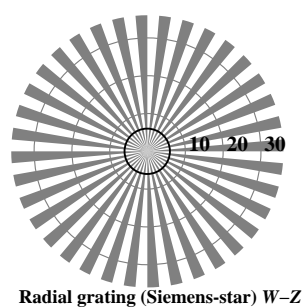
Radial grating (Siemens-star) $W-N$ 

Radial grating (Siemens-star) W-Z

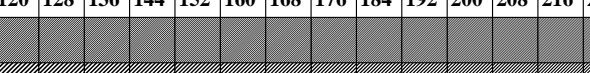
$L^*/Y_{intended}$ (absolute)	0.0/0.0	23.8/4.0	47.7/16.5	71.5/43.0	95.4/88.5	N_0 (min.)	W_I (max.)
$w^* w^* w^*$ setrgb $g_P=1.0$							
No. and Hex code	00;4	01;3	02;2	03;1	04;0		
$w^*=l^*$ CIELAB, r (relative)							
$w^*_{intended}$	0,000	0,250	0,500	0,750	1,000	N_0 (min.)	W_I (max.)
w^*_{out}	0.0	0.25	0.5	0.75	1.0		

L^*Y _{intended} (absolute)	0.0/0.0	6.3/0.7	12.7/1.5	19.0/2.7	25.4/4.5	31.8/6.9	38.1/10.1	44.5/14.2	50.8/19.1	57.2/25.1	63.6/32.3	69.9/40.7	76.3/50.4	82.6/61.5	89.0/74.2	95.4/88.5
$w^* w^* w^*$ <i>setrgb</i> $g_P=1.0$																
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
$w^*=l^*$ <i>CIELAB</i> , 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

Viewing Y contrast $Y_W:Y_N=88,9:0,31$; Y_N range 0,0 to <0,46

1	<i>ring step</i>	0-1
8	<i>Hex code</i>	7-8
F		E-F
0		2-0
6		8-6
D		F-D

code: background-ring

	120	128	136	144	152	160	168	176	184	192	200	208	216	224	232	240	
120 (+8)																	240
60 (+4)																	120
30 (+2)																	60
15 (+1)																	30
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	line raster diameter in lpi																

	120	128	136	144	152	160	168	176	184	192	200	208	216	224	232	240	
120 (+8)																	240
60 (+4)																	120
30 (+2)																	60
15 (+1)																	30
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	line raster diameter in lpi																

input: $w \rightarrow rgb^*_d$ *setgray*
output 130-0: $g_P=1.0$; $g_N=1.0$

Test for the best visual linearized output of Picture A7-130-0 Yes/No
Output test with the computer display () or the external display ()
Test of the radial grating according to picture A1-130-0
N-W-radial grating: Is the resolution diameter < 6 mm? Yes/No
Test with magnifying glass (e.g. 6x) resolution diameter mm
W-N-radial grating: Is the resolution diameter < 6 mm? Yes/No
Test with magnifying glass (e.g. 6x) resolution diameter mm
N-Z-radial grating: Is the resolution diameter < 6 mm? Yes/No
Test with magnifying glass (e.g. 6x) resolution diameter mm
W-Z-radial grating: Is the resolution diameter < 6 mm? Yes/No
Test with magnifying glass (e.g. 6x) resolution diameter mm
Test of 5 visual equidistant L*-grey steps according to picture A2-130-0
Are the 5 steps on the upper rows distinguishable? Yes/No
If No: How many steps can be distinguished? Steps
of the given 5 steps:
Test of 16 visual equidistant L*-grey steps according to picture A3-130-0
Are the 16 steps on the upper rows distinguishable? Yes/No
If No: How many steps can be distinguished? Steps
of the given 16 steps:

Part 1 OE510-3N-130-1

Documentation of file format, hardware and software for this test:
PDF-File: http://130.149.60.45/farbmetrik/OE51/OE51L0NP.PDF underline Yes/No
PS-File: http://130.149.60.45/farbmetrik/OE51/OE51L0NA.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 OE51L0NP.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 OE51L0NA.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 OE510-7N-130-1

OE51: Form A for test chart according to ISO 9241-306; 1MR, DH input: $w (->rgb*_d)$ setgray
Viewing Y contrast $Y_W:Y_N=88,9:0,31$; Y_N range 0,0 to <0,46 output 130-1: $g_P=1.0$; $g_N=1.0$

Test for the best visual linearized output of Picture A7-130-0 Yes/No
Output test with the computer display () or the external display ()
Test of the Landolt-rings N-W according to picture A4-130-0
N-W-radial grating:
Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?
background - ring
0 - 1 Yes/No
7 - 8 Yes/No
E - F Yes/No
2 - 0 Yes/No
8 - 6 Yes/No
F - D Yes/No
Test of the radial grating under 45° according to picture A5-130-0
Can equally spaced lines be seen?
Visual testing: for radial diameter from 15 to 60 lpi Yes/No
Test with a magnifying glass (e.g. 6x): - from 15 lpi: to lpi
Test of the radial grating under 90° according to picture A6-130-0
Can equally spaced lines be seen?
Visual testing: for radial diameter from 15 to 60 lpi Yes/No
Test with a magnifying glass (e.g. 6x): - from 15 lpi: to lpi

Part 2 OE511-3N-130-1

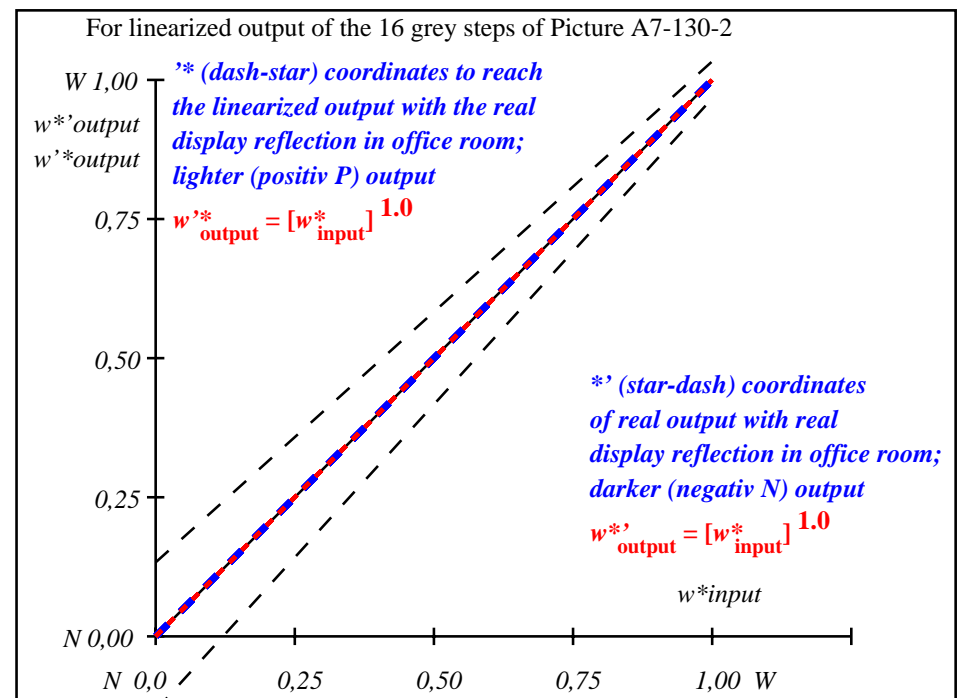
Documentation of assessor colour vision properties for visual assessment
The assessor has normal colour vision according to one test: underline Yes/No
either according to DIN 6160:1996 with Anomaloskop of Nagel underline Yes/unknown
or with test charts using colour points according to Ishihara underline Yes/unknown
or tested with, please specify: underline Yes/unknown
For visual evaluation of the display (monitor, data projector) output
Office workplace illumination is daylight (clouded/north sky) underline Yes/No
PDF file: http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PDF underline Yes/No
PS file: http://130.149.60.45/farbmetrik/OE51/OE51F1P2.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/OE51/OE51F1P2.PDF underline Yes/No
picture A7-130-2
PS-File: http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PS or underline Yes/No
picture A7-130-2
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 OE511-7N-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	I*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	0.0	0.0	0.0	0.0	0.0	0.01
2	6.36	0.0	0.07	6.36	0.0	0.01
3	12.72	0.0	0.13	12.72	0.0	0.01
4	19.08	0.0	0.2	19.08	0.0	0.01
5	25.44	0.0	0.27	25.44	0.0	0.01
6	31.8	0.0	0.33	31.8	0.0	0.01
7	38.16	0.0	0.4	38.16	0.0	0.01
8	44.52	0.0	0.47	44.52	0.0	0.01
9	50.89	0.0	0.53	50.89	0.0	0.01
10	57.25	0.0	0.6	57.25	0.0	0.01
11	63.61	0.0	0.67	63.61	0.0	0.01
12	69.97	0.0	0.73	69.97	0.0	0.01
13	76.33	0.0	0.8	76.33	0.0	0.01
14	82.69	0.0	0.87	82.69	0.0	0.01
15	89.05	0.0	0.93	89.05	0.0	0.01
16	95.41	0.0	1.0	95.41	0.0	0.01
17	0.0	0.0	0.0	0.0	0.0	0.01
18	23.85	0.0	0.25	23.85	0.0	0.01
19	47.71	0.0	0.5	47.71	0.0	0.01
20	71.56	0.0	0.75	71.56	0.0	0.01
21	95.41	0.0	1.0	95.41	0.0	0.01
Mean lightness difference (16 steps)						ΔE* _{CIELAB} = 0.0
Mean lightness difference (5 steps)						ΔE* _{CIELAB} = 0.0
Mean colour reproduction index:						R* _{ab,m} = 100

OE510-3N-130-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE511-3N-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

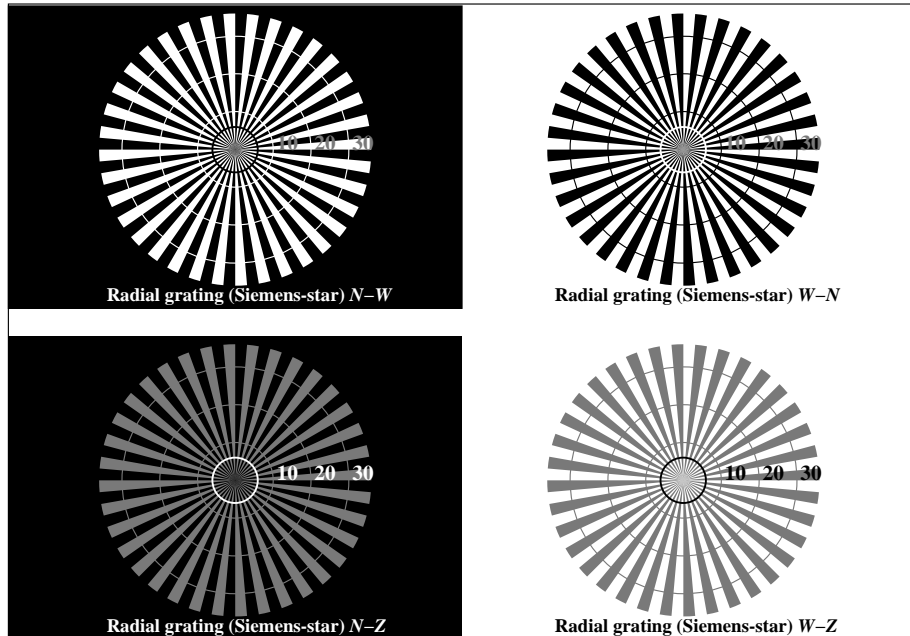
OE510-7N, Picture A7-130-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*_{setrgbcolor}$

OE51: 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

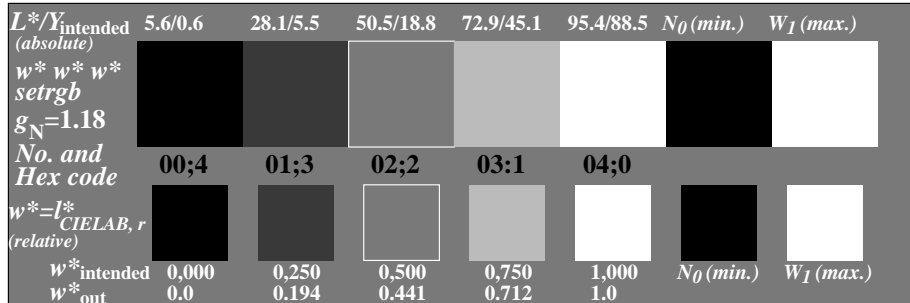
input: w ($\rightarrow rgb^*_d$) setgray
output 130-2: $g_p=1.0$; $g_N=1.0$

TUB registration: 20110801-OE51/OE51L0NA.TXT /.PS
TUB material: code=thata
application for output of displays: monitor systems or data projector systems

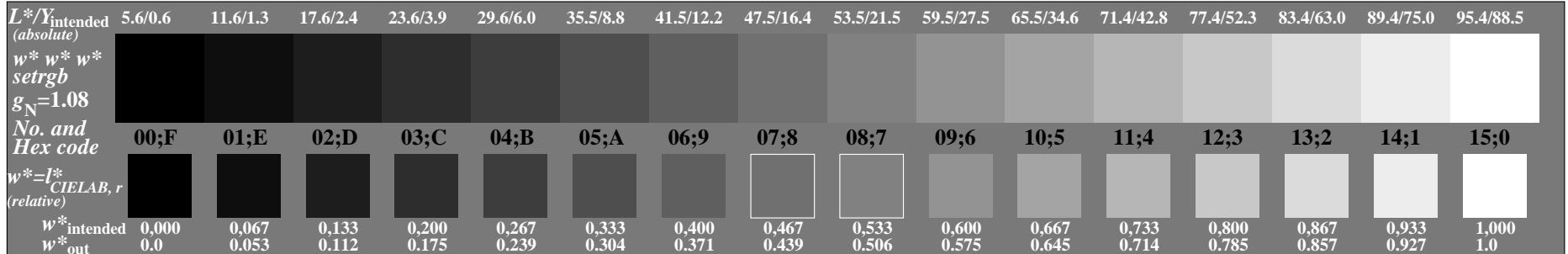
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



OE510-3N, Picture A1-131-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$



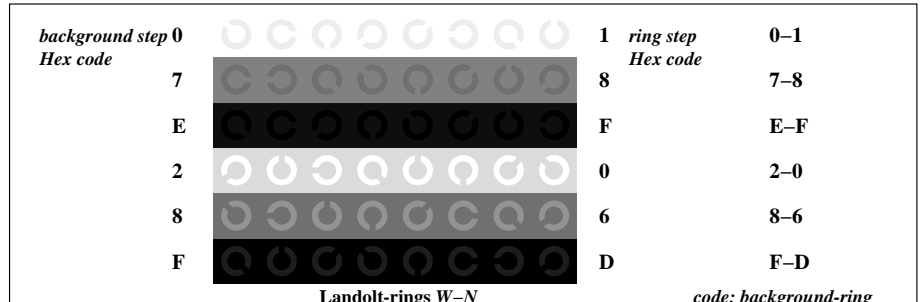
OE510-5N, Picture A2-131-0: 5 equidistant L^* -grey steps+ N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$



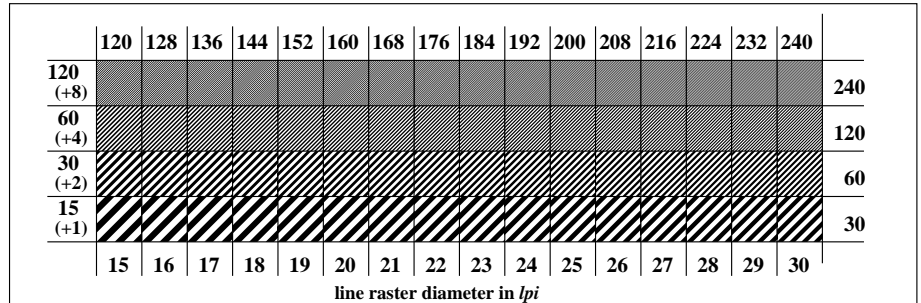
OE510-7N, Picture A3-131-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

OE51: similar ME16 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

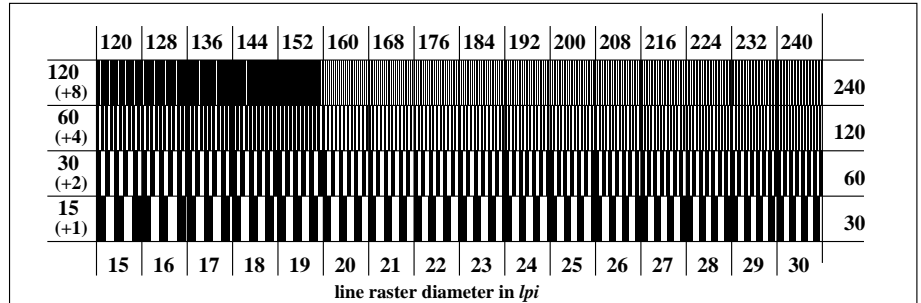
input: w ($\rightarrow \text{rgb}^*_d$) setgray
output 130-0: $g_P=1.0$; $g_N=1.08$



OE511-1N, Picture A4-131-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE511-3N, Picture A5-131-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE511-5N, Picture A6-131-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

Test for the best visual linearized output of Picture A7-131-0 Yes/No
Output test with the computer display () or the external display ()
Test of the radial grating according to picture A1-131-0
N-W-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
W-N-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
N-Z-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
W-Z-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
Test of 5 visual equidistant L*-grey steps according to picture A2-131-0
 Are the 5 steps on the upper rows distinguishable? Yes/No
 If No: How many steps can be distinguished? Steps
Test of 16 visual equidistant L*-grey steps according to picture A3-131-0
 Are the 16 steps on the upper rows distinguishable? Yes/No
 If No: How many steps can be distinguished? Steps

Part 1 OE510-3N-138-1

Documentation of file format, hardware and software for this test:
PDF-File: <http://130.149.60.45/farbmetrik/OE51/OE51L0NP.PDF> underline Yes/No
PS-File: <http://130.149.60.45/farbmetrik/OE51/OE51L0NA.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 OE51L0NP.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 OE51L0NA.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 OE510-7N-131-1

OE51: Form A for test chart according to ISO 9241-306; 1MR, DH input: $w (-> rgb*_d)$ setgray
 Viewing Y contrast $Y_W: Y_N=88,9:0,62$; Y_N range 0,46 to <0,93 output 130-1: $g_P=1.0$; $g_N=1.08$

Test for the best visual linearized output of Picture A7-131-0 Yes/No
Output test with the computer display () or the external display ()
Test of the Landolt-rings N-W according to picture A4-131-0
N-W-radial grating:
 Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?
 background – ring
 0 – 1 Yes/No
 7 – 8 Yes/No
 E – F Yes/No
 2 – 0 Yes/No
 8 – 6 Yes/No
 F – D Yes/No
Test of the radial grating under 45° according to picture A5-131-0
 Can equally spaced lines be seen?
 Visual testing: for radial diameter from 15 to 60 lpi Yes/No
 Test with a magnifying glass (e.g. 6x): – from 15 lpi: to lpi
Test of the radial grating under 90° according to picture A6-131-0
 Can equally spaced lines be seen?
 Visual testing: for radial diameter from 15 to 60 lpi Yes/No
 Test with a magnifying glass (e.g. 6x): – from 15 lpi: to lpi

Part 2 OE511-3N-131-1

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

For visual evaluation of the display (monitor, data projector) output
 Office workplace illumination is daylight (clouded/north sky) underline Yes/No
PDF file: <http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PDF> underline Yes/No
PS file: <http://130.149.60.45/farbmetrik/OE51/OE51F1P2.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/OE51/OE51F1P2.PDF> underline Yes/No
picture A7-131-2
PS-File: <http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PS> or underline Yes/No
picture A7-131-2

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 OE511-7N-131-1

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

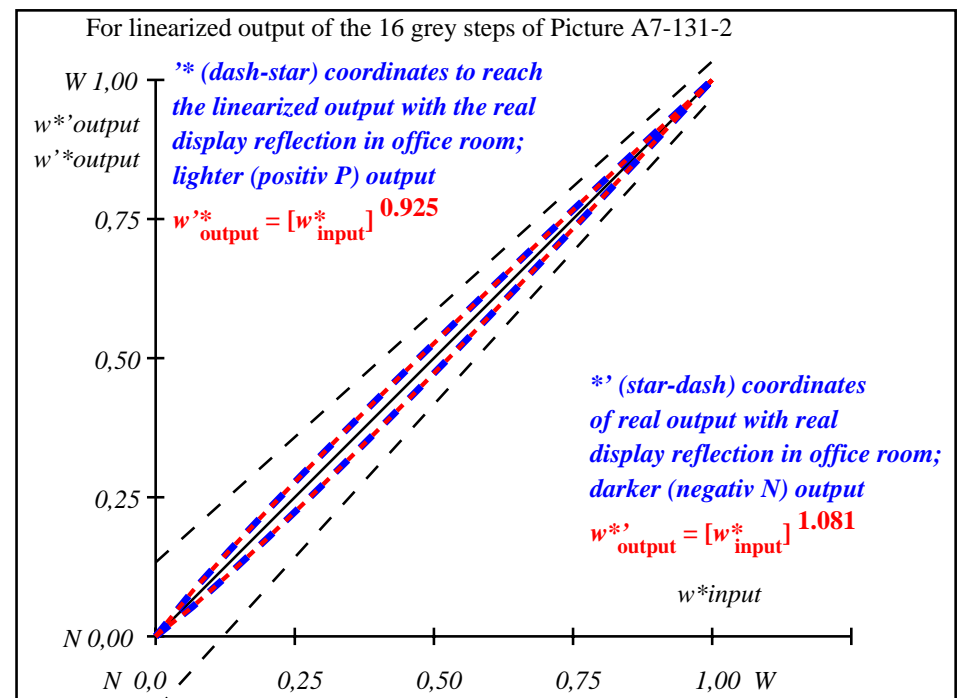
i	LAB*ref	L*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	5.69	0.0	0.0	5.69	0.0	0.0
2	11.67	0.0	0.05	10.49	0.0	0.0
3	17.65	0.0	0.11	15.85	0.0	0.0
4	23.63	0.0	0.18	21.44	0.0	0.0
5	29.62	0.0	0.24	27.18	0.0	0.0
6	35.6	0.0	0.3	33.05	0.0	0.0
7	41.58	0.0	0.37	39.01	0.0	0.0
8	47.56	0.0	0.44	45.05	0.0	0.0
9	53.54	0.0	0.51	51.16	0.0	0.0
10	59.52	0.0	0.58	57.34	0.0	0.0
11	65.5	0.0	0.65	63.57	0.0	0.0
12	71.48	0.0	0.72	69.85	0.0	0.0
13	77.47	0.0	0.79	76.18	0.0	0.0
14	83.45	0.0	0.86	82.55	0.0	0.0
15	89.43	0.0	0.93	88.96	0.0	0.0
16	95.41	0.0	1.0	95.41	0.0	0.0
17	5.69	0.0	0.0	5.69	0.0	0.0
18	28.12	0.0	0.22	25.74	0.0	0.0
19	50.55	0.0	0.47	48.1	0.0	0.0
20	72.98	0.0	0.73	71.43	0.0	0.0
21	95.41	0.0	1.0	95.41	0.0	0.0

Mean lightness difference (16 steps) $\Delta E^*_{CIELAB} = 1.6$

Mean lightness difference (5 steps) $\Delta E^*_{CIELAB} = 1.3$

Mean colour reproduction index: $R^*_{ab,m} = 93$

OE510-3N-131-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE511-3N-131-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

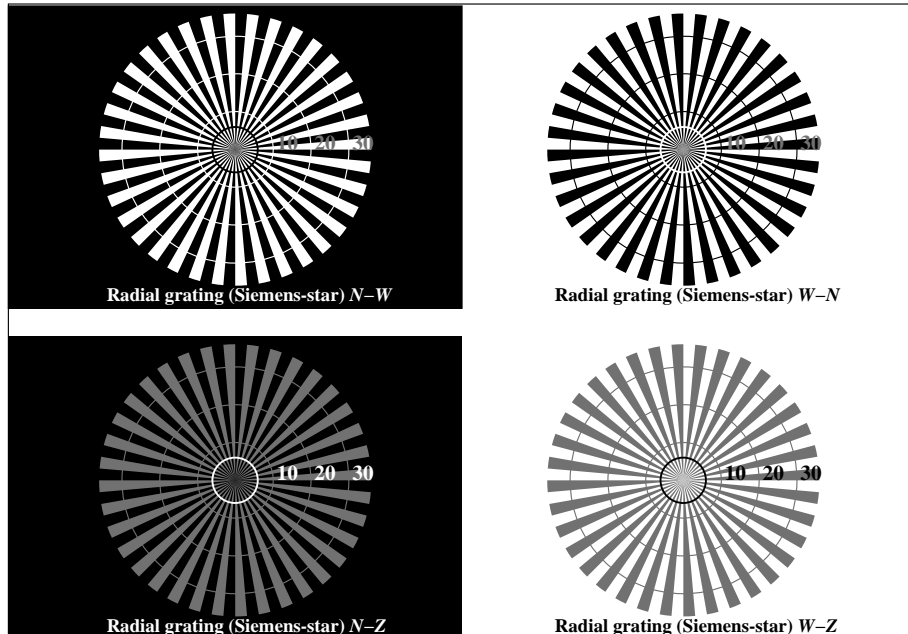
$L^*/Y^*_{intended}$ (absolute)	5.7/0.6	11.7/1.4	17.7/2.4	23.6/4.0	29.6/6.1	35.6/8.8	41.6/12.2	47.6/16.5	53.5/21.5	59.5/27.6	65.5/34.7	71.5/42.9	77.5/52.3	83.4/63.0	89.4/75.1	95.4/88.6
$w^* w^* w^*$ <i>setrgb</i>																
$g_N=1.08$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7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

OE510-7N, Picture A7-131-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*_{setrgbcolor}$

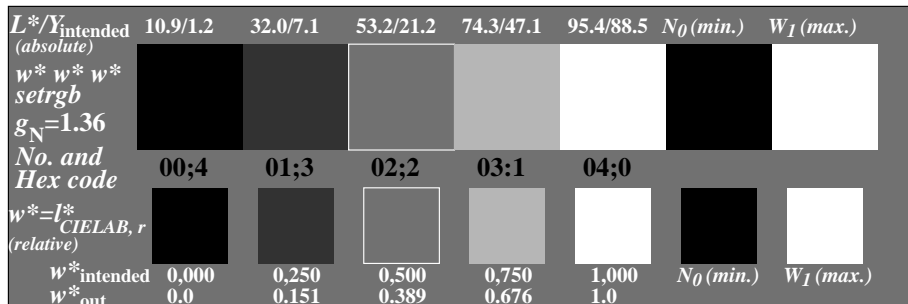
OE51: In-output relation according to ISO 9241-306; 1MR, DH
Viewing Y contrast $Y_W:Y_N=88,9:0,62$; Y_N range 0,46 to <0,93

input: w ($\rightarrow rgb^*_d$) *setgray*
output 130-2: $g_P=1.0$; $g_N=1.08$

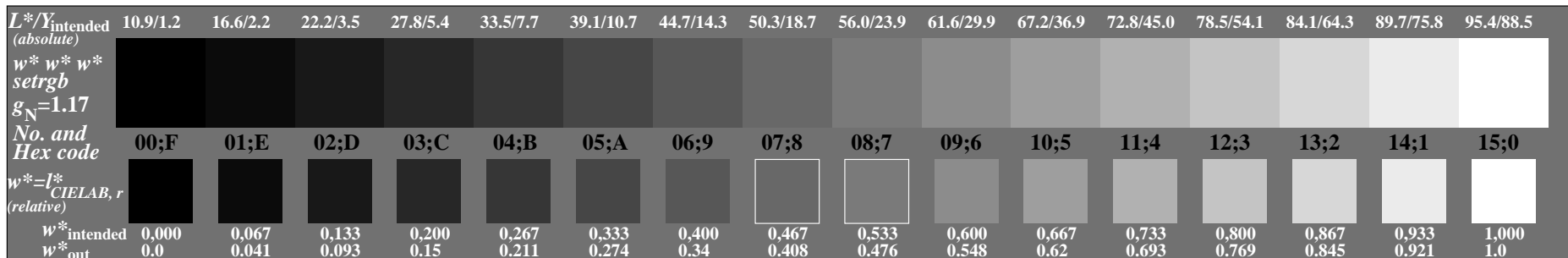
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



OE510-3N, Picture A1-132-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^*w^*w^*$ setrgbcolor

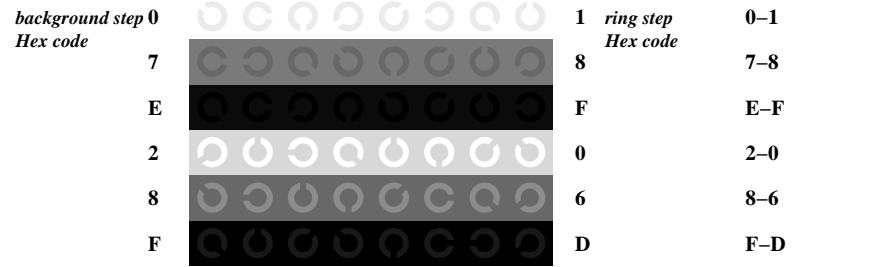


OE510-5N, Picture A2-132-0: 5 equidistant L^* -grey steps+N0+W1; PS operator: $w^*w^*w^*$ setrgbcolor

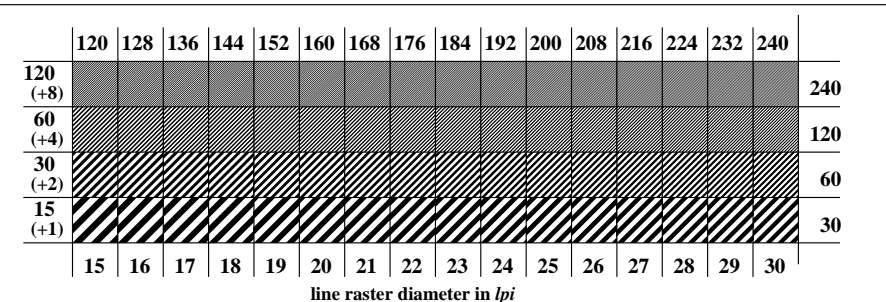


OE510-7N, Picture A3-132-0: 16 visual equidistant L^* -grey steps; PS operator: $w^*w^*w^*$ setrgbcolor

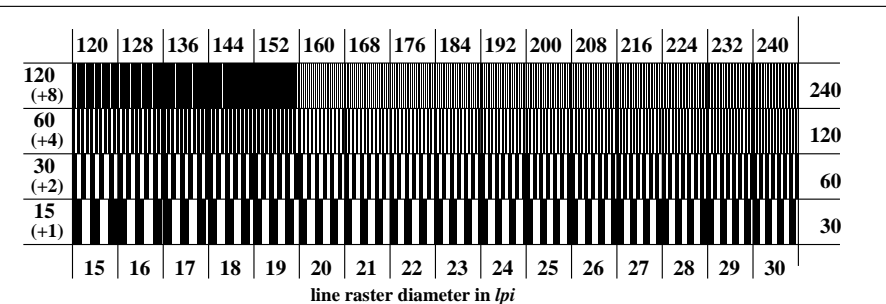
OE51: similar ME16 according to ISO 9241-306; 1MR, DH
Viewing Y contrast $Y_W:Y_N=88,9:1,25$; Y_N range 0,93 to <1,87



OE511-1N, Picture A4-132-0: Landolt-rings W-N; PS operator: $w^*w^*w^*$ setrgbcolor



OE511-3N, Picture A5-132-0: Line raster under 45° (or 135°); PS operator: $w^*w^*w^*$ setrgbcolor



OE511-5N, Picture A6-132-0: Line raster under 90° (or 0°); PS operator: $w^*w^*w^*$ setrgbcolor

input: w ($\rightarrow rgb^*_d$) setgray
output 130-0: $g_P=1.0$; $g_N=1.17$

TUB registration: 20110801-OE51/OE51L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

Test for the best visual linearized output of Picture A7-132-0 Yes/No
Output test with the computer display () or the external display ()
Test of the radial grating according to picture A1-132-0
N-W-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
W-N-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
N-Z-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
W-Z-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
Test of 5 visual equidistant L*-grey steps according to picture A2-132-0
 Are the 5 steps on the upper rows distinguishable? Yes/No
 If No: How many steps can be distinguished? of the given 5 steps: Steps
Test of 16 visual equidistant L*-grey steps according to picture A3-132-0
 Are the 16 steps on the upper rows distinguishable? Yes/No
 If No: How many steps can be distinguished? of the given 16 steps: Steps

Part 1

OE510-3N-1316-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE51/OE51L0NP.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE51/OE51L0NA.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 OE51L0NP.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 OE51L0NA.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

OE510-7N-132-1

OE51: Form A for test chart according to ISO 9241-306; 1MR, DH input: $w (->rgb*_d)$ setgray
 Viewing Y contrast $Y_W:Y_N=88,9:1,25$; Y_N range 0,93 to <1,87 output 130-1: $g_P=1.0$; $g_N=1.17$

Test for the best visual linearized output of Picture A7-132-0 Yes/No
Output test with the computer display () or the external display ()
Test of the Landolt-rings N-W according to picture A4-132-0
N-W-radial grating:
 Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?
 background – ring
 0 – 1 Yes/No
 7 – 8 Yes/No
 E – F Yes/No
 2 – 0 Yes/No
 8 – 6 Yes/No
 F – D Yes/No
Test of the radial grating under 45° according to picture A5-132-0
 Can equally spaced lines be seen?
 Visual testing: for radial diameter from 15 to 60 lpi Yes/No
 Test with a magnifying glass (e.g. 6x): – from 15 lpi: to lpi
Test of the radial grating under 90° according to picture A6-132-0
 Can equally spaced lines be seen?
 Visual testing: for radial diameter from 15 to 60 lpi Yes/No
 Test with a magnifying glass (e.g. 6x): – from 15 lpi: to lpi

Part 2

OE511-3N-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/OE51/OE51F1P2.PDF>

underline Yes/No

PS file: <http://130.149.60.45/farbmetrik/OE51/OE51F1P2.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/OE51/OE51F1P2.PDF>

underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PS>

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

OE511-7N-132-1

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

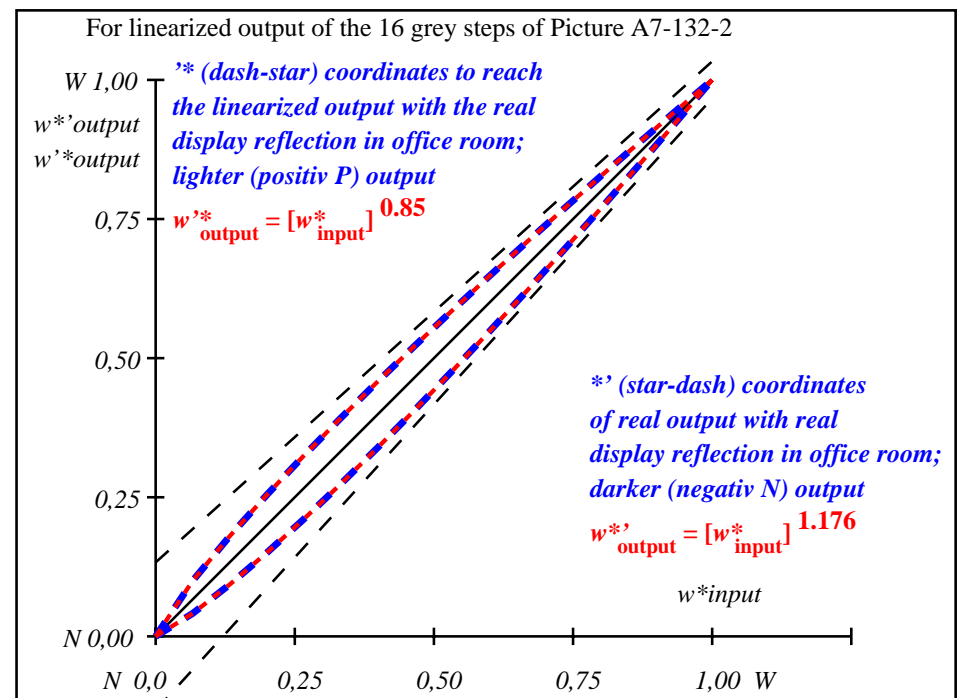
i	LAB*ref	L*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	10.99	0.0	0.0	10.99	0.0	0.01
2	16.62	0.0	0.04	14.48	0.0	2.14
3	22.25	0.0	0.09	18.88	0.0	3.37
4	27.88	0.0	0.15	23.7	0.0	4.17
5	33.5	0.0	0.21	28.82	0.0	4.68
6	39.13	0.0	0.27	34.17	0.0	4.96
7	44.76	0.0	0.34	39.72	0.0	5.04
8	50.39	0.0	0.41	45.43	0.0	4.96
9	56.02	0.0	0.48	51.29	0.0	4.73
10	61.64	0.0	0.55	57.28	0.0	4.37
11	67.27	0.0	0.62	63.38	0.0	3.89
12	72.9	0.0	0.69	69.6	0.0	3.3
13	78.53	0.0	0.77	75.92	0.0	2.61
14	84.15	0.0	0.85	82.33	0.0	1.82
15	89.78	0.0	0.92	88.83	0.0	0.95
16	95.41	0.0	1.0	95.41	0.0	0.01
17	10.99	0.0	0.0	10.99	0.0	0.01
18	32.1	0.0	0.2	27.52	0.0	4.58
19	53.2	0.0	0.44	48.34	0.0	4.86
20	74.31	0.0	0.71	71.17	0.0	3.13
21	95.41	0.0	1.0	95.41	0.0	0.01

Mean lightness difference (16 steps) $\Delta E^*_{\text{CIELAB}} = 3.2$

Mean lightness difference (5 steps) $\Delta E^*_{\text{CIELAB}} = 2.5$

Mean colour reproduction index: $R^*_{\text{ab,m}} = 86$

OE510-3N-132-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE511-3N-132-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

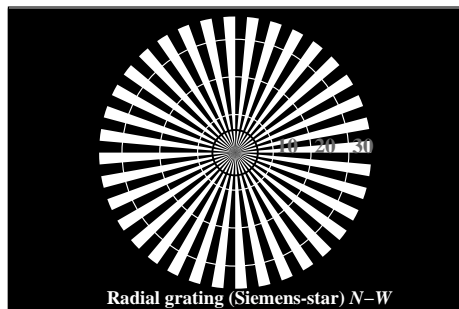
$L^*/Y^*_{\text{intended}}$ (absolute)	11.0/1.3	16.6/2.2	22.2/3.6	27.9/5.4	33.5/7.8	39.1/10.7	44.8/14.4	50.4/18.7	56.0/23.9	61.6/30.0	67.3/37.0	72.9/45.0	78.5/54.1	84.2/64.4	89.8/75.8	95.4/88.6
$w^* w^* w^*$ setrgb $g_N=1.18$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4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

OE510-7N, Picture A7-132-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

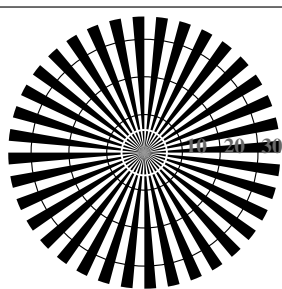
OE51: In-output relation according to ISO 9241-306; 1MR, DH
Viewing Y contrast $Y_W:Y_N=88,9:1,25$; Y_N range 0,93 to <1,87

input: w ($\rightarrow \text{rgb}^*_d$) setgray
output 130-2: $g_P=1.0$; $g_N=1.17$

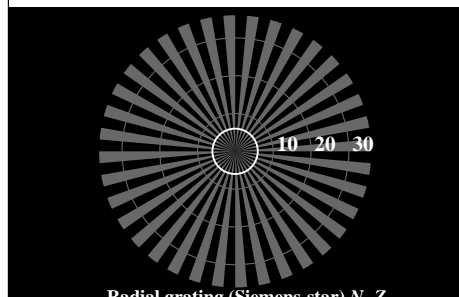
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



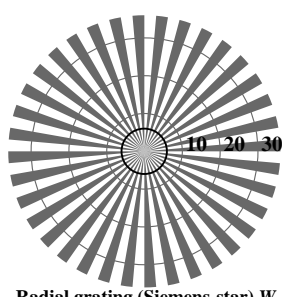
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

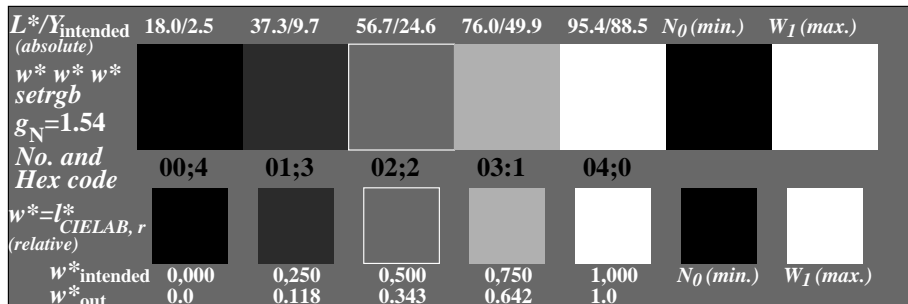


Radial grating (Siemens-star) N-Z

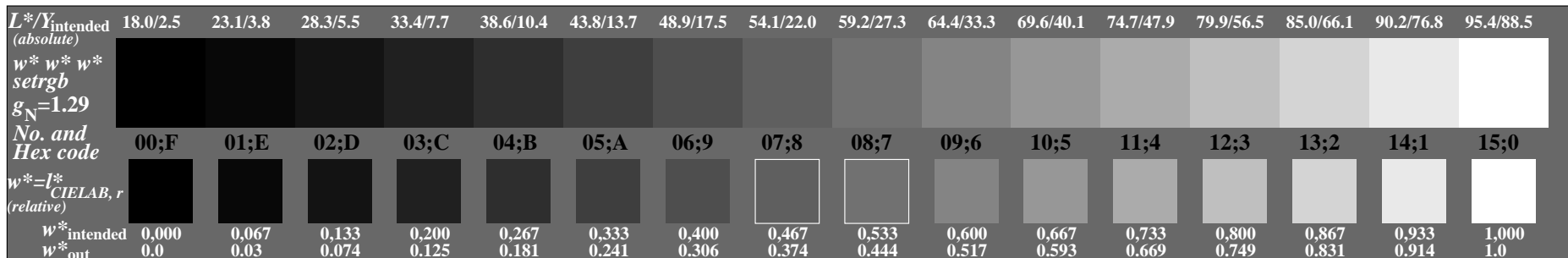


Radial grating (Siemens-star) W-Z

OE510-3N, Picture A1-133-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$

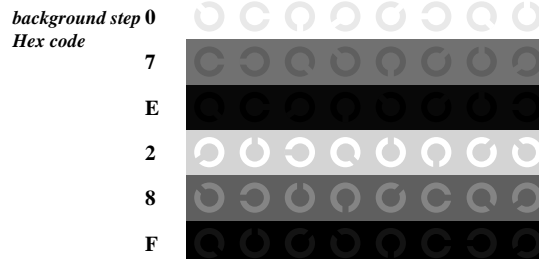


OE510-5N, Picture A2-133-0: 5 equidistant L^* -grey steps+ N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE510-7N, Picture A3-133-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

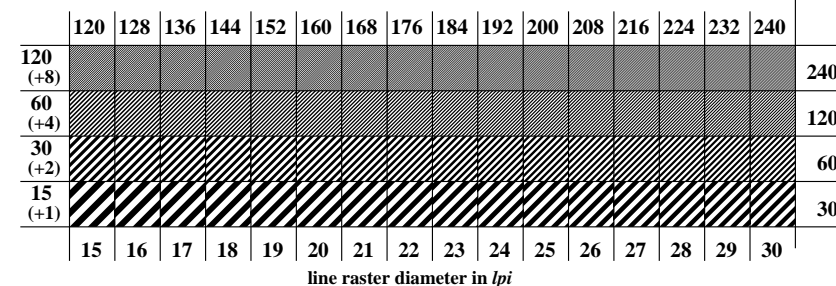
OE51: similar ME16 according to ISO 9241-306; 1MR, DH
Viewing Y contrast $Y_W:Y_N=88.9:2.5$; Y_N range 1,87 to <3,75



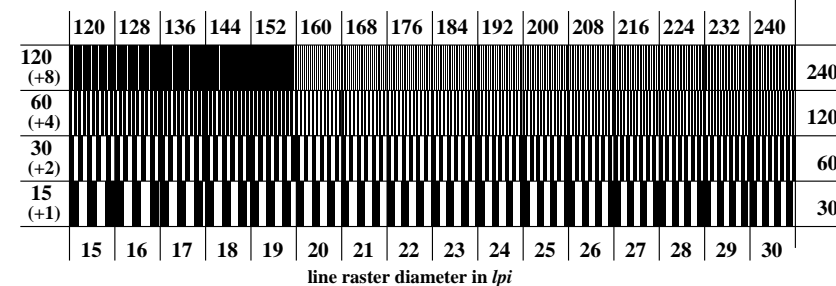
Landolt-rings W-N

code: background-ring

OE511-1N, Picture A4-133-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE511-3N, Picture A5-133-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE511-5N, Picture A6-133-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

input: w ($\rightarrow \text{rgb}^*_d$) setgray
output 130-0: $g_P=1.0$; $g_N=1.29$

TUB registration: 20110801-OE51/OE51L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

Test for the best visual linearized output of Picture A7-133-0 Yes/No
Output test with the computer display () or the external display ()
Test of the radial grating according to picture A1-133-0
N-W-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
W-N-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
N-Z-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
W-Z-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
Test of 5 visual equidistant *L-grey steps according to picture A2-133-0**
 Are the 5 steps on the upper rows distinguishable? Yes/No
 If No: How many steps can be distinguished? Steps
Test of 16 visual equidistant *L-grey steps according to picture A3-133-0**
 Are the 16 steps on the upper rows distinguishable? Yes/No
 If No: How many steps can be distinguished? Steps

Part 1

OE510-3N-1324-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE51/OE51L0NP.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE51/OE51L0NA.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 OE51L0NP.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 OE51L0NA.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

OE510-7N-133-1

OE51: Form A for test chart according to ISO 9241-306; 1MR, DH input: $w (->rgb*_d)$ setgray
 Viewing Y contrast $Y_W:Y_N=88,9:2,5$; Y_N range 1,87 to <3,75

Test for the best visual linearized output of Picture A7-133-0 Yes/No
Output test with the computer display () or the external display ()
Test of the *Landolt*-rings *N-W* according to picture A4-133-0
N-W-radial grating:
 Is the recognition frequency of the *Landolt*-rings > 50% (5 of 8 at least)?
 background – ring
 0 – 1 Yes/No
 7 – 8 Yes/No
 E – F Yes/No
 2 – 0 Yes/No
 8 – 6 Yes/No
 F – D Yes/No
Test of the radial grating under 45° according to picture A5-133-0
 Can equally spaced lines be seen?
 Visual testing: for radial diameter from 15 to 60 lpi Yes/No
 Test with a magnifying glass (e.g. 6x): – from 15 lpi: to lpi
Test of the radial grating under 90° according to picture A6-133-0
 Can equally spaced lines be seen?
 Visual testing: for radial diameter from 15 to 60 lpi Yes/No
 Test with a magnifying glass (e.g. 6x): – from 15 lpi: to lpi

Part 2

OE511-3N-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/OE51/OE51F1P2.PDF>

underline Yes/No

PS file: <http://130.149.60.45/farbmetrik/OE51/OE51F1P2.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/OE51/OE51F1P2.PDF>

underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PS>

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

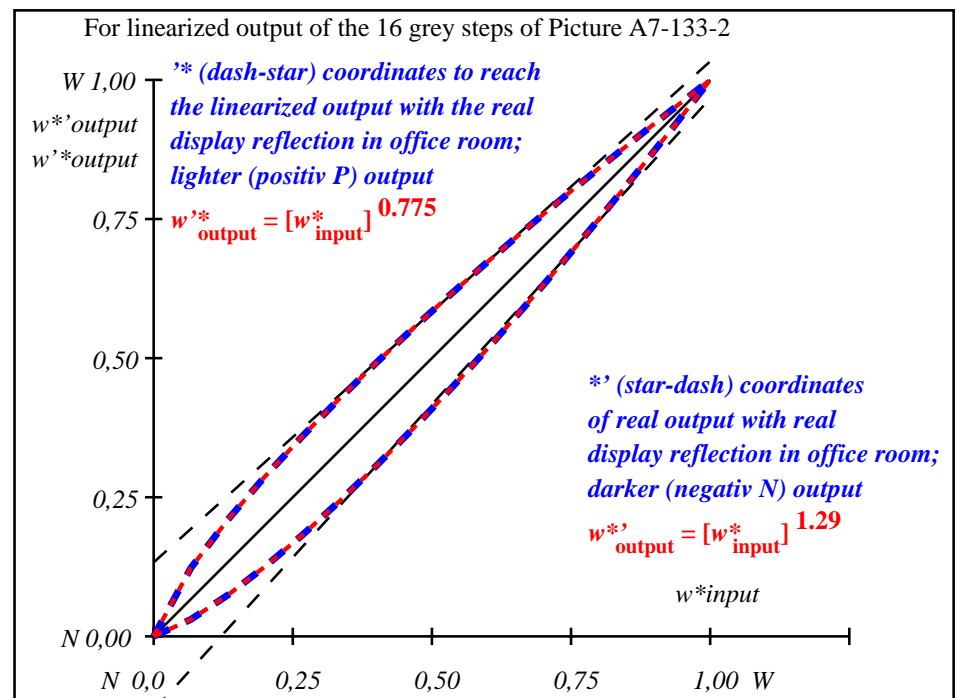
OE511-7N-133-1

output 130-1: $g_P=1.0$; $g_N=1.29$

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

i	LAB*ref	I*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	18.01	0.0	0.0	18.01	0.0	0.0
2	23.17	0.0	0.03	20.36	0.0	-2.8
3	28.33	0.0	0.07	23.76	0.0	-4.56
4	33.49	0.0	0.13	27.71	0.0	-5.77
5	38.65	0.0	0.18	32.07	0.0	-6.57
6	43.81	0.0	0.24	36.76	0.0	-7.04
7	48.97	0.0	0.31	41.74	0.0	-7.22
8	54.13	0.0	0.37	46.96	0.0	-7.16
9	59.29	0.0	0.44	52.4	0.0	-6.88
10	64.45	0.0	0.52	58.05	0.0	-6.39
11	69.61	0.0	0.59	63.88	0.0	-5.72
12	74.77	0.0	0.67	69.88	0.0	-4.88
13	79.93	0.0	0.75	76.05	0.0	-3.87
14	85.09	0.0	0.83	82.36	0.0	-2.72
15	90.25	0.0	0.91	88.82	0.0	-1.42
16	95.41	0.0	1.0	95.41	0.0	0.0
17	18.01	0.0	0.0	18.01	0.0	0.0
18	37.36	0.0	0.17	30.95	0.0	-6.4
19	56.71	0.0	0.41	49.66	0.0	-7.04
20	76.06	0.0	0.69	71.41	0.0	-4.64
21	95.41	0.0	1.0	95.41	0.0	0.0
Mean lightness difference (16 steps)						ΔE* _{CIELAB} = 4.6
Mean lightness difference (5 steps)						ΔE* _{CIELAB} = 3.6
Mean colour reproduction index:						R* _{ab,m} = 80

OE510-3N-133-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE511-3N-133-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

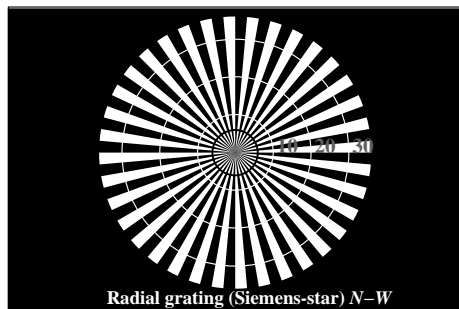
$L^*/Y^*_{\text{intended}}$ (absolute)	18.0/2.5	23.2/3.8	28.3/5.6	33.5/7.8	38.6/10.5	43.8/13.7	49.0/17.6	54.1/22.1	59.3/27.3	64.4/33.4	69.6/40.2	74.8/47.9	79.9/56.6	85.1/66.2	90.2/76.8	95.4/88.6
$w^* w^* w^*$ setrgb $g_N=1.29$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^* = [L^*_{\text{CIELAB}, r}]$ (relative)	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	0.031	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

OE510-7N, Picture A7-133-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

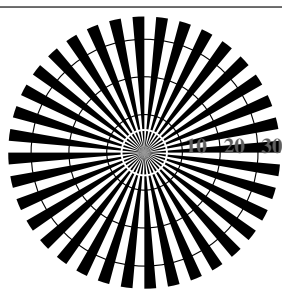
OE51: In-output relation according to ISO 9241-306; 1MR, DH
Viewing Y contrast $Y_W:Y_N=88,9:2,5$; Y_N range 1,87 to <3,75

input: w (\rightarrow rgb*d) setgray
output 130-2: $g_P=1.0$; $g_N=1.29$

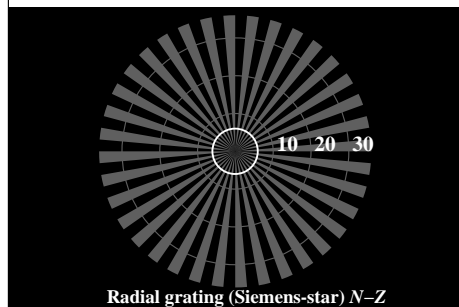
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



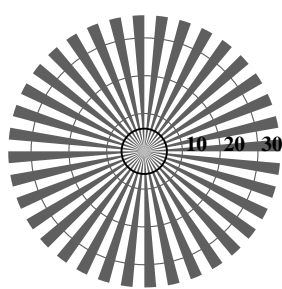
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

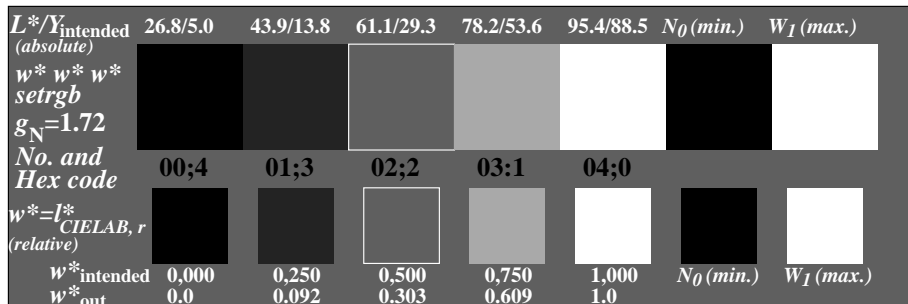


Radial grating (Siemens-star) N-Z

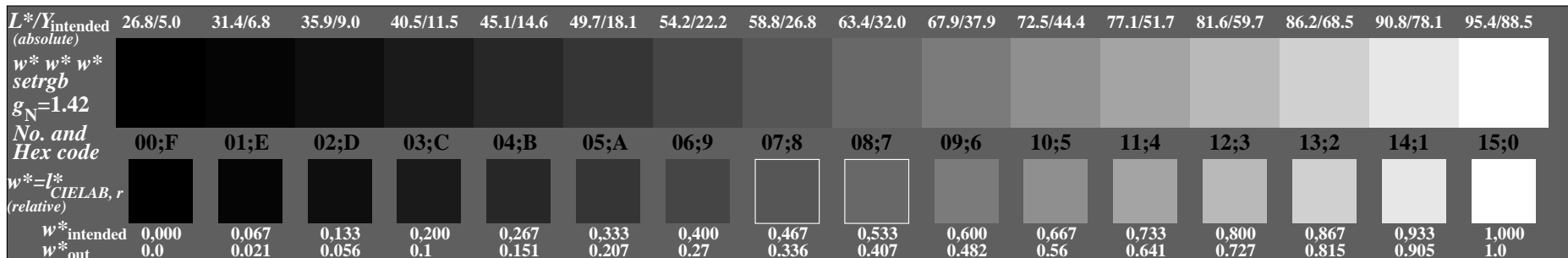


Radial grating (Siemens-star) W-Z

OE510-3N, Picture A1-134-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$



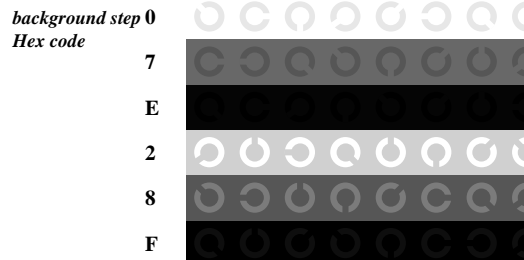
OE510-5N, Picture A2-134-0: 5 equidistant L^* -grey steps+ N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE510-7N, Picture A3-134-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

OE51: similar ME16 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

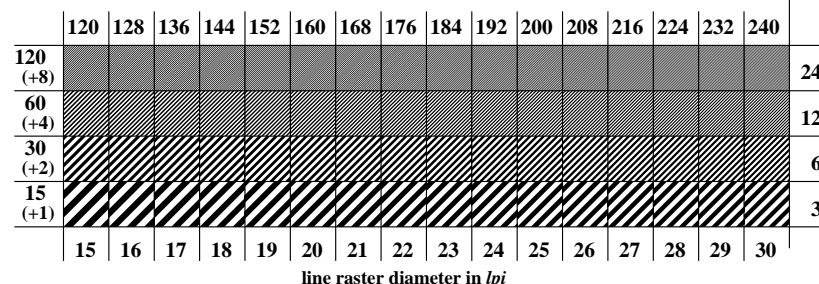
input: w ($\rightarrow \text{rgb}^*_d$) *setgray*
output 130-0: $g_P=1.0$; $g_N=1.42$



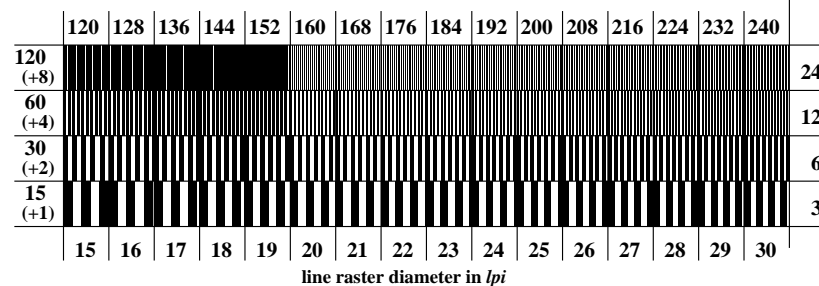
Landolt-rings W-N

code: background-ring

OE511-1N, Picture A4-134-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE511-3N, Picture A5-134-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE511-5N, Picture A6-134-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

TUB registration: 20110801-OE51/OE51L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

Test for the best visual linearized output of Picture A7-134-0		Yes/No
Output test with the computer display () or the external display ()		
Test of the radial grating according to picture A1-134-0		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
	resolution diameter	Yes/No
W-N-radial grating:	Is the resolution diameter < 6 mm?	..... mm
	Test with magnifying glass (e.g. 6x)	Yes/No
	resolution diameter	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
	resolution diameter	Yes/No
W-Z-radial grating:	Is the resolution diameter < 6 mm?	..... mm
	Test with magnifying glass (e.g. 6x)	Yes/No
	resolution diameter	..... mm
Test of 5 visual equidistant L*-grey steps according to picture A2-134-0		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
of the given 5 steps:		..... Steps
Test of 16 visual equidistant L*-grey steps according to picture A3-134-0		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
of the given 16 steps:		..... Steps

Part 1 OE510-3N-1332-1

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

PDF-File: http://130.149.60.45/farbmetrik/OE51/OE51L0NP.PDF Yes/No

PS-File: http://130.149.60.45/farbmetrik/OE51/OE51L0NA.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: monitor/data projector/printer

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

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

For device output with PDF-file OE51L0NP.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 OE51L0NA.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

OE510-7N-134-1

OE51: Form A for test chart according to ISO 9241-306; 1MR, DH input: $w (->rgb*_d)$ setgray
Viewing Y contrast $Y_W:Y_N=88,9:5$; Y_N range 3,75 to <7,5

Test for the best visual linearized output of Picture A7-134-0		Yes/No
Output test with the computer display () or the external display ()		
Test of the Landolt-rings N-W according to picture A4-134-0		
N-W-radial grating:		
Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?		
	background – ring	Yes/No
	0 – 1	Yes/No
	7 – 8	Yes/No
	E – F	Yes/No
	2 – 0	Yes/No
	8 – 6	Yes/No
	F – D	Yes/No
Test of the radial grating under 45° according to picture A5-134-0		
Can equally spaced lines be seen?		
Visual testing: for radial diameter from 15 to 60 lpi		Yes/No
Test with a magnifying glass (e.g. 6x): – from 15 lpi:		to lpi
Test of the radial grating under 90° according to picture A6-134-0		
Can equally spaced lines be seen?		
Visual testing: for radial diameter from 15 to 60 lpi		Yes/No
Test with a magnifying glass (e.g. 6x): – from 15 lpi:		to lpi

Part 2 OE511-3N-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:

 Yes/No

 Yes/unknown

 Yes/unknown

 Yes/unknown

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

Office workplace illumination is daylight (clouded/north sky)

PDF file: http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PDF

PS file: http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PS

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

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/OE51/OE51F1P2.PDF

picture A7-134-2

 Yes/No

PS-File: http://130.149.60.45/farbmetrik/OE51/OE51F1P2.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:

If No, please give other parameters:

 Yes/No

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

If No, please describe other method:

 Yes/No

Part 4

OE511-7N-134-1

output 130-1: $g_P=1.0$; $g_N=1.42$

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

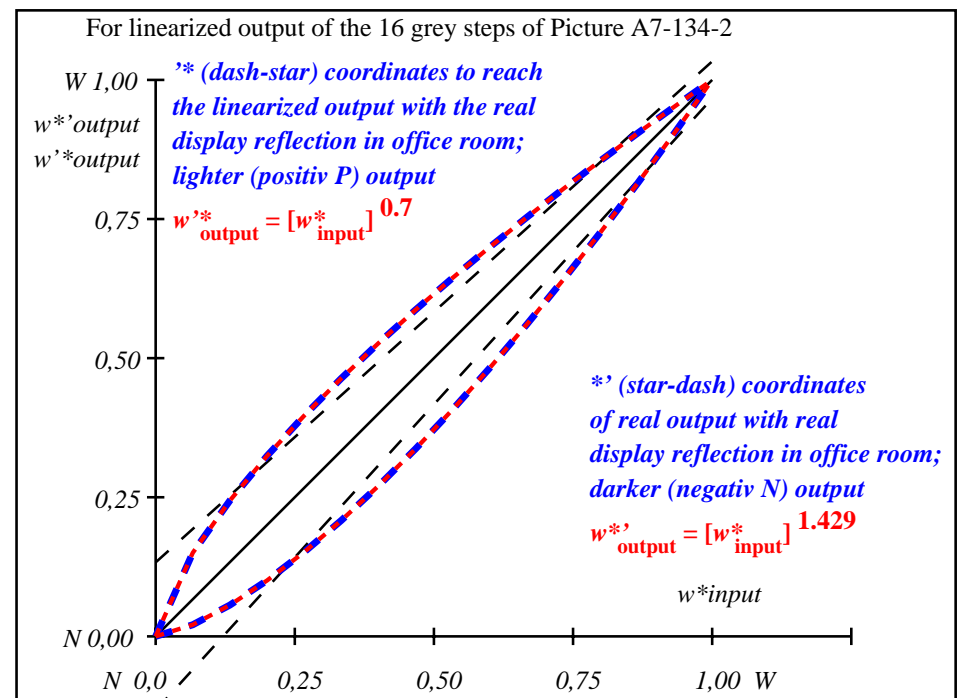
i	LAB*ref	I*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	26.85	0.0	0.0	26.85	0.0	0.01
2	31.42	0.0	0.02	28.28	0.0	0.0
3	35.99	0.0	0.06	30.7	0.0	0.0
4	40.56	0.0	0.1	33.73	0.0	0.0
5	45.13	0.0	0.15	37.22	0.0	0.0
6	49.7	0.0	0.21	41.12	0.0	0.0
7	54.27	0.0	0.27	45.37	0.0	0.0
8	58.84	0.0	0.34	49.93	0.0	0.0
9	63.41	0.0	0.41	54.78	0.0	0.0
10	67.99	0.0	0.48	59.9	0.0	0.0
11	72.56	0.0	0.56	65.27	0.0	0.0
12	77.13	0.0	0.64	70.87	0.0	0.0
13	81.7	0.0	0.73	76.7	0.0	0.0
14	86.27	0.0	0.82	82.73	0.0	0.0
15	90.84	0.0	0.91	88.97	0.0	0.0
16	95.41	0.0	1.0	95.41	0.0	0.0
17	26.85	0.0	0.0	26.85	0.0	0.0
18	43.99	0.0	0.14	36.31	0.0	0.0
19	61.13	0.0	0.37	52.32	0.0	0.0
20	78.27	0.0	0.66	72.31	0.0	0.0
21	95.41	0.0	1.0	95.41	0.0	0.0

Mean lightness difference (16 steps) $\Delta E^*_{\text{CIELAB}} = 5.6$

Mean lightness difference (5 steps) $\Delta E^*_{\text{CIELAB}} = 4.5$

Mean colour reproduction index: $R^*_{\text{ab,m}} = 75$

OE510-3N-134-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE511-3N-134-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

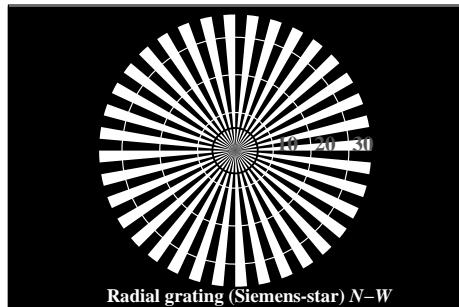
$L^*/Y^*_{\text{intended}}$ (absolute)	26.8/5.0	31.4/6.8	36.0/9.0	40.6/11.6	45.1/14.6	49.7/18.2	54.3/22.2	58.8/26.9	63.4/32.1	68.0/38.0	72.6/44.5	77.1/51.7	81.7/59.7	86.3/68.5	90.8/78.1	95.4/88.6
$w^* w^* w^*$ setrgb $g_N=1.43$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^* = [L^*_{\text{CIELAB}, r}]$ (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	0.021	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

OE510-7N, Picture A7-134-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

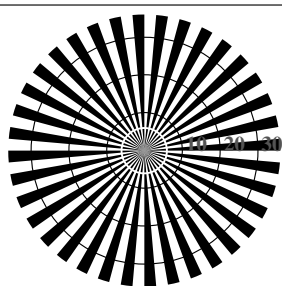
OE51: In-output relation according to ISO 9241-306; 1MR, DH
Viewing Y contrast $Y_W:Y_N=88,9:5$; Y_N range 3,75 to <7,5

input: w ($\rightarrow \text{rgb}^*_d$) setgray
output 130-2: $g_P=1.0$; $g_N=1.42$

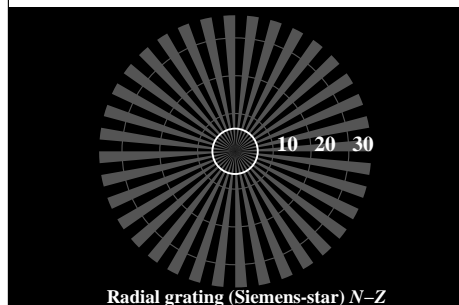
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



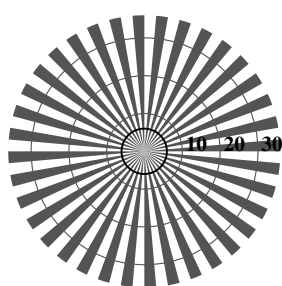
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

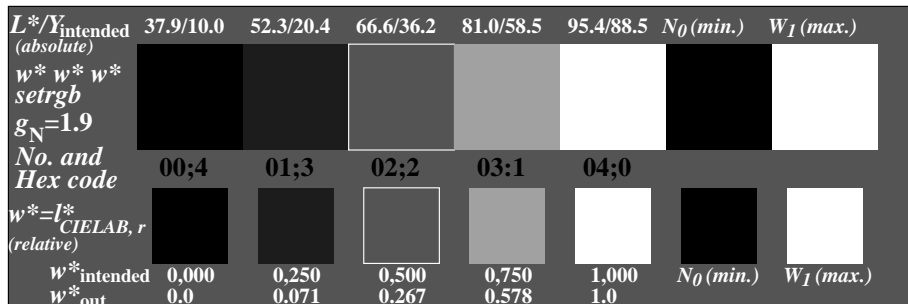


Radial grating (Siemens-star) N-Z

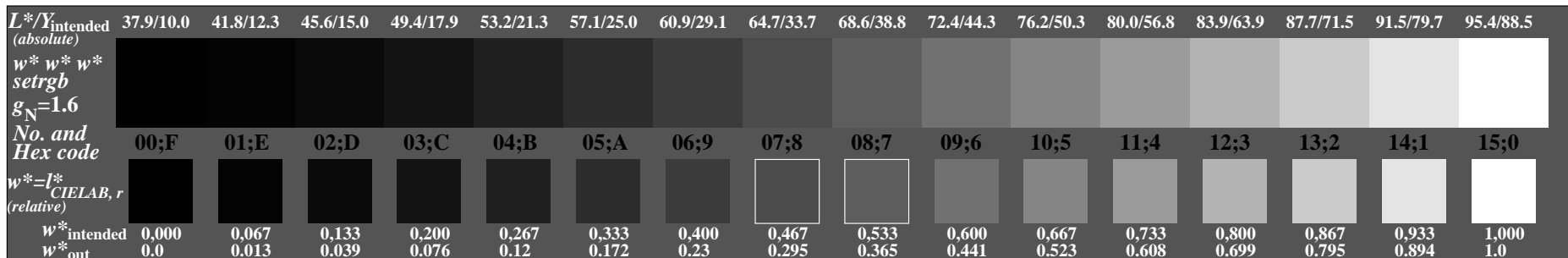


Radial grating (Siemens-star) W-Z

OE510-3N, Picture A1-135-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE510-5N, Picture A2-135-0: 5 equidistant L^* -grey steps+ N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE510-7N, Picture A3-135-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

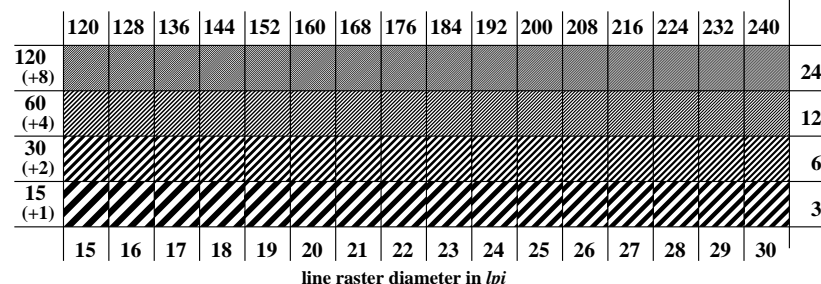
OE51: similar ME16 according to ISO 9241-306; 1MR, DH
Viewing Y contrast $Y_W:Y_N=88,9:10$; Y_N range 7,5 to <15

background step 0		1	ring step	0-1
Hex code		8	Hex code	7-8
7		F		E-F
E		0		2-0
2		6		8-6
8		D		F-D
F				

Landolt-rings W-N

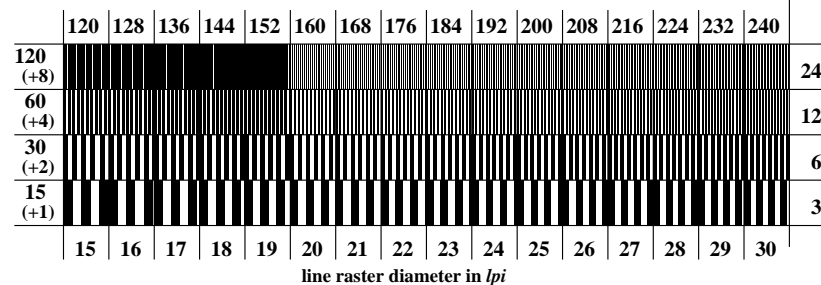
code: background-ring

OE511-1N, Picture A4-135-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE511-3N, Picture A5-135-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE511-5N, Picture A6-135-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

input: w ($\rightarrow \text{rgb}^*_d$) setgray
output 130-0: $g_P=1.0$; $g_N=1.6$

TUB registration: 20110801-OE51/OE51L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

Test for the best visual linearized output of Picture A7-135-0 Yes/No
Output test with the computer display () or the external display ()
Test of the radial grating according to picture A1-135-0
N-W-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
W-N-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
N-Z-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
W-Z-radial grating: Is the resolution diameter < 6 mm? Yes/No
 Test with magnifying glass (e.g. 6x) resolution diameter mm
Test of 5 visual equidistant L*-grey steps according to picture A2-135-0
 Are the 5 steps on the upper rows distinguishable? Yes/No
 If No: How many steps can be distinguished? Steps
Test of 16 visual equidistant L*-grey steps according to picture A3-135-0
 Are the 16 steps on the upper rows distinguishable? Yes/No
 If No: How many steps can be distinguished? Steps

Part 1 OE510-3N-1340-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE51/OE51L0NP.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE51/OE51L0NA.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 OE51L0NP.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 OE51L0NA.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 OE510-7N-135-1

OE51: Form A for test chart according to ISO 9241-306; 1MR, DH input: $w (->rgb*_d)$ setgray
 Viewing Y contrast $Y_W:Y_N=88,9:10$; Y_N range 7,5 to <15
 output 130-1: $g_P=1.0$; $g_N=1.6$

Test for the best visual linearized output of Picture A7-135-0 Yes/No
Output test with the computer display () or the external display ()
Test of the Landolt-rings N-W according to picture A4-135-0
N-W-radial grating:
 Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?
 background – ring
 0 – 1 Yes/No
 7 – 8 Yes/No
 E – F Yes/No
 2 – 0 Yes/No
 8 – 6 Yes/No
 F – D Yes/No
Test of the radial grating under 45° according to picture A5-135-0
 Can equally spaced lines be seen?
 Visual testing: for radial diameter from 15 to 60 lpi Yes/No
 Test with a magnifying glass (e.g. 6x): – from 15 lpi to lpi
Test of the radial grating under 90° according to picture A6-135-0
 Can equally spaced lines be seen?
 Visual testing: for radial diameter from 15 to 60 lpi Yes/No
 Test with a magnifying glass (e.g. 6x): – from 15 lpi to lpi

Part 2 OE511-3N-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/OE51/OE51F1P2.PDF>

underline Yes/No

PS file: <http://130.149.60.45/farbmetrik/OE51/OE51F1P2.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/OE51/OE51F1P2.PDF>

underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PS>

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:

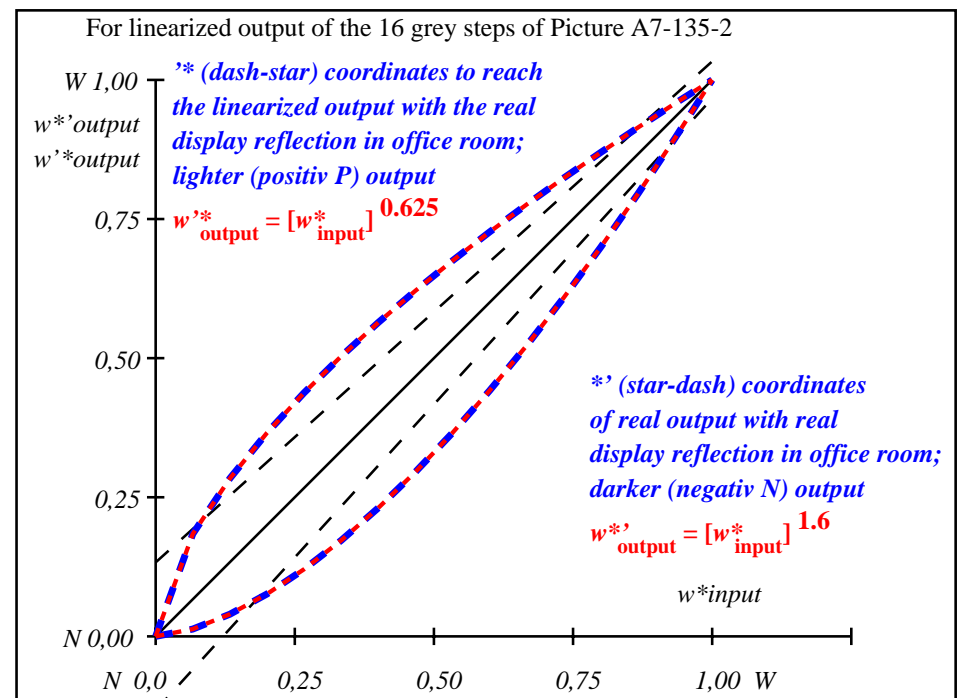
Part 4

OE511-7N-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
1	37.99	0.0	0.0	37.99	0.0	0.0
2	41.81	0.0	0.01	38.74	0.0	-3.06
3	45.64	0.0	0.04	40.27	0.0	-5.36
4	49.47	0.0	0.08	42.36	0.0	-7.1
5	53.3	0.0	0.12	44.91	0.0	-8.37
6	57.13	0.0	0.17	47.89	0.0	-9.23
7	60.96	0.0	0.23	51.24	0.0	-9.7
8	64.78	0.0	0.3	54.95	0.0	-9.82
9	68.61	0.0	0.37	58.99	0.0	-9.61
10	72.44	0.0	0.44	63.34	0.0	-9.09
11	76.27	0.0	0.52	68.0	0.0	-8.26
12	80.1	0.0	0.61	72.95	0.0	-7.14
13	83.93	0.0	0.7	78.17	0.0	-5.75
14	87.75	0.0	0.8	83.66	0.0	-4.08
15	91.58	0.0	0.9	89.41	0.0	-2.16
16	95.41	0.0	1.0	95.41	0.0	0.0
17	37.99	0.0	0.0	37.99	0.0	0.0
18	52.34	0.0	0.11	44.23	0.0	-8.1
19	66.7	0.0	0.33	56.93	0.0	-9.76
20	81.05	0.0	0.63	74.23	0.0	-6.82
21	95.41	0.0	1.0	95.41	0.0	0.0
Mean lightness difference (16 steps)					ΔE* _{CIELAB} = 6.2	
Mean lightness difference (5 steps)					ΔE* _{CIELAB} = 4.9	
Mean colour reproduction index:					R* _{ab,m} = 73	

OE510-3N-135-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE511-3N-135-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

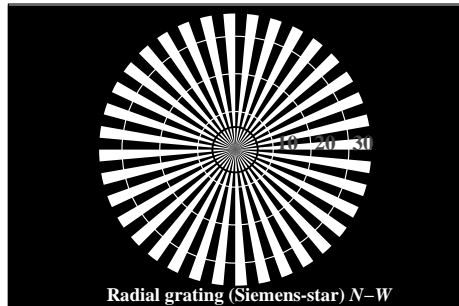
$L^*/Y^*_{\text{intended}}$ (absolute)	38.0/10.1	41.8/12.4	45.6/15.0	49.5/18.0	53.3/21.3	57.1/25.1	61.0/29.2	64.8/33.8	68.6/38.8	72.4/44.3	76.3/50.3	80.1/56.9	83.9/63.9	87.8/71.6	91.6/79.8	95.4/88.6
$w^* w^* w^*$ setrgb $g_N=1.6$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^* = [L^*_{\text{CIELAB}, r}]$ (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	0.013	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

OE510-7N, Picture A7-135-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

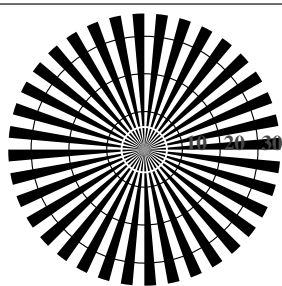
OE51: In-output relation according to ISO 9241-306; 1MR, DH
Viewing Y contrast $Y_W:Y_N=88,9:10$; Y_N range 7,5 to <15

input: w ($\rightarrow \text{rgb}^*_d$) setgray
output 130-2: $g_P=1.0$; $g_N=1.6$

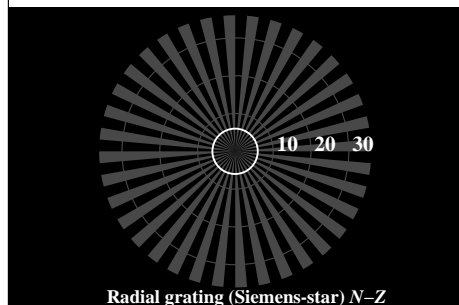
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



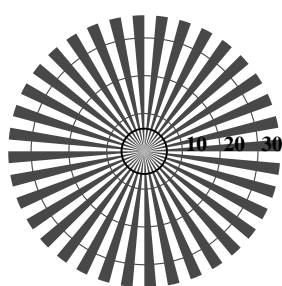
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

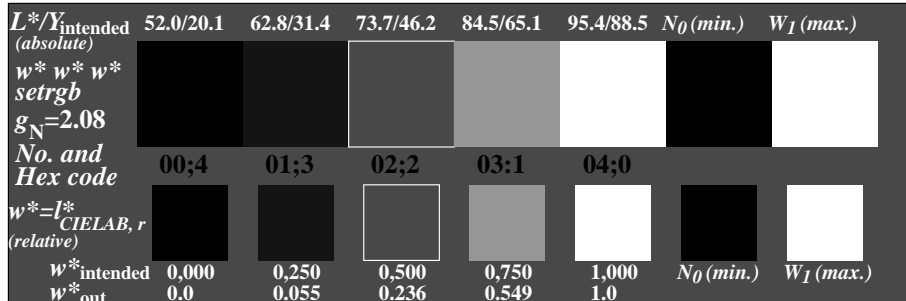


Radial grating (Siemens-star) N-Z

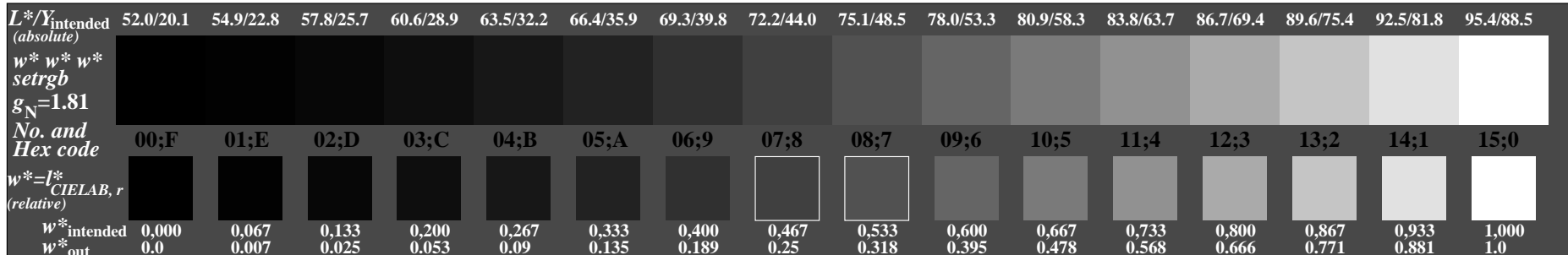


Radial grating (Siemens-star) W-Z

OE510-3N, Picture A1-136-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE510-5N, Picture A2-136-0: 5 equidistant L^* -grey steps+ N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE510-7N, Picture A3-136-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

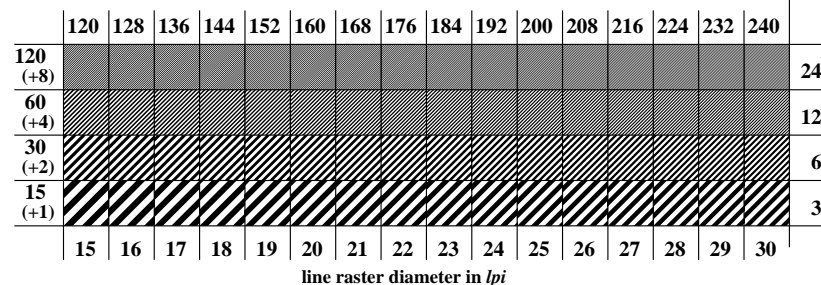
OE51: similar ME16 according to ISO 9241-306; 1MR, DH
Viewing Y contrast $Y_W:Y_N=88,9:20$; Y_N range 15 to <30

background step 0		1	ring step	0-1
Hex code		8	Hex code	7-8
7		F		E-F
E		0		2-0
2		6		8-6
8		D		F-D
F				

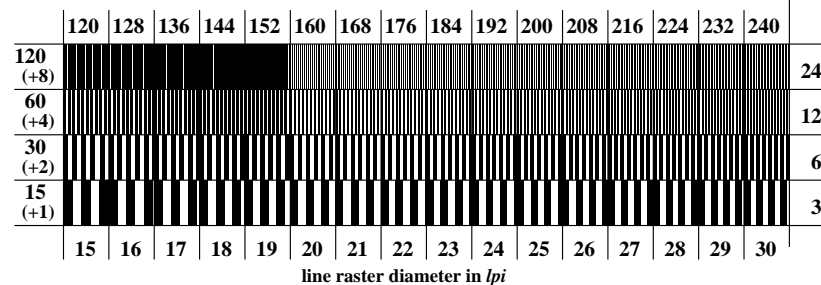
Landolt-rings W-N

code: background-ring

OE511-1N, Picture A4-136-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE511-3N, Picture A5-136-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE511-5N, Picture A6-136-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

input: w ($\rightarrow \text{rgb}^*_d$) setgray
output 130-0: $g_P=1.0$; $g_N=1.81$

TUB registration: 20110801-OE51/OE51L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

Test for the best visual linearized output of Picture A7-136-0		Yes/No
Output test with the computer display () or the external display ()		
Test of the radial grating according to picture A1-136-0		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
	resolution diameter	Yes/No
W-N-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
	resolution diameter	Yes/No
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
	resolution diameter	Yes/No
W-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
	resolution diameter	..... mm
Test of 5 visual equidistant L*-grey steps according to picture A2-136-0		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
of the given 5 steps:		..... Steps
Test of 16 visual equidistant L*-grey steps according to picture A3-136-0		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
of the given 16 steps:		..... Steps

Part 1

OE510-3N-1348-1

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

PDF-File: http://130.149.60.45/farbmetrik/OE51/OE51L0NP.PDF underline Yes/No

PS-File: http://130.149.60.45/farbmetrik/OE51/OE51L0NA.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 OE51L0NP.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 OE51L0NA.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

OE510-7N-136-1

OE51: Form A for test chart according to ISO 9241-306; 1MR, DH input: $w (->rgb*_d)$ setgray
Viewing Y contrast $Y_W:Y_N=88,9:20$; Y_N range 15 to <30
output 130-1: $g_P=1.0$; $g_N=1.81$

Test for the best visual linearized output of Picture A7-136-0		Yes/No
Output test with the computer display () or the external display ()		
Test of the Landolt-rings N-W according to picture A4-136-0		
N-W-radial grating:		
Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?		
	background - ring	Yes/No
	0 - 1	Yes/No
	7 - 8	Yes/No
	E - F	Yes/No
	2 - 0	Yes/No
	8 - 6	Yes/No
	F - D	Yes/No
Test of the radial grating under 45° according to picture A5-136-0		
Can equally spaced lines be seen?		
Visual testing: for radial diameter from 15 to 60 lpi		Yes/No
Test with a magnifying glass (e.g. 6x): - from 15 lpi:		to lpi
Test of the radial grating under 90° according to picture A6-136-0		
Can equally spaced lines be seen?		
Visual testing: for radial diameter from 15 to 60 lpi		Yes/No
Test with a magnifying glass (e.g. 6x): - from 15 lpi:		to lpi

Part 2

OE511-3N-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

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)

PDF file: http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PDF

PS file: http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PS

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

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/OE51/OE51F1P2.PDF

picture A7-136-2

PS-File: http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PS

picture A7-136-2

colour measurement and specification for:

CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry:

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

If No, please describe other method:

underline Yes/No

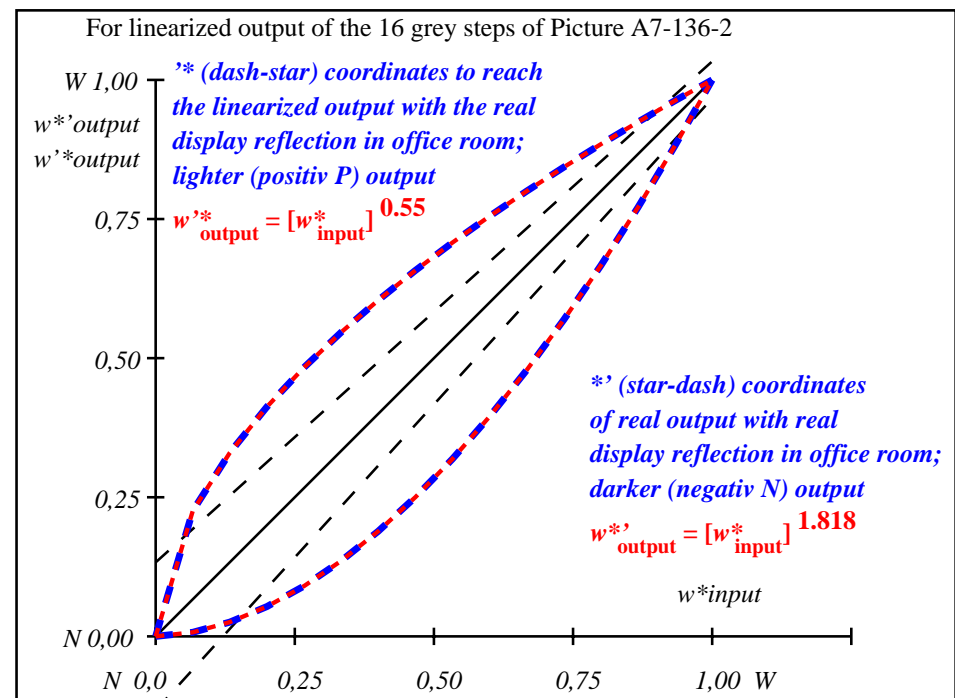
underline Yes/No

OE511-7N-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*	Start output S1
1	52.02 0.0 0.0	0.0 0.0 0.0	52.02 0.0 0.0	0.0 0.0 0.0	0.01	Specification according to
2	54.91 0.0 0.0	0.01 0.01 0.01	52.33 0.0 0.0	-2.57 0.0 0.0	2.58	ISO/IEC 15775 Annex G
3	57.8 0.0 0.0	0.03 0.03 0.03	53.13 0.0 0.0	-4.66 0.0 0.0	4.67	and DIN 33866-1 Annex G
4	60.7 0.0 0.0	0.05 0.05 0.05	54.34 0.0 0.0	-6.34 0.0 0.0	6.35	
5	63.59 0.0 0.0	0.09 0.09 0.09	55.94 0.0 0.0	-7.64 0.0 0.0	7.65	
6	66.48 0.0 0.0	0.14 0.14 0.14	57.9 0.0 0.0	-8.57 0.0 0.0	8.58	
7	69.37 0.0 0.0	0.19 0.19 0.19	60.22 0.0 0.0	-9.15 0.0 0.0	9.16	
8	72.27 0.0 0.0	0.25 0.25 0.25	62.87 0.0 0.0	-9.39 0.0 0.0	9.4	
9	75.16 0.0 0.0	0.32 0.32 0.32	65.85 0.0 0.0	-9.3 0.0 0.0	9.31	
10	78.05 0.0 0.0	0.4 0.4 0.4	69.16 0.0 0.0	-8.88 0.0 0.0	8.89	
11	80.95 0.0 0.0	0.48 0.48 0.48	72.78 0.0 0.0	-8.16 0.0 0.0	8.17	
12	83.84 0.0 0.0	0.57 0.57 0.57	76.71 0.0 0.0	-7.12 0.0 0.0	7.13	
13	86.73 0.0 0.0	0.67 0.67 0.67	80.94 0.0 0.0	-5.78 0.0 0.0	5.79	
14	89.62 0.0 0.0	0.77 0.77 0.77	85.47 0.0 0.0	-4.15 0.0 0.0	4.16	
15	92.52 0.0 0.0	0.88 0.88 0.88	90.29 0.0 0.0	-2.21 0.0 0.0	2.22	Mean lightness difference (16 steps)
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	ΔE* _{CIELAB} = 5.9
17	52.02 0.0 0.0	0.0 0.0 0.0	52.02 0.0 0.0	0.0 0.0 0.0	0.01	
18	62.87 0.0 0.0	0.08 0.08 0.08	55.51 0.0 0.0	-7.35 0.0 0.0	7.36	
19	73.71 0.0 0.0	0.28 0.28 0.28	64.32 0.0 0.0	-9.38 0.0 0.0	9.39	
20	84.56 0.0 0.0	0.59 0.59 0.59	77.74 0.0 0.0	-6.82 0.0 0.0	6.83	Mean lightness difference (5 steps)
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	ΔL* _{CIELAB} = 4.7
Mean colour reproduction index:					R* _{ab,m} = 74	

OE510-3N-136-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



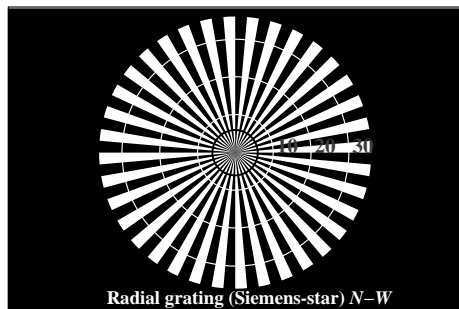
OE511-3N-136-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

$L^*/Y^*_{intended}$ (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																
$g_N=1.82$ 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
$w^* = [L^*_{CIELAB, r}]$ (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	0.007	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

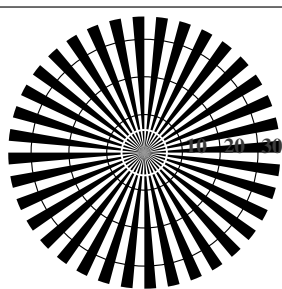
OE510-7N, Picture A7-136-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

OE51: 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

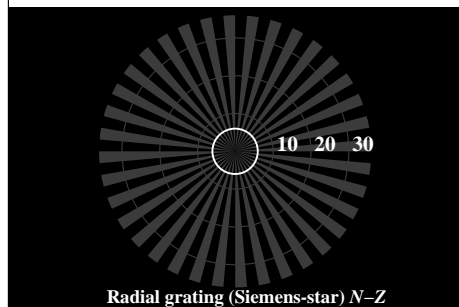
input: w ($\rightarrow \text{rgb}^*_d$) setgray
output 130-2: $g_P=1.0$; $g_N=1.81$



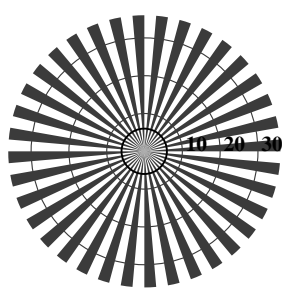
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

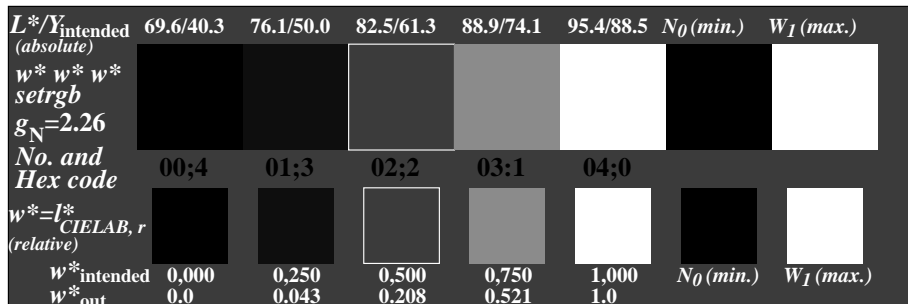


Radial grating (Siemens-star) N-Z

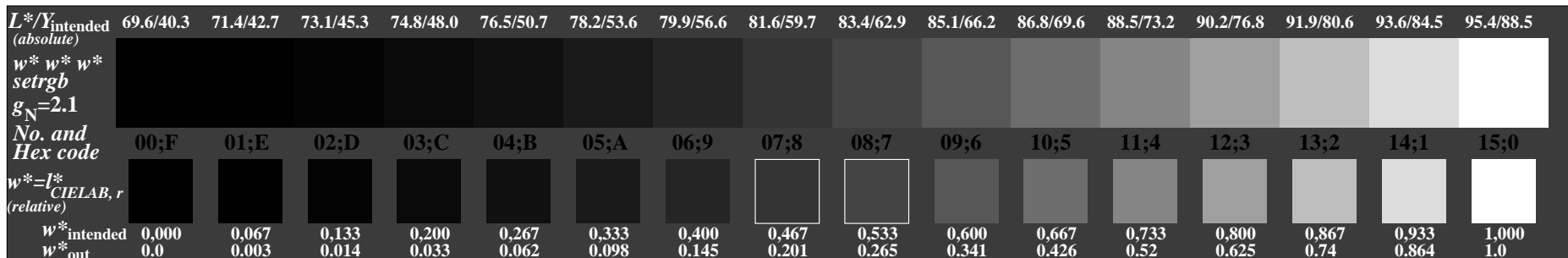


Radial grating (Siemens-star) W-Z

OE510-3N, Picture A1-137-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE510-5N, Picture A2-137-0: 5 equidistant L^* -grey steps+ N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE510-7N, Picture A3-137-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

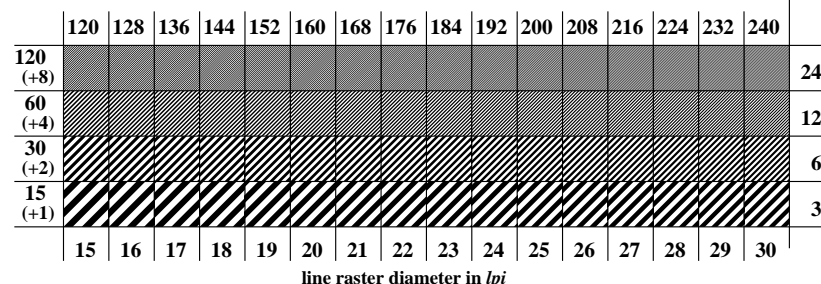
OE51: similar ME16 according to ISO 9241-306; 1MR, DH
Viewing Y contrast $Y_W:Y_N=88.9:40$; Y_N range 30 to <60

background step 0		1	ring step	0-1
Hex code		8	Hex code	7-8
7		F		E-F
E		0		2-0
2		6		8-6
8		D		F-D
F				

Landolt-rings W-N

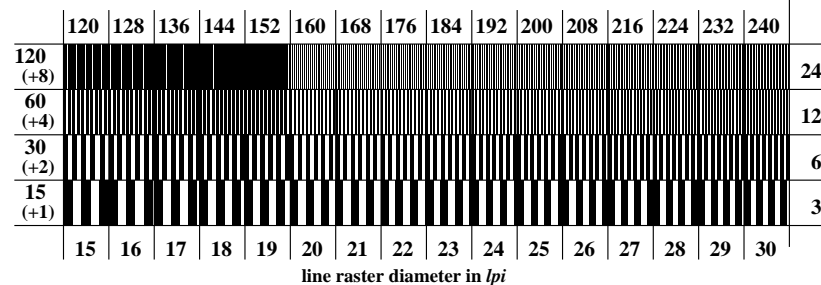
code: background-ring

OE511-1N, Picture A4-137-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE511-3N, Picture A5-137-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE511-5N, Picture A6-137-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

input: w ($\rightarrow \text{rgb}^*_d$) setgray
output 130-0: $g_P=1.0$; $g_N=2.1$

Test for the best visual linearized output of Picture A7-137-0 Yes/No
Output test with the computer display () or the external display ()

Test of the radial grating according to picture A1-137-0

N-W-radial grating: Is the resolution diameter < 6 mm? Yes/No
Test with magnifying glass (e.g. 6x) resolution diameter mm

W-N-radial grating: Is the resolution diameter < 6 mm? Yes/No
Test with magnifying glass (e.g. 6x) resolution diameter mm

N-Z-radial grating: Is the resolution diameter < 6 mm? Yes/No
Test with magnifying glass (e.g. 6x) resolution diameter mm

W-Z-radial grating: Is the resolution diameter < 6 mm? Yes/No
Test with magnifying glass (e.g. 6x) resolution diameter mm

Test of 5 visual equidistant L*-grey steps according to picture A2-137-0

Are the 5 steps on the upper rows distinguishable? Yes/No
If No: How many steps can be distinguished? Steps
of the given 5 steps:

Test of 16 visual equidistant L*-grey steps according to picture A3-137-0

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

Part 1 OE510-3N-1356-1

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

PDF-File: http://130.149.60.45/farbmetrik/OE51/OE51L0NP.PDF underline Yes/No

PS-File: http://130.149.60.45/farbmetrik/OE51/OE51L0NA.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 OE51L0NP.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 OE51L0NA.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

OE510-7N-137-1

OE51: Form A for test chart according to ISO 9241-306; 1MR, DH input: $w (->rgb*_d)$ setgray
Viewing Y contrast $Y_W:Y_N=88,9:40$; Y_N range 30 to <60
output 130-1: $g_P=1.0$; $g_N=2.1$

Test for the best visual linearized output of Picture A7-137-0 Yes/No
Output test with the computer display () or the external display ()

Test of the Landolt-rings N-W according to picture A4-137-0

N-W-radial grating:
Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?
background – ring
0 – 1 Yes/No
7 – 8 Yes/No
E – F Yes/No
2 – 0 Yes/No
8 – 6 Yes/No
F – D Yes/No

Test of the radial grating under 45° according to picture A5-137-0

Can equally spaced lines be seen?
Visual testing: for radial diameter from 15 to 60 lpi Yes/No
Test with a magnifying glass (e.g. 6x): – from 15 lpi: to lpi

Test of the radial grating under 90° according to picture A6-137-0

Can equally spaced lines be seen?
Visual testing: for radial diameter from 15 to 60 lpi Yes/No
Test with a magnifying glass (e.g. 6x): – from 15 lpi: to lpi

Part 2

OE511-3N-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)

PDF file: http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PDF

PS file: http://130.149.60.45/farbmetrik/OE51/OE51F1P2.PS

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/OE51/OE51F1P2.PDF

picture A7-137-2

underline Yes/No

PS-File: http://130.149.60.45/farbmetrik/OE51/OE51F1P2.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:

If No, please give other parameters:

underline Yes/No

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

If No, please describe other method:

underline Yes/No

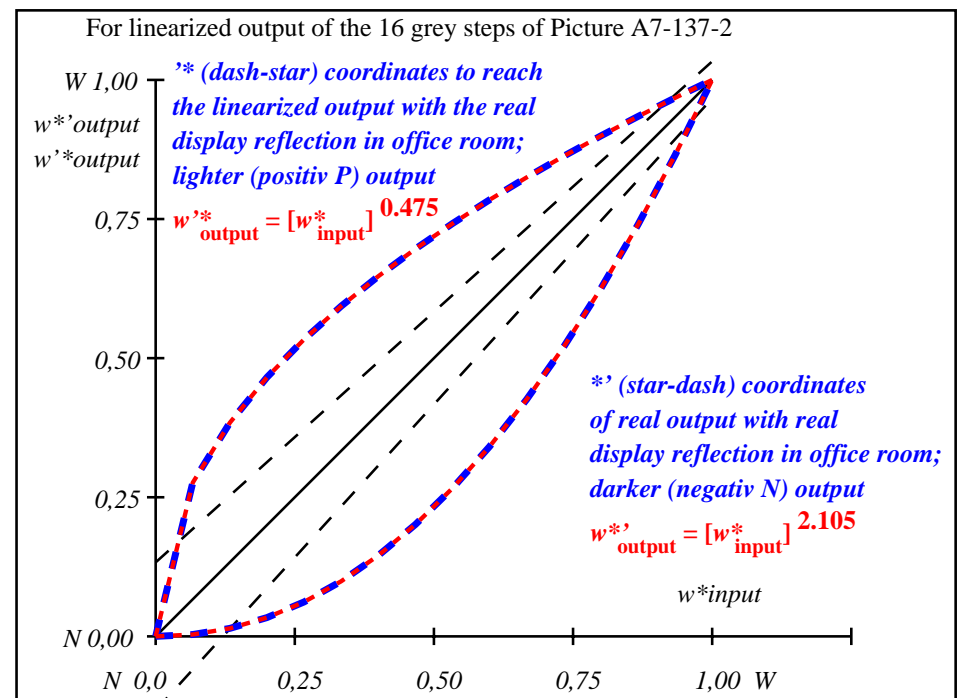
Part 4

OE511-7N-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*	Start output S1
1	69.7	0.0	69.7	0.0	0.01	Specification according to
2	71.41	0.0	69.78	-1.62	1.63	ISO/IEC 15775 Annex G
3	73.13	0.0	70.07	-3.05	3.06	and DIN 33866-1 Annex G
4	74.84	0.0	70.57	-4.26	4.27	
5	76.55	0.0	71.29	-5.26	5.27	
6	78.27	0.0	72.24	-6.02	6.03	
7	79.98	0.0	73.43	-6.54	6.55	
8	81.7	0.0	74.86	-6.82	6.83	
9	83.41	0.0	76.54	-6.86	6.87	
10	85.12	0.0	78.47	-6.65	6.66	
11	86.84	0.0	80.65	-6.18	6.19	
12	88.55	0.0	83.08	-5.46	5.47	
13	90.27	0.0	85.77	-4.49	4.5	
14	91.98	0.0	88.72	-3.25	3.26	
15	93.7	0.0	91.93	-1.75	1.76	Mean lightness difference (16 steps)
16	95.41	0.0	95.41	0.0	0.01	ΔE*CIELAB = 4.3
17	69.7	0.0	69.7	0.0	0.01	
18	76.13	0.0	71.09	-5.03	5.04	
19	82.55	0.0	75.67	-6.87	6.88	
20	88.98	0.0	83.73	-5.24	5.25	Mean lightness difference (5 steps)
21	95.41	0.0	95.41	0.0	0.01	ΔL*CIELAB = 3.4
Mean colour reproduction index:					R* _{ab,m} = 81	

OE510-3N-137-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE511-3N-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* 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	0,003	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

OE510-7N, Picture A7-137-2: 16 visual equidistant L*-grey steps; PS operator: w* w* w* setrgbcolor

OE51: 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: w (->rgb*d) setgray
output 130-2: g_P=1.0; g_N=2.1

TUB registration: 20110801-OE51/OE51L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta