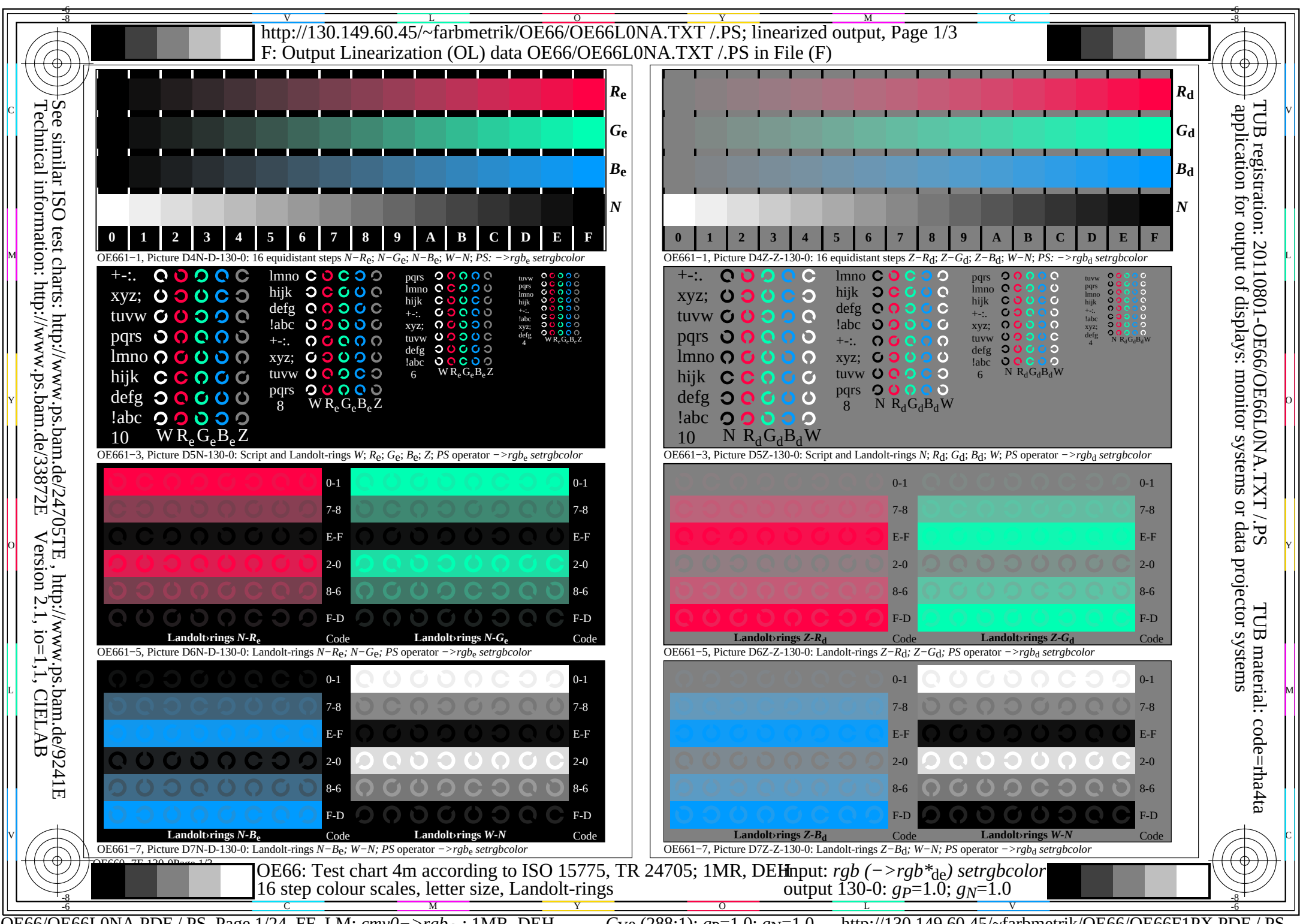




Test of 16 visually equally spaced steps of the colour rows $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to picture D4N-130-0

$N-R_d$ Black – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-G_d$ Black – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-B_d$ Black – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5N-130-0
 Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

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

Test of recognition frequency of Landolt-rings $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to pictures D6N-130-0, and D7N-130-0
 Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

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

Part 1

OE660-3N-130-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NP.PDF> **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NA.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 OE66L0NP.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 OE66L0NA.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

OE660-7N-130-1

OE66: Form A for test chart 4m according to ISO 15775; 1MR, DEHinput: $rgb(->rgb^*_{de})$ setrgbcolor
 16 step colour scales, letter size, Landolt-rings
 output 130-1: $g_P=1.0$; $g_N=1.0$

Test of 16 visually equally spaced steps of the colour rows $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to picture D4Z-130-0

$Z-R_d$ Grey – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-G_d$ Grey – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-B_d$ Grey – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5Z-130-0
 Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

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

Test of recognition frequency of Landolt-rings $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to pictures D6Z-130-0, and D7Z-130-0
 Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

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

Part 1

OE660-3N-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/OE66/OE66F1P2.PDF> **underline Yes/No**

PS file: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.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/OE66/OE66F1P2.PDF>

picture A7-130-2 **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.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 and transfer
 of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF **underline Yes/No**

If No, please describe other method:

Part 4

OE661-7N-130-1

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	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

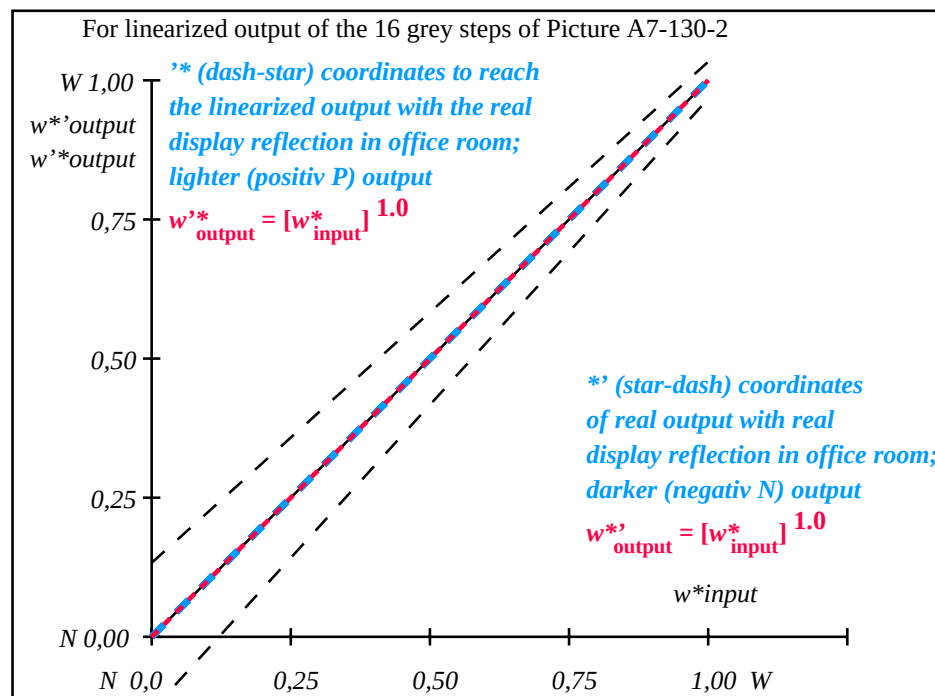
Start output S1
Specification according to
ISO/IEC 15775 Annex G
and DIN 33866-1 Annex G

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

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

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

OE660-3N-130-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE661-3N-130-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

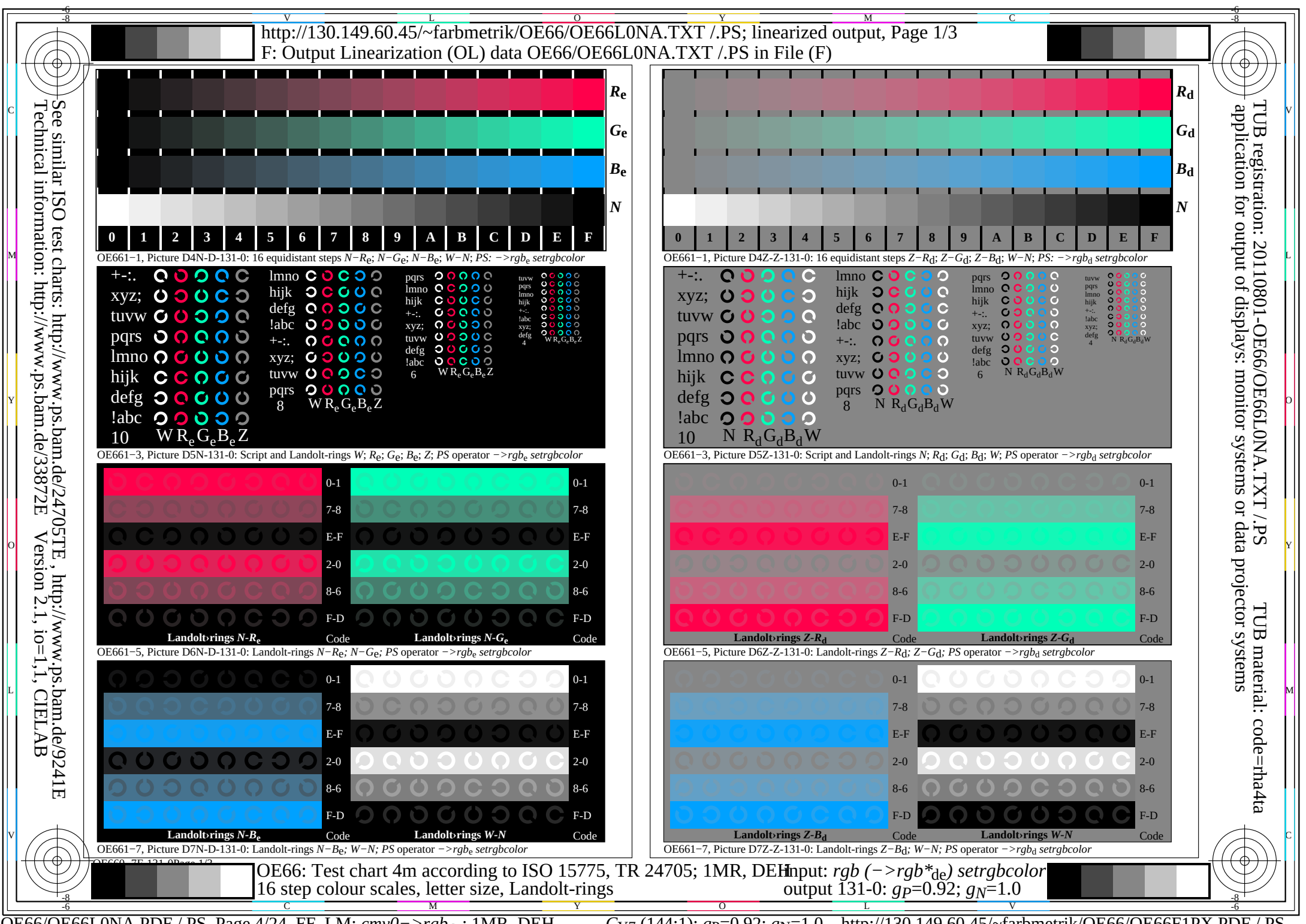
$L^*/Y_{intended}$ (absolute)	0.0/0.0	6.4/0.7	12.7/1.5	19.1/2.8	25.4/4.6	31.8/7.0	38.2/10.2	44.5/14.2	50.9/19.2	57.2/25.2	63.6/32.3	70.0/40.7	76.3/50.4	82.7/61.6	89.0/74.3	95.4/88.6
$w^* w^* w^*$ setrgb $g_P=1.0$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1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

OE660-7N, Picture A7-130-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

OE66: In-output relation according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:0,31$; Y_N range 0,0 to <0,46

input: $rgb \rightarrow rgb^*_{de}$ setrgbcolor
output 130-2: $g_P=1.0$; $g_N=1.0$

TUB registration: 20110801-OE66/OE66L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta



Test of 16 visually equally spaced steps of the colour rows $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to picture D4N-131-0

$N-R_d$ Black – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-G_d$ Black – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-B_d$ Black – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5N-131-0

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

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

Test of recognition frequency of Landolt-rings $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to pictures D6N-131-0, and D7N-131-0

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

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

Part 1 OE660-3N-131-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NP.PDF> **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NA.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 OE66L0NP.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 OE66L0NA.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 OE660-7N-131-1

Test of 16 visually equally spaced steps of the colour rows $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to picture D4Z-131-0

$Z-R_d$ Grey – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-G_d$ Grey – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-B_d$ Grey – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5Z-131-0

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

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

Test of recognition frequency of Landolt-rings $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to pictures D6Z-131-0, and D7Z-131-0

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

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

Part 1 OE660-3N-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/OE66/OE66F1P2.PDF> **underline Yes/No**

PS file: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.PS> **underline Yes/No**

Picture A7-131-2: contrast range: (>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/OE66/OE66F1P2.PDF>

picture A7-131-2 **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.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 and transfer
 of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF **underline Yes/No**

If No, please describe other method:

Part 4 OE661-7N-131-1

OE66: Form A for test chart 4m according to ISO 15775; 1MR, DEHinput: $rgb (->rgb^*_{de})$ setrgbcolor
 16 step colour scales, letter size, Landolt-rings
 output 131-1: $g_P=0.92$; $g_N=1.0$

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	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	0.1 0.0 0.0	14.73 0.0 0.0	3.06 0.0 0.0	3.06
3	17.65 0.0 0.0	0.18 0.0 0.0	21.96 0.0 0.0	4.3 0.0 0.0	4.3
4	23.63 0.0 0.0	0.26 0.0 0.0	28.63 0.0 0.0	4.99 0.0 0.0	4.99
5	29.62 0.0 0.0	0.33 0.0 0.0	34.96 0.0 0.0	5.34 0.0 0.0	5.34
6	35.6 0.0 0.0	0.39 0.0 0.0	41.05 0.0 0.0	5.46 0.0 0.0	5.46
7	41.58 0.0 0.0	0.46 0.0 0.0	46.96 0.0 0.0	5.38 0.0 0.0	5.38
8	47.56 0.0 0.0	0.52 0.0 0.0	52.72 0.0 0.0	5.16 0.0 0.0	5.16
9	53.54 0.0 0.0	0.59 0.0 0.0	58.36 0.0 0.0	4.82 0.0 0.0	4.82
10	59.52 0.0 0.0	0.65 0.0 0.0	63.88 0.0 0.0	4.36 0.0 0.0	4.36
11	65.5 0.0 0.0	0.71 0.0 0.0	69.32 0.0 0.0	3.82 0.0 0.0	3.82
12	71.48 0.0 0.0	0.77 0.0 0.0	74.67 0.0 0.0	3.19 0.0 0.0	3.19
13	77.47 0.0 0.0	0.83 0.0 0.0	79.95 0.0 0.0	2.49 0.0 0.0	2.49
14	83.45 0.0 0.0	0.89 0.0 0.0	85.16 0.0 0.0	1.72 0.0 0.0	1.72
15	89.43 0.0 0.0	0.94 0.0 0.0	90.31 0.0 0.0	0.89 0.0 0.0	0.89
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	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	0.31 0.0 0.0	33.4 0.0 0.0	5.28 0.0 0.0	5.28
19	50.55 0.0 0.0	0.56 0.0 0.0	55.55 0.0 0.0	5.0 0.0 0.0	5.0
20	72.98 0.0 0.0	0.78 0.0 0.0	76.0 0.0 0.0	3.02 0.0 0.0	3.02
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

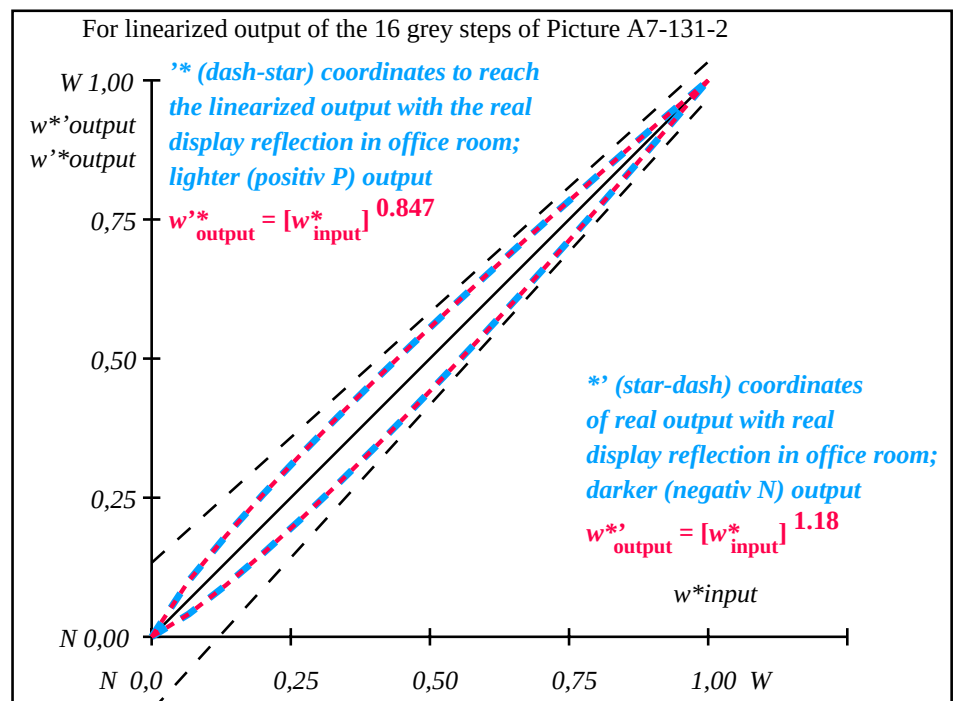
Start output S1
Specification according to
ISO/IEC 15775 Annex G
and DIN 33866-1 Annex G

Mean lightness difference (16 steps)
 $\Delta E^*_{CIELAB} = 3.4$

Mean lightness difference (5 steps)
 $\Delta L^*_{CIELAB} = 2.7$

Mean colour reproduction index: $R^*_{ab,m} = 85$

OE660-3N-131-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE661-3N-131-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

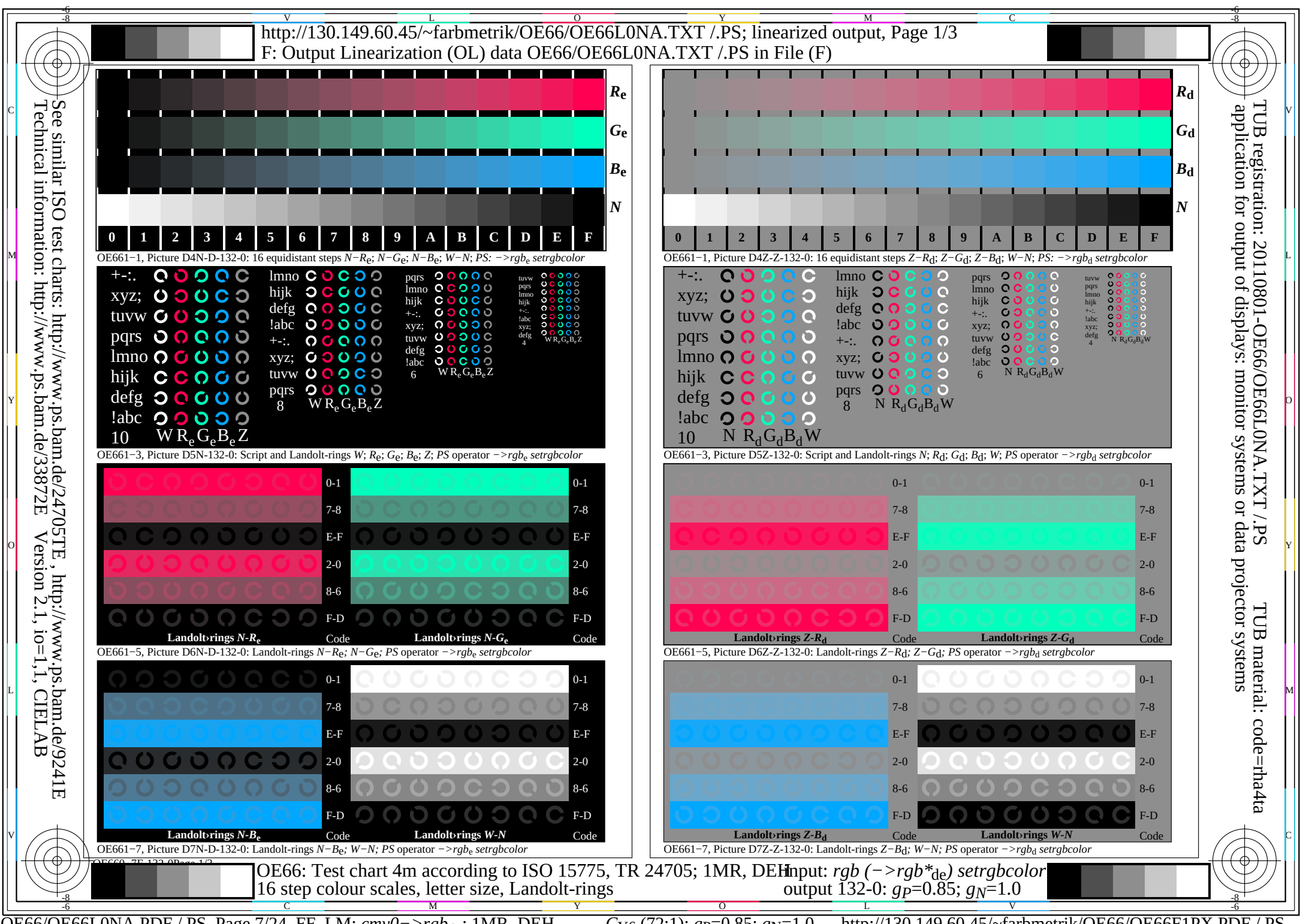
$L^*/Y_{intended}$ (absolute)	5.7/0.6	11.7/1.4	17.7/2.4	23.6/4.0	29.6/6.1	35.6/8.8	41.6/12.2	47.6/16.5	53.5/21.5	59.5/27.6	65.5/34.7	71.5/42.9	77.5/52.3	83.4/63.0	89.4/75.1	95.4/88.6
$w^* w^* w^*$ setrgb																
$g_P=0.85$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	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	0.101	0.181	0.256	0.327	0.394	0.46	0.525	0.587	0.649	0.71	0.769	0.828	0.886	0.943	1.0

OE660-7N, Picture A7-131-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

OE66: In-output relation according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:0,62$; Y_N range 0,46 to <0,93

input: $rgb (->rgb^*_{de})$ setrgbcolor
output 131-2: $g_P=0.92$; $g_N=1.0$

TUB registration: 20110801-OE66/OE66L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta



<http://130.149.60.45/~farbmetrik/OE66/OE66L0NA.TXT> /PS; linearized output, Page 2/3
 F: Output Linearization (OL) data OE66/OE66L0NA.TXT /PS in File (F)

Test of 16 visually equally spaced steps of the colour rows $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to picture D4N-132-0

$N-R_d$ Black – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-G_d$ Black – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-B_d$ Black – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5N-132-0

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

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

Test of recognition frequency of Landolt-rings $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to pictures D6N-132-0, and D7N-132-0

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

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

Part 1 OE660-3N-132-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NP.PDF> **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NA.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 OE66L0NP.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 OE66L0NA.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 OE660-7N-132-1

Test of 16 visually equally spaced steps of the colour rows $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to picture D4Z-132-0

$Z-R_d$ Grey – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-G_d$ Grey – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-B_d$ Grey – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5Z-132-0

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

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

Test of recognition frequency of Landolt-rings $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to pictures D6Z-132-0, and D7Z-132-0

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

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

Part 1 OE660-3N-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/OE66/OE66F1P2.PDF> **underline Yes/No**

PS file: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.PS> **underline Yes/No**

Picture A7-132-2: contrast range: (>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/OE66/OE66F1P2.PDF>

picture A7-132-2 **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.PS>

picture A7-132-2 **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 and transfer
 of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF **underline Yes/No**

If No, please describe other method:

Part 4 OE661-7N-132-1

OE66: Form A for test chart 4m according to ISO 15775; 1MR, DEHinput: $rgb(->rgb_{de})$ setrgbcolor
 16 step colour scales, letter size, Landolt-rings
 output 132-1: $g_P=0.85$; $g_N=1.0$

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	10.99 0.0 0.0	10.99 0.0 0.0	10.99 0.0 0.0	0.0 0.0 0.0	0.01
2	16.62 0.0 0.0	14 22.52 0.0 0.0	16.62 0.0 0.0	5.9 0.0 0.0	5.9
3	22.25 0.0 0.0	23 30.18 0.0 0.0	22.25 0.0 0.0	7.93 0.0 0.0	7.93
4	27.88 0.0 0.0	31 36.84 0.0 0.0	27.88 0.0 0.0	8.97 0.0 0.0	8.97
5	33.5 0.0 0.0	38 42.93 0.0 0.0	33.5 0.0 0.0	9.43 0.0 0.0	9.43
6	39.13 0.0 0.0	45 48.63 0.0 0.0	39.13 0.0 0.0	9.5 0.0 0.0	9.5
7	44.76 0.0 0.0	51 54.03 0.0 0.0	44.76 0.0 0.0	9.27 0.0 0.0	9.27
8	50.39 0.0 0.0	57 59.19 0.0 0.0	50.39 0.0 0.0	8.81 0.0 0.0	8.81
9	56.02 0.0 0.0	63 64.17 0.0 0.0	56.02 0.0 0.0	8.15 0.0 0.0	8.15
10	61.64 0.0 0.0	69 68.98 0.0 0.0	61.64 0.0 0.0	7.33 0.0 0.0	7.33
11	67.27 0.0 0.0	74 73.65 0.0 0.0	67.27 0.0 0.0	6.38 0.0 0.0	6.38
12	72.9 0.0 0.0	78.2 0.0 0.0	72.9 0.0 0.0	5.3 0.0 0.0	5.3
13	78.53 0.0 0.0	85 82.64 0.0 0.0	78.53 0.0 0.0	4.11 0.0 0.0	4.11
14	84.15 0.0 0.0	9 86.98 0.0 0.0	84.15 0.0 0.0	2.82 0.0 0.0	2.82
15	89.78 0.0 0.0	95 91.23 0.0 0.0	89.78 0.0 0.0	1.45 0.0 0.0	1.45
16	95.41 0.0 0.0	1.0 95.41 0.0 0.0	95.41 0.0 0.0	0.0 0.0 0.0	0.01
17	10.99 0.0 0.0	10.99 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	36 41.45 0.0 0.0	32.1 0.0 0.0	9.36 0.0 0.0	9.36
19	53.2 0.0 0.0	6 61.7 0.0 0.0	53.2 0.0 0.0	8.5 0.0 0.0	8.5
20	74.31 0.0 0.0	81 79.32 0.0 0.0	74.31 0.0 0.0	5.01 0.0 0.0	5.01
21	95.41 0.0 0.0	1.0 95.41 0.0 0.0	95.41 0.0 0.0	0.0 0.0 0.0	0.01

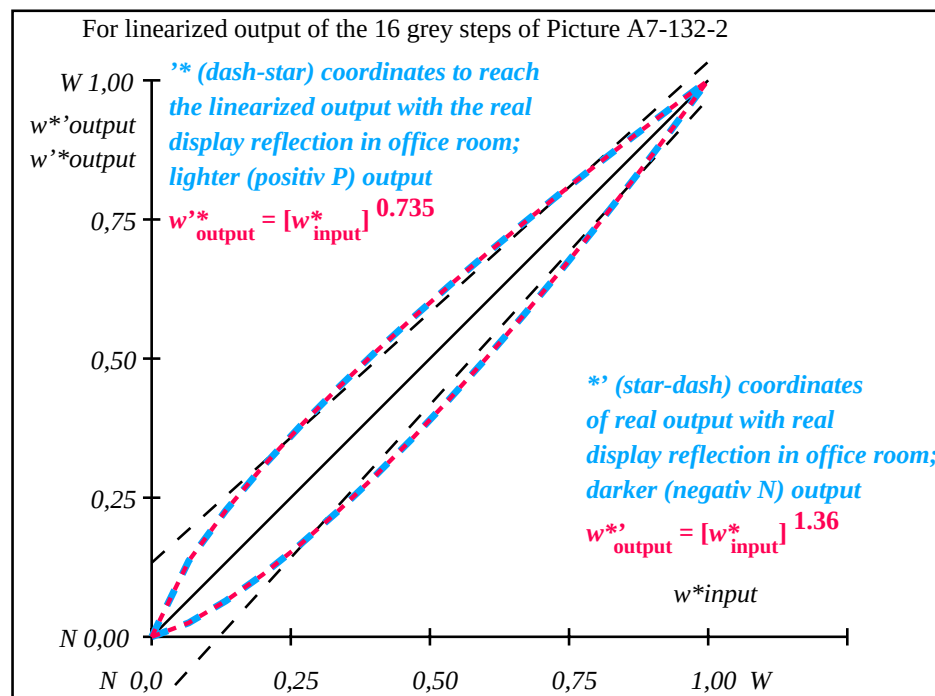
Start output S1
Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G

Mean lightness difference (16 steps)
 $\Delta E^*_{CIELAB} = 6.0$

Mean lightness difference (5 steps)
 $\Delta L^*_{CIELAB} = 4.6$

Mean colour reproduction index: $R^*_{ab,m} = 74$

OE660-3N-132-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE661-3N-132-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

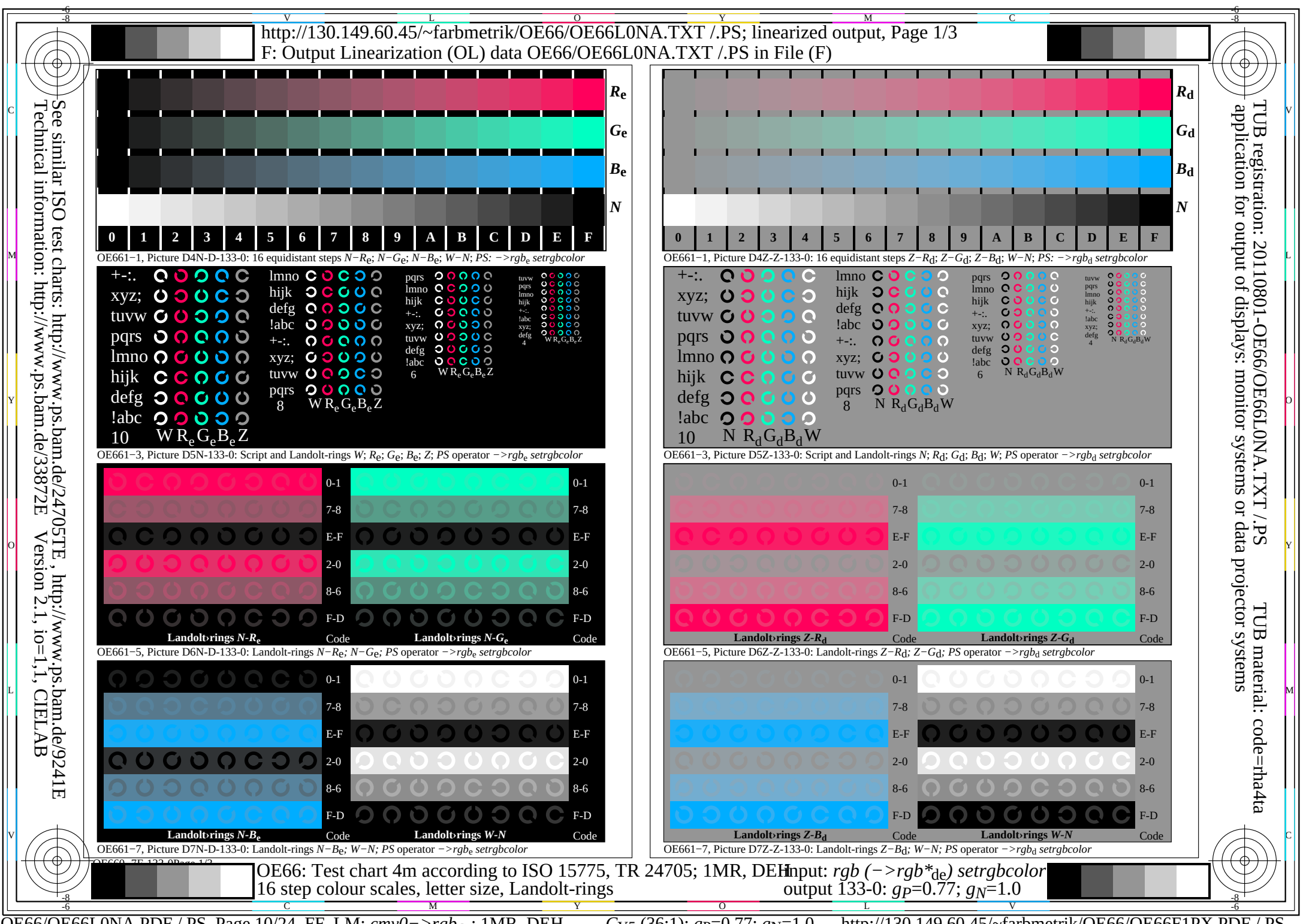
$L^*/Y_{intended}$ (absolute)	11.0/1.3	16.6/2.2	22.2/3.6	27.9/5.4	33.5/7.8	39.1/10.7	44.8/14.4	50.4/18.7	56.0/23.9	61.6/30.0	67.3/37.0	72.9/45.0	78.5/54.1	84.2/64.4	89.8/75.8	95.4/88.6
$w^* w^* w^*$ setrgb $g_P=0.74$																
No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	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	0.137	0.227	0.306	0.379	0.446	0.51	0.571	0.63	0.687	0.742	0.796	0.849	0.9	0.95	1.0

OE660-7N, Picture A7-132-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

OE66: In-output relation according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:1,25$; Y_N range 0,93 to <1,87

input: $rgb (->rgb^*_{de})$ setrgbcolor
output 132-2: $g_P=0.85$; $g_N=1.0$

TUB registration: 20110801-OE66/OE66L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta



Test of 16 visually equally spaced steps of the colour rows $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to picture D4N-133-0

$N-R_d$ Black – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-G_d$ Black – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-B_d$ Black – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5N-133-0

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

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

Test of recognition frequency of Landolt-rings $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to pictures D6N-133-0, and D7N-133-0

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

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

Part 1 OE660-3N-133-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NP.PDF> **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NA.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 OE66L0NP.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 OE66L0NA.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 OE660-7N-133-1

Test of 16 visually equally spaced steps of the colour rows $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to picture D4Z-133-0

$Z-R_d$ Grey – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-G_d$ Grey – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-B_d$ Grey – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5Z-133-0

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

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

Test of recognition frequency of Landolt-rings $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to pictures D6Z-133-0, and D7Z-133-0

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

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

Part 1 OE660-3N-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/OE66/OE66F1P2.PDF>

underline Yes/No

PS file: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.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/OE66/OE66F1P2.PDF>

picture A7-133-2

underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.PS>

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

underline Yes/No

If No, please describe other method:

Part 4 OE661-7N-133-1

OE66: Form A for test chart 4m according to ISO 15775; 1MR, DEHinput: $rgb (->rgb^*_{de})$ setrgbcolor
 16 step colour scales, letter size, Landolt-rings
 output 133-1: $g_P=0.77$; $g_N=1.0$

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	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	0.17 31.35 0.0	0.0 0.0 8.18	0.0 0.0 8.18	8.18
3	28.33 0.0 0.0	0.27 38.93 0.0	0.0 0.0 10.6	0.0 0.0 10.6	10.6
4	33.49 0.0 0.0	0.35 45.23 0.0	0.0 0.0 11.74	0.0 0.0 11.74	11.74
5	38.65 0.0 0.0	0.42 50.82 0.0	0.0 0.0 12.17	0.0 0.0 12.17	12.17
6	43.81 0.0 0.0	0.49 55.93 0.0	0.0 0.0 12.12	0.0 0.0 12.12	12.12
7	48.97 0.0 0.0	0.55 60.7 0.0	0.0 0.0 11.73	0.0 0.0 11.73	11.73
8	54.13 0.0 0.0	0.61 65.2 0.0	0.0 0.0 11.07	0.0 0.0 11.07	11.07
9	59.29 0.0 0.0	0.66 69.47 0.0	0.0 0.0 10.18	0.0 0.0 10.18	10.18
10	64.45 0.0 0.0	0.72 73.56 0.0	0.0 0.0 9.11	0.0 0.0 9.11	9.11
11	69.61 0.0 0.0	0.77 77.49 0.0	0.0 0.0 7.88	0.0 0.0 7.88	7.88
12	74.77 0.0 0.0	0.82 81.29 0.0	0.0 0.0 6.52	0.0 0.0 6.52	6.52
13	79.93 0.0 0.0	0.87 84.97 0.0	0.0 0.0 5.04	0.0 0.0 5.04	5.04
14	85.09 0.0 0.0	0.91 88.54 0.0	0.0 0.0 3.45	0.0 0.0 3.45	3.45
15	90.25 0.0 0.0	0.96 92.02 0.0	0.0 0.0 1.77	0.0 0.0 1.77	1.77
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	0.41 49.47 0.0	0.0 0.0 12.11	0.0 0.0 12.11	12.11
19	56.71 0.0 0.0	0.64 67.36 0.0	0.0 0.0 10.65	0.0 0.0 10.65	10.65
20	76.06 0.0 0.0	0.83 82.22 0.0	0.0 0.0 6.16	0.0 0.0 6.16	6.16
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

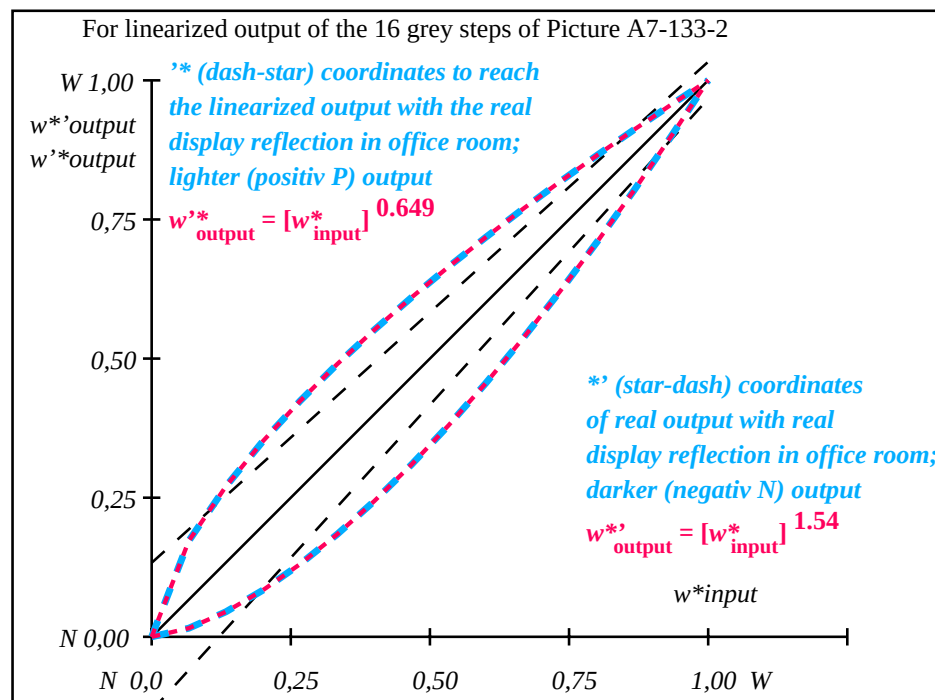
Start output S1
Specification according to
ISO/IEC 15775 Annex G
and DIN 33866-1 Annex G

Mean lightness difference (16 steps)
 $\Delta E^*_{CIELAB} = 7.6$

Mean lightness difference (5 steps)
 $\Delta L^*_{CIELAB} = 5.8$

Mean colour reproduction index: $R^*_{ab,m} = 67$

OE660-3N-133-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE661-3N-133-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

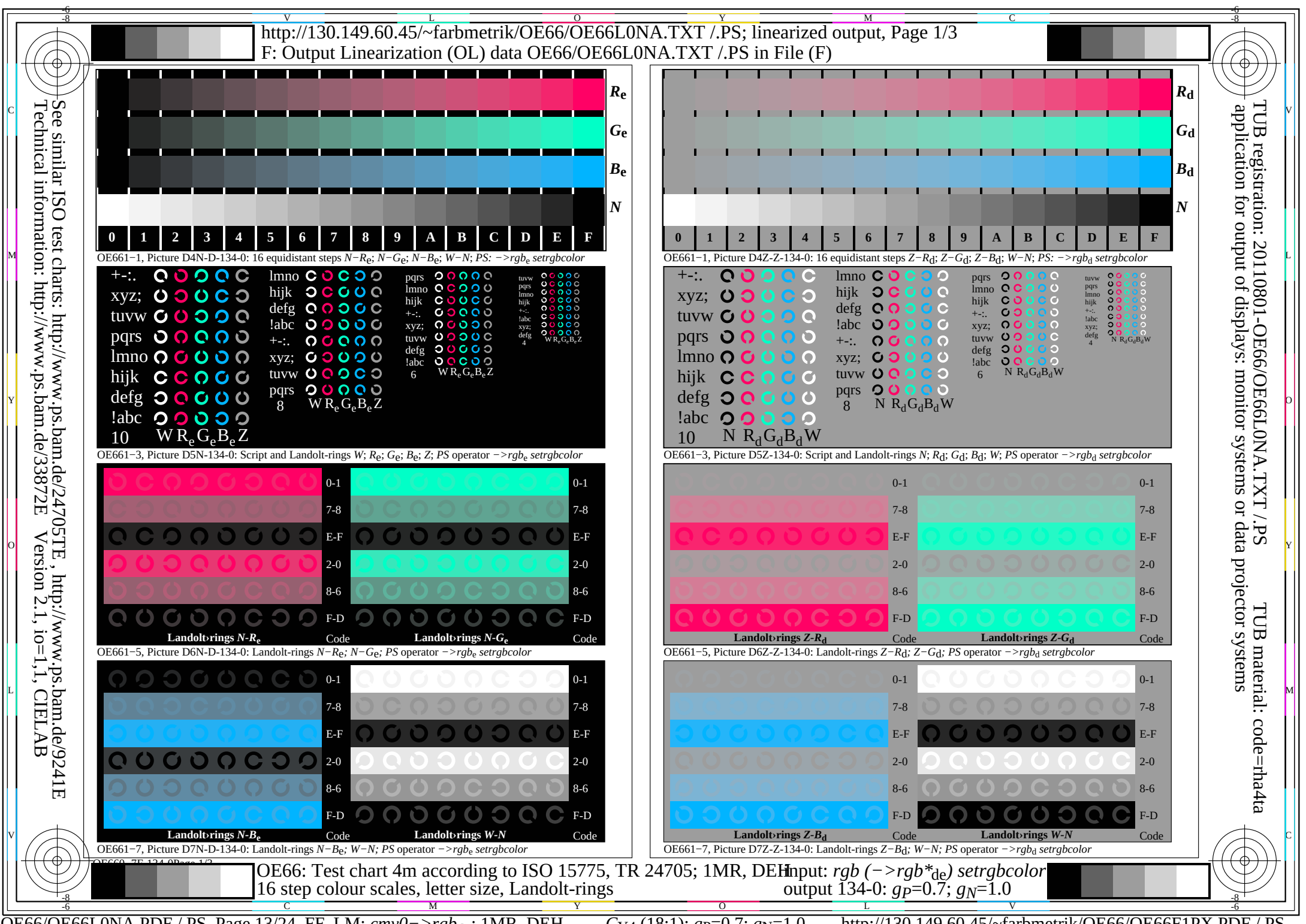
$L^*/Y_{intended}$ (absolute)	18.0/2.5	23.2/3.8	28.3/5.6	33.5/7.8	38.6/10.5	43.8/13.7	49.0/17.6	54.1/22.1	59.3/27.3	64.4/33.4	69.6/40.2	74.8/47.9	79.9/56.6	85.1/66.2	90.2/76.8	95.4/88.6
$w^* w^* w^*$ setrgb $g_P=0.65$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	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	0.173	0.27	0.352	0.424	0.49	0.552	0.61	0.665	0.718	0.769	0.817	0.865	0.911	0.956	1.0

OE660-7N, Picture A7-133-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*_{setrgbcolor}$

OE66: In-output relation according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:2,5$; Y_N range 1,87 to <3,75

input: $rgb \rightarrow rgb^*_{de}$ setrgbcolor
output 133-2: $g_P=0.77$; $g_N=1.0$

TUB registration: 20110801-OE66/OE66L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta



<http://130.149.60.45/~farbmetrik/OE66/OE66L0NA.TXT> /PS; linearized output, Page 2/3
 F: Output Linearization (OL) data OE66/OE66L0NA.TXT /PS in File (F)

Test of 16 visually equally spaced steps of the colour rows $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to picture D4N-134-0

$N-R_d$ Black – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-G_d$ Black – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-B_d$ Black – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5N-134-0
 Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

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

Test of recognition frequency of Landolt-rings $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to pictures D6N-134-0, and D7N-134-0
 Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

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

Part 1 OE660-3N-134-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NP.PDF> **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NA.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 OE66L0NP.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 OE66L0NA.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

OE660-7N-134-1

OE66: Form A for test chart 4m according to ISO 15775; 1MR, DEHinput: $rgb(->rgb^*_{de})$ setrgbcolor
 16 step colour scales, letter size, Landolt-rings
 output 134-1: $g_P=0.7$; $g_N=1.0$

Test of 16 visually equally spaced steps of the colour rows $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to picture D4Z-134-0

$Z-R_d$ Grey – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-G_d$ Grey – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-B_d$ Grey – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5Z-134-0
 Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

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

Test of recognition frequency of Landolt-rings $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to pictures D6Z-134-0, and D7Z-134-0
 Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

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

Part 1 OE660-3N-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/OE66/OE66F1P2.PDF>

underline Yes/No

PS file: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.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/OE66/OE66F1P2.PDF>

picture A7-134-2

underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.PS>

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

underline Yes/No

If No, please describe other method:

Part 4

OE661-7N-134-1

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	26.85 0.0 0.0	0.0 26.85 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
2	31.42 0.0 0.0	0.21 41.05 0.0	0.0 0.0 9.63	0.0 0.0 0.0	9.63
3	35.99 0.0 0.0	0.31 48.1 0.0	0.0 0.0 12.11	0.0 0.0 0.0	12.11
4	40.56 0.0 0.0	0.39 53.75 0.0	0.0 0.0 13.18	0.0 0.0 0.0	13.18
5	45.13 0.0 0.0	0.46 58.64 0.0	0.0 0.0 13.51	0.0 0.0 0.0	13.51
6	49.7 0.0 0.0	0.53 63.05 0.0	0.0 0.0 13.34	0.0 0.0 0.0	13.34
7	54.27 0.0 0.0	0.59 67.09 0.0	0.0 0.0 12.82	0.0 0.0 0.0	12.82
8	58.84 0.0 0.0	0.64 70.87 0.0	0.0 0.0 12.02	0.0 0.0 0.0	12.02
9	63.41 0.0 0.0	0.69 74.42 0.0	0.0 0.0 11.01	0.0 0.0 0.0	11.01
10	67.99 0.0 0.0	0.74 77.79 0.0	0.0 0.0 9.81	0.0 0.0 0.0	9.81
11	72.56 0.0 0.0	0.79 81.01 0.0	0.0 0.0 8.46	0.0 0.0 0.0	8.46
12	77.13 0.0 0.0	0.84 84.1 0.0	0.0 0.0 6.97	0.0 0.0 0.0	6.97
13	81.7 0.0 0.0	0.88 87.07 0.0	0.0 0.0 5.37	0.0 0.0 0.0	5.37
14	86.27 0.0 0.0	0.92 89.94 0.0	0.0 0.0 3.67	0.0 0.0 0.0	3.67
15	90.84 0.0 0.0	0.96 92.71 0.0	0.0 0.0 1.88	0.0 0.0 0.0	1.88
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	26.85 0.0 0.0	0.0 26.85 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.01
18	43.99 0.0 0.0	0.45 57.47 0.0	0.0 0.0 13.48	0.0 0.0 0.0	13.48
19	61.13 0.0 0.0	0.67 72.67 0.0	0.0 0.0 11.54	0.0 0.0 0.0	11.54
20	78.27 0.0 0.0	0.85 84.85 0.0	0.0 0.0 6.58	0.0 0.0 0.0	6.58
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

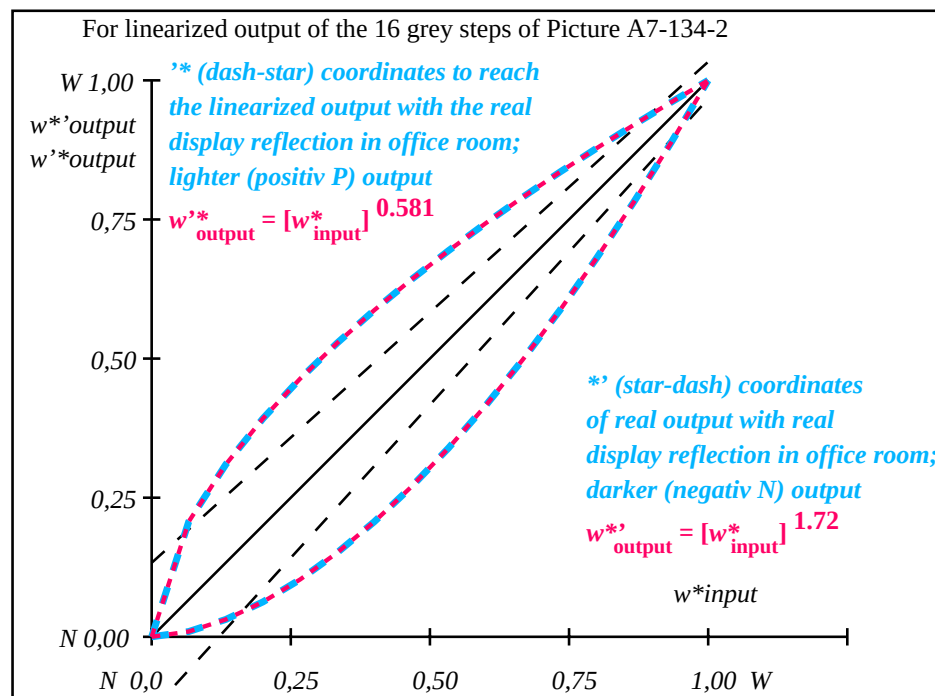
Start output S1
Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G

Mean lightness difference (16 steps)
 $\Delta E^*_{CIELAB} = 8.4$

Mean lightness difference (5 steps)
 $\Delta L^*_{CIELAB} = 6.3$

Mean colour reproduction index: $R^*_{ab,m} = 64$

OE660-3N-134-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE661-3N-134-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

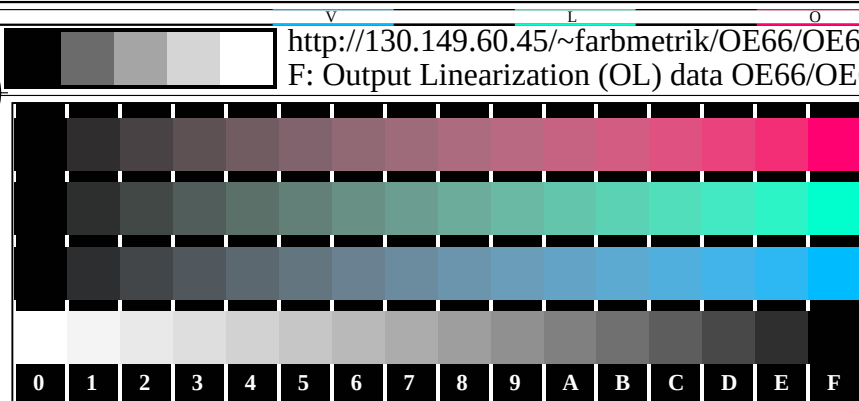
$L^*/Y_{intended}$ (absolute)	26.8/5.0	31.4/6.8	36.0/9.0	40.6/11.6	45.1/14.6	49.7/18.2	54.3/22.2	58.8/26.9	63.4/32.1	68.0/38.0	72.6/44.5	77.1/51.7	81.7/59.7	86.3/68.5	90.8/78.1	95.4/88.6
$w^* w^* w^*$ setrgb $g_P=0.58$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	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	0.208	0.309	0.392	0.464	0.528	0.587	0.642	0.694	0.743	0.79	0.835	0.878	0.92	0.96	1.0

OE660-7N, Picture A7-134-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

OE66: In-output relation according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:5$; Y_N range 3,75 to <7,5

input: $rgb \rightarrow rgb^*_{de}$ setrgbcolor
output 134-2: $g_P=0.7$; $g_N=1.0$

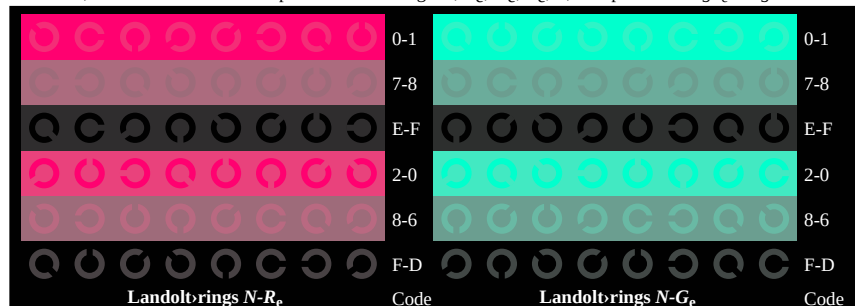
TUB registration: 20110801-OE66/OE66L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta



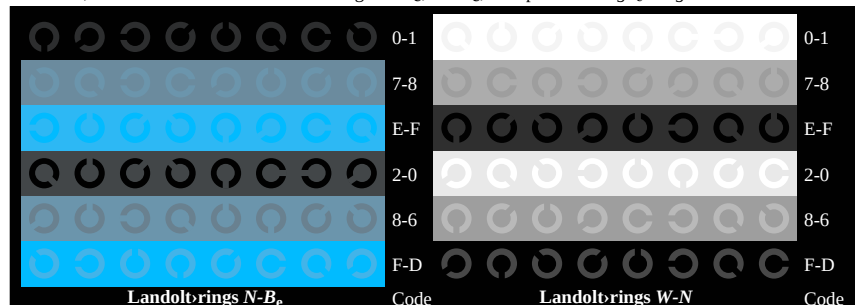
OE661-1, Picture D4N-D-135-0: 16 equidistant steps $N-R_e$; $N-G_e$; $N-B_e$; $W-N$; PS: $\rightarrow rgb_e$ setrgbcolor



OE661-3, Picture D5N-135-0: Script and Landolt-rings W ; R_e ; G_e ; B_e ; Z ; PS operator $\rightarrow rgb_e$ setrgbcolor



OE661-5, Picture D6N-D-135-0: Landolt-rings $N-R_e$; $N-G_e$; PS operator $\rightarrow rgb_e$ setrgbcolor



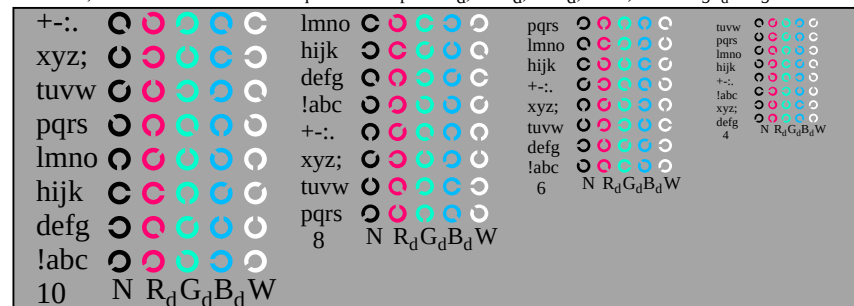
OE661-7, Picture D7N-D-135-0: Landolt-rings $N-B_e$; $W-N$; PS operator $\rightarrow rgb_e$ setrgbcolor



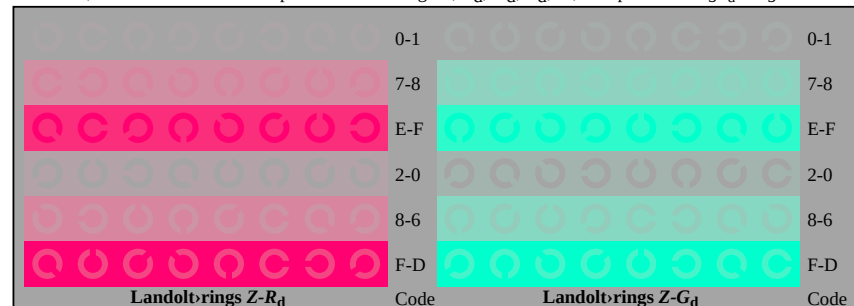
OE66: Test chart 4m according to ISO 15775, TR 24705; 1MR, DEH Input: rgb ($\rightarrow rgb_{de}$) setrgbcolor
16 step colour scales, letter size, Landolt-rings output 135-0: $g_P=0.62$; $g_N=1.0$



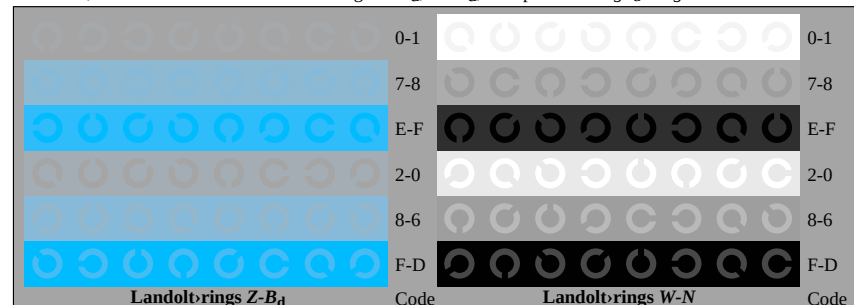
OE661-1, Picture D4Z-Z-135-0: 16 equidistant steps $Z-R_d$; $Z-G_d$; $Z-B_d$; $W-N$; PS: $\rightarrow rgb_d$ setrgbcolor



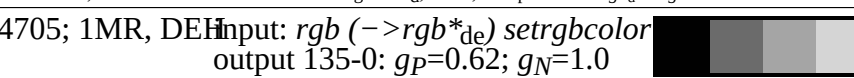
OE661-3, Picture D5Z-135-0: Script and Landolt-rings N ; R_d ; G_d ; B_d ; W ; PS operator $\rightarrow rgb_d$ setrgbcolor



OE661-5, Picture D6Z-Z-135-0: Landolt-rings $Z-R_d$; $Z-G_d$; PS operator $\rightarrow rgb_d$ setrgbcolor



OE661-7, Picture D7Z-Z-135-0: Landolt-rings $Z-B_d$; $W-N$; PS operator $\rightarrow rgb_d$ setrgbcolor



<http://130.149.60.45/~farbmetrik/OE66/OE66L0NA.TXT> /PS; linearized output, Page 2/3
 F: Output Linearization (OL) data OE66/OE66L0NA.TXT /PS in File (F)

Test of 16 visually equally spaced steps of the colour rows $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to picture D4N-135-0

$N-R_d$ Black – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-G_d$ Black – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-B_d$ Black – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5N-135-0
 Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

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

Test of recognition frequency of Landolt-rings $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to pictures D6N-135-0, and D7N-135-0
 Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

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

Part 1

OE660-3N-135-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NP.PDF> **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NA.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 OE66L0NP.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 OE66L0NA.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

OE660-7N-135-1

OE66: Form A for test chart 4m according to ISO 15775; 1MR, DEHinput: $rgb(->rgb_{de})$ setrgbcolor
 16 step colour scales, letter size, Landolt-rings
 output 135-1: $g_p=0.62$; $g_N=1.0$

Test of 16 visually equally spaced steps of the colour rows $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to picture D4Z-135-0

$Z-R_d$ Grey – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-G_d$ Grey – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-B_d$ Grey – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5Z-135-0
 Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

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

Test of recognition frequency of Landolt-rings $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to pictures D6Z-135-0, and D7Z-135-0
 Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

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

Part 1

OE660-3N-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/OE66/OE66F1P2.PDF> **underline Yes/No**

PS file: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.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/OE66/OE66F1P2.PDF>

picture A7-135-2 **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.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 and transfer
 of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF **underline Yes/No**

If No, please describe other method:

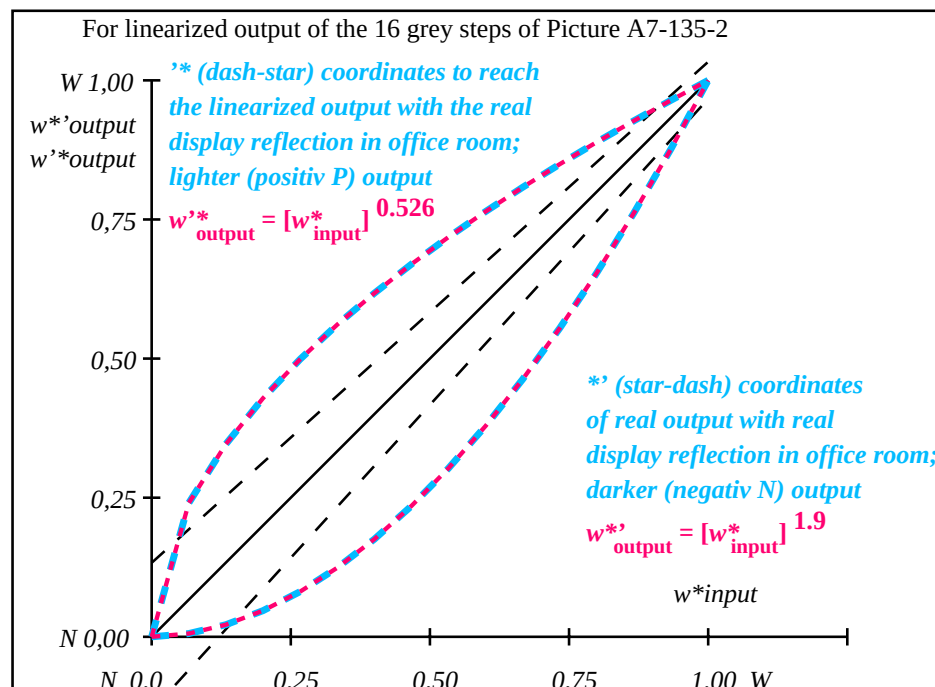
Part 4

OE661-7N-135-1

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*	Start output S1 Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G
1	37.99	0.0	0.0	0.0	37.99	0.0	0.0	0.0	0.0	0.0	0.0	0.01		
2	41.81	0.0	0.0	0.24	51.79	0.0	0.0	9.98	0.0	0.0	9.98			
3	45.64	0.0	0.0	0.35	57.87	0.0	0.0	12.23	0.0	0.0	12.23			
4	49.47	0.0	0.0	0.43	62.6	0.0	0.0	13.13	0.0	0.0	13.13			
5	53.3	0.0	0.0	0.5	66.63	0.0	0.0	13.33	0.0	0.0	13.33			
6	57.13	0.0	0.0	0.56	70.19	0.0	0.0	13.07	0.0	0.0	13.07			
7	60.96	0.0	0.0	0.62	73.44	0.0	0.0	12.48	0.0	0.0	12.48			
8	64.78	0.0	0.0	0.67	76.44	0.0	0.0	11.65	0.0	0.0	11.65			
9	68.61	0.0	0.0	0.72	79.23	0.0	0.0	10.62	0.0	0.0	10.62			
10	72.44	0.0	0.0	0.76	81.87	0.0	0.0	9.43	0.0	0.0	9.43			
11	76.27	0.0	0.0	0.81	84.37	0.0	0.0	8.11	0.0	0.0	8.11			
12	80.1	0.0	0.0	0.85	86.76	0.0	0.0	6.66	0.0	0.0	6.66			
13	83.93	0.0	0.0	0.89	89.05	0.0	0.0	5.12	0.0	0.0	5.12			
14	87.75	0.0	0.0	0.93	91.24	0.0	0.0	3.49	0.0	0.0	3.49			
15	91.58	0.0	0.0	0.96	93.36	0.0	0.0	1.78	0.0	0.0	1.78	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} = 8.2		
17	37.99	0.0	0.0	0.0	37.99	0.0	0.0	0.0	0.0	0.0	0.01			
18	52.34	0.0	0.0	0.48	65.67	0.0	0.0	13.33	0.0	0.0	13.33			
19	66.7	0.0	0.0	0.69	77.86	0.0	0.0	11.16	0.0	0.0	11.16			
20	81.05	0.0	0.0	0.86	87.34	0.0	0.0	6.29	0.0	0.0	6.29	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} = 6.2		
Mean colour reproduction index:													R* _{ab,m} = 65	

OE660-3N-135-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE661-3N-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 $g_P=0.53$ 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	0.241	0.346	0.429	0.499	0.561	0.617	0.67	0.718	0.764	0.808	0.849	0.889	0.928	0.964	1.0

OE660-7N, Picture A7-135-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

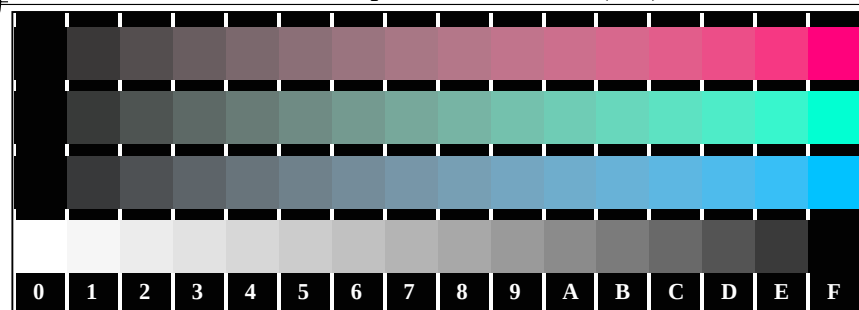
OE66: In-output relation according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:10$; Y_N range 7,5 to <15

input: $rgb \rightarrow rgb^*_{de}$ setrgbcolor
output 135-2: $g_P=0.62$; $g_N=1.0$

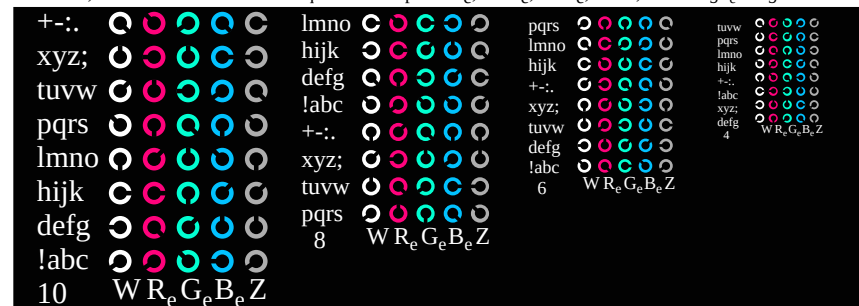
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/3387ZE> Version 2.1, io=1,1, CIELAB



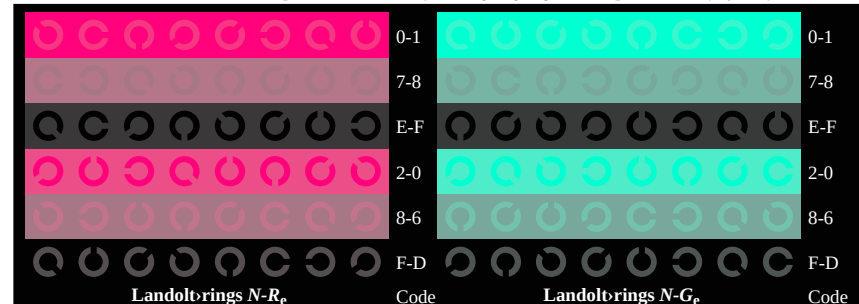
<http://130.149.60.45/~farbmetrik/OE66/OE66L0NA.TXT> /PS; linearized output, Page 1/3
F: Output Linearization (OL) data OE66/OE66L0NA.TXT /PS in File (F)



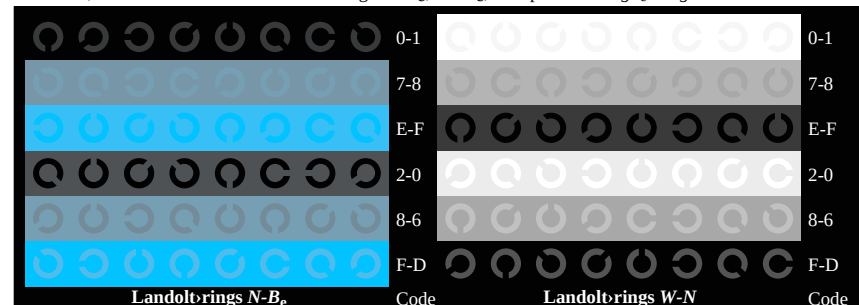
OE661-1, Picture D4N-D-136-0: 16 equidistant steps $N-R_e$; $N-G_e$; $N-B_e$; $W-N$; PS: $\rightarrow rgb_e$ setrgbcolor



OE661-3, Picture D5N-136-0: Script and Landolt-rings W ; R_e ; G_e ; B_e ; Z ; PS operator $\rightarrow rgb_e$ setrgbcolor



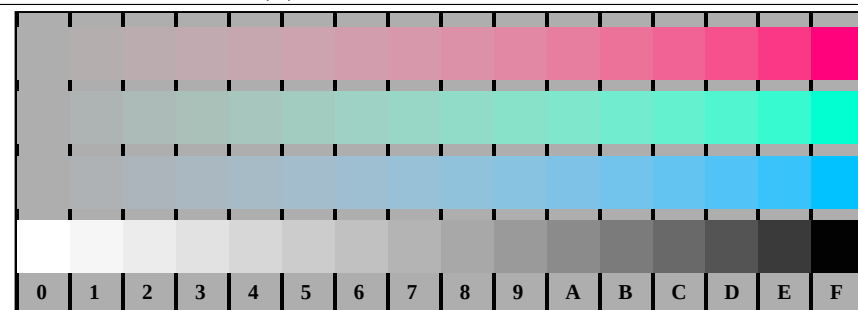
OE661-5, Picture D6N-D-136-0: Landolt-rings $N-R_e$; $N-G_e$; PS operator $\rightarrow rgb_e$ setrgbcolor



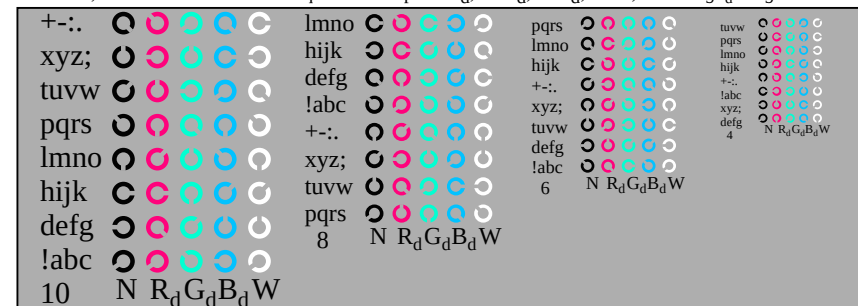
OE661-7, Picture D7N-D-136-0: Landolt-rings $N-B_e$; $W-N$; PS operator $\rightarrow rgb_e$ setrgbcolor



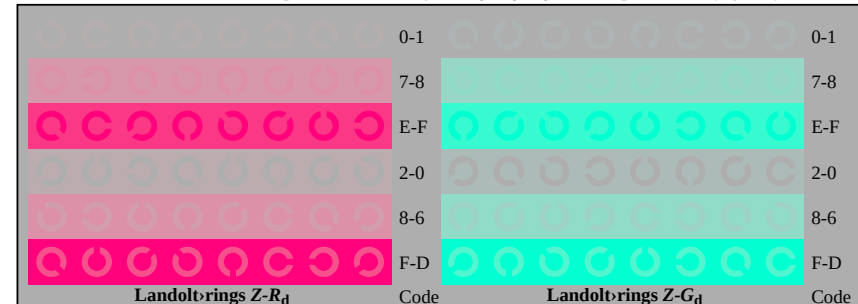
OE66: Test chart 4m according to ISO 15775, TR 24705; 1MR, DEH Input: rgb ($\rightarrow rgb_{de}$) setrgbcolor
16 step colour scales, letter size, Landolt-rings output 136-0: $g_P=0.55$; $g_N=1.0$



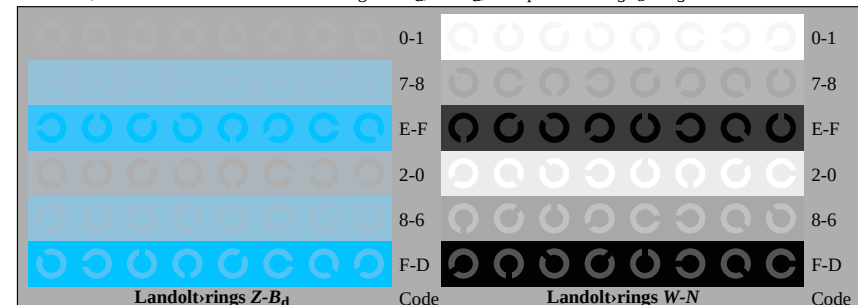
OE661-1, Picture D4Z-Z-136-0: 16 equidistant steps $Z-R_d$; $Z-G_d$; $Z-B_d$; $W-N$; PS: $\rightarrow rgb_d$ setrgbcolor



OE661-3, Picture D5Z-136-0: Script and Landolt-rings N ; R_d ; G_d ; B_d ; W ; PS operator $\rightarrow rgb_d$ setrgbcolor



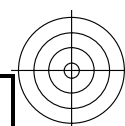
OE661-5, Picture D6Z-Z-136-0: Landolt-rings $Z-R_d$; $Z-G_d$; PS operator $\rightarrow rgb_d$ setrgbcolor



OE661-7, Picture D7Z-Z-136-0: Landolt-rings $Z-B_d$; $W-N$; PS operator $\rightarrow rgb_d$ setrgbcolor



TUB registration: 20110801-OE66/OE66L0NA.TXT /PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta



Test of 16 visually equally spaced steps of the colour rows $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to picture D4N-136-0

$N-R_d$ Black – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-G_d$ Black – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$N-B_d$ Black – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5N-136-0

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

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

Test of recognition frequency of Landolt-rings $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to pictures D6N-136-0, and D7N-136-0

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

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

Part 1 OE660-3N-136-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NP.PDF> **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NA.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 OE66L0NP.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 OE66L0NA.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 OE660-7N-136-1

Test of 16 visually equally spaced steps of the colour rows $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to picture D4Z-136-0

$Z-R_d$ Grey – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-G_d$ Grey – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$Z-B_d$ Grey – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps Steps

Test of characters and Landolt-rings in four sizes according to picture D5Z-136-0

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

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

Test of recognition frequency of Landolt-rings $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to pictures D6Z-136-0, and D7Z-136-0

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

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

Part 1 OE660-3N-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 **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://130.149.60.45/farbmetrik/OE66/OE66F1P2.PDF> **underline Yes/No**

PS file: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.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/OE66/OE66F1P2.PDF> **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.PS> **or underline Yes/No**

picture A7-136-2 **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 and transfer
 of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF **underline Yes/No**

If No, please describe other method:

Part 4 OE661-7N-136-1

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	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	0.27 63.82 0.0	0.0 0.0 0.0	8.91 0.0 0.0	8.91
3	57.8 0.0 0.0	0.38 68.49 0.0	0.0 0.0 0.0	10.69 0.0 0.0	10.69
4	60.7 0.0 0.0	0.46 72.03 0.0	0.0 0.0 0.0	11.34 0.0 0.0	11.34
5	63.59 0.0 0.0	0.53 75.0 0.0	0.0 0.0 0.0	11.41 0.0 0.0	11.41
6	66.48 0.0 0.0	0.59 77.61 0.0	0.0 0.0 0.0	11.12 0.0 0.0	11.12
7	69.37 0.0 0.0	0.64 79.95 0.0	0.0 0.0 0.0	10.57 0.0 0.0	10.57
8	72.27 0.0 0.0	0.69 82.1 0.0	0.0 0.0 0.0	9.83 0.0 0.0	9.83
9	75.16 0.0 0.0	0.74 84.09 0.0	0.0 0.0 0.0	8.93 0.0 0.0	8.93
10	78.05 0.0 0.0	0.78 85.96 0.0	0.0 0.0 0.0	7.91 0.0 0.0	7.91
11	80.95 0.0 0.0	0.82 87.72 0.0	0.0 0.0 0.0	6.78 0.0 0.0	6.78
12	83.84 0.0 0.0	0.86 89.4 0.0	0.0 0.0 0.0	5.56 0.0 0.0	5.56
13	86.73 0.0 0.0	0.9 91.0 0.0	0.0 0.0 0.0	4.26 0.0 0.0	4.26
14	89.62 0.0 0.0	0.93 92.53 0.0	0.0 0.0 0.0	2.9 0.0 0.0	2.9
15	92.52 0.0 0.0	0.97 93.99 0.0	0.0 0.0 0.0	1.48 0.0 0.0	1.48
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	0.51 74.3 0.0	0.0 0.0 0.0	11.43 0.0 0.0	11.43
19	73.71 0.0 0.0	0.72 83.11 0.0	0.0 0.0 0.0	9.4 0.0 0.0	9.4
20	84.56 0.0 0.0	0.87 89.81 0.0	0.0 0.0 0.0	5.24 0.0 0.0	5.24
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

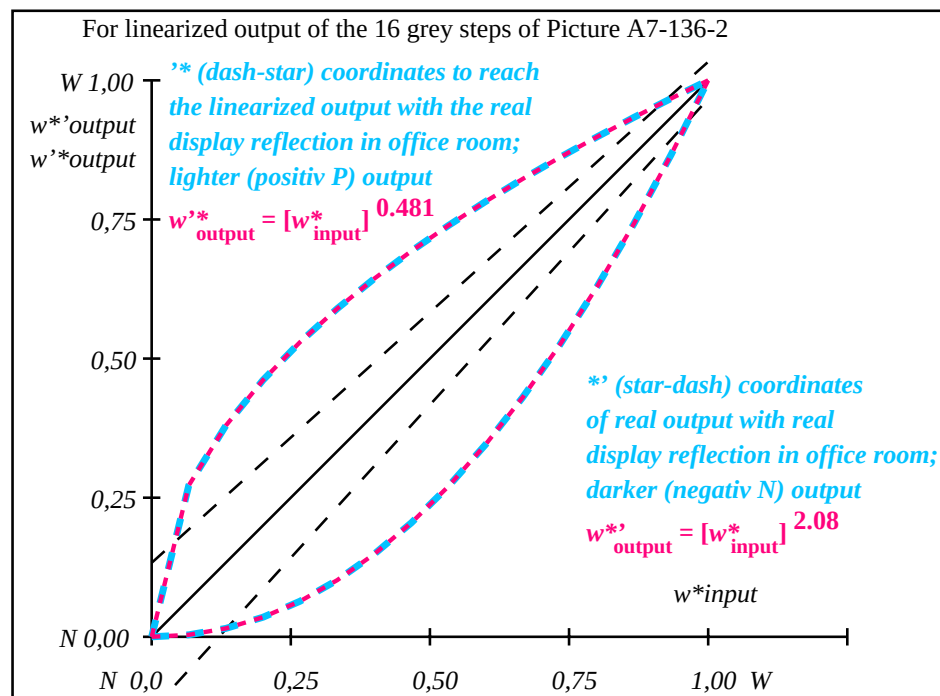
Start output S1
Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G

Mean lightness difference (16 steps)
 $\Delta E^*_{CIELAB} = 7.0$

Mean lightness difference (5 steps)
 $\Delta L^*_{CIELAB} = 5.2$

Mean colour reproduction index: $R^*_{ab,m} = 70$

OE660-3N-136-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE661-3N-136-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

$L^*/Y_{intended}$ (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 $g_P=0.48$ 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)	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{intended}$ w^*_{out}	0.000 0.0	0.067 0.273	0.133 0.379	0.200 0.461	0.267 0.53	0.333 0.589	0.400 0.644	0.467 0.693	0.533 0.739	0.600 0.782	0.667 0.823	0.733 0.861	0.800 0.898	0.867 0.934	0.933 0.967	1.000 1.0

OE660-7N, Picture A7-136-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

OE66: In-output relation according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:20$; Y_N range 15 to <30

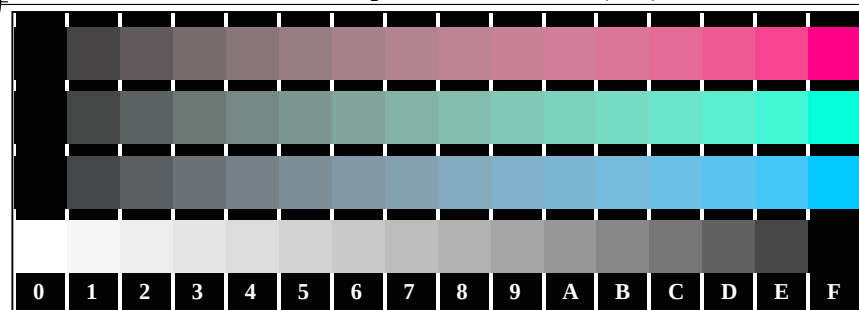
input: $rgb \rightarrow rgb^*_{de}$ setrgbcolor
output 136-2: $g_P=0.55$; $g_N=1.0$

TUB registration: 20110801-OE66/OE66L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

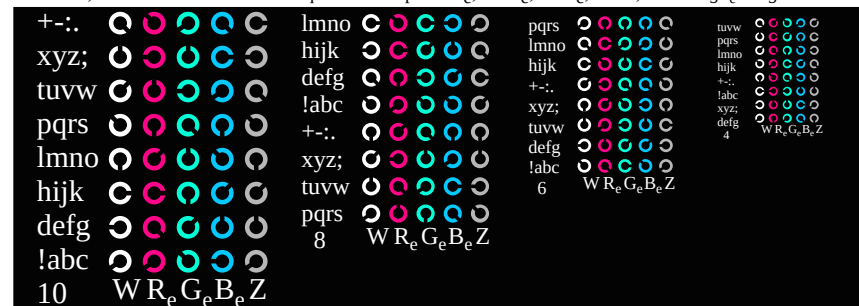
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



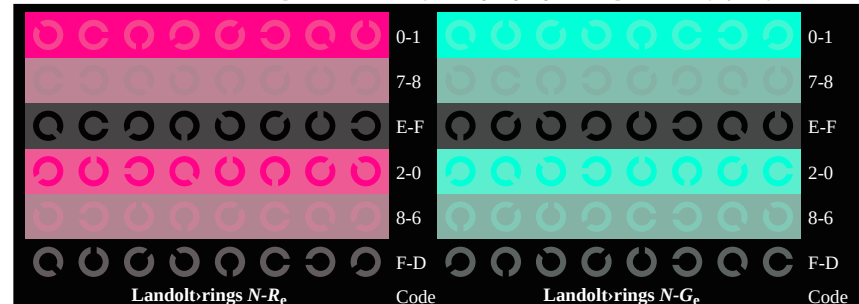
<http://130.149.60.45/~farbmetrik/OE66/OE66L0NA.TXT> /PS; linearized output, Page 1/3
F: Output Linearization (OL) data OE66/OE66L0NA.TXT /PS in File (F)



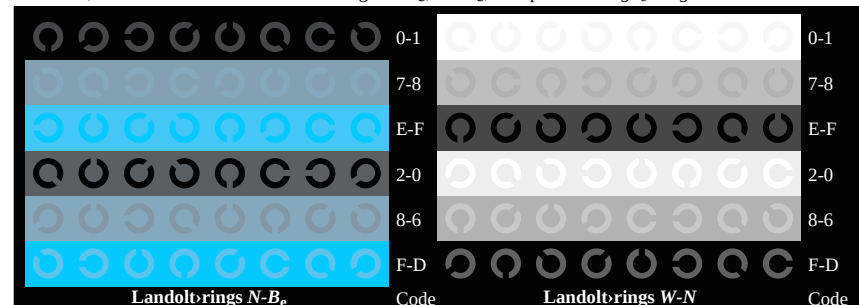
OE661-1, Picture D4N-D-137-0: 16 equidistant steps $N-R_e$; $N-G_e$; $N-B_e$; $W-N$; PS: $\rightarrow rgb_e$ setrgbcolor



OE661-3, Picture D5N-137-0: Script and Landolt-rings W ; R_e ; G_e ; B_e ; Z ; PS operator $\rightarrow rgb_e$ setrgbcolor



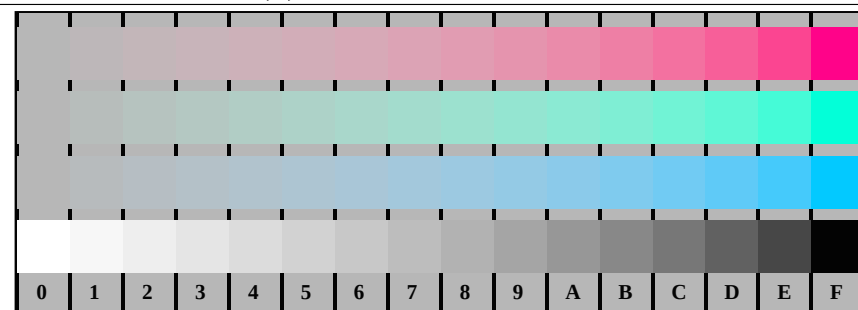
OE661-5, Picture D6N-D-137-0: Landolt-rings $N-R_e$; $N-G_e$; PS operator $\rightarrow rgb_e$ setrgbcolor



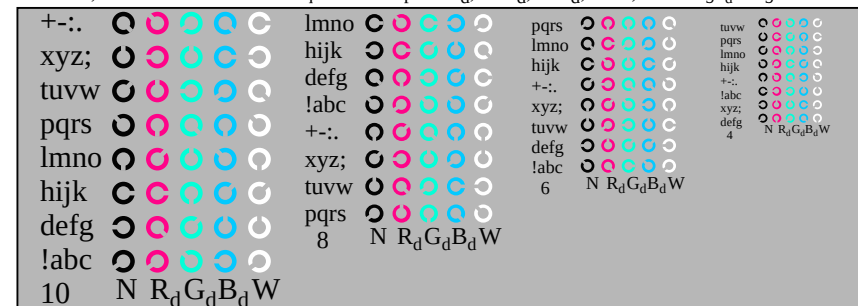
OE661-7, Picture D7N-D-137-0: Landolt-rings $N-B_e$; $W-N$; PS operator $\rightarrow rgb_e$ setrgbcolor



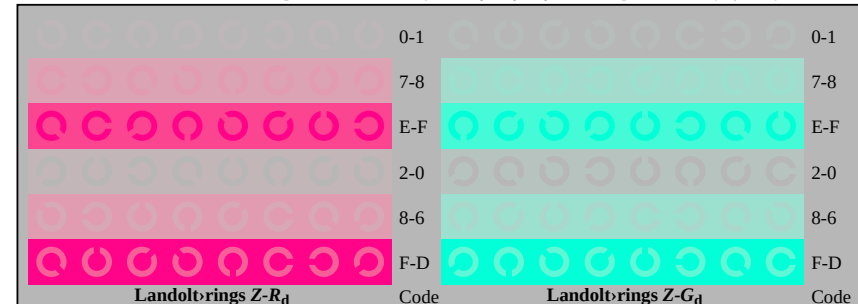
OE66: Test chart 4m according to ISO 15775, TR 24705; 1MR, DEH Input: rgb ($\rightarrow rgb_{de}$) setrgbcolor
16 step colour scales, letter size, Landolt-rings output 137-0: $g_P=0.47$; $g_N=1.0$



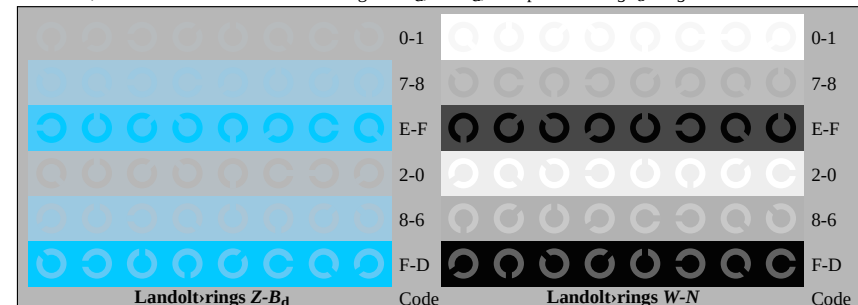
OE661-1, Picture D4Z-Z-137-0: 16 equidistant steps $Z-R_d$; $Z-G_d$; $Z-B_d$; $W-N$; PS: $\rightarrow rgb_d$ setrgbcolor



OE661-3, Picture D5Z-137-0: Script and Landolt-rings N ; R_d ; G_d ; B_d ; W ; PS operator $\rightarrow rgb_d$ setrgbcolor



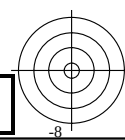
OE661-5, Picture D6Z-Z-137-0: Landolt-rings $Z-R_d$; $Z-G_d$; PS operator $\rightarrow rgb_d$ setrgbcolor



OE661-7, Picture D7Z-Z-137-0: Landolt-rings $Z-B_d$; $W-N$; PS operator $\rightarrow rgb_d$ setrgbcolor



TUB registration: 20110801-OE66/OE66L0NA.TXT /PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rha4ta



<http://130.149.60.45/~farbmetrik/OE66/OE66L0NA.TXT> /PS; linearized output, Page 2/3
 F: Output Linearization (OL) data OE66/OE66L0NA.TXT /PS in File (F)

Test of 16 visually equally spaced steps of the colour rows $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to picture D4N-137-0

$N-R_d$ Black – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps

$N-G_d$ Black – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps

$N-B_d$ Black – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps

Test of characters and Landolt-rings in four sizes according to picture D5N-137-0
 Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

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

Test of recognition frequency of Landolt-rings $N-R_d$, $N-G_d$, $N-B_d$, and $W-N$ according to pictures D6N-137-0, and D7N-137-0
 Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

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

Part 1

OE660-3N-137-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NP.PDF> **underline Yes/No**

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66L0NA.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 OE66L0NP.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 OE66L0NA.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

OE660-7N-137-1

OE66: Form A for test chart 4m according to ISO 15775; 1MR, DEHinput: $rgb(->rgb_{de})$ setrgbcolor
 16 step colour scales, letter size, Landolt-rings
 output 137-1: $g_P=0.47$; $g_N=1.0$

Test of 16 visually equally spaced steps of the colour rows $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to picture D4Z-137-0

$Z-R_d$ Grey – Orangered: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps

$Z-G_d$ Grey – Leafgreen: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps

$Z-B_d$ Grey – Violetblue: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps

$W-N$ White – Black: Are all the 16 steps distinguishable? **Yes/No**
 If No: How many steps can be distinguished? of the given 16 steps

Test of characters and Landolt-rings in four sizes according to picture D5Z-137-0
 Is the recognition frequency > 50% for letters (17 from 32 at least) and for Landolt-rings (minimum 5 of 8)?

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

Test of recognition frequency of Landolt-rings $Z-R_d$, $Z-G_d$, $Z-B_d$, and $W-N$ according to pictures D6Z-137-0, and D7Z-137-0
 Is the recognition frequency of the Landolt-rings > 50% (min. 5 of 8 at least)?

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

Part 1

OE660-3N-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/OE66/OE66F1P2.PDF> **underline Yes/No**

PS file: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.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/OE66/OE66F1P2.PDF>

picture A7-137-2

underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE66/OE66F1P2.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 and transfer
 of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF

underline Yes/No

If No, please describe other method:

Part 4

OE661-7N-137-1

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	0.3 77.46 0.0	0.0 0.0 0.0	6.04 0.0 0.0	6.04
3	73.13 0.0 0.0	0.41 80.24 0.0	0.0 0.0 0.0	7.11 0.0 0.0	7.11
4	74.84 0.0 0.0	0.49 82.31 0.0	0.0 0.0 0.0	7.47 0.0 0.0	7.47
5	76.55 0.0 0.0	0.56 84.02 0.0	0.0 0.0 0.0	7.47 0.0 0.0	7.47
6	78.27 0.0 0.0	0.62 85.51 0.0	0.0 0.0 0.0	7.24 0.0 0.0	7.24
7	79.98 0.0 0.0	0.67 86.84 0.0	0.0 0.0 0.0	6.86 0.0 0.0	6.86
8	81.7 0.0 0.0	0.71 88.05 0.0	0.0 0.0 0.0	6.35 0.0 0.0	6.35
9	83.41 0.0 0.0	0.76 89.17 0.0	0.0 0.0 0.0	5.76 0.0 0.0	5.76
10	85.12 0.0 0.0	0.8 90.21 0.0	0.0 0.0 0.0	5.08 0.0 0.0	5.08
11	86.84 0.0 0.0	0.84 91.19 0.0	0.0 0.0 0.0	4.35 0.0 0.0	4.35
12	88.55 0.0 0.0	0.87 92.11 0.0	0.0 0.0 0.0	3.56 0.0 0.0	3.56
13	90.27 0.0 0.0	0.91 92.99 0.0	0.0 0.0 0.0	2.73 0.0 0.0	2.73
14	91.98 0.0 0.0	0.94 93.83 0.0	0.0 0.0 0.0	1.85 0.0 0.0	1.85
15	93.7 0.0 0.0	0.97 94.64 0.0	0.0 0.0 0.0	0.94 0.0 0.0	0.94
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	0.54 83.62 0.0	0.0 0.0 0.0	7.5 0.0 0.0	7.5
19	82.55 0.0 0.0	0.74 88.62 0.0	0.0 0.0 0.0	6.06 0.0 0.0	6.06
20	88.98 0.0 0.0	0.88 92.34 0.0	0.0 0.0 0.0	3.35 0.0 0.0	3.35
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

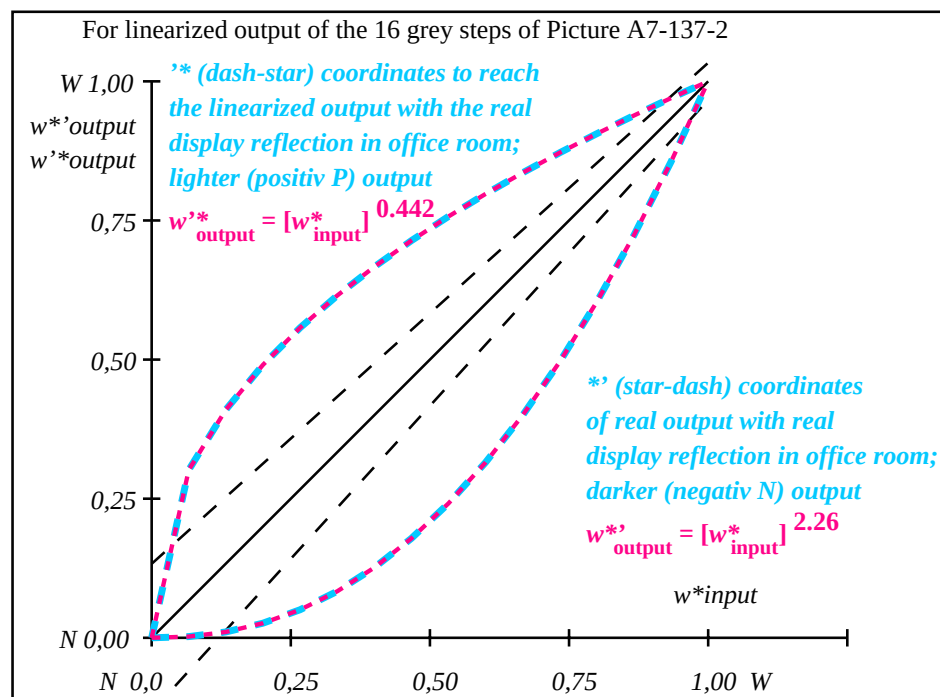
Start output S1
Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G

Mean lightness difference (16 steps)
 $\Delta E^*_{CIELAB} = 4.6$

Mean lightness difference (5 steps)
 $\Delta L^*_{CIELAB} = 3.4$

Mean colour reproduction index: $R^*_{ab,m} = 80$

OE660-3N-137-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE661-3N-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 $g_P=0.44$																
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	0.302	0.41	0.491	0.557	0.615	0.667	0.714	0.757	0.798	0.836	0.872	0.906	0.939	0.97	1.0

OE660-7N, Picture A7-137-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*_{setrgbcolor}$

OE66: In-output relation according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:40$; Y_N range 30 to <60

input: $rgb \rightarrow rgb^*_{de}$ $setrgbcolor$
output 137-2: $g_P=0.47$; $g_N=1.0$

TUB registration: 20110801-OE66/OE66L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta