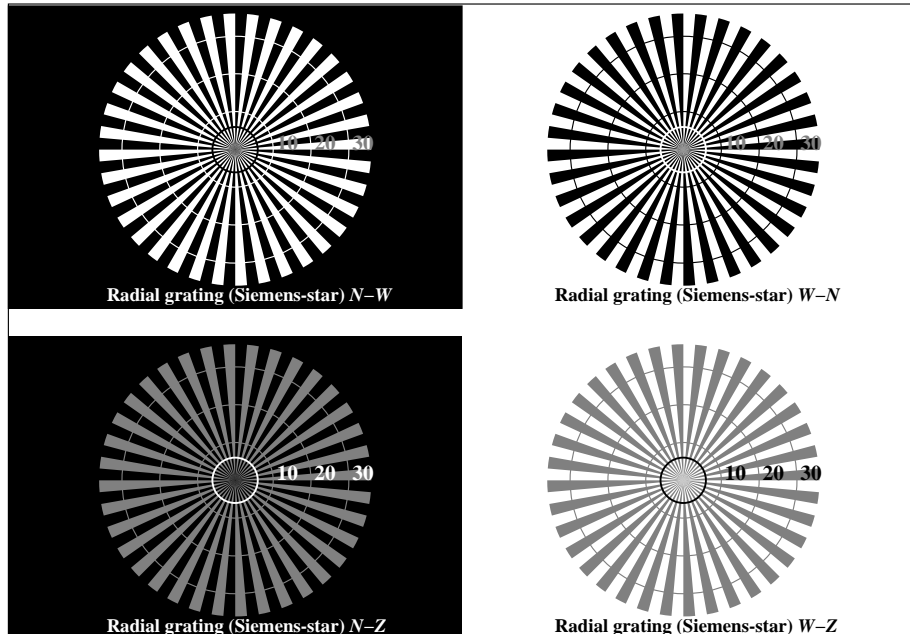
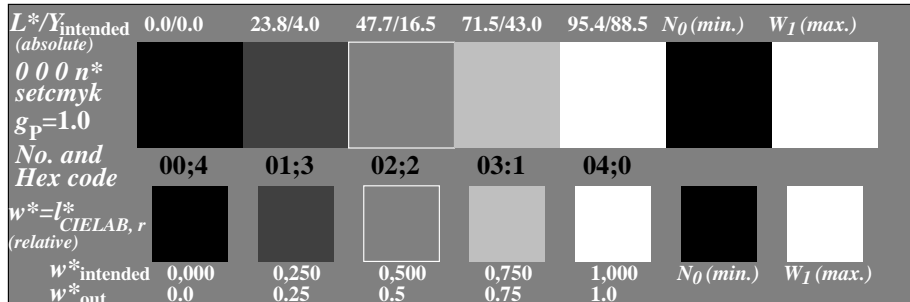


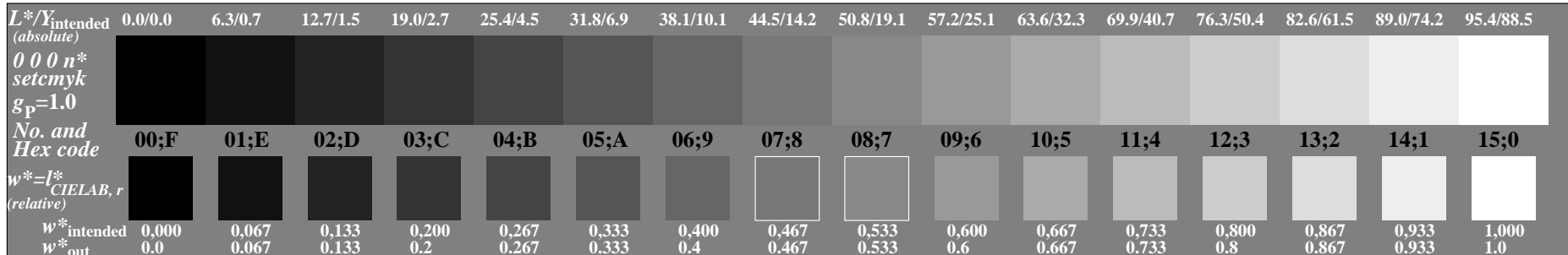
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



OE640-3N, Picture A1-100-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: 0 0 0 n\* setcmykcolor

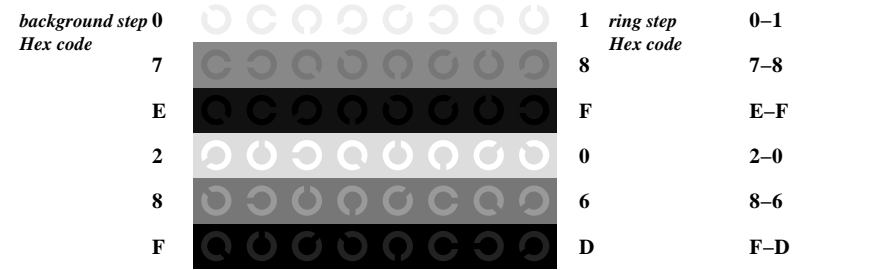


OE640-5N, Picture A2-100-0: 5 equidistant  $L^*$ -grey steps+N0+W1; PS operator: 0 0 0 n\* setcmykcolor

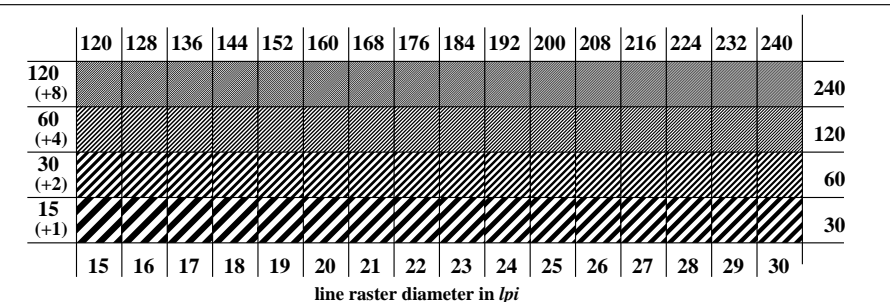


OE640-7N, Picture A3-100-0: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

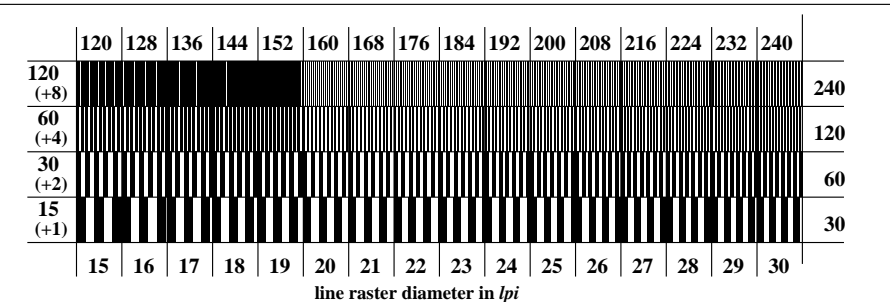
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:0,31$ ;  $Y_N$  range 0,0 to <0,46



Landolt-rings W-N code: background-ring  
OE641-1N, Picture A4-100-0: Landolt-rings W-N; PS operator: 0 0 0 n\* setcmykcolor



OE641-3N, Picture A5-100-0: Line raster under 45° (or 135°); PS operator: 0 0 0 n\* setcmykcolor



OE641-5N, Picture A6-100-0: Line raster under 90° (or 0°); PS operator: 0 0 0 n\* setcmykcolor

input: all (->rgb\*<sub>de</sub>) setrgbcolor  
output 130-0:  $g_p=1.0$ ;  $g_N=1.0$

<b>Test for the best visual linearized output of Picture A7-100-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-100-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-100-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-100-0</b>		
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 OE640-3N-100-1

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-100-1

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all ( $\rightarrow$ rgb\*<sub>de</sub>) setrgbcolor  
Viewing Y contrast  $Y_W: Y_N=88,9:0,31$ ;  $Y_N$  range 0,0 to <0,46 output 130-1:  $g_P=1.0$ ;  $g_N=1.0$

<b>Test for the best visual linearized output of Picture A7-100-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-100-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-100-0</b>		
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: to ..... lpi		
<b>Test of the radial grating under 90° according to picture A6-100-0</b>		
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: to ..... lpi		

Part 2 OE641-3N-100-1

**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/OE64/OE64F1P2.PDF> underline Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS> underline Yes/No

**Picture A7-100-2: 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/OE64/OE64F1P2.PDF> underline Yes/No

**picture A7-100-2**

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS> or underline Yes/No

**picture A7-100-2**

**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: .....

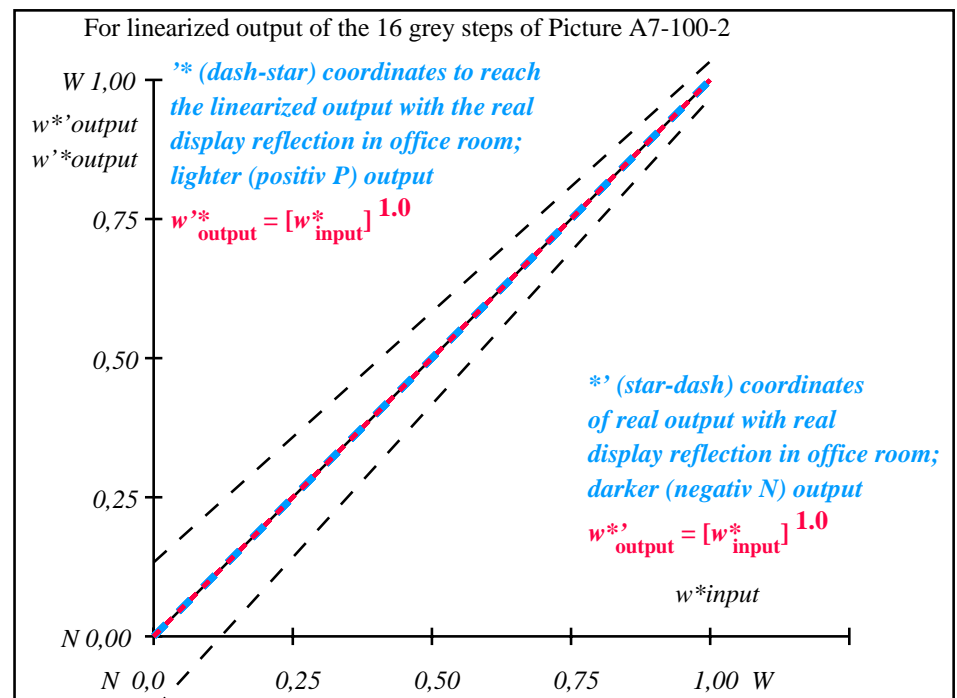
**Colorimetric specification with PS file for colours in the columns A to T**  
Exchange of CIELAB data in file [www.ps.bam.de/De17/10L/L17e00NP.PS](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer  
of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF underline Yes/No  
If No, please describe other method: .....

Part 4 OE641-7N-100-1

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* <sub>CIELAB</sub> =	0.0
Mean lightness difference (5 steps)					ΔE* <sub>CIELAB</sub> =	0.0
Mean colour reproduction index:					R* <sub>ab,m</sub> =	100

OE640-3N-100-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-100-2: 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
0 0 0 n* setcmyk g <sub>p</sub> =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

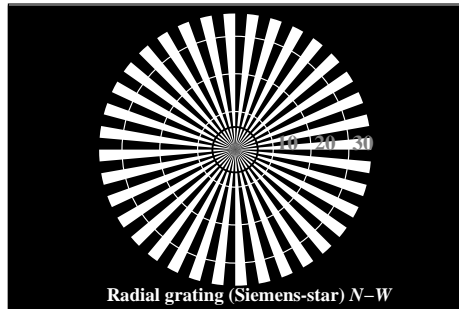
OE640-7N, Picture A7-100-2: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

OE64: 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

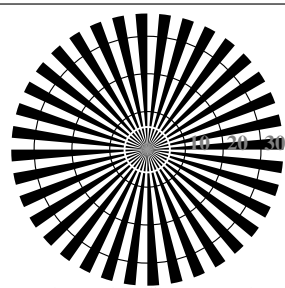
input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-2:  $g_p=1.0$ ;  $g_N=1.0$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta

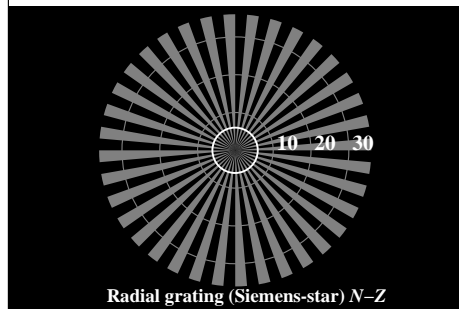
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



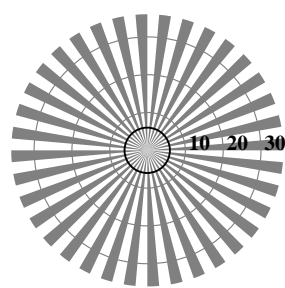
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

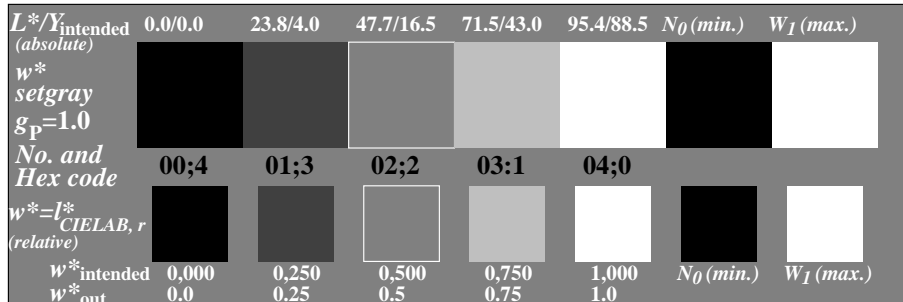


Radial grating (Siemens-star) N-Z

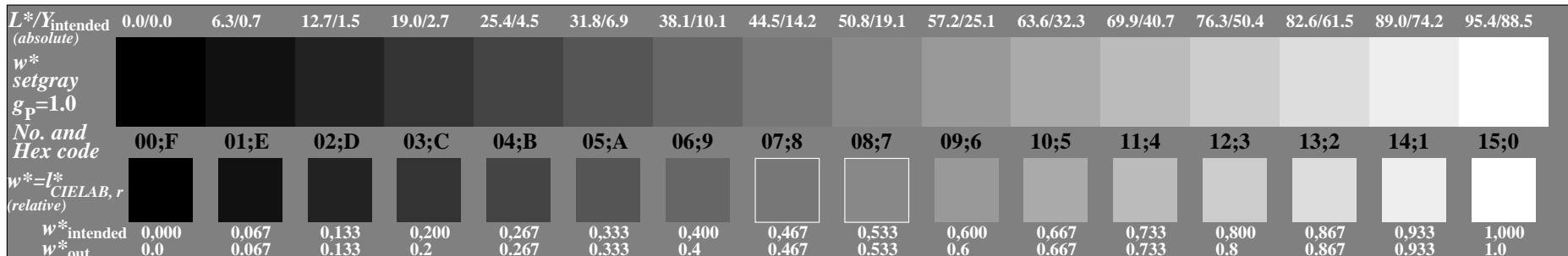


Radial grating (Siemens-star) W-Z

OE640-3N, Picture A1-110-3: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^*$  setgray



OE640-5N, Picture A2-110-3: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $w^*$  setgray



OE640-7N, Picture A3-110-3: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*$  setgray

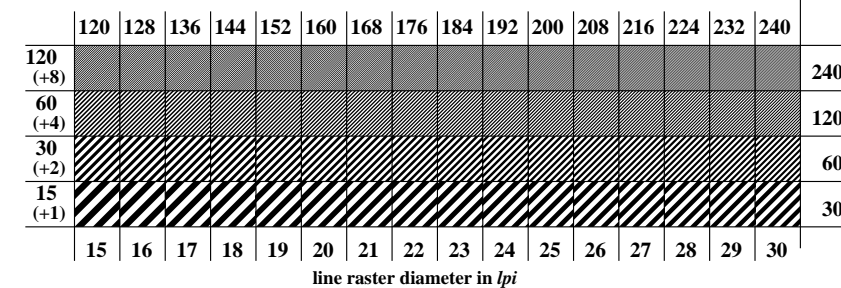
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:0,31$ ;  $Y_N$  range 0,0 to <0,46

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

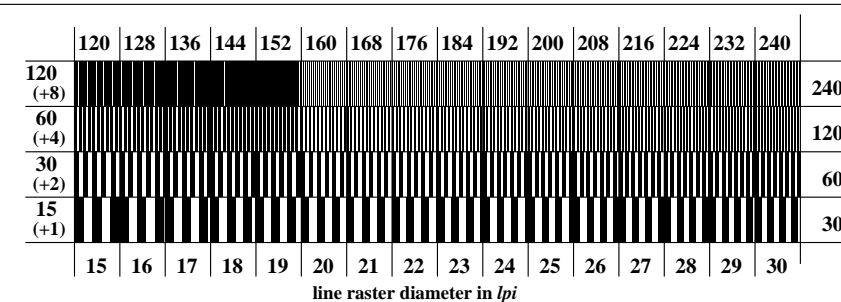
code: background-ring

OE641-1N, Picture A4-110-3: Landolt-rings W-N; PS operator:  $w^*$  setgray



line raster diameter in lpi

OE641-3N, Picture A5-110-3: Line raster under 45° (or 135°); PS operator:  $w^*$  setgray



line raster diameter in lpi

OE641-5N, Picture A6-110-3: Line raster under 90° (or 0°); PS operator:  $w^*$  setgray

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-3:  $g_p=1.0$ ;  $g_N=1.0$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta



<b>Test for the best visual linearized output of Picture A7-110-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-110-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-110-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-110-0</b>		
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 OE640-3N-110-4

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-110-4

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput:  $all (->rgb^*_{de}) setrgbcolor$   
Viewing Y contrast  $Y_W: Y_N=88,9:0,31$ ;  $Y_N$  range 0,0 to <0,46 output 130-4:  $g_P=1.0$ ;  $g_N=1.0$

<b>Test for the best visual linearized output of Picture A7-110-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-110-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-110-0</b>		
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: to ..... lpi		
<b>Test of the radial grating under 90° according to picture A6-110-0</b>		
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: to ..... lpi		

Part 2 OE641-3N-110-4

**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/OE64/OE64F1P2.PDF> underline Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS> underline Yes/No

**Picture A7-110-2: 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/OE64/OE64F1P2.PDF> underline Yes/No

**picture A7-110-2**

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS> or underline Yes/No

**picture A7-110-2**

**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: .....

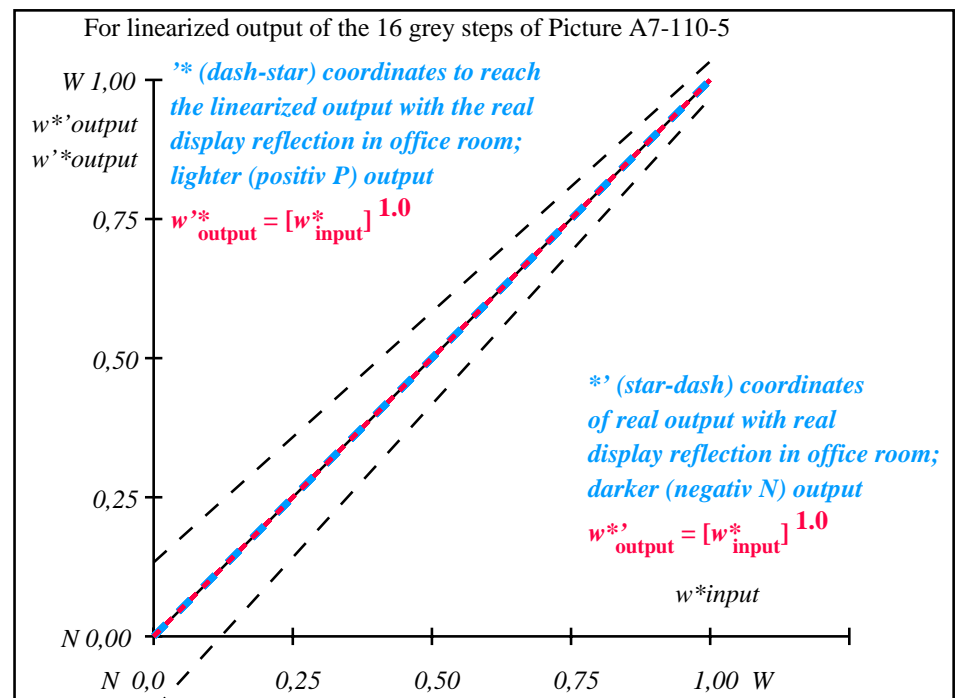
**Colorimetric specification with PS file for colours in the columns A to T**  
Exchange of CIELAB data in file [www.ps.bam.de/De17/10L/L17e00NP.PS](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer  
of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF underline Yes/No  
If No, please describe other method: .....

Part 4 OE641-7N-110-4

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* <sub>CIELAB</sub> = 0.0
Mean lightness difference (5 steps)						ΔE* <sub>CIELAB</sub> = 0.0
Mean colour reproduction index:						R* <sub>ab,m</sub> = 100

OE640-3N-110-5: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-110-5: 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
$w^*$ setgray $g_P=1.0$																
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

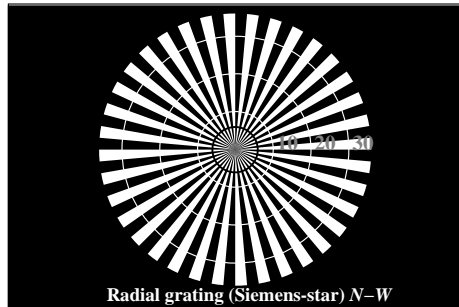
OE640-7N, Picture A7-110-5: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*$  setgray

OE64: 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

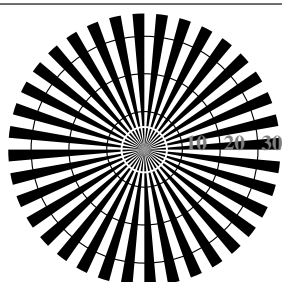
input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-5:  $g_P=1.0$ ;  $g_N=1.0$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta

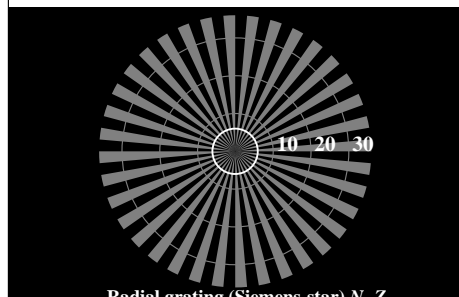
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



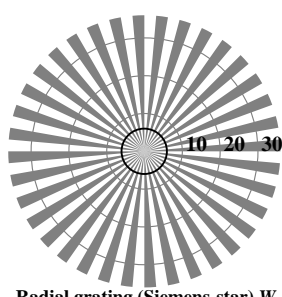
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

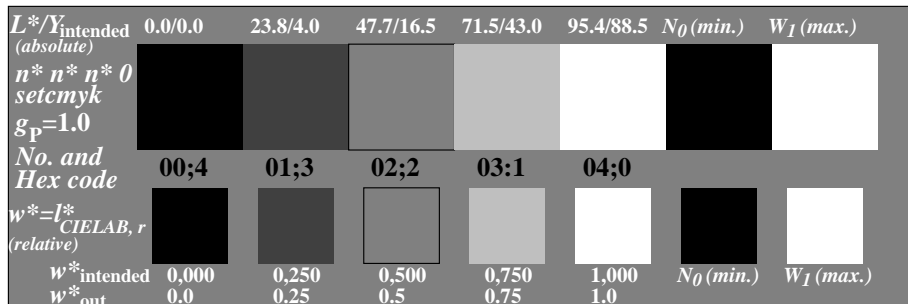


Radial grating (Siemens-star) N-Z

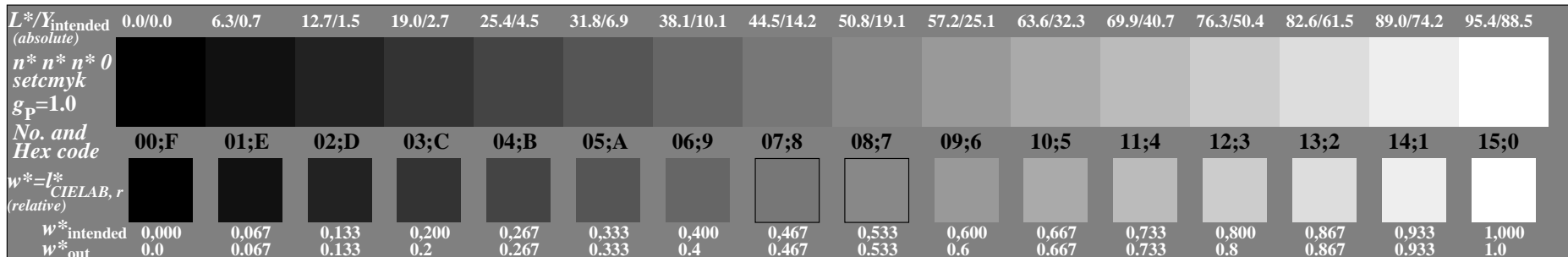


Radial grating (Siemens-star) W-Z

OE640-3N, Picture A1-120-6: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $n^*n^*n^*0$  setcmykcolor



OE640-5N, Picture A2-120-6: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $n^*n^*n^*0$  setcmykcolor



OE640-7N, Picture A3-120-6: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^*n^*n^*0$  setcmykcolor

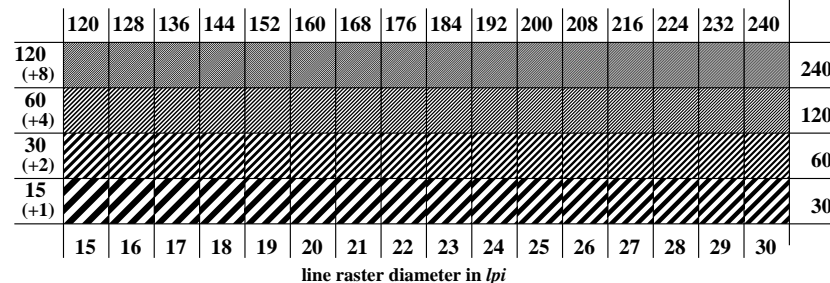
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:0,31$ ;  $Y_N$  range 0,0 to <0,46

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

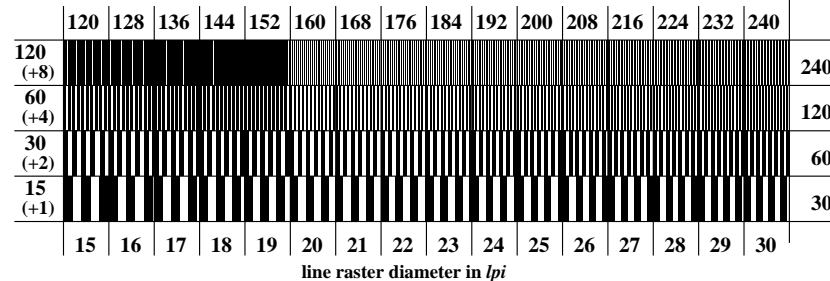
code: background-ring

OE641-1N, Picture A4-120-6: Landolt-rings W-N; PS operator:  $n^*n^*n^*0$  setcmykcolor



line raster diameter in lpi

OE641-3N, Picture A5-120-6: Line raster under 45° (or 135°); PS operator:  $n^*n^*n^*0$  setcmykcolor



line raster diameter in lpi

OE641-5N, Picture A6-120-6: Line raster under 90° (or 0°); PS operator:  $n^*n^*n^*0$  setcmykcolor

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-6:  $g_p=1.0$ ;  $g_N=1.0$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

<b>Test for the best visual linearized output of Picture A7-120-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-120-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-120-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-120-0</b>		
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 OE640-3N-120-7

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF>            Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-120-7

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: *all (->rgb\*\_de) setrgbcolor*  
Viewing Y contrast  $Y_W: Y_N=88,9:0,31$ ;  $Y_N$  range 0,0 to <0,46 output 130-7:  $g_P=1.0$ ;  $g_N=1.0$

<b>Test for the best visual linearized output of Picture A7-120-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-120-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-120-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-120-0</b>		
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 OE641-3N-120-7

**Documentation of assessor colour vision properties for visual assessment**

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

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

Office workplace illumination is daylight (clouded/north sky)            Yes/No

**PDF file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF>            Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>            Yes/No

**Picture A7-120-2: 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            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/OE64/OE64F1P2.PDF>            Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>            Yes/No

**picture A7-120-2**            Yes/No

**picture A7-120-2**            or underline Yes/No

**colour measurement and specification for:**  
CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry:            Yes/No  
If No, please give other parameters: .....

**Colorimetric specification with PS file for colours in the columns A to T**  
Exchange of CIELAB data in file [www.ps.bam.de/De17/10L/L17e00NP.PS](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer  
of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF            Yes/No  
If No, please describe other method: .....

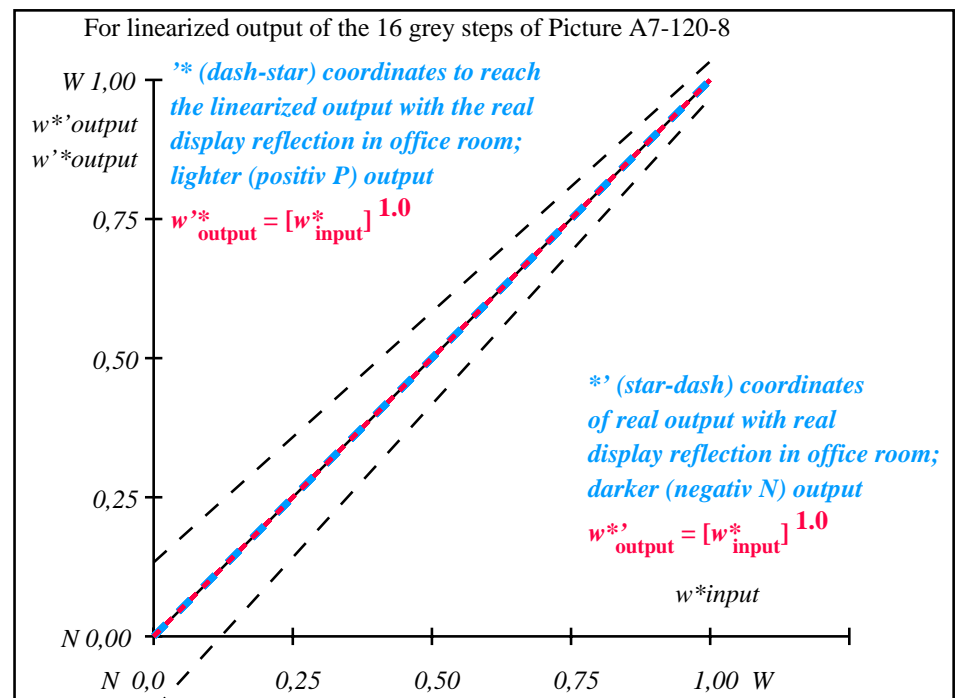
Part 4 OE641-7N-120-7



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* <sub>CIELAB</sub> = 0.0
Mean lightness difference (5 steps)						ΔE* <sub>CIELAB</sub> = 0.0
Mean colour reproduction index:						R* <sub>ab,m</sub> = 100

OE640-3N-120-8: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-120-8: 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
$n^* n^* n^* 0$ setcmk $g_P=1.0$																
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

OE640-7N, Picture A7-120-8: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^* n^* n^* 0$  setcmkcolor

OE64: 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: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-8:  $g_P=1.0$ ;  $g_N=1.0$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta



Test for the best visual linearized output of Picture A7-130-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-130-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-130-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-130-0</b>		
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

OE640-3N-130-10

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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

OE640-7N-130-10

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: *all (->rgb\*\_de) setrgbcolor*  
Viewing Y contrast  $Y_W:Y_N=88,9:0,31$ ;  $Y_N$  range 0,0 to <0,46 output 130-10:  $g_P=1.0$ ;  $g_N=1.0$

Test for the best visual linearized output of Picture A7-130-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-130-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-130-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-130-0</b>		
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

OE641-3N-130-10

**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/OE64/OE64F1P2.PDF>

underline Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.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/OE64/OE64F1P2.PDF>

underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.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](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF

underline Yes/No

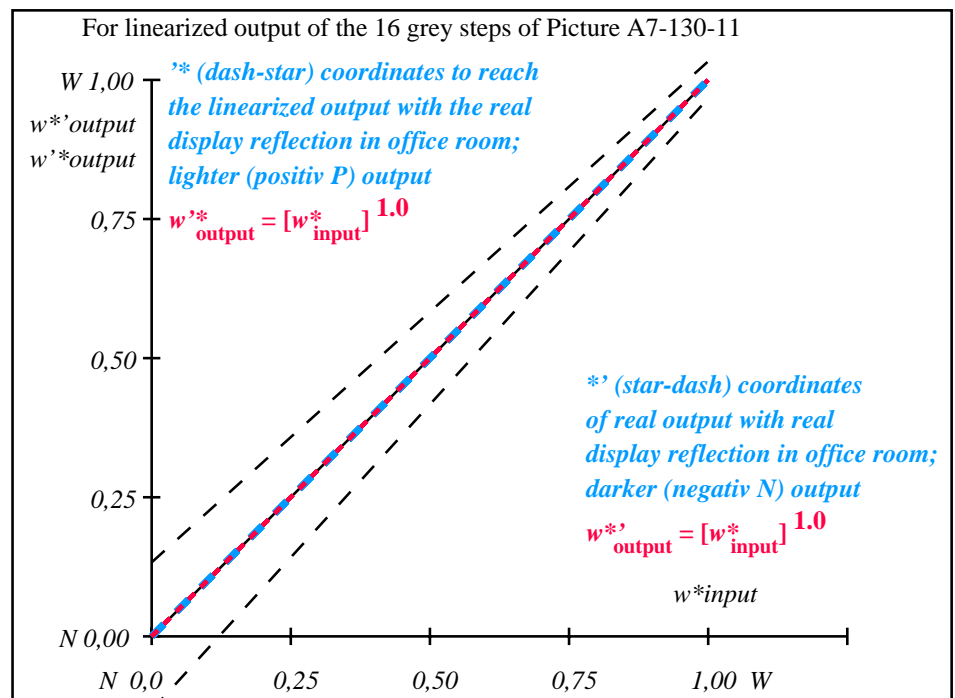
If No, please describe other method: .....

OE641-7N-130-10

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* <sub>CIELAB</sub> =	0.0
Mean lightness difference (5 steps)					ΔE* <sub>CIELAB</sub> =	0.0
Mean colour reproduction index:					R* <sub>ab,m</sub> =	100

OE640-3N-130-11: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-130-11: 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

OE640-7N, Picture A7-130-11: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*$  setrgbcolor

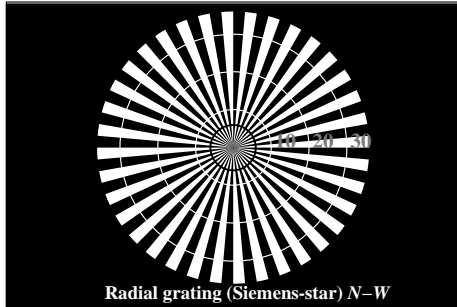
OE64: In-output relation according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:0,31$ ;  $Y_N$  range 0,0 to <0,46

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-11:  $g_P=1.0$ ;  $g_N=1.0$

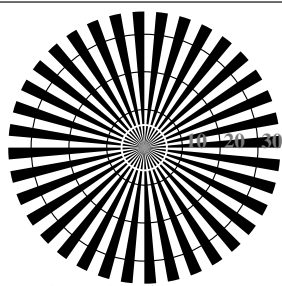
TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta



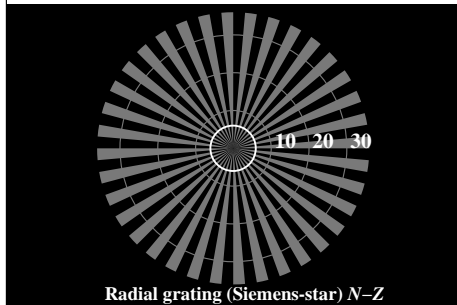
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



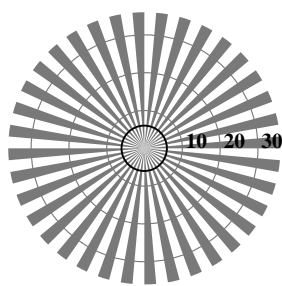
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N



Radial grating (Siemens-star) N-Z



Radial grating (Siemens-star) W-Z

OE640-3N, Picture A1-101-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: 0 0 0 n\* setcmykcolor

$L^*/Y_{intended}$ (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.)
0 0 0 n* setcmyk $g_N=1.18$ 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.)	$W_1$ (max.)
$w^*_{out}$	0.0	0.194	0.441	0.712	1.0		

OE640-5N, Picture A2-101-0: 5 equidistant  $L^*$ -grey steps+N0+W1; PS operator: 0 0 0 n\* setcmykcolor

$L^*/Y_{intended}$ (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
0 0 0 n* setcmyk $g_N=1.18$ 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
$w^*=l^*$ 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	0.092	0.149	0.21	0.273	0.339	0.407	0.475	0.547	0.62	0.693	0.768	0.845	0.921	1.0

OE640-7N, Picture A3-101-0: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

OE64: 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

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

Landolt-rings W-N

code: background-ring

OE641-1N, Picture A4-101-0: Landolt-rings W-N; PS operator: 0 0 0 n\* setcmykcolor

	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

OE641-3N, Picture A5-101-0: Line raster under 45° (or 135°); PS operator: 0 0 0 n\* setcmykcolor

	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

OE641-5N, Picture A6-101-0: Line raster under 90° (or 0°); PS operator: 0 0 0 n\* setcmykcolor

input: all (->rgb\*<sub>de</sub>) setrgbcolor  
output 130-0:  $g_P=1.0$ ;  $g_N=1.08$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

<b>Test for the best visual linearized output of Picture A7-101-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-101-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-101-0</b>		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-101-0</b>		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		.... Steps

Part 1

OE640-3N-108-1

<b>Documentation of file format, hardware and software for this test:</b>	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF">http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF</a>	<u>          </u> Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS">http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS</a>	<u>          </u> or underline Yes/No
<b>Used computer operating system:</b> either one of Windows/Mac/Unix/other and version:.....	
<b>This evaluation is for the device output:</b> <u>          </u> monitor/data projector/printer	
Device model, driver and version:.....	
<b>Device output with PDF/PS-file:</b>	<u>          </u> PDF/PS-file
<b>For device output with PDF-file OE64L0NP.PDF:</b>	
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:.....	
<b>For device output with PS-file OE64L0NA.PS:</b>	
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

OE640-7N-101-1

<b>Test for the best visual linearized output of Picture A7-101-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-101-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-101-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-101-0</b>		
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

OE641-3N-101-1

<b>Documentation of assessor colour vision properties for visual assessment</b>	
The assessor has <b>normal</b> colour vision according to one test:	
either according to DIN 6160:1996 with Anomaloskop of Nagel	<u>          </u> Yes/No
or with test charts using colour points according to Ishihara	<u>          </u> Yes/unknown
or tested with, please specify: .....	<u>          </u> Yes/unknown
<b>For visual evaluation of the display (monitor, data projector) output</b>	
Office workplace illumination is daylight (clouded/north sky)	
<b>PDF file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	<u>          </u> Yes/No
<b>PS file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	<u>          </u> Yes/No
<b>Picture A7-101-2: contrast range:</b> (>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)	
<b>Only for optional colorimetric specification with PDF/PS file output</b>	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	<u>          </u> Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	<u>          </u> Yes/No
<b>colour measurement and specification for:</b>	
CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry:	<u>          </u> Yes/No
If No, please give other parameters: .....	
<b>Colorimetric specification with PS file for colours in the columns A to T</b>	
Exchange of CIELAB data in file <a href="http://www.ps.bam.de/De17/10L/L17e00NP.PS">www.ps.bam.de/De17/10L/L17e00NP.PS</a> and transfer	
of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF	<u>          </u> Yes/No
If No, please describe other method: .....	

Part 4

OE641-7N-101-1

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (→rgb\*<sub>de</sub>) setrgbcolor  
Viewing Y contrast Y<sub>W</sub>: Y<sub>N</sub>=88,9:0,62; Y<sub>N</sub> range 0,46 to <0,93 output 130-1: g<sub>P</sub>=1.0; g<sub>N</sub>=1.08

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

i	LAB*ref	L*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	5.69	0.0	0.0	5.69	0.0	0.0
2	11.67	0.0	0.0	9.36	0.0	0.0
3	17.65	0.0	0.0	14.01	0.0	0.0
4	23.63	0.0	0.0	19.12	0.0	0.0
5	29.62	0.0	0.0	24.55	0.0	0.0
6	35.6	0.0	0.0	30.23	0.0	0.0
7	41.58	0.0	0.0	36.12	0.0	0.0
8	47.56	0.0	0.0	42.19	0.0	0.0
9	53.54	0.0	0.0	48.42	0.0	0.0
10	59.52	0.0	0.0	54.79	0.0	0.0
11	65.5	0.0	0.0	61.29	0.0	0.0
12	71.48	0.0	0.0	67.91	0.0	0.0
13	77.47	0.0	0.0	74.64	0.0	0.0
14	83.45	0.0	0.0	81.47	0.0	0.0
15	89.43	0.0	0.0	88.4	0.0	0.0
16	95.41	0.0	0.0	95.41	0.0	0.0
17	5.69	0.0	0.0	5.69	0.0	0.0
18	28.12	0.0	0.0	23.17	0.0	0.0
19	50.55	0.0	0.0	45.29	0.0	0.0
20	72.98	0.0	0.0	69.58	0.0	0.0
21	95.41	0.0	0.0	95.41	0.0	0.0

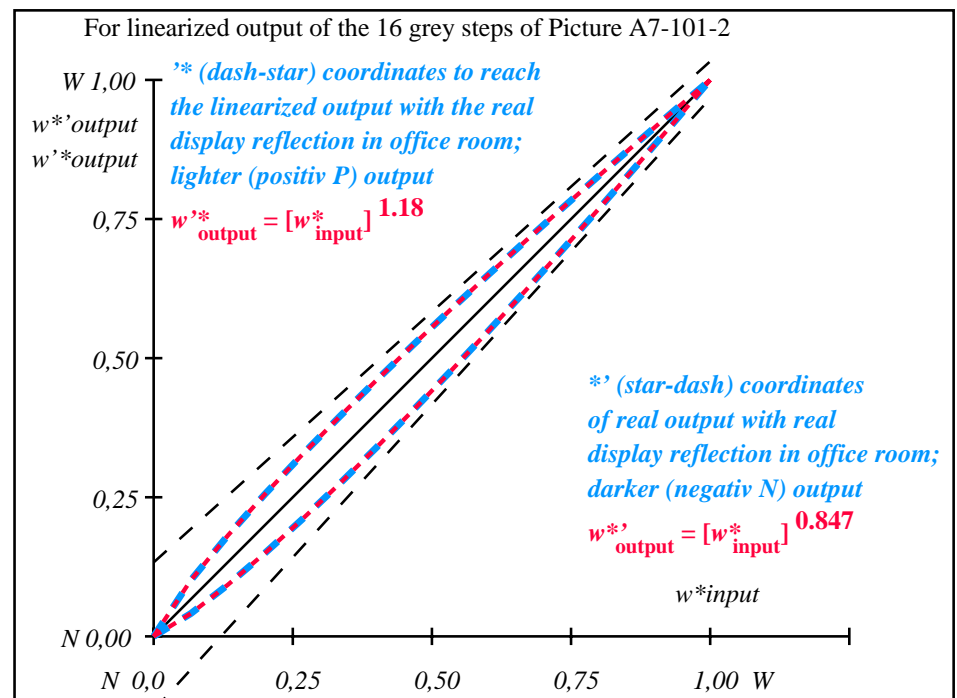
Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G

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

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

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

OE640-3N-101-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-101-2: 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
$000n^*$ setcmk $g_N=1.18$ 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
$w^*_{\text{intended}}$ $w^*_{\text{out}}$	0.000	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

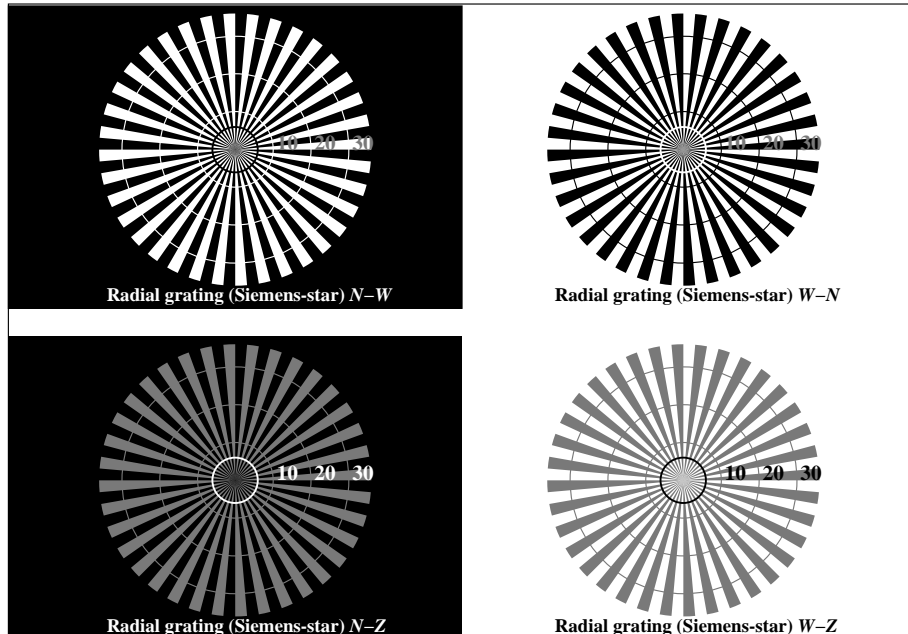
OE640-7N, Picture A7-101-2: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $000n^*$  setcmkcolor

OE64: 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

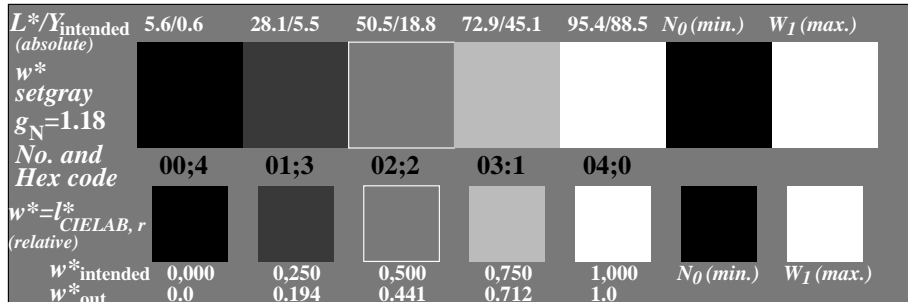
input: all ( $\rightarrow rgb^*_{\text{de}}$ ) setrgbcolor  
output 130-2:  $g_P=1.0$ ;  $g_N=1.08$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

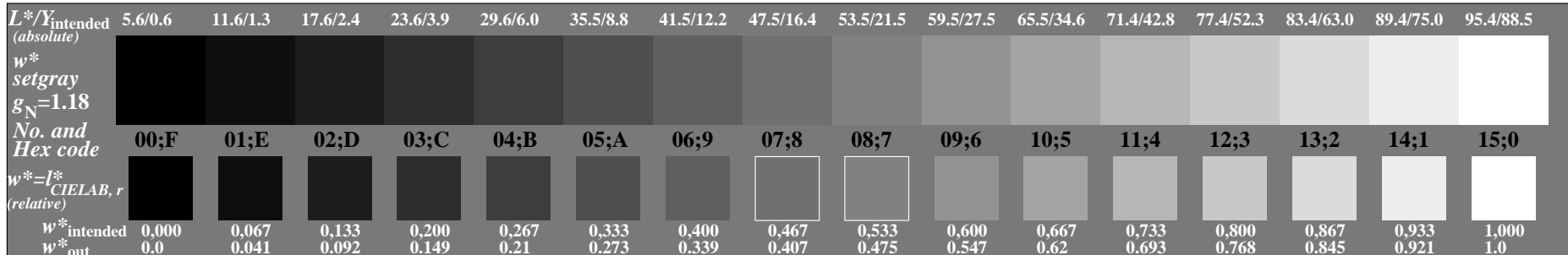
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



OE640-3N, Picture A1-111-3: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^*$  setgray

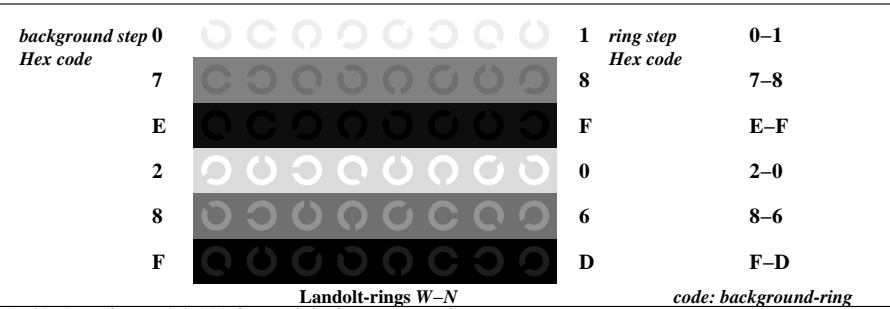


OE640-5N, Picture A2-111-3: 5 equidistant  $L^*$ -gray steps+ $N_0$ + $W_1$ ; PS operator:  $w^*$  setgray

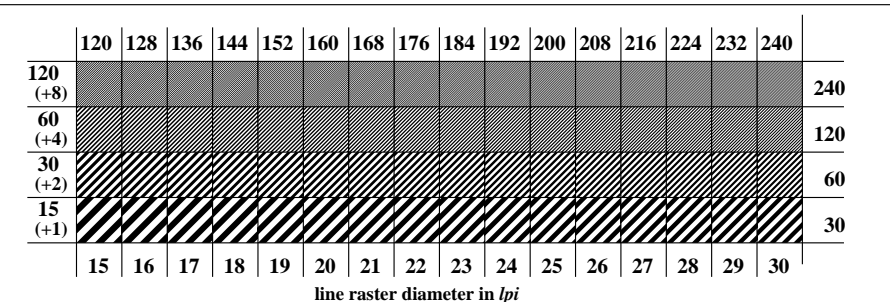


OE640-7N, Picture A3-111-3: 16 visual equidistant  $L^*$ -gray steps; PS operator:  $w^*$  setgray

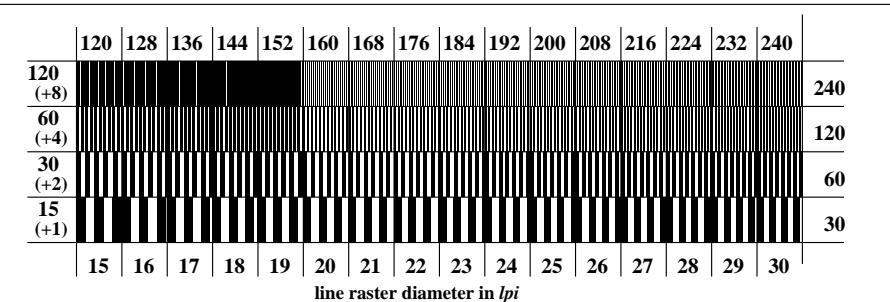
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:0,62$ ;  $Y_N$  range 0,46 to <0,93



OE641-1N, Picture A4-111-3: Landolt-rings W-N; PS operator:  $w^*$  setgray



OE641-3N, Picture A5-111-3: Line raster under 45° (or 135°); PS operator:  $w^*$  setgray



OE641-5N, Picture A6-111-3: Line raster under 90° (or 0°); PS operator:  $w^*$  setgray

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-3:  $g_P=1,0$ ;  $g_N=1,08$



<b>Test for the best visual linearized output of Picture A7-111-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-111-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-111-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-111-0</b>		
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 OE640-3N-118-4

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

PDF-File: <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-111-4

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: *all (->rgb\*\_de) setrgbcolor*  
Viewing Y contrast  $Y_W:Y_N=88,9:0,62$ ;  $Y_N$  range 0,46 to <0,93 output 130-4:  $g_P=1.0$ ;  $g_N=1.08$

<b>Test for the best visual linearized output of Picture A7-111-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-111-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-111-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-111-0</b>		
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 OE641-3N-111-4

**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/OE64/OE64F1P2.PDF>

PS file: <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

Picture A7-111-2: **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/OE64/OE64F1P2.PDF>

picture A7-111-2

underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

picture A7-111-2

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](http://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

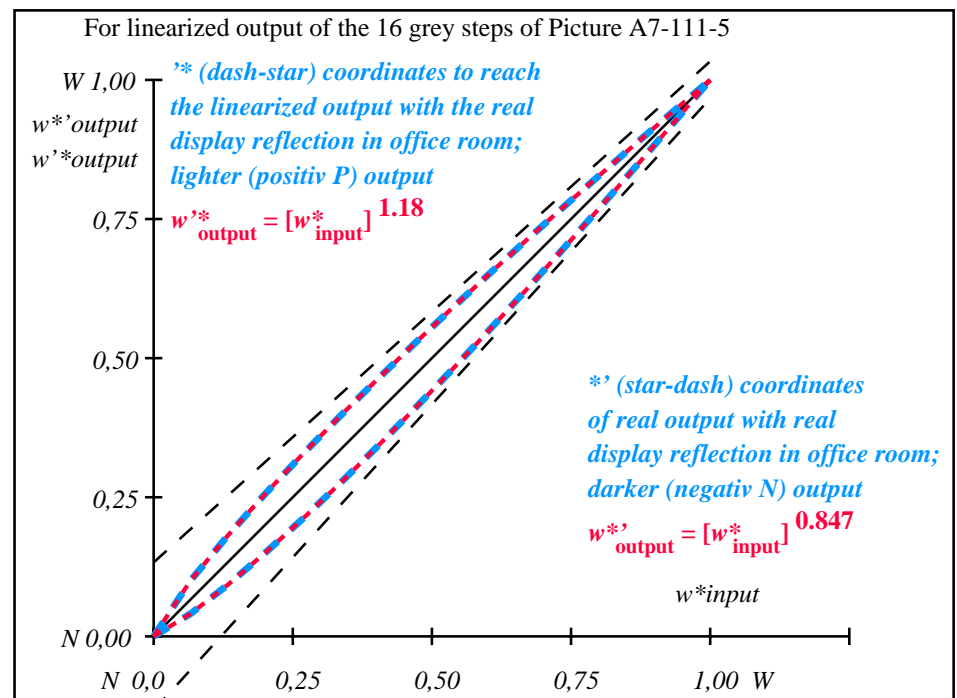
Part 4

OE641-7N-111-4

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	0.01
2	11.67	0.0	0.04	9.36	0.0	2.31
3	17.65	0.0	0.09	14.01	0.0	3.64
4	23.63	0.0	0.15	19.12	0.0	4.51
5	29.62	0.0	0.21	24.55	0.0	5.07
6	35.6	0.0	0.27	30.23	0.0	5.37
7	41.58	0.0	0.34	36.12	0.0	5.46
8	47.56	0.0	0.41	42.19	0.0	5.37
9	53.54	0.0	0.48	48.42	0.0	5.12
10	59.52	0.0	0.55	54.79	0.0	4.73
11	65.5	0.0	0.62	61.29	0.0	4.21
12	71.48	0.0	0.69	67.91	0.0	3.57
13	77.47	0.0	0.77	74.64	0.0	2.83
14	83.45	0.0	0.84	81.47	0.0	1.98
15	89.43	0.0	0.92	88.4	0.0	1.03
16	95.41	0.0	1.0	95.41	0.0	0.01
17	5.69	0.0	0.0	5.69	0.0	0.01
18	28.12	0.0	0.19	23.17	0.0	4.95
19	50.55	0.0	0.44	45.29	0.0	5.26
20	72.98	0.0	0.71	69.58	0.0	3.4
21	95.41	0.0	1.0	95.41	0.0	0.01
Mean lightness difference (16 steps)						ΔE* <sub>CIELAB</sub> = 3.4
Mean lightness difference (5 steps)						ΔE* <sub>CIELAB</sub> = 2.7
Mean colour reproduction index:						R* <sub>ab,m</sub> = 85

OE640-3N-111-5: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-111-5: 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
$w^*$ setgray																
$g_N=1.18$ 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
$w^* = [L^*_{CIELAB}]^r$ (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

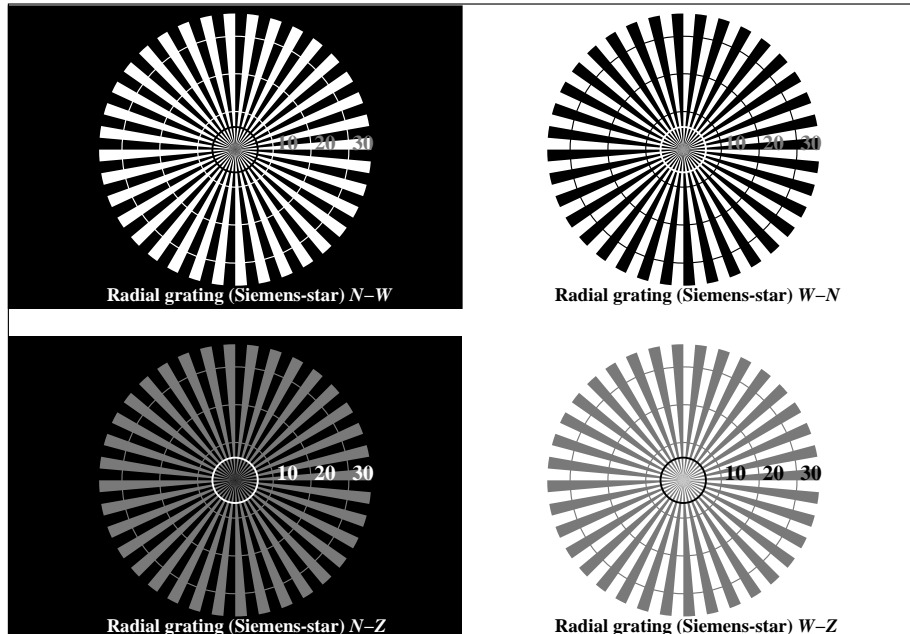
OE640-7N, Picture A7-111-5: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*$  setgray

OE64: 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

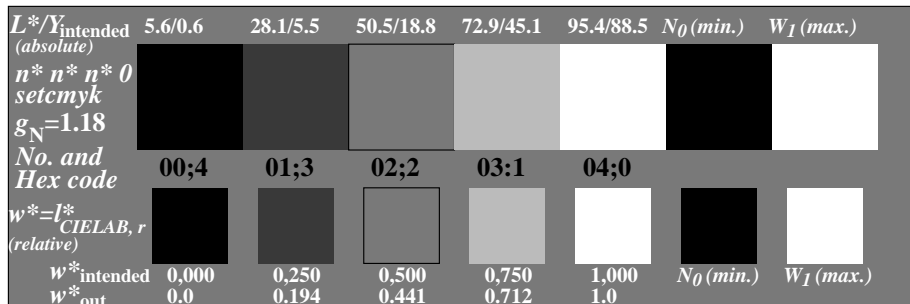
input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-5:  $g_P=1.0$ ;  $g_N=1.08$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta

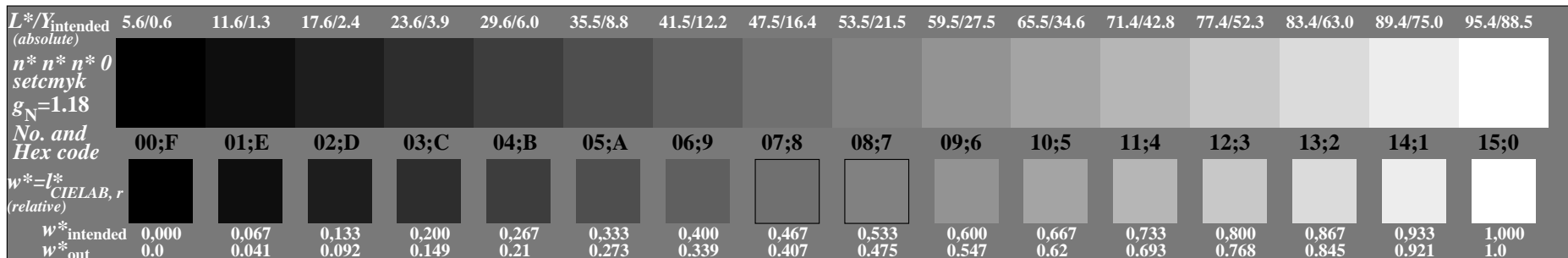
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



OE640-3N, Picture A1-121-6: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $n^*n^*n^*0$  setcmykcolor

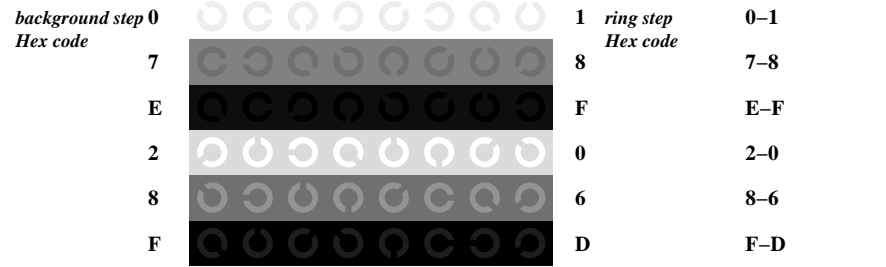


OE640-5N, Picture A2-121-6: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $n^*n^*n^*0$  setcmykcolor



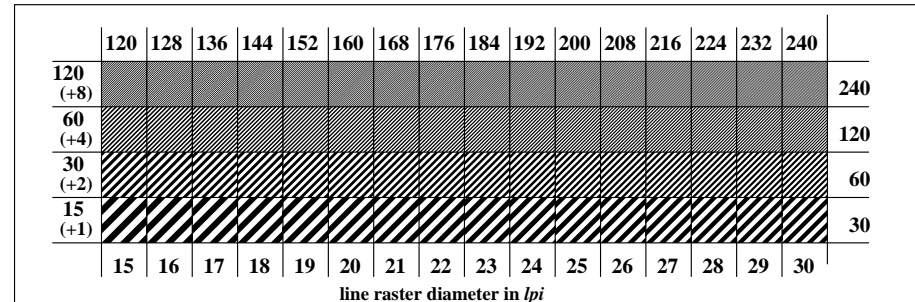
OE640-7N, Picture A3-121-6: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^*n^*n^*0$  setcmykcolor

OE64: 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



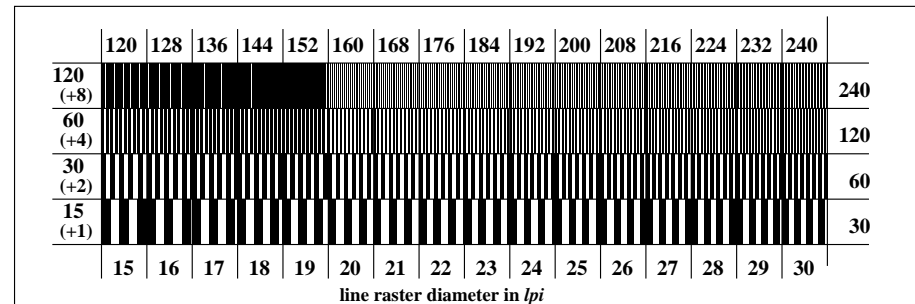
Landolt-rings W-N code: background-ring

OE641-1N, Picture A4-121-6: Landolt-rings W-N; PS operator:  $n^*n^*n^*0$  setcmykcolor



line raster diameter in lpi

OE641-3N, Picture A5-121-6: Line raster under 45° (or 135°); PS operator:  $n^*n^*n^*0$  setcmykcolor



line raster diameter in lpi

OE641-5N, Picture A6-121-6: Line raster under 90° (or 0°); PS operator:  $n^*n^*n^*0$  setcmykcolor

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-6:  $g_P=1.0$ ;  $g_N=1.08$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

<b>Test for the best visual linearized output of Picture A7-121-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-121-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-121-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-121-0</b>		
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 OE640-3N-128-7

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-121-7

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput:  $all (->rgb^*_{de}) setrgbcolor$   
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:0,62$ ;  $Y_N$  range 0,46 to <0,93 output 130-7:  $g_P=1.0$ ;  $g_N=1.08$

<b>Test for the best visual linearized output of Picture A7-121-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-121-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-121-0</b>		
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: to ..... lpi		
<b>Test of the radial grating under 90° according to picture A6-121-0</b>		
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: to ..... lpi		

Part 2 OE641-3N-121-7

**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/OE64/OE64F1P2.PDF> underline Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS> underline Yes/No

**Picture A7-121-2: 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/OE64/OE64F1P2.PDF> underline Yes/No

**picture A7-121-2** underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS> or underline Yes/No

**picture A7-121-2** or underline Yes/No

**colour measurement and specification for:**  
CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: underline Yes/No  
If No, please give other parameters: .....

**Colorimetric specification with PS file for colours in the columns A to T**  
Exchange of CIELAB data in file [www.ps.bam.de/De17/10L/L17e00NP.PS](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer  
of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF underline Yes/No  
If No, please describe other method: .....

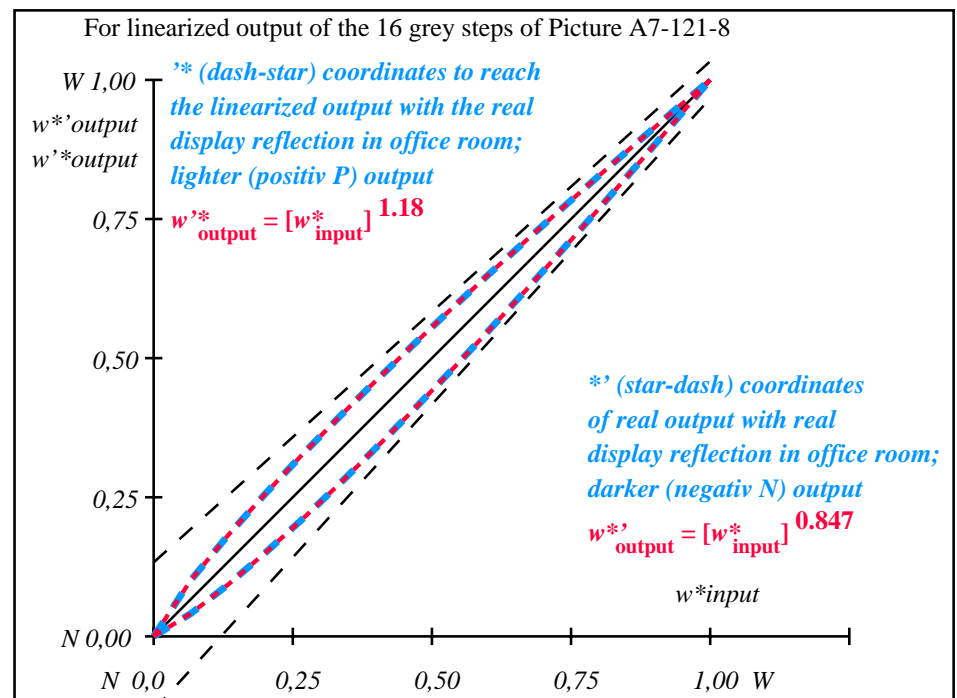
Part 4 OE641-7N-121-7



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	0.04	9.36	0.0	-2.3
3	17.65	0.0	0.09	14.01	0.0	-3.63
4	23.63	0.0	0.15	19.12	0.0	-4.5
5	29.62	0.0	0.21	24.55	0.0	-5.06
6	35.6	0.0	0.27	30.23	0.0	-5.36
7	41.58	0.0	0.34	36.12	0.0	-5.45
8	47.56	0.0	0.41	42.19	0.0	-5.36
9	53.54	0.0	0.48	48.42	0.0	-5.11
10	59.52	0.0	0.55	54.79	0.0	-4.72
11	65.5	0.0	0.62	61.29	0.0	-4.2
12	71.48	0.0	0.69	67.91	0.0	-3.56
13	77.47	0.0	0.77	74.64	0.0	-2.82
14	83.45	0.0	0.84	81.47	0.0	-1.97
15	89.43	0.0	0.92	88.4	0.0	-1.02
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	0.19	23.17	0.0	-4.94
19	50.55	0.0	0.44	45.29	0.0	-5.25
20	72.98	0.0	0.71	69.58	0.0	-3.39
21	95.41	0.0	1.0	95.41	0.0	0.0
Mean lightness difference (16 steps)					ΔE* <sub>CIELAB</sub> =	3.4
Mean lightness difference (5 steps)					ΔE* <sub>CIELAB</sub> =	2.7
Mean colour reproduction index:					R* <sub>ab,m</sub> =	85

OE640-3N-121-8: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-121-8: 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
$n^* n^* n^* 0$ setcmk $g_N=1.18$ 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
$w^* = [L^*_{CIELAB, r}]$ (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
$w^*_{intended}$	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

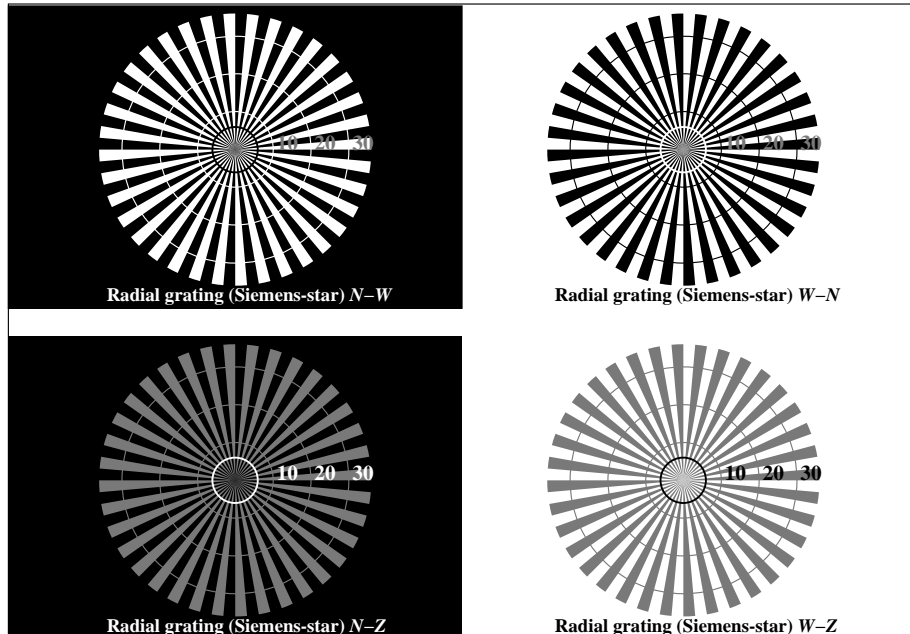
OE640-7N, Picture A7-121-8: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^* n^* n^* 0$  setcmkcolor

OE64: 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

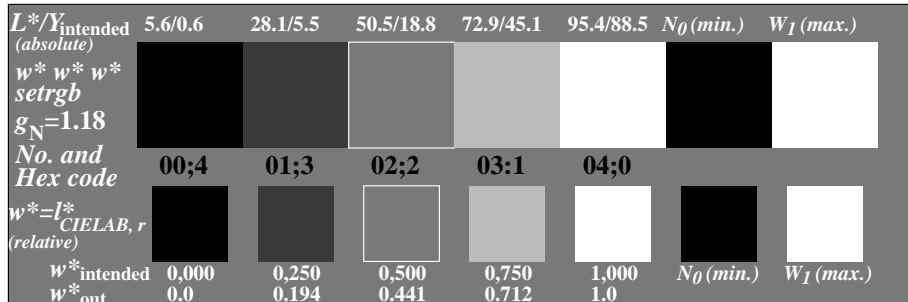
input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-8:  $g_P=1.0$ ;  $g_N=1.08$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta

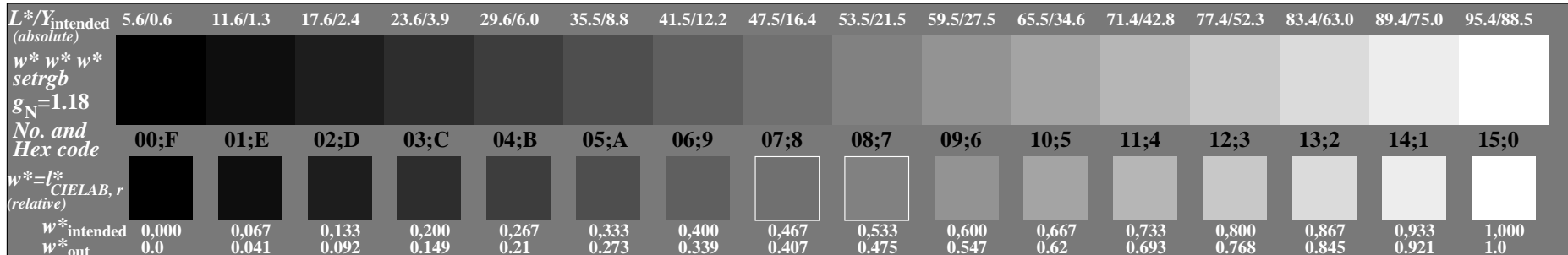
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



OE640-3N, Picture A1-131-9: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^* w^* w^* \text{setrgbcolor}$



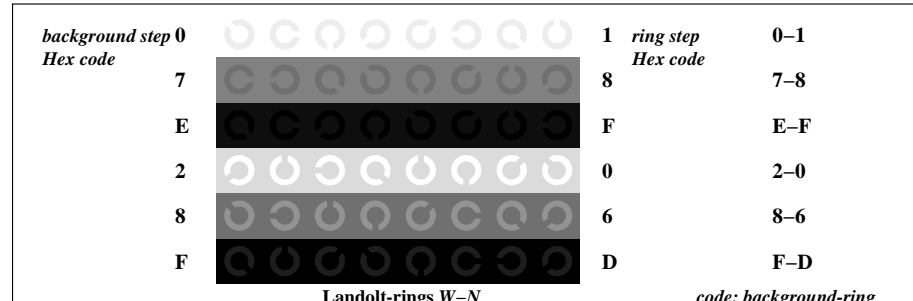
OE640-5N, Picture A2-131-9: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $w^* w^* w^* \text{setrgbcolor}$



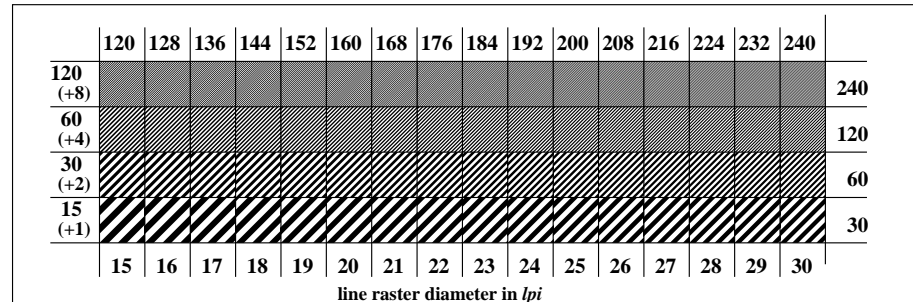
OE640-7N, Picture A3-131-9: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^* \text{setrgbcolor}$

OE64: 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

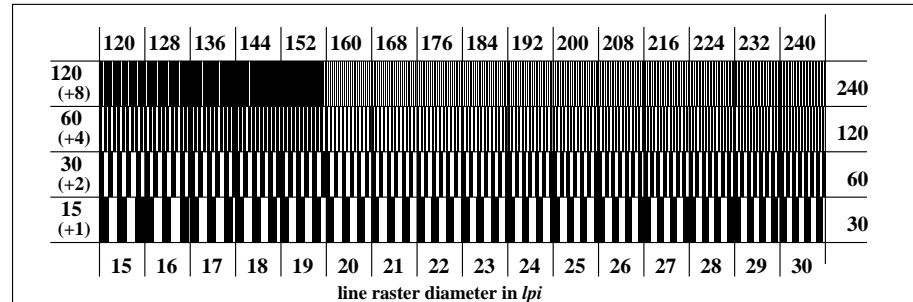
input:  $all (->rgb^*_{\text{de}}) \text{setrgbcolor}$   
output 130-9:  $g_P=1.0$ ;  $g_N=1.08$



OE641-1N, Picture A4-131-9: Landolt-rings W-N; PS operator:  $w^* w^* w^* \text{setrgbcolor}$



OE641-3N, Picture A5-131-9: Line raster under 45° (or 135°); PS operator:  $w^* w^* w^* \text{setrgbcolor}$



OE641-5N, Picture A6-131-9: Line raster under 90° (or 0°); PS operator:  $w^* w^* w^* \text{setrgbcolor}$

TUB registration: 20110801-OE64/OE64L0NA.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 A7-131-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-131-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-131-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-131-0</b>		
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

OE640-3N-138-10

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

**PDF-File:** http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF underline Yes/No

**PS-File:** http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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

OE640-7N-131-10

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all ( $\rightarrow$ rgb\*<sub>de</sub>) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:0,62$ ;  $Y_N$  range 0,46 to <0,93 output 130-10:  $g_P=1.0$ ;  $g_N=1.08$

Test for the best visual linearized output of Picture A7-131-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-131-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-131-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-131-0</b>		
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

OE641-3N-131-10

**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/OE64/OE64F1P2.PDF

**PS file:** http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS

**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/OE64/OE64F1P2.PDF

**picture A7-131-2**

underline Yes/No

**PS-File:** http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS

**picture A7-131-2**

or underline Yes/No

**colour measurement and specification for:**

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

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

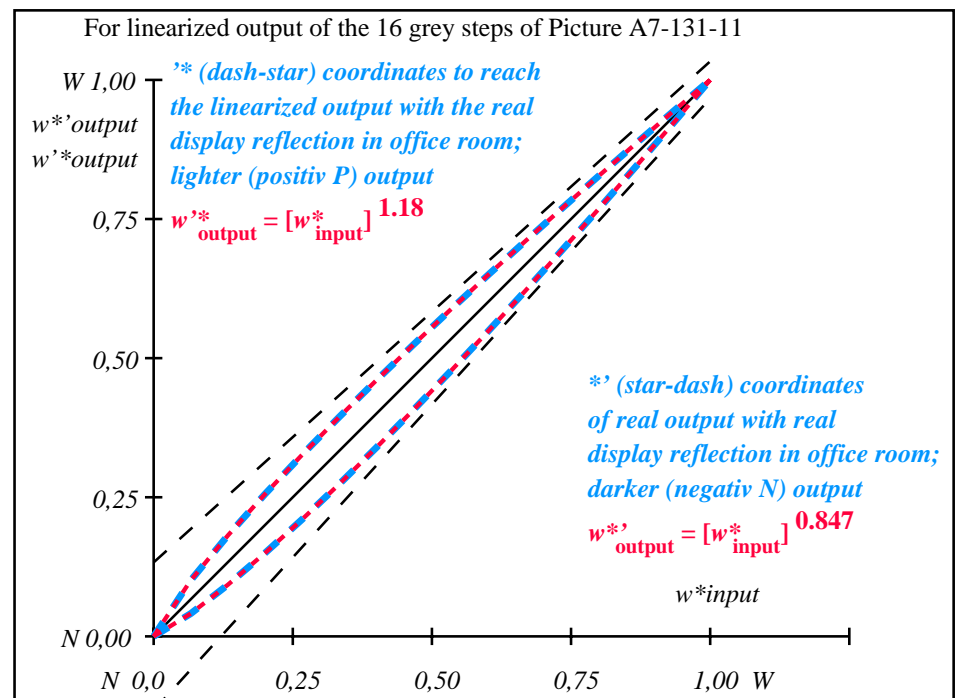
Part 4

OE641-7N-131-10

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	0.0	9.36	0.0	-2.3
3	17.65	0.0	0.0	14.01	0.0	-3.63
4	23.63	0.0	0.0	19.12	0.0	-4.5
5	29.62	0.0	0.0	24.55	0.0	-5.06
6	35.6	0.0	0.0	30.23	0.0	-5.36
7	41.58	0.0	0.0	36.12	0.0	-5.45
8	47.56	0.0	0.0	42.19	0.0	-5.36
9	53.54	0.0	0.0	48.42	0.0	-5.11
10	59.52	0.0	0.0	54.79	0.0	-4.72
11	65.5	0.0	0.0	61.29	0.0	-4.2
12	71.48	0.0	0.0	67.91	0.0	-3.56
13	77.47	0.0	0.0	74.64	0.0	-2.82
14	83.45	0.0	0.0	81.47	0.0	-1.97
15	89.43	0.0	0.0	88.4	0.0	-1.02
16	95.41	0.0	0.0	95.41	0.0	0.0
17	5.69	0.0	0.0	5.69	0.0	0.0
18	28.12	0.0	0.0	23.17	0.0	-4.94
19	50.55	0.0	0.0	45.29	0.0	-5.25
20	72.98	0.0	0.0	69.58	0.0	-3.39
21	95.41	0.0	0.0	95.41	0.0	0.0
Mean lightness difference (16 steps)					ΔE* <sub>CIELAB</sub> = 3.4	
Mean lightness difference (5 steps)					ΔE* <sub>CIELAB</sub> = 2.7	
Mean colour reproduction index:					R* <sub>ab,m</sub> = 85	

OE640-3N-131-11: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-131-11: 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)																
$w^*_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{out}}$	0.0	0.041	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

OE640-7N, Picture A7-131-11: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*$  setrgbcolor

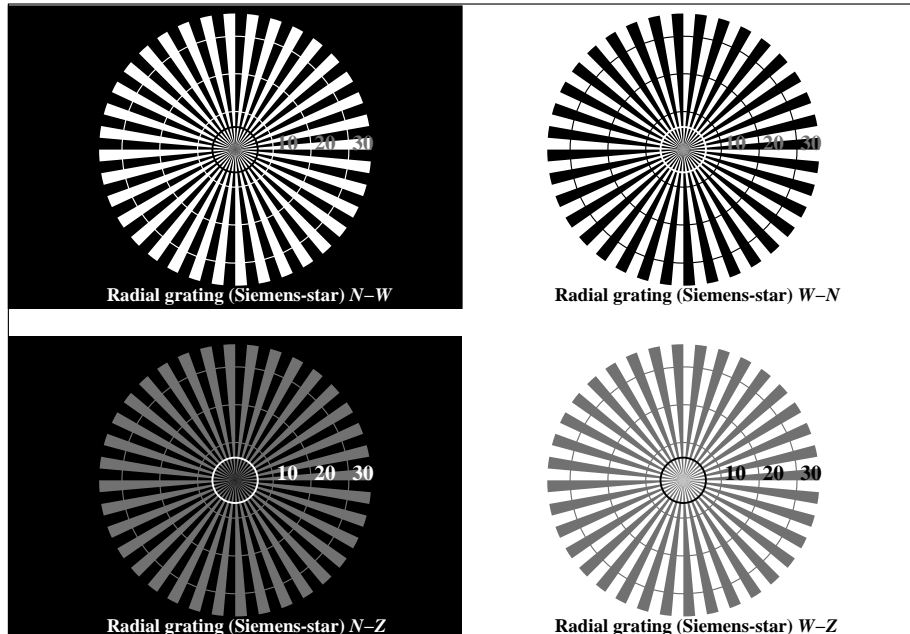
OE64: In-output relation according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:0,62$ ;  $Y_N$  range 0,46 to <0,93

input: all ( $\rightarrow$ rgb\*<sub>de</sub>) setrgbcolor  
output 130-11:  $g_P=1.0$ ;  $g_N=1.08$

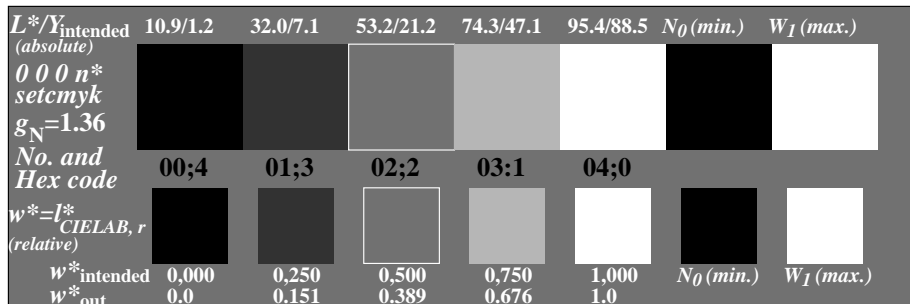
TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta



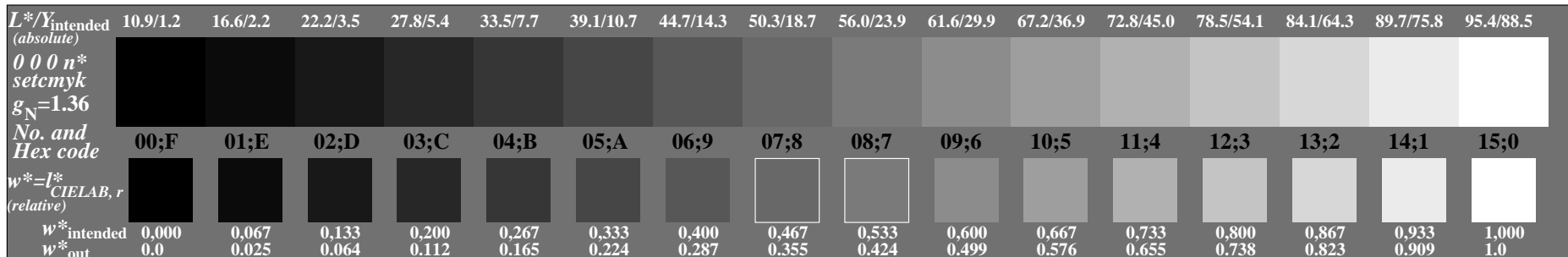
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



OE640-3N, Picture A1-102-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: 0 0 0 n\* setcmykcolor



OE640-5N, Picture A2-102-0: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator: 0 0 0 n\* setcmykcolor



OE640-7N, Picture A3-102-0: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

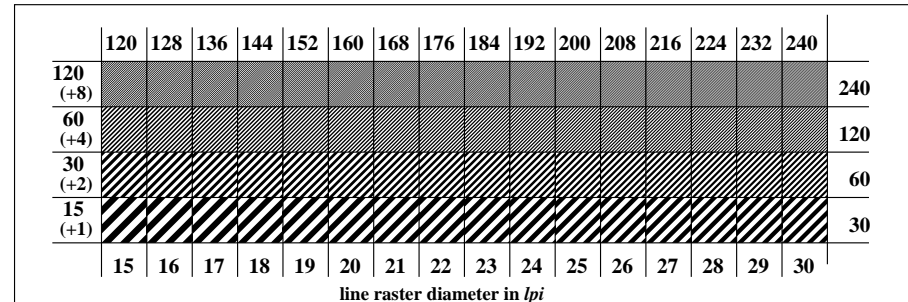
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:1,25$ ;  $Y_N$  range 0,93 to <1,87

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

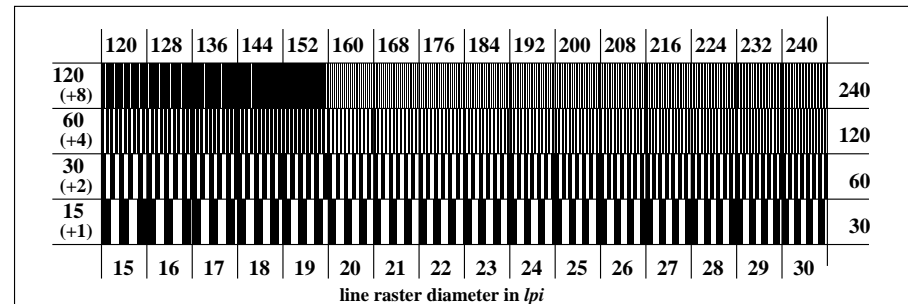
code: background-ring

OE641-1N, Picture A4-102-0: Landolt-rings W-N; PS operator: 0 0 0 n\* setcmykcolor



line raster diameter in lpi

OE641-3N, Picture A5-102-0: Line raster under 45° (or 135°); PS operator: 0 0 0 n\* setcmykcolor



line raster diameter in lpi

OE641-5N, Picture A6-102-0: Line raster under 90° (or 0°); PS operator: 0 0 0 n\* setcmykcolor

input: all (->rgb\*<sub>de</sub>) setrgbcolor  
output 130-0:  $g_P=1.0$ ;  $g_N=1.17$

TUB registration: 20110801-OE64/OE64L0NA.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 A7-102-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-102-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-102-0</b>		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-102-0</b>		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		.... Steps

Part 1

OE640-3N-1016-1

Documentation of file format, hardware and software for this test:	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF">http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF</a>	<u>underline</u> Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS">http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS</a>	<u>or underline</u> Yes/No
<b>Used computer operating system:</b> either one of Windows/Mac/Unix/other and version:.....	
<b>This evaluation is for the device output:</b> <u>underline</u> monitor/data projector/printer	
Device model, driver and version:.....	
<b>Device output with PDF/PS-file:</b>	<u>underline</u> PDF/PS-file
<b>For device output with PDF-file OE64L0NP.PDF:</b> 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:.....	
<b>For device output with PS-file OE64L0NA.PS:</b> 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

OE640-7N-102-1

Test for the best visual linearized output of Picture A7-102-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-102-0</b>		
N-W-radial grating:	Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?	Yes/No
	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
<b>Test of the radial grating under 45° according to picture A5-102-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	
<b>Test of the radial grating under 90° according to picture A6-102-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	

Part 2

OE641-3N-102-1

Documentation of assessor colour vision properties for visual assessment	
The assessor has <b>normal</b> colour vision according to one test:	
either according to DIN 6160:1996 with Anomaloskop of Nagel	<u>underline</u> Yes/No
or with test charts using colour points according to Ishihara	<u>underline</u> Yes/unknown
or tested with, please specify: .....	<u>underline</u> Yes/unknown
<b>For visual evaluation of the display (monitor, data projector) output</b>	
Office workplace illumination is daylight (clouded/north sky)	<u>underline</u> Yes/No
<b>PDF file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	<u>underline</u> Yes/No
<b>PS file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	<u>underline</u> Yes/No
<b>Picture A7-102-2: contrast range:</b> (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)	<u>underline</u> range
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)	
<b>Only for optional colorimetric specification with PDF/PS file output</b>	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	<u>underline</u> Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	<u>or underline</u> Yes/No
<b>colour measurement and specification for:</b> CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: <u>underline</u> Yes/No If No, please give other parameters: .....	
<b>Colorimetric specification with PS file for colours in the columns A to T</b> Exchange of CIELAB data in file <a href="http://www.ps.bam.de/De17/10L/L17e00NP.PS">www.ps.bam.de/De17/10L/L17e00NP.PS</a> 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 4

OE641-7N-102-1

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:1,25$ ;  $Y_N$  range 0,93 to <1,87 output 130-1:  $g_P=1.0$ ;  $g_N=1.17$

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

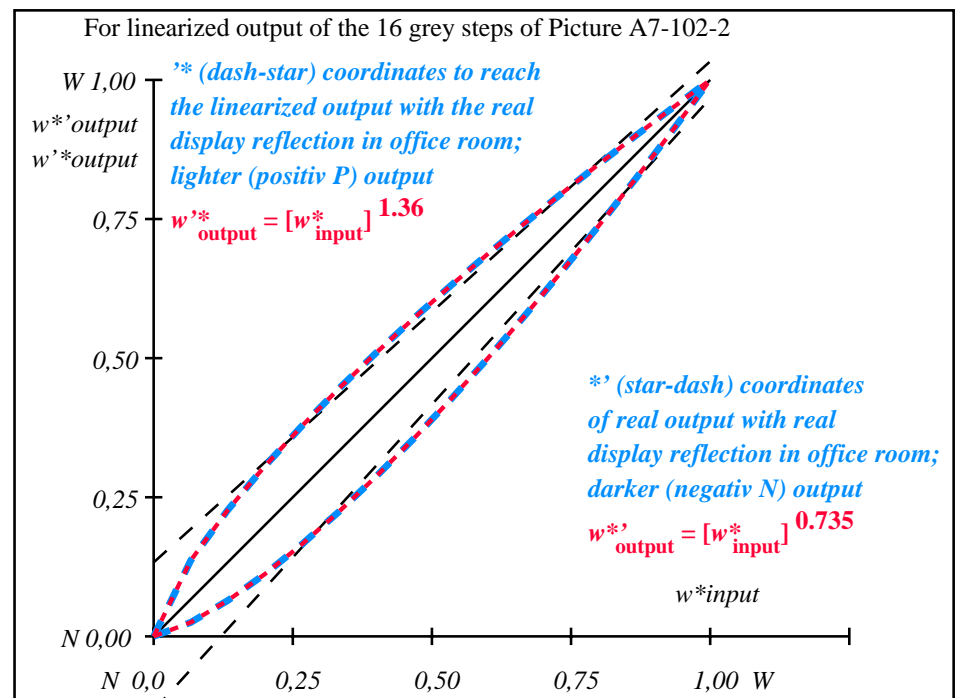
i	LAB*ref	I*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	10.99	0.0	0.0	0.0	0.0	0.01
2	16.62	0.0	0.03	13.12	0.0	0.0
3	22.25	0.0	0.06	16.44	0.0	0.0
4	27.88	0.0	0.11	20.45	0.0	0.0
5	33.5	0.0	0.17	24.98	0.0	0.0
6	39.13	0.0	0.22	29.94	0.0	0.0
7	44.76	0.0	0.29	35.27	0.0	0.0
8	50.39	0.0	0.35	40.93	0.0	0.0
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)  $\Delta E^*_{\text{CIELAB}} = 6.0$

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

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

OE640-3N-102-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-102-2: 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
0 0 0 n* setcmk $g_N=1.36$ 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
$w^* = [L^*_{\text{CIELAB}, r}]$ (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
$w^*_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{out}}$	0.0	0.025	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

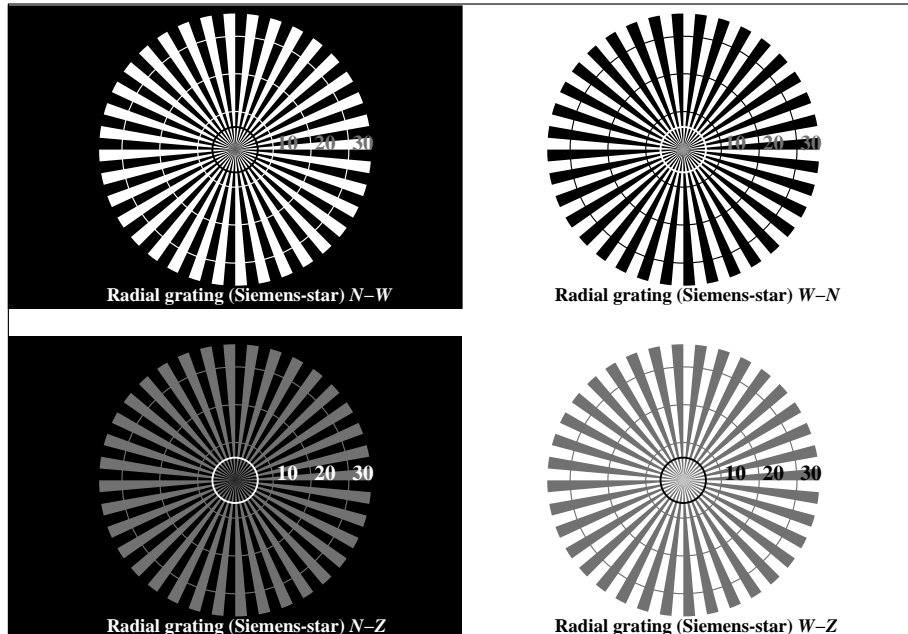
OE640-7N, Picture A7-102-2: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmkcolor

OE64: 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

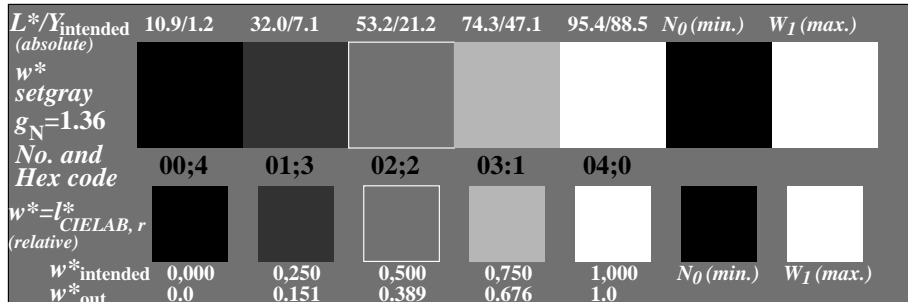
input: all ( $\rightarrow rgb^*_{\text{de}}$ ) setrgbcolor  
output 130-2:  $g_P=1.0$ ;  $g_N=1.17$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

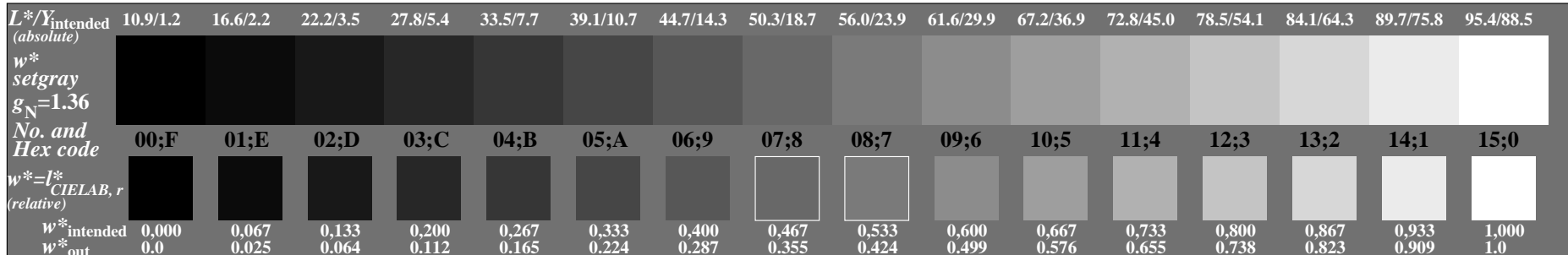
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



OE640-3N, Picture A1-112-3: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^*$  setgray

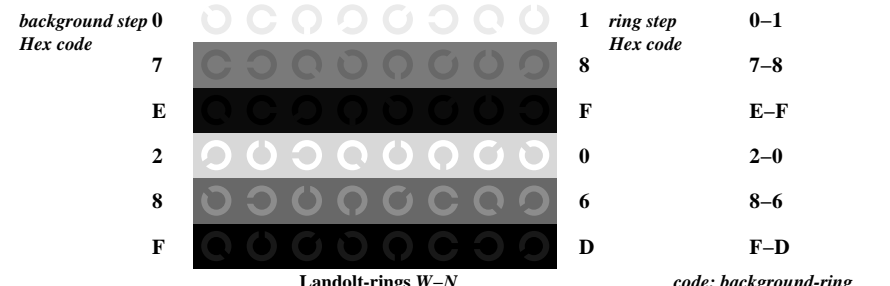


OE640-5N, Picture A2-112-3: 5 equidistant  $L^*$ -gray steps+N0+W1; PS operator:  $w^*$  setgray

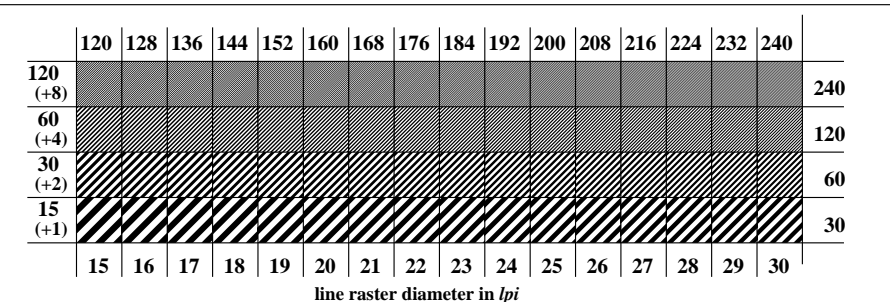


OE640-7N, Picture A3-112-3: 16 visual equidistant  $L^*$ -gray steps; PS operator:  $w^*$  setgray

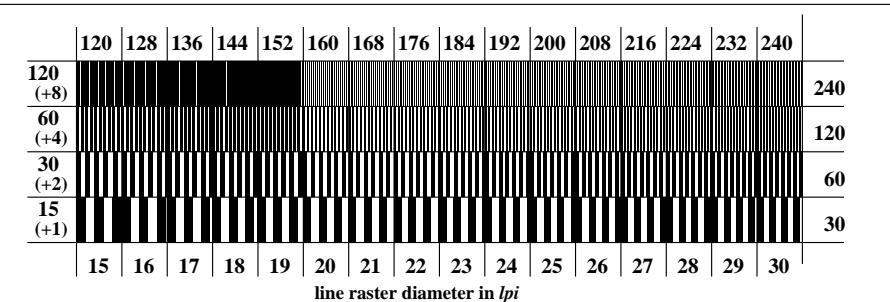
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:1,25$ ;  $Y_N$  range 0,93 to <1,87



OE641-1N, Picture A4-112-3: Landolt-rings W-N; PS operator:  $w^*$  setgray



OE641-3N, Picture A5-112-3: Line raster under 45° (or 135°); PS operator:  $w^*$  setgray



OE641-5N, Picture A6-112-3: Line raster under 90° (or 0°); PS operator:  $w^*$  setgray

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-3:  $g_P=1.0$ ;  $g_N=1.17$

TUB registration: 20110801-OE64/OE64L0NA.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 A7-112-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-112-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-112-0</b>		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-112-0</b>		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		.... Steps

Part 1

OE640-3N-1116-4

Documentation of file format, hardware and software for this test:	
<b>PDF-File:</b>	<a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF">http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF</a> underline Yes/No
<b>PS-File:</b>	<a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS">http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS</a> or underline Yes/No
<b>Used computer operating system:</b> either one of Windows/Mac/Unix/other and version:.....	
<b>This evaluation is for the device output:</b> underline monitor/data projector/printer	
Device model, driver and version:.....	
<b>Device output with PDF/PS-file:</b>	underline PDF/PS-file
<b>For device output with PDF-file OE64L0NP.PDF:</b> 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:.....	
<b>For device output with PS-file OE64L0NA.PS:</b> 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

OE640-7N-112-4

Test for the best visual linearized output of Picture A7-112-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-112-0</b>		
N-W-radial grating:	Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?	Yes/No
	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
<b>Test of the radial grating under 45° according to picture A5-112-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	
<b>Test of the radial grating under 90° according to picture A6-112-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	

Part 2

OE641-3N-112-4

Documentation of assessor colour vision properties for visual assessment	
The assessor has <b>normal</b> colour vision according to one test:	
either according to DIN 6160:1996 with Anomaloskop of Nagel	underline Yes/No
or with test charts using colour points according to Ishihara	underline Yes/unknown
or tested with, please specify: .....	underline Yes/unknown
<b>For visual evaluation of the display (monitor, data projector) output</b>	
Office workplace illumination is daylight (clouded/north sky)	underline Yes/No
<b>PDF file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	underline Yes/No
<b>PS file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	underline Yes/No
<b>Picture A7-112-2: contrast range:</b> (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)	underline range
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)	
<b>Only for optional colorimetric specification with PDF/PS file output</b>	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	underline Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	or underline Yes/No
<b>colour measurement and specification for:</b> CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: underline Yes/No If No, please give other parameters: .....	
<b>Colorimetric specification with PS file for colours in the columns A to T</b> Exchange of CIELAB data in file <a href="http://www.ps.bam.de/De17/10L/L17e00NP.PS">www.ps.bam.de/De17/10L/L17e00NP.PS</a> and transfer of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF underline Yes/No If No, please describe other method: .....	

Part 4

OE641-7N-112-4

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
Viewing Y contrast  $Y_W: Y_N=88,9:1,25$ ;  $Y_N$  range 0,93 to <1,87 output 130-4:  $g_P=1.0$ ;  $g_N=1.17$

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

i	LAB*ref	L*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	10.99	0.0	0.0	0.0	0.0	0.01
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

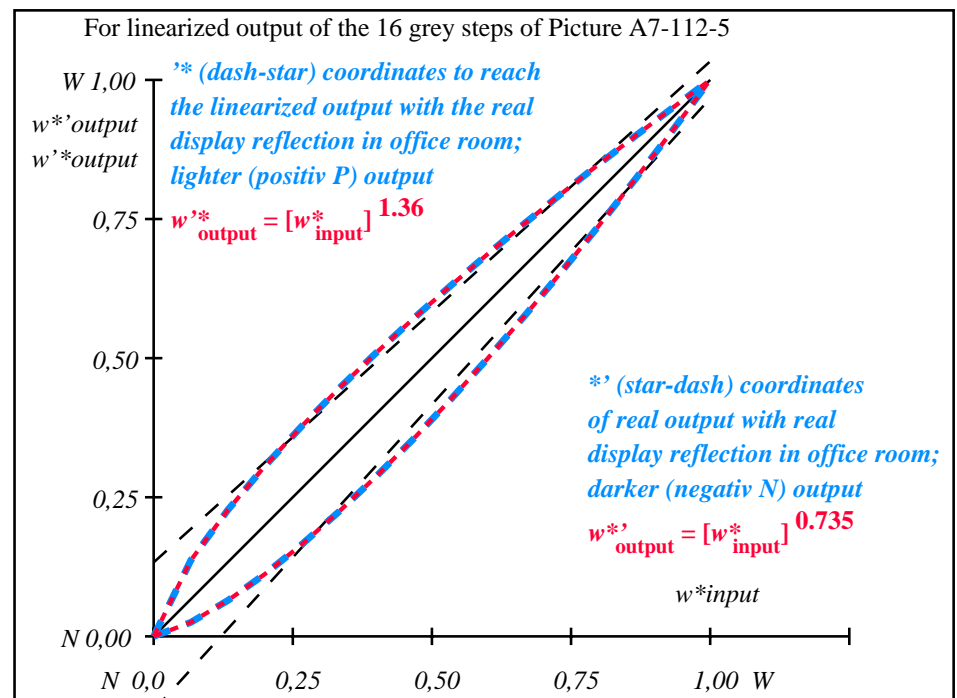
Specification according to  
ISO/IEC 15775 Annex G  
and DIN 33866-1 Annex G

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

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

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

OE640-3N-112-5: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-112-5: File: Measure unknown; Device: Device unknown; Date: Date unknown

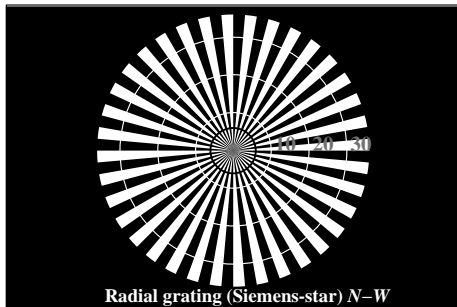
$L^*/Y^*_{\text{intended}}$ (absolute)	11.0/1.3	16.6/2.2	22.2/3.6	27.9/5.4	33.5/7.8	39.1/10.7	44.8/14.4	50.4/18.7	56.0/23.9	61.6/30.0	67.3/37.0	72.9/45.0	78.5/54.1	84.2/64.4	89.8/75.8	95.4/88.6
$w^*_{\text{setgray}}$ $g_N=1.36$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^* = [L^*_{\text{CIELAB}, r}]$ (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
$w^*_{\text{intended}}$ $w^*_{\text{out}}$	0.000	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

OE640-7N, Picture A7-112-5: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*_{\text{setgray}}$

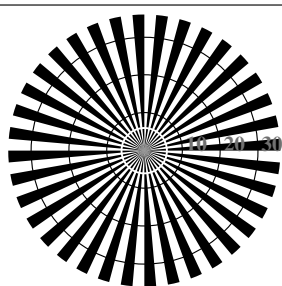
OE64: In-output relation according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:1,25$ ;  $Y_N$  range 0,93 to <1,87

input: all ( $\rightarrow rgb^*_{\text{de}}$ ) setrgbcolor  
output 130-5:  $g_P=1.0$ ;  $g_N=1.17$

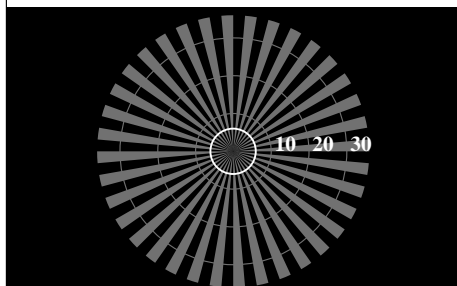
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



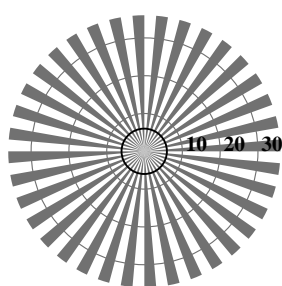
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N



Radial grating (Siemens-star) N-Z



Radial grating (Siemens-star) W-Z

OE640-3N, Picture A1-122-6: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $n^*n^*n^*0$  setcmykcolor

$L^*/Y_{intended}$ (absolute)	10.9/1.2	32.0/7.1	53.2/21.2	74.3/47.1	95.4/88.5	$N_0$ (min.)	$W_1$ (max.)
$n^*n^*n^*0$ setcmyk							
$g_N=1.36$							
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.)	$W_1$ (max.)
$w^*_{out}$	0.0	0.151	0.389	0.676	1.0		

OE640-5N, Picture A2-122-6: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $n^*n^*n^*0$  setcmykcolor

$L^*/Y_{intended}$ (absolute)	10.9/1.2	16.6/2.2	22.2/3.5	27.8/5.4	33.5/7.7	39.1/10.7	44.7/14.3	50.3/18.7	56.0/23.9	61.6/29.9	67.2/36.9	72.8/45.0	78.5/54.1	84.1/64.3	89.7/75.8	95.4/88.5
$n^*n^*n^*0$ setcmyk																
$g_N=1.36$																
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	0.165	0.224	0.287	0.355	0.424	0.499	0.576	0.655	0.738	0.823	0.909	1.0

OE640-7N, Picture A3-122-6: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^*n^*n^*0$  setcmykcolor

OE64: 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

OE641-1N, Picture A4-122-6: Landolt-rings W-N; PS operator:  $n^*n^*n^*0$  setcmykcolor

	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

OE641-3N, Picture A5-122-6: Line raster under 45° (or 135°); PS operator:  $n^*n^*n^*0$  setcmykcolor

	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

OE641-5N, Picture A6-122-6: Line raster under 90° (or 0°); PS operator:  $n^*n^*n^*0$  setcmykcolor

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-6:  $g_P=1.0$ ;  $g_N=1.17$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

<b>Test for the best visual linearized output of Picture A7-122-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-122-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-122-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-122-0</b>		
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 OE640-3N-1216-7

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

PDF-File: <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-122-7

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:1,25$ ;  $Y_N$  range 0,93 to <1,87 output 130-7:  $g_P=1.0$ ;  $g_N=1.17$

<b>Test for the best visual linearized output of Picture A7-122-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-122-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-122-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-122-0</b>		
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 OE641-3N-122-7

**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/OE64/OE64F1P2.PDF>

PS file: <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

Picture A7-122-2: 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/OE64/OE64F1P2.PDF>

picture A7-122-2

underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

picture A7-122-2

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](http://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

OE641-7N-122-7



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

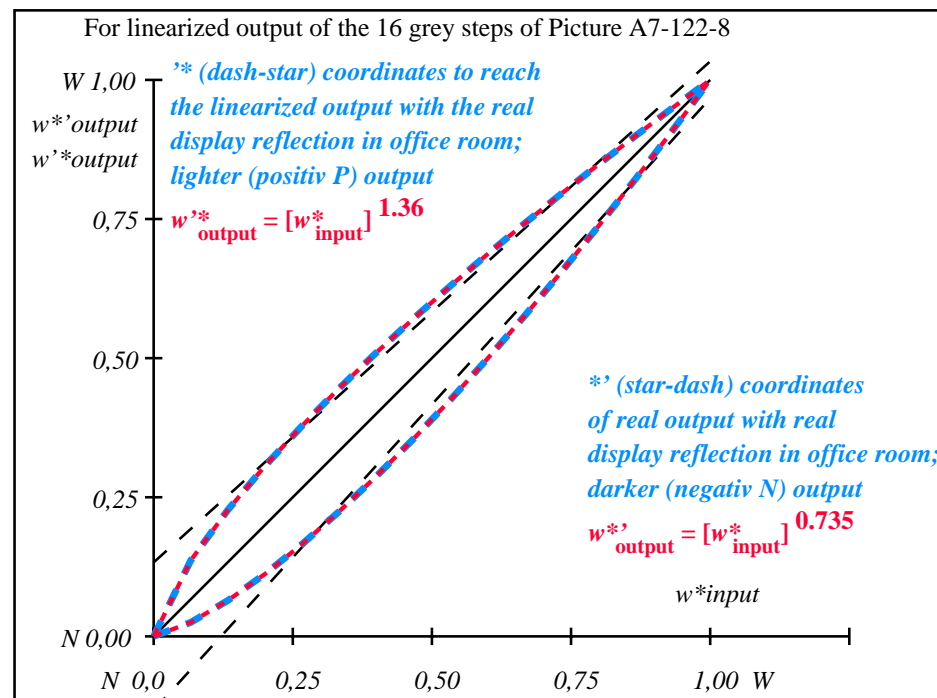
i	LAB*ref	I*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	10.99	0.0	0.0	0.0	0.0	0.01
2	16.62	0.0	0.03	13.12	0.0	0.0
3	22.25	0.0	0.06	16.44	0.0	0.0
4	27.88	0.0	0.11	20.45	0.0	0.0
5	33.5	0.0	0.17	24.98	0.0	0.0
6	39.13	0.0	0.22	29.94	0.0	0.0
7	44.76	0.0	0.29	35.27	0.0	0.0
8	50.39	0.0	0.35	40.93	0.0	0.0
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)  $\Delta E^*_{\text{CIELAB}} = 6.0$

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

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

OE640-3N-122-8: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-122-8: 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
$n^* n^* n^* 0$ setcmk $g_N=1.36$ 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
$w^* = [L^*_{\text{CIELAB}, r}]$ (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
$w^*_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{out}}$	0.0	0.025	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

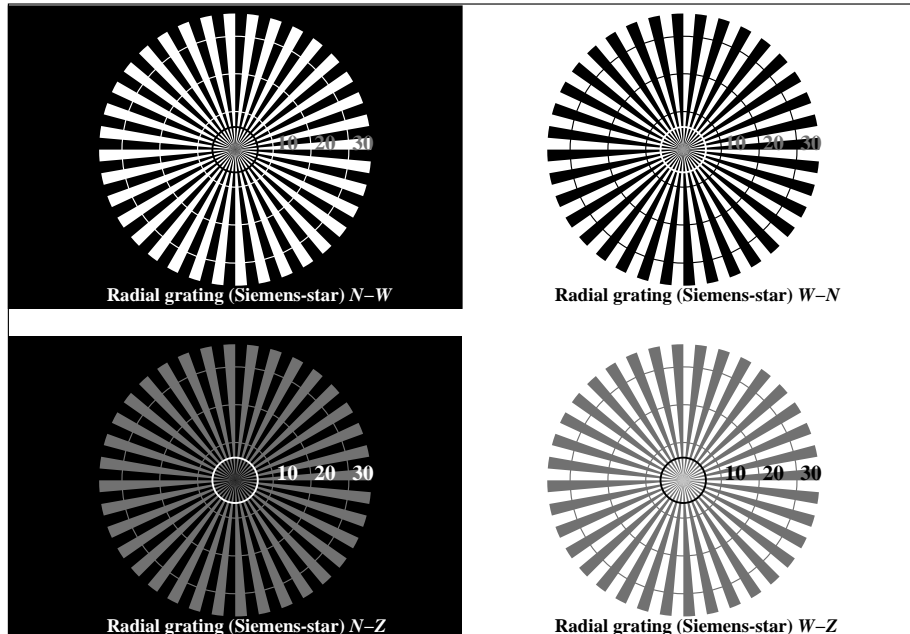
OE640-7N, Picture A7-122-8: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^* n^* n^* 0$  setcmkcolor

OE64: 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

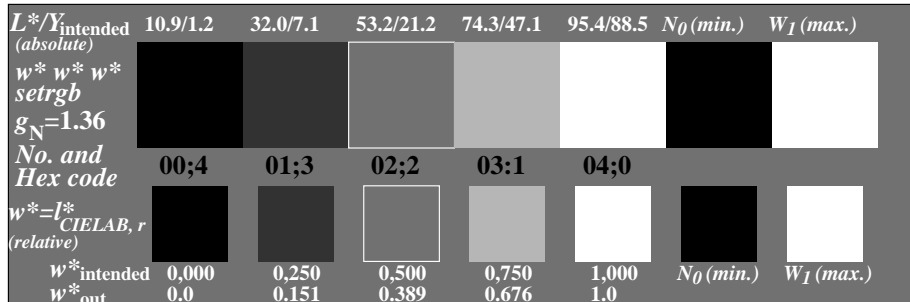
input: all ( $\rightarrow rgb^*_{\text{de}}$ ) setrgbcolor  
output 130-8:  $g_P=1.0$ ;  $g_N=1.17$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta

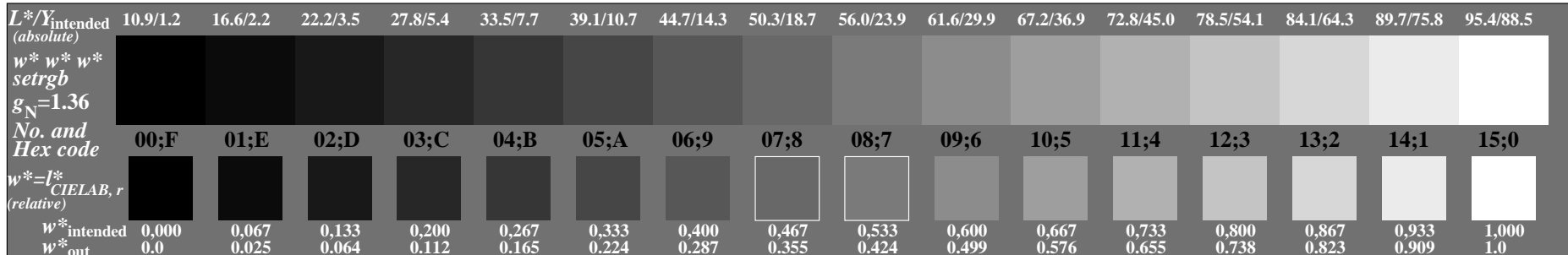
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



OE640-3N, Picture A1-132-9: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^* w^* w^* \text{setrgbcolor}$

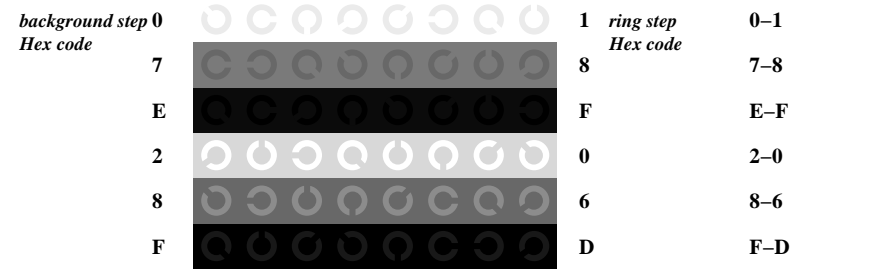


OE640-5N, Picture A2-132-9: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $w^* w^* w^* \text{setrgbcolor}$

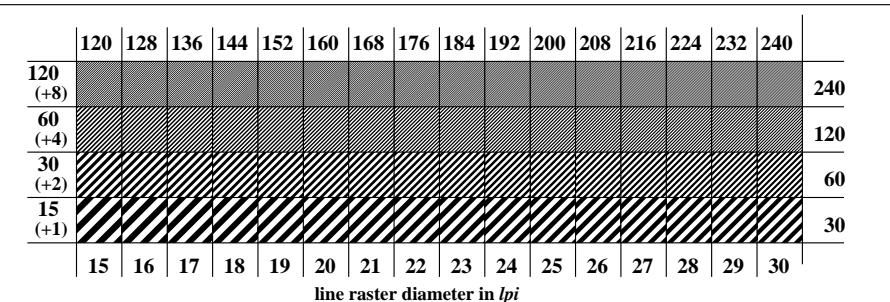


OE640-7N, Picture A3-132-9: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^* \text{setrgbcolor}$

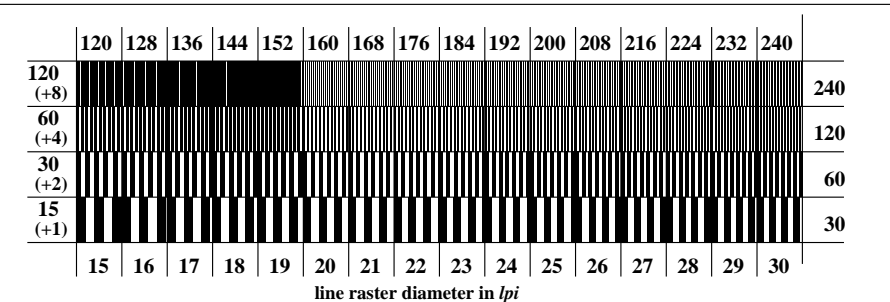
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88.9:1.25$ ;  $Y_N$  range 0.93 to <1.87



Landolt-rings W-N code: background-ring  
OE641-1N, Picture A4-132-9: Landolt-rings W-N; PS operator:  $w^* w^* w^* \text{setrgbcolor}$



OE641-3N, Picture A5-132-9: Line raster under 45° (or 135°); PS operator:  $w^* w^* w^* \text{setrgbcolor}$



OE641-5N, Picture A6-132-9: Line raster under 90° (or 0°); PS operator:  $w^* w^* w^* \text{setrgbcolor}$

input: all ( $\rightarrow \text{rgb}^*_{\text{de}}$ )  $\text{setrgbcolor}$   
output 130-9:  $g_P=1.0$ ;  $g_N=1.17$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

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

Part 1 OE640-3N-1316-10

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> **underline Yes/No**

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-132-10

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: *all (->rgb\*\_de) setrgbcolor*  
Viewing Y contrast  $Y_W:Y_N=88,9:1,25$ ;  $Y_N$  range 0,93 to <1,87 output 130-10:  $g_P=1.0$ ;  $g_N=1.17$

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

Part 2 OE641-3N-132-10

**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/OE64/OE64F1P2.PDF>

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

**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

*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/OE64/OE64F1P2.PDF>

**picture A7-132-2**

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

**picture A7-132-2**

**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](http://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**

Part 4

OE641-7N-132-10

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	0.0	0.0	0.01
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

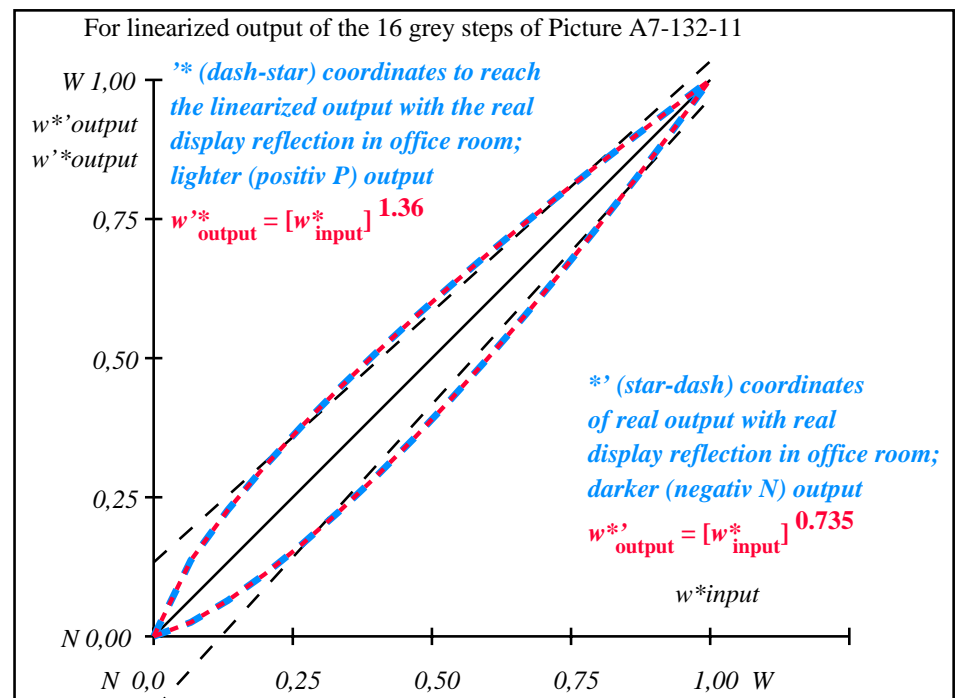
Specification according to  
ISO/IEC 15775 Annex G  
and DIN 33866-1 Annex G

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

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

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

OE640-3N-132-11: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-132-11: 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 $g_N=1.36$ 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
$w^* = [L^*_{\text{CIELAB}, r}]$ (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
$w^*_{\text{intended}}$ $w^*_{\text{out}}$	0.000	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

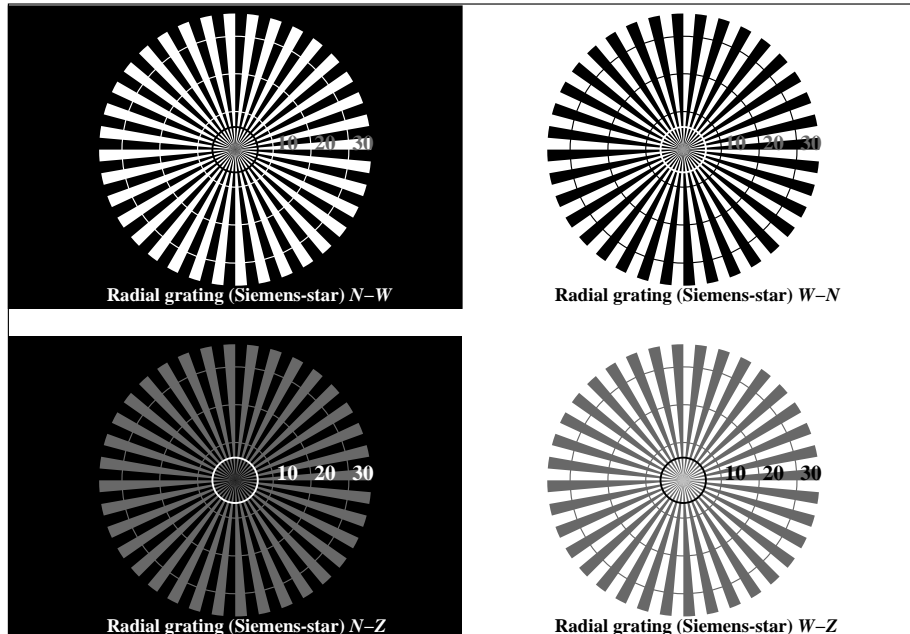
OE640-7N, Picture A7-132-11: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*$  setrgbcolor

OE64: 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

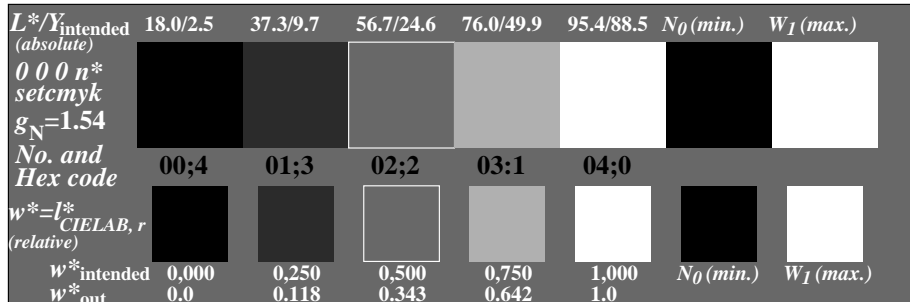
input: all ( $\rightarrow \text{rgb}^*_{\text{de}}$ ) setrgbcolor  
output 130-11:  $g_P=1.0$ ;  $g_N=1.17$



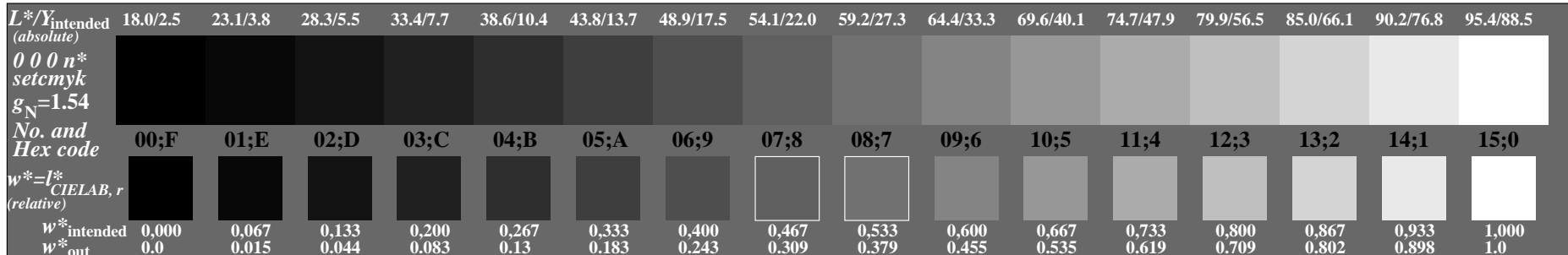
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



OE640-3N, Picture A1-103-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: 0 0 0 n\* setcmykcolor



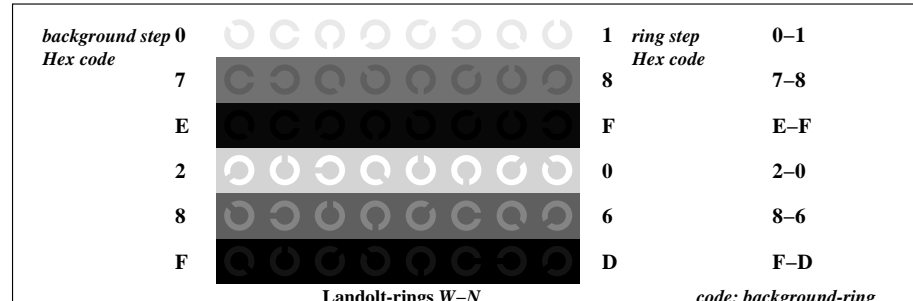
OE640-5N, Picture A2-103-0: 5 equidistant  $L^*$ -grey steps+N0+W1; PS operator: 0 0 0 n\* setcmykcolor



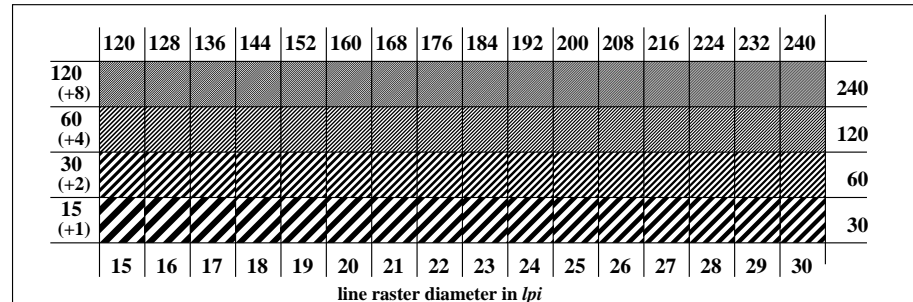
OE640-7N, Picture A3-103-0: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

OE64: 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

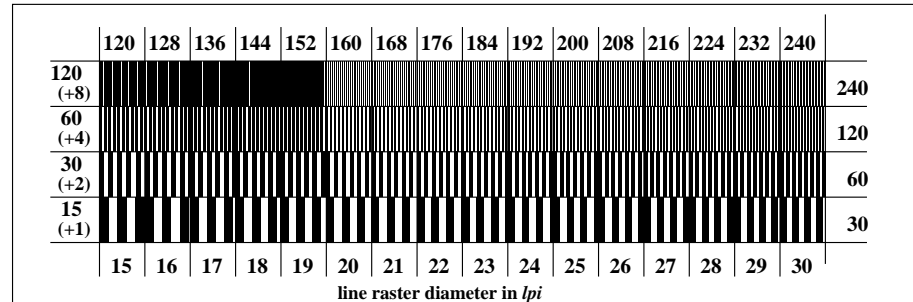
input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-0:  $g_P=1.0$ ;  $g_N=1.29$



OE641-1N, Picture A4-103-0: Landolt-rings W-N; PS operator: 0 0 0 n\* setcmykcolor



OE641-3N, Picture A5-103-0: Line raster under 45° (or 135°); PS operator: 0 0 0 n\* setcmykcolor



OE641-5N, Picture A6-103-0: Line raster under 90° (or 0°); PS operator: 0 0 0 n\* setcmykcolor

Test for the best visual linearized output of Picture A7-103-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-103-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-103-0</b>		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-103-0</b>		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		.... Steps

Part 1

OE640-3N-1024-1

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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

OE640-7N-103-1

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: *all (->rgb\*\_de) setrgbcolor*  
Viewing Y contrast  $Y_W: Y_N=88,9:2,5$ ;  $Y_N$  range 1,87 to <3,75 output 130-1:  $g_P=1.0$ ;  $g_N=1.29$

Test for the best visual linearized output of Picture A7-103-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-103-0</b>		
N-W-radial grating:	Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?	Yes/No
	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
<b>Test of the radial grating under 45° according to picture A5-103-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	
<b>Test of the radial grating under 90° according to picture A6-103-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	

Part 2

OE641-3N-103-1

#### 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/OE64/OE64F1P2.PDF>

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

**Picture A7-103-2: 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/OE64/OE64F1P2.PDF>

**picture A7-103-2**

underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

**picture A7-103-2**

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](http://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: .....

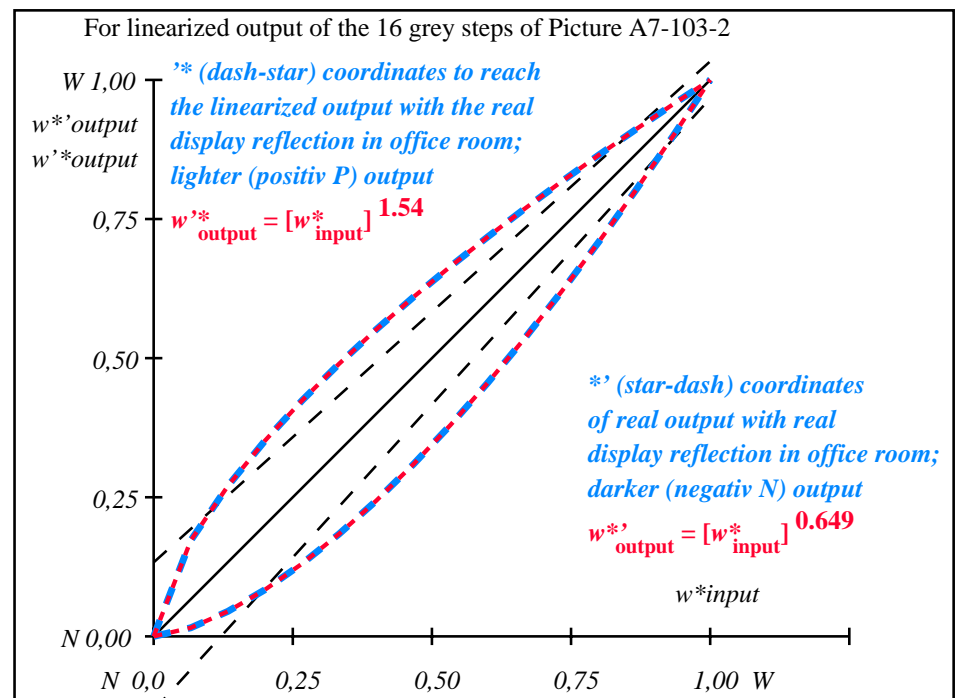
underline Yes/No

OE641-7N-103-1

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	$\Delta E^*$	Start output S1
1	18.01	0.0	0.0	18.01	0.0	0.0
2	23.17	0.0	0.02	19.2	0.0	-3.95
3	28.33	0.0	0.04	21.49	0.0	-6.83
4	33.49	0.0	0.08	24.5	0.0	-8.98
5	38.65	0.0	0.13	28.12	0.0	-10.52
6	43.81	0.0	0.18	32.26	0.0	-11.53
7	48.97	0.0	0.24	36.89	0.0	-12.07
8	54.13	0.0	0.31	41.94	0.0	-12.18
9	59.29	0.0	0.38	47.41	0.0	-11.87
10	64.45	0.0	0.46	53.25	0.0	-11.19
11	69.61	0.0	0.54	59.46	0.0	-10.14
12	74.77	0.0	0.62	66.02	0.0	-8.74
13	79.93	0.0	0.71	72.9	0.0	-7.02
14	85.09	0.0	0.8	80.1	0.0	-4.98
15	90.25	0.0	0.9	87.61	0.0	-2.63
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	0.12	27.16	0.0	-10.19
19	56.71	0.0	0.34	44.63	0.0	-12.07
20	76.06	0.0	0.64	67.71	0.0	-8.34
21	95.41	0.0	1.0	95.41	0.0	0.0
Mean lightness difference (16 steps)						$\Delta E^*_{\text{CIELAB}} = 7.7$
Mean lightness difference (5 steps)						$\Delta E^*_{\text{CIELAB}} = 6.1$
Mean colour reproduction index:						$R^*_{\text{ab,m}} = 66$

OE640-3N-103-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



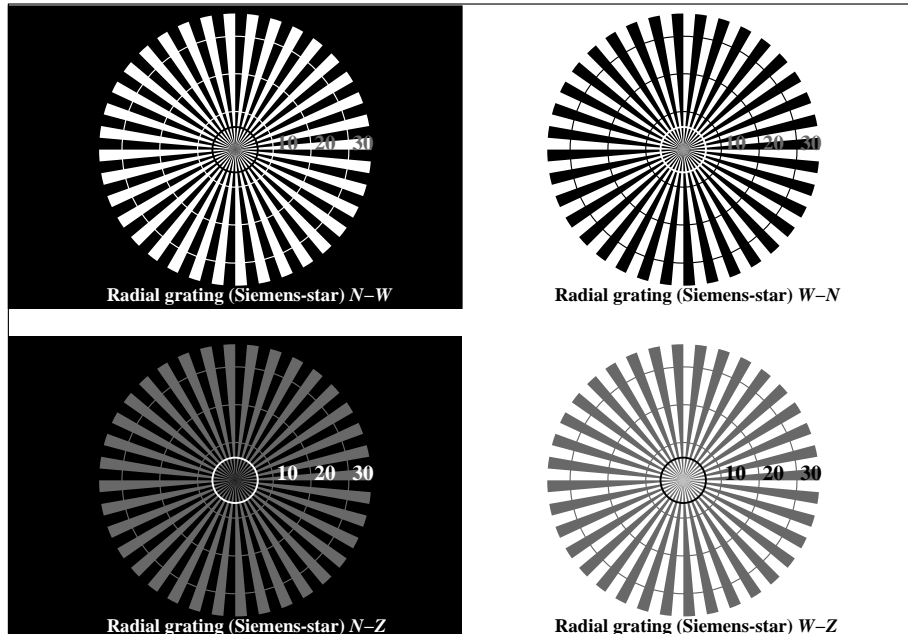
$L^*/Y_{\text{intended}}$ (absolute)	18.0/2.5	23.2/3.8	28.3/5.6	33.5/7.8	38.6/10.5	43.8/13.7	49.0/17.6	54.1/22.1	59.3/27.3	64.4/33.4	69.6/40.2	74.8/47.9	79.9/56.6	85.1/66.2	90.2/76.8	95.4/88.6
0 0 0 n* setcmyk $g_N=1.54$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^* = [L^*_{\text{CIELAB}}, r]$ (relative)	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{out}}$	0.0	0.016	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

OE640-7N, Picture A7-103-2: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

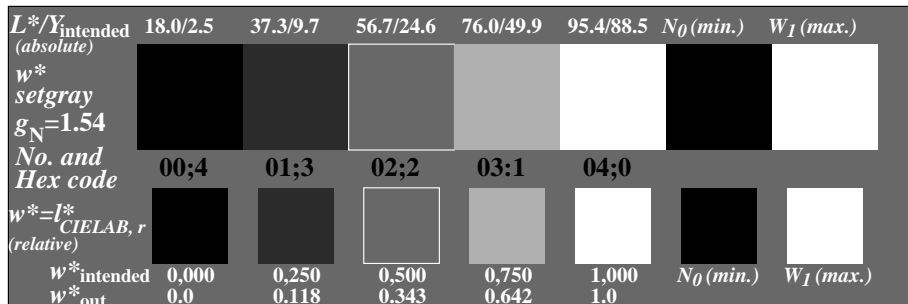
OE64: In-output relation according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:2,5$ ;  $Y_N$  range 1,87 to <3,75

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

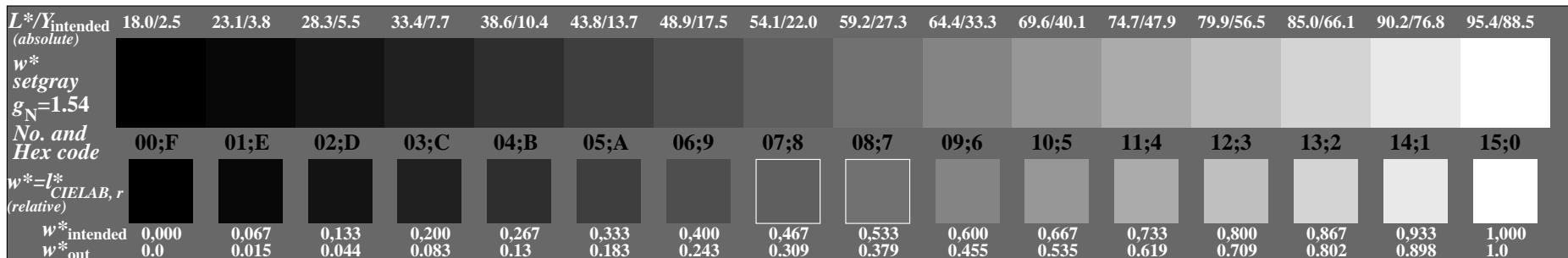
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



OE640-3N, Picture A1-113-3: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^*$  setgray

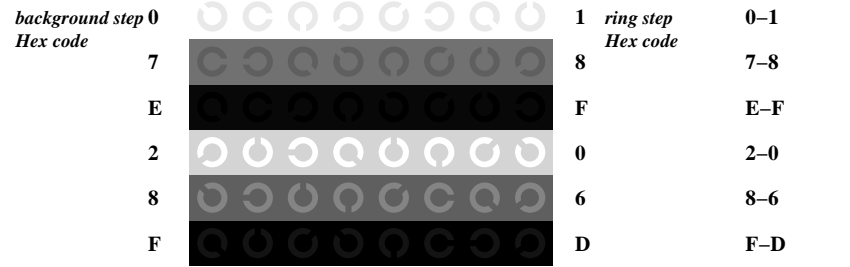


OE640-5N, Picture A2-113-3: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $w^*$  setgray



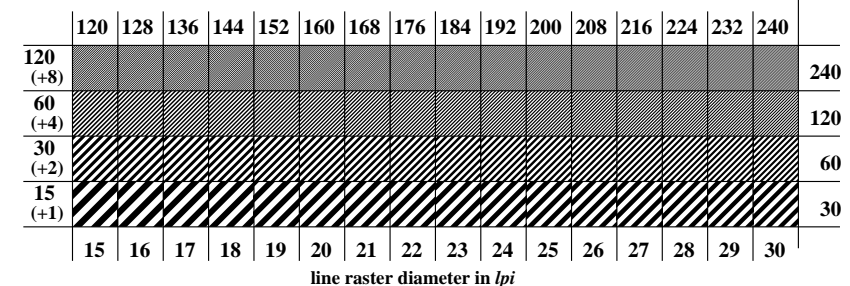
OE640-7N, Picture A3-113-3: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*$  setgray

OE64: 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

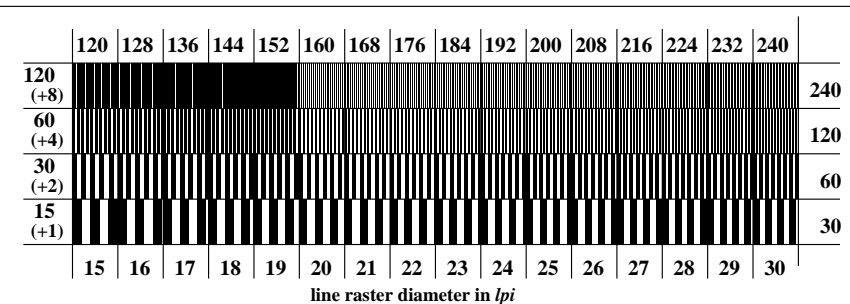


Landolt-rings W-N code: background-ring

OE641-1N, Picture A4-113-3: Landolt-rings W-N; PS operator:  $w^*$  setgray



OE641-3N, Picture A5-113-3: Line raster under 45° (or 135°); PS operator:  $w^*$  setgray



OE641-5N, Picture A6-113-3: Line raster under 90° (or 0°); PS operator:  $w^*$  setgray

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-3:  $g_P=1.0$ ;  $g_N=1.29$



Test for the best visual linearized output of Picture A7-113-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-113-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-113-0</b>		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-113-0</b>		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		.... Steps

Part 1

OE640-3N-1124-4

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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

OE640-7N-113-4

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: *all (->rgb\*\_de) setrgbcolor*  
Viewing Y contrast  $Y_W: Y_N=88,9:2,5$ ;  $Y_N$  range 1,87 to <3,75 output 130-4:  $g_P=1.0$ ;  $g_N=1.29$

Test for the best visual linearized output of Picture A7-113-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-113-0</b>		
N-W-radial grating:	Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?	Yes/No
	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
<b>Test of the radial grating under 45° according to picture A5-113-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	
<b>Test of the radial grating under 90° according to picture A6-113-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	

Part 2

OE641-3N-113-4

#### 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/OE64/OE64F1P2.PDF>

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

**Picture A7-113-2: 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/OE64/OE64F1P2.PDF>

**picture A7-113-2**

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

**picture A7-113-2**

#### 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](http://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  
underline Yes/No  
underline Yes/No  
underline Yes/No  
underline Yes/No  
underline Yes/No  
underline Yes/No

OE641-7N-113-4

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	$\Delta E^*$	
1	18.01	0.0	0.0	18.01	0.0	0.0
2	23.17	0.0	0.02	19.2	0.0	-3.95
3	28.33	0.0	0.04	21.49	0.0	-6.83
4	33.49	0.0	0.08	24.5	0.0	-8.98
5	38.65	0.0	0.13	28.12	0.0	-10.52
6	43.81	0.0	0.18	32.26	0.0	-11.53
7	48.97	0.0	0.24	36.89	0.0	-12.07
8	54.13	0.0	0.31	41.94	0.0	-12.18
9	59.29	0.0	0.38	47.41	0.0	-11.87
10	64.45	0.0	0.46	53.25	0.0	-11.19
11	69.61	0.0	0.54	59.46	0.0	-10.14
12	74.77	0.0	0.62	66.02	0.0	-8.74
13	79.93	0.0	0.71	72.9	0.0	-7.02
14	85.09	0.0	0.8	80.1	0.0	-4.98
15	90.25	0.0	0.9	87.61	0.0	-2.63
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	0.12	27.16	0.0	-10.19
19	56.71	0.0	0.34	44.63	0.0	-12.07
20	76.06	0.0	0.64	67.71	0.0	-8.34
21	95.41	0.0	1.0	95.41	0.0	0.0

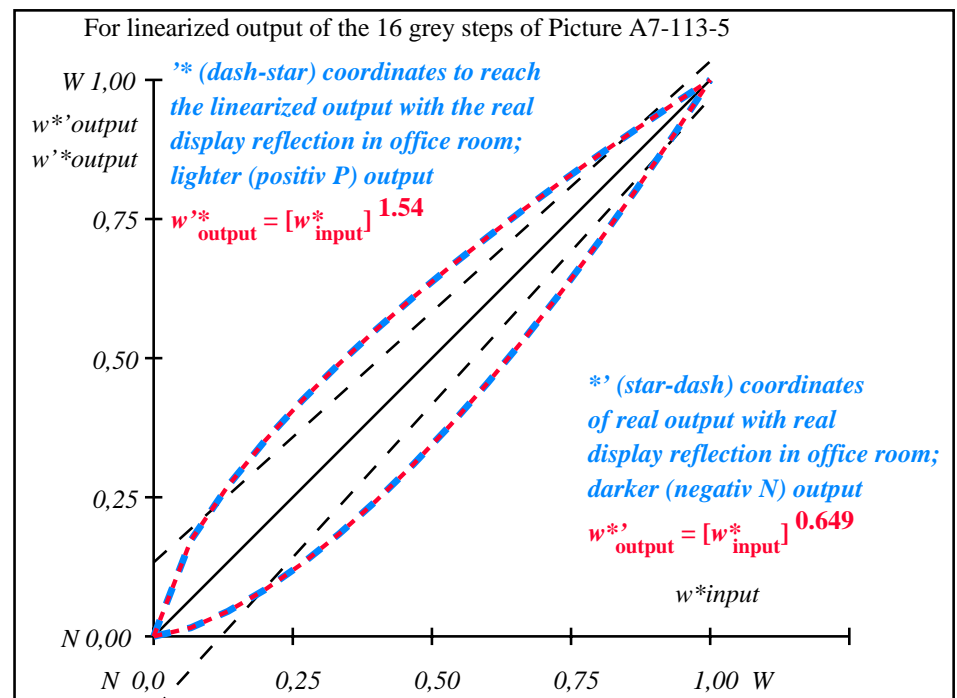
**Start output S1**  
**Specification according to ISO/IEC 15775 Annex G and DIN 33866-1 Annex G**

Mean lightness difference (16 steps)  $\Delta E^*_{\text{CIELAB}} = 7.7$

Mean lightness difference (5 steps)  $\Delta E^*_{\text{CIELAB}} = 6.1$

Mean colour reproduction index:  $R^*_{\text{ab,m}} = 66$

OE640-3N-113-5: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-113-5: 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
$w^*$ setgray $g_N=1.54$ 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)																
$w^*_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{out}}$	0.0	0.016	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

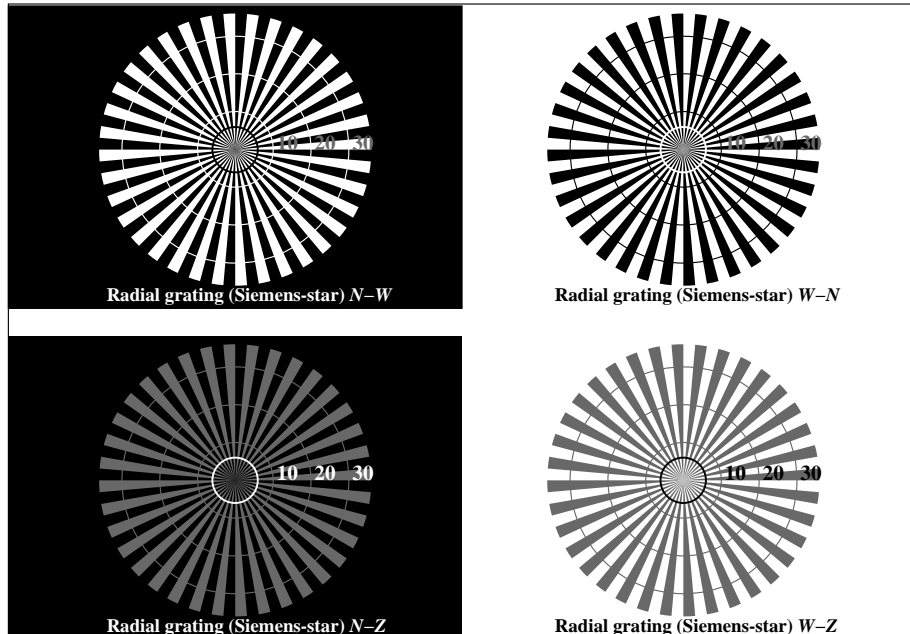
OE640-7N, Picture A7-113-5: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*$  setgray

OE64: 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

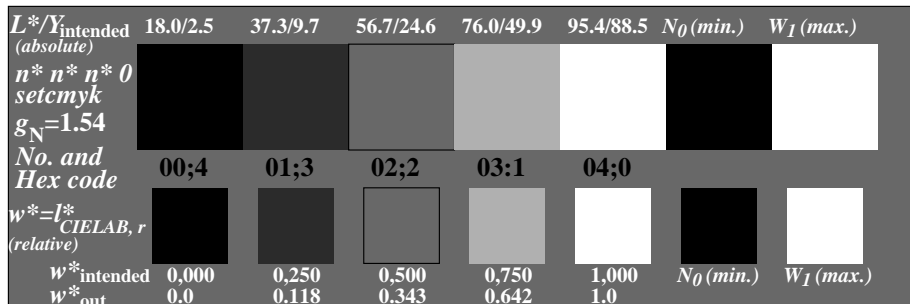
input: all ( $\rightarrow \text{rgb}^*_{\text{de}}$ ) setrgbcolor  
output 130-5:  $g_P=1.0$ ;  $g_N=1.29$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta

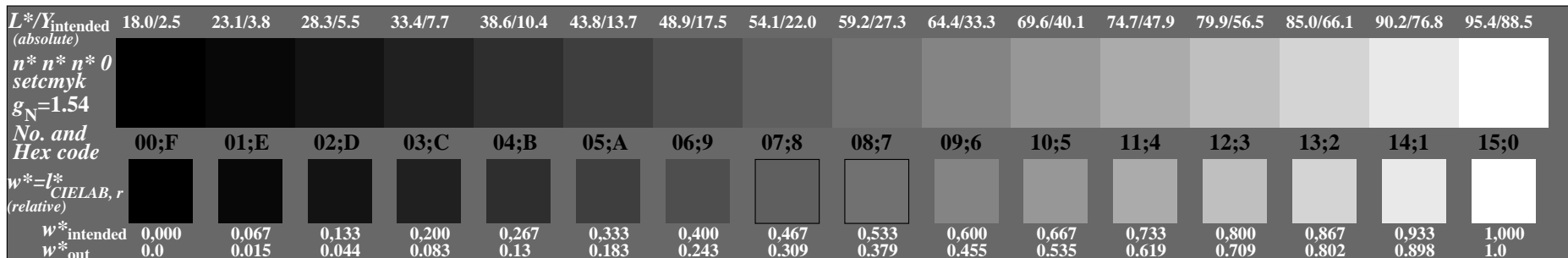
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIE LAB



OE640-3N, Picture A1-123-6: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $n^*n^*n^*0$  setcmykcolor



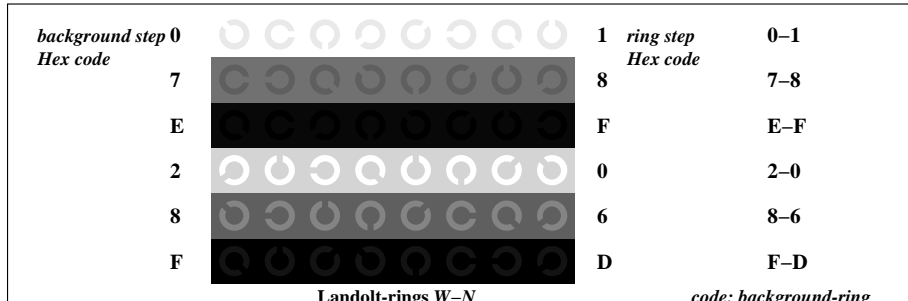
OE640-5N, Picture A2-123-6: 5 equidistant  $L^*$ -grey steps+N0+W1; PS operator:  $n^*n^*n^*0$  setcmykcolor



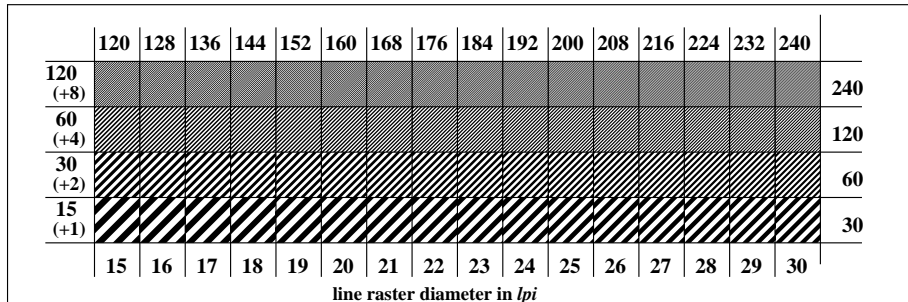
OE640-7N, Picture A3-123-6: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^*n^*n^*0$  setcmykcolor

OE64: 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

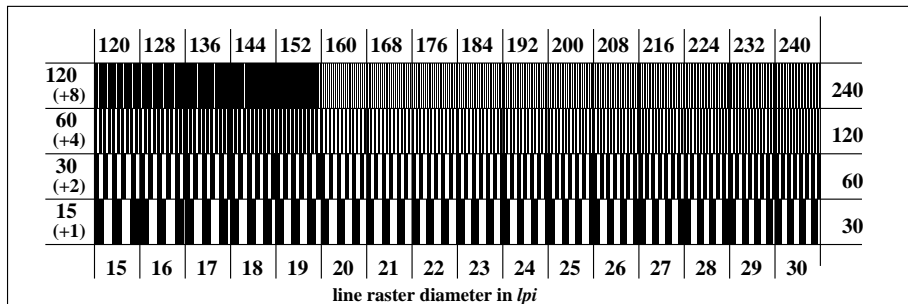
input:  $all(->rgb^*_{de})$  setrgbcolor  
output 130-6:  $g_P=1.0$ ;  $g_N=1.29$



OE641-1N, Picture A4-123-6: Landolt-rings W-N; PS operator:  $n^*n^*n^*0$  setcmykcolor



OE641-3N, Picture A5-123-6: Line raster under 45° (or 135°); PS operator:  $n^*n^*n^*0$  setcmykcolor



OE641-5N, Picture A6-123-6: Line raster under 90° (or 0°); PS operator:  $n^*n^*n^*0$  setcmykcolor

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta

Test for the best visual linearized output of Picture A7-123-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-123-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-123-0</b>		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-123-0</b>		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		.... Steps

Part 1

OE640-3N-1224-7

Documentation of file format, hardware and software for this test:	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF">http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF</a>	<u>underline</u> Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS">http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS</a>	<u>or underline</u> Yes/No
<b>Used computer operating system:</b> either one of Windows/Mac/Unix/other and version:.....	
<b>This evaluation is for the device output:</b> <u>underline</u> monitor/data projector/printer	
Device model, driver and version:.....	
<b>Device output with PDF/PS-file:</b>	<u>underline</u> PDF/PS-file
<b>For device output with PDF-file OE64L0NP.PDF:</b> 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:.....	
<b>For device output with PS-file OE64L0NA.PS:</b> 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

OE640-7N-123-7

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: *all (->rgb\*\_de) setrgbcolor*  
Viewing Y contrast  $Y_W: Y_N=88,9:2,5$ ;  $Y_N$  range 1,87 to <3,75 output 130-7:  $g_P=1.0$ ;  $g_N=1.29$

Test for the best visual linearized output of Picture A7-123-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-123-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-123-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-123-0</b>		
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

OE641-3N-123-7

Documentation of assessor colour vision properties for visual assessment	
The assessor has <b>normal</b> colour vision according to one test:	
either according to DIN 6160:1996 with Anomaloskop of Nagel	<u>underline</u> Yes/No
or with test charts using colour points according to Ishihara	<u>underline</u> Yes/unknown
or tested with, please specify: .....	<u>underline</u> Yes/unknown
<b>For visual evaluation of the display (monitor, data projector) output</b>	
Office workplace illumination is daylight (clouded/north sky)	<u>underline</u> Yes/No
<b>PDF file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	<u>underline</u> Yes/No
<b>PS file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	<u>underline</u> Yes/No
<b>Picture A7-123-2: contrast range:</b> (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)	<u>underline</u> range
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)	
<b>Only for optional colorimetric specification with PDF/PS file output</b>	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	<u>underline</u> Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	<u>or underline</u> Yes/No
<b>colour measurement and specification for:</b> CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: <u>underline</u> Yes/No If No, please give other parameters: .....	
<b>Colorimetric specification with PS file for colours in the columns A to T</b> Exchange of CIELAB data in file <a href="http://www.ps.bam.de/De17/10L/L17e00NP.PS">www.ps.bam.de/De17/10L/L17e00NP.PS</a> 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 4

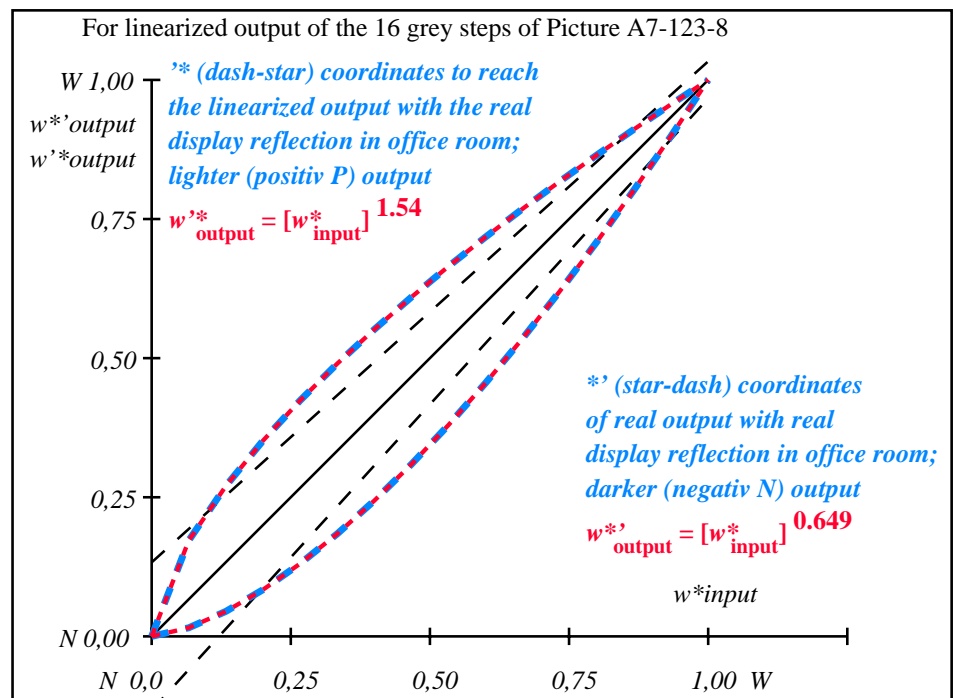
OE641-7N-123-7



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	18.01	0.0	0.0
2	23.17	0.0	0.02	19.2	0.0	-3.95
3	28.33	0.0	0.04	21.49	0.0	-6.83
4	33.49	0.0	0.08	24.5	0.0	-8.98
5	38.65	0.0	0.13	28.12	0.0	-10.52
6	43.81	0.0	0.18	32.26	0.0	-11.53
7	48.97	0.0	0.24	36.89	0.0	-12.07
8	54.13	0.0	0.31	41.94	0.0	-12.18
9	59.29	0.0	0.38	47.41	0.0	-11.87
10	64.45	0.0	0.46	53.25	0.0	-11.19
11	69.61	0.0	0.54	59.46	0.0	-10.14
12	74.77	0.0	0.62	66.02	0.0	-8.74
13	79.93	0.0	0.71	72.9	0.0	-7.02
14	85.09	0.0	0.8	80.1	0.0	-4.98
15	90.25	0.0	0.9	87.61	0.0	-2.63
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	0.12	27.16	0.0	-10.19
19	56.71	0.0	0.34	44.63	0.0	-12.07
20	76.06	0.0	0.64	67.71	0.0	-8.34
21	95.41	0.0	1.0	95.41	0.0	0.0
Mean lightness difference (16 steps)						ΔE* <sub>CIELAB</sub> = 7.7
Mean lightness difference (5 steps)						ΔE* <sub>CIELAB</sub> = 6.1
Mean colour reproduction index:						R* <sub>ab,m</sub> = 66

OE640-3N-123-8: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-123-8: 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
$n^*n^*n^*0$ setcmk $g_N=1.54$ 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
$w^*=L^*_{CIELAB,r}$ (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
$w^*_{intended}$	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

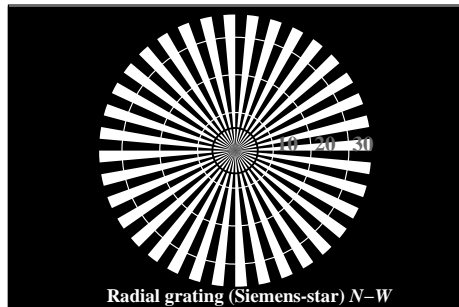
OE640-7N, Picture A7-123-8: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^*n^*n^*0$  setcmkcolor

OE64: 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

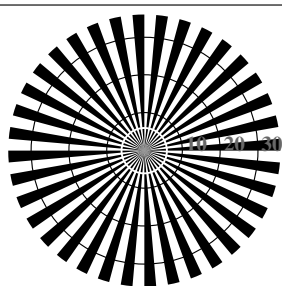
input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-8:  $g_P=1.0$ ;  $g_N=1.29$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=thata

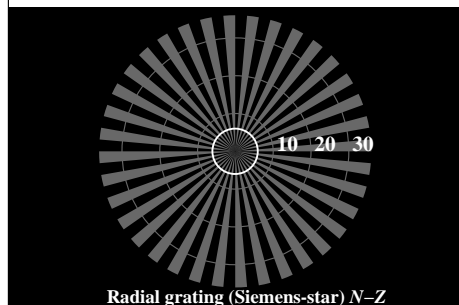
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



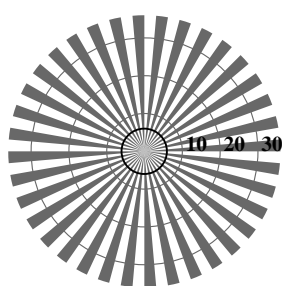
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

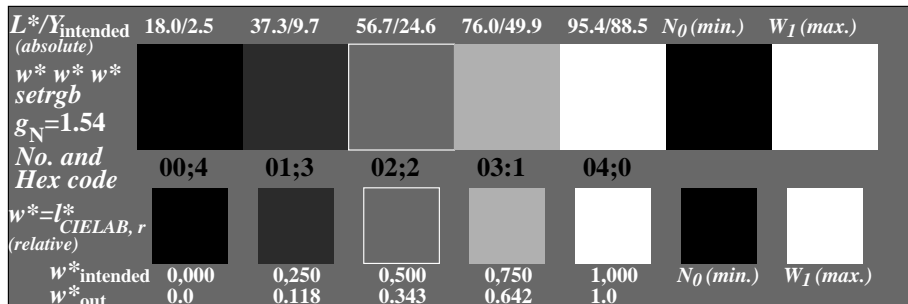


Radial grating (Siemens-star) N-Z

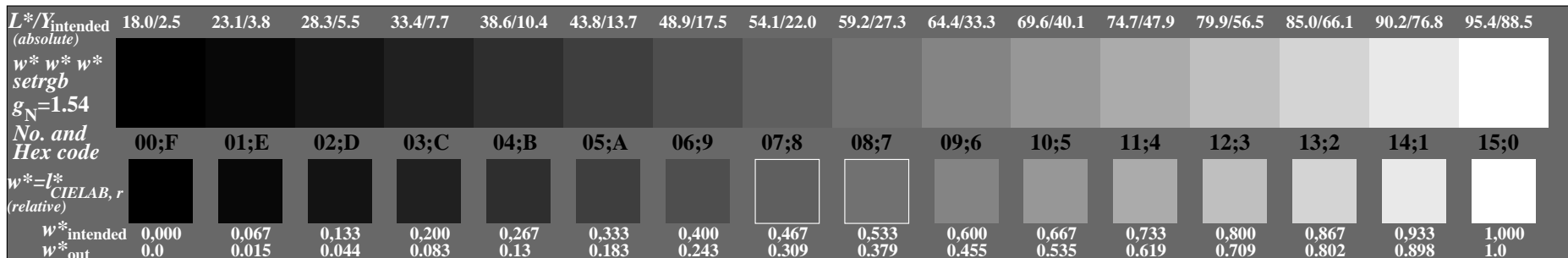


Radial grating (Siemens-star) W-Z

OE640-3N, Picture A1-133-9: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^*w^*w^*$  setrgbcolor

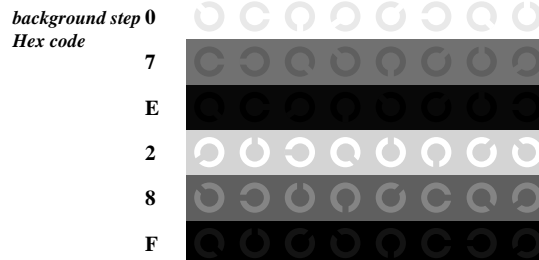


OE640-5N, Picture A2-133-9: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $w^*w^*w^*$  setrgbcolor

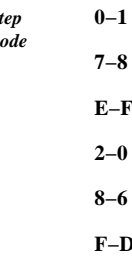


OE640-7N, Picture A3-133-9: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*w^*w^*$  setrgbcolor

OE64: 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

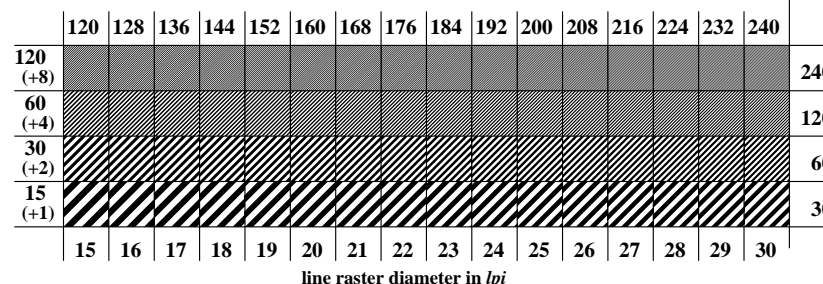


Landolt-rings W-N

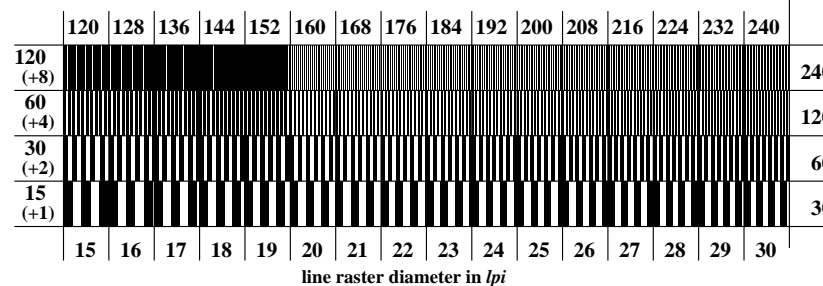


code: background-ring

OE641-1N, Picture A4-133-9: Landolt-rings W-N; PS operator:  $w^*w^*w^*$  setrgbcolor



OE641-3N, Picture A5-133-9: Line raster under 45° (or 135°); PS operator:  $w^*w^*w^*$  setrgbcolor



OE641-5N, Picture A6-133-9: Line raster under 90° (or 0°); PS operator:  $w^*w^*w^*$  setrgbcolor

input: all ( $\rightarrow$ rgb\*<sub>de</sub>) setrgbcolor  
output 130-9:  $g_P=1.0$ ;  $g_N=1.29$

TUB registration: 20110801-OE64/OE64L0NA.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
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-133-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-133-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-133-0</b>		
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 OE640-3N-1324-10

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

PDF-File: <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-133-10

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:2,5$ ;  $Y_N$  range 1,87 to <3,75 output 130-10:  $g_P=1.0$ ;  $g_N=1.29$

Test for the best visual linearized output of Picture A7-133-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-133-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-133-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-133-0</b>		
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 OE641-3N-133-10

**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/OE64/OE64F1P2.PDF>

PS file: <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

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/OE64/OE64F1P2.PDF>

picture A7-133-2

underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

picture A7-133-2

or underline Yes/No

**colour measurement and specification for:**

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

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](http://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

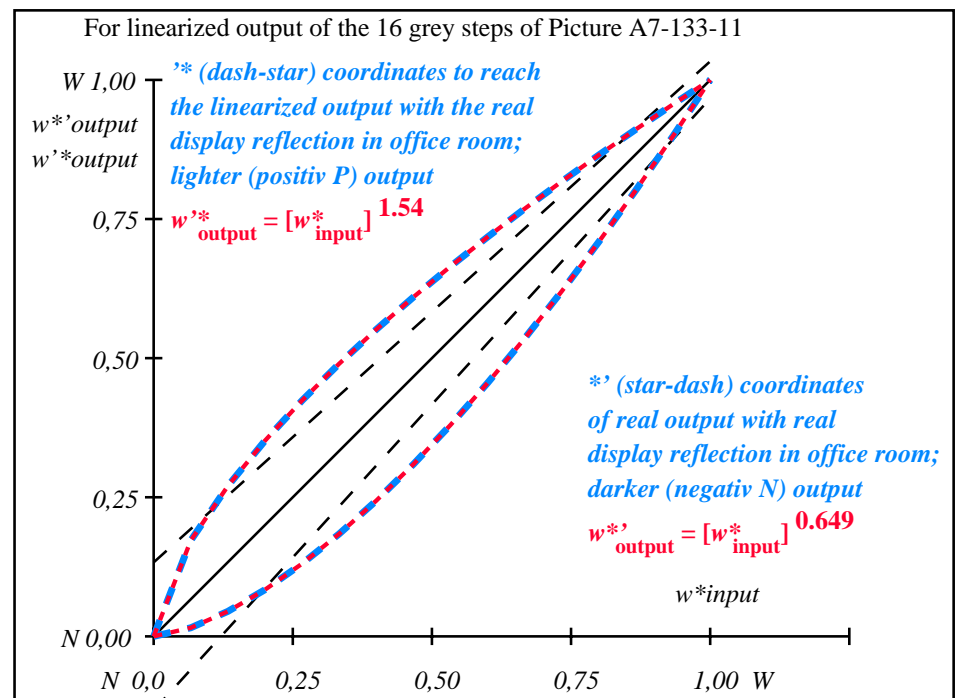
Part 4

OE641-7N-133-10

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	18.01	0.0	0.0
2	23.17	0.0	0.02	19.2	0.0	-3.95
3	28.33	0.0	0.04	21.49	0.0	-6.83
4	33.49	0.0	0.08	24.5	0.0	-8.98
5	38.65	0.0	0.13	28.12	0.0	-10.52
6	43.81	0.0	0.18	32.26	0.0	-11.53
7	48.97	0.0	0.24	36.89	0.0	-12.07
8	54.13	0.0	0.31	41.94	0.0	-12.18
9	59.29	0.0	0.38	47.41	0.0	-11.87
10	64.45	0.0	0.46	53.25	0.0	-11.19
11	69.61	0.0	0.54	59.46	0.0	-10.14
12	74.77	0.0	0.62	66.02	0.0	-8.74
13	79.93	0.0	0.71	72.9	0.0	-7.02
14	85.09	0.0	0.8	80.1	0.0	-4.98
15	90.25	0.0	0.9	87.61	0.0	-2.63
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	0.12	27.16	0.0	-10.19
19	56.71	0.0	0.34	44.63	0.0	-12.07
20	76.06	0.0	0.64	67.71	0.0	-8.34
21	95.41	0.0	1.0	95.41	0.0	0.0
Mean lightness difference (16 steps)						ΔE* <sub>CIELAB</sub> = 7.7
Mean lightness difference (5 steps)						ΔE* <sub>CIELAB</sub> = 6.1
Mean colour reproduction index:						R* <sub>ab,m</sub> = 66

OE640-3N-133-11: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-133-11: 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
$w^* = [L^*_{CIELAB, r}]$ (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	0.016	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

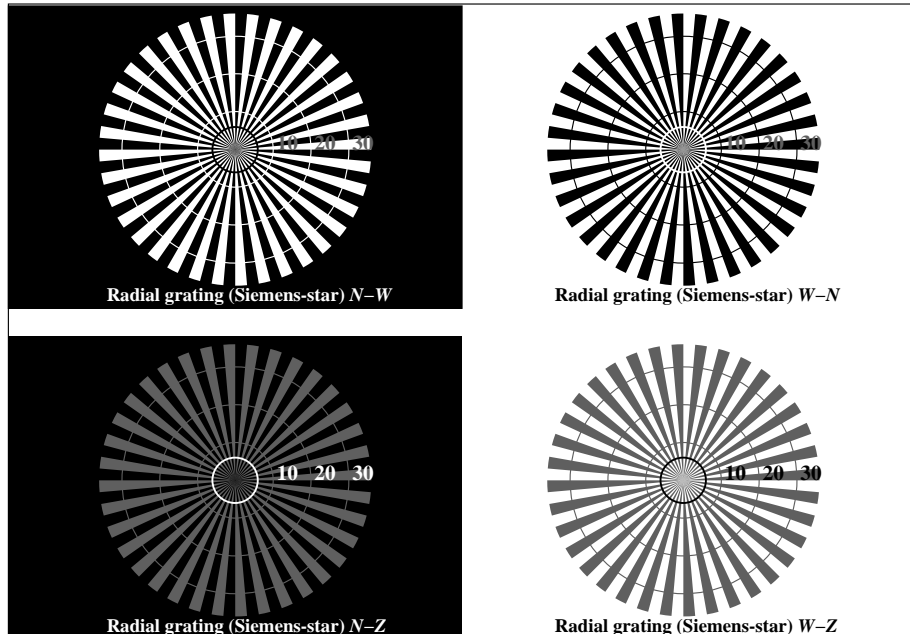
OE640-7N, Picture A7-133-11: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*$  setrgbcolor

OE64: 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

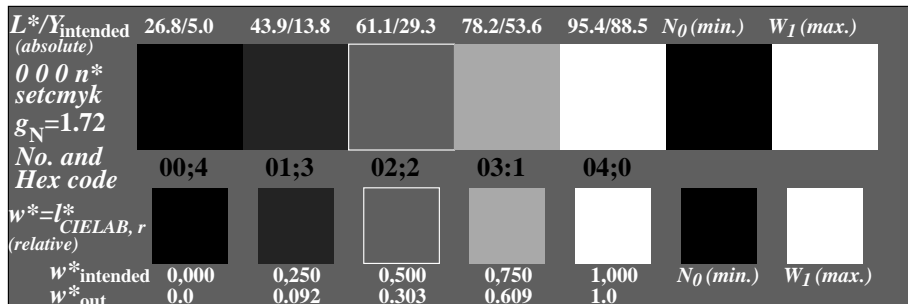
input: all ( $\rightarrow$ rgb\*<sub>de</sub>) setrgbcolor  
output 130-11:  $g_P=1.0$ ;  $g_N=1.29$



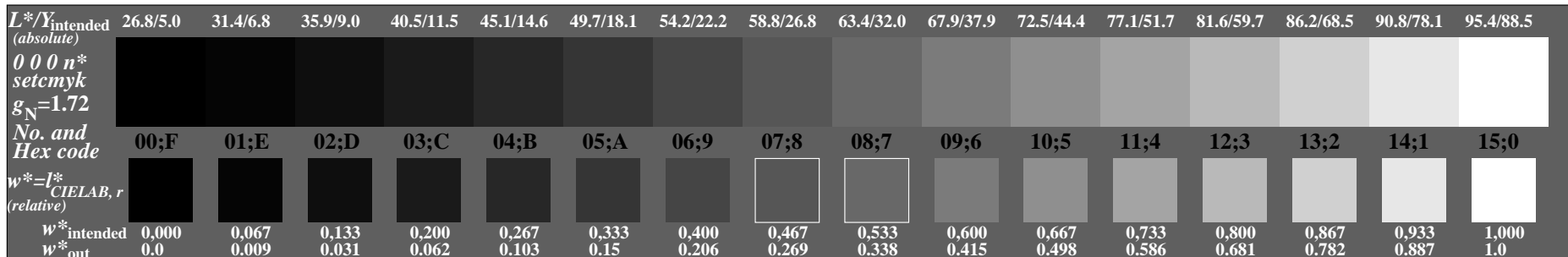
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



OE640-3N, Picture A1-104-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: 0 0 0 n\* setcmykcolor

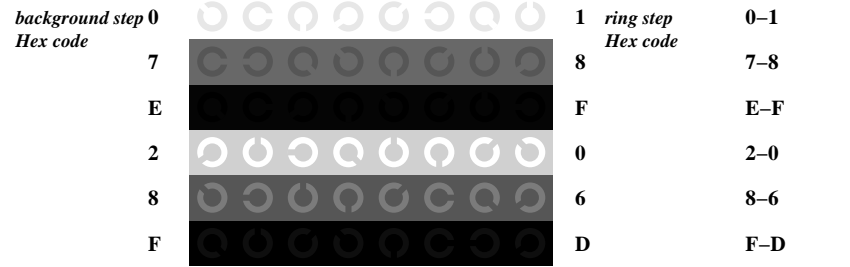


OE640-5N, Picture A2-104-0: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator: 0 0 0 n\* setcmykcolor



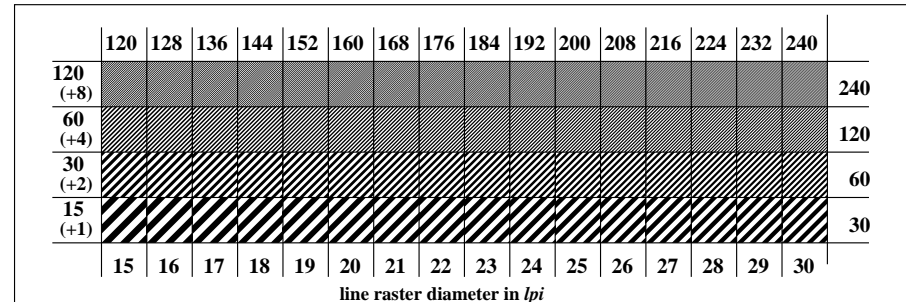
OE640-7N, Picture A3-104-0: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

OE64: 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



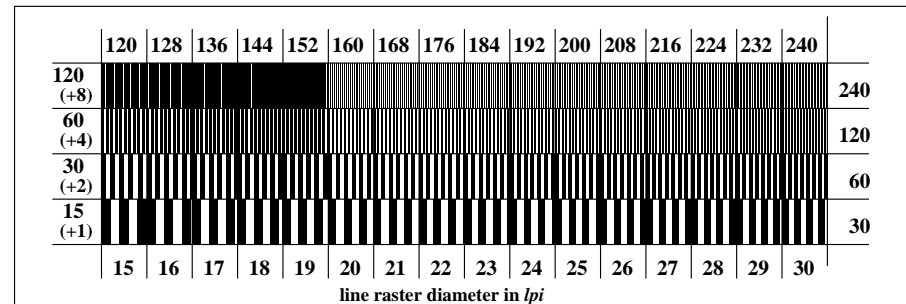
Landolt-rings W-N code: background-ring

OE641-1N, Picture A4-104-0: Landolt-rings W-N; PS operator: 0 0 0 n\* setcmykcolor



line raster diameter in lpi

OE641-3N, Picture A5-104-0: Line raster under 45° (or 135°); PS operator: 0 0 0 n\* setcmykcolor



line raster diameter in lpi

OE641-5N, Picture A6-104-0: Line raster under 90° (or 0°); PS operator: 0 0 0 n\* setcmykcolor

input: all (->rgb\*<sub>de</sub>) setrgbcolor  
output 130-0:  $g_P=1.0$ ;  $g_N=1.42$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta

Test for the best visual linearized output of Picture A7-104-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-104-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-104-0</b>		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-104-0</b>		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		.... Steps

Part 1 OE640-3N-1032-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-104-1

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:5$ ;  $Y_N$  range 3,75 to <7,5  
output 130-1:  $g_P=1.0$ ;  $g_N=1.42$

Test for the best visual linearized output of Picture A7-104-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-104-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-104-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-104-0</b>		
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 OE641-3N-104-1

**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/OE64/OE64F1P2.PDF>

PS file: <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

Picture A7-104-2: 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/OE64/OE64F1P2.PDF>

picture A7-104-2

underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

picture A7-104-2

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](http://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

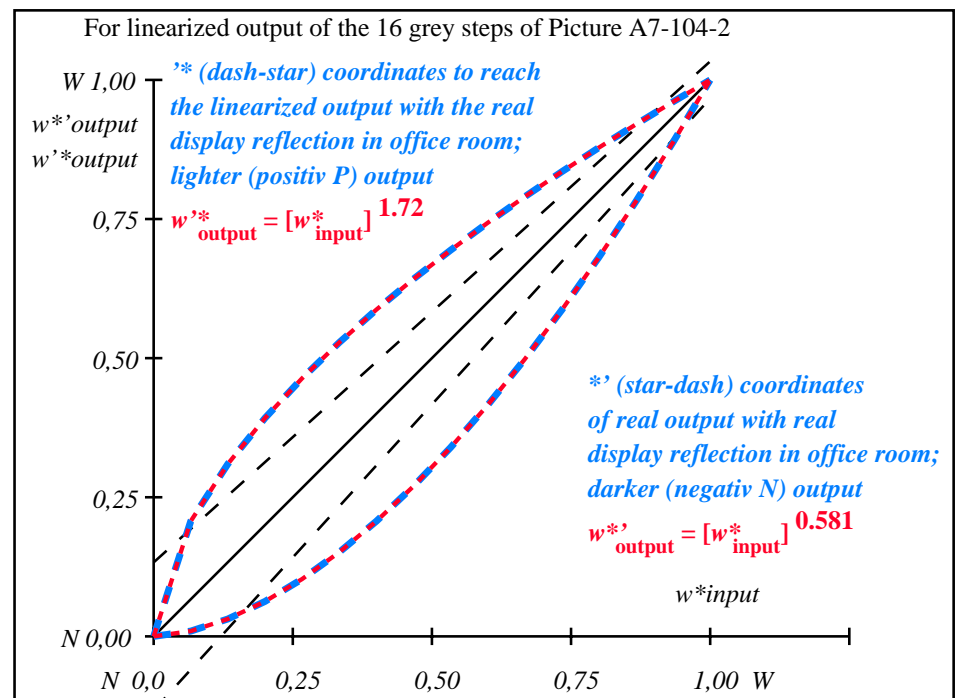
Part 4

OE641-7N-104-1

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	26.85	0.0	0.0
2	31.42	0.0	0.01	27.5	0.0	-3.91
3	35.99	0.0	0.03	28.99	0.0	-6.99
4	40.56	0.0	0.06	31.15	0.0	-9.4
5	45.13	0.0	0.1	33.91	0.0	-11.21
6	49.7	0.0	0.15	37.21	0.0	-12.48
7	54.27	0.0	0.21	41.03	0.0	-13.24
8	58.84	0.0	0.27	45.33	0.0	-13.5
9	63.41	0.0	0.34	50.1	0.0	-13.3
10	67.99	0.0	0.42	55.33	0.0	-12.65
11	72.56	0.0	0.5	60.98	0.0	-11.56
12	77.13	0.0	0.59	67.06	0.0	-10.05
13	81.7	0.0	0.68	73.56	0.0	-8.13
14	86.27	0.0	0.78	80.45	0.0	-5.81
15	90.84	0.0	0.89	87.74	0.0	-3.09
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	0.09	33.17	0.0	-10.81
19	61.13	0.0	0.3	47.66	0.0	-13.46
20	78.27	0.0	0.61	68.65	0.0	-9.61
21	95.41	0.0	1.0	95.41	0.0	0.0
Mean lightness difference (16 steps)					ΔE* <sub>CIELAB</sub> =	8.5
Mean lightness difference (5 steps)					ΔL* <sub>CIELAB</sub> =	6.8
Mean colour reproduction index:					R* <sub>ab,m</sub> =	63

OE640-3N-104-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-104-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

$L^*/Y_{intended}$ (absolute)	26.8/5.0	31.4/6.8	36.0/9.0	40.6/11.6	45.1/14.6	49.7/18.2	54.3/22.2	58.8/26.9	63.4/32.1	68.0/38.0	72.6/44.5	77.1/51.7	81.7/59.7	86.3/68.5	90.8/78.1	95.4/88.6
0 0 0 n* setcmyk $g_N=1.72$ 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
$w^* = [L^*_{CIELAB, r}]$ (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
$w^*_{intended}$	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

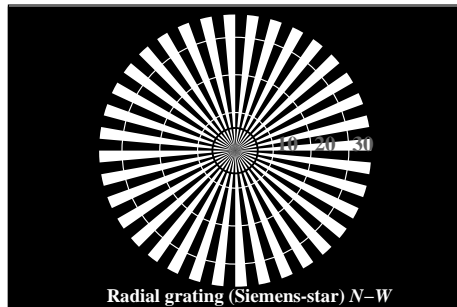
OE640-7N, Picture A7-104-2: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

OE64: 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

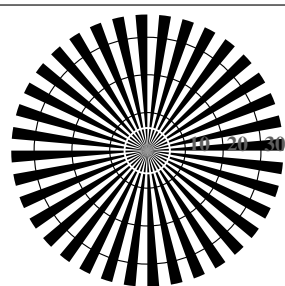
input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-2:  $g_P=1.0$ ;  $g_N=1.42$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

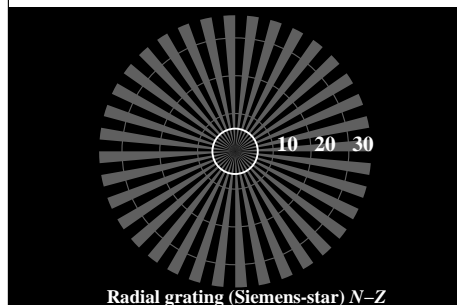
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



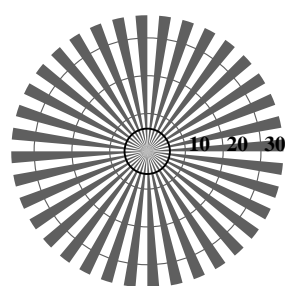
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

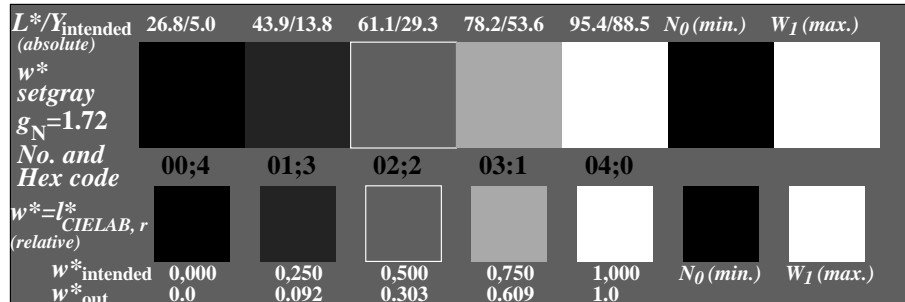


Radial grating (Siemens-star) N-Z

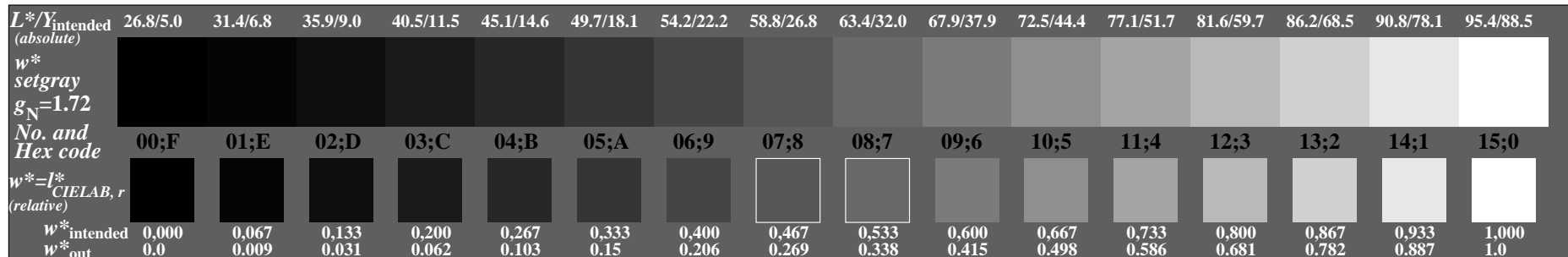


Radial grating (Siemens-star) W-Z

OE640-3N, Picture A1-114-3: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^*$  setgray

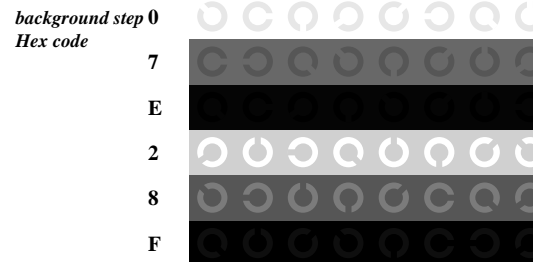


OE640-5N, Picture A2-114-3: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $w^*$  setgray



OE640-7N, Picture A3-114-3: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*$  setgray

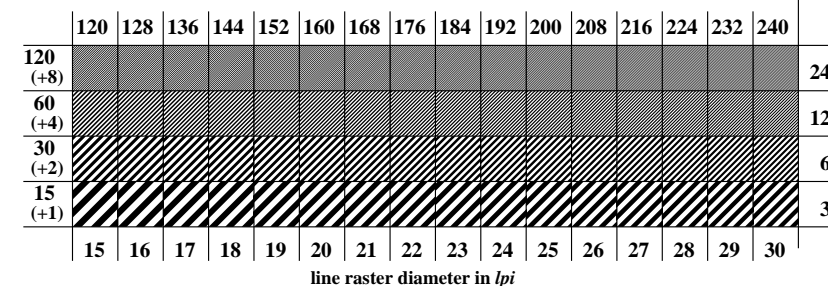
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:5$ ;  $Y_N$  range 3,75 to <7,5



Landolt-rings W-N

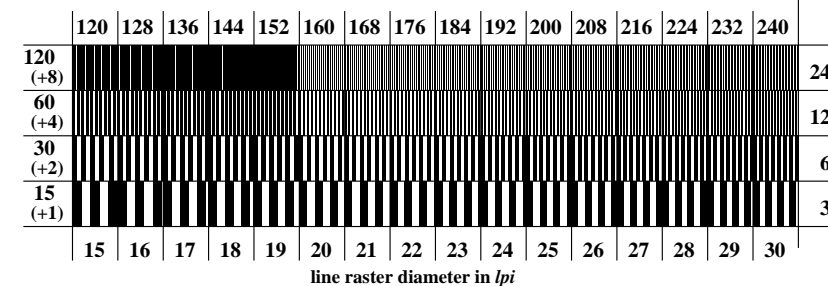
code: background-ring

OE641-1N, Picture A4-114-3: Landolt-rings W-N; PS operator:  $w^*$  setgray



line raster diameter in lpi

OE641-3N, Picture A5-114-3: Line raster under 45° (or 135°); PS operator:  $w^*$  setgray



line raster diameter in lpi

OE641-5N, Picture A6-114-3: Line raster under 90° (or 0°); PS operator:  $w^*$  setgray

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-3:  $g_P=1.0$ ;  $g_N=1.42$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta



<b>Test for the best visual linearized output of Picture A7-114-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-114-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-114-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-114-0</b>		
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 OE640-3N-1132-4

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

**PDF-File:** http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF underline Yes/No

**PS-File:** http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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

OE640-7N-114-4

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:5$ ;  $Y_N$  range 3,75 to <7,5  
output 130-4:  $g_P=1.0$ ;  $g_N=1.42$

<b>Test for the best visual linearized output of Picture A7-114-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-114-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-114-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-114-0</b>		
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 OE641-3N-114-4

**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/OE64/OE64F1P2.PDF

**PS file:** http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS

**Picture A7-114-2: 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/OE64/OE64F1P2.PDF

**picture A7-114-2**

underline Yes/No

**PS-File:** http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS

**picture A7-114-2**

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

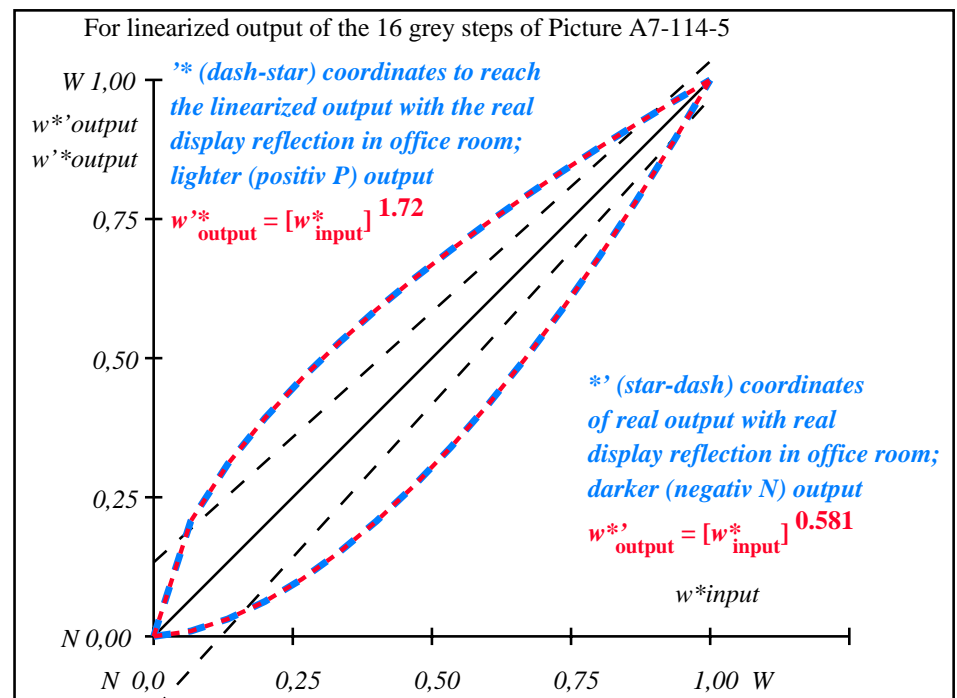
Part 4

OE641-7N-114-4

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	26.85	0.0	0.0
2	31.42	0.0	0.01	27.5	0.0	-3.91
3	35.99	0.0	0.03	28.99	0.0	-6.99
4	40.56	0.0	0.06	31.15	0.0	-9.4
5	45.13	0.0	0.1	33.91	0.0	-11.21
6	49.7	0.0	0.15	37.21	0.0	-12.48
7	54.27	0.0	0.21	41.03	0.0	-13.24
8	58.84	0.0	0.27	45.33	0.0	-13.5
9	63.41	0.0	0.34	50.1	0.0	-13.3
10	67.99	0.0	0.42	55.33	0.0	-12.65
11	72.56	0.0	0.5	60.98	0.0	-11.56
12	77.13	0.0	0.59	67.06	0.0	-10.05
13	81.7	0.0	0.68	73.56	0.0	-8.13
14	86.27	0.0	0.78	80.45	0.0	-5.81
15	90.84	0.0	0.89	87.74	0.0	-3.09
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	0.09	33.17	0.0	-10.81
19	61.13	0.0	0.3	47.66	0.0	-13.46
20	78.27	0.0	0.61	68.65	0.0	-9.61
21	95.41	0.0	1.0	95.41	0.0	0.0
Mean lightness difference (16 steps)					ΔE* <sub>CIELAB</sub> = 8.5	
Mean lightness difference (5 steps)					ΔE* <sub>CIELAB</sub> = 6.8	
Mean colour reproduction index:					R* <sub>ab,m</sub> = 63	

OE640-3N-114-5: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-114-5: 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
$w^{*}$ setgray																
$g_N=1.72$ 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)																
$w^{*}_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^{*}_{\text{out}}$	0.0	0.01	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

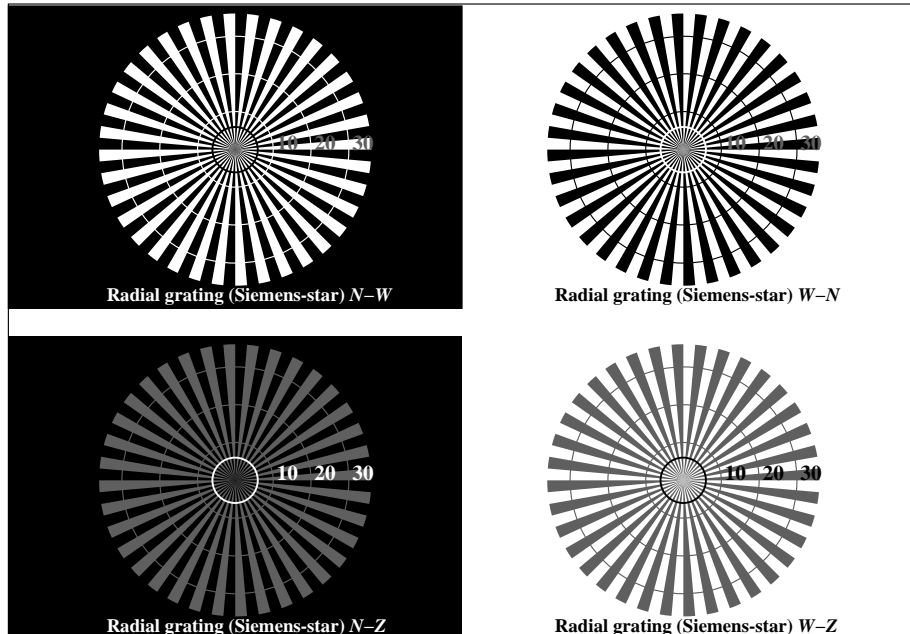
OE640-7N, Picture A7-114-5: 16 visual equidistant  $L^{*}$ -grey steps; PS operator:  $w^{*}$  setgray

OE64: 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

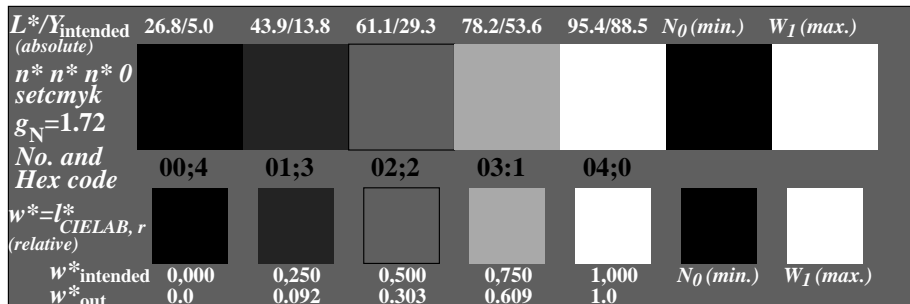
input: all ( $\rightarrow$ rgb\*<sub>de</sub>) setrgbcolor  
output 130-5:  $g_P=1.0$ ;  $g_N=1.42$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

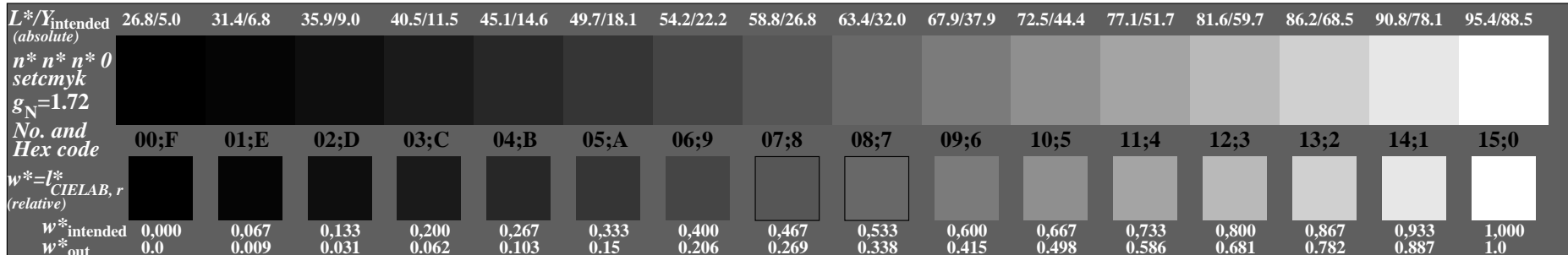
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



OE640-3N, Picture A1-124-6: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $n^*n^*n^*0$  setcmykcolor



OE640-5N, Picture A2-124-6: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $n^*n^*n^*0$  setcmykcolor



OE640-7N, Picture A3-124-6: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^*n^*n^*0$  setcmykcolor

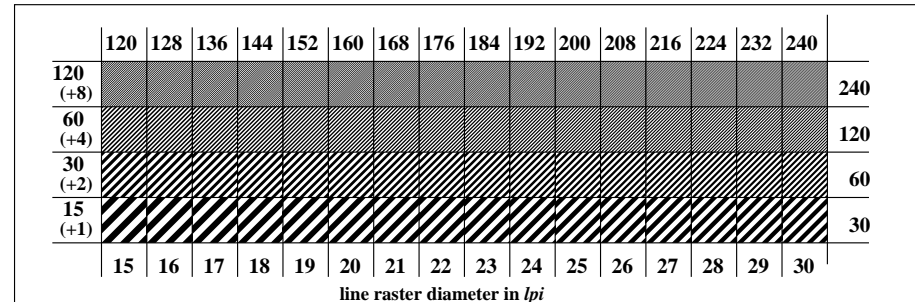
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:5$ ;  $Y_N$  range 3,75 to <7,5

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

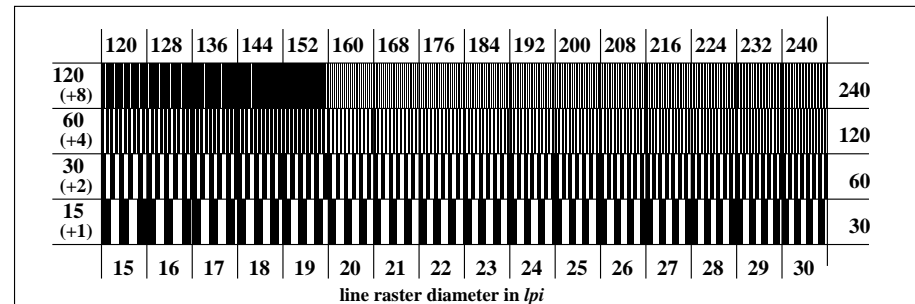
code: background-ring

OE641-1N, Picture A4-124-6: Landolt-rings W-N; PS operator:  $n^*n^*n^*0$  setcmykcolor



line raster diameter in lpi

OE641-3N, Picture A5-124-6: Line raster under 45° (or 135°); PS operator:  $n^*n^*n^*0$  setcmykcolor



line raster diameter in lpi

OE641-5N, Picture A6-124-6: Line raster under 90° (or 0°); PS operator:  $n^*n^*n^*0$  setcmykcolor

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-6:  $g_P=1.0$ ;  $g_N=1.42$

TUB registration: 20110801-OE64/OE64L0NA.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 A7-124-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-124-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-124-0</b>		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-124-0</b>		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		.... Steps

Part 1

OE640-3N-1232-7

Documentation of file format, hardware and software for this test:	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF">http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF</a>	<u>underline</u> Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS">http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS</a>	<u>or underline</u> Yes/No
<b>Used computer operating system:</b> either one of Windows/Mac/Unix/other and version:.....	
<b>This evaluation is for the device output:</b> <u>underline</u> monitor/data projector/printer	
Device model, driver and version:.....	
<b>Device output with PDF/PS-file:</b>	<u>underline</u> PDF/PS-file
<b>For device output with PDF-file OE64L0NP.PDF:</b> 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:.....	
<b>For device output with PS-file OE64L0NA.PS:</b> 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

OE640-7N-124-7

Test for the best visual linearized output of Picture A7-124-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-124-0</b>		
N-W-radial grating:	Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?	Yes/No
	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
<b>Test of the radial grating under 45° according to picture A5-124-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	
<b>Test of the radial grating under 90° according to picture A6-124-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	

Part 2

OE641-3N-124-7

Documentation of assessor colour vision properties for visual assessment	
The assessor has <b>normal</b> colour vision according to one test:	
either according to DIN 6160:1996 with Anomaloskop of Nagel	<u>underline</u> Yes/No
or with test charts using colour points according to Ishihara	<u>underline</u> Yes/unknown
or tested with, please specify: .....	<u>underline</u> Yes/unknown
<b>For visual evaluation of the display (monitor, data projector) output</b>	
Office workplace illumination is daylight (clouded/north sky)	<u>underline</u> Yes/No
<b>PDF file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	<u>underline</u> Yes/No
<b>PS file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	<u>underline</u> Yes/No
<b>Picture A7-124-2: contrast range:</b> (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)	<u>underline</u> range
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)	
<b>Only for optional colorimetric specification with PDF/PS file output</b>	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	<u>underline</u> Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	<u>or underline</u> Yes/No
<b>colour measurement and specification for:</b> CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: <u>underline</u> Yes/No If No, please give other parameters: .....	
<b>Colorimetric specification with PS file for colours in the columns A to T</b> Exchange of CIELAB data in file <a href="http://www.ps.bam.de/De17/10L/L17e00NP.PS">www.ps.bam.de/De17/10L/L17e00NP.PS</a> 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 4

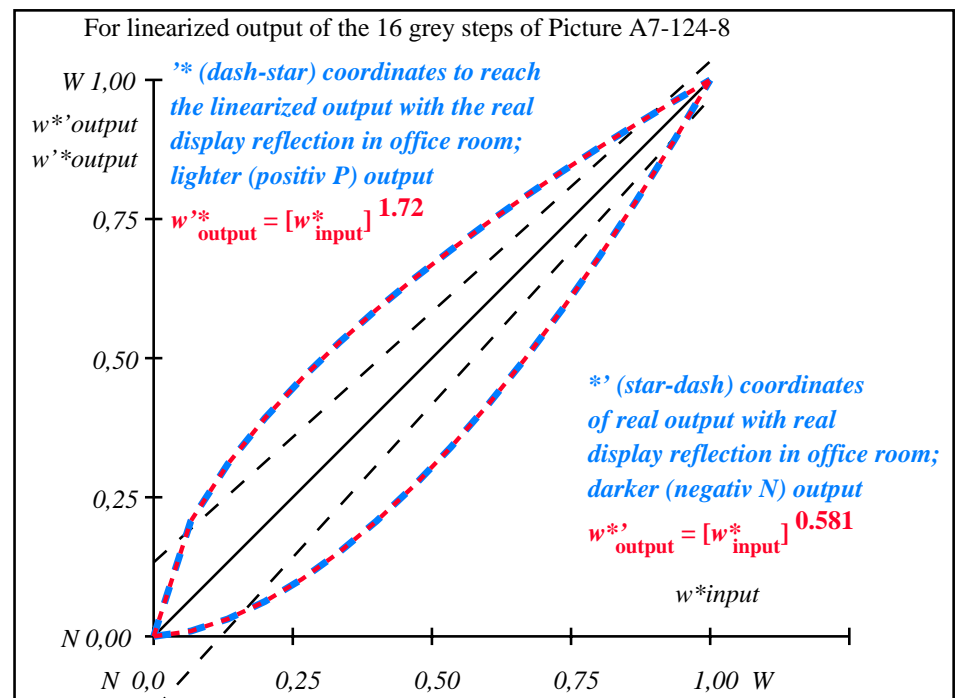
OE641-7N-124-7



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	0.0
2	31.42	0.0	0.01	27.5	0.0	-3.91
3	35.99	0.0	0.03	28.99	0.0	-6.99
4	40.56	0.0	0.06	31.15	0.0	-9.4
5	45.13	0.0	0.1	33.91	0.0	-11.21
6	49.7	0.0	0.15	37.21	0.0	-12.48
7	54.27	0.0	0.21	41.03	0.0	-13.24
8	58.84	0.0	0.27	45.33	0.0	-13.5
9	63.41	0.0	0.34	50.1	0.0	-13.3
10	67.99	0.0	0.42	55.33	0.0	-12.65
11	72.56	0.0	0.5	60.98	0.0	-11.56
12	77.13	0.0	0.59	67.06	0.0	-10.05
13	81.7	0.0	0.68	73.56	0.0	-8.13
14	86.27	0.0	0.78	80.45	0.0	-5.81
15	90.84	0.0	0.89	87.74	0.0	-3.09
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	0.09	33.17	0.0	-10.81
19	61.13	0.0	0.3	47.66	0.0	-13.46
20	78.27	0.0	0.61	68.65	0.0	-9.61
21	95.41	0.0	1.0	95.41	0.0	0.0
Mean lightness difference (16 steps)						ΔE* <sub>CIELAB</sub> = 8.5
Mean lightness difference (5 steps)						ΔE* <sub>CIELAB</sub> = 6.8
Mean colour reproduction index:						R* <sub>ab,m</sub> = 63

OE640-3N-124-8: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-124-8: File: Measure unknown; Device: Device unknown; Date: Date unknown

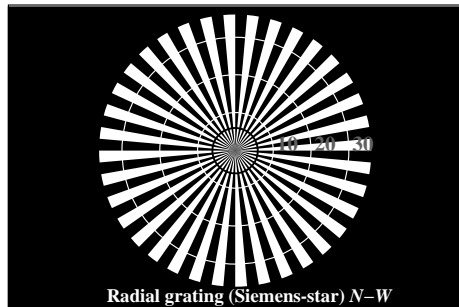
$L^*/Y_{\text{intended}}$ (absolute)	26.8/5.0	31.4/6.8	36.0/9.0	40.6/11.6	45.1/14.6	49.7/18.2	54.3/22.2	58.8/26.9	63.4/32.1	68.0/38.0	72.6/44.5	77.1/51.7	81.7/59.7	86.3/68.5	90.8/78.1	95.4/88.6
$n^* n^* n^* 0$ setcmyk $g_N=1.72$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^* = [L^*_{\text{CIELAB}, r}]$ (relative)	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{out}}$	0.0	0.01	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

OE640-7N, Picture A7-124-8: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^* n^* n^* 0$  setcmykcolor

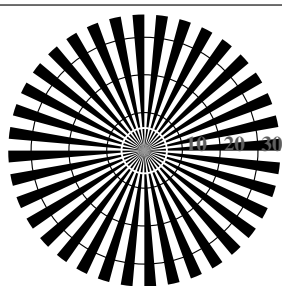
OE64: In-output relation according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:5$ ;  $Y_N$  range 3,75 to <7,5

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-8:  $g_P=1.0$ ;  $g_N=1.42$

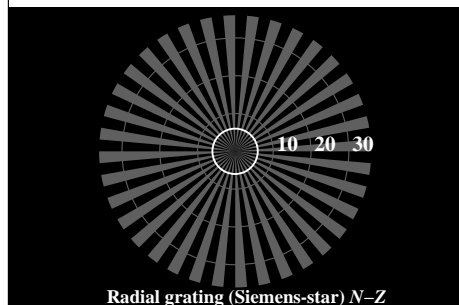
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



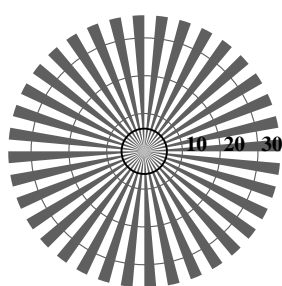
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

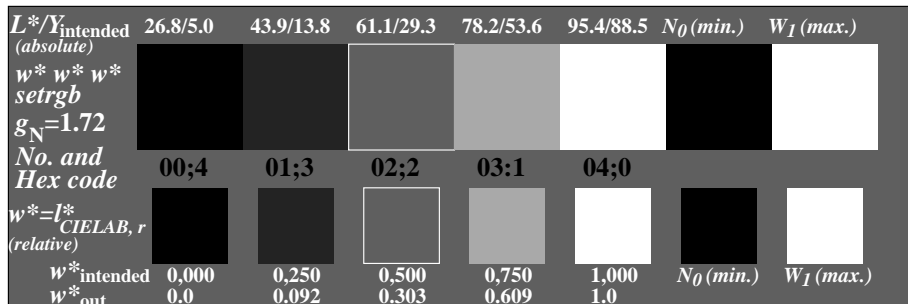


Radial grating (Siemens-star) N-Z

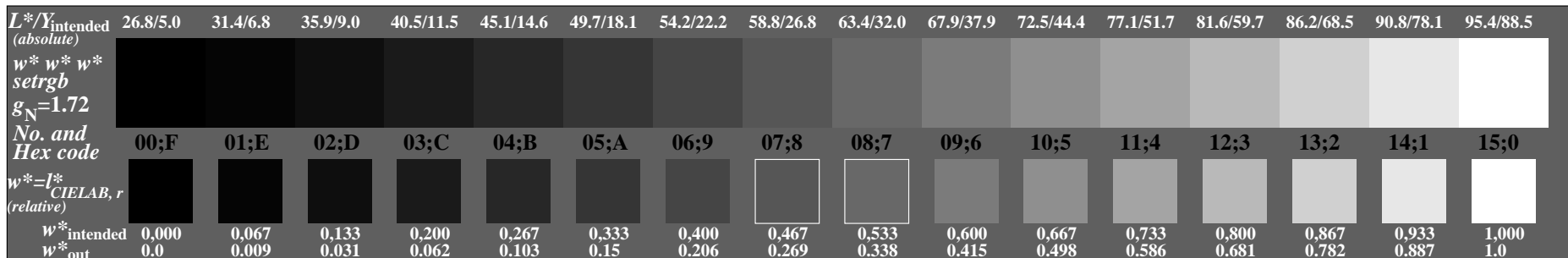


Radial grating (Siemens-star) W-Z

OE640-3N, Picture A1-134-9: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^*w^*w^*$  setrgbcolor



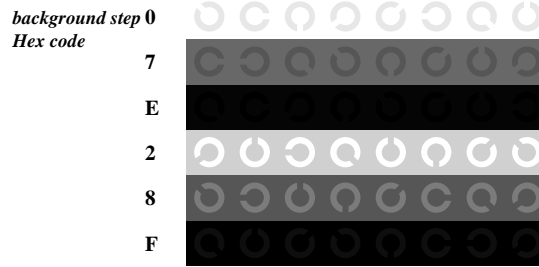
OE640-5N, Picture A2-134-9: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $w^*w^*w^*$  setrgbcolor



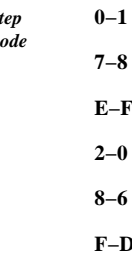
OE640-7N, Picture A3-134-9: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*w^*w^*$  setrgbcolor

OE64: 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: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-9:  $g_P=1.0$ ;  $g_N=1.42$

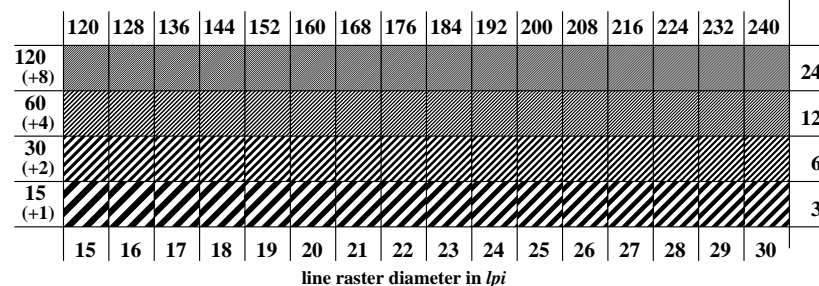


Landolt-rings W-N



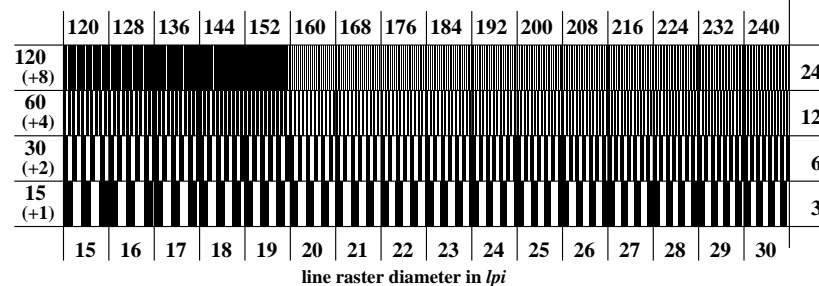
code: background-ring

OE641-1N, Picture A4-134-9: Landolt-rings W-N; PS operator:  $w^*w^*w^*$  setrgbcolor



line raster diameter in lpi

OE641-3N, Picture A5-134-9: Line raster under 45° (or 135°); PS operator:  $w^*w^*w^*$  setrgbcolor



line raster diameter in lpi

OE641-5N, Picture A6-134-9: Line raster under 90° (or 0°); PS operator:  $w^*w^*w^*$  setrgbcolor

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

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

Part 1 OE640-3N-1332-10

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> **underline Yes/No**

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-134-10

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:5$ ;  $Y_N$  range 3,75 to <7,5  
output 130-10:  $g_P=1.0$ ;  $g_N=1.42$

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

Part 2 OE641-3N-134-10

**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/OE64/OE64F1P2.PDF>

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.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/OE64/OE64F1P2.PDF>

**picture A7-134-2**

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

**picture A7-134-2**

**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](http://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**

**underline Yes/No**

**underline Yes/No**

**underline Yes/No**

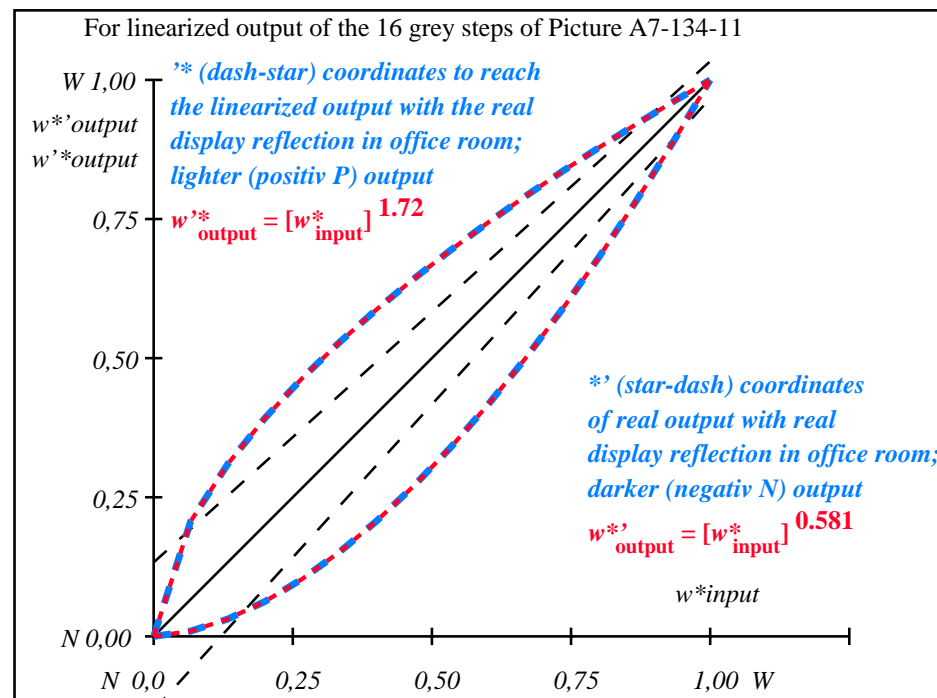
**underline Yes/No**

OE641-7N-134-10

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	0.0	0.01
2	31.42	0.0	0.01	27.5	0.0	0.0
3	35.99	0.0	0.03	28.99	0.0	0.0
4	40.56	0.0	0.06	31.15	0.0	0.0
5	45.13	0.0	0.1	33.91	0.0	0.0
6	49.7	0.0	0.15	37.21	0.0	0.0
7	54.27	0.0	0.21	41.03	0.0	0.0
8	58.84	0.0	0.27	45.33	0.0	0.0
9	63.41	0.0	0.34	50.1	0.0	0.0
10	67.99	0.0	0.42	55.33	0.0	0.0
11	72.56	0.0	0.5	60.98	0.0	0.0
12	77.13	0.0	0.59	67.06	0.0	0.0
13	81.7	0.0	0.68	73.56	0.0	0.0
14	86.27	0.0	0.78	80.45	0.0	0.0
15	90.84	0.0	0.89	87.74	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	0.09	33.17	0.0	0.0
19	61.13	0.0	0.3	47.66	0.0	0.0
20	78.27	0.0	0.61	68.65	0.0	0.0
21	95.41	0.0	1.0	95.41	0.0	0.0
Mean lightness difference (16 steps)						ΔE* <sub>CIELAB</sub> = 8.5
Mean lightness difference (5 steps)						ΔE* <sub>CIELAB</sub> = 6.8
Mean colour reproduction index:						R* <sub>ab,m</sub> = 63

OE640-3N-134-11: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-134-11: File: Measure unknown; Device: Device unknown; Date: Date unknown

$L^*/Y^*_{intended}$ (absolute)	26.8/5.0	31.4/6.8	36.0/9.0	40.6/11.6	45.1/14.6	49.7/18.2	54.3/22.2	58.8/26.9	63.4/32.1	68.0/38.0	72.6/44.5	77.1/51.7	81.7/59.7	86.3/68.5	90.8/78.1	95.4/88.6
$w^* w^* w^*$ setrgb $g_N=1.72$ 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
$w^* = [L^*_{CIELAB, r}]$ (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	0.01	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

OE640-7N, Picture A7-134-11: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*$  setrgbcolor

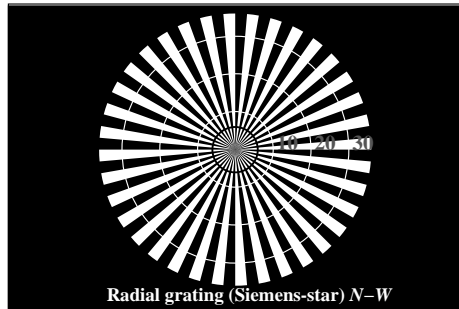
OE64: In-output relation according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:5$ ;  $Y_N$  range 3,75 to <7,5

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-11:  $g_P=1.0$ ;  $g_N=1.42$

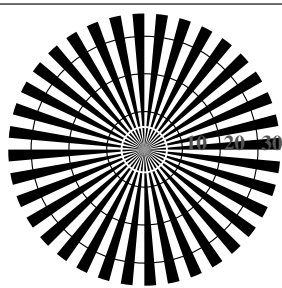
TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=th4ta



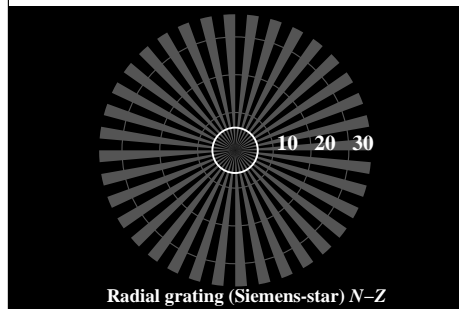
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



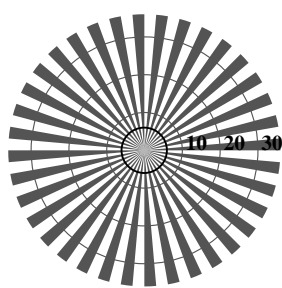
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

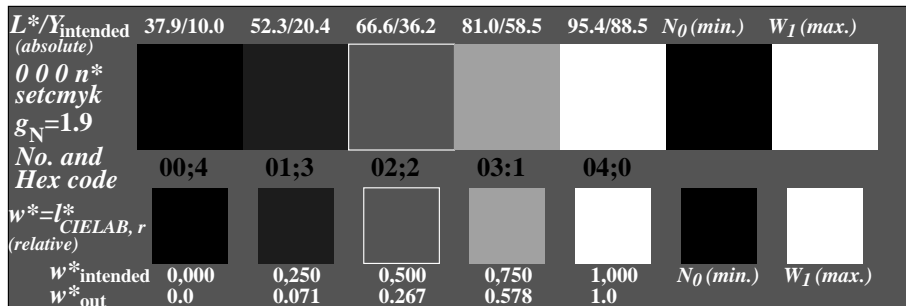


Radial grating (Siemens-star) N-Z

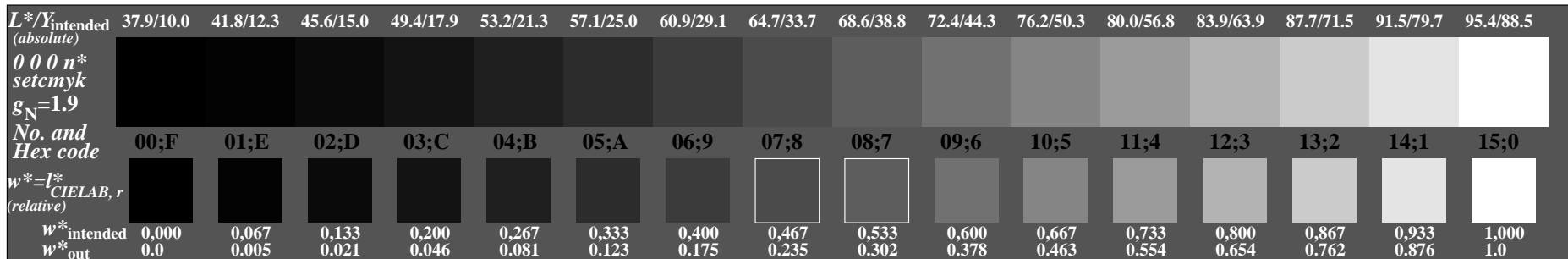


Radial grating (Siemens-star) W-Z

OE640-3N, Picture A1-105-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: 0 0 0 n\* setcmykcolor



OE640-5N, Picture A2-105-0: 5 equidistant  $L^*$ -grey steps+N0+W1; PS operator: 0 0 0 n\* setcmykcolor



OE640-7N, Picture A3-105-0: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

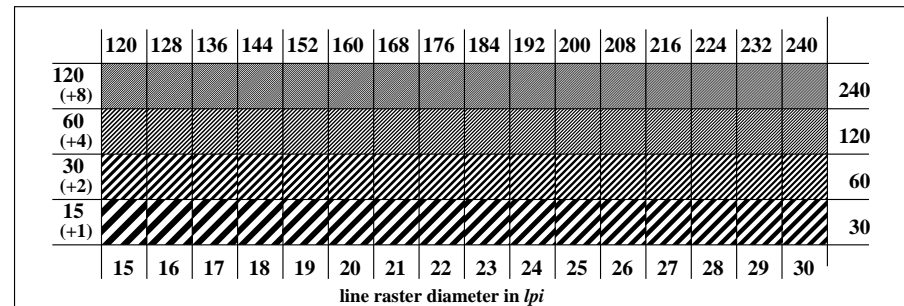
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:10$ ;  $Y_N$  range 7,5 to <15

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

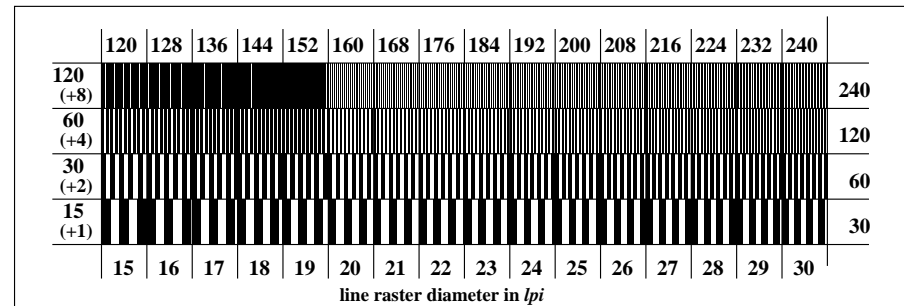
code: background-ring

OE641-1N, Picture A4-105-0: Landolt-rings W-N; PS operator: 0 0 0 n\* setcmykcolor



line raster diameter in lpi

OE641-3N, Picture A5-105-0: Line raster under 45° (or 135°); PS operator: 0 0 0 n\* setcmykcolor



line raster diameter in lpi

OE641-5N, Picture A6-105-0: Line raster under 90° (or 0°); PS operator: 0 0 0 n\* setcmykcolor

input: all (->rgb\*<sub>de</sub>) setrgbcolor  
output 130-0:  $g_P=1.0$ ;  $g_N=1.6$

TUB registration: 20110801-OE64/OE64L0NA.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 A7-105-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-105-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-105-0</b>		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-105-0</b>		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		.... Steps

Part 1

OE640-3N-1040-1

Documentation of file format, hardware and software for this test:	
<b>PDF-File:</b>	<a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF">http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF</a> underline Yes/No
<b>PS-File:</b>	<a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS">http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS</a> or underline Yes/No
<b>Used computer operating system:</b> either one of Windows/Mac/Unix/other and version:.....	
<b>This evaluation is for the device output:</b> underline monitor/data projector/printer	
Device model, driver and version:.....	
<b>Device output with PDF/PS-file:</b> underline PDF/PS-file	
<b>For device output with PDF-file OE64L0NP.PDF:</b> 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:.....	
<b>For device output with PS-file OE64L0NA.PS:</b> 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

OE640-7N-105-1

Test for the best visual linearized output of Picture A7-105-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-105-0</b>		
N-W-radial grating:	Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?	Yes/No
	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
<b>Test of the radial grating under 45° according to picture A5-105-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):		from 15 lpi:
<b>Test of the radial grating under 90° according to picture A6-105-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):		from 15 lpi:

Part 2

OE641-3N-105-1

Documentation of assessor colour vision properties for visual assessment	
The assessor has <b>normal</b> 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	
<b>PDF file:</b>	<a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a> underline Yes/No
<b>PS file:</b>	<a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a> underline Yes/No
<b>Picture A7-105-2: contrast range:</b> (>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	
<b>PDF-File:</b>	<a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a> underline Yes/No
<b>PS-File:</b>	<a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a> or underline Yes/No
<b>colour measurement and specification for:</b> 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 <a href="http://www.ps.bam.de/De17/10L/L17e00NP.PS">www.ps.bam.de/De17/10L/L17e00NP.PS</a> and transfer of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF underline Yes/No	
If No, please describe other method: .....	

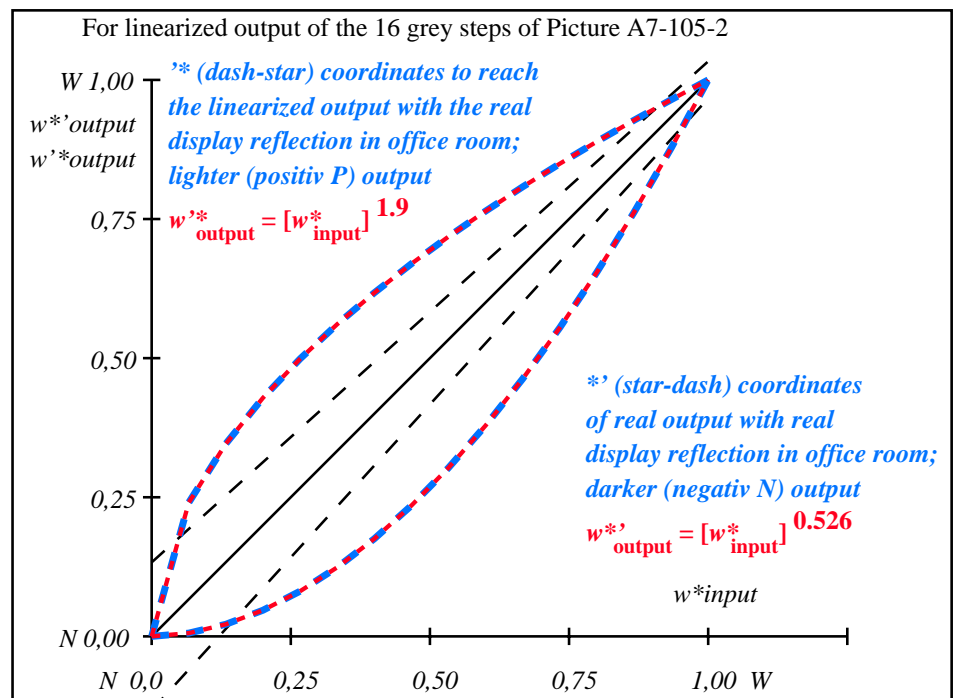
Part 4

OE641-7N-105-1

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	38.32	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* <sub>CIELAB</sub> = 8.3	
Mean lightness difference (5 steps)					ΔE* <sub>CIELAB</sub> = 6.7	
Mean colour reproduction index:					R* <sub>ab,m</sub> = 64	

OE640-3N-105-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-105-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

L*/Y <sub>intended</sub> (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
0 0 0 n* setcmyk g <sub>N</sub> =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*=[*] 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

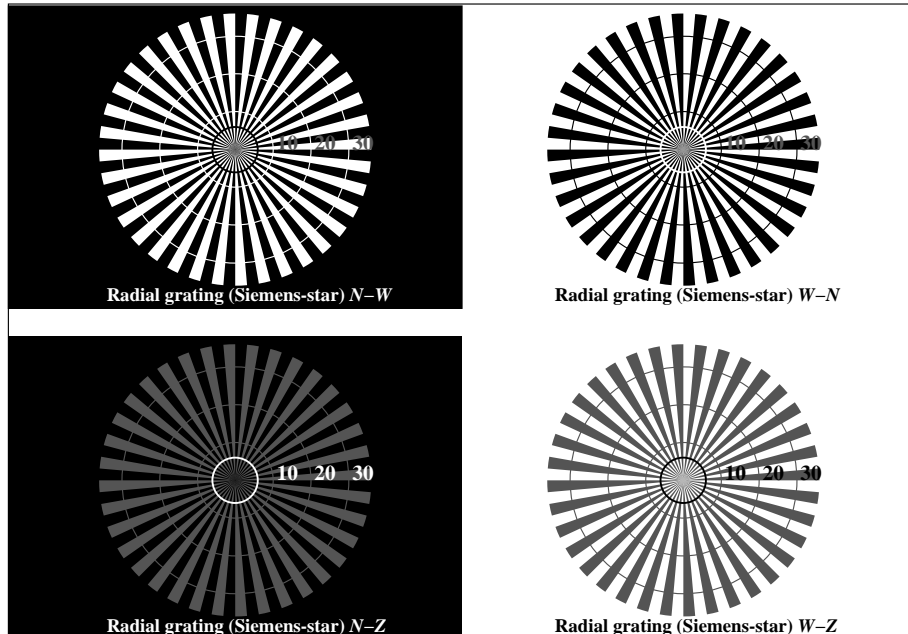
OE640-7N, Picture A7-105-2: 16 visual equidistant L\*-grey steps; PS operator: 0 0 0 n\* setcmycolor

OE64: In-output relation according to ISO 9241-306; 1MR, DEH  
Viewing Y contrast Y<sub>W</sub>:Y<sub>N</sub>=88,9:10; Y<sub>N</sub> range 7,5 to <15

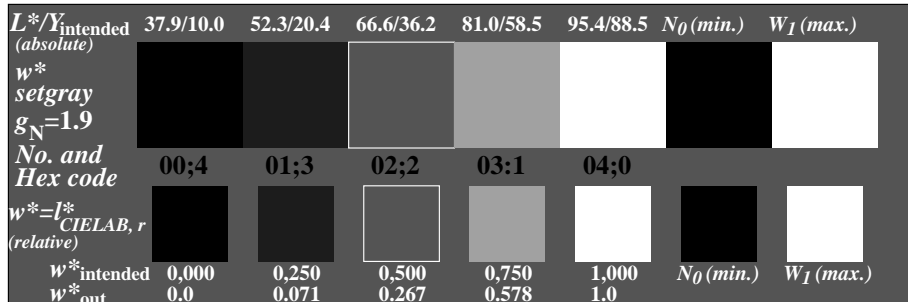
input: all (->rgb\*<sub>de</sub>) setrgbcolor  
output 130-2: g<sub>P</sub>=1.0; g<sub>N</sub>=1.6

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

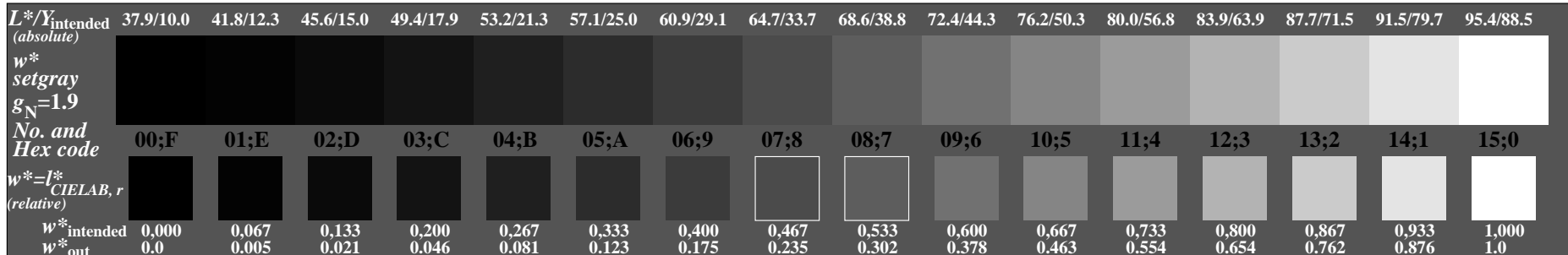
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



OE640-3N, Picture A1-115-3: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^*$  setgray

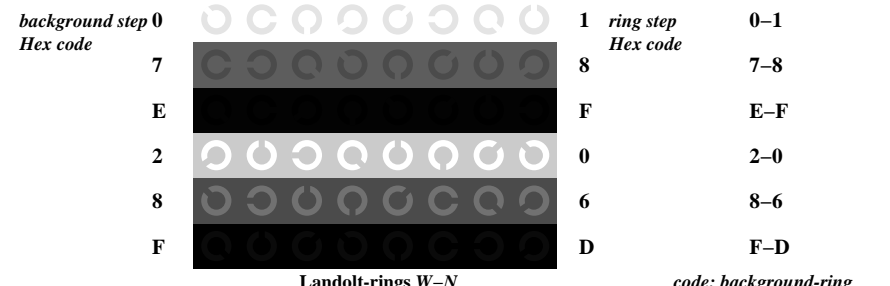


OE640-5N, Picture A2-115-3: 5 equidistant  $L^*$ -gray steps+N0+W1; PS operator:  $w^*$  setgray

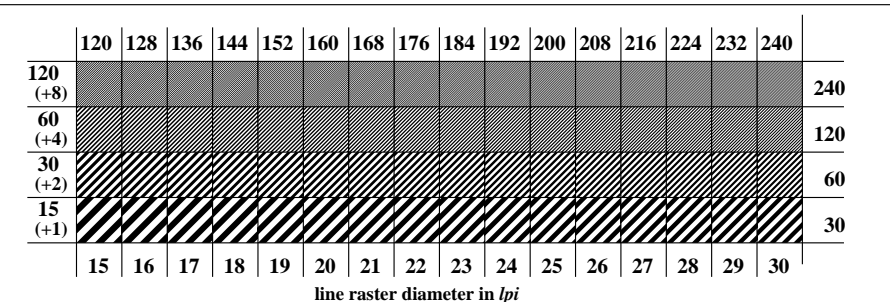


OE640-7N, Picture A3-115-3: 16 visual equidistant  $L^*$ -gray steps; PS operator:  $w^*$  setgray

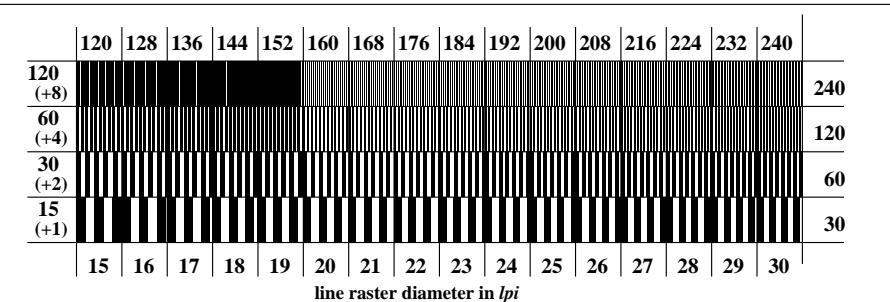
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:10$ ;  $Y_N$  range 7,5 to <15



OE641-1N, Picture A4-115-3: Landolt-rings W-N; PS operator:  $w^*$  setgray



OE641-3N, Picture A5-115-3: Line raster under 45° (or 135°); PS operator:  $w^*$  setgray



OE641-5N, Picture A6-115-3: Line raster under 90° (or 0°); PS operator:  $w^*$  setgray

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-3:  $g_P=1.0$ ;  $g_N=1.6$

TUB registration: 20110801-OE64/OE64L0NA.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 A7-115-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-115-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-115-0</b>		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-115-0</b>		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		.... Steps

Part 1

OE640-3N-1140-4

Documentation of file format, hardware and software for this test:	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF">http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF</a>	<u>underline</u> Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS">http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS</a>	or <u>underline</u> Yes/No
<b>Used computer operating system:</b> either one of Windows/Mac/Unix/other and version:.....	
<b>This evaluation is for the device output:</b> <u>underline</u> monitor/data projector/printer	
Device model, driver and version:.....	
<b>Device output with PDF/PS-file:</b>	<u>underline</u> PDF/PS-file
<b>For device output with PDF-file OE64L0NP.PDF:</b> 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:.....	
<b>For device output with PS-file OE64L0NA.PS:</b> 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

OE640-7N-115-4

Test for the best visual linearized output of Picture A7-115-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-115-0</b>		
N-W-radial grating:	Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?	Yes/No
	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
<b>Test of the radial grating under 45° according to picture A5-115-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	
<b>Test of the radial grating under 90° according to picture A6-115-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	

Part 2

OE641-3N-115-4

Documentation of assessor colour vision properties for visual assessment	
The assessor has <b>normal</b> colour vision according to one test:	
either according to DIN 6160:1996 with Anomaloskop of Nagel	<u>underline</u> Yes/No
or with test charts using colour points according to Ishihara	<u>underline</u> Yes/unknown
or tested with, please specify: .....	<u>underline</u> Yes/unknown
<b>For visual evaluation of the display (monitor, data projector) output</b>	
Office workplace illumination is daylight (clouded/north sky)	<u>underline</u> Yes/No
<b>PDF file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	<u>underline</u> Yes/No
<b>PS file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	<u>underline</u> Yes/No
<b>Picture A7-115-2: contrast range:</b> (>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 <u>underline</u> range
<i>Remark: In daylighted offices the contrast range is in many cases: on display between: &gt;F:0 and E:0 (monitor), D:0 and 3:0 (data projector)</i>	
<b>Only for optional colorimetric specification with PDF/PS file output</b>	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	<u>underline</u> Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	or <u>underline</u> Yes/No
<b>colour measurement and specification for:</b> CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: <u>underline</u> Yes/No If No, please give other parameters: .....	
<b>Colorimetric specification with PS file for colours in the columns A to T</b> Exchange of CIELAB data in file <a href="http://www.ps.bam.de/De17/10L/L17e00NP.PS">www.ps.bam.de/De17/10L/L17e00NP.PS</a> 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 4

OE641-7N-115-4

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:10$ ;  $Y_N$  range 7,5 to <15  
output 130-4:  $g_P=1.0$ ;  $g_N=1.6$

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

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

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	0.0	38.32	0.0	0.0
3	45.64	0.0	0.0	39.23	0.0	0.0
4	49.47	0.0	0.0	40.68	0.0	0.0
5	53.3	0.0	0.0	42.65	0.0	0.0
6	57.13	0.0	0.0	45.11	0.0	0.0
7	60.96	0.0	0.0	48.06	0.0	0.0
8	64.78	0.0	0.0	51.48	0.0	0.0
9	68.61	0.0	0.0	55.38	0.0	0.0
10	72.44	0.0	0.0	59.74	0.0	0.0
11	76.27	0.0	0.0	64.56	0.0	0.0
12	80.1	0.0	0.0	69.84	0.0	0.0
13	83.93	0.0	0.0	75.57	0.0	0.0
14	87.75	0.0	0.0	81.74	0.0	0.0
15	91.58	0.0	0.0	88.35	0.0	0.0
16	95.41	0.0	0.0	95.41	0.0	0.0
17	37.99	0.0	0.0	37.99	0.0	0.0
18	52.34	0.0	0.0	42.11	0.0	0.0
19	66.7	0.0	0.0	53.37	0.0	0.0
20	81.05	0.0	0.0	71.23	0.0	0.0
21	95.41	0.0	0.0	95.41	0.0	0.0

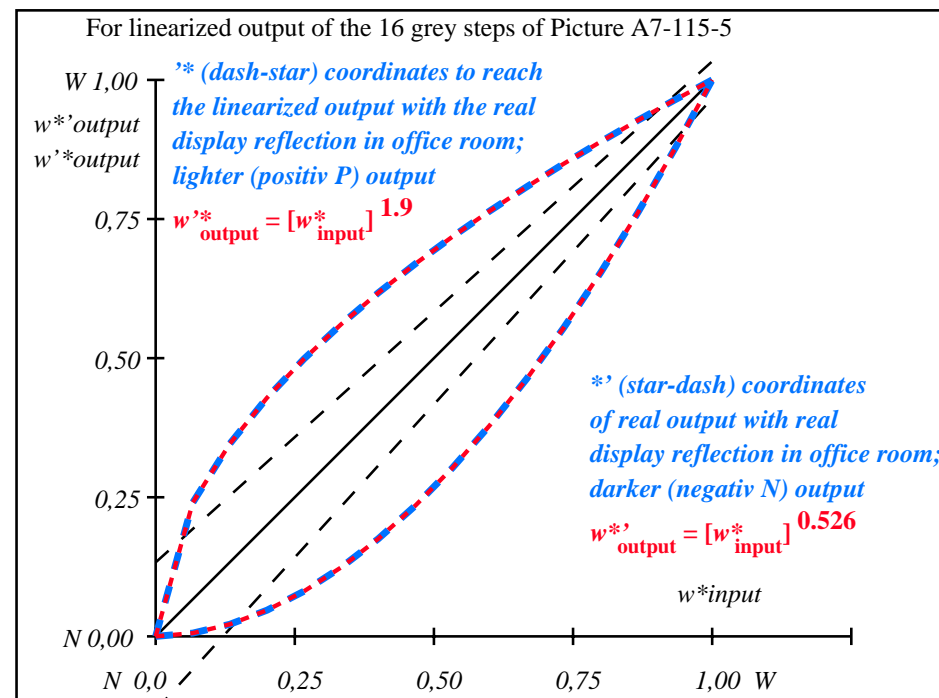
Specification according to  
ISO/IEC 15775 Annex G  
and DIN 33866-1 Annex G

Mean lightness difference (16 steps)  
 $\Delta E^*_{\text{CIELAB}} = 8.3$

Mean lightness difference (5 steps)  
 $\Delta E^*_{\text{CIELAB}} = 6.7$

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

OE640-3N-115-5: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-115-5: File: Measure unknown; Device: Device unknown; Date: Date unknown

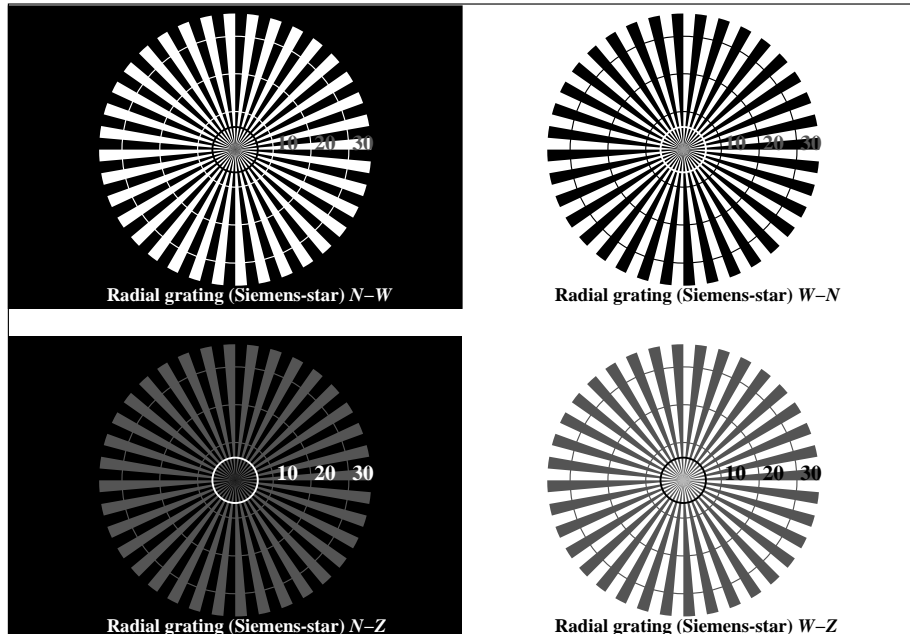
$L^*/Y^*_{\text{intended}}$ (absolute)	38.0/10.1	41.8/12.4	45.6/15.0	49.5/18.0	53.3/21.3	57.1/25.1	61.0/29.2	64.8/33.8	68.6/38.8	72.4/44.3	76.3/50.3	80.1/56.9	83.9/63.9	87.8/71.6	91.6/79.8	95.4/88.6
$w^*_{\text{setgray}}$ $g_N=1.9$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^* = [L^*_{\text{CIELAB}, r}]$ (relative)	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{out}}$	0.0	0.006	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

OE640-7N, Picture A7-115-5: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*_{\text{setgray}}$

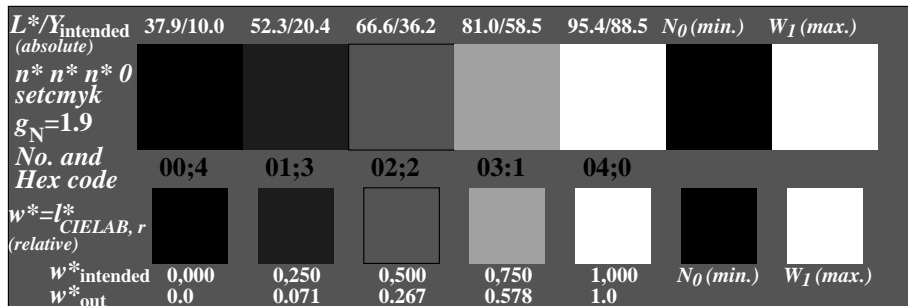
OE64: In-output relation according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:10$ ;  $Y_N$  range 7,5 to <15

input:  $all (->rgb^*_{\text{de}})$   $setrgbcolor$   
output 130-5:  $g_P=1.0$ ;  $g_N=1.6$

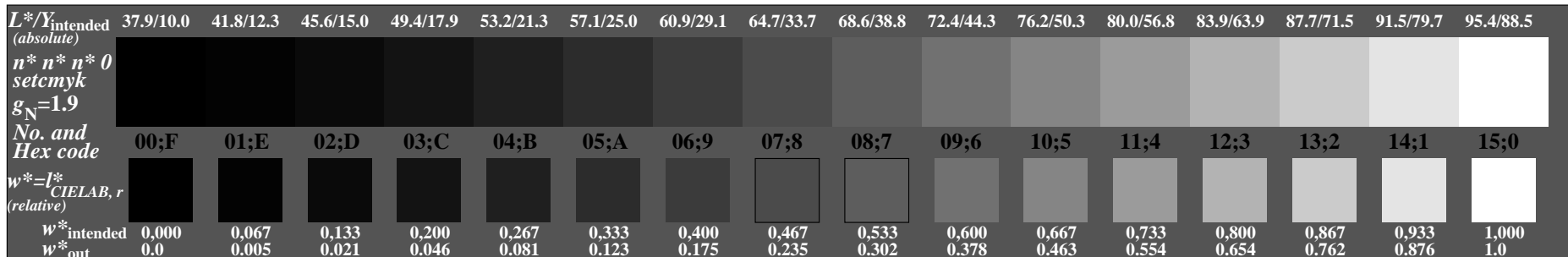
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIE LAB



OE640-3N, Picture A1-125-6: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $n^*n^*n^*0$  setcmykcolor



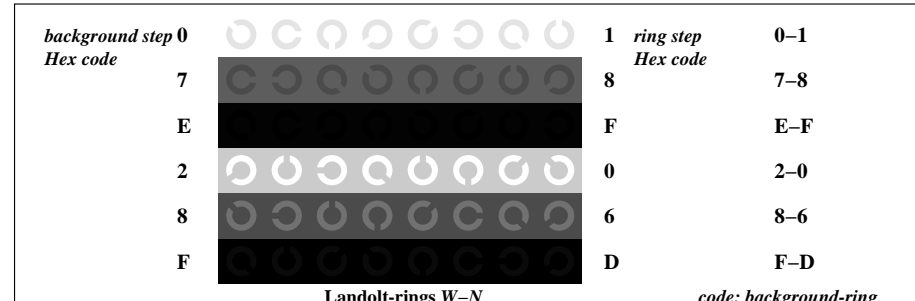
OE640-5N, Picture A2-125-6: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $n^*n^*n^*0$  setcmykcolor



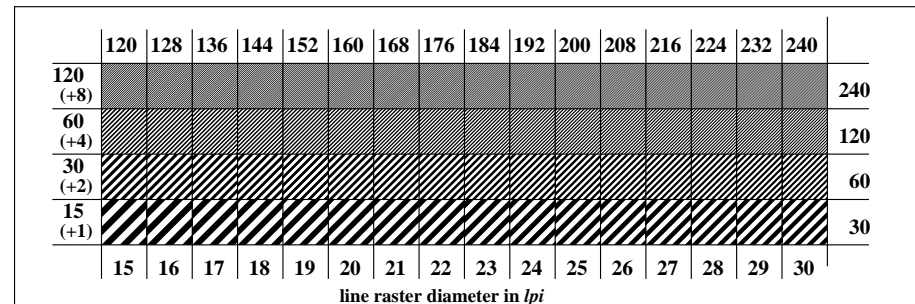
OE640-7N, Picture A3-125-6: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^*n^*n^*0$  setcmykcolor

OE64: 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

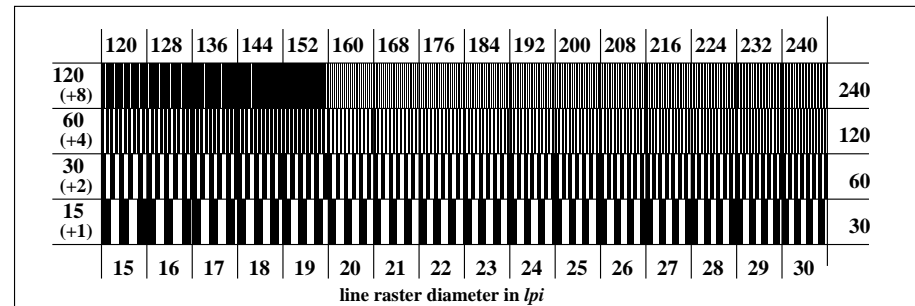
input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-6:  $g_P=1.0$ ;  $g_N=1.6$



OE641-1N, Picture A4-125-6: Landolt-rings W-N; PS operator:  $n^*n^*n^*0$  setcmykcolor



OE641-3N, Picture A5-125-6: Line raster under 45° (or 135°); PS operator:  $n^*n^*n^*0$  setcmykcolor



OE641-5N, Picture A6-125-6: Line raster under 90° (or 0°); PS operator:  $n^*n^*n^*0$  setcmykcolor

TUB registration: 20110801-OE64/OE64L0NA.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

Test for the best visual linearized output of Picture A7-125-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-125-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	Yes/No
	Test with magnifying glass (e.g. 6x)	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-125-0</b>		
Are the 5 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-125-0</b>		
Are the 16 steps on the upper rows distinguishable?		Yes/No
If No: How many steps can be distinguished?		.... Steps

Part 1

OE640-3N-1240-7

Documentation of file format, hardware and software for this test:	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF">http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF</a>	<u>underline</u> Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS">http://130.149.60.45/farbmetrik/OE64/OE64L0NA.PS</a>	<u>or underline</u> Yes/No
<b>Used computer operating system:</b> either one of Windows/Mac/Unix/other and version:.....	
<b>This evaluation is for the device output:</b> <u>underline</u> monitor/data projector/printer	
Device model, driver and version:.....	
<b>Device output with PDF/PS-file:</b>	<u>underline</u> PDF/PS-file
<b>For device output with PDF-file OE64L0NP.PDF:</b> 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:.....	
<b>For device output with PS-file OE64L0NA.PS:</b> 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

OE640-7N-125-7

Test for the best visual linearized output of Picture A7-125-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-125-0</b>		
N-W-radial grating:	Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?	Yes/No
	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
<b>Test of the radial grating under 45° according to picture A5-125-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	
<b>Test of the radial grating under 90° according to picture A6-125-0</b>		
Can equally spaced lines be seen?		Yes/No
Visual testing: for radial diameter from 15 to 60 lpi		to ..... lpi
Test with a magnifying glass (e.g. 6x):	- from 15 lpi:	

Part 2

OE641-3N-125-7

Documentation of assessor colour vision properties for visual assessment	
The assessor has <b>normal</b> colour vision according to one test:	
either according to DIN 6160:1996 with Anomaloskop of Nagel	<u>underline</u> Yes/No
or with test charts using colour points according to Ishihara	<u>underline</u> Yes/unknown
or tested with, please specify: .....	<u>underline</u> Yes/unknown
<b>For visual evaluation of the display (monitor, data projector) output</b>	
Office workplace illumination is daylight (clouded/north sky)	<u>underline</u> Yes/No
<b>PDF file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	<u>underline</u> Yes/No
<b>PS file:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	<u>underline</u> Yes/No
<b>Picture A7-125-2: contrast range:</b> (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)	<u>underline</u> range
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)	
<b>Only for optional colorimetric specification with PDF/PS file output</b>	
<b>PDF-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF</a>	<u>underline</u> Yes/No
<b>PS-File:</b> <a href="http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS">http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS</a>	<u>or underline</u> Yes/No
<b>colour measurement and specification for:</b> CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: <u>underline</u> Yes/No If No, please give other parameters: .....	
<b>Colorimetric specification with PS file for colours in the columns A to T</b> Exchange of CIELAB data in file <a href="http://www.ps.bam.de/De17/10L/L17e00NP.PS">www.ps.bam.de/De17/10L/L17e00NP.PS</a> 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 4

OE641-7N-125-7

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:10$ ;  $Y_N$  range 7,5 to <15  
output 130-7:  $g_P=1.0$ ;  $g_N=1.6$

TUB registration: 20110801-OE64/OE64L0NA.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

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	0.0	38.32	0.0	0.0
3	45.64	0.0	0.0	39.23	0.0	0.0
4	49.47	0.0	0.0	40.68	0.0	0.0
5	53.3	0.0	0.0	42.65	0.0	0.0
6	57.13	0.0	0.0	45.11	0.0	0.0
7	60.96	0.0	0.0	48.06	0.0	0.0
8	64.78	0.0	0.0	51.48	0.0	0.0
9	68.61	0.0	0.0	55.38	0.0	0.0
10	72.44	0.0	0.0	59.74	0.0	0.0
11	76.27	0.0	0.0	64.56	0.0	0.0
12	80.1	0.0	0.0	69.84	0.0	0.0
13	83.93	0.0	0.0	75.57	0.0	0.0
14	87.75	0.0	0.0	81.74	0.0	0.0
15	91.58	0.0	0.0	88.35	0.0	0.0
16	95.41	0.0	0.0	95.41	0.0	0.0
17	37.99	0.0	0.0	37.99	0.0	0.0
18	52.34	0.0	0.0	42.11	0.0	0.0
19	66.7	0.0	0.0	53.37	0.0	0.0
20	81.05	0.0	0.0	71.23	0.0	0.0
21	95.41	0.0	0.0	95.41	0.0	0.0

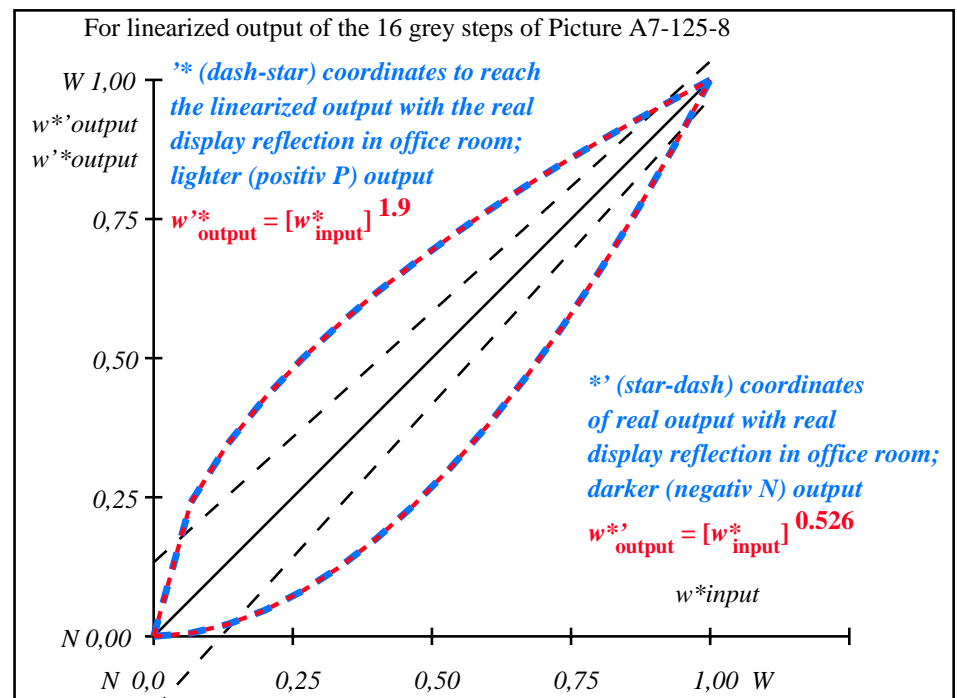
Specification according to  
ISO/IEC 15775 Annex G  
and DIN 33866-1 Annex G

Mean lightness difference (16 steps)  
 $\Delta E^*_{\text{CIELAB}} = 8.3$

Mean lightness difference (5 steps)  
 $\Delta E^*_{\text{CIELAB}} = 6.7$

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

OE640-3N-125-8: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-125-8: 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
$n^* n^* n^* 0$ setcmk $g_N=1.9$ 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)	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{out}}$	0.0	0.006	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

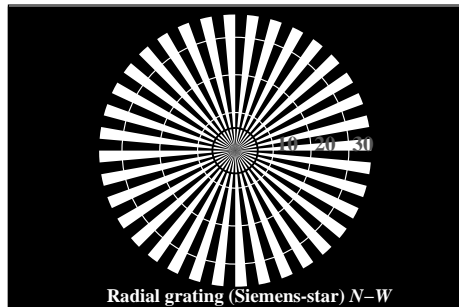
OE640-7N, Picture A7-125-8: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^* n^* n^* 0$  setcmkcolor

OE64: 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

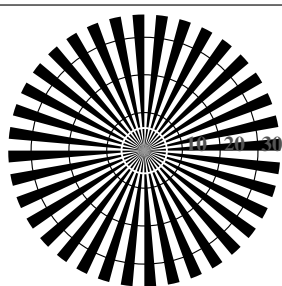
input: all ( $\rightarrow rgb^*_{\text{de}}$ ) setrgbcolor  
output 130-8:  $g_P=1.0$ ;  $g_N=1.6$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

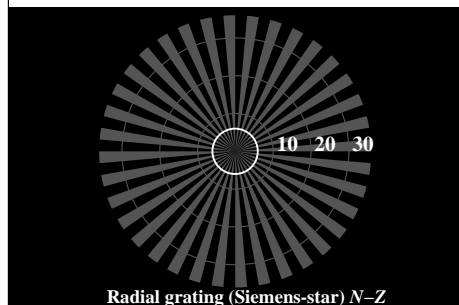
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



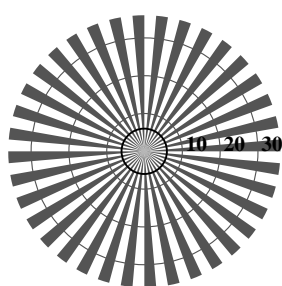
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N

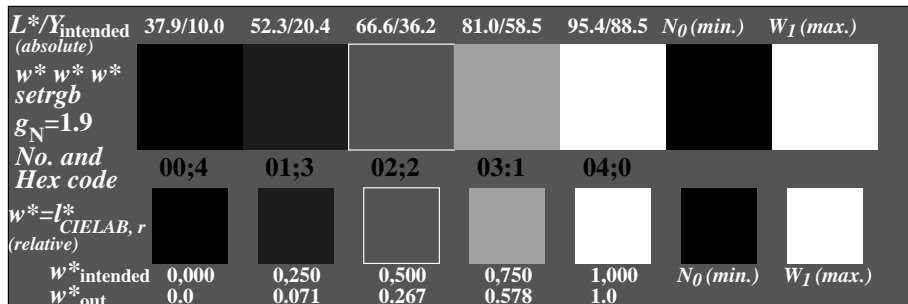


Radial grating (Siemens-star) N-Z

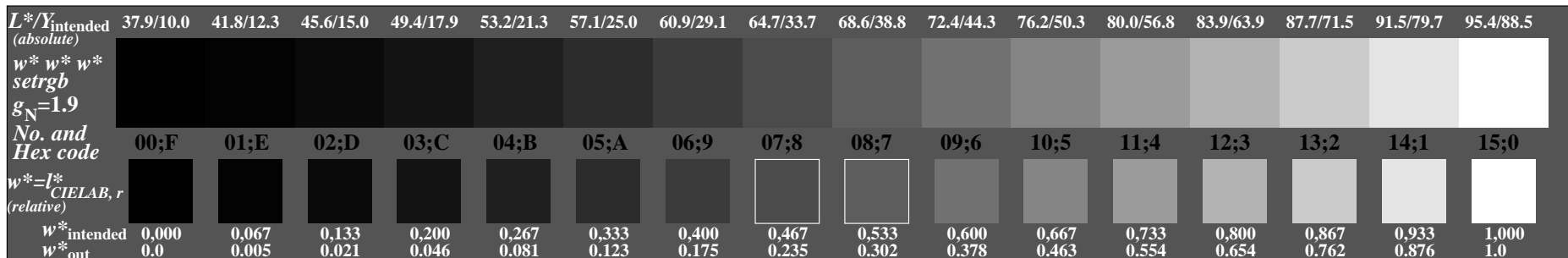


Radial grating (Siemens-star) W-Z

OE640-3N, Picture A1-135-9: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^* w^* w^* \text{setrgbcolor}$



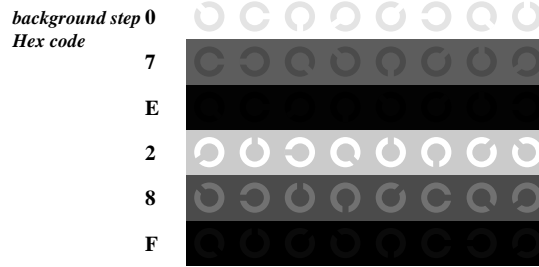
OE640-5N, Picture A2-135-9: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $w^* w^* w^* \text{setrgbcolor}$



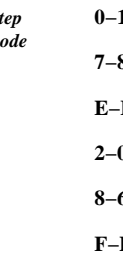
OE640-7N, Picture A3-135-9: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^* \text{setrgbcolor}$

OE64: 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:  $all (->rgb^*_{\text{de}}) \text{setrgbcolor}$   
output 130-9:  $g_P=1.0$ ;  $g_N=1.6$

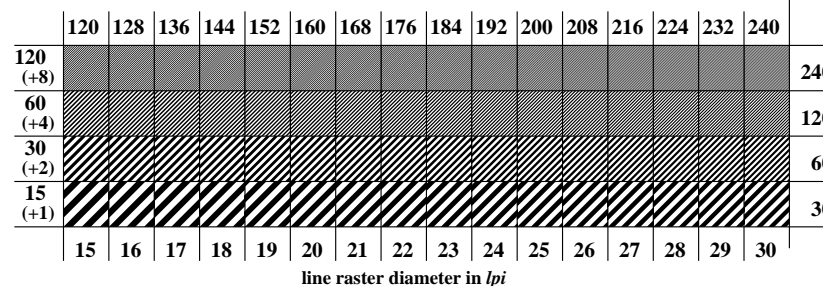


Landolt-rings W-N

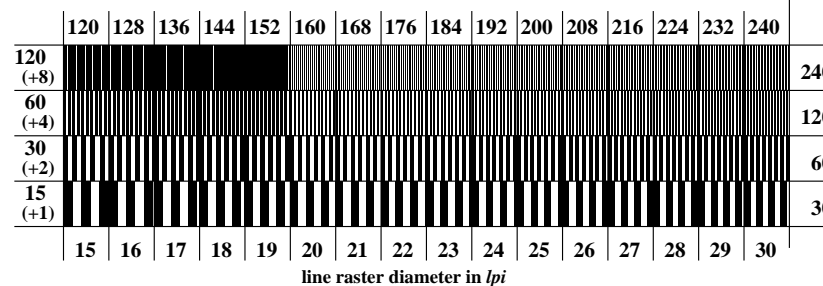


code: background-ring

OE641-1N, Picture A4-135-9: Landolt-rings W-N; PS operator:  $w^* w^* w^* \text{setrgbcolor}$



OE641-3N, Picture A5-135-9: Line raster under 45° (or 135°); PS operator:  $w^* w^* w^* \text{setrgbcolor}$



OE641-5N, Picture A6-135-9: Line raster under 90° (or 0°); PS operator:  $w^* w^* w^* \text{setrgbcolor}$

TUB registration: 20110801-OE64/OE64L0NA.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? of the given 5 steps: ..... 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? of the given 16 steps: .... Steps

Part 1

OE640-3N-1340-10

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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

OE640-7N-135-10

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
 Viewing Y contrast  $Y_W:Y_N=88,9:10$ ;  $Y_N$  range 7,5 to <15  
 output 130-10:  $g_P=1.0$ ;  $g_N=1.6$

**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

OE641-3N-135-10

**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/OE64/OE64F1P2.PDF>

underline Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.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/OE64/OE64F1P2.PDF>

underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.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](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer

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

underline Yes/No

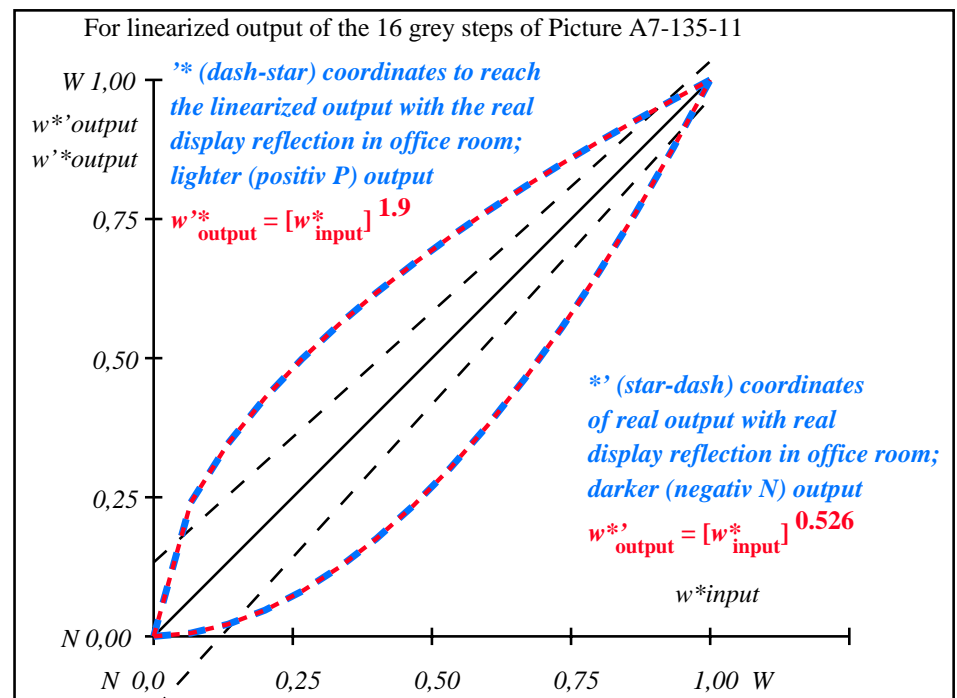
If No, please describe other method: .....

OE641-7N-135-10

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* <sub>CIELAB</sub> = 8.3	
Mean lightness difference (5 steps)					ΔE* <sub>CIELAB</sub> = 6.7	
Mean colour reproduction index:					R* <sub>ab,m</sub> = 64	

OE640-3N-135-11: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-135-11: 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)	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{intended}}$ $w^*_{\text{out}}$	0.000	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

OE640-7N, Picture A7-135-11: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*$  setrgbcolor

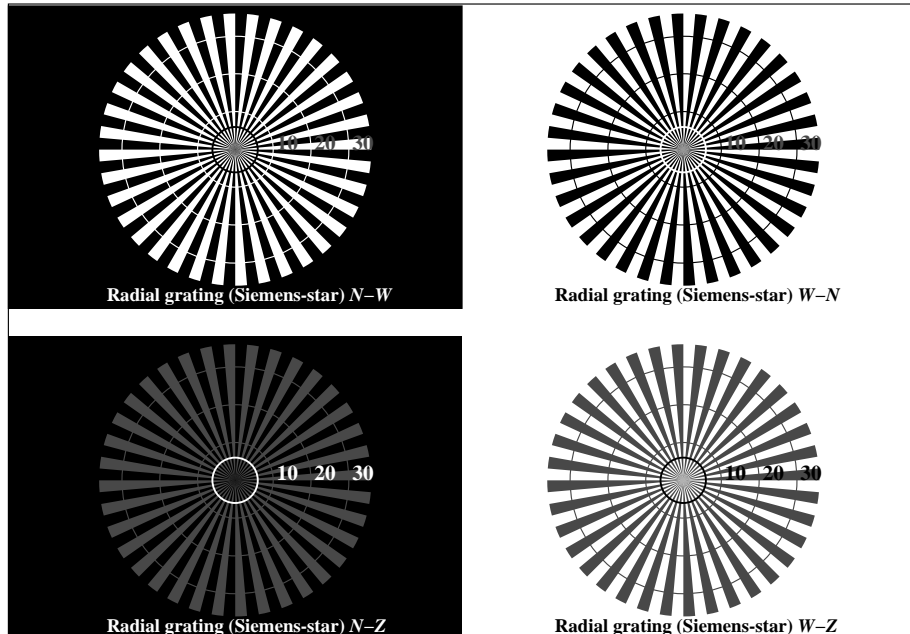
OE64: In-output relation according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:10$ ;  $Y_N$  range 7,5 to <15

input: all ( $\rightarrow$ rgb\*<sub>de</sub>) setrgbcolor  
output 130-11:  $g_P=1.0$ ;  $g_N=1.6$

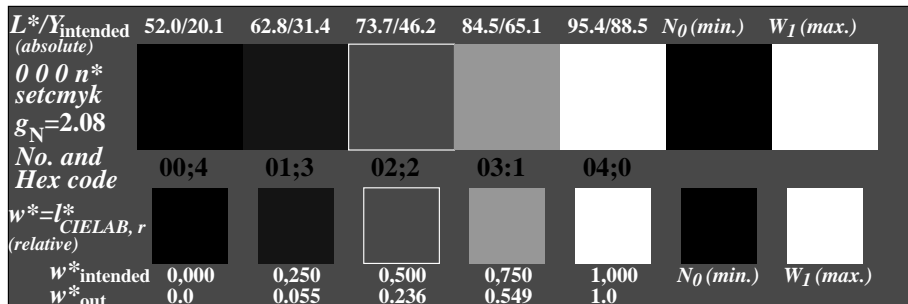
TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta



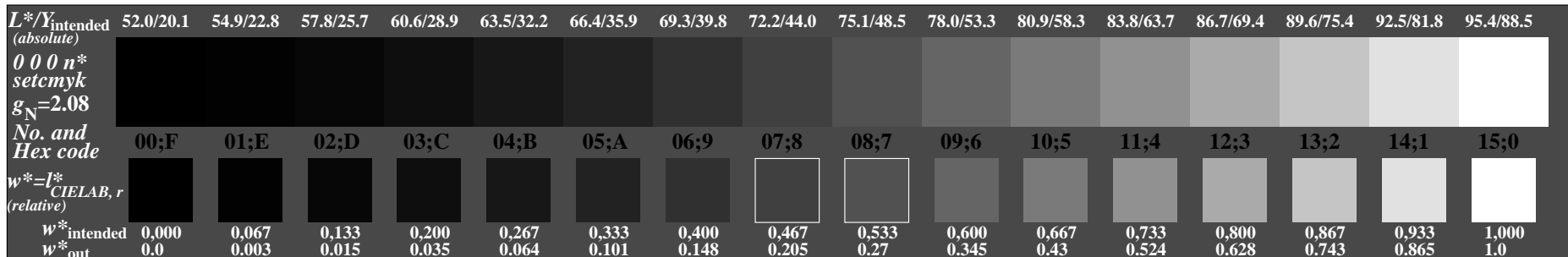
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIE LAB



OE640-3N, Picture A1-106-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: 0 0 0 n\* setcmykcolor



OE640-5N, Picture A2-106-0: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator: 0 0 0 n\* setcmykcolor



OE640-7N, Picture A3-106-0: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

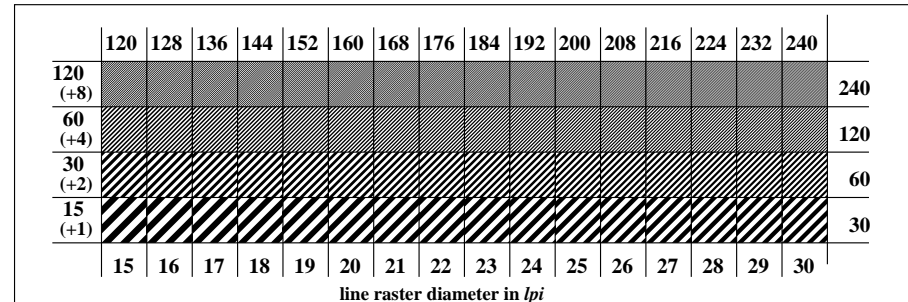
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:20$ ;  $Y_N$  range 15 to <30

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

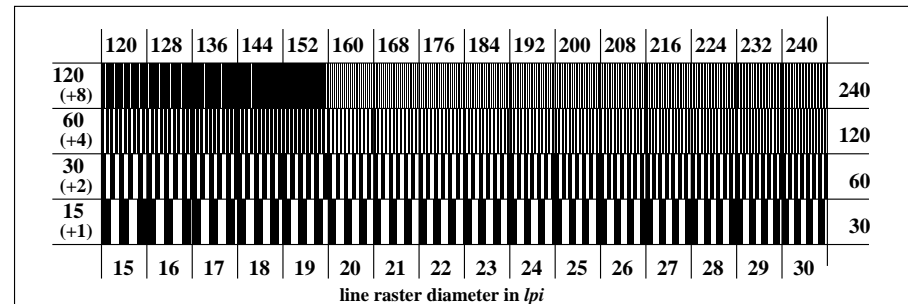
code: background-ring

OE641-1N, Picture A4-106-0: Landolt-rings W-N; PS operator: 0 0 0 n\* setcmykcolor



line raster diameter in lpi

OE641-3N, Picture A5-106-0: Line raster under 45° (or 135°); PS operator: 0 0 0 n\* setcmykcolor



line raster diameter in lpi

OE641-5N, Picture A6-106-0: Line raster under 90° (or 0°); PS operator: 0 0 0 n\* setcmykcolor

input: all (->rgb\*<sub>de</sub>) setrgbcolor  
output 130-0:  $g_P=1.0$ ;  $g_N=1.81$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

<b>Test for the best visual linearized output of Picture A7-106-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-106-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-106-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-106-0</b>		
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 OE640-3N-1048-1

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

PDF-File: <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-106-1

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:20$ ;  $Y_N$  range 15 to <30  
output 130-1:  $g_P=1.0$ ;  $g_N=1.81$

<b>Test for the best visual linearized output of Picture A7-106-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-106-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-106-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-106-0</b>		
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 OE641-3N-106-1

**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/OE64/OE64F1P2.PDF>

PS file: <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

Picture A7-106-2: 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/OE64/OE64F1P2.PDF>

picture A7-106-2

underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

picture A7-106-2

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](http://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

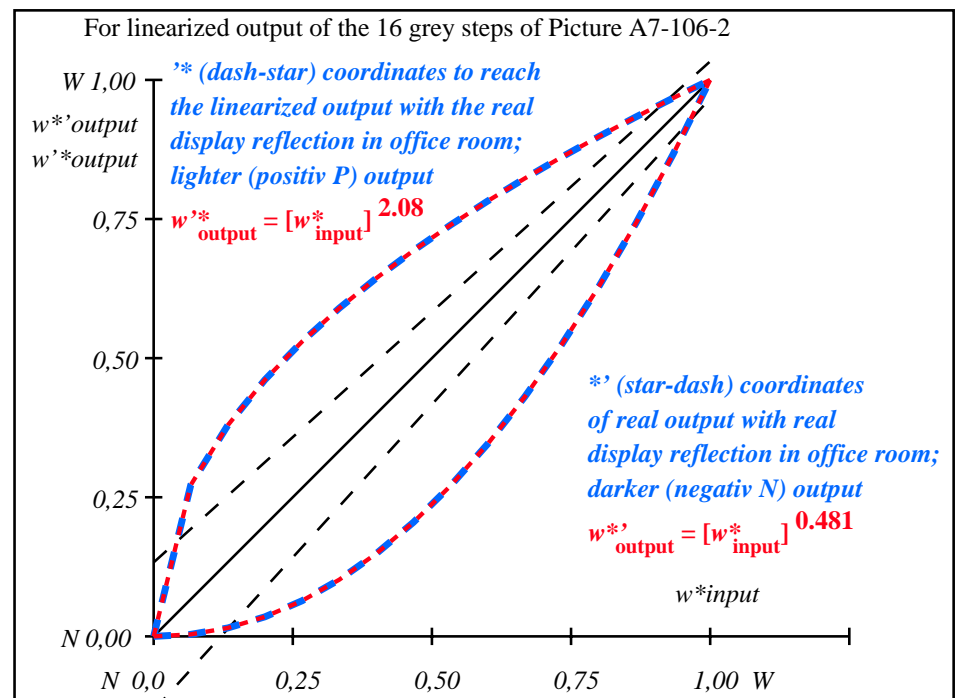
Part 4

OE641-7N-106-1

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	0.0 0.0 0.0	52.17 0.0 0.0	-2.73 0.0 0.0	2.74	ISO/IEC 15775 Annex G
3	57.8 0.0 0.0	0.0 0.02 0.0	52.67 0.0 0.0	-5.12 0.0 0.0	5.13	and DIN 33866-1 Annex G
4	60.7 0.0 0.0	0.0 0.04 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 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 0.0	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 0.0	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 0.0	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 0.0	95.41 0.0 0.0	0.0 0.0 0.0	0.01	ΔL*CIELAB = 5.7
Mean colour reproduction index:					R* <sub>ab,m</sub> = 69	

OE640-3N-106-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-106-2: File: Measure unknown; Device: Device unknown; Date: Date unknown

L*/Y <sub>intended</sub> (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
0 0 0 n* setcmyk																
g <sub>N</sub> =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*=[*] 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

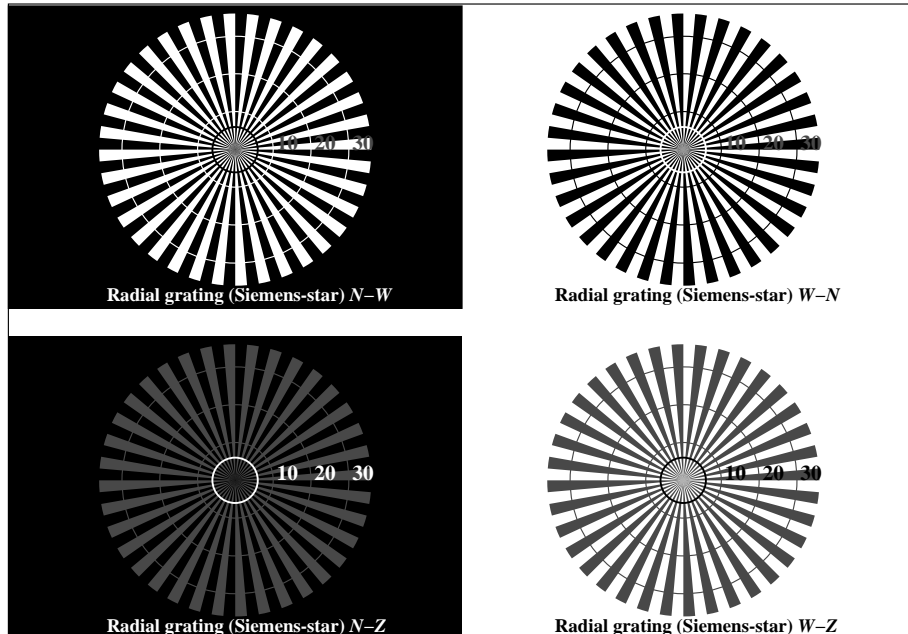
OE640-7N, Picture A7-106-2: 16 visual equidistant L\*-grey steps; PS operator: 0 0 0 n\* setcmykcolor

OE64: 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

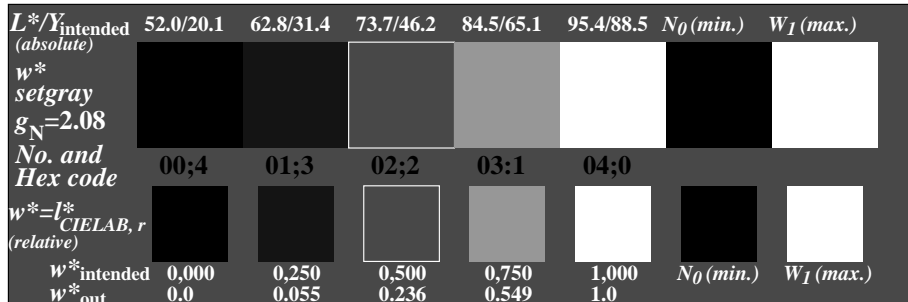
input: all (->rgb\*<sub>de</sub>) setrgbcolor  
output 130-2: g<sub>P</sub>=1.0; g<sub>N</sub>=1.81

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

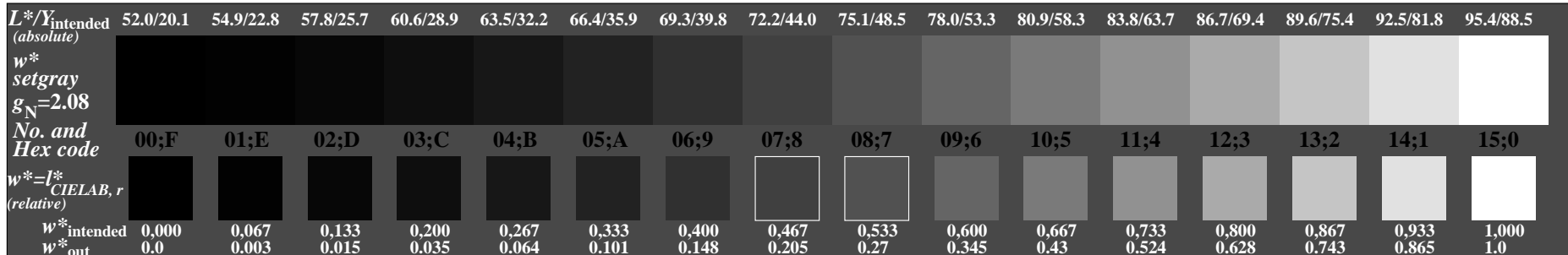
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



OE640-3N, Picture A1-116-3: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^*$  setgray

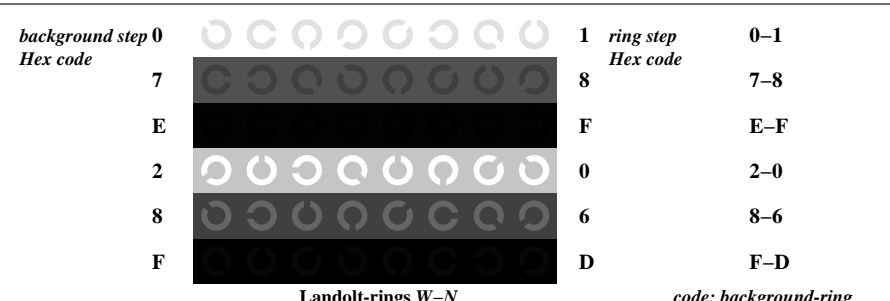


OE640-5N, Picture A2-116-3: 5 equidistant  $L^*$ -gray steps+N0+W1; PS operator:  $w^*$  setgray

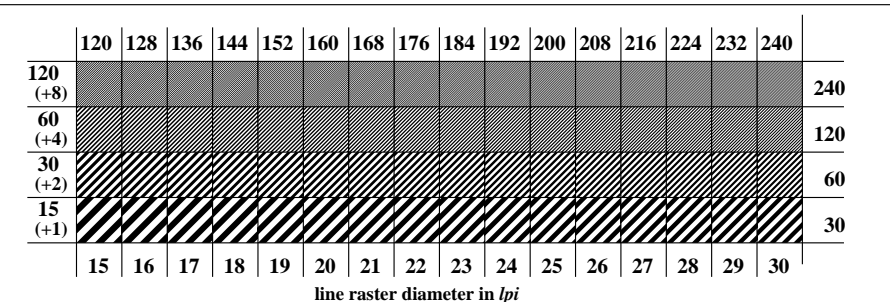


OE640-7N, Picture A3-116-3: 16 visual equidistant  $L^*$ -gray steps; PS operator:  $w^*$  setgray

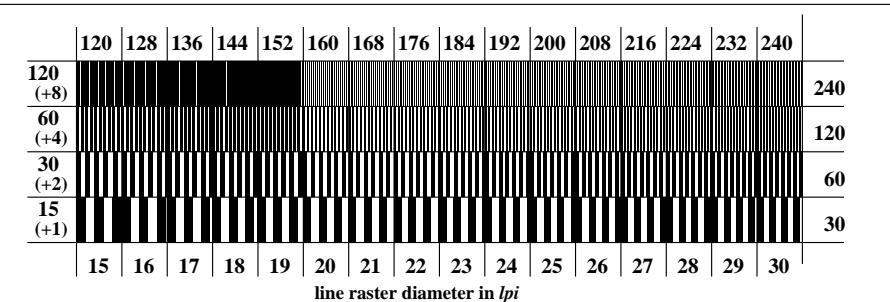
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:20$ ;  $Y_N$  range 15 to <30



OE641-1N, Picture A4-116-3: Landolt-rings W-N; PS operator:  $w^*$  setgray



OE641-3N, Picture A5-116-3: Line raster under 45° (or 135°); PS operator:  $w^*$  setgray



OE641-5N, Picture A6-116-3: Line raster under 90° (or 0°); PS operator:  $w^*$  setgray

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-3:  $g_P=1.0$ ;  $g_N=1.81$



<b>Test for the best visual linearized output of Picture A7-116-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-116-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-116-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-116-0</b>		
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 OE640-3N-1148-4

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

PDF-File: <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-116-4

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:20$ ;  $Y_N$  range 15 to <30  
output 130-4:  $g_P=1.0$ ;  $g_N=1.81$

<b>Test for the best visual linearized output of Picture A7-116-0</b>		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-116-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-116-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-116-0</b>		
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 OE641-3N-116-4

**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/OE64/OE64F1P2.PDF>

PS file: <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

Picture A7-116-2: 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/OE64/OE64F1P2.PDF>

picture A7-116-2

underline Yes/No

PS-File: <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

picture A7-116-2

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](http://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

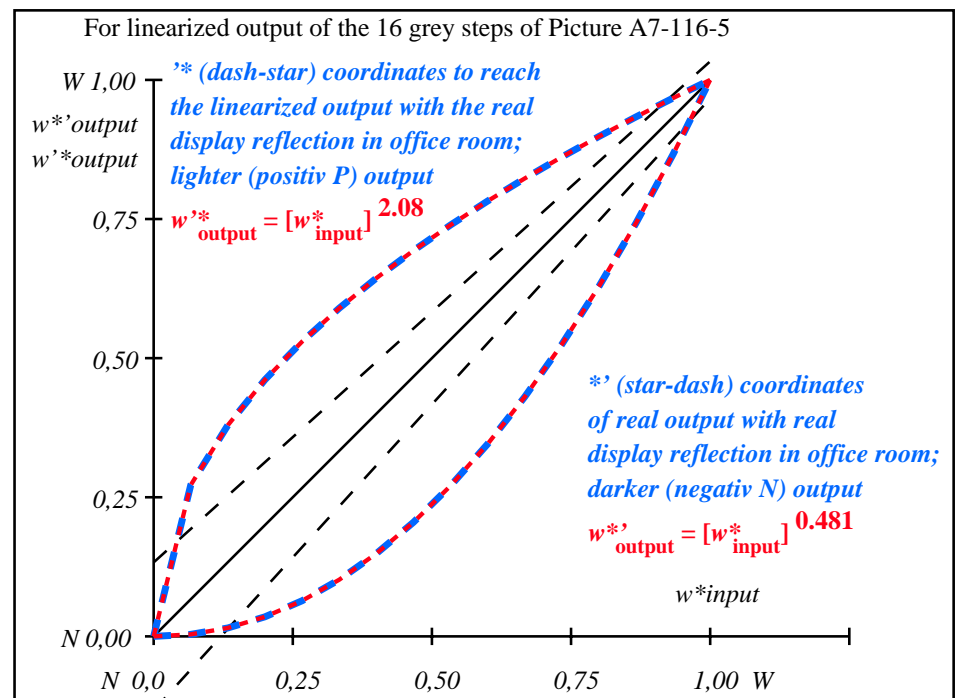
Part 4

OE641-7N-116-4

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	52.02	0.0	0.0
2	54.91	0.0	0.0	52.17	0.0	-2.73
3	57.8	0.0	0.0	52.67	0.0	-5.12
4	60.7	0.0	0.0	53.54	0.0	-7.14
5	63.59	0.0	0.0	54.79	0.0	-8.79
6	66.48	0.0	0.0	56.43	0.0	-10.04
7	69.37	0.0	0.0	58.47	0.0	-10.89
8	72.27	0.0	0.0	60.91	0.0	-11.35
9	75.16	0.0	0.0	63.75	0.0	-11.4
10	78.05	0.0	0.0	67.01	0.0	-11.03
11	80.95	0.0	0.0	70.69	0.0	-10.25
12	83.84	0.0	0.0	74.78	0.0	-9.05
13	86.73	0.0	0.0	79.3	0.0	-7.42
14	89.62	0.0	0.0	84.24	0.0	-5.38
15	92.52	0.0	0.0	89.61	0.0	-2.9
16	95.41	0.0	0.0	95.41	0.0	0.0
17	52.02	0.0	0.0	52.02	0.0	0.0
18	62.87	0.0	0.0	54.44	0.0	-8.41
19	73.71	0.0	0.0	62.28	0.0	-11.42
20	84.56	0.0	0.0	75.87	0.0	-8.68
21	95.41	0.0	0.0	95.41	0.0	0.0
Mean lightness difference (16 steps)						ΔE* <sub>CIELAB</sub> = 7.1
Mean lightness difference (5 steps)						ΔE* <sub>CIELAB</sub> = 5.7
Mean colour reproduction index:						R* <sub>ab,m</sub> = 69

OE640-3N-116-5: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-116-5: 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
$w^*$ setgray																
$g_N=2.08$																
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

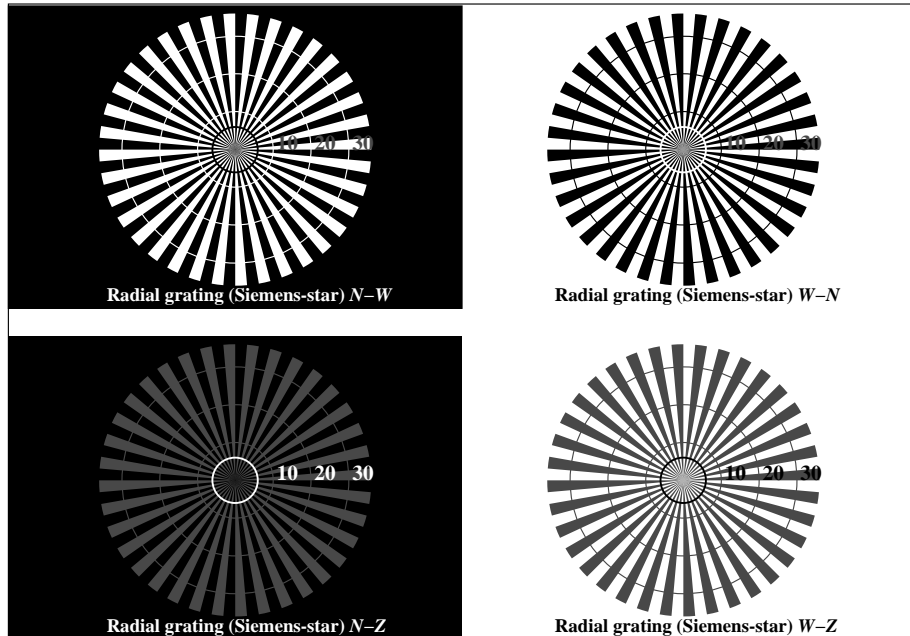
OE640-7N, Picture A7-116-5: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*$  setgray

OE64: 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: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-5:  $g_P=1.0$ ;  $g_N=1.81$

TUB registration: 20110801-OE64/OE64L0NA.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, CIE LAB



OE640-3N, Picture A1-126-6: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $n^*n^*n^*0$  setcmykcolor

$L^*/Y_{intended}$ (absolute)	52.0/20.1	62.8/31.4	73.7/46.2	84.5/65.1	95.4/88.5	$N_0$ (min.)	$W_1$ (max.)
$n^*n^*n^*0$ setcmyk							
$g_N=2.08$							
No. and Hex code	00;4	01;3	02;2	03;1	04;0		
$w^*=l^*_{CIE LAB, r}$ (relative)							
$w^*_{intended}$	0.000	0.250	0.500	0.750	1.000	$N_0$ (min.)	$W_1$ (max.)
$w^*_{out}$	0.0	0.055	0.236	0.549	1.0		

OE640-5N, Picture A2-126-6: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $n^*n^*n^*0$  setcmykcolor

$L^*/Y_{intended}$ (absolute)	52.0/20.1	54.9/22.8	57.8/25.7	60.6/28.9	63.5/32.2	66.4/35.9	69.3/39.8	72.2/44.0	75.1/48.5	78.0/53.3	80.9/58.3	83.8/63.7	86.7/69.4	89.6/75.4	92.5/81.8	95.4/88.5
$n^*n^*n^*0$ setcmyk																
$g_N=2.08$																
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
$w^*=l^*_{CIE LAB, r}$ (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	0.015	0.035	0.064	0.101	0.148	0.205	0.27	0.345	0.43	0.524	0.628	0.743	0.865	1.0

OE640-7N, Picture A3-126-6: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^*n^*n^*0$  setcmykcolor

OE64: 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				

OE641-1N, Picture A4-126-6: Landolt-rings W-N; PS operator:  $n^*n^*n^*0$  setcmykcolor

	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	

OE641-3N, Picture A5-126-6: Line raster under 45° (or 135°); PS operator:  $n^*n^*n^*0$  setcmykcolor

	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	

OE641-5N, Picture A6-126-6: Line raster under 90° (or 0°); PS operator:  $n^*n^*n^*0$  setcmykcolor

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-6:  $g_P=1.0$ ;  $g_N=1.81$

TUB registration: 20110801-OE64/OE64L0NA.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 A7-126-0** Yes/No  
**Output test with the computer display ( ) or the external display ( )**  
**Test of the radial grating according to picture A1-126-0**  
**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 A2-126-0**  
 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 A3-126-0**  
 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

OE640-3N-1248-7

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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

OE640-7N-126-7

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
 Viewing Y contrast  $Y_W:Y_N=88,9:20$ ;  $Y_N$  range 15 to <30  
 output 130-7:  $g_P=1.0$ ;  $g_N=1.81$

**Test for the best visual linearized output of Picture A7-126-0** Yes/No  
**Output test with the computer display ( ) or the external display ( )**  
**Test of the Landolt-rings N-W according to picture A4-126-0**  
**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 A5-126-0**  
 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 A6-126-0**  
 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

OE641-3N-126-7

**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/OE64/OE64F1P2.PDF>

underline Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

underline Yes/No

**Picture A7-126-2: 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/OE64/OE64F1P2.PDF>

underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.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](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer

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

underline Yes/No

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

Part 4

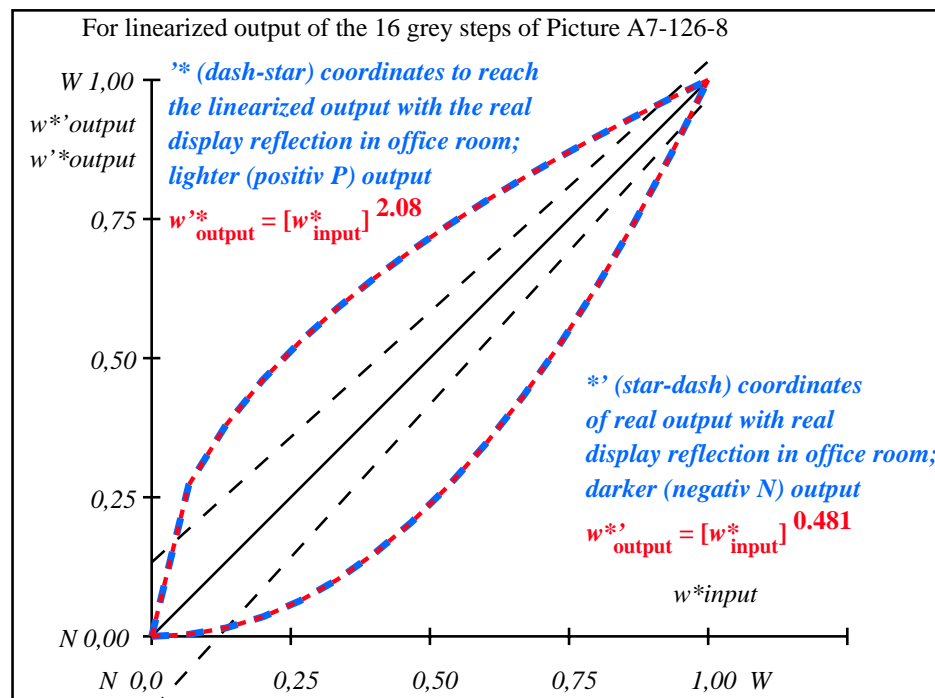
OE641-7N-126-7



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	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	52.17	0.0	0.0	-2.73	0.0	0.0	2.74	
3	57.8	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	0.04	53.54	0.0	0.0	-7.14	0.0	0.0	7.15	
5	63.59	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	0.1	56.43	0.0	0.0	-10.04	0.0	0.0	10.05	
7	69.37	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	0.2	60.91	0.0	0.0	-11.35	0.0	0.0	11.36	
9	75.16	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	0.35	67.01	0.0	0.0	-11.03	0.0	0.0	11.04	
11	80.95	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	0.52	74.78	0.0	0.0	-9.05	0.0	0.0	9.06	
13	86.73	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	0.74	84.24	0.0	0.0	-5.38	0.0	0.0	5.39	
15	92.52	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	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	52.02	0.0	0.0	0.0	0.0	0.0	0.01	Mean lightness difference (5 steps)
18	62.87	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	0.24	62.28	0.0	0.0	-11.42	0.0	0.0	11.43	
20	84.56	0.0	0.0	0.55	75.87	0.0	0.0	-8.68	0.0	0.0	8.69	
21	95.41	0.0	0.0	1.0	95.41	0.0	0.0	0.0	0.0	0.0	0.01	
Mean colour reproduction index:											R* <sub>ab,m</sub> = 69	

OE640-3N-126-8: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-126-8: File: Measure unknown; Device: Device unknown; Date: Date unknown

$L^*/Y_{\text{intended}}$ (absolute)	52.0/20.2	54.9/22.8	57.8/25.8	60.7/28.9	63.6/32.3	66.5/36.0	69.4/39.9	72.3/44.1	75.2/48.5	78.1/53.3	80.9/58.4	83.8/63.8	86.7/69.5	89.6/75.5	92.5/81.9	95.4/88.6
$n^* n^* n^* 0$ setcmk $g_N=2.08$ 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
$w^* = l^*_{\text{CIELAB}, r}$ (relative)																
$w^*_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{out}}$	0.0	0.004	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

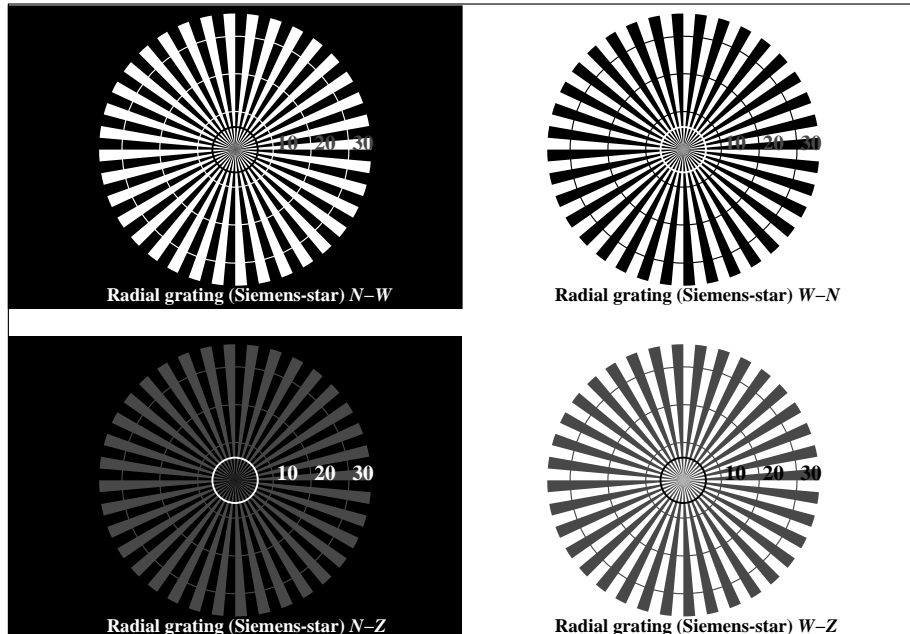
OE640-7N, Picture A7-126-8: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^* n^* n^* 0$  setcmkcolor

OE64: 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

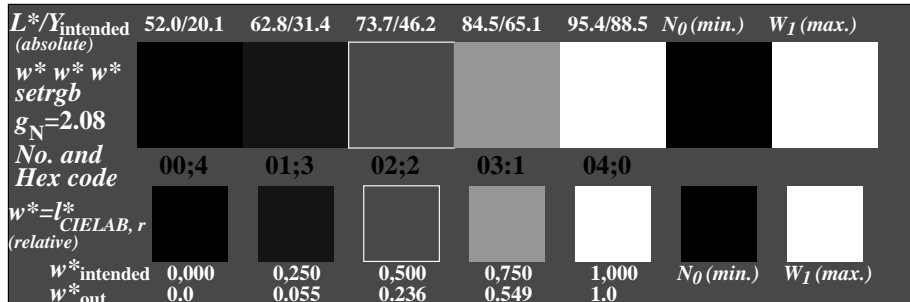
input: all ( $\rightarrow \text{rgb}^*_{\text{de}}$ ) setrgbcolor  
output 130-8:  $g_P=1.0$ ;  $g_N=1.81$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

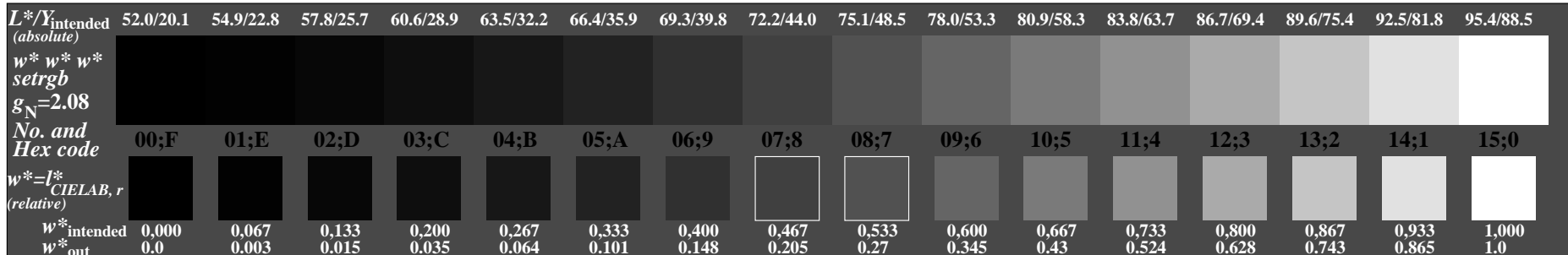
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



OE640-3N, Picture A1-136-9: Radial grating  $N-W$ ,  $W-N$ ,  $N-Z$ ,  $W-Z$ ; PS operator:  $w^*w^*w^*$  setrgbcolor



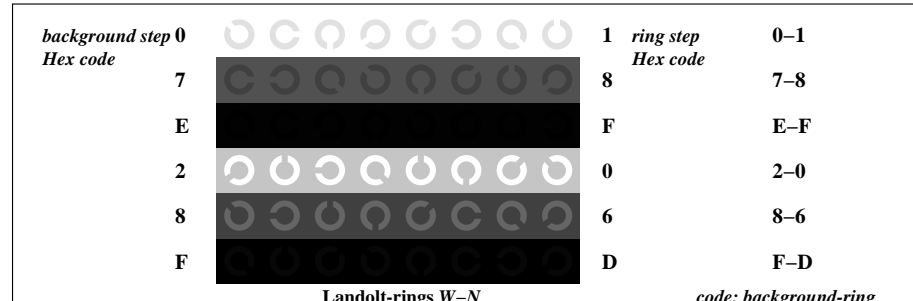
OE640-5N, Picture A2-136-9: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $w^*w^*w^*$  setrgbcolor



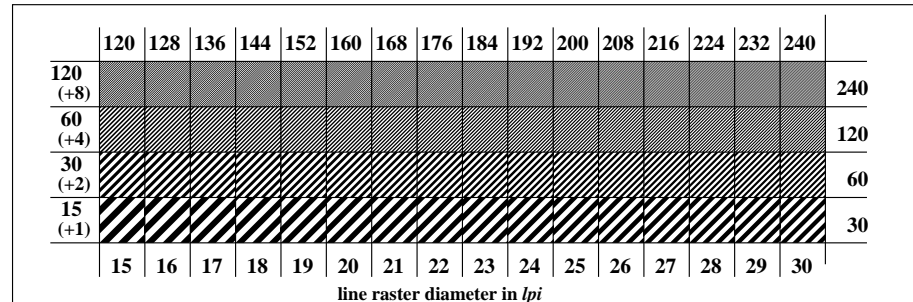
OE640-7N, Picture A3-136-9: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*w^*w^*$  setrgbcolor

OE64: 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

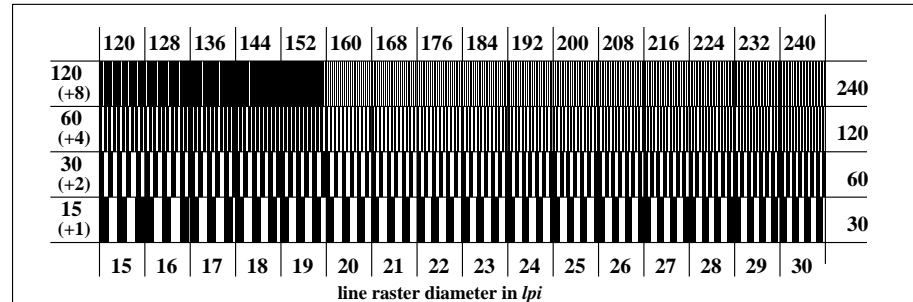
input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-9:  $g_P=1.0$ ;  $g_N=1.81$



OE641-1N, Picture A4-136-9: Landolt-rings  $W-N$ ; PS operator:  $w^*w^*w^*$  setrgbcolor



OE641-3N, Picture A5-136-9: Line raster under 45° (or 135°); PS operator:  $w^*w^*w^*$  setrgbcolor



OE641-5N, Picture A6-136-9: Line raster under 90° (or 0°); PS operator:  $w^*w^*w^*$  setrgbcolor

TUB registration: 20110801-OE64/OE64L0NA.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) 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 A2-136-0**  
 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 OE640-3N-1348-10

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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 OE640-7N-136-10

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:20$ ;  $Y_N$  range 15 to <30  
output 130-10:  $g_P=1.0$ ;  $g_N=1.81$

**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  
 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 OE641-3N-136-10

**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/OE64/OE64F1P2.PDF>

underline Yes/No

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

underline Yes/No

**Picture A7-136-2: contrast range:** (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)  
 compare standard print output according to ISO/IEC 15775 with range F:0 underline range

Remark: In daylighted offices the contrast range is in many cases:

on display between: >F:0 and E:0 (monitor), D:0 and 3:0 (data projector)

**Only for optional colorimetric specification with PDF/PS file output**

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PDF>

underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.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](http://www.ps.bam.de/De17/10L/L17e00NP.PS) and transfer of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF

underline Yes/No

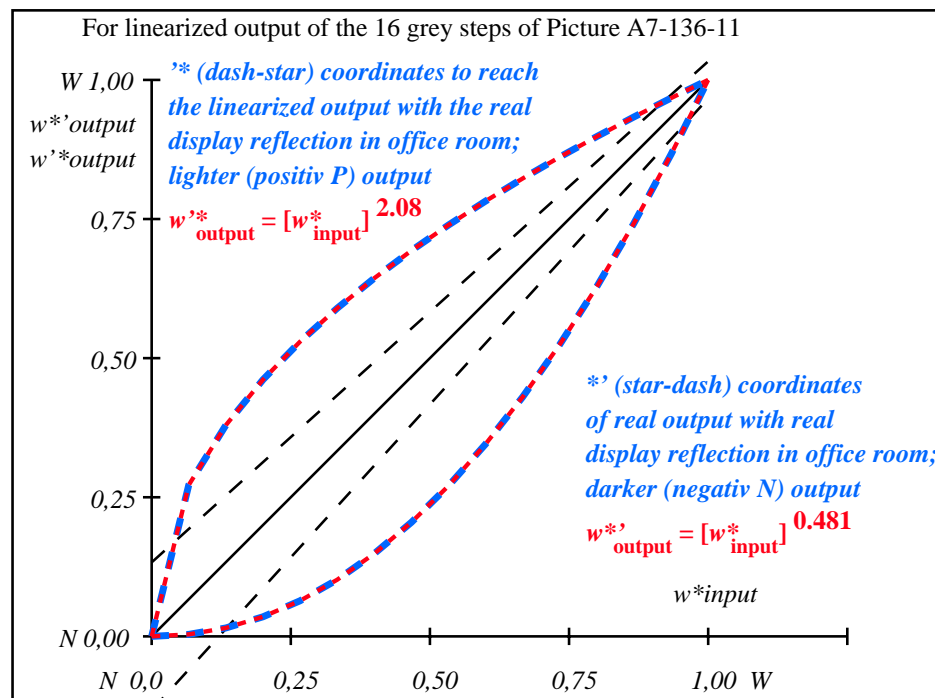
If No, please describe other method: .....

Part 4 OE641-7N-136-10

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	0.0 0.0 0.0	52.17 0.0 0.0	-2.73 0.0 0.0	2.74	ISO/IEC 15775 Annex G
3	57.8 0.0 0.0	0.0 0.02 0.0	52.67 0.0 0.0	-5.12 0.0 0.0	5.13	and DIN 33866-1 Annex G
4	60.7 0.0 0.0	0.0 0.04 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	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 0.0	95.41 0.0 0.0	0.0 0.0 0.0	0.01	ΔE* <sub>CIELAB</sub> = 7.1
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	0.0 0.06 0.0	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 0.0	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 0.0	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 0.0	95.41 0.0 0.0	0.0 0.0 0.0	0.01	ΔL* <sub>CIELAB</sub> = 5.7
Mean colour reproduction index:					R* <sub>ab,m</sub> = 69	

OE640-3N-136-11: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-136-11: 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

OE640-7N, Picture A7-136-11: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*$  setrgbcolor

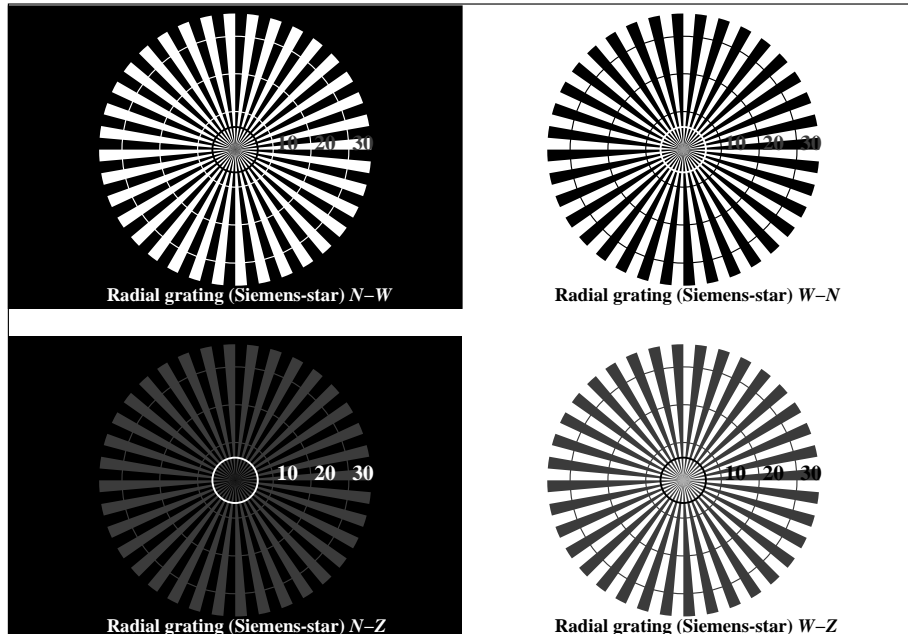
OE64: In-output relation according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:20$ ;  $Y_N$  range 15 to <30

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-11:  $g_P=1.0$ ;  $g_N=1.81$

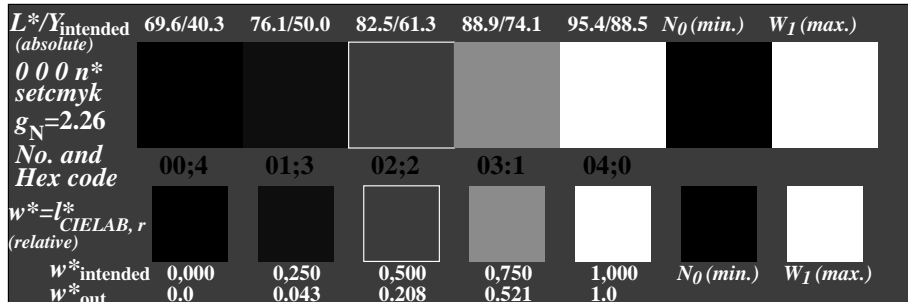
TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta



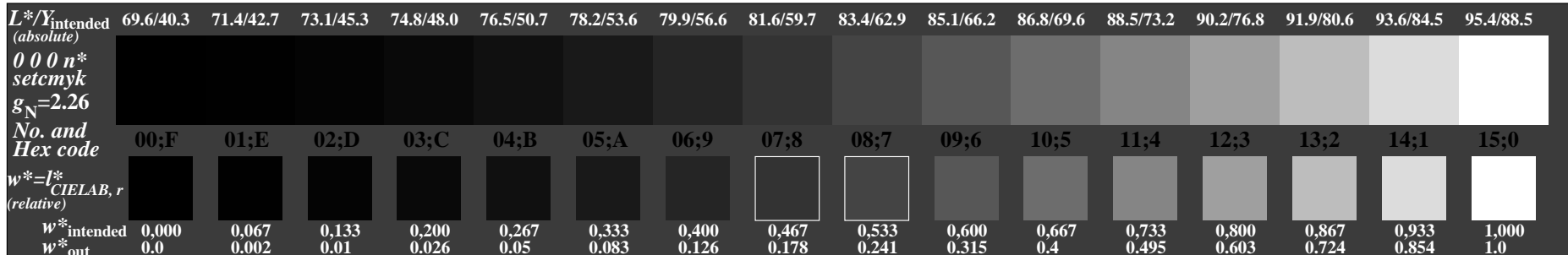
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



OE640-3N, Picture A1-107-0: Radial grating N-W, W-N, N-Z, W-Z; PS operator: 0 0 0 n\* setcmykcolor



OE640-5N, Picture A2-107-0: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator: 0 0 0 n\* setcmykcolor



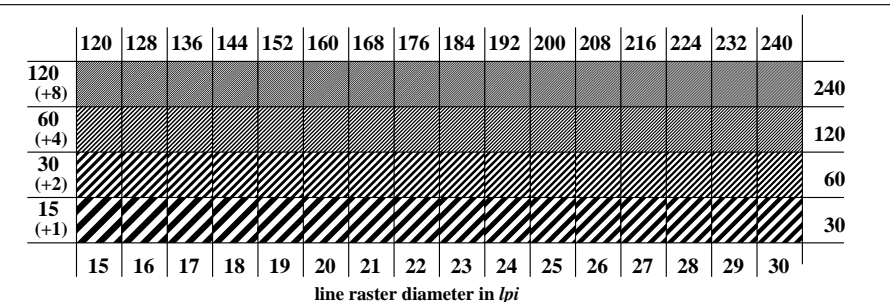
OE640-7N, Picture A3-107-0: 16 visual equidistant  $L^*$ -grey steps; PS operator: 0 0 0 n\* setcmykcolor

OE64: 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				

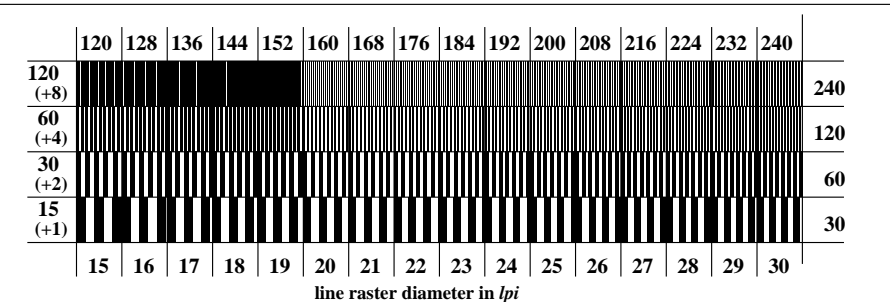
Landolt-rings W-N code: background-ring

OE641-1N, Picture A4-107-0: Landolt-rings W-N; PS operator: 0 0 0 n\* setcmykcolor



line raster diameter in lpi

OE641-3N, Picture A5-107-0: Line raster under 45° (or 135°); PS operator: 0 0 0 n\* setcmykcolor



line raster diameter in lpi

OE641-5N, Picture A6-107-0: Line raster under 90° (or 0°); PS operator: 0 0 0 n\* setcmykcolor

input: all (->rgb\*<sub>de</sub>) setrgbcolor  
output 130-0:  $g_P=1.0$ ;  $g_N=2.1$

TUB registration: 20110801-OE64/OE64L0NA.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 A7-107-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-107-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-107-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-107-0</b>		
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

OE640-3N-1056-1

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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

OE640-7N-107-1

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: *all* ( $\rightarrow$   $rgb^*_{de}$ ) *setrgbcolor*  
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 A7-107-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-107-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-107-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-107-0</b>		
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

OE641-3N-107-1

**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/OE64/OE64F1P2.PDF>

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

**Picture A7-107-2: 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/OE64/OE64F1P2.PDF>

**picture A7-107-2**

underline Yes/No

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

**picture A7-107-2**

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](http://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

OE641-7N-107-1

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

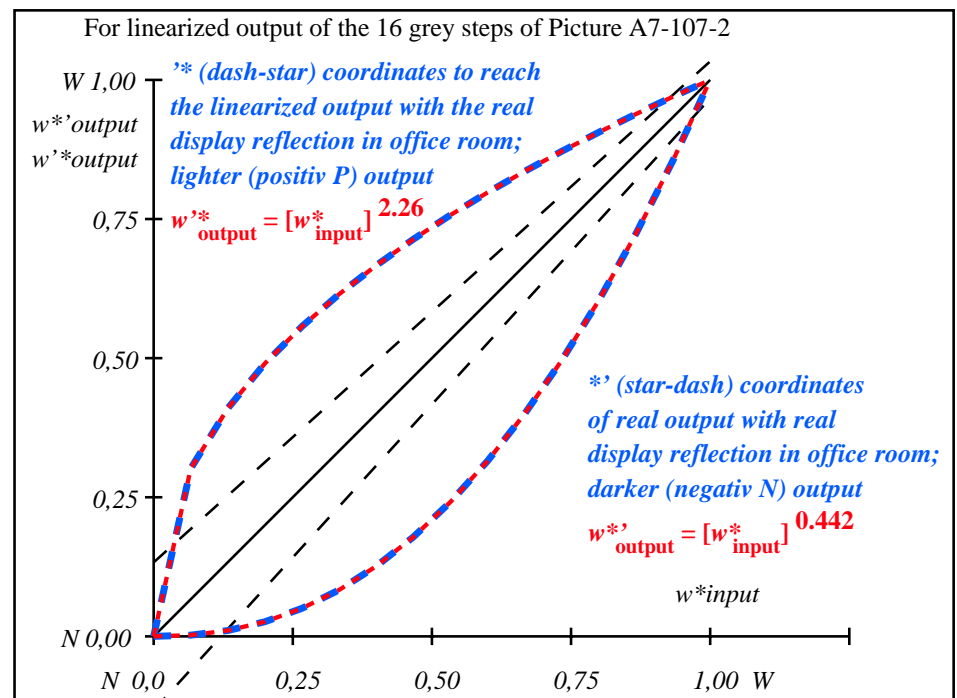
i	LAB*ref	L*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	69.7	0.0	0.0	0.0	0.0	0.01
2	71.41	0.0	0.0	0.0	0.0	1.66
3	73.13	0.0	0.0	0.0	0.0	3.16
4	74.84	0.0	0.0	0.0	0.0	4.47
5	76.55	0.0	0.0	0.0	0.0	5.56
6	78.27	0.0	0.0	0.0	0.0	6.42
7	79.98	0.0	0.0	0.0	0.0	7.04
8	81.7	0.0	0.0	0.0	0.0	7.41
9	83.41	0.0	0.0	0.0	0.0	7.5
10	85.12	0.0	0.0	0.0	0.0	7.32
11	86.84	0.0	0.0	0.0	0.0	6.86
12	88.55	0.0	0.0	0.0	0.0	6.1
13	90.27	0.0	0.0	0.0	0.0	5.04
14	91.98	0.0	0.0	0.0	0.0	3.68
15	93.7	0.0	0.0	0.0	0.0	2.0
16	95.41	0.0	0.0	0.0	0.0	0.01
17	69.7	0.0	0.0	0.0	0.0	0.01
18	76.13	0.0	0.0	0.0	0.0	5.31
19	82.55	0.0	0.0	0.0	0.0	7.49
20	88.98	0.0	0.0	0.0	0.0	5.86
21	95.41	0.0	0.0	0.0	0.0	0.01

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

Mean lightness difference (5 steps)  $\Delta E^*_{\text{CIELAB}} = 3.7$

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

OE640-3N-107-2: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-107-2: 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
$0\ 0\ 0\ n^*$ setcmk																
$g_N=2.26$ 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)																
$w^*_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{out}}$	0.0	0.002	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

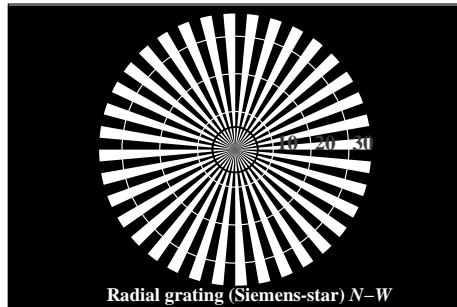
OE640-7N, Picture A7-107-2: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $0\ 0\ 0\ n^*$  setcmkcolor

OE64: 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

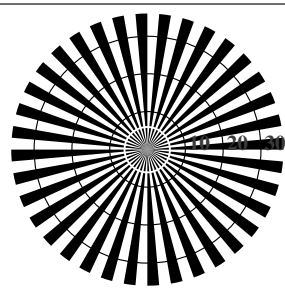
input: all ( $\rightarrow rgb^*_{\text{de}}$ ) setrgbcolor  
output 130-2:  $g_P=1.0$ ;  $g_N=2.1$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

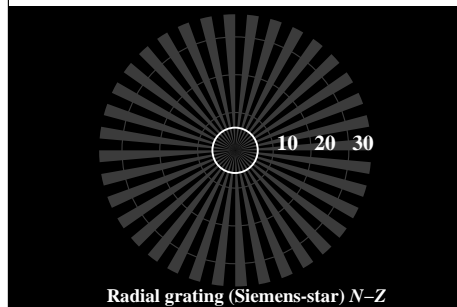
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1, CIELAB



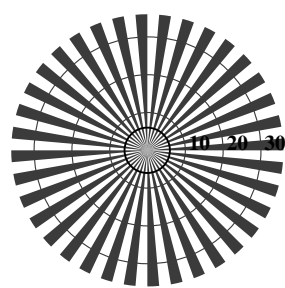
Radial grating (Siemens-star) N-W



Radial grating (Siemens-star) W-N



Radial grating (Siemens-star) N-Z



Radial grating (Siemens-star) W-Z

OE640-3N, Picture A1-117-3: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^*$  setgray

$L^*/Y_{intended}$ (absolute)	69.6/40.3	76.1/50.0	82.5/61.3	88.9/74.1	95.4/88.5	$N_0$ (min.)	$W_1$ (max.)
$w^*$ setgray							
$g_N=2.26$							
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.)	$W_1$ (max.)
$w^*_{out}$	0.0	0.043	0.208	0.521	1.0		

OE640-5N, Picture A2-117-3: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $w^*$  setgray

$L^*/Y_{intended}$ (absolute)	69.6/40.3	71.4/42.7	73.1/45.3	74.8/48.0	76.5/50.7	78.2/53.6	79.9/56.6	81.6/59.7	83.4/62.9	85.1/66.2	86.8/69.6	88.5/73.2	90.2/76.8	91.9/80.6	93.6/84.5	95.4/88.5
$w^*$ setgray																
$g_N=2.26$																
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
$w^*=l^*$ 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	0.05	0.083	0.126	0.178	0.241	0.315	0.4	0.495	0.603	0.724	0.854	1.0

OE640-7N, Picture A3-117-3: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^*$  setgray

OE64: 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	Hex code	Hex code	Hex code
7	8	7-8	
E	F	E-F	
2	0	2-0	
8	6	8-6	
F	D	F-D	

Landolt-rings W-N

code: background-ring

OE641-1N, Picture A4-117-3: Landolt-rings W-N; PS operator:  $w^*$  setgray

	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  $lpi$

OE641-3N, Picture A5-117-3: Line raster under 45° (or 135°); PS operator:  $w^*$  setgray

	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  $lpi$

OE641-5N, Picture A6-117-3: Line raster under 90° (or 0°); PS operator:  $w^*$  setgray

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-3:  $g_P=1.0$ ;  $g_N=2.1$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta



<b>Test for the best visual linearized output of Picture A7-117-0</b>		<b>Yes/No</b>
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-117-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	<b>Yes/No</b>
	Test with magnifying glass (e.g. 6x)	
	resolution diameter	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	<b>Yes/No</b>
	Test with magnifying glass (e.g. 6x)	
	resolution diameter	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	<b>Yes/No</b>
	Test with magnifying glass (e.g. 6x)	
	resolution diameter	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	<b>Yes/No</b>
	Test with magnifying glass (e.g. 6x)	
	resolution diameter	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-117-0</b>		
Are the 5 steps on the upper rows distinguishable?		<b>Yes/No</b>
If No: How many steps can be distinguished?		
of the given 5 steps:		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-117-0</b>		
Are the 16 steps on the upper rows distinguishable?		<b>Yes/No</b>
If No: How many steps can be distinguished?		
of the given 16 steps:		.... Steps

Part 1 OE640-3N-1156-4

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> **underline Yes/No**

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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)

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<b>Test for the best visual linearized output of Picture A7-117-0</b>		<b>Yes/No</b>
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-117-0</b>		
N-W-radial grating:		
Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?		
background – ring		
0 – 1		<b>Yes/No</b>
7 – 8		<b>Yes/No</b>
E – F		<b>Yes/No</b>
2 – 0		<b>Yes/No</b>
8 – 6		<b>Yes/No</b>
F – D		<b>Yes/No</b>
<b>Test of the radial grating under 45° according to picture A5-117-0</b>		
Can equally spaced lines be seen?		
Visual testing: for radial diameter from 15 to 60 lpi		<b>Yes/No</b>
Test with a magnifying glass (e.g. 6x): – from 15 lpi:		<b>to ..... lpi</b>
<b>Test of the radial grating under 90° according to picture A6-117-0</b>		
Can equally spaced lines be seen?		
Visual testing: for radial diameter from 15 to 60 lpi		<b>Yes/No</b>
Test with a magnifying glass (e.g. 6x): – from 15 lpi:		<b>to ..... lpi</b>

Part 2 OE641-3N-117-4

**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/OE64/OE64F1P2.PDF>

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

**Picture A7-117-2: 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/OE64/OE64F1P2.PDF>

**picture A7-117-2**

**underline Yes/No**

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS>

**picture A7-117-2**

**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](http://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 3

OE640-7N-117-4

Part 4

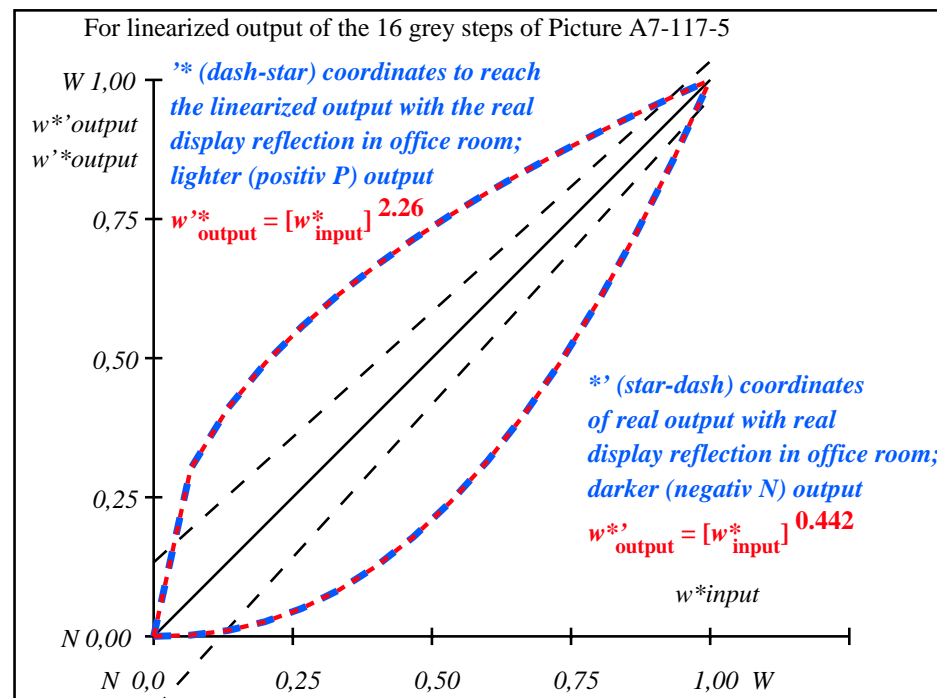
OE641-7N-117-4

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: *all (->rgb\*\_de) setrgbcolor*  
Viewing Y contrast  $Y_W:Y_N=88,9:40$ ;  $Y_N$  range 30 to <60  
output 130-4:  $g_P=1.0$ ;  $g_N=2.1$

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

i	LAB*ref	L*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	69.7 0.0 0.0	69.7 0.0 0.0	69.7 0.0 0.0	0.0 0.0 0.0	0.01	Specification according to
2	71.41 0.0 0.0	69.75 0.0 0.0	-1.65 0.0 0.0	1.66		ISO/IEC 15775 Annex G
3	73.13 0.0 0.0	69.97 0.0 0.0	-3.15 0.0 0.0	3.16		and DIN 33866-1 Annex G
4	74.84 0.0 0.0	70.37 0.0 0.0	-4.46 0.0 0.0	4.47		
5	76.55 0.0 0.0	70.99 0.0 0.0	-5.55 0.0 0.0	5.56		
6	78.27 0.0 0.0	71.84 0.0 0.0	-6.41 0.0 0.0	6.42		
7	79.98 0.0 0.0	72.94 0.0 0.0	-7.03 0.0 0.0	7.04		
8	81.7 0.0 0.0	74.29 0.0 0.0	-7.4 0.0 0.0	7.41		
9	83.41 0.0 0.0	75.91 0.0 0.0	-7.49 0.0 0.0	7.5		
10	85.12 0.0 0.0	77.8 0.0 0.0	-7.31 0.0 0.0	7.32		
11	86.84 0.0 0.0	79.98 0.0 0.0	-6.85 0.0 0.0	6.86		
12	88.55 0.0 0.0	82.45 0.0 0.0	-6.09 0.0 0.0	6.1		
13	90.27 0.0 0.0	85.23 0.0 0.0	-5.03 0.0 0.0	5.04		
14	91.98 0.0 0.0	88.3 0.0 0.0	-3.67 0.0 0.0	3.68		
15	93.7 0.0 0.0	91.7 0.0 0.0	-1.99 0.0 0.0	2.0	Mean lightness difference (16 steps)	
16	95.41 0.0 0.0	95.41 0.0 0.0	0.0 0.0 0.0	0.01	ΔE*CIELAB = 4.6	
17	69.7 0.0 0.0	69.7 0.0 0.0	0.0 0.0 0.0	0.01		
18	76.13 0.0 0.0	70.82 0.0 0.0	-5.3 0.0 0.0	5.31		
19	82.55 0.0 0.0	75.07 0.0 0.0	-7.48 0.0 0.0	7.49		
20	88.98 0.0 0.0	83.12 0.0 0.0	-5.85 0.0 0.0	5.86	Mean lightness difference (5 steps)	
21	95.41 0.0 0.0	95.41 0.0 0.0	0.0 0.0 0.0	0.01	ΔL*CIELAB = 3.7	
Mean colour reproduction index:					R* <sub>ab,m</sub> = 80	

OE640-3N-117-5: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-117-5: File: Measure unknown; Device: Device unknown; Date: Date unknown

L*/Y <sub>intended</sub> (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* setgray																
g <sub>N</sub> =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* CIELAB, r (relative)																
w* <sub>intended</sub>	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* <sub>out</sub>	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

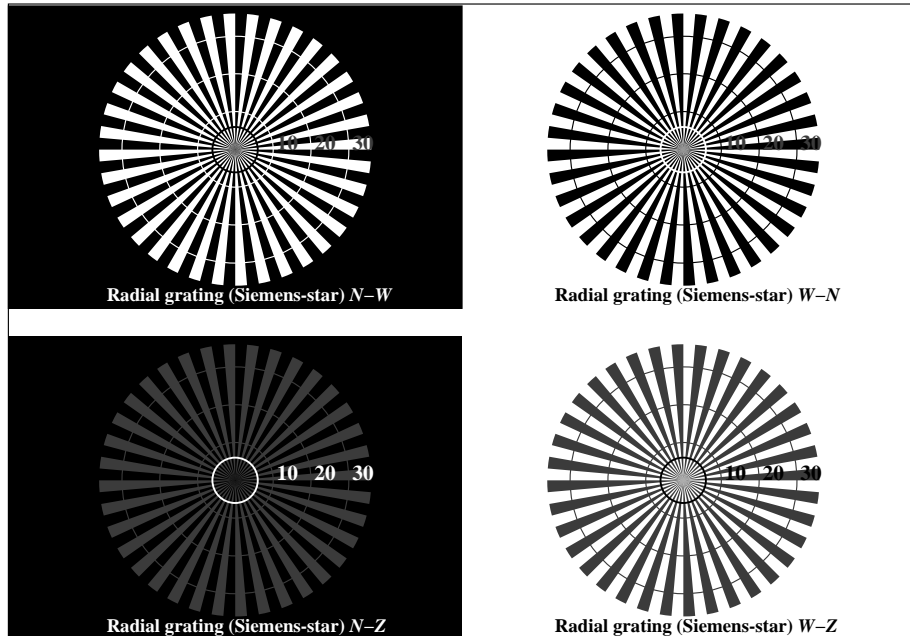
OE640-7N, Picture A7-117-5: 16 visual equidistant L\*-grey steps; PS operator: w\* setgray

OE64: In-output relation according to ISO 9241-306; 1MR, DEH  
Viewing Y contrast Y<sub>W</sub>:Y<sub>N</sub>=88,9:40; Y<sub>N</sub> range 30 to <60

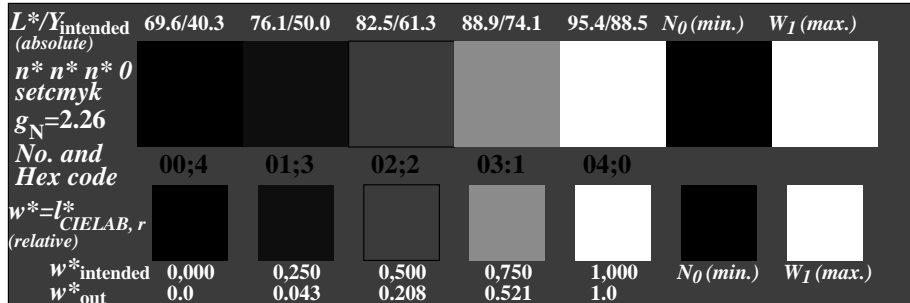
input: all (->rgb\*<sub>de</sub>) setrgbcolor  
output 130-5: g<sub>P</sub>=1.0; g<sub>N</sub>=2.1

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

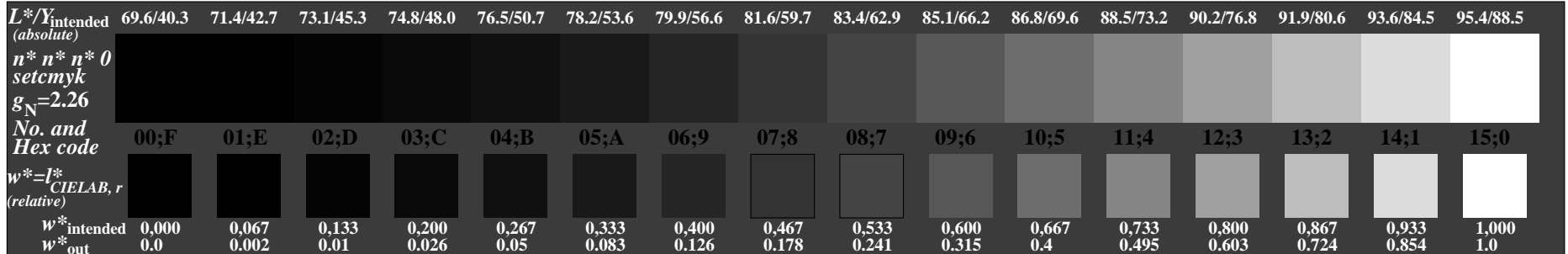
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIE LAB



OE640-3N, Picture A1-127-6: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $n^*n^*n^*0$  setcmkcolor

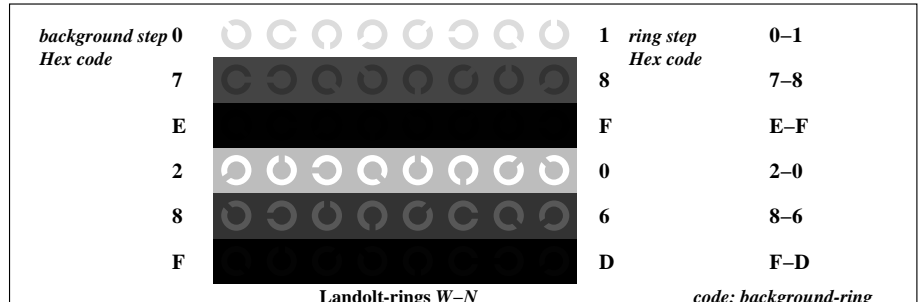


OE640-5N, Picture A2-127-6: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $n^*n^*n^*0$  setcmkcolor

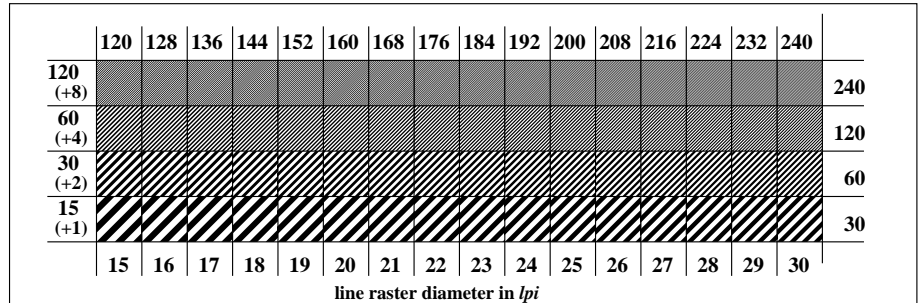


OE640-7N, Picture A3-127-6: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^*n^*n^*0$  setcmkcolor

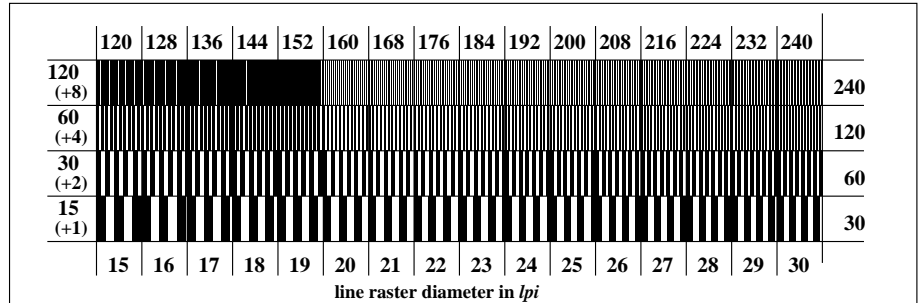
OE64: similar ME16 according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:40$ ;  $Y_N$  range 30 to <60



OE641-1N, Picture A4-127-6: Landolt-rings W-N; PS operator:  $n^*n^*n^*0$  setcmkcolor



OE641-3N, Picture A5-127-6: Line raster under 45° (or 135°); PS operator:  $n^*n^*n^*0$  setcmkcolor



OE641-5N, Picture A6-127-6: Line raster under 90° (or 0°); PS operator:  $n^*n^*n^*0$  setcmkcolor

input: all ( $\rightarrow rgb^*_{de}$ ) setrgbcolor  
output 130-6:  $g_P=1.0$ ;  $g_N=2.1$

Test for the best visual linearized output of Picture A7-127-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-127-0</b>		
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
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-127-0</b>		
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
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-127-0</b>		
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 OE640-3N-1256-7

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

**PDF-File:** http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF underline Yes/No

**PS-File:** http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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

OE640-7N-127-7

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all (->rgb\*\_de) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:40$ ;  $Y_N$  range 30 to <60  
output 130-7:  $g_P=1.0$ ;  $g_N=2.1$

Test for the best visual linearized output of Picture A7-127-0		Yes/No
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-127-0</b>		
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
<b>Test of the radial grating under 45° according to picture A5-127-0</b>		
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
<b>Test of the radial grating under 90° according to picture A6-127-0</b>		
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 OE641-3N-127-7

**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/OE64/OE64F1P2.PDF

**PS file:** http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS

**Picture A7-127-2: 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/OE64/OE64F1P2.PDF

**picture A7-127-2**

underline Yes/No

**PS-File:** http://130.149.60.45/farbmetrik/OE64/OE64F1P2.PS

**picture A7-127-2**

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

OE641-7N-127-7



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

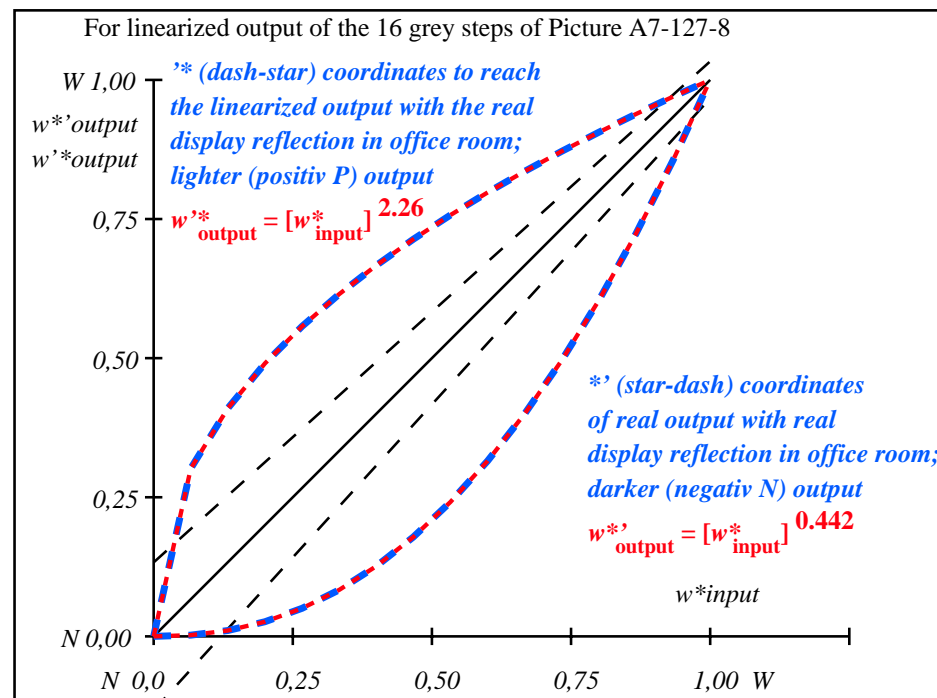
i	LAB*ref	I*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	69.7	0.0	0.0	0.0	0.0	0.01
2	71.41	0.0	0.0	0.0	0.0	1.66
3	73.13	0.0	0.0	0.0	0.0	3.16
4	74.84	0.0	0.0	0.0	0.0	4.47
5	76.55	0.0	0.0	0.0	0.0	5.56
6	78.27	0.0	0.0	0.0	0.0	6.42
7	79.98	0.0	0.0	0.0	0.0	7.04
8	81.7	0.0	0.0	0.0	0.0	7.41
9	83.41	0.0	0.0	0.0	0.0	7.5
10	85.12	0.0	0.0	0.0	0.0	7.32
11	86.84	0.0	0.0	0.0	0.0	6.86
12	88.55	0.0	0.0	0.0	0.0	6.1
13	90.27	0.0	0.0	0.0	0.0	5.04
14	91.98	0.0	0.0	0.0	0.0	3.68
15	93.7	0.0	0.0	0.0	0.0	2.0
16	95.41	0.0	0.0	0.0	0.0	0.01
17	69.7	0.0	0.0	0.0	0.0	0.01
18	76.13	0.0	0.0	0.0	0.0	5.31
19	82.55	0.0	0.0	0.0	0.0	7.49
20	88.98	0.0	0.0	0.0	0.0	5.86
21	95.41	0.0	0.0	0.0	0.0	0.01

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

Mean lightness difference (5 steps)  $\Delta E^*_{\text{CIELAB}} = 3.7$

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

OE640-3N-127-8: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-127-8: File: Measure unknown; Device: Device unknown; Date: Date unknown

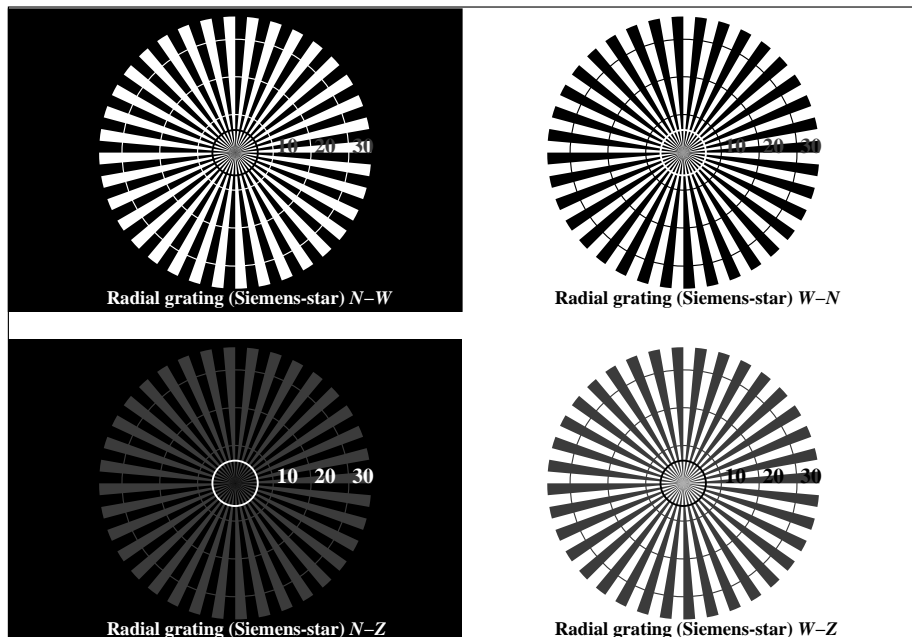
$L^*/Y^*_{\text{intended}}$ (absolute)	69.7/40.3	71.4/42.8	73.1/45.4	74.8/48.0	76.6/50.8	78.3/53.7	80.0/56.6	81.7/59.7	83.4/62.9	85.1/66.3	86.8/69.7	88.6/73.2	90.3/76.9	92.0/80.7	93.7/84.6	95.4/88.6
$n^* n^* n^* 0$ setcmk $g_N=2.26$ No. and Hex code	00;F	01;E	02;D	03;C	04;B	05;A	06;9	07;8	08;7	09;6	10;5	11;4	12;3	13;2	14;1	15;0
$w^* = l^*_{\text{CIELAB}, r}$ (relative)	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{out}}$	0.0	0.002	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

OE640-7N, Picture A7-127-8: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $n^* n^* n^* 0$  setcmkcolor

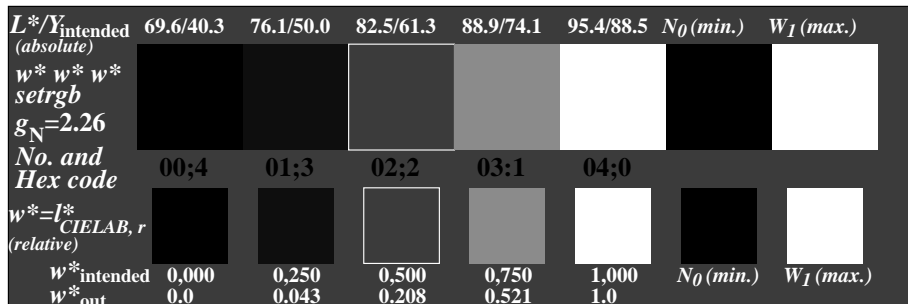
OE64: In-output relation according to ISO 9241-306; 1MR, DEH  
Viewing  $Y$  contrast  $Y_W:Y_N=88,9:40$ ;  $Y_N$  range 30 to <60

input: all ( $\rightarrow rgb^*_{\text{de}}$ ) setrgbcolor  
output 130-8:  $g_P=1.0$ ;  $g_N=2.1$

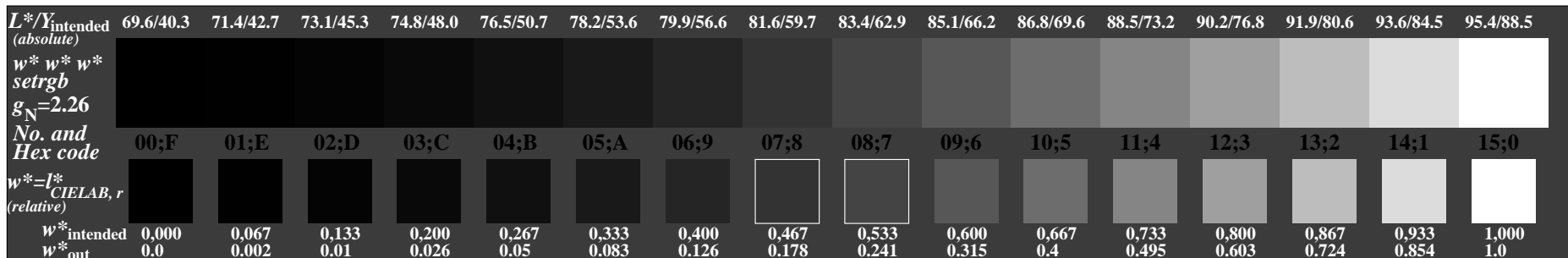
See similar ISO test charts: <http://www.ps.bam.de/24705TE>, <http://www.ps.bam.de/9241E>  
Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1.1, CIELAB



OE640-3N, Picture A1-137-9: Radial grating N-W, W-N, N-Z, W-Z; PS operator:  $w^* w^* w^* \text{setrgbcolor}$

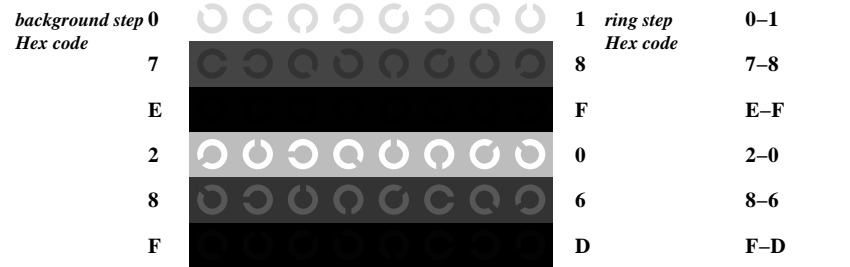


OE640-5N, Picture A2-137-9: 5 equidistant  $L^*$ -grey steps+ $N_0$ + $W_1$ ; PS operator:  $w^* w^* w^* \text{setrgbcolor}$



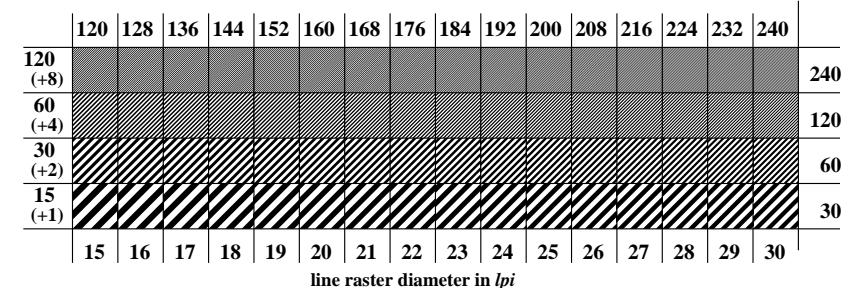
OE640-7N, Picture A3-137-9: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^* \text{setrgbcolor}$

OE64: 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



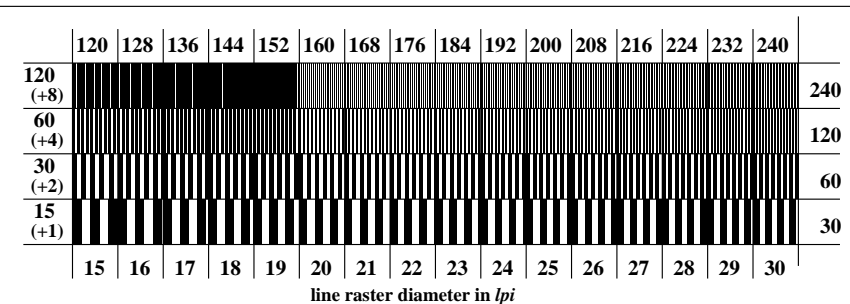
Landolt-rings W-N code: background-ring

OE641-1N, Picture A4-137-9: Landolt-rings W-N; PS operator:  $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE641-3N, Picture A5-137-9: Line raster under 45° (or 135°); PS operator:  $w^* w^* w^* \text{setrgbcolor}$



line raster diameter in lpi

OE641-5N, Picture A6-137-9: Line raster under 90° (or 0°); PS operator:  $w^* w^* w^* \text{setrgbcolor}$

input: all ( $\rightarrow \text{rgb}^*_{\text{de}}$ )  $\text{setrgbcolor}$   
output 130-9:  $g_P=1.0$ ;  $g_N=2.1$

TUB registration: 20110801-OE64/OE64L0NA.TXT /.PS  
application for output of displays: monitor systems or data projector systems  
TUB material: code=rh4ta

<b>Test for the best visual linearized output of Picture A7-137-0</b>		<b>Yes/No</b>
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the radial grating according to picture A1-137-0</b>		
N-W-radial grating:	Is the resolution diameter < 6 mm?	<b>Yes/No</b>
	Test with magnifying glass (e.g. 6x)	
	resolution diameter	..... mm
W-N-radial grating:	Is the resolution diameter < 6 mm?	<b>Yes/No</b>
	Test with magnifying glass (e.g. 6x)	
	resolution diameter	..... mm
N-Z-radial grating:	Is the resolution diameter < 6 mm?	<b>Yes/No</b>
	Test with magnifying glass (e.g. 6x)	
	resolution diameter	..... mm
W-Z-radial grating:	Is the resolution diameter < 6 mm?	<b>Yes/No</b>
	Test with magnifying glass (e.g. 6x)	
	resolution diameter	..... mm
<b>Test of 5 visual equidistant L*-grey steps according to picture A2-137-0</b>		
Are the 5 steps on the upper rows distinguishable?		<b>Yes/No</b>
If No: How many steps can be distinguished?		
of the given 5 steps:		..... Steps
<b>Test of 16 visual equidistant L*-grey steps according to picture A3-137-0</b>		
Are the 16 steps on the upper rows distinguishable?		<b>Yes/No</b>
If No: How many steps can be distinguished?		
of the given 16 steps:		.... Steps

Part 1 OE640-3N-1356-10

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

**PDF-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NP.PDF> **underline Yes/No**

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64L0NA.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 OE64L0NP.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 OE64L0NA.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

OE640-7N-137-10

OE64: Form A for test chart according to ISO 9241-306; 1MR, DEHinput: all ( $\rightarrow$ rgb\*<sub>de</sub>) setrgbcolor  
Viewing Y contrast  $Y_W:Y_N=88,9:40$ ;  $Y_N$  range 30 to <60  
output 130-10:  $g_P=1.0$ ;  $g_N=2.1$

<b>Test for the best visual linearized output of Picture A7-137-0</b>		<b>Yes/No</b>
<b>Output test with the computer display ( ) or the external display ( )</b>		
<b>Test of the Landolt-rings N-W according to picture A4-137-0</b>		
N-W-radial grating:		
Is the recognition frequency of the Landolt-rings > 50% (5 of 8 at least)?		
	background – ring	<b>Yes/No</b>
	0 – 1	<b>Yes/No</b>
	7 – 8	<b>Yes/No</b>
	E – F	<b>Yes/No</b>
	2 – 0	<b>Yes/No</b>
	8 – 6	<b>Yes/No</b>
	F – D	<b>Yes/No</b>
<b>Test of the radial grating under 45° according to picture A5-137-0</b>		
Can equally spaced lines be seen?		
Visual testing: for radial diameter from 15 to 60 lpi		<b>Yes/No</b>
Test with a magnifying glass (e.g. 6x): – from 15 lpi:		<b>to ..... lpi</b>
<b>Test of the radial grating under 90° according to picture A6-137-0</b>		
Can equally spaced lines be seen?		
Visual testing: for radial diameter from 15 to 60 lpi		<b>Yes/No</b>
Test with a magnifying glass (e.g. 6x): – from 15 lpi:		<b>to ..... lpi</b>

Part 2 OE641-3N-137-10

**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/OE64/OE64F1P2.PDF>

**PS file:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.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

*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/OE64/OE64F1P2.PDF>

**picture A7-137-2**

**underline Yes/No**

**PS-File:** <http://130.149.60.45/farbmetrik/OE64/OE64F1P2.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](http://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**

OE641-7N-137-10

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

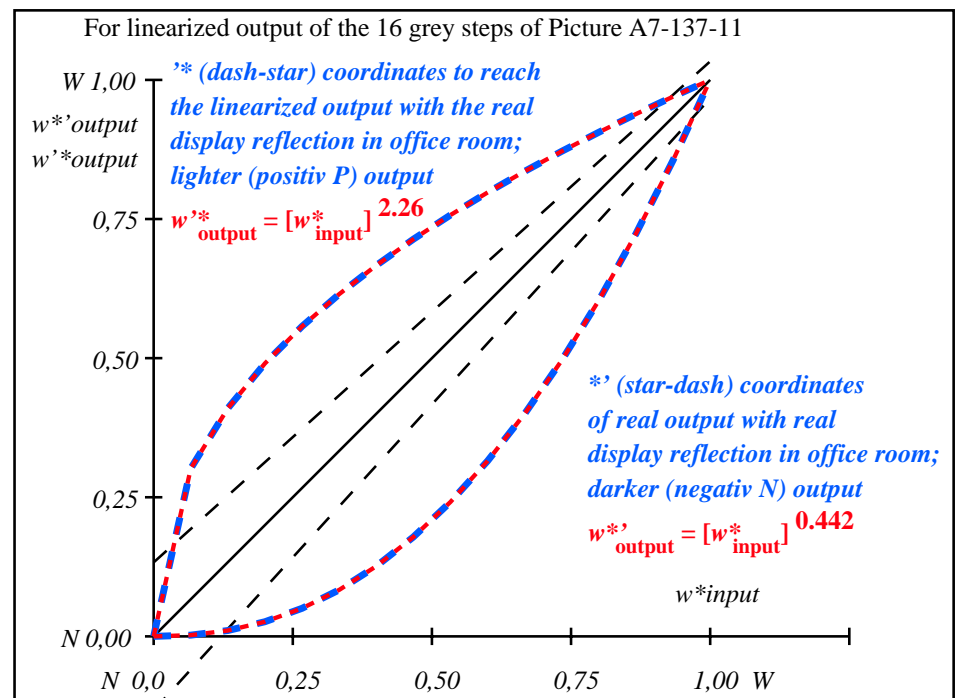
i	LAB*ref	L*out	LAB*out	LAB*out/c-ref	ΔE*	Start output S1
1	69.7	0.0	0.0	0.0	0.0	0.01
2	71.41	0.0	0.0	0.0	0.0	1.66
3	73.13	0.0	0.0	0.0	0.0	3.16
4	74.84	0.0	0.0	0.0	0.0	4.47
5	76.55	0.0	0.0	0.0	0.0	5.56
6	78.27	0.0	0.0	0.0	0.0	6.42
7	79.98	0.0	0.0	0.0	0.0	7.04
8	81.7	0.0	0.0	0.0	0.0	7.41
9	83.41	0.0	0.0	0.0	0.0	7.5
10	85.12	0.0	0.0	0.0	0.0	7.32
11	86.84	0.0	0.0	0.0	0.0	6.86
12	88.55	0.0	0.0	0.0	0.0	6.1
13	90.27	0.0	0.0	0.0	0.0	5.04
14	91.98	0.0	0.0	0.0	0.0	3.68
15	93.7	0.0	0.0	0.0	0.0	2.0
16	95.41	0.0	0.0	0.0	0.0	0.01
17	69.7	0.0	0.0	0.0	0.0	0.01
18	76.13	0.0	0.0	0.0	0.0	5.31
19	82.55	0.0	0.0	0.0	0.0	7.49
20	88.98	0.0	0.0	0.0	0.0	5.86
21	95.41	0.0	0.0	0.0	0.0	0.01

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

Mean lightness difference (5 steps)  $\Delta E^*_{\text{CIELAB}} = 3.7$

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

OE640-3N-137-11: File: Measure unknown; Device: Device unknown; Date: Date unknown



OE641-3N-137-11: 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)																
$w^*_{\text{intended}}$	0.000	0.067	0.133	0.200	0.267	0.333	0.400	0.467	0.533	0.600	0.667	0.733	0.800	0.867	0.933	1.000
$w^*_{\text{out}}$	0.0	0.002	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

OE640-7N, Picture A7-137-11: 16 visual equidistant  $L^*$ -grey steps; PS operator:  $w^* w^* w^*$  setrgbcolor

OE64: 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: all ( $\rightarrow \text{rgb}^*_{\text{de}}$ ) setrgbcolor  
output 130-11:  $g_P=1.0$ ;  $g_N=2.1$