

Technical Report BAM(7450/60/70/80/90)E

Wide Gamut colour space code (WGcode) for standard Printing (PR18) and Television (TV18) and CIELAB colours (RAL colour atlas) -Transformation from CIELAB data to Standard, Mean and Wide Gamut 8bit *colour code (SGcode, MGcode and WGcode of olv^* and $cm y^*$) and relative colour code olv^* , $cm y^*$, nru^* , and rtu^* within the range ...0...1... in PR18sa and TV18sa (page 1) and the reverse transformation form SGcode, MGcode and WGcode of olv^* and $cm y^*$, and relative colour code olv^* , $cm y^*$ within the range ...0...1... in PR18sa and TV18sa to CIELAB data (pages 2, 3, and 4)

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<http://o2.ps.bam.de/INFVM03/7410/BAM7410E.PDF>

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The following paper may be used for an introduction:

<http://o2.ps.bam.de/CISO08.PDF>

There are very similar transformations in the technical reports

<http://o2.ps.bam.de/INFVM03/7110/BAM7110E.PDF>

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In all these reports the SGcode (Standard Gamut) olv^* , $cm y^*$, nru^* and WGcode (Wide Gamut 88-166) olv^* , $cm y^*$ is calculated for the device adapted coordinates L^*CIE_{da} , A^*CIE_{da} , B^*CIE_{da} .

These technical reports include all important basic transformations in colour systems PR18sa ($L^*=18-95$), TV18sa ($L^*=18-95$), CPR (colorimetric PR, $L^*=0-100$), and CTV (Colorimetric TV, $L^*=0-100$). The series 7210 to 7290 show transformations to the $sRGB$ tristimulus value and the $sRGB^*$ perceptive *colour space.

Report 7450/60/70/80/90

The report here is the only one which includes the **reverse** transformations, e. g. from the WGcode to CIELAB data. All series 7450 to 7490 are defined as multipage. Page 1 include the transformation from CIELAB data to WGcode and the pages 2, 3, and 4 the **reverse** transformations. Pages 2, 3 and 4 transform from the three different codes WGcode (or MGcode) of olv^* within the range 0...255, SGcode of olv^* within the range ...0...255..., and relative olv^* within the range ...0...1... to CIELAB data.

Reference system is here the system adapted (sa) system of offset printing (PR18sa) or television (TV18sa) with the lightness range between $L^*=18$ and $L^*=95$ for Black N and White W .

There are transformations of all the standard printing colours PR18 and television colours TV18 in both systems PR18sa and TV18sa including mixed mode (series 7450, 7460, 7470)

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All green CIELAB colours of the RAL colour atlas are calculated in PR18sa. Many of the RAL colours are outside the PR18sa system (out of gamut) (see negative olv^* values or olv^* values larger compared to 1 in series 7480, 7490). The series 7480 uses the MGcode with 7bit for the gray colours $N-W$. The MGcode allows to code all RAL colours. The series 7490 uses the WGcode with 6bit for the gray colours $N-W$.

Similar data:

The Technical Reports 7410/20/30/40 transform LAB^* coordinates into coordinates cmv^* , olv^* and rtu^* in Systems PR18sa and TV18sa and calculate the data rtu^* and RGB and $R'G'B'$ of the $sRGB$ colour space according to IEC 61966-2-1:1999-10.

The Technical Reports 7310/20/30/40/50/60/70/80 transform Standard printing colours (Series 7310) and RAL colours of the four different hues green (Series 7320/30), red (7340/50), yellow (7360/70) and blue (7380/90) (CIELAB hue angle 180, 360, 90 and 270). The CIELAB coordinates of real RAL colours of the RAL colour atlas are transformed to the SGcode and WGcode of both the Television (Series 7320/40/60/80) and the Printing (Series 7330/50/70/90) colour spaces.

The Technical Reports 8650,8750,8870,8880,8890 include similar. The SGcode (Standard Gamut) olv^* , cmv^* , nru^* and WGcode (Wide Gamut 77-177) olv^* , cmv^* is calculated for the device adapted coordinates L^*CIE_{da} , A^*CIE_{da} , B^*CIE_{da} . See for instance the technical report:

<http://o2.ps.bam.de/INFVM03/8650/BAM8650E.PDF>

or one example;

<http://o2.ps.bam.de/INFVM03/8650/A4Q8650E.PDF>

<http://o2.ps.bam.de/INFVM03/8600/A4Q8650E.PS>

These technical reports include transformations in colour systems PR18sa ($L^*=18-95$), PR14sa ($L^*=14-95$), PR10sa ($L^*=10-95$), PR0sa ($L^*=0-95$)

The Technical Reports 8930,8940,8950,8950,8960,8970,8980,8990 include similar data. The SGcode (Standard Gamut) olv^* , cmv^* , nru^* and WGcode (Wide Gamut 77-177) olv^* , cmv^* is calculated for the device adapted coordinates L^*CIE_{da} , A^*CIE_{da} , B^*CIE_{da} . See for instance the technical report:

<http://o2.ps.bam.de/INFVM03/8930/BAM8930E.PDF>

or one example;

<http://o2.ps.bam.de/INFVM03/8930/A4Q8930E.PDF>

<http://o2.ps.bam.de/INFVM03/8930/A4Q8930E.PS>

The technical report 8930 include transformations in colour system PR18sa ($L^*=18-95$)

The technical reports 8940 to 8950 include transformations in colour systems PR18sa ($L^*=18-95$) for the 16 step colour series $W-C$, $N-C$, $W-M$, $N-M$, $W-Y$, $N-Y$, $W-N$, $N-W$

The technical reports 8960 to 8990 include transformations in colour systems TV18sa ($L^*=18-95$), TV14sa ($L^*=14-95$), TV10sa ($L^*=10-95$), TV0sa ($L^*=0-95$)