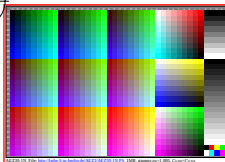


http://farbe.li.tu-berlin.de/AEZ3/AEZ3L0N1.TXT /PS; frame and text file in VG; start output  
N: no 3D-linearization (OL) in file (F) or PS-startup (S), page 1/1



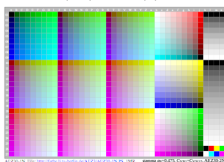
↑ VG → VG

**Original VG with standard gamma  $g_p=1,000$**

| File     | graphic | ISO step          | gamma $g_p$ |
|----------|---------|-------------------|-------------|
| AEZ30-1N | VG      | $C_{Yp0}=C_{YN0}$ | 1,000       |

Application: luminance contrast of sRGB displays:  
 $Y_W : Y_N = 90 : 0,31 = 288 : 1$  according to ISO 9241-306.  
(contrast without display reflection of room light)

AEZ30-1N



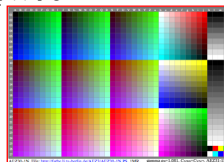
↑ VG → PG

**Change of original VG with gamma  $g_p=0,475$**

| File     | graphic | ISO step           | gamma $g_p$ |
|----------|---------|--------------------|-------------|
| AEZ30-2N | PG      | $C_{Yp1}=C_{YN15}$ | 0,475       |

Application: Low luminance contrast of projectors:  
 $Y_W : Y_N = 90 : 40 = 2,15 : 1$  according to ISO 9241-306.

AEZ30-2N



**Output test of color devices at the work places**

The visual colours change by the software and:  
on displays with the reflection of the room light,  
in print with the printer driver and the workflow.

The luminance contrast ratio between White W and Black N determines,  
if the 9 gray steps between N and W appear equally spaced.

**Equal spacing shall appear for the intended device output:**  
on displays for the output within the broken red rectangle,  
in print for the output within the continuous red rectangle.

If this is NOT the case, then determine visually with the next page  
the ISO-contrast step which gives the intended result.

You may ask the device manufacturer for software solutions.  
You may change the PDF-file gamma to produce the intended result.  
Different gamma-change methods in VG or PG graphics are available.

AEZ31-1N

VG → PG  
←

**Original VG with standard gamma  $g_p=1,000$**

| File     | graphic | ISO step          | gamma $g_p$ |
|----------|---------|-------------------|-------------|
| AEZ31-1N | PG      | $C_{Yp0}=C_{YN0}$ | 1,000       |

Application: luminance contrast of sRGB displays:  
 $Y_W : Y_N = 90 : 0,31 = 288 : 1$  according to ISO 9241-306.  
(contrast without display reflection of room light)

**Ergonomics of human-system interaction ISO 9241-306:2018**

Part 306: Field assessment methods for electronic visual displays

For test charts see  
<http://standards.iso.org/iso/9241/306/ed-2/nd.html>

For similar ISO-test charts in A4 size see  
<http://standards.iso.org/iso/9241/306/ed-2/nd.html>

For similar ISO-test charts with output questions see  
<http://standards.iso.org/iso/9241/306/ed-2/nd.html>

For similar ISO/IEC test charts according to ISO/IEC 15775,  
and ISO/IEC TR 24705 see  
<http://farbe.li.tu-berlin.de/A/24705TE.html>

For the relation and links to many other standards see  
<http://farbe.li.tu-berlin.de/EE68/EE68LONP.PDF>

AEZ31-1N

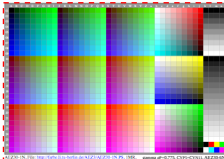
VG → PG  
→

**Change of original VG with gamma  $g_p=0,775$**

| File     | graphic | ISO step           | gamma $g_p$ |
|----------|---------|--------------------|-------------|
| AEZ30-6N | PG      | $C_{Yp5}=C_{YN11}$ | 0,775       |

Application: office luminance contrast of displays:  
 $Y_W : Y_N = 90 : 2,5 = 36 : 1$  according to ISO 9241-306.  
(contrast of offset paper according to ISO/IEC 15775)

AEZ30-6N



VG → PG  
←

**Change original VG with gamma  $g_p=0,850$**

| File     | graphic | ISO step           | gamma $g_p$ |
|----------|---------|--------------------|-------------|
| AEZ30-7N | PG      | $C_{Yp6}=C_{YN10}$ | 0,850       |

Application: mean luminance contrast of displays:  
 $Y_W : Y_N = 90 : 1,25 = 72 : 1$  according to ISO 9241-306.  
(contrast higher offset paper according to ISO/IEC 15775)

AEZ30-7N

**PDF- and PS-test files for relative colour image reproduction according to DIN 33872-1 to -6:2010**

These DIN-test charts serve for the colorimetric specification,  
and the visual assessment of the display and print output.

For free download of the test charts see  
<http://farbe.li.tu-berlin.de/A/33872.html>

For similar DIN-test charts according to DIN 33866-1 to -5:2000 see  
<http://farbe.li.tu-berlin.de/A/DE13/DE13.HTM>

For more test charts, standards and applications see  
<http://farbe.li.tu-berlin.de/A/INFORMALAE.html>

AEZ31-1N

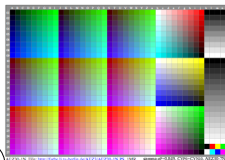
**Ergonomic and colorimetric colour image reproduction**

For the ergonomic and colorimetric colour image reproduction see  
Richter, Klaus (2016), Output linearization method OLM36 for  
displays, printers, and offset, 61 pages, 1,4MB.  
[http://farbe.li.tu-berlin.de/OLM36\\_01.PDF](http://farbe.li.tu-berlin.de/OLM36_01.PDF)  
(Content similar to CIE R0-09:2015, free download for CIE-members.)

For a list of publications of Klaus Richter see  
<http://farbe.li.tu-berlin.de/XY91FEN.html>

For basic information in 6 languages (EN, GE, FR, IT, SP, NO):  
Klaus Richter (2015), Colour, colour vision, and elementary colours  
in colour information technology, 86 pages, 2,2 MB, see  
<http://standards.iso.org/iso/9241/306/ed-2/ES15.PDF>

AEZ31-1N



AEZ30-8N

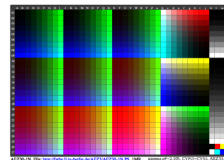
VG → PG  
→

**Change original VG with gamma  $g_p=2,105$**

| File     | graphic | ISO step           | gamma $g_p$ |
|----------|---------|--------------------|-------------|
| AEZ31-8N | PG      | $C_{Yp15}=C_{YN1}$ | 2,105       |

Application: extrem luminance contrast of displays:  
 $Y_W : Y_N = 90 : 0,002 = 36864 : 1$  according to ISO 9241-306.  
(extrem high contrast not known by the visual system)

AEZ31-8N



AEZ30-9N

TUB-test chart AEZ3; 5 of 6 colour figures in pixel graphic PG  
1 VG[0-1], 5 PG gamma transfer, similar ISO 9241-306:AE49

input: w/rgb/cmyk → rgb (1MR)  
output: change of gamma  $g_p$