

http://130.149.60.45/~farbmetrik/ME00/ME00LOFA.TXT / .PS; start output  
F: 3D-linearization ME00/ME00LE30FA.DAT in file (F), page 1/2

colour television  
multicolour printing  
colour photography

colour reproductions  
film to other media:  
film – television  
film – printing  
film – hardcopy

colour graphics

optimization  
(expenses, quality)

computer technic  
(hardware,  
software)

visual qualities  
(colour metric,  
lighting technic)

1-103030-L0

ME000-1N, B1\_01

visual  
properties:

color and  
color vision:

color order  
color attributes  
color scaling  
measurement

color reproduction

optimization with:  
CIE-color measurement  
CIE-color coordinates

technical  
properties:

color reproduction  
processes:

color television  
color photography  
multicolor printing

1-103030-L0

ME001-3N, B1\_02

three aims:

testing

research and  
development

advice and  
information

BAM laboratory:  
color reproduction

specification and  
judgement of  
color rendering-quality

simulation of  
reproduction

color original →  
color film  
color film →  
color printing  
color original →  
color printing

1-103030-L0

ME000-5N, B1\_03

influence parameters  
on color reproduction  
quality of the  
reproduction row:

color original →  
color film

(test-)color original and illumination  
(spectral reflection and radiation)  
camera, taking filters, exposure  
(spectral reflection and radiation)  
film material and development  
(spectral and absolute sensitivity)  
further treatment and projection  
(framing, spectral radiation)

1-103030-L0

ME000-7N, B1\_04

influence parameters  
on color reproduction

quality of the  
reproduction row:

color original →  
multicolor printing

color film original and illumination  
(spectral transmission and radiation)

production of color scan signal  
(spectral and absolute sensitivity)

processing of color scan signal  
(calculation program for print preparation)

reproduction of multicolor printing  
(halftoning, orientation, printing inks)

1-103030-L0

ME001-1N, B1\_05

influence parameters  
on color reproduction

quality of the  
reproduction row:

color original →  
color film →  
multicolor printing

mode of taking light and exposure  
(3200 / 6500 / 9000 K; -3 / 0 / +3 DIN)

color film material  
(Agfa, Fuji, Kodak, Konika, 3M)

properties of color scan signal  
(spectral and absolute sensitivity)

reproduction model and printing inks  
(signal processing, CIE colour scale)

1-103030-L0

ME001-3N, B1\_06

scanner for color slide material:

three photoelectric sensors  
0,01mm image point diameter  
4096 (12 bit) luminance range

measurement at each pixel:  
3 color values **R, G and B**

development intent:  
colorimetric device driver:

conversion of three color values  
**R, G and B** in colorness  
**L\*, a\* and b\*** (CIELAB system)

problems:

large pixel amount:  
approximately 3000×2000 pixels  
within a color slide 36mm × 24mm  
often original size larger than  
DIN-A2 with drum scanners

three procedures for optimization  
of colorimetric device driver:

adaptation of the spectral  
sensitivities at the three  
tristimulus value functions

optimization of 3 × 3- or  
3 × 6-device matrices for  
conversion from **RGB to L\*a\*b\***  
with 17 CIE-test colors

calculation of the spectral color  
reflection or transmission  
at each image position, for example  
with three densities of three known  
dyes (color pigments),  
only possible for  
homogeneous material  
(slide material, printing material)

1-103030-L0

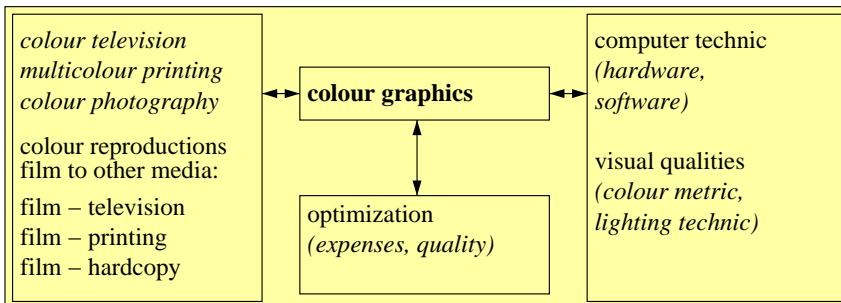
ME001-7N, B1\_07

TUB-test chart ME00; Computer graphics and colorimetry  
Image series ME00, 3D=1, de=0

input: **rgb/cmyk** → **rgb/cmyk**  
output: no change

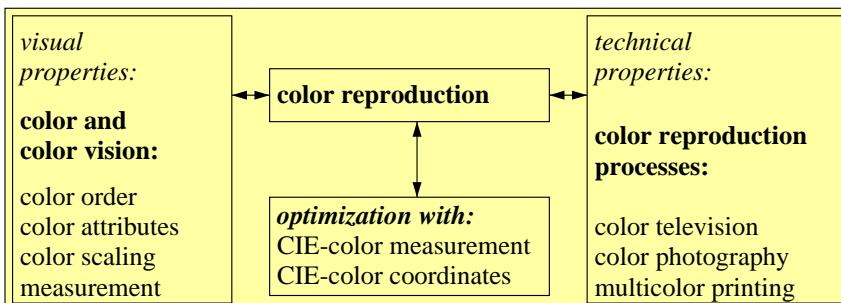
see similar files: <http://130.149.60.45/~farbmetrik/ME00/ME00LOFA.TXT> / .PS; start output  
technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmetrik>

http://130.149.60.45/~farbmetrik/ME00/ME00L0FA.TXT / .PS; 3D-linearization  
F: 3D-linearization ME00/ME00LE30FA.DAT in file (F), page 2/2



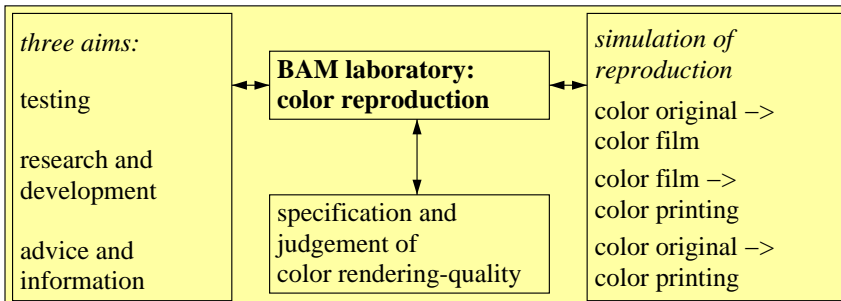
1-103130-L0

ME000-12, B1\_01



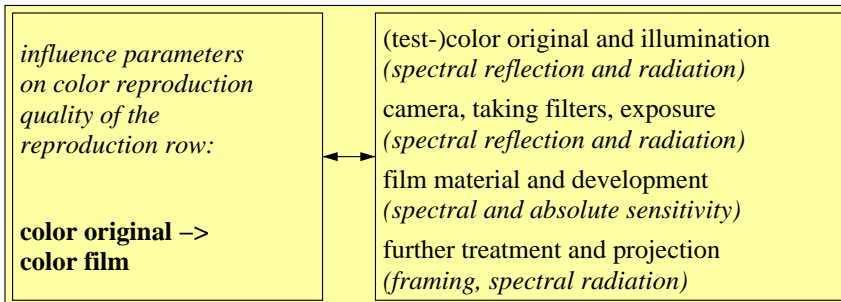
1-103130-L0

ME001-32, B1\_02



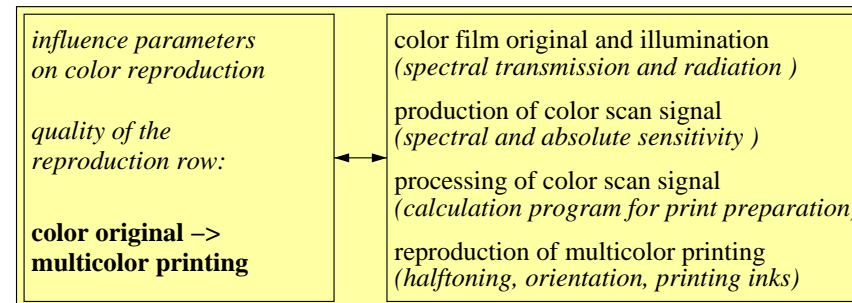
1-103130-L0

ME000-52, B1\_03



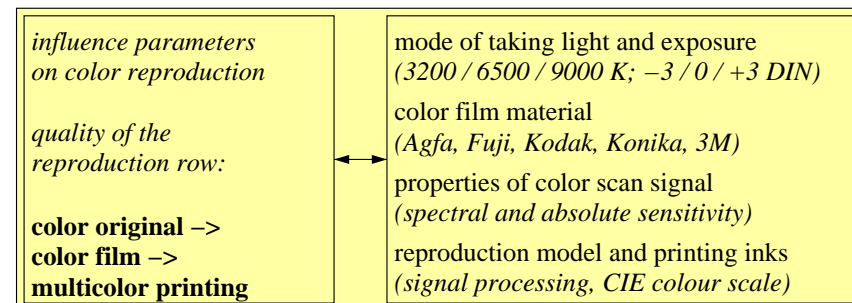
1-103130-L0

ME000-72, B1\_04



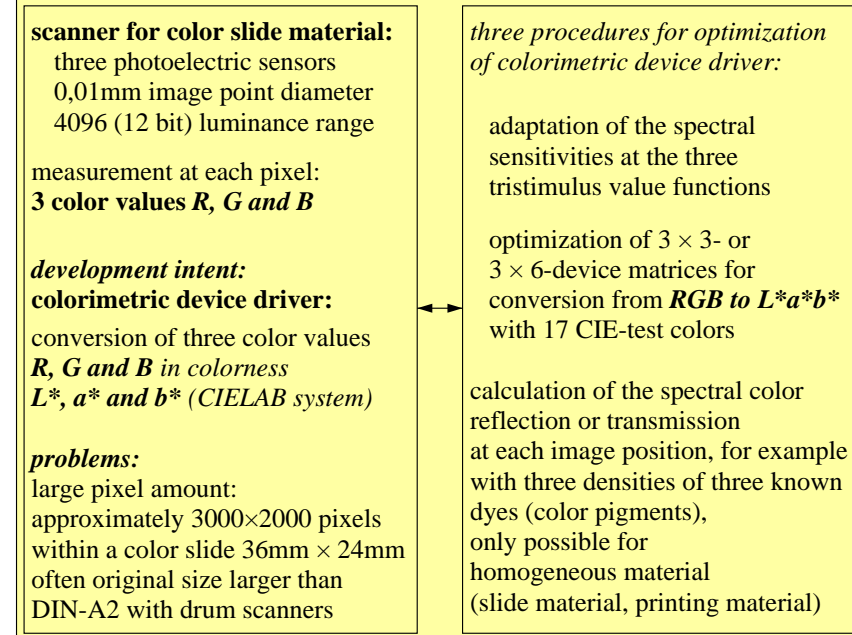
1-103130-L0

ME001-12, B1\_05



1-103130-L0

ME001-32, B1\_06



1-103130-L0

ME001-72, B1\_07

TUB-test chart ME00; Computer graphics and colorimetry  
Image series ME00, 3D=1, de=0, sRGB\*

input: *rgb/cmyk* → *rgb<sub>dd</sub>*  
output: 3D-linearization to *rgb\*<sub>dd</sub>*

see similar files: <http://130.149.60.45/~farbmetrik/ME00/ME00L0FA.TXT> / .PS  
technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmetrik>

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1-113030-L0

ME000-1N, B1\_01

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ME001-3N, B1\_02

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color film →  
color printing  
color original →  
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1-113030-L0

ME000-5N, B1\_03

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on color reproduction  
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reproduction row:

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color film

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camera, taking filters, exposure  
(spectral reflection and radiation)  
film material and development  
(spectral and absolute sensitivity)  
further treatment and projection  
(framing, spectral radiation)

1-113030-L0

ME000-7N, B1\_04

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on color reproduction

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reproduction row:

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multicolor printing

color film original and illumination  
(spectral transmission and radiation)

production of color scan signal  
(spectral and absolute sensitivity)

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(calculation program for print preparation)

reproduction of multicolor printing  
(halftoning, orientation, printing inks)

1-113030-L0

ME001-1N, B1\_05

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on color reproduction

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reproduction row:

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color film →  
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(spectral and absolute sensitivity)

reproduction model and printing inks  
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1-113030-L0

ME001-3N, B1\_06

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dyes (color pigments),  
only possible for  
homogeneous material  
(slide material, printing material)

1-113030-L0

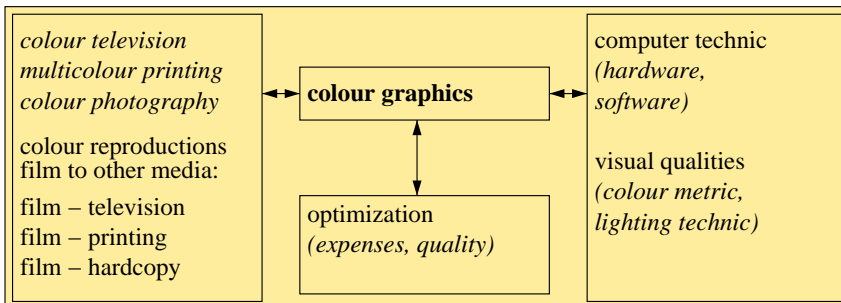
ME001-7N, B1\_07

TUB-test chart ME00; Computer graphics and colorimetry  
Image series ME00, 3D=1, de=1

input: *rgb/cmyk* → *rgb/cmyk*  
output: no change

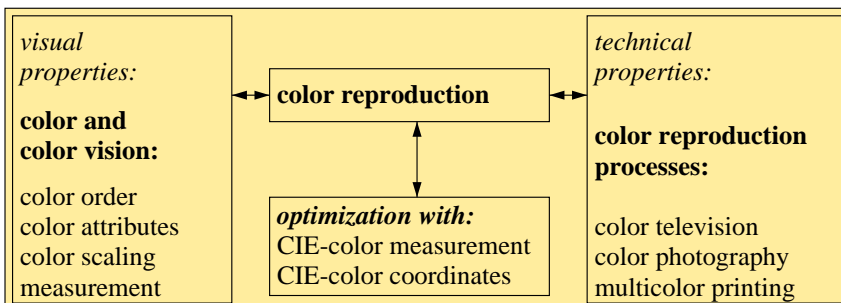
see similar files: http://130.149.60.45/~farbmetrik/ME00/ME00.HTM  
technical information: http://www.ps.bam.de or http://130.149.60.45/~farbmetrik

http://130.149.60.45/~farbmetrik/ME00/ME00L0FA.TXT / .PS; 3D-linearization  
F: 3D-linearization ME00/ME00LE30FA.DAT in file (F), page 2/2



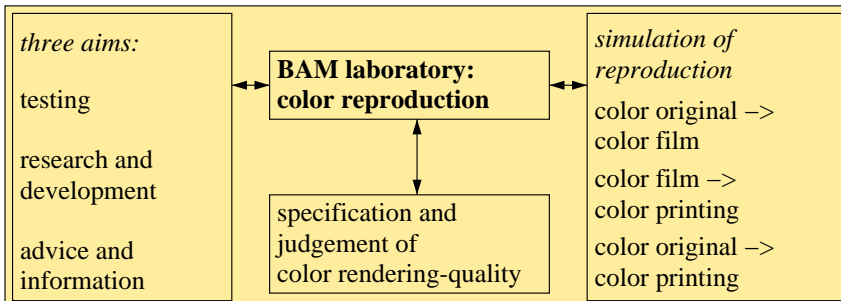
1-113130-L0

ME000-13, B1\_01



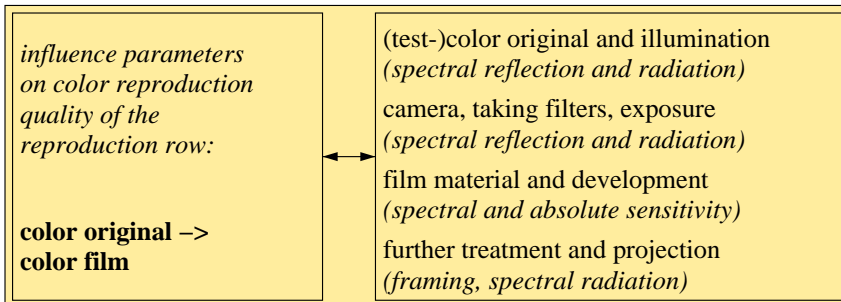
1-113130-L0

ME001-33, B1\_02



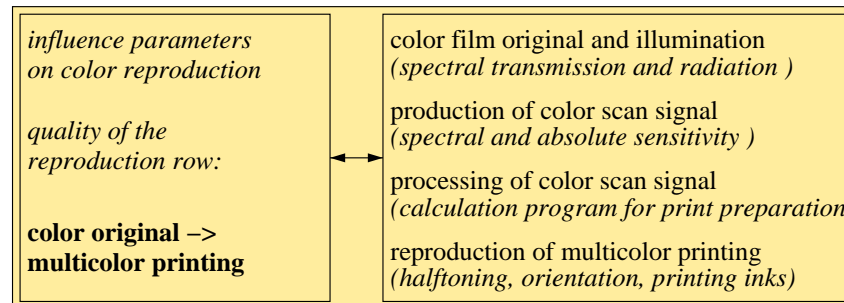
1-113130-L0

ME000-53, B1\_03



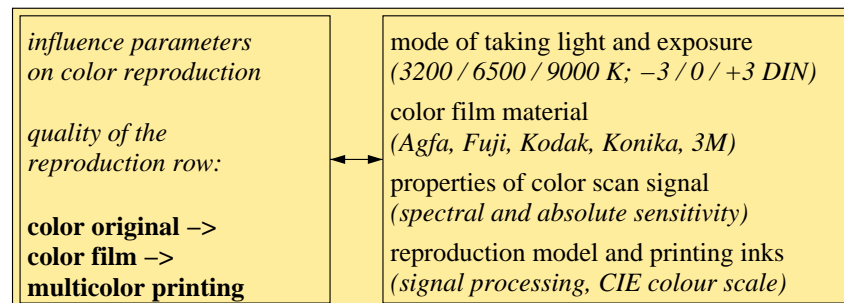
1-113130-L0

ME000-73, B1\_04



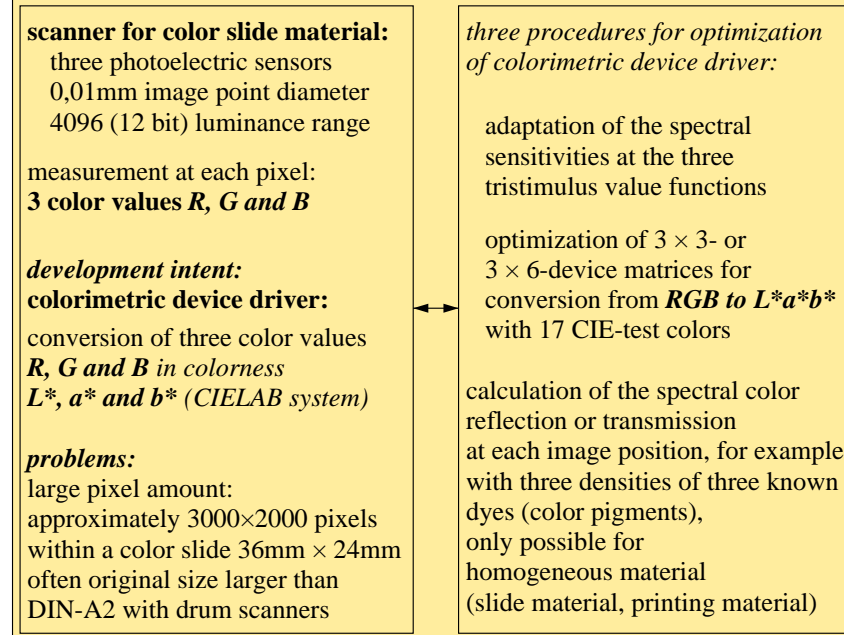
1-113130-L0

ME001-13, B1\_05



1-113130-L0

ME001-33, B1\_06



1-113130-L0

ME001-73, B1\_07

TUB-test chart ME00; Computer graphics and colorimetry  
Image series ME00, 3D=1, de=1, sRGB\*

input: *rgb/cmyk* → *rgb<sub>de</sub>*  
output: 3D-linearization to *rgb\*<sub>de</sub>*