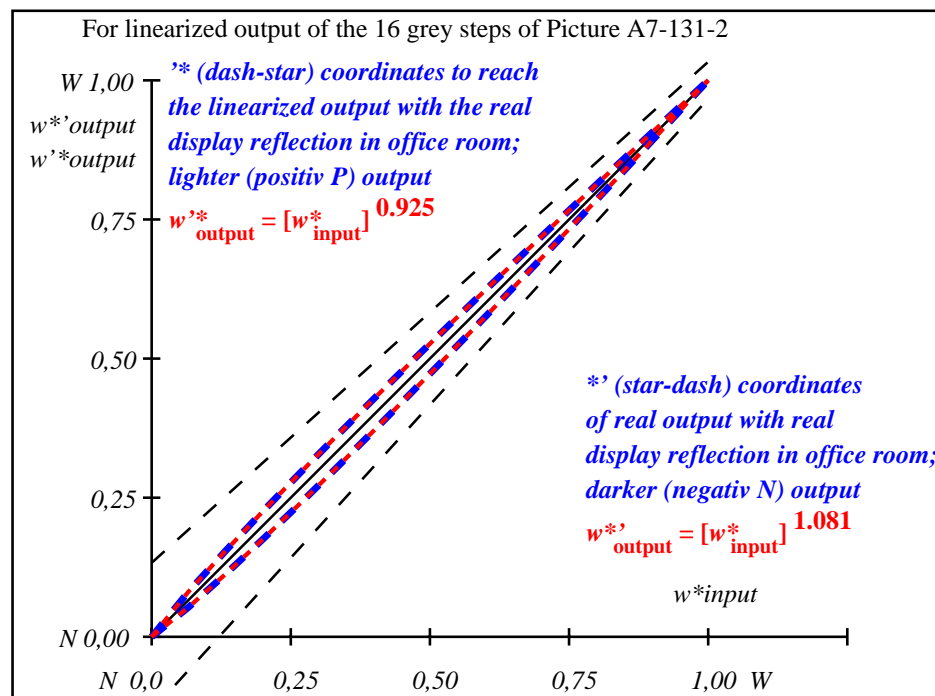
OE74: Form A for test chart 1 according to DIN 33872-3; 1MR, DHinput: 000n/w/cmy0/rgb(->rgb\*d  
Equality and Discriminability (Yes/No decision) output 130-1: g<sub>P</sub>=1.0; g<sub>N</sub>=1.08



See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB

i	LAB*ref	l*out	LAB*out	LAB*out/c-ref	ΔE*
1	5.69 0.0 0.0	0.0 0.0 0.0	5.69 0.0 0.0	0.0 0.0 0.0	0.01
2	11.67 0.0 0.0	0.05 10.49 0.0	0.0 0.0 -1.17	0.0 0.0 0.0	1.18
3	17.65 0.0 0.0	0.11 15.85 0.0	0.0 0.0 -1.79	0.0 0.0 0.0	1.8
4	23.63 0.0 0.0	0.18 21.44 0.0	0.0 0.0 -2.19	0.0 0.0 0.0	2.2
5	29.62 0.0 0.0	0.24 27.18 0.0	0.0 0.0 -2.42	0.0 0.0 0.0	2.43
6	35.6 0.0 0.0	0.3 33.05 0.0	0.0 0.0 -2.54	0.0 0.0 0.0	2.55
7	41.58 0.0 0.0	0.37 39.01 0.0	0.0 0.0 -2.56	0.0 0.0 0.0	2.57
8	47.56 0.0 0.0	0.44 45.05 0.0	0.0 0.0 -2.5	0.0 0.0 0.0	2.51
9	53.54 0.0 0.0	0.51 51.16 0.0	0.0 0.0 -2.37	0.0 0.0 0.0	2.38
10	59.52 0.0 0.0	0.58 57.34 0.0	0.0 0.0 -2.17	0.0 0.0 0.0	2.18
11	65.5 0.0 0.0	0.65 63.57 0.0	0.0 0.0 -1.92	0.0 0.0 0.0	1.93
12	71.48 0.0 0.0	0.72 69.85 0.0	0.0 0.0 -1.62	0.0 0.0 0.0	1.63
13	77.47 0.0 0.0	0.79 76.18 0.0	0.0 0.0 -1.28	0.0 0.0 0.0	1.29
14	83.45 0.0 0.0	0.86 82.55 0.0	0.0 0.0 -0.89	0.0 0.0 0.0	0.9
15	89.43 0.0 0.0	0.93 88.96 0.0	0.0 0.0 -0.46	0.0 0.0 0.0	0.47
16	95.41 0.0 0.0	1.0 95.41 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
17	5.69 0.0 0.0	0.0 0.0 0.0	5.69 0.0 0.0	0.0 0.0 0.0	0.01
18	28.12 0.0 0.0	0.22 25.74 0.0	0.0 0.0 -2.37	0.0 0.0 0.0	2.38
19	50.55 0.0 0.0	0.47 48.1 0.0	0.0 0.0 -2.44	0.0 0.0 0.0	2.45
20	72.98 0.0 0.0	0.73 71.43 0.0	0.0 0.0 -1.54	0.0 0.0 0.0	1.55
21	95.41 0.0 0.0	1.0 95.41 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
Mean lightness difference (16 steps)					ΔE* <sub>CIELAB</sub> = 1.6
Mean lightness difference (5 steps)					ΔL* <sub>CIELAB</sub> = 1.3
Mean colour reproduction index:					R* <sub>ab,m</sub> = 93

OE740-3N-131-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE741-3N-131-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

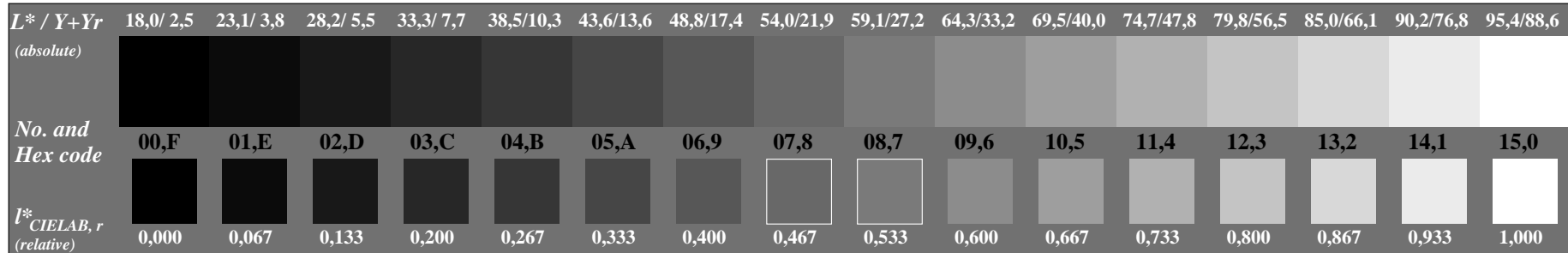
$L^*/Y_{\text{intended}}$ (absolute)	5.7/0.6	11.7/1.4	17.7/2.4	23.6/4.0	29.6/6.1	35.6/8.8	41.6/12.2	47.6/16.5	53.5/21.5	59.5/27.6	65.5/34.7	71.5/42.9	77.5/52.3	83.4/63.0	89.4/75.1	95.4/88.6
$w^* w^* w^*$ setrgb $g_N=1.08$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^*=l^*$ $C_{\text{IELAB}}, r$ (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	0.054	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

OE740-7N, Picture A7-131-2: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*$  setrgbcolor

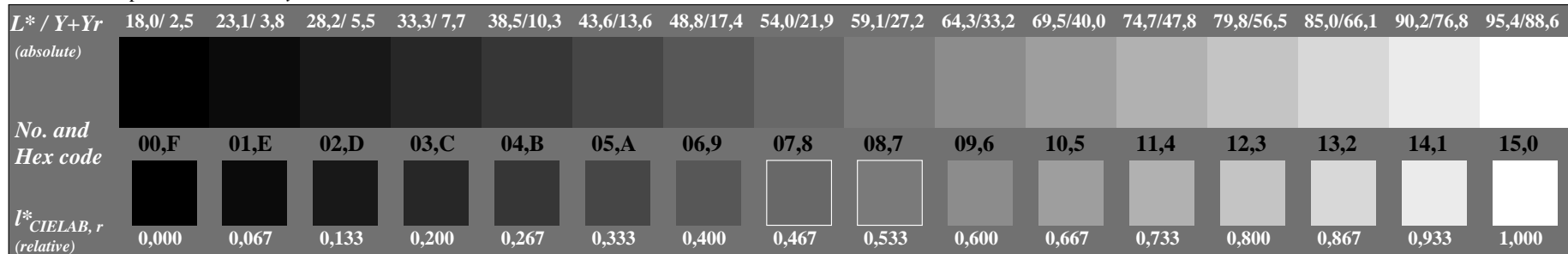
OE74: In-output relation according to ISO 9241-306; 1MR, DH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:0,62$ ;  $Y_N$  range 0,46 to <0,93

input: 000n/w/cmy0/rgb(->rgb\*d  
output 130-2:  $g_P=1.0$ ;  $g_N=1.08$

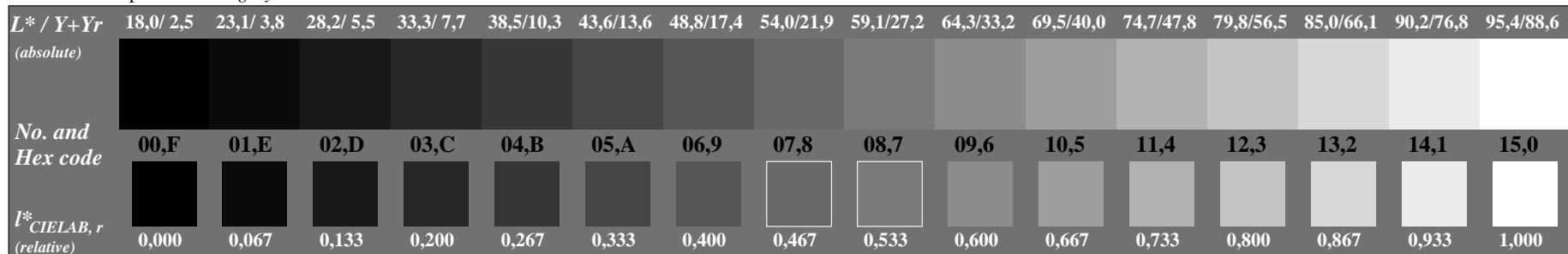
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



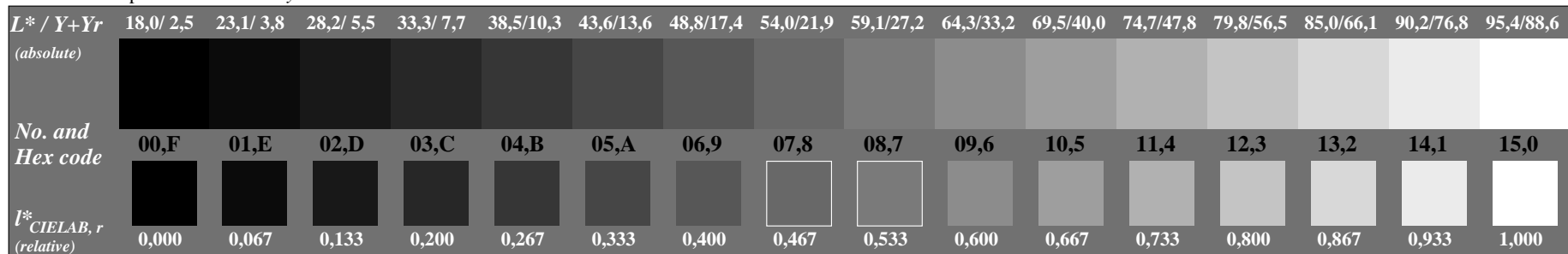
Use of the PS operator 000n\* setcmymcolor



Use of the PS operator w\* setgray



Use of the PS operator nnn0\* setcmymcolor



Use of the PS operator www\* setrgbcolor

OE740-7N-132-0: Use of four different equivalent PS operators

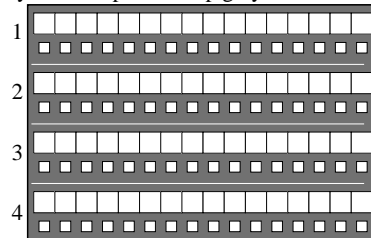
OE74: Test chart 1 according to DIN 33872-3; 1MR, DH  
Equality; Discriminability with 4 colour definitions,

input: 000n/w/cmy0/rgb(->rgb\*d  
output 130-0: g<sub>P</sub>=1.0; g<sub>N</sub>=1.17

TUB registration: 20110801-OE74/OE74L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta

### Equality of grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps White W

There are two basic colours on each page:  
Black N and White W in mean grey background.

There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.

In each column the four adjacent greys  
should be equal.

The four grey series are defined by four  
different PS-operators.

This test uses only the four upper adjacent grey series N–W.

For the upper grey series and in each column the four greys should be equal for **all** the 16 steps.

**Are in each column the four greys for all the 16 steps equal?** underline: Yes/No

**Only in case of "No":**

Is row no. 3 most different compared to all others ?

underline: Yes/No

Are the series no. 1, no. 2, and no. 4 equal?

underline: Yes/No

**Only in case of "No":**

Are the rows no. 2 and no. 4 equal ?

underline: Yes/No

Remarks, e. q. other equality: .....

.....

Part 1

OE740–3N-132-1

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NP.PDF> underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NA.PS> 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 OE74L0NP.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 OE74L0NA.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)

.....

.....

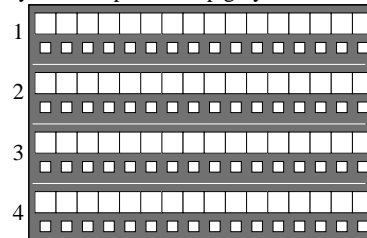
.....

Part 3

OE740–7N-132-1

### Discriminability of 16 step grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps, 15 differences White W

There are two basic colours on each page:  
Black N and White W in mean grey background.

There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.

The adjacent and separated are identical.  
Separated greys are less distinguishable.

Any grey colour is defined by four different  
PS-operators in four rows

**All the 16 steps of the eight series N–W should be distinguishable**

**Are all 15 grey differences of the eight rows distinguishable?** underline: Yes/No

Only in case of "No":

Test of adjacent grey samples (four upper rows):

Are the 15 grey differences of the four series distinguishable?

underline: Yes/No

Only in case of "No":

Are the 15 grey differences of series no. 1 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 2 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 3 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 4 distinguishable?

underline: Yes/No

Remarks: .....

Part 2

OE741–3-132-1

### 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

or with test charts using colour points according to Ishihara

or tested with, please specify: .....

underline: Yes/No

underline: Yes/unknown

underline: Yes/unknown

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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

underline: Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

underline: Yes/No

**Picture A7-132-2: 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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

**picture A7-132-2**

underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

**picture A7-132-2**

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 with PS file for colours in the columns A to T

Exchange of CIELAB data in file [www.ps.bam.de/De17/10L/L17e00NP.PS](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer

of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF

underline: Yes/No

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

Part 4

OE741–7N-132-1

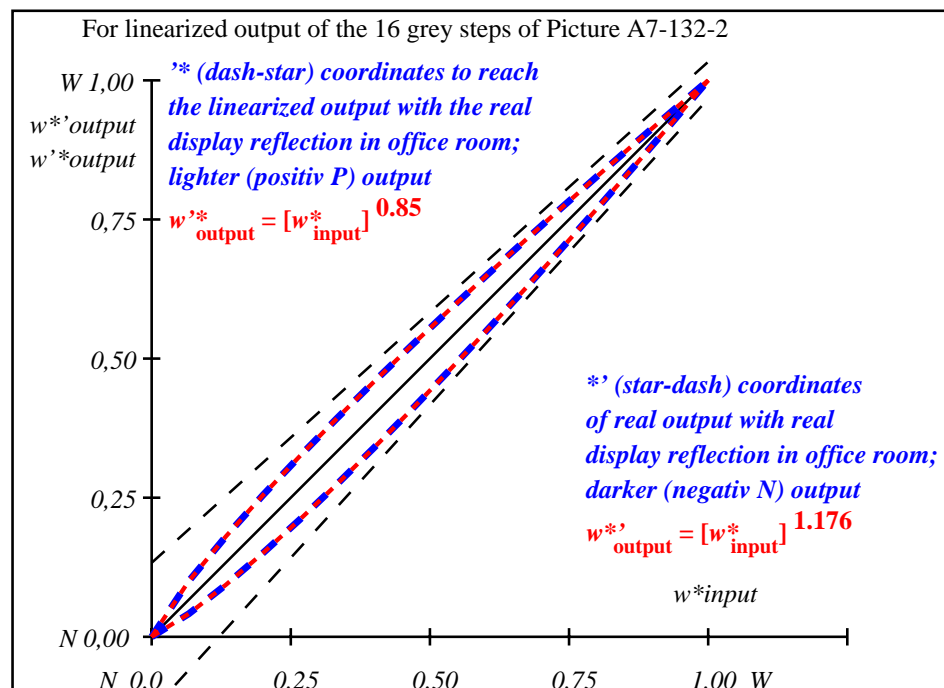
OE74: Form A for test chart 1 according to DIN 33872-3; 1MR, DHinput: 000n/w/cmy0/rgb(->rgb\*d  
Equality and Discriminability (Yes/No decision) output 130-1: g<sub>P</sub>=1.0; g<sub>N</sub>=1.17



See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB

i	LAB*ref			l*out			LAB*out			LAB*out/c-ref			ΔE*	Start output S1 Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G
1	10.99	0.0	0.0	0.0	10.99	0.0	0.0	0.0	0.0	0.0	0.0	0.01		
2	16.62	0.0	0.0	0.04	14.48	0.0	0.0	-2.13	0.0	0.0	2.14			
3	22.25	0.0	0.0	0.09	18.88	0.0	0.0	-3.36	0.0	0.0	3.37			
4	27.88	0.0	0.0	0.15	23.7	0.0	0.0	-4.16	0.0	0.0	4.17			
5	33.5	0.0	0.0	0.21	28.82	0.0	0.0	-4.67	0.0	0.0	4.68			
6	39.13	0.0	0.0	0.27	34.17	0.0	0.0	-4.95	0.0	0.0	4.96			
7	44.76	0.0	0.0	0.34	39.72	0.0	0.0	-5.03	0.0	0.0	5.04			
8	50.39	0.0	0.0	0.41	45.43	0.0	0.0	-4.95	0.0	0.0	4.96			
9	56.02	0.0	0.0	0.48	51.29	0.0	0.0	-4.72	0.0	0.0	4.73			
10	61.64	0.0	0.0	0.55	57.28	0.0	0.0	-4.36	0.0	0.0	4.37			
11	67.27	0.0	0.0	0.62	63.38	0.0	0.0	-3.88	0.0	0.0	3.89			
12	72.9	0.0	0.0	0.69	69.6	0.0	0.0	-3.29	0.0	0.0	3.3			
13	78.53	0.0	0.0	0.77	75.92	0.0	0.0	-2.6	0.0	0.0	2.61			
14	84.15	0.0	0.0	0.85	82.33	0.0	0.0	-1.81	0.0	0.0	1.82			
15	89.78	0.0	0.0	0.92	88.83	0.0	0.0	-0.94	0.0	0.0	0.95	Mean lightness difference (16 steps)		
16	95.41	0.0	0.0	1.0	95.41	0.0	0.0	0.0	0.0	0.0	0.01	ΔE*CIELAB = 3.2		
17	10.99	0.0	0.0	0.0	10.99	0.0	0.0	0.0	0.0	0.0	0.01			
18	32.1	0.0	0.0	0.2	27.52	0.0	0.0	-4.57	0.0	0.0	4.58			
19	53.2	0.0	0.0	0.44	48.34	0.0	0.0	-4.85	0.0	0.0	4.86			
20	74.31	0.0	0.0	0.71	71.17	0.0	0.0	-3.12	0.0	0.0	3.13	Mean lightness difference (5 steps)		
21	95.41	0.0	0.0	1.0	95.41	0.0	0.0	0.0	0.0	0.0	0.01	ΔL*CIELAB = 2.5		
Mean colour reproduction index:													R*ab,m = 86	

OE740-3N-132-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE741-3N-132-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

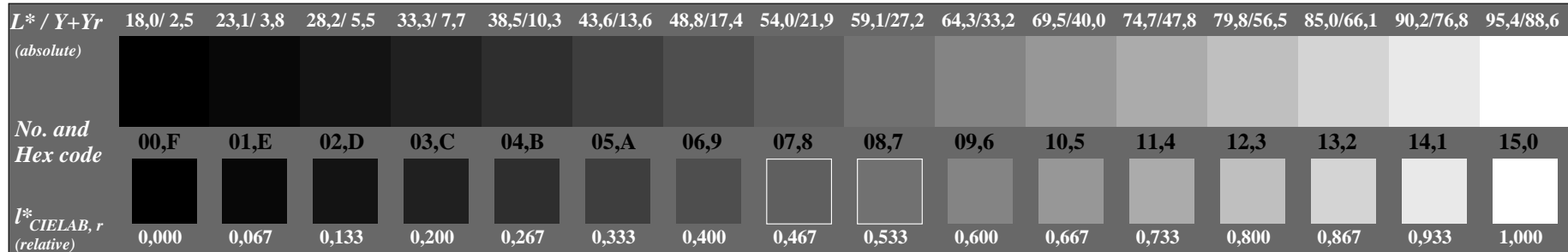
$L^*/Y_{\text{intended}}$ (absolute)	11.0/1.3	16.6/2.2	22.2/3.6	27.9/5.4	33.5/7.8	39.1/10.7	44.8/14.4	50.4/18.7	56.0/23.9	61.6/30.0	67.3/37.0	72.9/45.0	78.5/54.1	84.2/64.4	89.8/75.8	95.4/88.6
$w^* w^* w^*$ setrgb $g_N=1.18$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^*=l^*_{\text{CIELAB},r}$ (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	0.042	0.093	0.151	0.211	0.274	0.34	0.408	0.477	0.548	0.621	0.694	0.769	0.845	0.922	1.0

OE740-7N, Picture A7-132-2: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*_{\text{setrgbcolor}}$

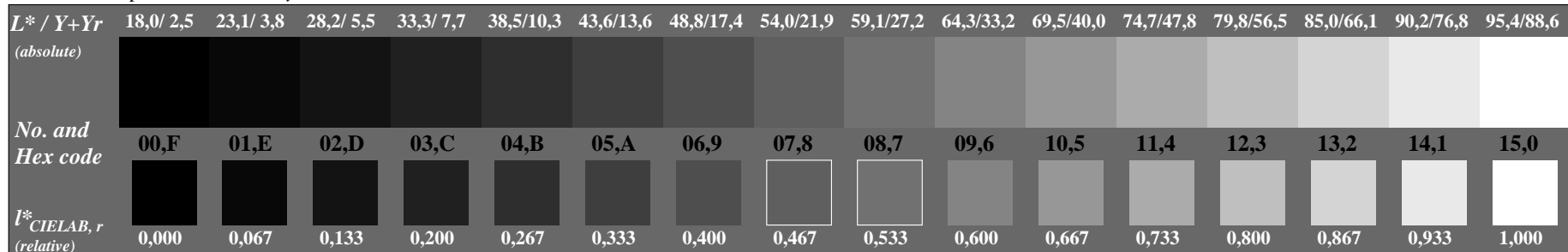
OE74: In-output relation according to ISO 9241-306; 1MR, DH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:1,25$ ;  $Y_N$  range 0,93 to <1,87

input:  $000n/w/cmy0/rgb(->rgb^*_d)$   
output 130-2:  $g_P=1.0$ ;  $g_N=1.17$

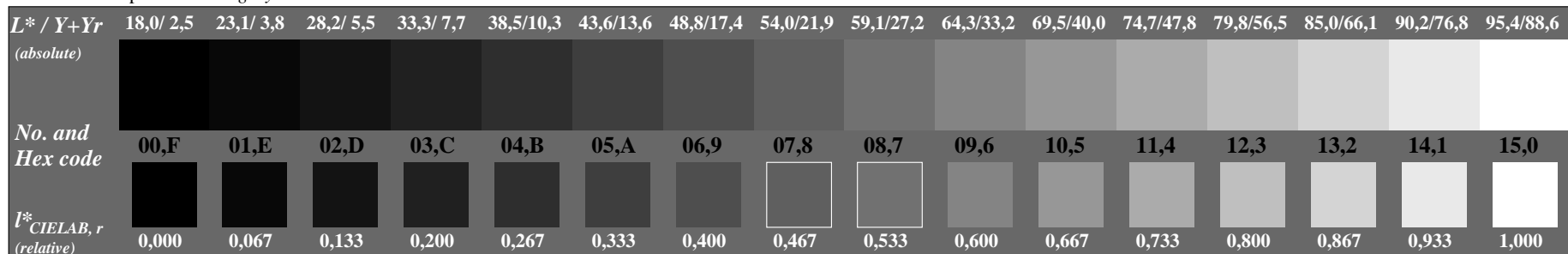
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



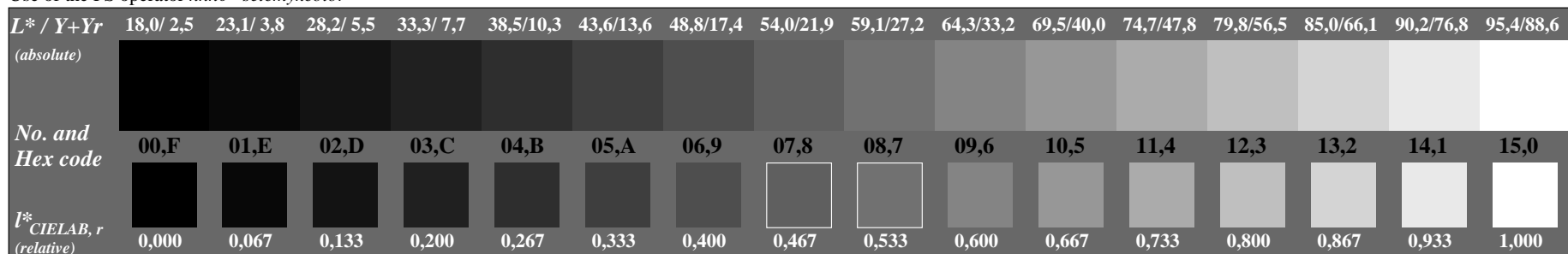
Use of the PS operator 000n\* setcmykcolor



Use of the PS operator w\* setgray



Use of the PS operator nnn0\* setcmykcolor



Use of the PS operator www\* setrgbcolor

OE740-7N-133-0: Use of four different equivalent PS operators

OE74: Test chart 1 according to DIN 33872-3; 1MR, DH  
Equality; Discriminability with 4 colour definitions,

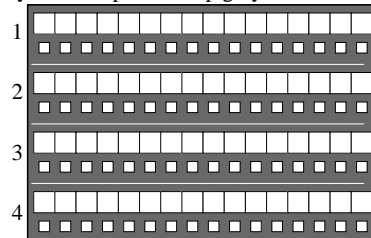
input: 000n/w/cmy0/rgb(->rgb\*d  
output 130-0: g<sub>P</sub>=1.0; g<sub>N</sub>=1.29

TUB registration: 20110801-OE74/OE74L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems

TUB material: code=th4ta

### Equality of grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps White W

There are two basic colours on each page:  
Black N and White W in mean grey background.  
There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.  
In each column the four adjacent greys  
should be equal.  
The four grey series are defined by four  
different PS-operators.

This test uses only the four upper adjacent grey series N–W.

For the upper grey series and in each column the four greys should be equal for **all** the 16 steps.

**Are in each column the four greys for all the 16 steps equal?** underline: Yes/No

**Only in case of "No":**

Is row no. 3 most different compared to all others ?

underline: Yes/No

Are the series no. 1, no. 2, and no. 4 equal?

underline: Yes/No

**Only in case of "No":**

Are the rows no. 2 and no. 4 equal ?

underline: Yes/No

Remarks, e. q. other equality: .....

.....

Part 1

OE740–3N-133-1

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NP.PDF> underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NA.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 OE74L0NP.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 OE74L0NA.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)

.....

.....

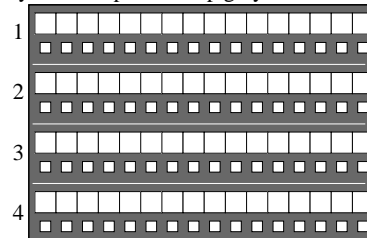
.....

Part 3

OE740–7N-133-1

### Discriminability of 16 step grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps, 15 differences White W

There are two basic colours on each page:  
Black N and White W in mean grey background.  
There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.  
The adjacent and separated are identical.  
Separated greys are less distinguishable.  
Any grey colour is defined by four different  
PS-operators in four rows

**All the 16 steps of the eight series N–W should be distinguishable**

**Are all 15 grey differences of the eight rows distinguishable?** underline: Yes/No

Only in case of "No":

Test of adjacent grey samples (four upper rows):

Are the 15 grey differences of the four series distinguishable?

underline: Yes/No

Only in case of "No":

Are the 15 grey differences of series no. 1 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 2 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 3 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 4 distinguishable?

underline: Yes/No

Remarks: .....

Part 2

OE741–3-133-1

### 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

or with test charts using colour points according to Ishihara

or tested with, please specify: .....

underline: Yes/No

underline: Yes/unknown

underline: Yes/unknown

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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

underline: Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

underline: Yes/No

**Picture A7-133-2: 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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

underline: Yes/No

**picture A7-133-2**

underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

underline: Yes/No

**picture A7-133-2**

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 with PS file for colours in the columns A to T

Exchange of CIELAB data in file [www.ps.bam.de/De17/10L/L17e00NP.PS](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer

of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF

underline: Yes/No

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

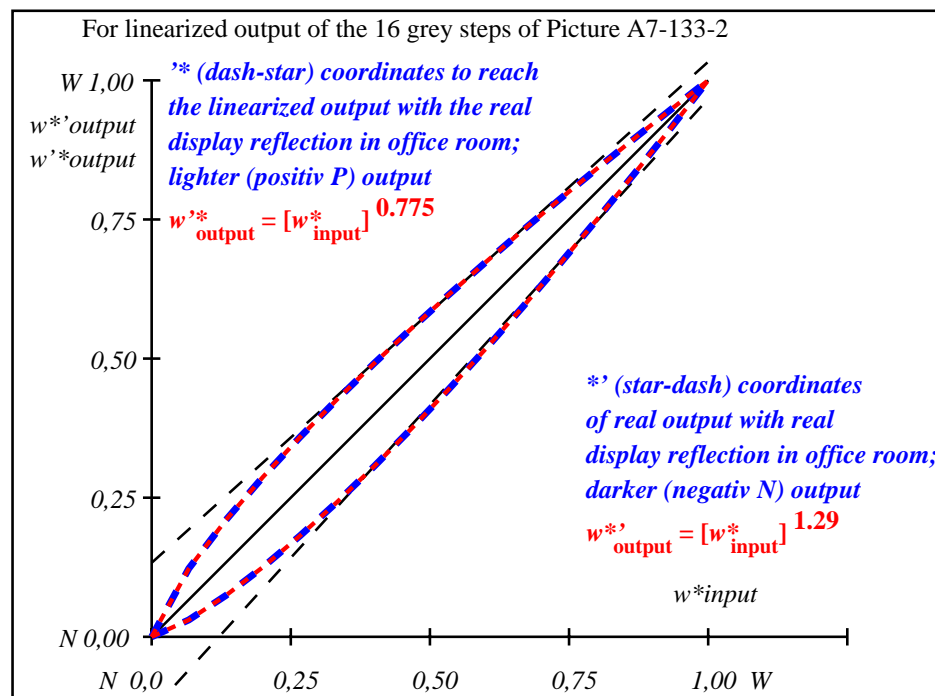
Part 4

OE741–7N-133-1

See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB

i	LAB*ref	l*out	LAB*out	LAB*out/c-ref	ΔE*
1	18.01 0.0 0.0	0.0 18.01 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
2	23.17 0.0 0.0	0.03 20.36 0.0	0.0 -2.8 0.0	0.0 0.0 0.0	2.81
3	28.33 0.0 0.0	0.07 23.76 0.0	0.0 -4.56 0.0	0.0 0.0 0.0	4.57
4	33.49 0.0 0.0	0.13 27.71 0.0	0.0 -5.77 0.0	0.0 0.0 0.0	5.78
5	38.65 0.0 0.0	0.18 32.07 0.0	0.0 -6.57 0.0	0.0 0.0 0.0	6.58
6	43.81 0.0 0.0	0.24 36.76 0.0	0.0 -7.04 0.0	0.0 0.0 0.0	7.05
7	48.97 0.0 0.0	0.31 41.74 0.0	0.0 -7.22 0.0	0.0 0.0 0.0	7.23
8	54.13 0.0 0.0	0.37 46.96 0.0	0.0 -7.16 0.0	0.0 0.0 0.0	7.17
9	59.29 0.0 0.0	0.44 52.4 0.0	0.0 -6.88 0.0	0.0 0.0 0.0	6.89
10	64.45 0.0 0.0	0.52 58.05 0.0	0.0 -6.39 0.0	0.0 0.0 0.0	6.4
11	69.61 0.0 0.0	0.59 63.88 0.0	0.0 -5.72 0.0	0.0 0.0 0.0	5.73
12	74.77 0.0 0.0	0.67 69.88 0.0	0.0 -4.88 0.0	0.0 0.0 0.0	4.89
13	79.93 0.0 0.0	0.75 76.05 0.0	0.0 -3.87 0.0	0.0 0.0 0.0	3.88
14	85.09 0.0 0.0	0.83 82.36 0.0	0.0 -2.72 0.0	0.0 0.0 0.0	2.73
15	90.25 0.0 0.0	0.91 88.82 0.0	0.0 -1.42 0.0	0.0 0.0 0.0	1.43
16	95.41 0.0 0.0	1.0 95.41 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
17	18.01 0.0 0.0	0.0 18.01 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
18	37.36 0.0 0.0	0.17 30.95 0.0	0.0 -6.4 0.0	0.0 0.0 0.0	6.41
19	56.71 0.0 0.0	0.41 49.66 0.0	0.0 -7.04 0.0	0.0 0.0 0.0	7.05
20	76.06 0.0 0.0	0.69 71.41 0.0	0.0 -4.64 0.0	0.0 0.0 0.0	4.65
21	95.41 0.0 0.0	1.0 95.41 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
Mean lightness difference (16 steps)					ΔE* <sub>CIELAB</sub> = 4.6
Mean lightness difference (5 steps)					ΔE* <sub>CIELAB</sub> = 3.6
Mean colour reproduction index:					R* <sub>ab,m</sub> = 80

OE740-3N-133-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE741-3N-133-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

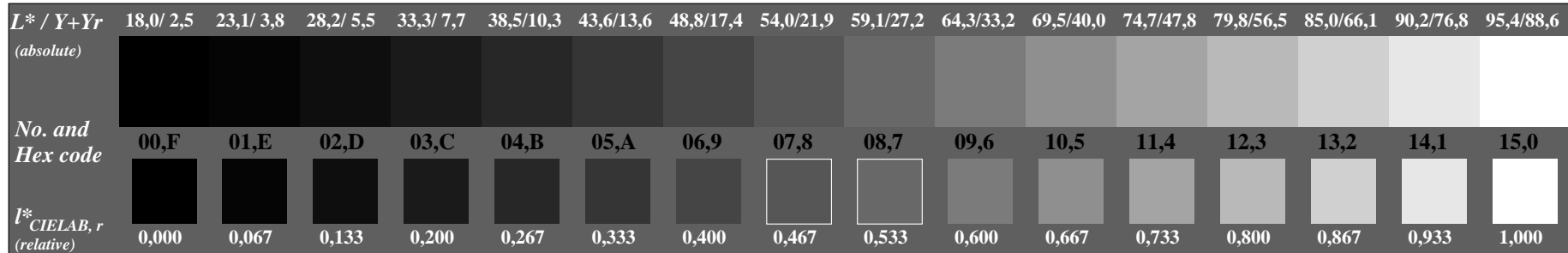
$L^*/Y_{\text{intended}}$ (absolute)	18.0/2.5	23.2/3.8	28.3/5.6	33.5/7.8	38.6/10.5	43.8/13.7	49.0/17.6	54.1/22.1	59.3/27.3	64.4/33.4	69.6/40.2	74.8/47.9	79.9/56.6	85.1/66.2	90.2/76.8	95.4/88.6
$w^* w^* w^*$ setrgb $g_N=1.29$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^*=l^*$ $\text{CIELAB}, r$ (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

OE740-7N, Picture A7-133-2: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^* \text{setrgbcolor}$

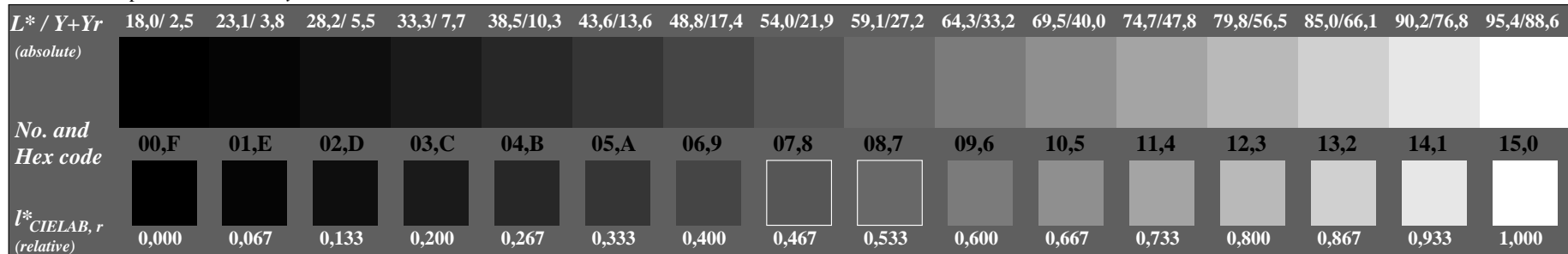
OE74: In-output relation according to ISO 9241-306; 1MR, DH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:2,5$ ;  $Y_N$  range 1,87 to <3,75

input: 000n/w/cmy0/rgb(->rgb\*\_d  
output 130-2:  $g_P=1.0$ ;  $g_N=1.29$

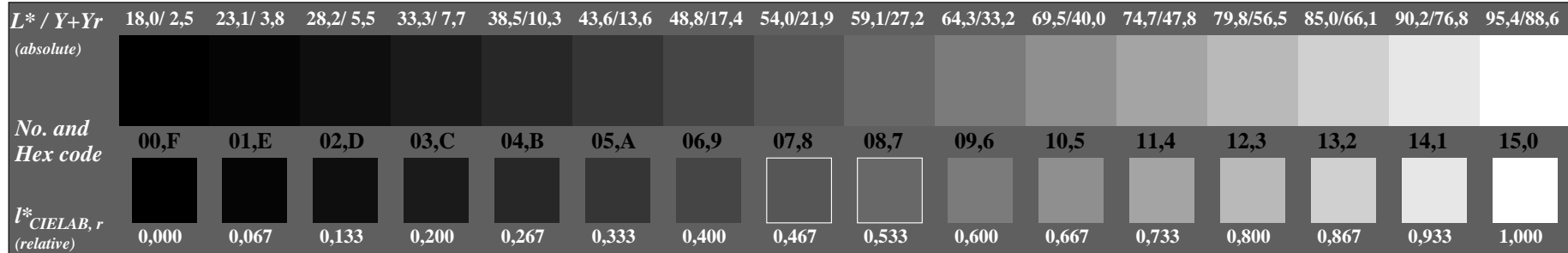
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



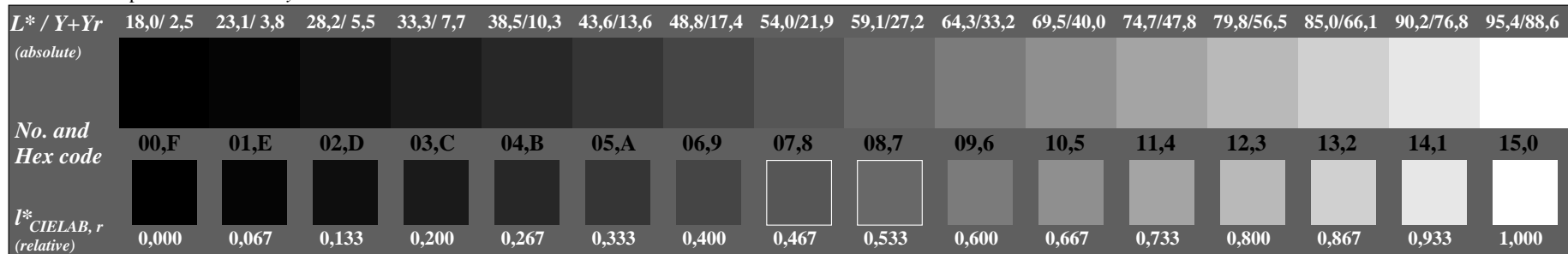
Use of the PS operator 000n\* setcmykcolor



Use of the PS operator w\* setgray



Use of the PS operator nnn0\* setcmykcolor



Use of the PS operator www\* setrgbcolor

OE740-7N-134-0: Use of four different equivalent PS operators

OE74: Test chart 1 according to DIN 33872-3; 1MR, DH  
Equality; Discriminability with 4 colour definitions,

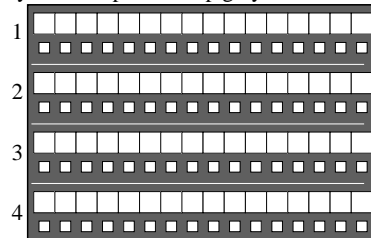
input: 000n/w/cmy0/rgb(->rgb\*\_d  
output 130-0: g<sub>P</sub>=1.0; g<sub>N</sub>=1.42

TUB registration: 20110801-OE74/OE74L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta



### Equality of grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps White W

There are two basic colours on each page:  
Black N and White W in mean grey background.  
There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.  
In each column the four adjacent greys  
should be equal.  
The four grey series are defined by four  
different PS-operators.

This test uses only the four upper adjacent grey series N–W.

For the upper grey series and in each column the four greys should be equal for **all** the 16 steps.

**Are in each column the four greys for all the 16 steps equal?** underline: Yes/No

**Only in case of "No":**

Is row no. 3 most different compared to all others ?

underline: Yes/No

Are the series no. 1, no. 2, and no. 4 equal?

underline: Yes/No

**Only in case of "No":**

Are the rows no. 2 and no. 4 equal ?

underline: Yes/No

Remarks, e. q. other equality: .....

.....

Part 1

OE740–3N-134-1

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NP.PDF> underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NA.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 OE74L0NP.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 OE74L0NA.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)

.....

.....

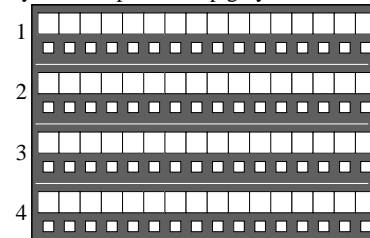
.....

Part 3

OE740–7N-134-1

### Discriminability of 16 step grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps, 15 differences White W

There are two basic colours on each page:  
Black N and White W in mean grey background.  
There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.  
The adjacent and separated are identical.  
Separated greys are less distinguishable.  
Any grey colour is defined by four different  
PS-operators in four rows

**All the 16 steps of the eight series N–W should be distinguishable**

**Are all 15 grey differences of the eight rows distinguishable?** underline: Yes/No

Only in case of "No":

Test of adjacent grey samples (four upper rows):

Are the 15 grey differences of the four series distinguishable?

underline: Yes/No

Only in case of "No":

Are the 15 grey differences of series no. 1 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 2 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 3 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 4 distinguishable?

underline: Yes/No

Remarks: .....

Part 2

OE741–3-134-1

### 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

or with test charts using colour points according to Ishihara

or tested with, please specify: .....

underline: Yes/No

underline: Yes/unknown

underline: Yes/unknown

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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

underline: Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

underline: Yes/No

**Picture A7-134-2: 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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

underline: Yes/No

**picture A7-134-2**

underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

or underline: Yes/No

**picture A7-134-2**

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 with PS file for colours in the columns A to T

Exchange of CIELAB data in file [www.ps.bam.de/De17/10L/L17e00NP.PS](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer

of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF

underline: Yes/No

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

Part 4

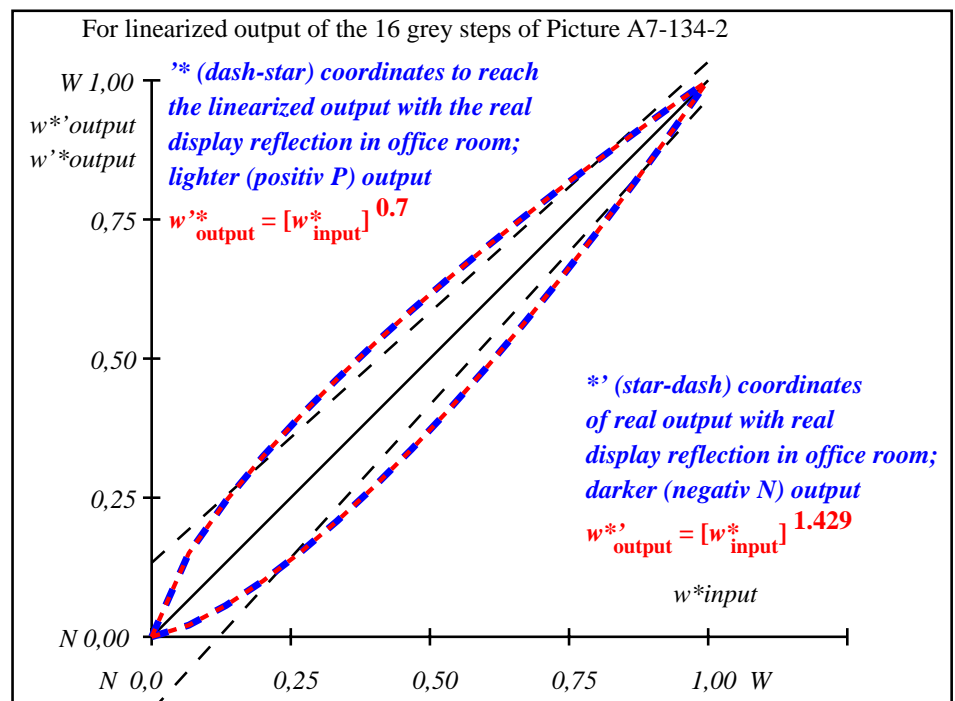
OE741–7N-134-1

OE74: Form A for test chart 1 according to DIN 33872-3; 1MR, DHinput: 000n/w/cmy0/rgb(->rgb\*d  
Equality and Discriminability (Yes/No decision) output 130-1: g<sub>P</sub>=1.0; g<sub>N</sub>=1.42

See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB

i	LAB*ref	l*out	LAB*out	LAB*out/c-ref	ΔE*
1	26.85 0.0 0.0	0.0 0.0 0.0	26.85 0.0 0.0	0.0 0.0 0.0	0.01
2	31.42 0.0 0.0	0.02 0.0 0.0	28.28 0.0 0.0	-3.13 0.0 0.0	3.14
3	35.99 0.0 0.0	0.06 0.0 0.0	30.7 0.0 0.0	-5.28 0.0 0.0	5.29
4	40.56 0.0 0.0	0.1 0.0 0.0	33.73 0.0 0.0	-6.82 0.0 0.0	6.83
5	45.13 0.0 0.0	0.15 0.0 0.0	37.22 0.0 0.0	-7.9 0.0 0.0	7.91
6	49.7 0.0 0.0	0.21 0.0 0.0	41.12 0.0 0.0	-8.57 0.0 0.0	8.58
7	54.27 0.0 0.0	0.27 0.0 0.0	45.37 0.0 0.0	-8.9 0.0 0.0	8.91
8	58.84 0.0 0.0	0.34 0.0 0.0	49.93 0.0 0.0	-8.91 0.0 0.0	8.92
9	63.41 0.0 0.0	0.41 0.0 0.0	54.78 0.0 0.0	-8.63 0.0 0.0	8.64
10	67.99 0.0 0.0	0.48 0.0 0.0	59.9 0.0 0.0	-8.08 0.0 0.0	8.09
11	72.56 0.0 0.0	0.56 0.0 0.0	65.27 0.0 0.0	-7.28 0.0 0.0	7.29
12	77.13 0.0 0.0	0.64 0.0 0.0	70.87 0.0 0.0	-6.25 0.0 0.0	6.26
13	81.7 0.0 0.0	0.73 0.0 0.0	76.7 0.0 0.0	-4.99 0.0 0.0	5.0
14	86.27 0.0 0.0	0.82 0.0 0.0	82.73 0.0 0.0	-3.52 0.0 0.0	3.53
15	90.84 0.0 0.0	0.91 0.0 0.0	88.97 0.0 0.0	-1.85 0.0 0.0	1.86
16	95.41 0.0 0.0	1.0 0.0 0.0	95.41 0.0 0.0	0.0 0.0 0.0	0.01
17	26.85 0.0 0.0	0.0 0.0 0.0	26.85 0.0 0.0	0.0 0.0 0.0	0.01
18	43.99 0.0 0.0	0.14 0.0 0.0	36.31 0.0 0.0	-7.67 0.0 0.0	7.68
19	61.13 0.0 0.0	0.37 0.0 0.0	52.32 0.0 0.0	-8.8 0.0 0.0	8.81
20	78.27 0.0 0.0	0.66 0.0 0.0	72.31 0.0 0.0	-5.95 0.0 0.0	5.96
21	95.41 0.0 0.0	1.0 0.0 0.0	95.41 0.0 0.0	0.0 0.0 0.0	0.01
Mean lightness difference (16 steps)					ΔE* <sub>CIELAB</sub> = 5.6
Mean lightness difference (5 steps)					ΔL* <sub>CIELAB</sub> = 4.5
Mean colour reproduction index:					R* <sub>ab,m</sub> = 75

OE740-3N-134-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE741-3N-134-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

$L^*/Y_{\text{intended}}$ (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
$w^* w^* w^*$ setrgb																
$g_N=1.43$ 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
$w^*=l^*$ CIELAB, r (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	0.337	0.407	0.482	0.561	0.642	0.727	0.816	0.906	1.0

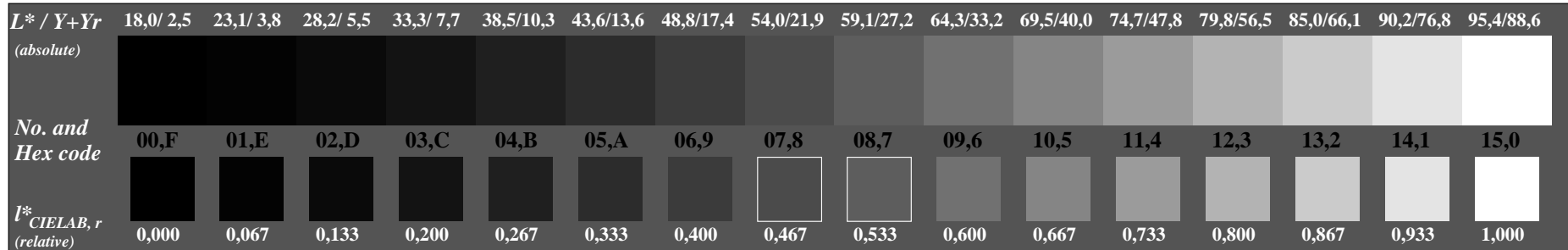
OE740-7N, Picture A7-134-2: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*$  setrgbcolor

OE74: In-output relation according to ISO 9241-306; 1MR, DH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:5$ ;  $Y_N$  range 3,75 to <7,5

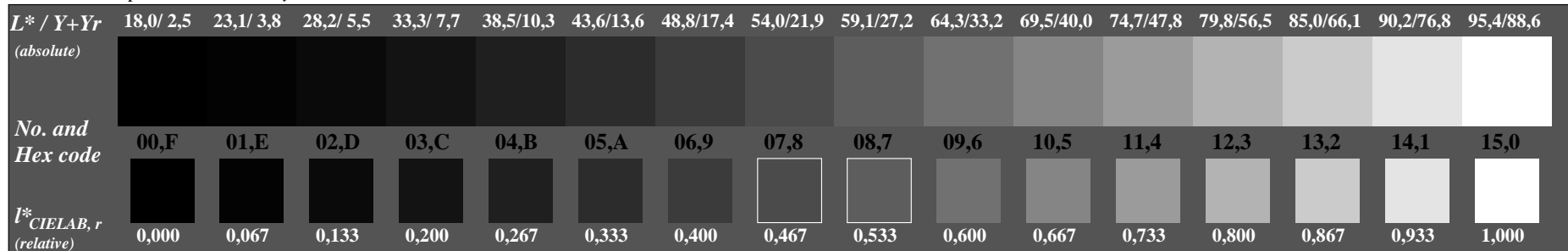
input: 000n/w/cmy0/rgb(->rgb\*d  
output 130-2:  $g_P=1.0$ ;  $g_N=1.42$

TUB registration: 20110801-OE74/OE74L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

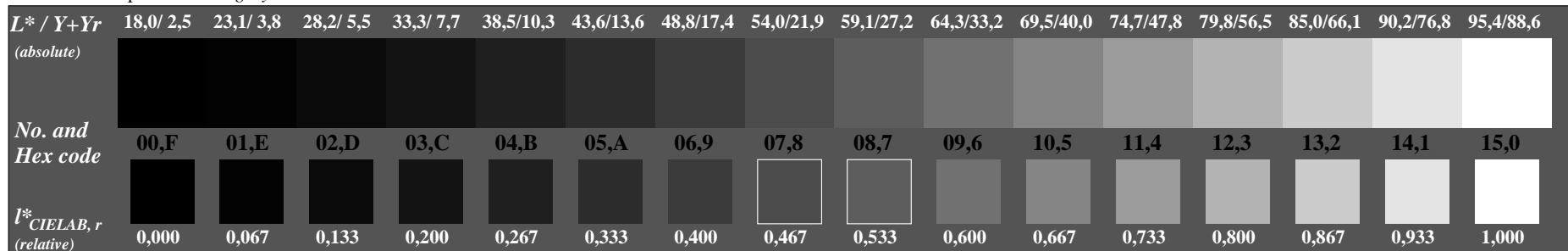
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



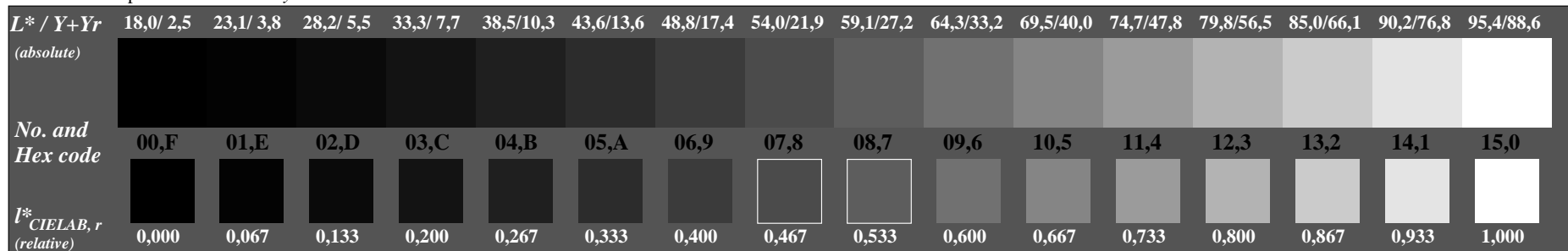
Use of the PS operator 000n\* setcmykcolor



Use of the PS operator w\* setgray



Use of the PS operator nnn0\* setcmykcolor



Use of the PS operator www\* setrgbcolor

OE740-7N-135-0: Use of four different equivalent PS operators

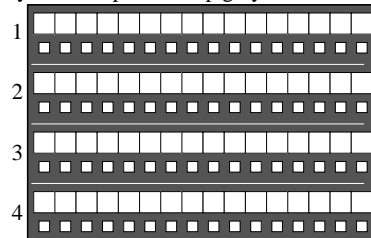
OE74: Test chart 1 according to DIN 33872-3; 1MR, DH  
Equality; Discriminability with 4 colour definitions,

input: 000n/w/cmy0/rgb(->rgb\*\_d)  
output 130-0: g<sub>P</sub>=1.0; g<sub>N</sub>=1.6

TUB registration: 20110801-OE74/OE74L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

### Equality of grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps White W

There are two basic colours on each page:  
Black N and White W in mean grey background.

There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.

In each column the four adjacent greys  
should be equal.

The four grey series are defined by four  
different PS-operators.

This test uses only the four upper adjacent grey series N–W.

For the upper grey series and in each column the four greys should be equal for **all** the 16 steps.

**Are in each column the four greys for all the 16 steps equal?** underline: Yes/No

**Only in case of "No":**

Is row no. 3 most different compared to all others ?

underline: Yes/No

Are the series no. 1, no. 2, and no. 4 equal?

underline: Yes/No

**Only in case of "No":**

Are the rows no. 2 and no. 4 equal ?

underline: Yes/No

Remarks, e. q. other equality: .....

.....

Part 1

OE740–3N-135-1

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NP.PDF> underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NA.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 OE74L0NP.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 OE74L0NA.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)

.....

.....

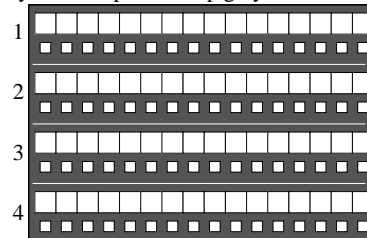
.....

Part 3

OE740–7N-135-1

### Discriminability of 16 step grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps, 15 differences White W

There are two basic colours on each page:  
Black N and White W in mean grey background.

There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.

The adjacent and separated are identical.  
Separated greys are less distinguishable.

Any grey colour is defined by four different  
PS-operators in four rows

**All the 16 steps of the eight series N–W should be distinguishable**

**Are all 15 grey differences of the eight rows distinguishable?** underline: Yes/No

Only in case of "No":

Test of adjacent grey samples (four upper rows):

Are the 15 grey differences of the four series distinguishable?

underline: Yes/No

Only in case of "No":

Are the 15 grey differences of series no. 1 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 2 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 3 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 4 distinguishable?

underline: Yes/No

Remarks: .....

Part 2

OE741–3-135-1

### 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

or with test charts using colour points according to Ishihara

or tested with, please specify: .....

underline: Yes/No

underline: Yes/unknown

underline: Yes/unknown

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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

underline: Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

underline: Yes/No

**Picture A7-135-2: 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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

**picture A7-135-2**

underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

**picture A7-135-2**

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 with PS file for colours in the columns A to T

Exchange of CIELAB data in file [www.ps.bam.de/De17/10L/L17e00NP.PS](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer

of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF

underline: Yes/No

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

Part 4

OE741–7N-135-1

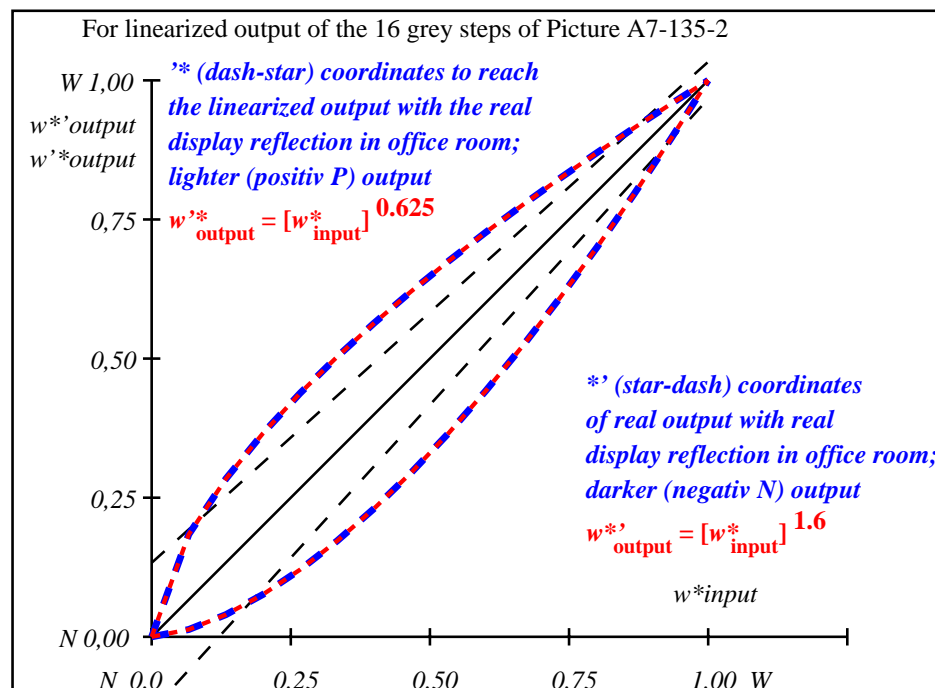
OE74: Form A for test chart 1 according to DIN 33872-3; 1MR, DHinput: 000n/w/cmy0/rgb(->rgb\*d  
Equality and Discriminability (Yes/No decision) output 130-1: g<sub>P</sub>=1.0; g<sub>N</sub>=1.6



See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB

i	LAB*ref	l*out	LAB*out	LAB*out/c-ref	ΔE*
1	37.99 0.0 0.0	0.0 37.99 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
2	41.81 0.0 0.0	0.01 38.74 0.0	0.0 -3.06 0.0	0.0 0.0 0.0	3.07
3	45.64 0.0 0.0	0.04 40.27 0.0	0.0 -5.36 0.0	0.0 0.0 0.0	5.37
4	49.47 0.0 0.0	0.08 42.36 0.0	0.0 -7.1 0.0	0.0 0.0 0.0	7.11
5	53.3 0.0 0.0	0.12 44.91 0.0	0.0 -8.37 0.0	0.0 0.0 0.0	8.38
6	57.13 0.0 0.0	0.17 47.89 0.0	0.0 -9.23 0.0	0.0 0.0 0.0	9.24
7	60.96 0.0 0.0	0.23 51.24 0.0	0.0 -9.7 0.0	0.0 0.0 0.0	9.71
8	64.78 0.0 0.0	0.3 54.95 0.0	0.0 -9.82 0.0	0.0 0.0 0.0	9.83
9	68.61 0.0 0.0	0.37 58.99 0.0	0.0 -9.61 0.0	0.0 0.0 0.0	9.62
10	72.44 0.0 0.0	0.44 63.34 0.0	0.0 -9.09 0.0	0.0 0.0 0.0	9.1
11	76.27 0.0 0.0	0.52 68.0 0.0	0.0 -8.26 0.0	0.0 0.0 0.0	8.27
12	80.1 0.0 0.0	0.61 72.95 0.0	0.0 -7.14 0.0	0.0 0.0 0.0	7.15
13	83.93 0.0 0.0	0.7 78.17 0.0	0.0 -5.75 0.0	0.0 0.0 0.0	5.76
14	87.75 0.0 0.0	0.8 83.66 0.0	0.0 -4.08 0.0	0.0 0.0 0.0	4.09
15	91.58 0.0 0.0	0.9 89.41 0.0	0.0 -2.16 0.0	0.0 0.0 0.0	2.17
16	95.41 0.0 0.0	1.0 95.41 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
Mean lightness difference (16 steps)					
17	37.99 0.0 0.0	0.0 37.99 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
18	52.34 0.0 0.0	0.11 44.23 0.0	0.0 -8.1 0.0	0.0 0.0 0.0	8.11
19	66.7 0.0 0.0	0.33 56.93 0.0	0.0 -9.76 0.0	0.0 0.0 0.0	9.77
20	81.05 0.0 0.0	0.63 74.23 0.0	0.0 -6.82 0.0	0.0 0.0 0.0	6.83
21	95.41 0.0 0.0	1.0 95.41 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
Mean lightness difference (5 steps)					
Mean colour reproduction index: $R^*_{ab,m} = 73$					

OE740-3N-135-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE741-3N-135-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

$L^*/Y_{intended}$ (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
$w^* w^* w^*$ setrgb $g_N=1.6$																
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
$w^*_{out}$	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

OE740-7N, Picture A7-135-2: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*_{setrgbcolor}$

OE74: In-output relation according to ISO 9241-306; 1MR, DH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:10$ ;  $Y_N$  range 7,5 to <15

input: 000n/w/cmy0/rgb(->rgb\*d  
output 130-2:  $g_P=1.0$ ;  $g_N=1.6$

TUB registration: 20110801-OE74/OE74L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta



See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB

$L^* / Y+Yr$	18,0/ 2,5	23,1/ 3,8	28,2/ 5,5	33,3/ 7,7	38,5/10,3	43,6/13,6	48,8/17,4	54,0/21,9	59,1/27,2	64,3/33,2	69,5/40,0	74,7/47,8	79,8/56,5	85,0/66,1	90,2/76,8	95,4/88,6
(absolute)																
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
$I^*_{CIELAB, r}$ (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

Use of the PS operator  $000n^*$  setcmkcolor

$L^* / Y+Yr$	18,0/ 2,5	23,1/ 3,8	28,2/ 5,5	33,3/ 7,7	38,5/10,3	43,6/13,6	48,8/17,4	54,0/21,9	59,1/27,2	64,3/33,2	69,5/40,0	74,7/47,8	79,8/56,5	85,0/66,1	90,2/76,8	95,4/88,6
(absolute)																
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
$I^*_{CIELAB, r}$ (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

Use of the PS operator  $w^*$  setgray

$L^* / Y+Yr$	18,0/ 2,5	23,1/ 3,8	28,2/ 5,5	33,3/ 7,7	38,5/10,3	43,6/13,6	48,8/17,4	54,0/21,9	59,1/27,2	64,3/33,2	69,5/40,0	74,7/47,8	79,8/56,5	85,0/66,1	90,2/76,8	95,4/88,6
(absolute)																
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
$I^*_{CIELAB, r}$ (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

Use of the PS operator  $nmm0^*$  setcmkcolor

$L^* / Y+Yr$	18,0/ 2,5	23,1/ 3,8	28,2/ 5,5	33,3/ 7,7	38,5/10,3	43,6/13,6	48,8/17,4	54,0/21,9	59,1/27,2	64,3/33,2	69,5/40,0	74,7/47,8	79,8/56,5	85,0/66,1	90,2/76,8	95,4/88,6
(absolute)																
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
$I^*_{CIELAB, r}$ (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

Use of the PS operator  $www^*$  setrgbcolor

OE740-7N-136-0: Use of four different equivalent PS operators

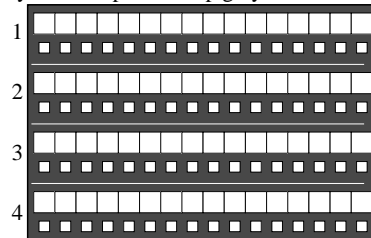
OE74: Test chart 1 according to DIN 33872-3; 1MR, DH  
Equality; Discriminability with 4 colour definitions,

input:  $000n/w/cmy0/rgb(->rgb^*_d)$   
output 130-0:  $g_P=1.0$ ;  $g_N=1.81$

TUB registration: 20110801-OE74/OE74L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

### Equality of grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps White W

There are two basic colours on each page:  
Black N and White W in mean grey background.

There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.

In each column the four adjacent greys  
should be equal.

The four grey series are defined by four  
different PS-operators.

This test uses only the four upper adjacent grey series N–W.

For the upper grey series and in each column the four greys should be equal for **all** the 16 steps.

**Are in each column the four greys for all the 16 steps equal?** underline: Yes/No

**Only in case of "No":**

Is row no. 3 most different compared to all others ?

underline: Yes/No

Are the series no. 1, no. 2, and no. 4 equal?

underline: Yes/No

**Only in case of "No":**

Are the rows no. 2 and no. 4 equal ?

underline: Yes/No

Remarks, e. q. other equality: .....

.....

Part 1

OE740–3N-136-1

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NP.PDF> underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NA.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 OE74L0NP.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 OE74L0NA.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)

.....

.....

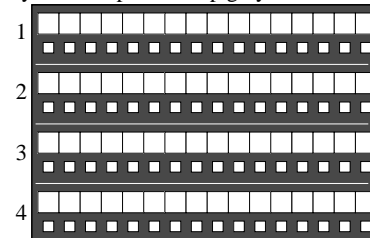
.....

Part 3

OE740–7N-136-1

### Discriminability of 16 step grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps, 15 differences White W

There are two basic colours on each page:  
Black N and White W in mean grey background.

There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.

The adjacent and separated are identical.  
Separated greys are less distinguishable.

Any grey colour is defined by four different  
PS-operators in four rows

**All the 16 steps of the eight series N–W should be distinguishable**

**Are all 15 grey differences of the eight rows distinguishable?** underline: Yes/No

Only in case of "No":

Test of adjacent grey samples (four upper rows):

Are the 15 grey differences of the four series distinguishable?

underline: Yes/No

Only in case of "No":

Are the 15 grey differences of series no. 1 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 2 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 3 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 4 distinguishable?

underline: Yes/No

Remarks: .....

Part 2

OE741–3-136-1

### 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

or with test charts using colour points according to Ishihara

or tested with, please specify: .....

underline: Yes/No

underline: Yes/unknown

underline: Yes/unknown

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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

underline: Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

underline: Yes/No

**Picture A7-136-2: 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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

**picture A7-136-2**

underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

**picture A7-136-2**

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 with PS file for colours in the columns A to T

Exchange of CIELAB data in file [www.ps.bam.de/De17/10L/L17e00NP.PS](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer

of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF

underline: Yes/No

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

Part 4

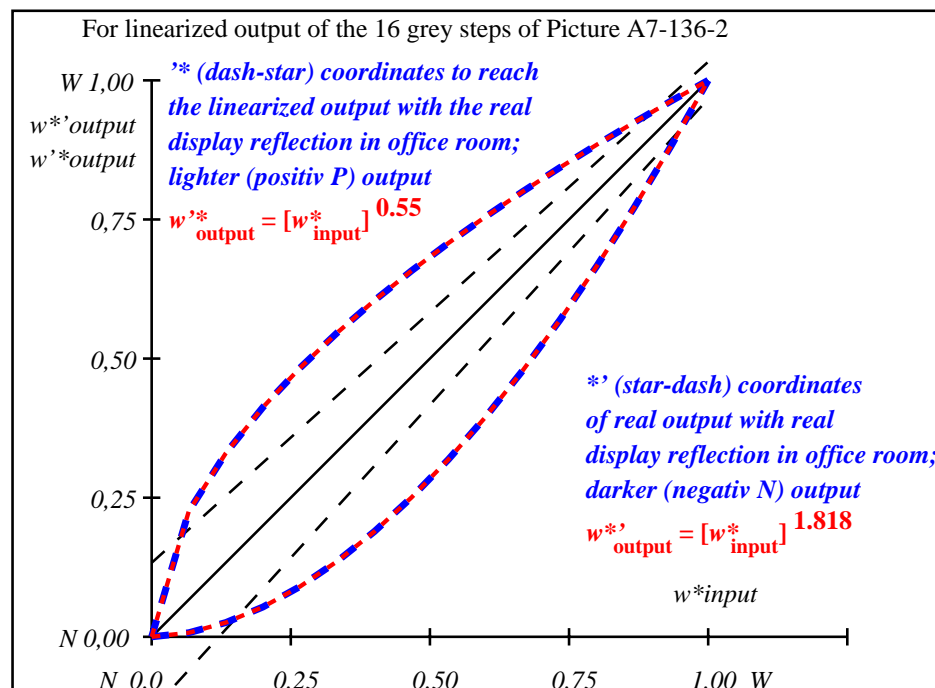
OE741–7N-136-1

OE74: Form A for test chart 1 according to DIN 33872-3; 1MR, DHinput: 000n/w/cmy0/rgb(->rgb\*d  
Equality and Discriminability (Yes/No decision) output 130-1: g<sub>P</sub>=1.0; g<sub>N</sub>=1.81

See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB

i	LAB*ref	l*out	LAB*out	LAB*out/c-ref	ΔE*
1	52.02 0.0 0.0	0.0 52.02 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
2	54.91 0.0 0.0	0.01 52.33 0.0	0.0 0.0 -2.57	0.0 0.0 0.0	2.58
3	57.8 0.0 0.0	0.03 53.13 0.0	0.0 0.0 -4.66	0.0 0.0 0.0	4.67
4	60.7 0.0 0.0	0.05 54.34 0.0	0.0 0.0 -6.34	0.0 0.0 0.0	6.35
5	63.59 0.0 0.0	0.09 55.94 0.0	0.0 0.0 -7.64	0.0 0.0 0.0	7.65
6	66.48 0.0 0.0	0.14 57.9 0.0	0.0 0.0 -8.57	0.0 0.0 0.0	8.58
7	69.37 0.0 0.0	0.19 60.22 0.0	0.0 0.0 -9.15	0.0 0.0 0.0	9.16
8	72.27 0.0 0.0	0.25 62.87 0.0	0.0 0.0 -9.39	0.0 0.0 0.0	9.4
9	75.16 0.0 0.0	0.32 65.85 0.0	0.0 0.0 -9.3	0.0 0.0 0.0	9.31
10	78.05 0.0 0.0	0.4 69.16 0.0	0.0 0.0 -8.88	0.0 0.0 0.0	8.89
11	80.95 0.0 0.0	0.48 72.78 0.0	0.0 0.0 -8.16	0.0 0.0 0.0	8.17
12	83.84 0.0 0.0	0.57 76.71 0.0	0.0 0.0 -7.12	0.0 0.0 0.0	7.13
13	86.73 0.0 0.0	0.67 80.94 0.0	0.0 0.0 -5.78	0.0 0.0 0.0	5.79
14	89.62 0.0 0.0	0.77 85.47 0.0	0.0 0.0 -4.15	0.0 0.0 0.0	4.16
15	92.52 0.0 0.0	0.88 90.29 0.0	0.0 0.0 -2.21	0.0 0.0 0.0	2.22
16	95.41 0.0 0.0	1.0 95.41 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
17	52.02 0.0 0.0	0.0 52.02 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
18	62.87 0.0 0.0	0.08 55.51 0.0	0.0 0.0 -7.35	0.0 0.0 0.0	7.36
19	73.71 0.0 0.0	0.28 64.32 0.0	0.0 0.0 -9.38	0.0 0.0 0.0	9.39
20	84.56 0.0 0.0	0.59 77.74 0.0	0.0 0.0 -6.82	0.0 0.0 0.0	6.83
21	95.41 0.0 0.0	1.0 95.41 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
Mean lightness difference (16 steps)					ΔE* <sub>CIELAB</sub> = 5.9
Mean lightness difference (5 steps)					ΔL* <sub>CIELAB</sub> = 4.7
Mean colour reproduction index:					R* <sub>ab,m</sub> = 74

OE740-3N-136-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE741-3N-136-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

$L^*/Y_{\text{intended}}$ (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
$w^* w^* w^*$ setrgb																
$g_N=1.82$ 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
$w^*=l^*$ <sub>CIELAB, r</sub> (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

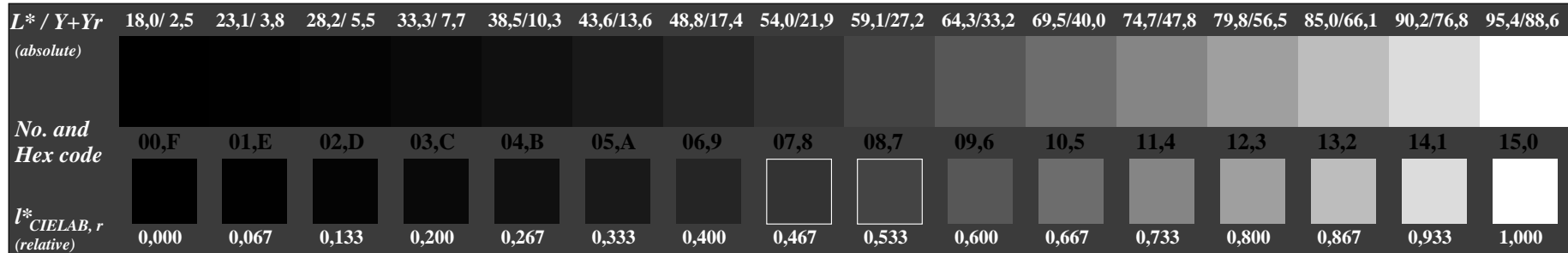
OE740-7N, Picture A7-136-2: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^* \text{setrgbcolor}$

OE74: In-output relation according to ISO 9241-306; 1MR, DH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:20$ ;  $Y_N$  range 15 to <30

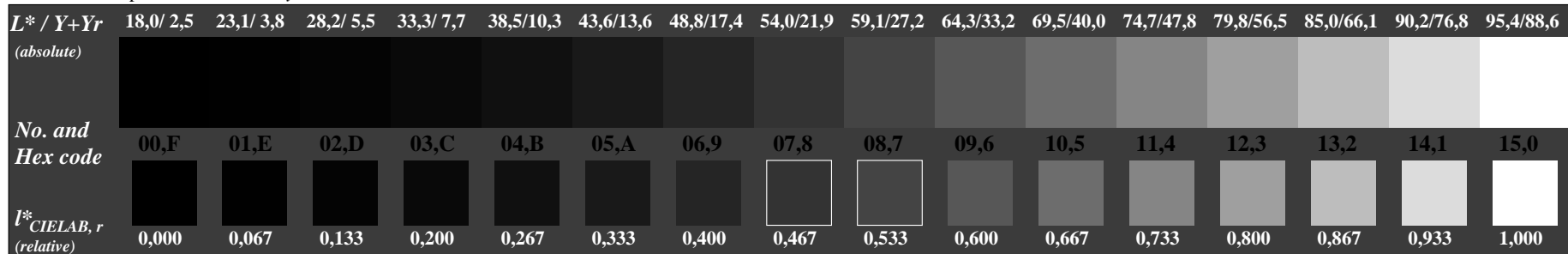
input: 000n/w/cmy0/rgb(->rgb\*d) output 130-2:  $g_P=1.0$ ;  $g_N=1.81$

TUB registration: 20110801-OE74/OE74L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

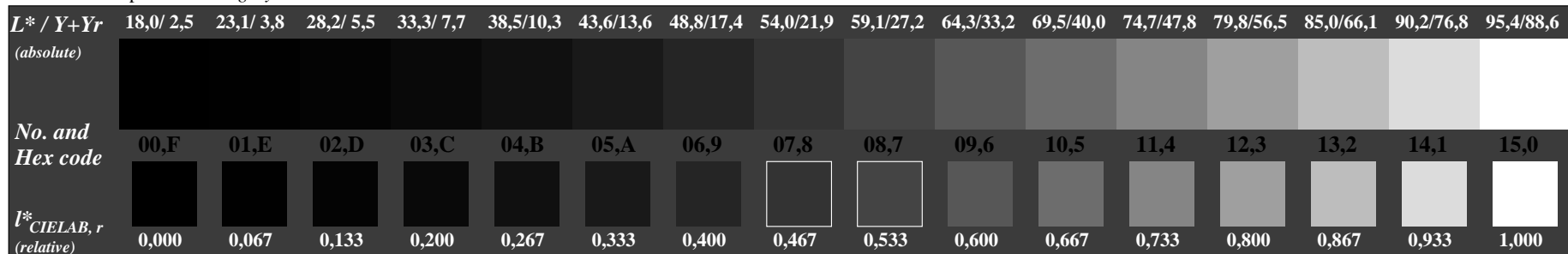
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



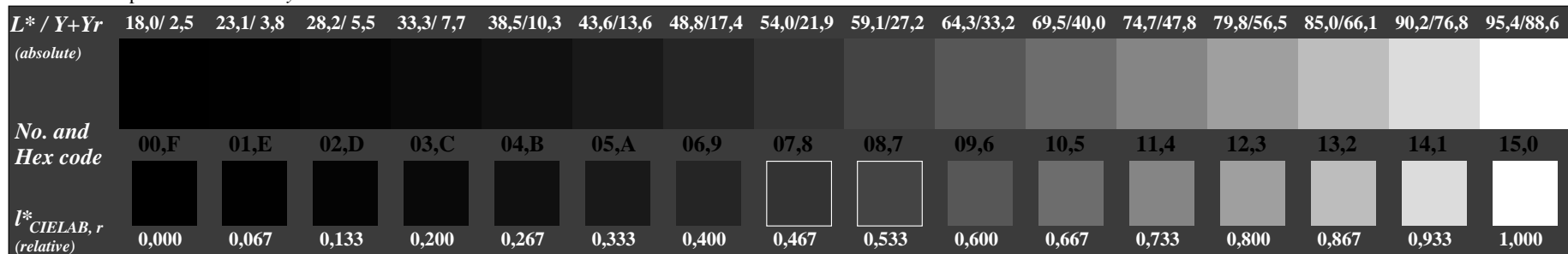
Use of the PS operator 000n\* setcmykcolor



Use of the PS operator w\* setgray



Use of the PS operator nnn0\* setcmykcolor



Use of the PS operator www\* setrgbcolor

OE740-7N-137-0: Use of four different equivalent PS operators

OE74: Test chart 1 according to DIN 33872-3; 1MR, DH  
Equality; Discriminability with 4 colour definitions,

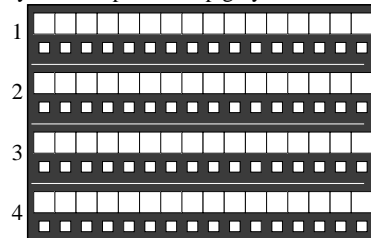
input: 000n/w/cmy0/rgb(->rgb\*\_d)  
output 130-0: g<sub>P</sub>=1.0; g<sub>N</sub>=2.1

TUB registration: 20110801-OE74/OE74L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems

TUB material: code=rh4ta

### Equality of grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps White W

There are two basic colours on each page:  
Black N and White W in mean grey background.

There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.

In each column the four adjacent greys  
should be equal.

The four grey series are defined by four  
different PS-operators.

This test uses only the four upper adjacent grey series N–W.

For the upper grey series and in each column the four greys should be equal for **all** the 16 steps.

**Are in each column the four greys for all the 16 steps equal?** underline: Yes/No

**Only in case of "No":**

Is row no. 3 most different compared to all others ?

underline: Yes/No

Are the series no. 1, no. 2, and no. 4 equal?

underline: Yes/No

**Only in case of "No":**

Are the rows no. 2 and no. 4 equal ?

underline: Yes/No

Remarks, e. q. other equality: .....

.....

Part 1

OE740–3N-137-1

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NP.PDF> underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74L0NA.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 OE74L0NP.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 OE74L0NA.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)

.....

.....

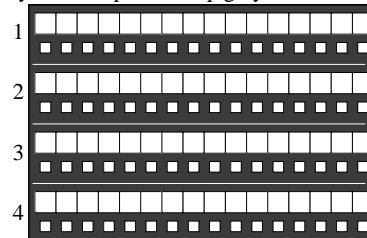
.....

Part 3

OE740–7N-137-1

### Discriminability of 16 step grey series by four grey definitions (Yes/No decision)

Layout example: 16 step grey series with four grey definitions



Black N 16 steps, 15 differences White W

There are two basic colours on each page:  
Black N and White W in mean grey background.

There are adjacent (upper row)  
and separate grey samples (lower row).  
This gives eight grey series.

The adjacent and separated are identical.  
Separated greys are less distinguishable.

Any grey colour is defined by four different  
PS-operators in four rows

**All the 16 steps of the eight series N–W should be distinguishable**

**Are all 15 grey differences of the eight rows distinguishable?** underline: Yes/No

Only in case of "No":

Test of adjacent grey samples (four upper rows):

Are the 15 grey differences of the four series distinguishable?

underline: Yes/No

Only in case of "No":

Are the 15 grey differences of series no. 1 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 2 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 3 distinguishable?

underline: Yes/No

Are the 15 grey differences of series no. 4 distinguishable?

underline: Yes/No

Remarks: .....

Part 2

OE741–3-137-1

### 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

or with test charts using colour points according to Ishihara

or tested with, please specify: .....

underline: Yes/No

underline: Yes/unknown

underline: Yes/unknown

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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

underline: Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

underline: Yes/No

**Picture A7-137-2: 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://130.149.60.45/farbmetrik/OE74/OE74F1P2.PDF>

**picture A7-137-2**

underline: Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE74/OE74F1P2.PS>

**picture A7-137-2**

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 with PS file for colours in the columns A to T

Exchange of CIELAB data in file [www.ps.bam.de/De17/10L/L17e00NP.PS](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer

of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF

underline: Yes/No

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

Part 4

OE741–7N-137-1

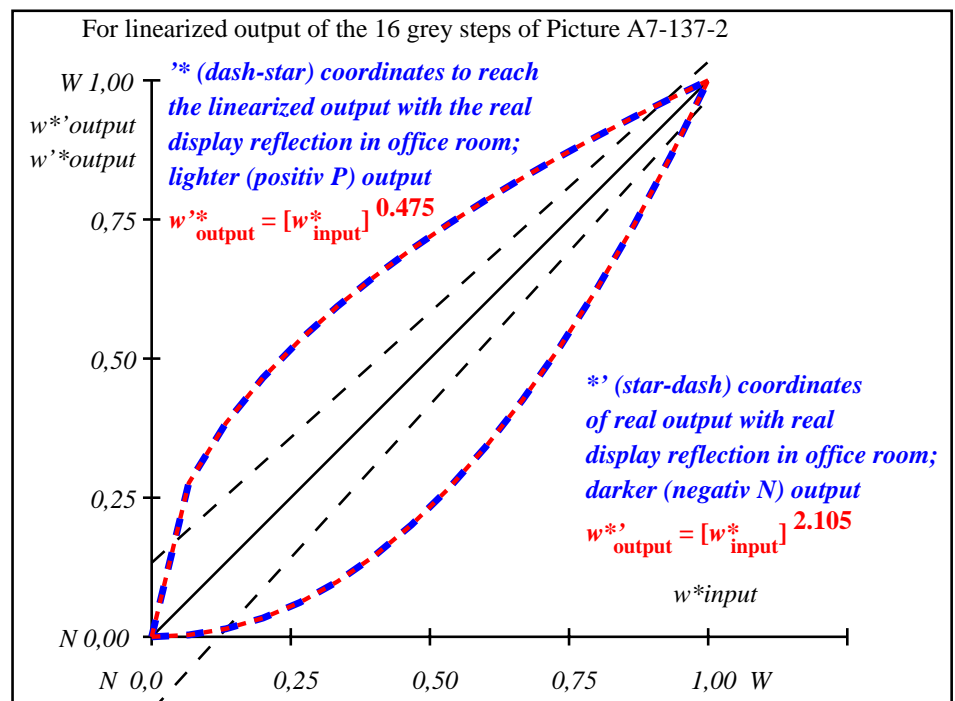
OE74: Form A for test chart 1 according to DIN 33872-3; 1MR, DHinput: 000n/w/cmy0/rgb(->rgb\*d<sub>0</sub>)  
Equality and Discriminability (Yes/No decision) output 130-1: g<sub>P</sub>=1.0; g<sub>N</sub>=2.1



See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB

i	LAB*ref	l*out	LAB*out	LAB*out/c-ref	ΔE*
1	69.7 0.0 0.0	0.0 69.7 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
2	71.41 0.0 0.0	0.0 69.78 0.0	0.0 0.0 -1.62	0.0 0.0 0.0	1.63
3	73.13 0.0 0.0	0.01 70.07 0.0	0.0 0.0 -3.05	0.0 0.0 0.0	3.06
4	74.84 0.0 0.0	0.03 70.57 0.0	0.0 0.0 -4.26	0.0 0.0 0.0	4.27
5	76.55 0.0 0.0	0.06 71.29 0.0	0.0 0.0 -5.26	0.0 0.0 0.0	5.27
6	78.27 0.0 0.0	0.1 72.24 0.0	0.0 0.0 -6.02	0.0 0.0 0.0	6.03
7	79.98 0.0 0.0	0.15 73.43 0.0	0.0 0.0 -6.54	0.0 0.0 0.0	6.55
8	81.7 0.0 0.0	0.2 74.86 0.0	0.0 0.0 -6.82	0.0 0.0 0.0	6.83
9	83.41 0.0 0.0	0.27 76.54 0.0	0.0 0.0 -6.86	0.0 0.0 0.0	6.87
10	85.12 0.0 0.0	0.34 78.47 0.0	0.0 0.0 -6.65	0.0 0.0 0.0	6.66
11	86.84 0.0 0.0	0.43 80.65 0.0	0.0 0.0 -6.18	0.0 0.0 0.0	6.19
12	88.55 0.0 0.0	0.52 83.08 0.0	0.0 0.0 -5.46	0.0 0.0 0.0	5.47
13	90.27 0.0 0.0	0.63 85.77 0.0	0.0 0.0 -4.49	0.0 0.0 0.0	4.5
14	91.98 0.0 0.0	0.74 88.72 0.0	0.0 0.0 -3.25	0.0 0.0 0.0	3.26
15	93.7 0.0 0.0	0.86 91.93 0.0	0.0 0.0 -1.75	0.0 0.0 0.0	1.76
16	95.41 0.0 0.0	1.0 95.41 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
17	69.7 0.0 0.0	0.0 69.7 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
18	76.13 0.0 0.0	0.05 71.09 0.0	0.0 0.0 -5.03	0.0 0.0 0.0	5.04
19	82.55 0.0 0.0	0.23 75.67 0.0	0.0 0.0 -6.87	0.0 0.0 0.0	6.88
20	88.98 0.0 0.0	0.55 83.73 0.0	0.0 0.0 -5.24	0.0 0.0 0.0	5.25
21	95.41 0.0 0.0	1.0 95.41 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
Mean lightness difference (16 steps)					ΔE* <sub>CIELAB</sub> = 4.3
Mean lightness difference (5 steps)					ΔL* <sub>CIELAB</sub> = 3.4
Mean colour reproduction index:					R* <sub>ab,m</sub> = 81

OE740-3N-137-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE741-3N-137-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

$L^{*}/Y_{intended}$ (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
$w^{*} w^{*} w^{*}$ setrgb $g_N=2.11$ 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
$w^{*}=l^{*}$ <sub>CIELAB, r</sub> (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	0.003	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

OE740-7N, Picture A7-137-2: 16 visual equidistant  $L^{*}$ -grey steps; PS operator:  $w^{*} w^{*} w^{*}$  setrgbcolor

OE74: In-output relation according to ISO 9241-306; 1MR, DH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:40$ ;  $Y_N$  range 30 to <60

input: 000n/w/cmy0/rgb(->rgb\*d<sub>0</sub>)  
output 130-2:  $g_P=1.0$ ;  $g_N=2.1$