

Remark: The last version of this file for the toner yield test according to DIN 33866 is available under 020901

<http://www.ps.bam.de/DE22/D33870E.PDF>

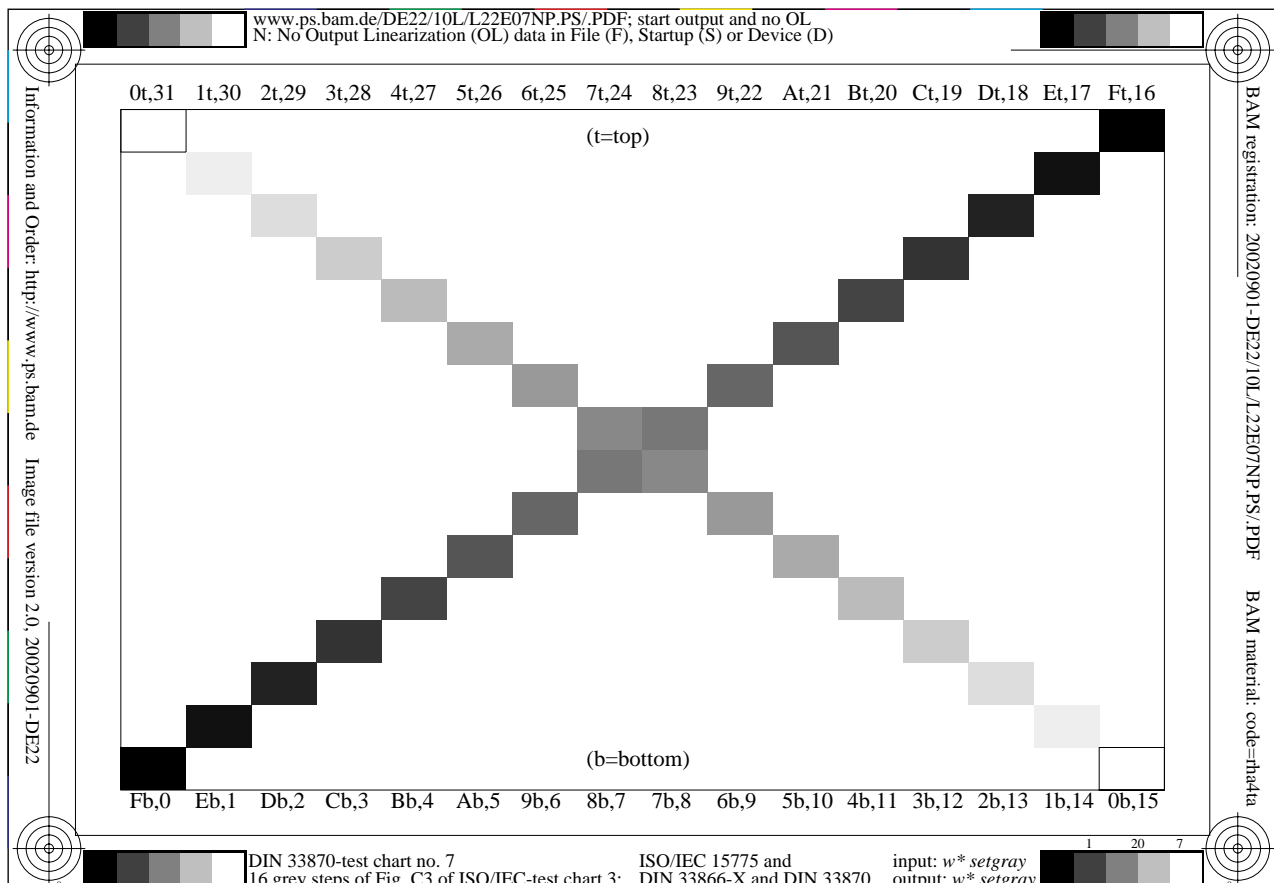
### 1.0 Necessary Hard- and Software for the toner yield test according to a new draft of DIN 33870

Black and white printer with toner cartridge connected to the computer operating system

*Windows 3.x or later or Macintosh 8.5 or later*

with software *Adobe Acrobat Reader 4.0 or later*;

Software *Adobe Acrobat Distiller 4.0 or later* for the production of PDF files from PS files (compare the section 3.0: Production of PDF files).



**Figure 1: DIN 33870 Test chart no. 7 with 16 step Grey scale according to DIN 33866-1.**

All necessary files for the test are free available in the internet, see

<http://www.ps.bam.de/DE22/DE22.HTM>

The 16 step grey scale of Fig. 1 as well as the file to include the CIELAB lightness  $L^*$  are under the following internet addresses for download on the local computer.

<http://www.ps.bam.de/DE22/10L/L22E00NP.PS>

<http://www.ps.bam.de/DE22/10L/L22E00SP.PS>

<http://www.ps.bam.de/DE22/10X/MTLE00SP.PS>

All files have a file size below 150 kByte. They are also given as PDF file with Fig. 1 as last page and as TXT file for study of the PostScript code in the browser window.

Remark: The internet PDF files serve only for a quick survey. All PDF files for the test must be produced on the local computer with the local software *Adobe Acrobat Distiller*. The start and other output is dependent on the *Distiller* and *Reader* versions and the default values of this software.

The file MTLE00SP.PS must be copied in the **Startup** directory of the **Copy** of the *Distiller*. Here the measurement data no. 0 to 31 must be included (Output of L22E00NP.PDF produced with **Original** of Distiller from L22G00NP.PS).

The following file serves after production of the PDF for the Viewing of the results (compare Fig. 9).

<http://www.ps.bam.de/DG22/10X/X22E00SP.PS>

### 3.0 Main test pages for the test of yield and of the reproduction properties

The locally produced file L22G00NP.PDF (20 pages) include the following 7 test pages no. 0 to 6:

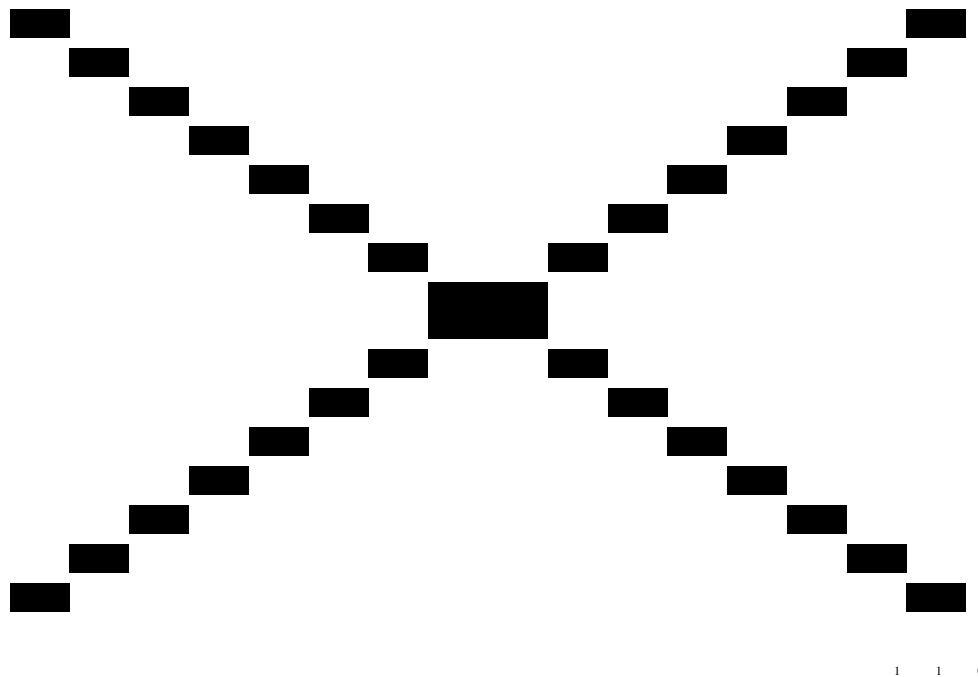


Figure 2: DIN 33870 Test chart no. 0: 5% area coverage, page no. 1 to 13 (in the NP-file)

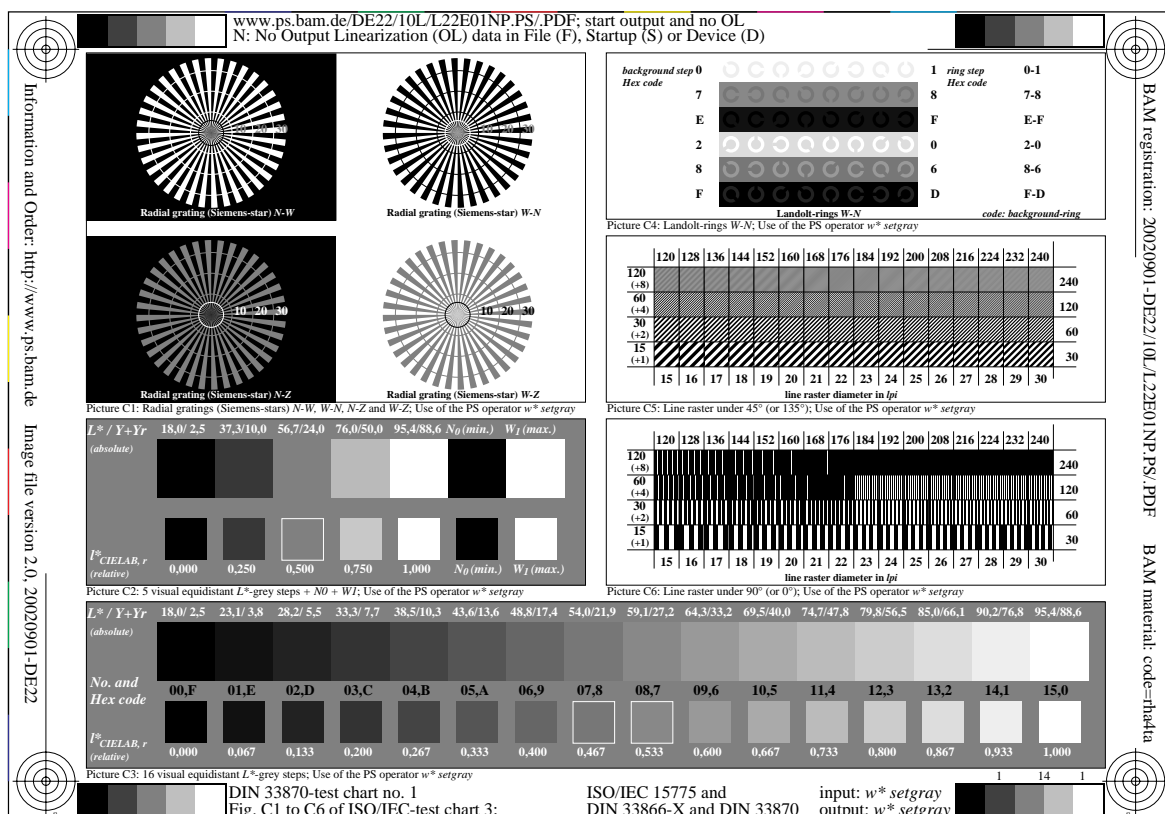


Figure 3: DIN 33870 Test chart no. 1, (identical test chart no. 3 according to DIN 33866-1), page 14

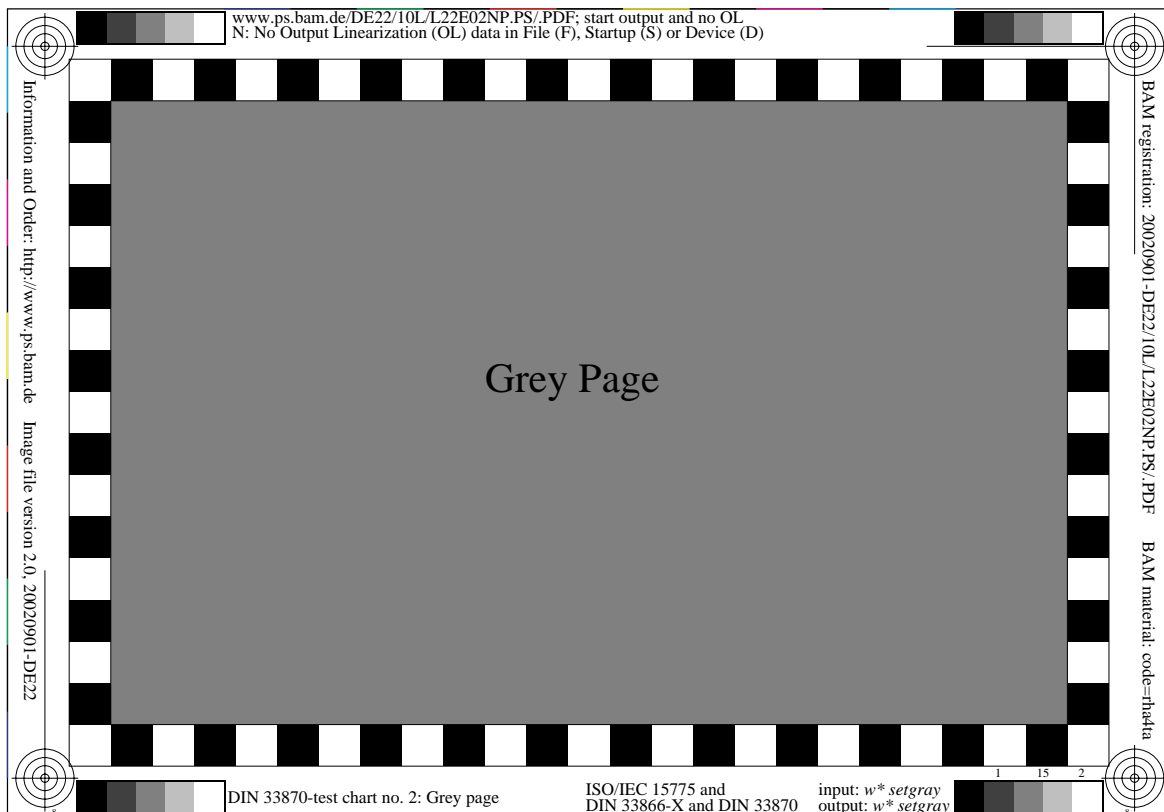


Figure 4: DIN 33870 Test chart no. 2, Grey page, page no. 15

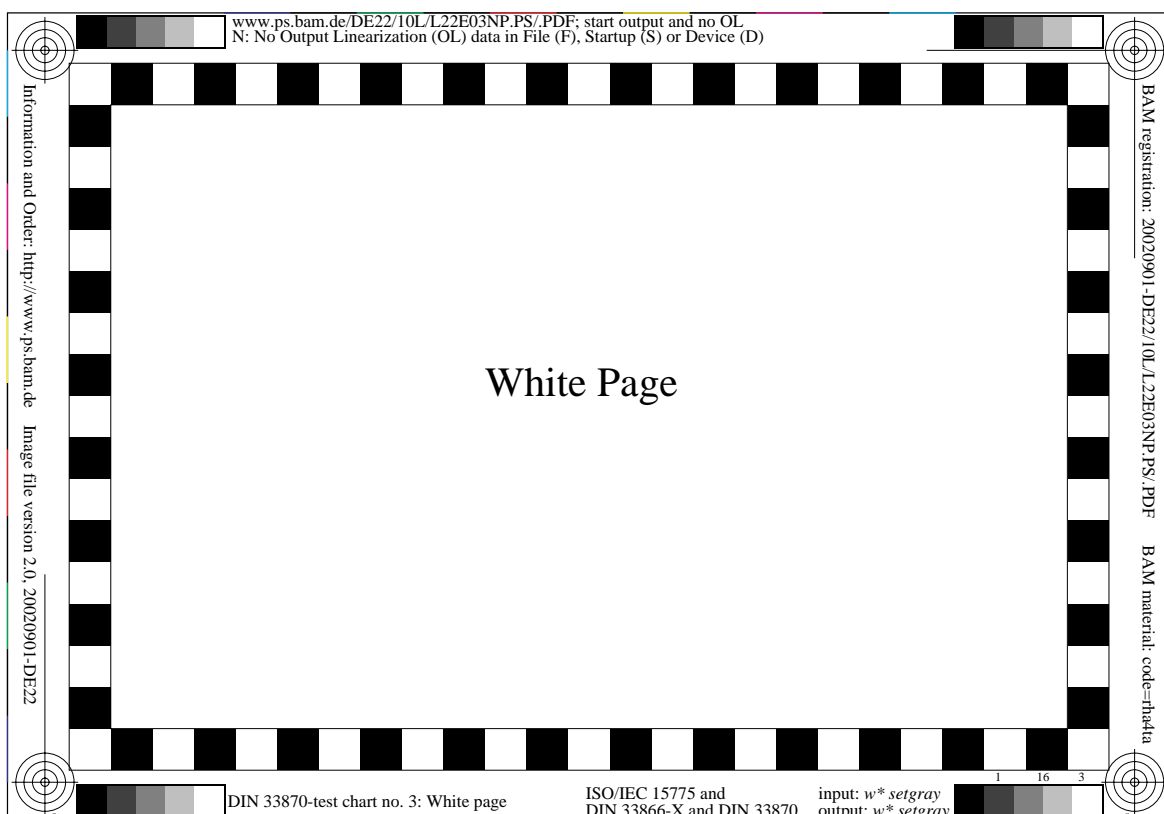


Figure 5: DIN 33870 Test chart no. 3, White page, page no. 16

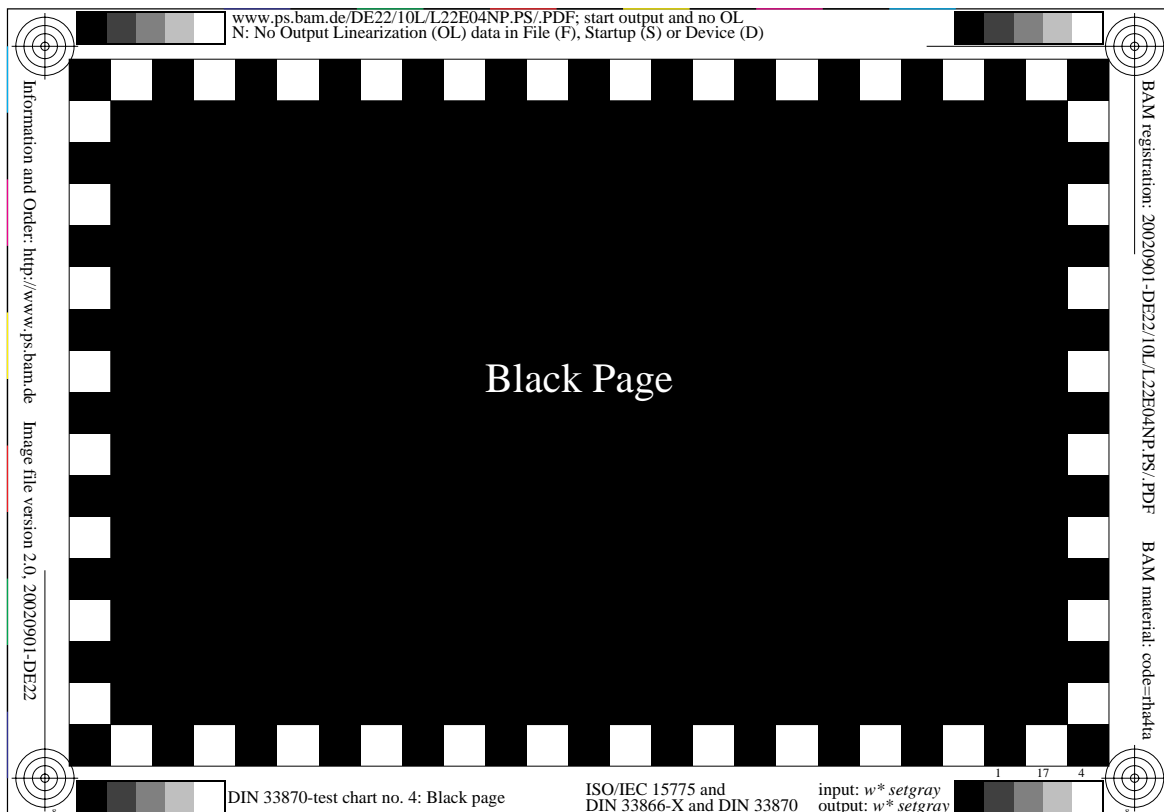


Figure 6: DIN 33870 Test chart no. 4: Black page, page no. 17

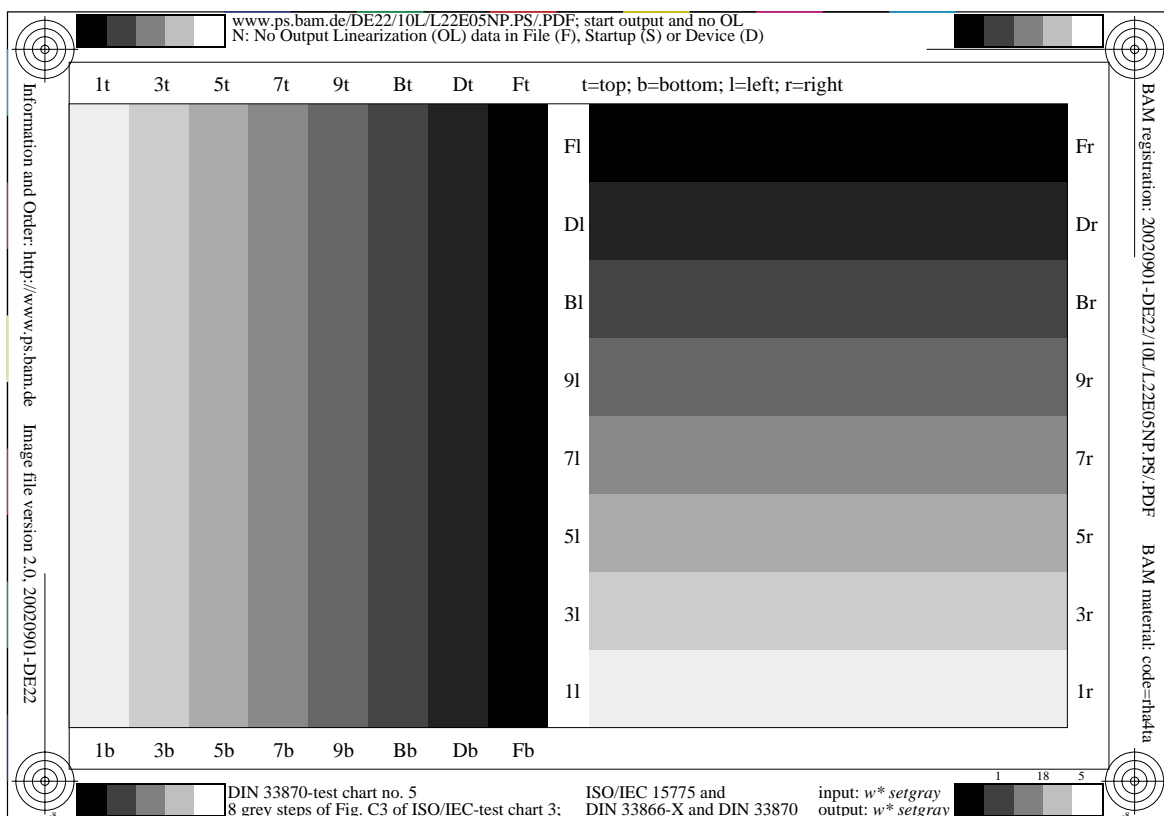


Figure 7: DIN 33870 Test chart no. 5: Grey strips, page no. 18

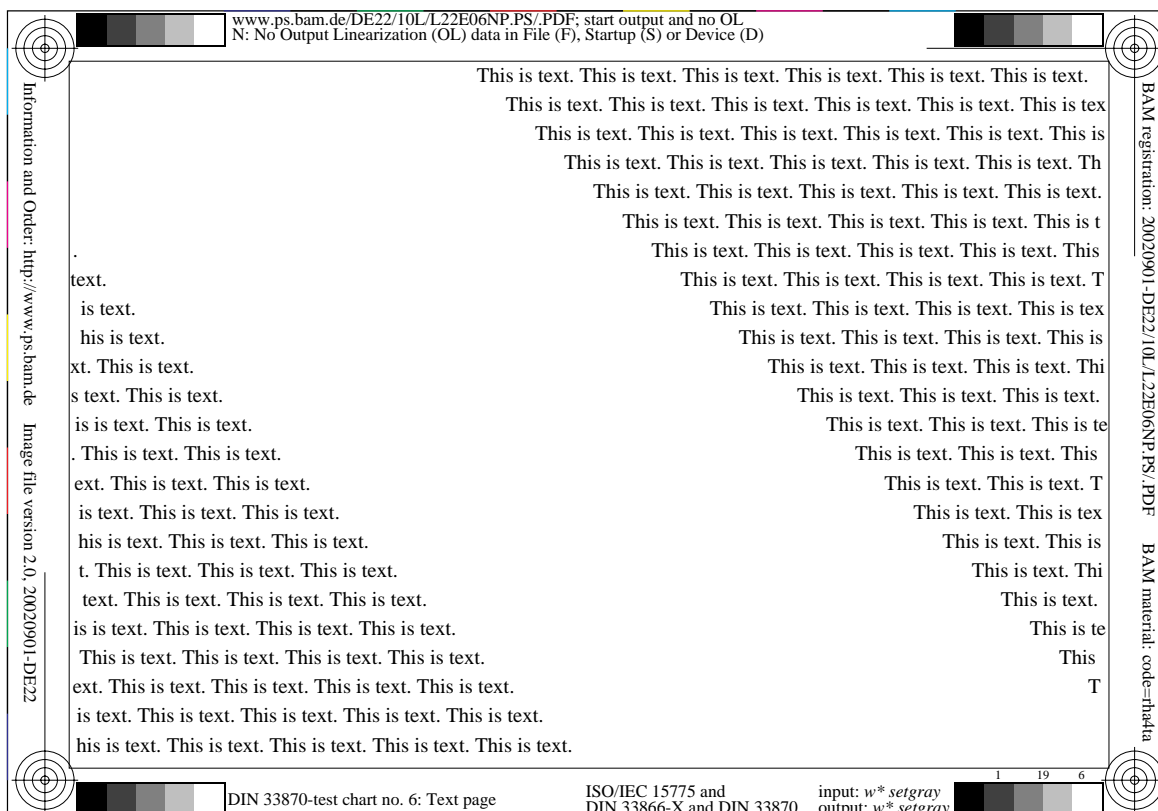


Figure 8: DIN 33870 Test chart no. 6: Text page, page no. 19

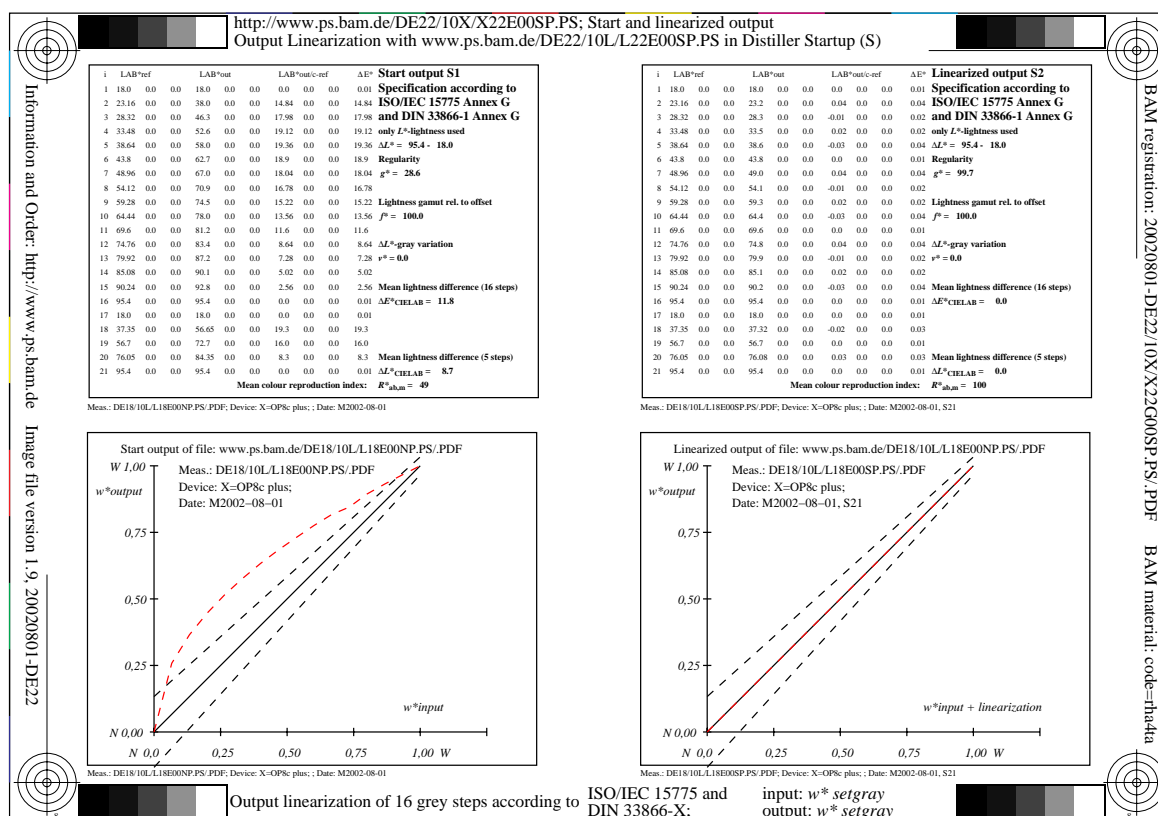
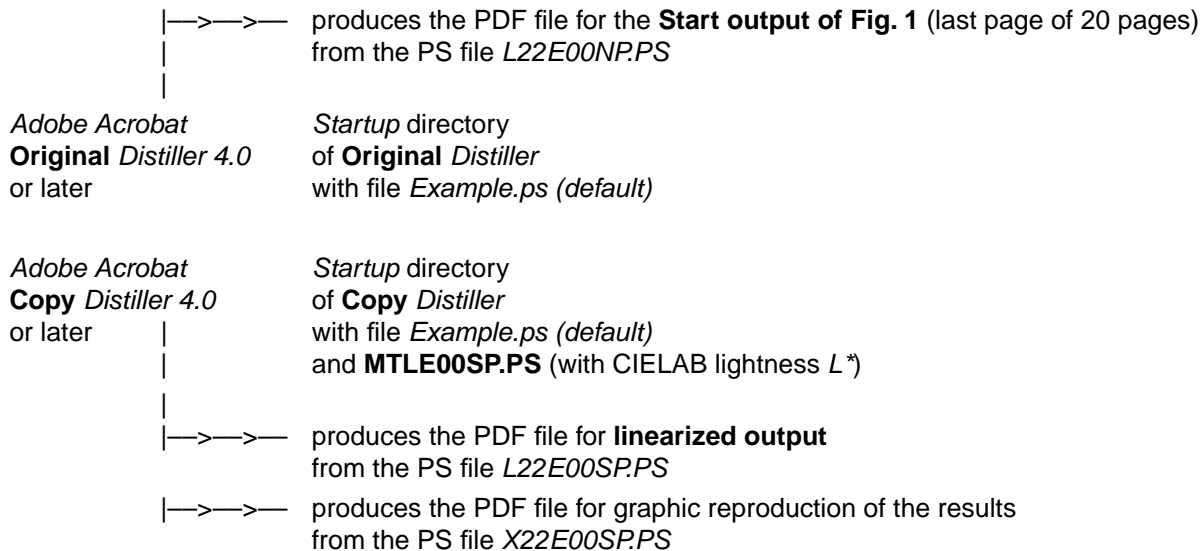


Figure 9: Example: Results of Start and linearized output (Magnification with Adobe Reader possible)

### 3.0 Production of PDF files from PS files (20 pages, test example)



### 4.0 Test example: Introduction in the toner yield test with output and measurement sequence

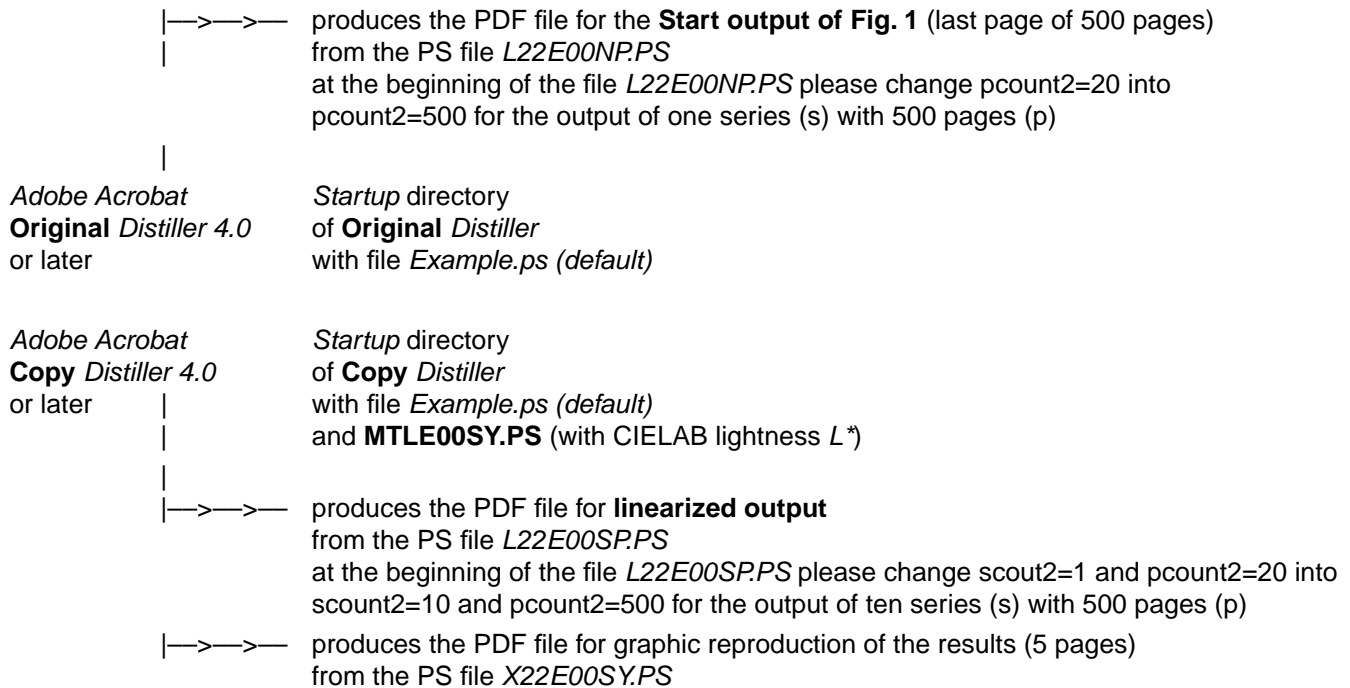
Remark 1: Remark: Only the procedure for linearization and the production of the results are described here. The test of the reproduction properties of the test pages (Fig. 2 to 8) is not described here.

Remark 2: In the test example 13 pages with 5% area coverage and 7 additional pages for the test of the reproduction properties are produced. This leads to 20 output pages. In the professional test (compare section 6.0) e. g. 10 series of 500 pages each are produced. Then 493 pages of 500 include 5% area coverage.

The following 5 steps are necessary for an introduction of the test and the documentation of the results on one page. To understand this procedure look at the workflow of section 3.0.

1. The output series **S1** of 20 pages is produced from L22E00NP.PS with the **Original Distiller**
2. **Page 20** (grey steps with X form) of the series **S1** is measured and the 32 CIELAB lightness  $L^*$  values are included in the file **MTLG00SP.PS**.
3. The output series **S2** of 20 pages is produced from the file L22E00SP.PS with the **Copy Distiller**.
4. The *linearized* page 20 (grey steps with X form) of the series **S2** is measured and the 32 CIELAB lightness  $L^*$  values are included in the file **MTLG00SP.PS**.
5. The results of **S1** and **S2** are produced from the file X22E00SP.PS (compare Fig. 9) with the **Copy Distiller**.

## 5.0 Production of PDF files from PS files (5000 pages, toner yield test)



## 6.0 Workflow of the toner yield test with output and sequence of measurement

Remark: Only the procedure for linearization and the production of the results are described here. The test of the reproduction properties of the test pages (Fig. 2 to 8) is not described here.

Please change at the beginning of the file *L22E00NP.PS* the values *pcount2*=20 into *pcount2*=500.

Please change at the beginning of the file *L22E00SP.PS* *scount2*=1 and *pcount2*=20 into *scount2*=10 and *pcount2*=500

This will produce 1 series of 500 pages from *L22E00NP.PS* and 10 series of 500 pages from *L22E00SP.PS*.

The following 8 steps are necessary for the test and the documentation of the results on five pages. To understand this procedure look at the workflow of section 5.0.

1. The output series **S1** of 500 pages is produced from *L22E00NP.PS* with the **Original Distiller**.
2. **Page 500** (grey steps with X form) of the series **S1** is measured and the 32 CIELAB lightness  $L^*$  values are included in the file **MTLG00SY.PS**.
3. An output of the series **S2** of **only one page** (no. 500) is produced from the file *L22E00SP.PS* with the **Copy Distiller**
4. The *linearized* page 500 (grey steps with X form) of the series **S2** is measured and the 32 CIELAB lightness  $L^*$  values are included in the file **MTLG00SY.PS**.
5. The results of **S1** and **S2** are produced from the file *X22E00SY.PS* (compare Fig. 9) with the **Copy Distiller**.
6. The output series **S22, ..., S27, S28, S29** of **500 pages each** (no. 501 to 1000, ... , 3501 to 4000, 4001 to 4500, 4501 to 5000) are produced from *L22E00SP.PS* with the **Copy Distiller**
7. The *linearized* pages 1000, ..., 4000, 4500, 5000 (grey steps with X form) of the series **S22, ..., S27, S28, S29** are measured and the 32 CIELAB lightness  $L^*$  values are included in the file **MTLG00SY.PS**.
8. The results of **S1** and **S2, S1 and S22, ..., S1 and S27, S1 and S28, S1 and S29** are produced with the file *X22E00SY.PS* on **five** pages.