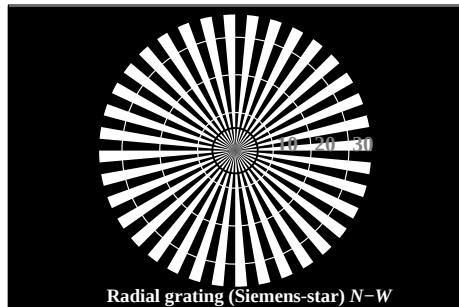


See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

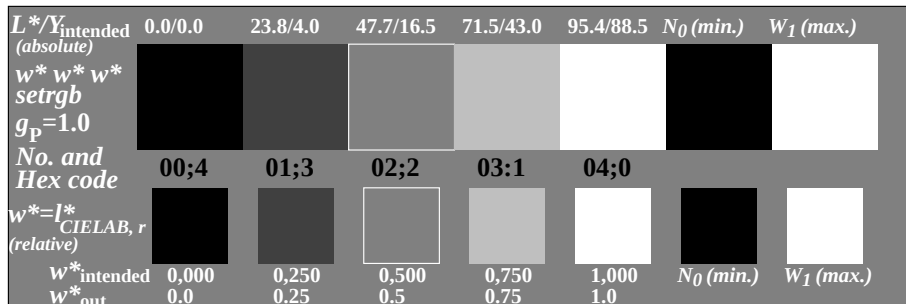


Radial grating (Siemens-star) N-Z

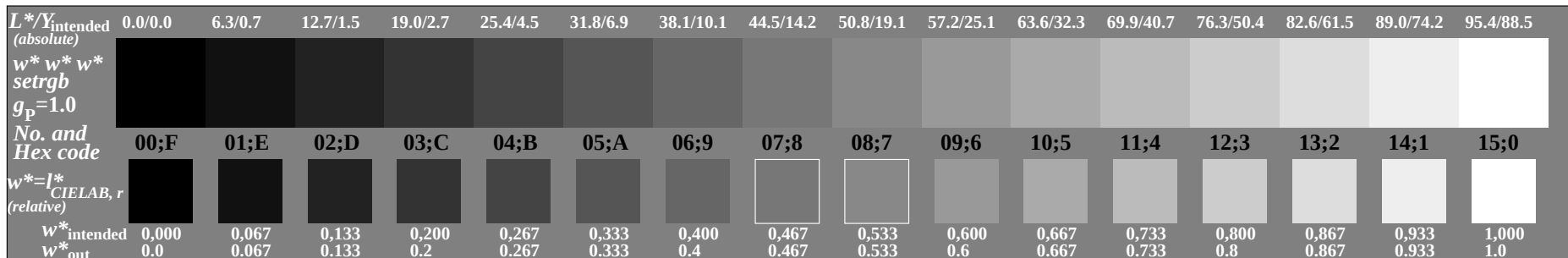


Radial grating (Siemens-star) W-Z

OE610-3N, Picture A1-130-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$



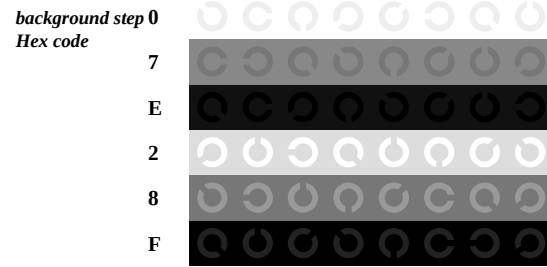
OE610-5N, Picture A2-130-0: 5 equidistant L^* -grey steps+ N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$



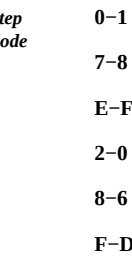
OE610-7N, Picture A3-130-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

OE61: similar ME16 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: $w (-> rgb^*_{de}) \text{setgray}$
output 130-0: $g_p=1.0$; $g_N=1.0$

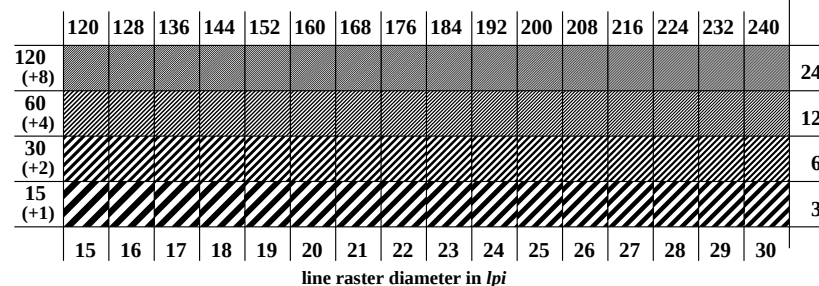


Landolt-rings W-N



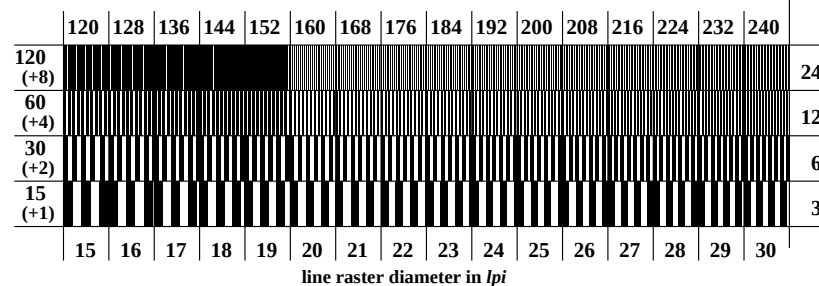
code: background-ring

OE611-1N, Picture A4-130-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

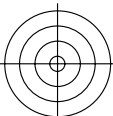
OE611-3N, Picture A5-130-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$



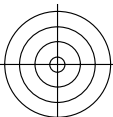
line raster diameter in lpi

OE611-5N, Picture A6-130-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

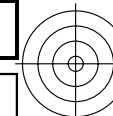
TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta



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

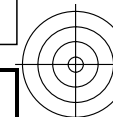


<http://130.149.60.45/~farbmetrik/OE61/OE61L0NA.TXT> /PS; linearized output, Page 2/3
 F: Output Linearization (OL) data OE61/OE61L0NA.TXT /PS in File (F)



TUB registration: 20110801-OE61/OE61L0NA.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 A7-130-0 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: 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: Steps

Part 1

OE610-3N-130-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE61/OE61L0NP.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE61/OE61L0NA.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 OE61L0NP.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 OE61L0NA.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

OE610-7N-130-1



OE61: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: w (->rgb*_{de}) 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

OE611-3N-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/OE61/OE61F1P2.PDF> underline Yes/No

PS file: <http://130.149.60.45/farbmetrik/OE61/OE61F1P2.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/OE61/OE61F1P2.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE61/OE61F1P2.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

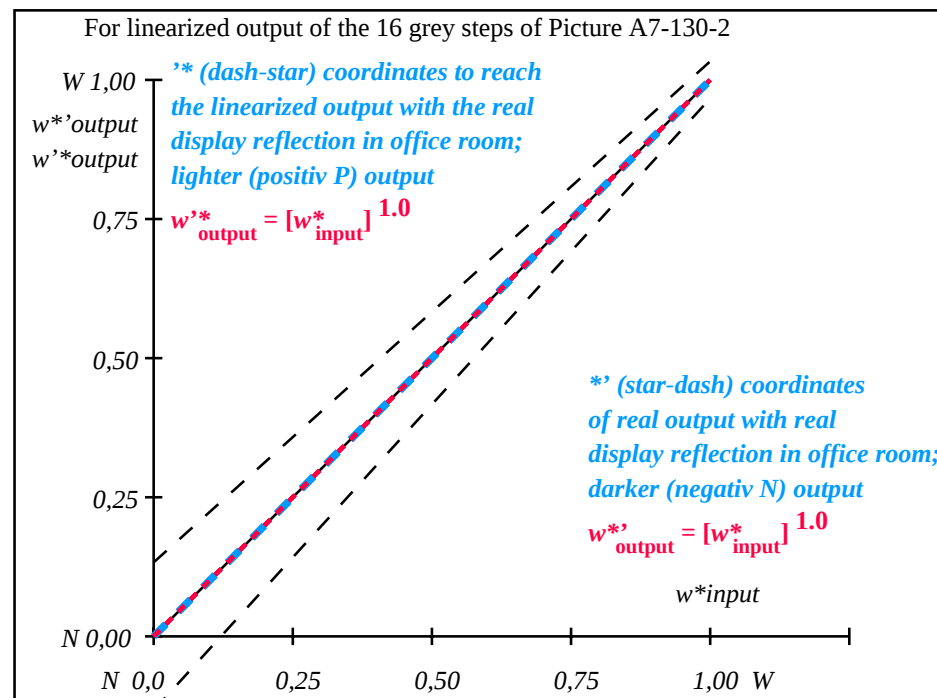
OE611-7N-130-1



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*	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)						ΔL* _{CIELAB} = 0.0
Mean colour reproduction index:						R* _{ab,m} = 100

OE610-3N-130-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE611-3N-130-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

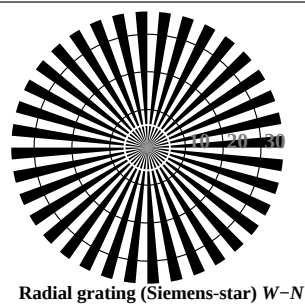
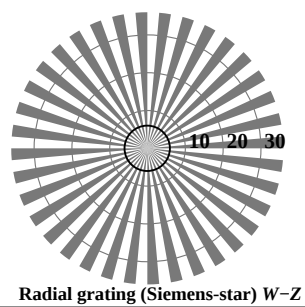
$L^*/Y_{intended}$ (absolute)	0.0/0.0	6.4/0.7	12.7/1.5	19.1/2.8	25.4/4.6	31.8/7.0	38.2/10.2	44.5/14.2	50.9/19.2	57.2/25.2	63.6/32.3	70.0/40.7	76.3/50.4	82.7/61.6	89.0/74.3	95.4/88.6
$w^* w^* w^*$ setrgb $g_P=1.0$																
No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5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

OE610-7N, Picture A7-130-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

OE61: 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: w ($\rightarrow rgb^*_{de}$) setgray
output 130-2: $g_P=1.0$; $g_N=1.0$

TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

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

Radial grating (Siemens-star) W-Z

$L^*/Y_{intended}$ (absolute)	5.6/0.6	28.1/5.5	50.5/18.8	72.9/45.1	95.4/88.5	N_0 (min.)	W_1 (max.)
$w^* w^* w^*$ <i>setrgb</i>							
$g_N=1.18$ <i>No. and Hex code</i>	00;4	01;3	02;2	03;1	04;0		
$w^*=l^*$ <i>CIELAB, r</i> (relative)							
$w^*_{intended}$	0,000	0,250	0,500	0,750	1,000	N_0 (min.)	W_1 (max.)
w^*_{out}	0.0	0.194	0.441	0.712	1.0		

L^*/Y_{intended} (absolute)	5.6/0.6	11.6/1.3	17.6/2.4	23.6/3.9	29.6/6.0	35.5/8.8	41.5/12.2	47.5/16.4	53.5/21.5	59.5/27.5	65.5/34.6	71.4/42.8	77.4/52.3	83.4/63.0	89.4/75.0	95.4/88.5
$w^* w^* w^*$ <i>setrgb</i> $g_N=1.18$																
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
$w^*=l^*$ <i>CIE LAB, r</i> (relative)																
w^*_{intended} w^*_{out}	0,000 0.0	0,067 0.041	0,133 0.092	0,200 0.149	0,267 0.21	0,333 0.273	0,400 0.339	0,467 0.407	0,533 0.475	0,600 0.547	0,667 0.62	0,733 0.693	0,800 0.768	0,867 0.845	0,933 0.921	1,000 1.0

OE61: similar ME16 according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:0,62$; Y_N range 0,46 to $<0,93$

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	

Figure 1 is a chart showing the relationship between line raster diameter in lpi and line frequency in lines per inch. The chart is a grid with columns labeled 120, 128, 136, 144, 152, 160, 168, 176, 184, 192, 200, 208, 216, 224, 232, 240 at the top and 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 at the bottom. The grid is divided into four horizontal sections. The top section is labeled '120 (+8)' on the left and '240' on the right. The second section is labeled '60 (+4)' on the left and '120' on the right. The third section is labeled '30 (+2)' on the left and '60' on the right. The bottom section is labeled '15 (+1)' on the left and '30' on the right. The grid cells are filled with vertical lines of varying thickness and spacing, representing different line frequencies.

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

Part 1	OE610-3N-138-1
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Part 3	OE610-7N-131-1
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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	OE611-3N-131-1
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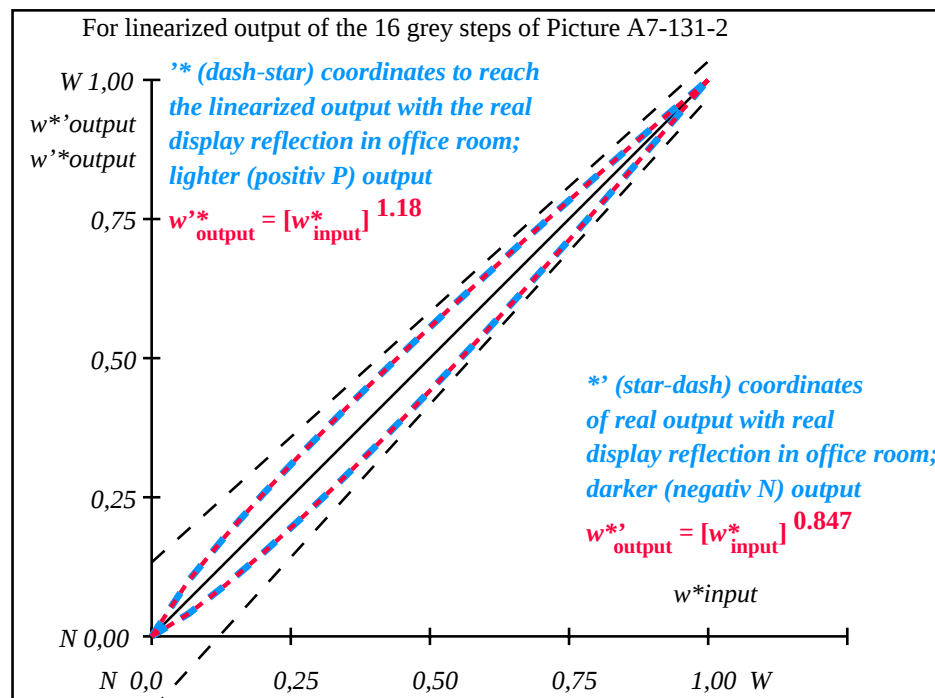
If No, please describe other method:

Part 4	OE611-7N-131-1
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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	0.0 0.0 0.0	5.69 0.0 0.0	0.0 0.0 0.0	0.01	Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G
2	11.67 0.0 0.0	0.04 9.36 0.0	0.0 -2.3 0.0	0.0 0.0 0.0	2.31	
3	17.65 0.0 0.0	0.09 14.01 0.0	0.0 -3.63 0.0	0.0 0.0 0.0	3.64	
4	23.63 0.0 0.0	0.15 19.12 0.0	0.0 -4.5 0.0	0.0 0.0 0.0	4.51	
5	29.62 0.0 0.0	0.21 24.55 0.0	0.0 -5.06 0.0	0.0 0.0 0.0	5.07	
6	35.6 0.0 0.0	0.27 30.23 0.0	0.0 -5.36 0.0	0.0 0.0 0.0	5.37	
7	41.58 0.0 0.0	0.34 36.12 0.0	0.0 -5.45 0.0	0.0 0.0 0.0	5.46	
8	47.56 0.0 0.0	0.41 42.19 0.0	0.0 -5.36 0.0	0.0 0.0 0.0	5.37	
9	53.54 0.0 0.0	0.48 48.42 0.0	0.0 -5.11 0.0	0.0 0.0 0.0	5.12	
10	59.52 0.0 0.0	0.55 54.79 0.0	0.0 -4.72 0.0	0.0 0.0 0.0	4.73	
11	65.5 0.0 0.0	0.62 61.29 0.0	0.0 -4.2 0.0	0.0 0.0 0.0	4.21	
12	71.48 0.0 0.0	0.69 67.91 0.0	0.0 -3.56 0.0	0.0 0.0 0.0	3.57	
13	77.47 0.0 0.0	0.77 74.64 0.0	0.0 -2.82 0.0	0.0 0.0 0.0	2.83	
14	83.45 0.0 0.0	0.84 81.47 0.0	0.0 -1.97 0.0	0.0 0.0 0.0	1.98	
15	89.43 0.0 0.0	0.92 88.4 0.0	0.0 -1.02 0.0	0.0 0.0 0.0	1.03	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 0.0 0.0	0.01	ΔE*CIELAB = 3.4
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	0.19 23.17 0.0	0.0 -4.94 0.0	0.0 0.0 0.0	4.95	
19	50.55 0.0 0.0	0.44 45.29 0.0	0.0 -5.25 0.0	0.0 0.0 0.0	5.26	
20	72.98 0.0 0.0	0.71 69.58 0.0	0.0 -3.39 0.0	0.0 0.0 0.0	3.4	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 0.0 0.0	0.01	ΔL*CIELAB = 2.7
Mean colour reproduction index:					R* _{ab,m} = 85	

OE610-3N-131-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE611-3N-131-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

$L^*/Y^*_{\text{intended}}$ (absolute)	5.7/0.6	11.7/1.4	17.7/2.4	23.6/4.0	29.6/6.1	35.6/8.8	41.6/12.2	47.6/16.5	53.5/21.5	59.5/27.6	65.5/34.7	71.5/42.9	77.5/52.3	83.4/63.0	89.4/75.1	95.4/88.6
$w^* w^* w^*$ setrgb																
$g_N=1.18$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^*=l^*_{\text{CIELAB},r}$ (relative)																
w^*_{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	0.041	0.093	0.15	0.211	0.273	0.339	0.407	0.476	0.547	0.62	0.693	0.769	0.845	0.921	1.0

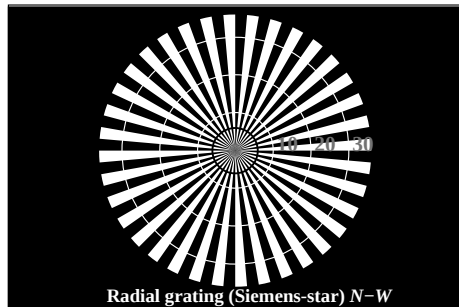
OE610-7N, Picture A7-131-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

OE61: 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

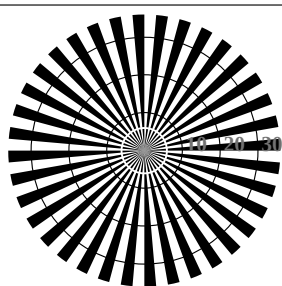
input: w ($\rightarrow rgb^*_{de}$) setgray
output 130-2: $g_P=1.0$; $g_N=1.08$

TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

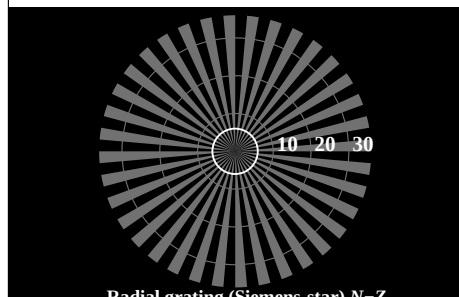
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



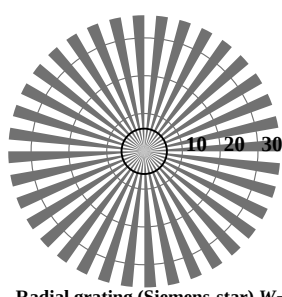
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

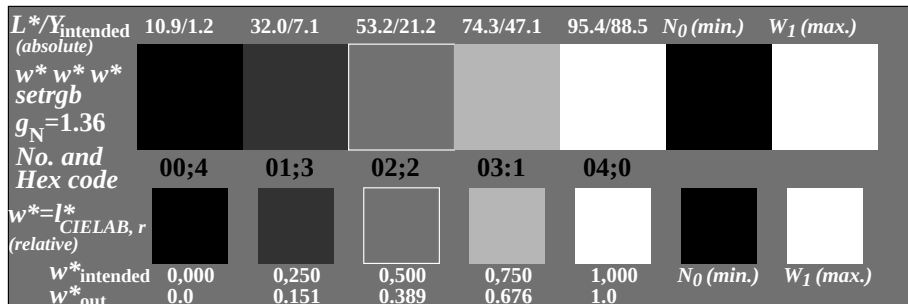


Radial grating (Siemens-star) N-Z

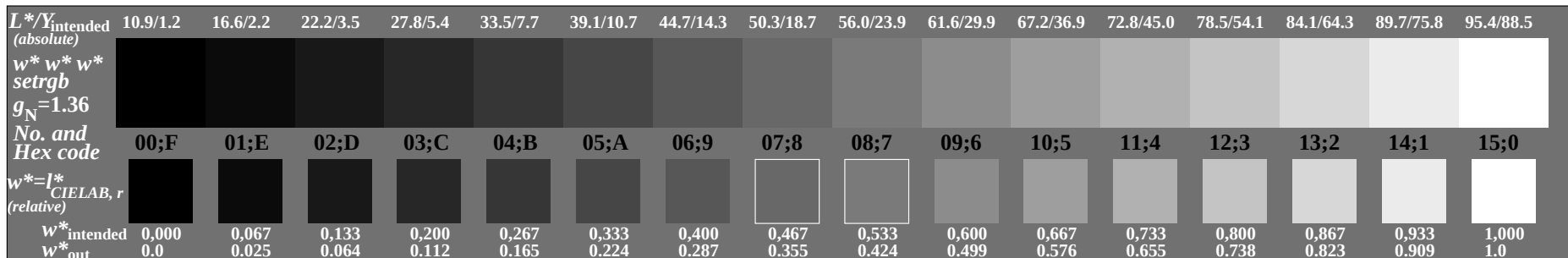


Radial grating (Siemens-star) W-Z

OE610-3N, Picture A1-132-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE610-5N, Picture A2-132-0: 5 equidistant L^* -grey steps+ N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE610-7N, Picture A3-132-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

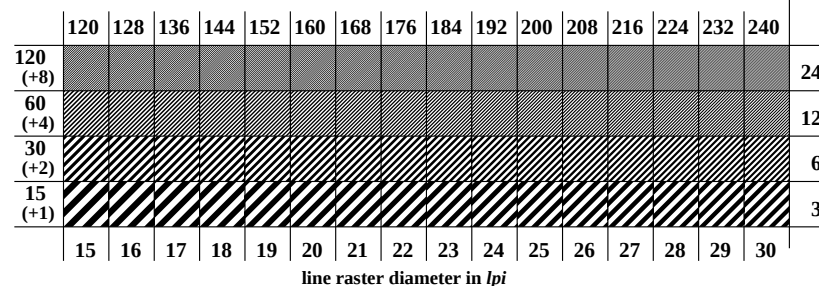
OE61: similar ME16 according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:1,25$; Y_N range 0,93 to <1,87

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

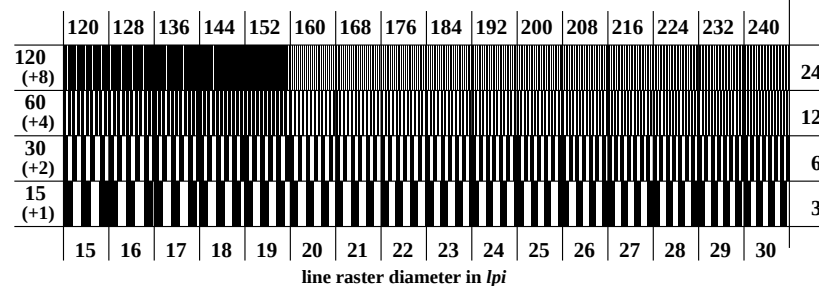
code: background-ring

OE611-1N, Picture A4-132-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE611-3N, Picture A5-132-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

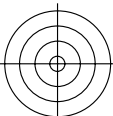


line raster diameter in lpi

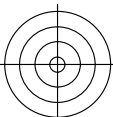
OE611-5N, Picture A6-132-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

input: w ($\rightarrow \text{rgb}^*_{\text{de}}$) setgray
output 130-0: $g_P=1.0$; $g_N=1.17$

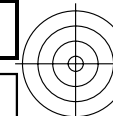
TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta



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

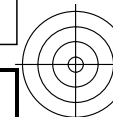


<http://130.149.60.45/~farbmetrik/OE61/OE61L0NA.TXT> /PS; linearized output, Page 2/3
 F: Output Linearization (OL) data OE61/OE61L0NA.TXT /PS in File (F)



TUB registration: 20110801-OE61/OE61L0NA.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? Steps
 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? Steps
 of the given 16 steps: Steps

Part 1

OE610-3N-1316-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE61/OE61L0NP.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE61/OE61L0NA.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 OE61L0NP.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 OE61L0NA.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

OE610-7N-132-1



OE61: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: w (->rgb*_{de}) 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

OE611-3N-132-1

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/OE61/OE61F1P2.PDF> underline Yes/No

PS file: <http://130.149.60.45/farbmetrik/OE61/OE61F1P2.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/OE61/OE61F1P2.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE61/OE61F1P2.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

OE611-7N-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

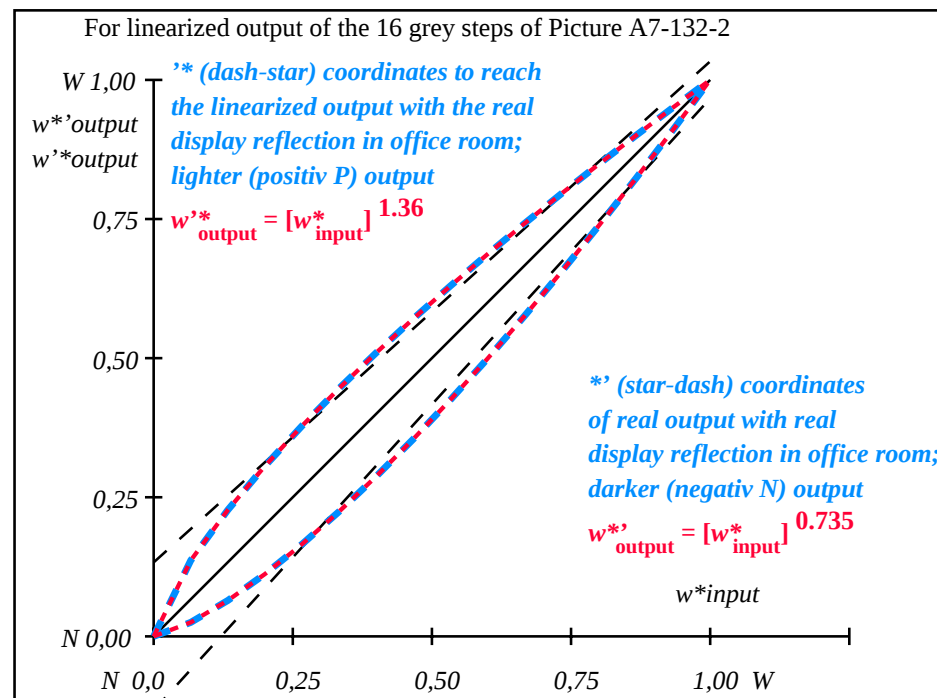
i	LAB*ref	L*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	10.99	0.0	0.0	10.99	0.0	0.0
2	16.62	0.0	0.03	13.12	0.0	0.0
3	22.25	0.0	0.06	16.44	0.0	0.0
4	27.88	0.0	0.11	20.45	0.0	0.0
5	33.5	0.0	0.17	24.98	0.0	0.0
6	39.13	0.0	0.22	29.94	0.0	0.0
7	44.76	0.0	0.29	35.27	0.0	0.0
8	50.39	0.0	0.35	40.93	0.0	0.0
9	56.02	0.0	0.43	46.9	0.0	0.0
10	61.64	0.0	0.5	53.13	0.0	0.0
11	67.27	0.0	0.58	59.63	0.0	0.0
12	72.9	0.0	0.66	66.36	0.0	0.0
13	78.53	0.0	0.74	73.31	0.0	0.0
14	84.15	0.0	0.82	80.48	0.0	0.0
15	89.78	0.0	0.91	87.85	0.0	0.0
16	95.41	0.0	1.0	95.41	0.0	0.0
17	10.99	0.0	0.0	10.99	0.0	0.0
18	32.1	0.0	0.15	23.81	0.0	0.0
19	53.2	0.0	0.39	43.88	0.0	0.0
20	74.31	0.0	0.68	68.08	0.0	0.0
21	95.41	0.0	1.0	95.41	0.0	0.0

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

Mean lightness difference (5 steps) $\Delta E^*_{CIELAB} = 4.8$

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

OE610-3N-132-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE611-3N-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																
$g_N=1.36$ 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	0.025	0.064	0.112	0.166	0.224	0.288	0.355	0.425	0.499	0.577	0.655	0.738	0.824	0.91	1.0

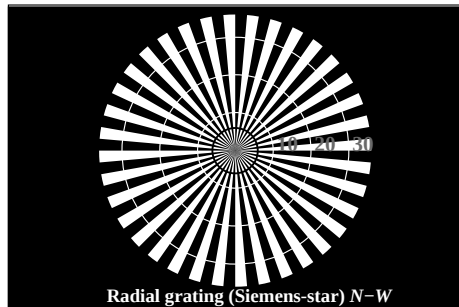
OE610-7N, Picture A7-132-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

OE61: 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

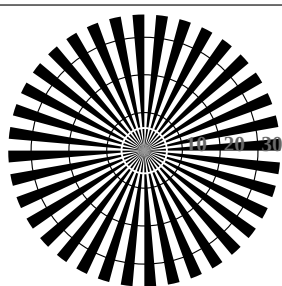
input: $w (->rgb^*_{de})$ setgray
output 130-2: $g_P=1.0$; $g_N=1.17$

TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

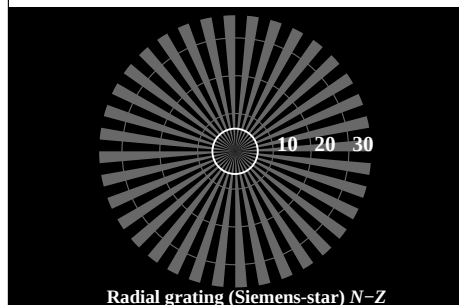
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



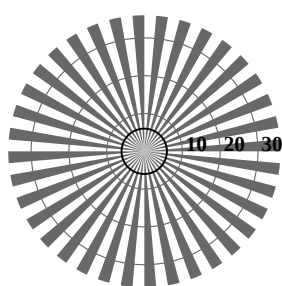
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

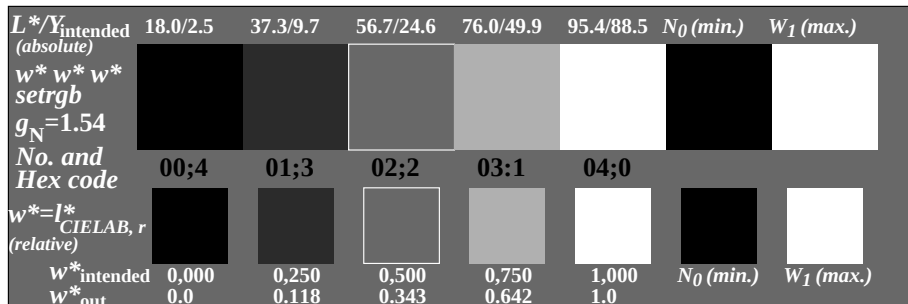


Radial grating (Siemens-star) N-Z

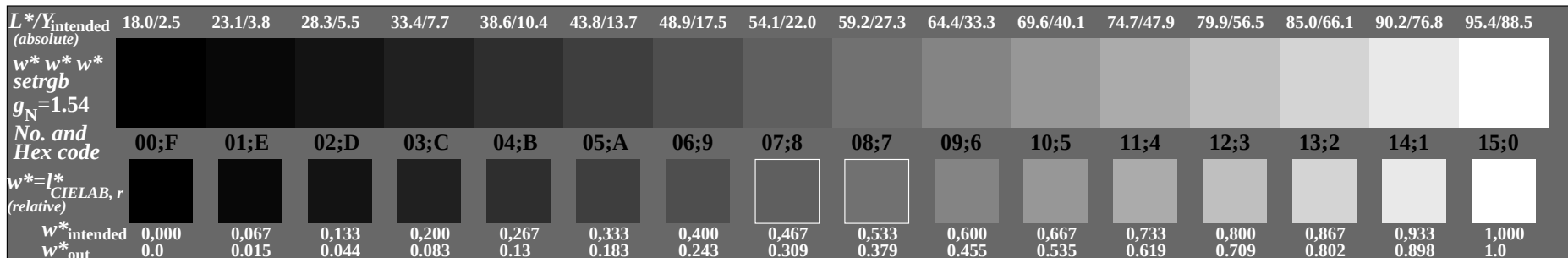


Radial grating (Siemens-star) W-Z

OE610-3N, Picture A1-133-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$

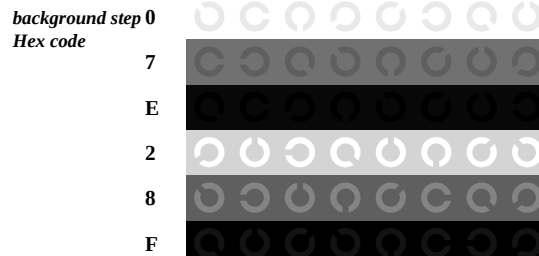


OE610-5N, Picture A2-133-0: 5 equidistant L^* -grey steps+ N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$

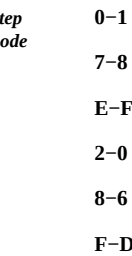


OE610-7N, Picture A3-133-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

OE61: similar ME16 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

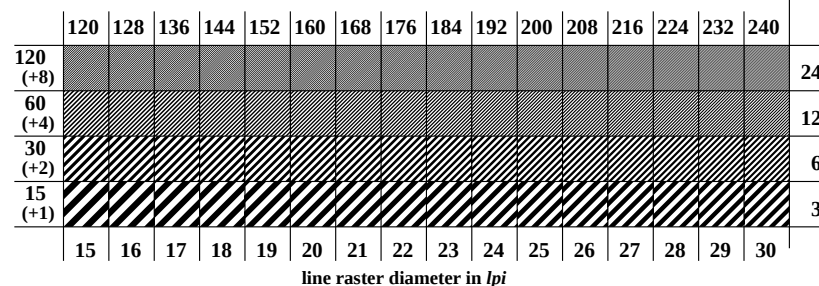


Landolt-rings W-N



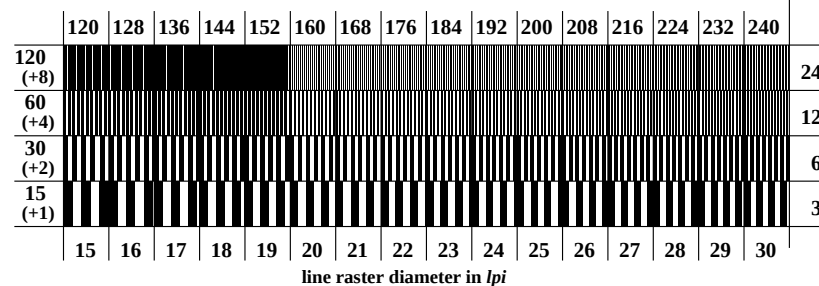
code: background-ring

OE611-1N, Picture A4-133-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE611-3N, Picture A5-133-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE611-5N, Picture A6-133-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

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

TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

Part 1 OE610-3N-1324-1

Part 3	OE610-7N-133-1
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Part 2
OE611-3N-133-1

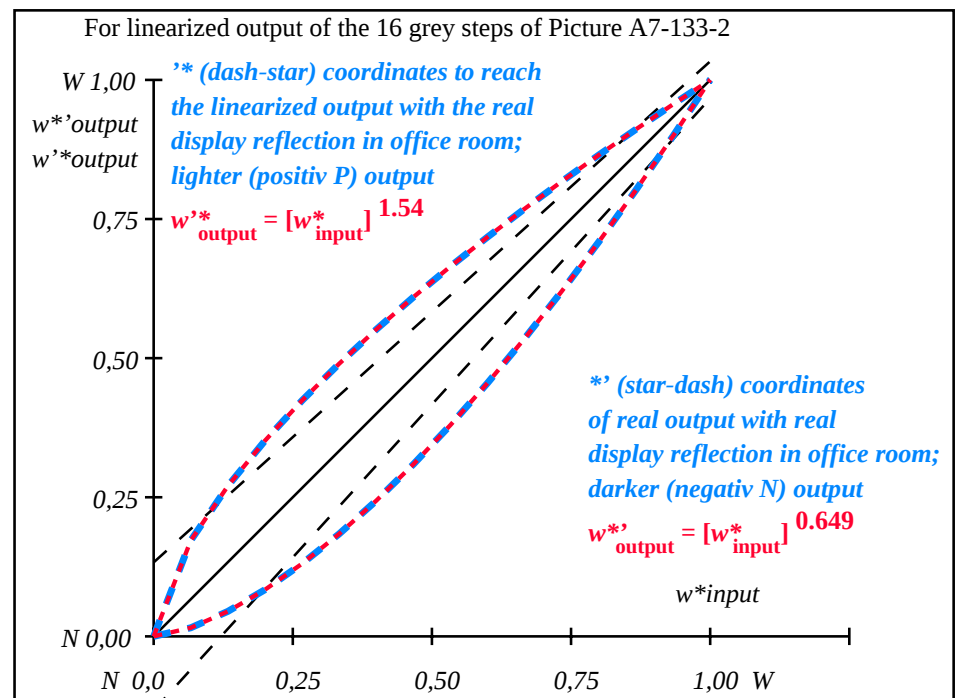
Part 4
OE611-7N-133-1

OE611-7N-133-1

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

i	LAB*ref	L*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	18.01	0.0	0.0	0.0	0.01	Specification according to
2	23.17	0.0	0.02	-3.95	0.0	ISO/IEC 15775 Annex G
3	28.33	0.0	0.04	-6.83	0.0	and DIN 33866-1 Annex G
4	33.49	0.0	0.08	-8.98	0.0	
5	38.65	0.0	0.13	-10.52	0.0	
6	43.81	0.0	0.18	-11.53	0.0	
7	48.97	0.0	0.24	-12.07	0.0	
8	54.13	0.0	0.31	-12.18	0.0	
9	59.29	0.0	0.38	-11.87	0.0	
10	64.45	0.0	0.46	-11.19	0.0	
11	69.61	0.0	0.54	-10.14	0.0	
12	74.77	0.0	0.62	-8.74	0.0	
13	79.93	0.0	0.71	-7.02	0.0	
14	85.09	0.0	0.8	-4.98	0.0	
15	90.25	0.0	0.9	-2.63	0.0	Mean lightness difference (16 steps)
16	95.41	0.0	1.0	0.0	0.01	ΔE*CIELAB = 7.7
17	18.01	0.0	0.0	0.0	0.0	
18	37.36	0.0	0.12	-10.19	0.0	
19	56.71	0.0	0.34	-12.07	0.0	
20	76.06	0.0	0.64	-8.34	0.0	Mean lightness difference (5 steps)
21	95.41	0.0	1.0	0.0	0.01	ΔL*CIELAB = 6.1
Mean colour reproduction index:					R* _{ab,m} = 66	

OE610-3N-133-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE611-3N-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																
$g_N=1.54$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^*=l^*_{\text{CIELAB},r}$ (relative)																
w^*_{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	0,016	0,045	0,084	0,131	0,184	0,244	0,31	0,379	0,455	0,536	0,62	0,709	0,803	0,899	1,0

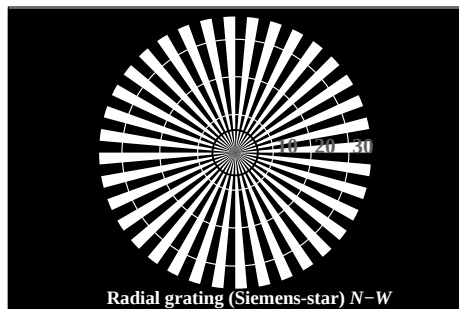
OE610-7N, Picture A7-133-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

OE61: 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

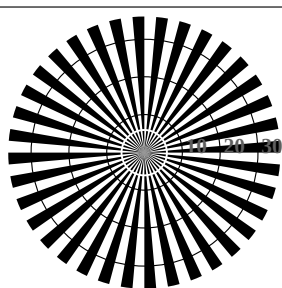
input: w ($\rightarrow \text{rgb}^*_{\text{de}}$) setgray
output 130-2: $g_P=1.0$; $g_N=1.29$

TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

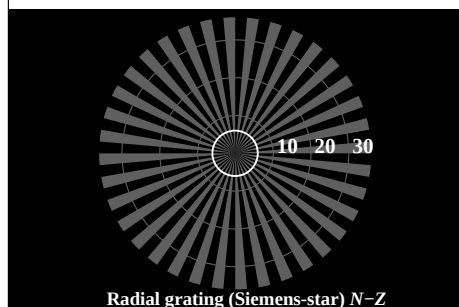
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



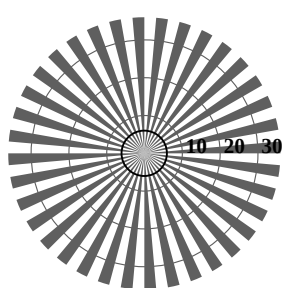
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

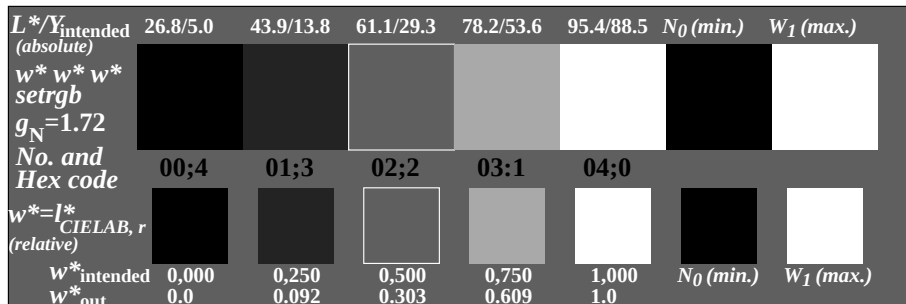


Radial grating (Siemens-star) N-Z

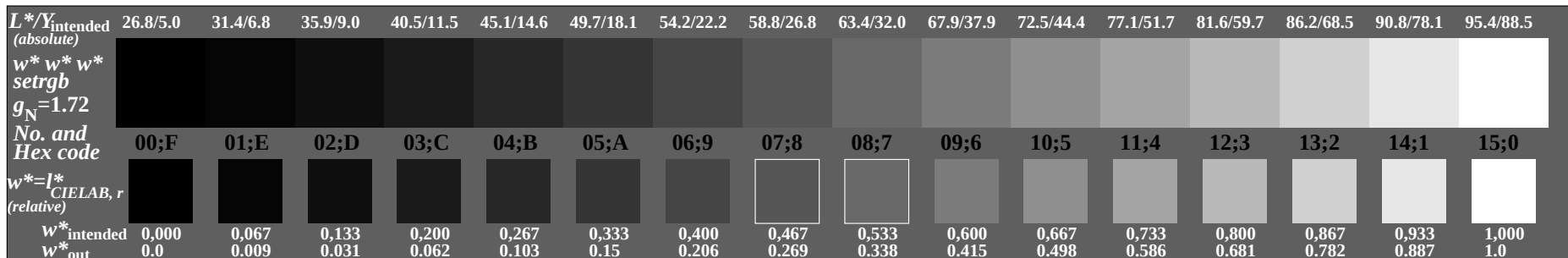


Radial grating (Siemens-star) W-Z

OE610-3N, Picture A1-134-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$



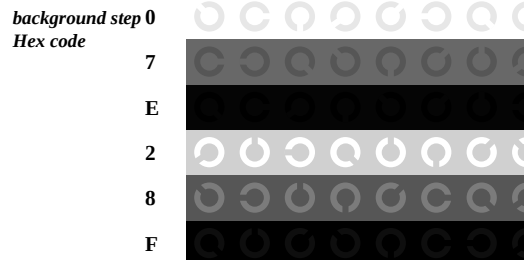
OE610-5N, Picture A2-134-0: 5 equidistant L^* -grey steps+ N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE610-7N, Picture A3-134-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

OE61: similar ME16 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

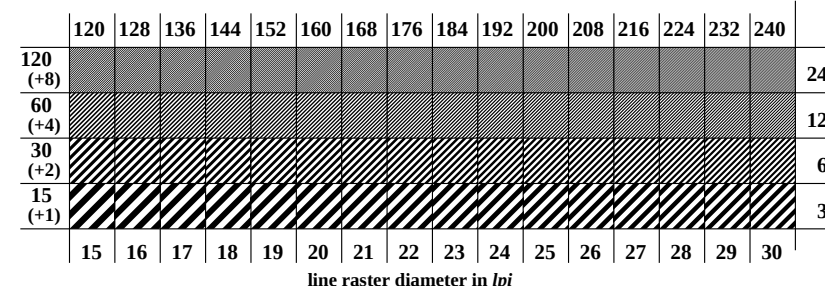
input: w ($\rightarrow \text{rgb}^*_{\text{de}}$) setgray
output 130-0: $g_P=1.0$; $g_N=1.42$



Landolt-rings W-N

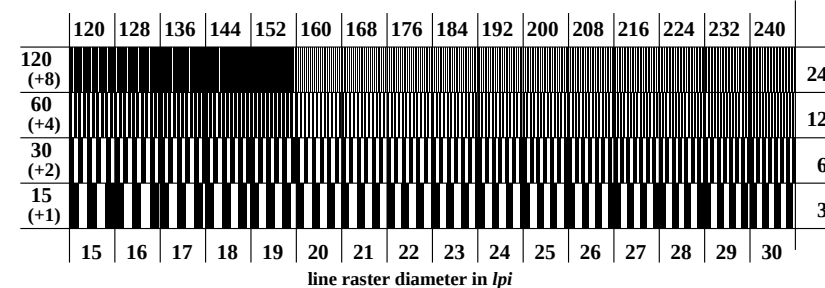
code: background-ring

OE611-1N, Picture A4-134-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE611-3N, Picture A5-134-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE611-5N, Picture A6-134-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

Part 1 OE610-3N-1332-1

Part 3	OE610-7N-134-1
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Part 2
OE611-3N-134-1

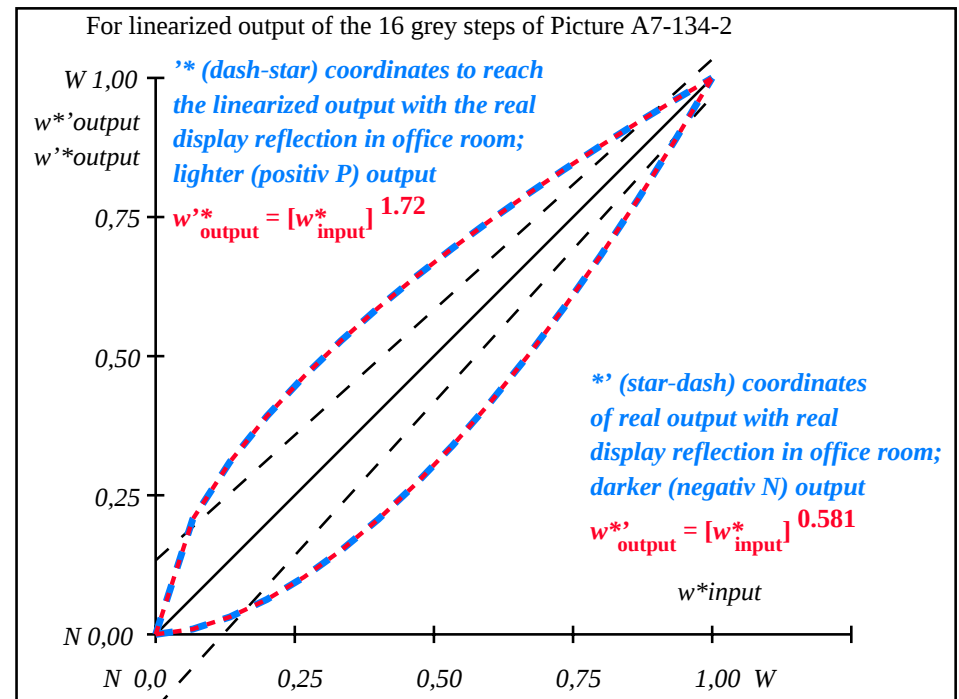
Part 4

OE611-7N-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*	Start output S1
1	26.85	0.0	0.0	0.0	26.85	0.0	0.0	0.0	0.0	0.0	0.0	0.01	Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G	
2	31.42	0.0	0.0	0.01	27.5	0.0	0.0	-3.91	0.0	0.0	3.92			
3	35.99	0.0	0.0	0.03	28.99	0.0	0.0	-6.99	0.0	0.0	7.0			
4	40.56	0.0	0.0	0.06	31.15	0.0	0.0	-9.4	0.0	0.0	9.41			
5	45.13	0.0	0.0	0.1	33.91	0.0	0.0	-11.21	0.0	0.0	11.22			
6	49.7	0.0	0.0	0.15	37.21	0.0	0.0	-12.48	0.0	0.0	12.49			
7	54.27	0.0	0.0	0.21	41.03	0.0	0.0	-13.24	0.0	0.0	13.25			
8	58.84	0.0	0.0	0.27	45.33	0.0	0.0	-13.5	0.0	0.0	13.51			
9	63.41	0.0	0.0	0.34	50.1	0.0	0.0	-13.3	0.0	0.0	13.31			
10	67.99	0.0	0.0	0.42	55.33	0.0	0.0	-12.65	0.0	0.0	12.66			
11	72.56	0.0	0.0	0.5	60.98	0.0	0.0	-11.56	0.0	0.0	11.57			
12	77.13	0.0	0.0	0.59	67.06	0.0	0.0	-10.05	0.0	0.0	10.06			
13	81.7	0.0	0.0	0.68	73.56	0.0	0.0	-8.13	0.0	0.0	8.14			
14	86.27	0.0	0.0	0.78	80.45	0.0	0.0	-5.81	0.0	0.0	5.82			
15	90.84	0.0	0.0	0.89	87.74	0.0	0.0	-3.09	0.0	0.0	3.1	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 = 8.5		
17	26.85	0.0	0.0	0.0	26.85	0.0	0.0	0.0	0.0	0.0	0.01			
18	43.99	0.0	0.0	0.09	33.17	0.0	0.0	-10.81	0.0	0.0	10.82			
19	61.13	0.0	0.0	0.3	47.66	0.0	0.0	-13.46	0.0	0.0	13.47			
20	78.27	0.0	0.0	0.61	68.65	0.0	0.0	-9.61	0.0	0.0	9.62	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 = 6.8		
Mean colour reproduction index:												R* _{ab,m} = 63		

OE610-3N-134-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE611-3N-134-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

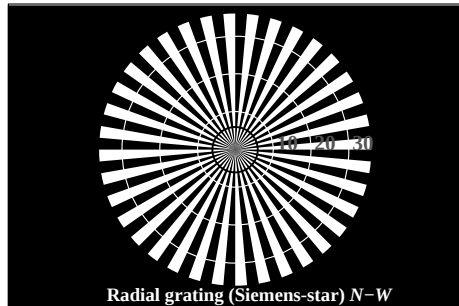
$L^*/Y^*_{\text{intended}}$ (absolute)	26.8/5.0	31.4/6.8	36.0/9.0	40.6/11.6	45.1/14.6	49.7/18.2	54.3/22.2	58.8/26.9	63.4/32.1	68.0/38.0	72.6/44.5	77.1/51.7	81.7/59.7	86.3/68.5	90.8/78.1	95.4/88.6
$w^* w^* w^*$ setrgb																
$g_N=1.72$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^*=L^*_{\text{CIELAB},r}$ (relative)																
w^*_{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	0.01	0.031	0.063	0.103	0.151	0.207	0.27	0.339	0.415	0.498	0.586	0.681	0.782	0.888	1.0

OE610-7N, Picture A7-134-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

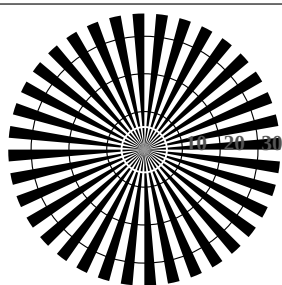
OE61: In-output relation according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:5$; Y_N range 3,75 to <7,5

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

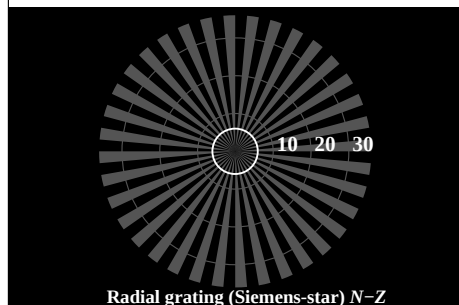
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



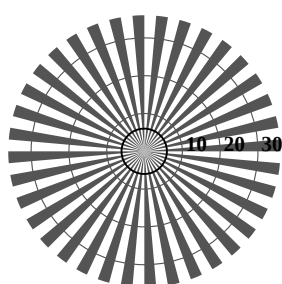
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

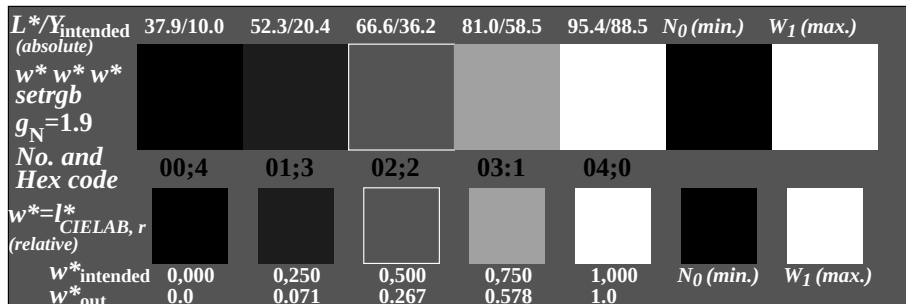


Radial grating (Siemens-star) N-Z

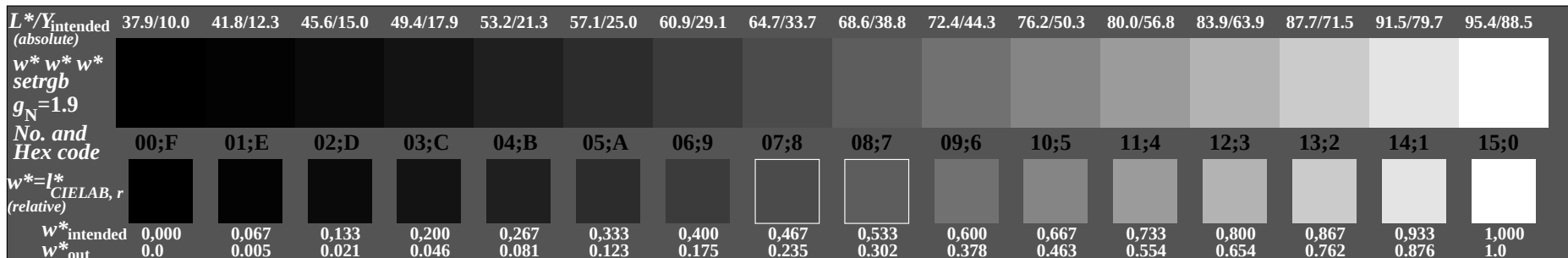


Radial grating (Siemens-star) W-Z

OE610-3N, Picture A1-135-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$



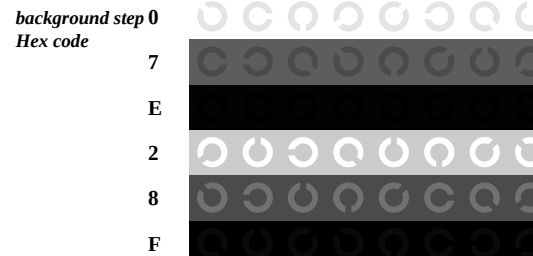
OE610-5N, Picture A2-135-0: 5 equidistant L^* -grey steps+ N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE610-7N, Picture A3-135-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

OE61: similar ME16 according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:10$; Y_N range 7,5 to <15

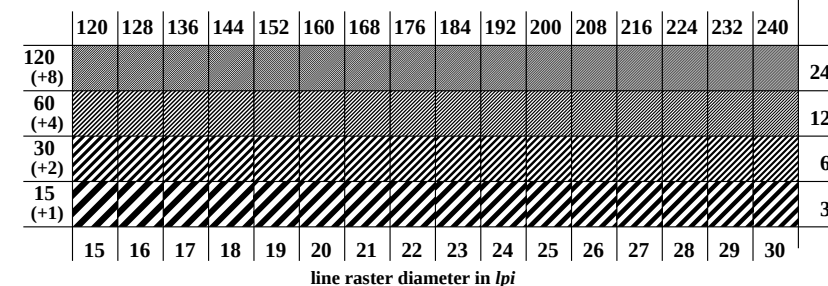
input: $w (-> \text{rgb}^*_{\text{de}}) \text{setgray}$
output 130-0: $g_P=1.0$; $g_N=1.6$



Landolt-rings W-N

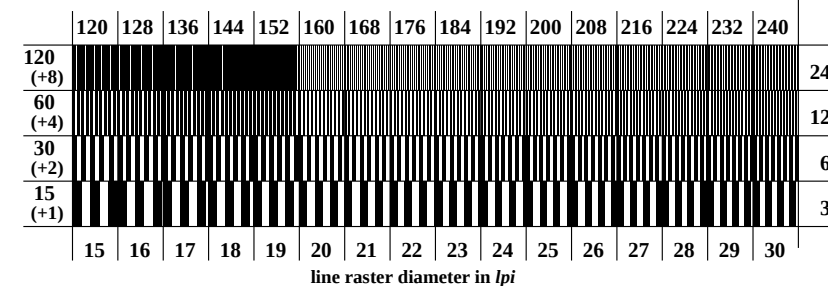
code: background-ring

OE611-1N, Picture A4-135-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE611-3N, Picture A5-135-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE611-5N, Picture A6-135-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

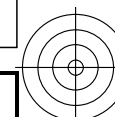


F: Output Linearization (OL) data OE61/OE61L0NA.TXT /.PS in File (F)



TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS TUB mater application for output of displays: monitor systems or data projector systems

TUB material: code=rha4ta



OE610-3N-1340-1

Part 3

OE610-7N-135-1

output 130-1: $q_P=1.0$; $q_N=1.6$

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

OE611-3N-135-1

Part 4

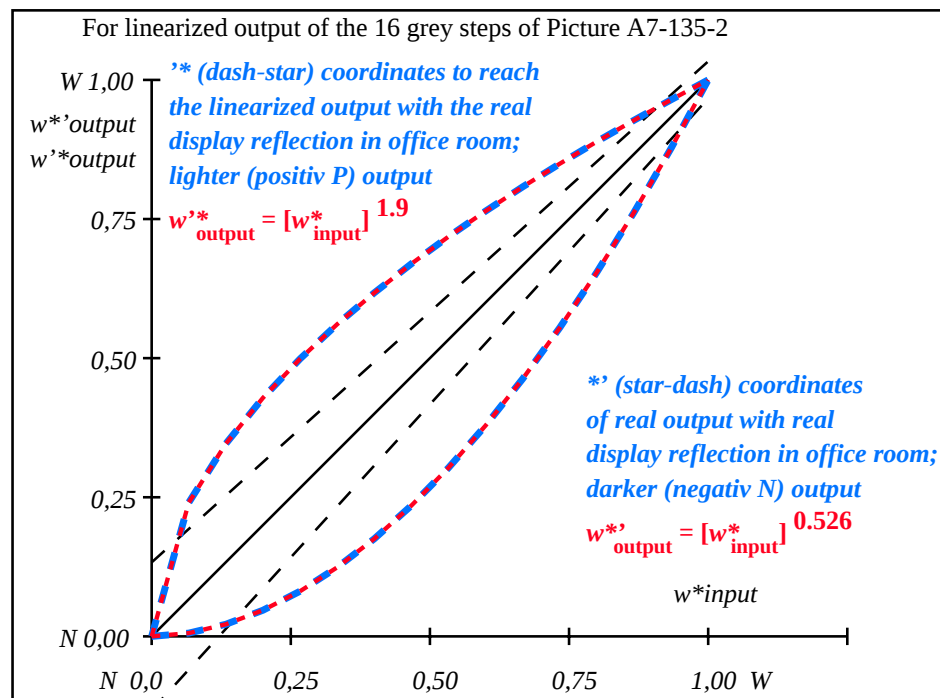
OE611-7N-135-1

<http://130.149.60.45/~farbmetrik/OE61/OE61F1NX.PDF> /.PS

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	38.32	0.0	-3.48
3	45.64	0.0	0.02	39.23	0.0	-6.4
4	49.47	0.0	0.05	40.68	0.0	-8.78
5	53.3	0.0	0.08	42.65	0.0	-10.64
6	57.13	0.0	0.12	45.11	0.0	-12.01
7	60.96	0.0	0.18	48.06	0.0	-12.89
8	64.78	0.0	0.24	51.48	0.0	-13.29
9	68.61	0.0	0.3	55.38	0.0	-13.22
10	72.44	0.0	0.38	59.74	0.0	-12.69
11	76.27	0.0	0.46	64.56	0.0	-11.69
12	80.1	0.0	0.55	69.84	0.0	-10.25
13	83.93	0.0	0.65	75.57	0.0	-8.35
14	87.75	0.0	0.76	81.74	0.0	-6.0
15	91.58	0.0	0.88	88.35	0.0	-3.22
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	0.07	42.11	0.0	-10.22
19	66.7	0.0	0.27	53.37	0.0	-13.32
20	81.05	0.0	0.58	71.23	0.0	-9.81
21	95.41	0.0	1.0	95.41	0.0	0.0
Mean lightness difference (16 steps)					ΔE* _{CIELAB} = 8.3	
Mean lightness difference (5 steps)					ΔE* _{CIELAB} = 6.7	
Mean colour reproduction index:					R* _{ab,m} = 64	

OE610-3N-135-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE611-3N-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 $g_N=1.9$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^* = l^*_{\text{CIELAB}, r}$ (relative)																
w^*_{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	0.006	0.022	0.047	0.081	0.124	0.175	0.235	0.303	0.379	0.463	0.554	0.654	0.762	0.877	1.0

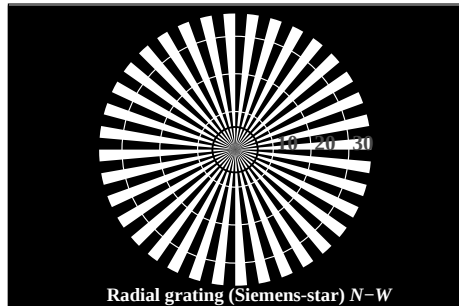
OE610-7N, Picture A7-135-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^*$ setrgbcolor

OE61: 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

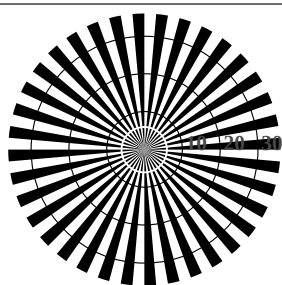
input: w ($\rightarrow \text{rgb}^*_{\text{de}}$) setgray
output 130-2: $g_P=1.0$; $g_N=1.6$

TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

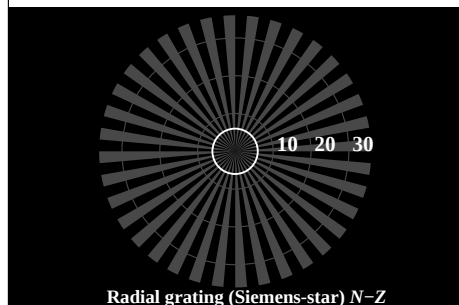
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



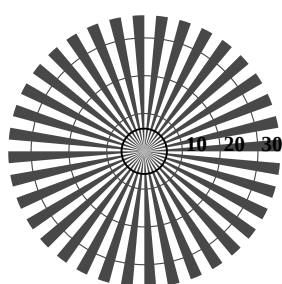
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

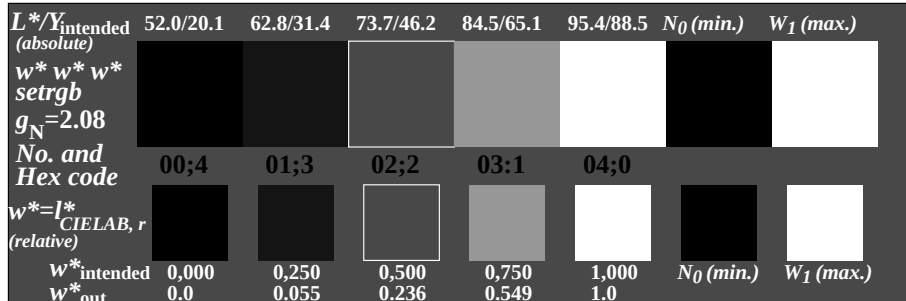


Radial grating (Siemens-star) N-Z

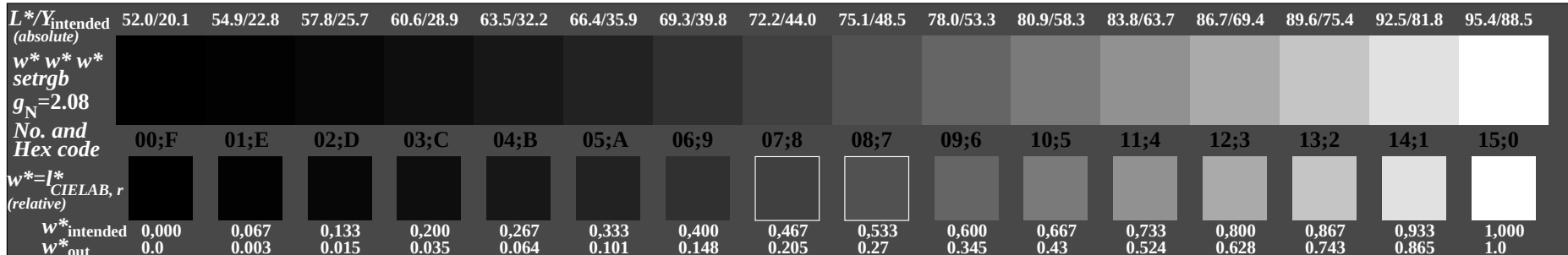


Radial grating (Siemens-star) W-Z

OE610-3N, Picture A1-136-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE610-5N, Picture A2-136-0: 5 equidistant L^* -grey steps+ N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE610-7N, Picture A3-136-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

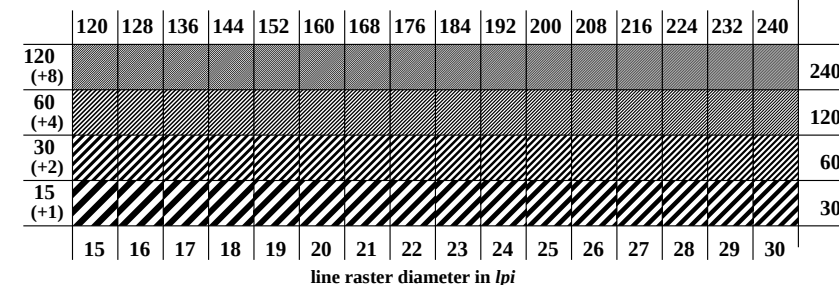
OE61: similar ME16 according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:20$; Y_N range 15 to <30

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

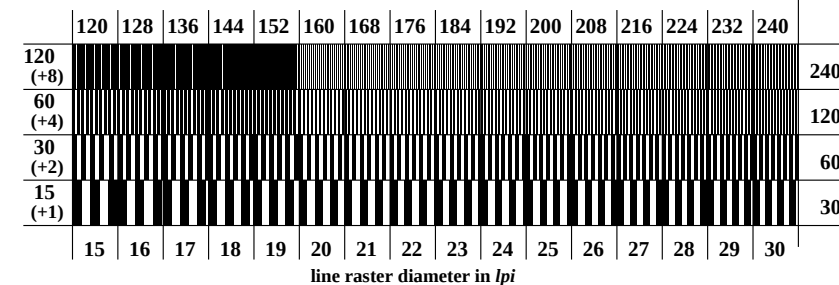
code: background-ring

OE611-1N, Picture A4-136-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE611-3N, Picture A5-136-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE611-5N, Picture A6-136-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

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

TUB registration: 20110801-OE61/OE61L0NA.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? Test with magnifying glass (e.g. 6x) resolution diameter	Yes/No mm
W-N-radial grating:	Is the resolution diameter < 6 mm? Test with magnifying glass (e.g. 6x) resolution diameter	Yes/No mm
N-Z-radial grating:	Is the resolution diameter < 6 mm? Test with magnifying glass (e.g. 6x) resolution diameter	Yes/No mm
W-Z-radial grating:	Is the resolution diameter < 6 mm? Test with magnifying glass (e.g. 6x) resolution diameter	Yes/No 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?	
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?	
of the given 16 steps:	 Steps

Part 1	OE610-3N-1348-1
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Documentation of file format, hardware and software for this test:

PDF-File:	http://130.149.60.45/farbmetrik/OE61/OE61L0NP.PDF	underline	Yes/No
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PS-File: <http://130.149.60.45/farbmetrik/OE61/OE61L0NA.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
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For device output with PDF-file OE61L0NP.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 OE61L0NA.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)

.....

.....

.....

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 <i>Landolt</i> -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 A5-136-0

Can equally spaced lines be seen?
Visual testing: for radial diameter from 15 to 60 lpi
Test with a magnifying glass (e.g. 6x): – from 15 lpi:

Test of the radial grating under 90° according to picture A6-136-0

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

Part 2
OE611-3N-136-1

Documentation of assessor colour vision properties for visual assessment

The assessor has normal colour vision according to one test:	<u> </u> Yes/No
either according to DIN 6160:1996 with Anomaloskop of Nagel	<u> </u> Yes/unknown
or with test charts using colour points according to Ishihara	<u> </u> Yes/unknown
or tested with, please specify:	<u> </u> 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/farbmatrik/OE61/OE61F1P2.PDF> **underline** Yes/No

PS file: <http://130.149.60.45/farbmetrik/OE61/OE61F1P2.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/farbmatrik/OE61/OE61F1P2.PDF>
picture A7-136-2

PS-File: <http://130.149.60.45/farbmatrik/OE61/OE61F1P2.PS>
picture A7-136-2 or underline Yes/No

colour measurement and specification for:

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

If No, please give other parameters:

Colorimetric specification with PS file for colours in the columns A to T

Exchange of CIELAB data in file www.ps.bam.de/De17/10L/L17e00NP.PS and transfer of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF	<u>underline</u> Yes/No

If No, please describe other method:

Part 3	OE610-7N-136-1
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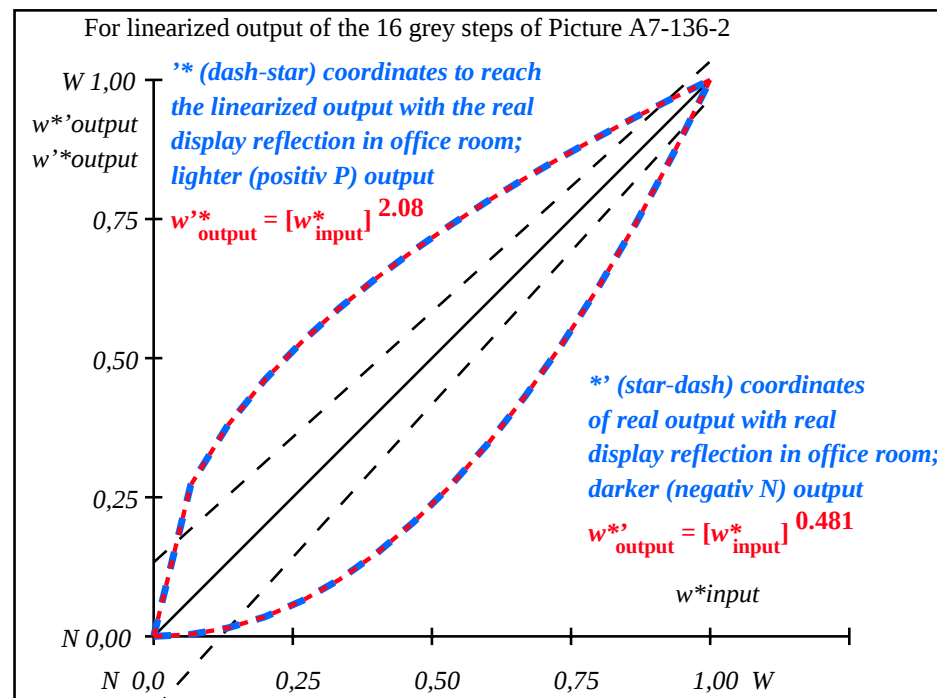
OE61: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: $w (-\rightarrow rgb^*_{de})$ setgray
Viewing Y contrast $Y_W: Y_N=88,9:20$; Y_N range 15 to <30 output 130-1: $q_P=1.0$; $q_N=1.81$

OE611-7N-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	52.02 0.0 0.0	0.0 0.0 0.0	0.01	Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G
2	54.91 0.0 0.0	0.0 0.0	52.17 0.0 0.0	-2.73 0.0 0.0	2.74	
3	57.8 0.0 0.0	0.0 0.02	52.67 0.0 0.0	-5.12 0.0 0.0	5.13	
4	60.7 0.0 0.0	0.0 0.04	53.54 0.0 0.0	-7.14 0.0 0.0	7.15	
5	63.59 0.0 0.0	0.0 0.06	54.79 0.0 0.0	-8.79 0.0 0.0	8.8	
6	66.48 0.0 0.0	0.0 0.1	56.43 0.0 0.0	-10.04 0.0 0.0	10.05	
7	69.37 0.0 0.0	0.0 0.15	58.47 0.0 0.0	-10.89 0.0 0.0	10.9	
8	72.27 0.0 0.0	0.0 0.2	60.91 0.0 0.0	-11.35 0.0 0.0	11.36	
9	75.16 0.0 0.0	0.0 0.27	63.75 0.0 0.0	-11.4 0.0 0.0	11.41	
10	78.05 0.0 0.0	0.0 0.35	67.01 0.0 0.0	-11.03 0.0 0.0	11.04	
11	80.95 0.0 0.0	0.0 0.43	70.69 0.0 0.0	-10.25 0.0 0.0	10.26	
12	83.84 0.0 0.0	0.0 0.52	74.78 0.0 0.0	-9.05 0.0 0.0	9.06	
13	86.73 0.0 0.0	0.0 0.63	79.3 0.0 0.0	-7.42 0.0 0.0	7.43	
14	89.62 0.0 0.0	0.0 0.74	84.24 0.0 0.0	-5.38 0.0 0.0	5.39	
15	92.52 0.0 0.0	0.0 0.87	89.61 0.0 0.0	-2.9 0.0 0.0	2.91	Mean lightness difference (16 steps)
16	95.41 0.0 0.0	0.0 1.0	95.41 0.0 0.0	0.0 0.0 0.0	0.01	ΔE*CIELAB = 7.1
17	52.02 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	0.0 0.06	54.44 0.0 0.0	-8.41 0.0 0.0	8.42	
19	73.71 0.0 0.0	0.0 0.24	62.28 0.0 0.0	-11.42 0.0 0.0	11.43	
20	84.56 0.0 0.0	0.0 0.55	75.87 0.0 0.0	-8.68 0.0 0.0	8.69	Mean lightness difference (5 steps)
21	95.41 0.0 0.0	0.0 1.0	95.41 0.0 0.0	0.0 0.0 0.0	0.01	ΔL*CIELAB = 5.7
Mean colour reproduction index:					R* _{ab,m} = 69	

OE610-3N-136-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE611-3N-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																
$g_N=2.08$ 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	0.004	0.015	0.035	0.064	0.102	0.149	0.205	0.27	0.346	0.431	0.524	0.629	0.743	0.866	1.0

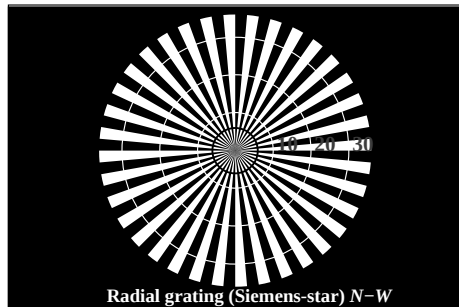
OE610-7N, Picture A7-136-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* setrgbcolor$

OE61: 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

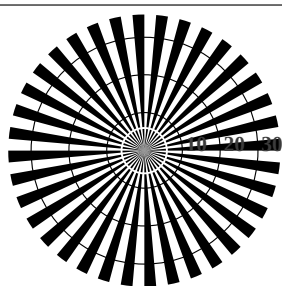
input: $w (->rgb^*_{de}) setgray$
output 130-2: $g_P=1.0$; $g_N=1.81$

TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

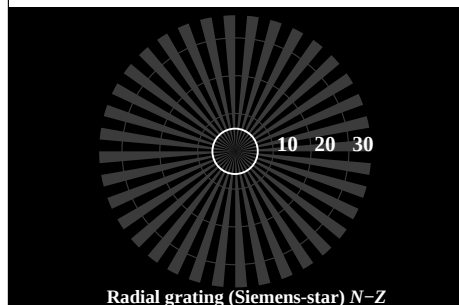
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



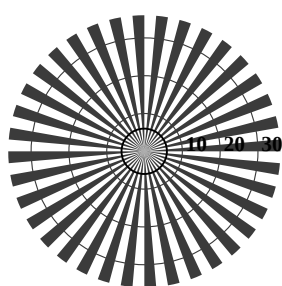
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

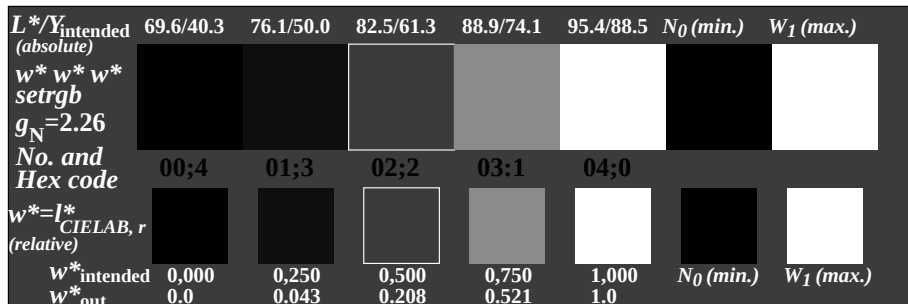


Radial grating (Siemens-star) N-Z

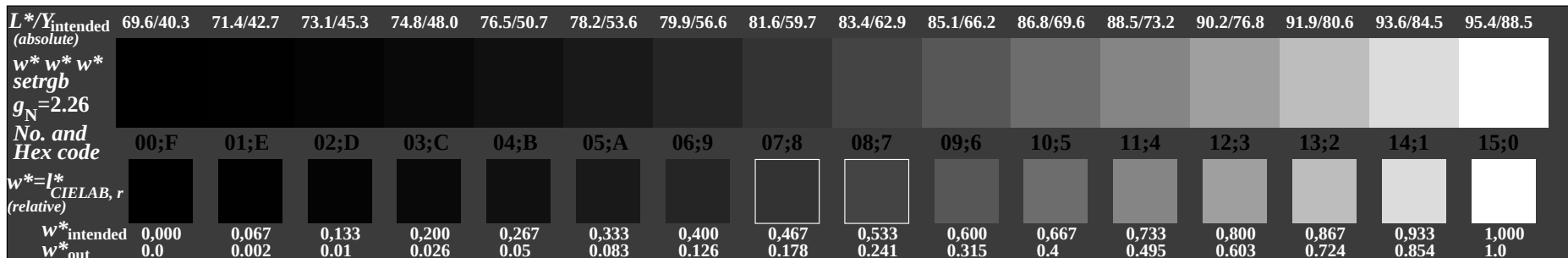


Radial grating (Siemens-star) W-Z

OE610-3N, Picture A1-137-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE610-5N, Picture A2-137-0: 5 equidistant L^* -grey steps + N_0 + W_1 ; PS operator: $w^* w^* w^* \text{setrgbcolor}$



OE610-7N, Picture A3-137-0: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

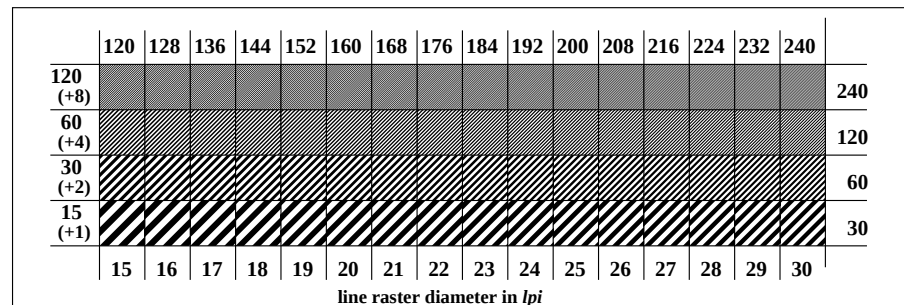
OE61: similar ME16 according to ISO 9241-306; 1MR, DEH
Viewing Y contrast $Y_W:Y_N=88,9:40$; Y_N range 30 to <60

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

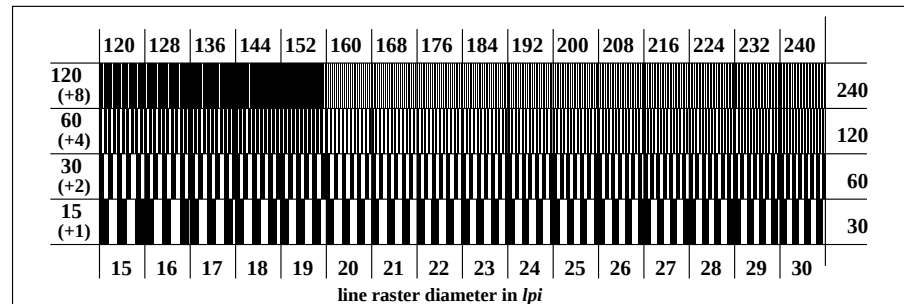
code: background-ring

OE611-1N, Picture A4-137-0: Landolt-rings W-N; PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE611-3N, Picture A5-137-0: Line raster under 45° (or 135°); PS operator: $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE611-5N, Picture A6-137-0: Line raster under 90° (or 0°); PS operator: $w^* w^* w^* \text{setrgbcolor}$

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

TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta

Part 1	OE610-3N-1356-1
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Part 3OE610-7N-137-1

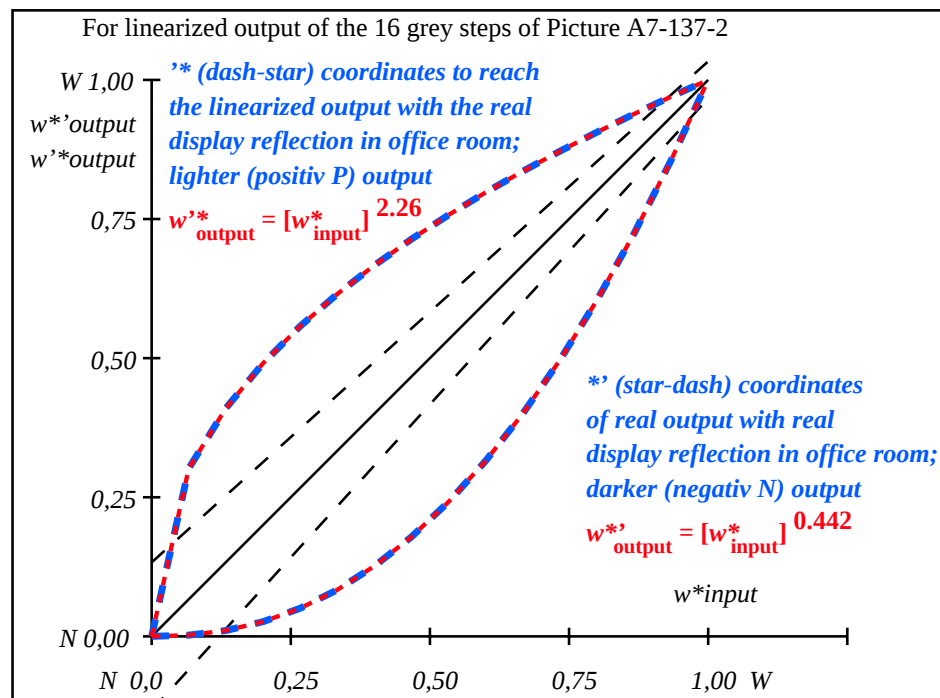
Part 2	OE611-3N-137-1
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Part 4OE611-7N-137-1

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	69.75	-1.65	1.66	ISO/IEC 15775 Annex G
3	73.13	0.0	69.97	-3.15	3.16	and DIN 33866-1 Annex G
4	74.84	0.0	70.37	-4.46	4.47	
5	76.55	0.0	70.99	-5.55	5.56	
6	78.27	0.0	71.84	-6.41	6.42	
7	79.98	0.0	72.94	-7.03	7.04	
8	81.7	0.0	74.29	-7.4	7.41	
9	83.41	0.0	75.91	-7.49	7.5	
10	85.12	0.0	77.8	-7.31	7.32	
11	86.84	0.0	79.98	-6.85	6.86	
12	88.55	0.0	82.45	-6.09	6.1	
13	90.27	0.0	85.23	-5.03	5.04	
14	91.98	0.0	88.3	-3.67	3.68	
15	93.7	0.0	91.7	-1.99	2.0	Mean lightness difference (16 steps)
16	95.41	0.0	95.41	0.0	0.01	$\Delta E^*_{\text{CIELAB}} = 4.6$
17	69.7	0.0	69.7	0.0	0.01	
18	76.13	0.0	70.82	-5.3	5.31	
19	82.55	0.0	75.07	-7.48	7.49	
20	88.98	0.0	83.12	-5.85	5.86	Mean lightness difference (5 steps)
21	95.41	0.0	95.41	0.0	0.01	$\Delta L^*_{\text{CIELAB}} = 3.7$
Mean colour reproduction index:					$R^*_{\text{ab,m}} = 80$	

OE610-3N-137-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE611-3N-137-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

$L^*/Y^*_{\text{intended}}$ (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																
$g_N=2.26$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^*=L^*_{\text{CIELAB},r}$ (relative)																
w^*_{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	0.002	0.01	0.026	0.051	0.083	0.126	0.179	0.241	0.315	0.4	0.496	0.604	0.724	0.855	1.0

OE610-7N, Picture A7-137-2: 16 visual equidistant L^* -grey steps; PS operator: $w^* w^* w^* \text{setrgbcolor}$

OE61: 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: $w (-> \text{rgb}^*_{\text{de}}) \text{setgray}$
output 130-2: $g_P=1.0$; $g_N=2.1$

TUB registration: 20110801-OE61/OE61L0NA.TXT /.PS
application for output of displays: monitor systems or data projector systems
TUB material: code=rh4ta