

Example files: Basic and mixed colors of a special LED display

basic color or mixed color and name	CIE standard chromaticity		CIE standard tristimulus value		
	x	y	X	Y	Z
<i>special LED display: three additive basic colors and White:</i>					
$O = R_d$ Orange red	0,6400	0,3300	43,03+44%	22,19+44%	2,02+44%
$L = G_d$ Leaf green	0,2900	0,6000	34,16+44%	70,68+44%	12,96+44%
$V = B_d$ Violet blue	0,1415	0,0482	17,82+44%	7,13+44%	93,87+44%
W White	0,3127	0,3291	95,01+0%	100,00+0%	108,85+0%

Assumption: Display of $142+64 \text{ cd/m}^2$ (=+44% compared to office standard)

rgb input data for Red and no internal display change l^* : 1,0 0,0 0,0 = 1,0 0,0 0,0

rgb input data for D65 and internal 20%-change of l^* : 1,0 1,0 1,0 $\rightarrow$ 0,8 0,8 0,8

See example simulation files with 0, 5, 10, ..., 35% change on 8 pages and

white frame: <http://130.149.60.45/~farbmetrik/LE52/LE52L0NP.PDF>

grey frame: <http://130.149.60.45/~farbmetrik/LE53/LE53L0NP.PDF>

Compare for example samples 01b (White) and 01j (Orange red) on different pages

Result: Lightness L^* and chroma C^*_{ab} of Red is 20% higher for the LED display.

relative brilliance $i^* = l^* + 0,5 c^*$ of Red is 30% higher for the LED display.

relative blackness $n^* = 1 - i^*$ of Red is 30% lower for the LED display.