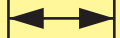
scanner for color slide material:
three photoelectric sensors
0,01mm image point diameter
4096 (12 bit) luminance range

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)

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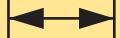

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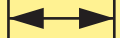

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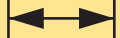

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