Relative Elementary Colour System RECS as digital and analog colour atlas

Relative Elementary Colour System (RECS)

Analog colour atlas with 5- and 16-step colour scales of 16 hues and about 2000 colour samples printed with standard offset printing on fluorescent free standard offset paper

Part 2 (Pages 19 - 36)

Test charts similar to the test charts according to ISO/IEC 15775

Start output and linearized output in CIELAB produced with an intelligent separation technology printed with standard offset printing on fluorescent free standard offset paper

According to ISO/IEC TR 24705 the pages 1 to 18 may serve as reference for output on printers and monitors and the pages 19 to 36 may serve as reference for the input of colour copiers, scanners and digital cameras.

For additional documents and publications see for example: www.ps.bam.de and www.li.tu-berlin.de

For the **digital colour atlas** of these prints in the format PDF with for example **rgb*, icu*** and **LCH* colour coordinates according to DIN E 33872-1:2007**, see www.ps.bam.de/RECS.

Some additional information about the **Relative Elementary Colour System RECS**:

Usually the device colours are produced on monitors or printers by *rgb* coordinates in the files. For example the *rgb*-coordinates (1,0,0), (0,1,0), (0,0,1) produce a device red, green and blue. It is intended by DIN E 33872-1 to -6, see www.ps.bam.de/33872E that on any device the elementary hues are produced instead of different device hues. Technically the elementary hues are defined by the CIE-test colors no. 9 to 12 of CIE-Publication 13.3 and have the hue angles h_{ab} = 26, 92, 162 and 272 in the CIELAB colour space for CIE standard illuminant D65, compare www.ps.bam.de/D33872-AE.PDF.
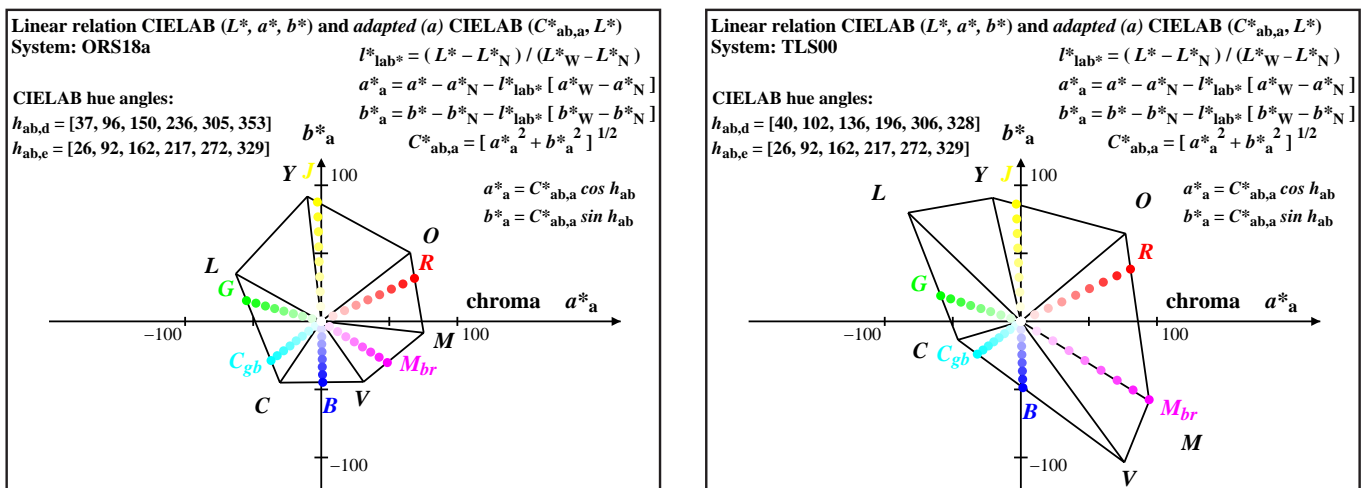

Fig. 1: Device hues *OYLCVM* of standard offset ORS18 and of a standard monitor TLS00 and of the elementary hues *RJGB*.

The *analog* Relative Elementary Colour System RECS_a is the *first analog colour system worldwide* which uses the four elementary hues *RJGB* as anchor points. Three hues, for example *r25j, r50j, r75j,* are additionally printed between two neighboring elementary hues. The hue circle of the RECS includes 16 hues (page 1). 5- and 16-step colour scales are shown on pages 2 to 17 which all are equally spaced, both visually and in CIELAB. Page 18 shows a 9x9x9 grid of regular *rgb* colours.

The pages 19 to 27 show a start output of test charts, similar to the ISO/IEC-test charts according to ISO/IEC 15775 and ISO/IEC TR 24705, and three different separation technology methods *cmy0*, *cmy4** and *cmyn6** for the 9x9x9 *rgb* grids. The pages 28 to 36 show a linearized output which is produced with the separation technology method *cmyn6**. This output shows again colour scales which are approximately equally spaced for both the device and elementary hues.

The *digital* Relative Elementary Colour System RECS_d is freely available in the internet and is the *first colour system worldwide* which includes the colour coordinates of equivalent colours, for example described by *relative* CIELAB coordinates *rgb*, olv*, ncu** and standard CIELAB coordinates *LAB** and *LCH* (Lightness, Chroma, Hue angle),* www.ps.bam.de/RECS