

Colorimetric "Standard data": Television Luminous System TLS11 for CIE lightness $L^*=11$ of black for illuminant D65

System TLS11
LCD monitor

Color	$r=olv^*_1$	$g=olv^*_2$	$b=olv^*_3$	$L^*=LAB^*_1$	$a^*=LAB^*_2$	$b^*=LAB^*_3$	$C^*_{ab}=LAB^*_r$	h_{ab}	$X=XYZ_1$	$Y=XYZ_2$	$Z=XYZ_3$	x	y	$Y/88.59$
00 o00y	1.0	0.0	0.0	54.21	78.64	58.52	98.03	37	42.14	22.17	3.33	0.623	0.3278	0.2503
01 o13y	1.0	0.125	0.0	54.91	76.45	59.02	96.58	38	42.42	22.84	3.44	0.6174	0.3325	0.2579
02 o25y	1.0	0.25	0.0	57.87	68.1	61.12	91.5	42	43.91	25.83	3.96	0.5958	0.3505	0.2916
03 o38y	1.0	0.375	0.0	62.22	56.16	64.44	85.47	49	46.26	30.66	4.75	0.5664	0.3754	0.3461
04 o50y	1.0	0.5	0.0	67.48	42.42	68.19	80.31	58	49.48	37.27	5.91	0.534	0.4022	0.4207
05 o63y	1.0	0.625	0.0	73.63	27.43	72.96	77.94	70	53.85	46.12	7.39	0.5016	0.4296	0.5206
06 o75y	1.0	0.75	0.0	80.08	12.73	77.89	78.93	81	59.14	56.82	9.2	0.4725	0.454	0.6414
07 o88y	1.0	0.875	0.0	86.52	-1.05	82.98	82.99	91	65.14	69.03	11.22	0.448	0.4748	0.7793
08 y00l	1.0	1.0	0.0	94.11	-15.83	89.38	90.77	101	73.43	85.54	13.8	0.425	0.4951	0.9655
09 y13l	0.875	1.0	0.0	92.0	-27.1	86.39	90.55	108	64.07	80.71	13.54	0.4047	0.5098	0.911
10 y25l	0.75	1.0	0.0	90.22	-37.49	83.97	91.96	115	56.47	76.78	13.28	0.3854	0.524	0.8667
11 y38l	0.625	1.0	0.0	88.56	-48.25	81.77	94.94	122	49.55	73.23	13.01	0.3649	0.5393	0.8266
12 y50l	0.5	1.0	0.0	87.07	-58.61	79.85	99.06	128	43.6	70.14	12.75	0.3447	0.5545	0.7917
13 y63l	0.375	1.0	0.0	85.89	-67.53	78.43	103.5	132	39.02	67.76	12.51	0.3271	0.568	0.7649
14 y75l	0.25	1.0	0.0	84.97	-74.95	77.13	107.56	136	35.55	65.95	12.4	0.3121	0.579	0.7444
15 y88l	0.125	1.0	0.0	84.37	-79.89	76.36	110.52	138	33.36	64.77	12.3	0.3021	0.5865	0.7312
16 l00c	0.0	1.0	0.0	84.21	-81.1	76.13	111.24	138	32.83	64.47	12.29	0.2996	0.5883	0.7278
17 l13c	0.0	1.0	0.125	84.25	-80.71	73.57	109.22	139	32.98	64.54	13.31	0.2976	0.5823	0.7285
18 l25c	0.0	1.0	0.25	84.35	-78.62	63.95	101.35	143	33.71	64.74	17.66	0.2903	0.5576	0.7308
19 l38c	0.0	1.0	0.375	84.61	-75.49	51.46	91.37	148	34.93	65.24	24.72	0.2797	0.5224	0.7365
20 l50c	0.0	1.0	0.5	84.97	-71.46	38.14	81.01	154	36.59	65.95	34.2	0.2676	0.4823	0.7444
21 l63c	0.0	1.0	0.625	85.43	-66.43	24.55	70.83	163	38.75	66.85	46.23	0.2552	0.4403	0.7546
22 l75c	0.0	1.0	0.75	85.97	-61.24	11.9	62.39	173	41.15	67.93	59.93	0.2435	0.4019	0.7668
23 l88c	0.0	1.0	0.875	86.54	-56.04	0.7	56.06	183	43.7	69.07	74.31	0.2336	0.3692	0.7796
24 c00v	0.0	1.0	1.0	87.18	-51.1	-9.41	51.97	195	46.37	70.38	89.45	0.2249	0.3413	0.7944
25 c13v	0.0	0.875	1.0	78.68	-38.63	-22.32	44.62	213	38.35	54.38	86.97	0.2134	0.3026	0.6138
26 c25v	0.0	0.75	1.0	71.08	-26.3	-33.97	42.97	233	32.33	42.3	84.93	0.2026	0.2651	0.4775
27 c38v	0.0	0.675	1.0	63.12	-11.97	-46.39	47.92	254	27.09	31.73	83.16	0.1908	0.2235	0.3582
28 c50v	0.0	0.5	1.0	54.95	4.19	-59.11	59.26	272	22.65	22.88	81.29	0.1786	0.1804	0.2582
29 c63v	0.0	0.375	1.0	47.37	21.46	-71.55	74.71	284	19.44	16.3	80.45	0.1673	0.1403	0.184
30 c75v	0.0	0.25	1.0	40.2	39.44	-83.05	91.95	294	16.99	11.37	79.32	0.1578	0.1056	0.1284
31 c88v	0.0	0.125	1.0	34.57	55.15	-92.53	107.73	299	15.49	8.29	79.02	0.1507	0.0806	0.0935
32 v00m	0.0	0.0	1.0	33.09	59.26	-94.9	111.9	301	15.11	7.58	78.79	0.1489	0.0747	0.0856
33 v13m	0.125	0.0	1.0	33.6	60.17	-94.39	111.95	301	15.63	7.82	79.26	0.1522	0.0761	0.0882
34 v25m	0.25	0.0	1.0	35.64	62.25	-90.58	109.92	303	17.57	8.82	78.88	0.1669	0.0838	0.0996
35 v38m	0.375	0.0	1.0	38.78	65.67	-85.41	107.74	306	20.9	10.53	79.21	0.1889	0.0952	0.1189
36 v50m	0.5	0.0	1.0	42.38	69.54	-79.14	105.36	310	25.19	12.75	79.11	0.2152	0.1089	0.1439
37 v63m	0.625	0.0	1.0	46.58	74.48	-72.19	103.73	315	31.01	15.7	79.49	0.2457	0.1244	0.1772
38 v75m	0.75	0.0	1.0	50.83	79.05	-64.9	102.28	320	37.61	19.12	79.55	0.276	0.1403	0.2158
39 v88m	0.875	0.0	1.0	54.98	83.66	-57.89	101.74	324	44.97	22.91	79.74	0.3046	0.1552	0.2586
40 m00o	1.0	0.0	1.0	59.56	89.09	-50.27	102.3	329	54.26	27.64	80.12	0.3349	0.1706	0.312
41 m13o	1.0	0.0	0.875	58.35	87.39	-40.57	96.35	334	51.59	26.33	65.42	0.3599	0.1837	0.2972
42 m25o	1.0	0.0	0.75	57.23	85.38	-29.34	90.29	340	49.04	25.16	51.28	0.3908	0.2005	0.284
43 m38o	1.0	0.0	0.675	56.14	83.38	-16.14	84.93	348	46.62	24.05	37.77	0.4299	0.2218	0.2715
44 m50o	1.0	0.0	0.5	55.19	81.22	-0.89	81.23	359	44.43	23.11	25.72	0.4764	0.2478	0.2609
45 m63o	1.0	0.0	0.375	54.35	79.62	15.44	81.1	11	42.67	22.31	16.14	0.526	0.275	0.2518
46 m75o	1.0	0.0	0.25	53.75	78.41	33.44	85.24	24	41.41	21.74	8.91	0.5747	0.3017	0.2454
47 m88o	1.0	0.0	0.125	53.35	77.5	51.81	93.22	34	40.55	21.37	4.23	0.613	0.323	0.2412
48 o00y	1.0	0.0	0.0	54.21	78.64	58.52	98.03	37	42.14	22.17	3.33	0.623	0.3278	0.2503
49 n00w	0.0	0.0	0.0	10.76	5.51	-3.96	6.79	0	1.34	1.23	1.71	0.3134	0.2867	0.0139
50 n13w	0.125	0.125	0.125	16.56	4.87	-3.31	5.9	169	2.33	2.21	2.86	0.3146	0.2988	0.025
51 n25w	0.25	0.25	0.25	30.75	4.15	-2.76	4.99	269	6.61	6.54	7.89	0.3142	0.311	0.0739
52 n38w	0.375	0.375	0.375	43.53	4.11	-2.65	4.9	292	13.48	13.52	15.89	0.3142	0.3152	0.1526
53 n50w	0.5	0.5	0.5	55.06	4.06	-2.42	4.73	297	22.73	22.99	26.55	0.3145	0.3181	0.2595
54 n63w	0.625	0.625	0.625	66.15	3.69	-1.8	4.11	298	34.83	35.52	40.18	0.3151	0.3214	0.401
55 n75w	0.75	0.75	0.75	76.28	3.24	-0.77	3.34	301	49.03	50.35	55.64	0.3163	0.3248	0.5683
56 n88w	0.875	0.875	0.875	85.51	2.1	0.82	2.26	299	64.62	67.02	71.95	0.3174	0.3292	0.7565
57 n99w	1.0	1.0	1.0	95.41	-0.21	4.78	4.79	0	84.08	88.59	89.43	0.3208	0.338	1.0

IE370-7N, Colorimetric data of Television Luminous System TLS11 for CIE standard illuminant D65; LCD monitor; Page: 1/66

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 1/66 output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

See original or copy: <http://web.me.com/klaus.richter/IE37/IE37L0NA.PS/.TXT>
Technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmetrik>

TUB registration: 20090901-IE37/IE37L0NA.PS/.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

<http://130.149.60.45/~farbmetrik/IE37/IE37L0NA.PS/.TXT>; start output
N: No Output Linearization (OL) data in File (F), Startup (S) or Device (D)

Colorimetric "Standard data": Television Luminous System TLS11 for CIE lightness $L^*=11$ of black for illuminant D65

System TLS11

LCD monitor

Y Yellow

$LCH^* = 94.1 \ 90.8 \ 100$

$LAB^* = 94.1 \ -15.8 \ 89.4$

L Leaf green

$LCH^* = 84.2 \ 111.2 \ 137$

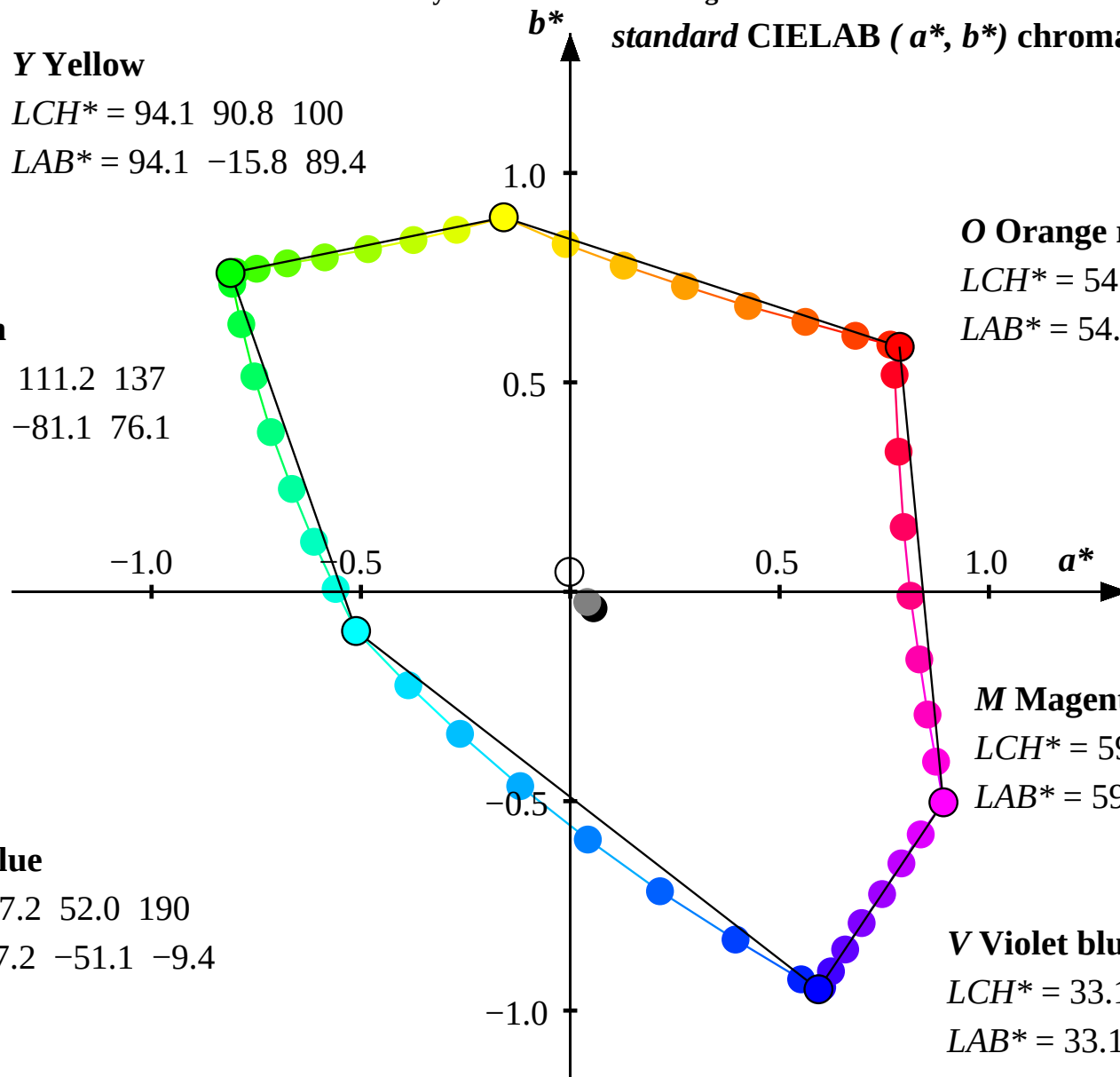
$LAB^* = 84.2 \ -81.1 \ 76.1$

C Cyan blue

$LCH^* = 87.2 \ 52.0 \ 190$

$LAB^* = 87.2 \ -51.1 \ -9.4$

standard CIELAB (a^* , b^*) chroma diagram



Colorimetric "Adapted data (a)": Television Luminous System TLS11a for CIE lightness $L^*=11$ of black for illuminant D65

System TLS11a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*r_a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD monitor	00 o00y	1.0	0.0	0.0	54.21	76.07	58.0	95.66	37	41.29	22.17	3.41	0.6174	0.3315	0.2503
	01 o13y	1.0	0.125	0.0	54.91	73.93	58.43	94.23	38	41.58	22.84	3.54	0.6118	0.3361	0.2579
	02 o25y	1.0	0.25	0.0	57.87	65.78	60.22	89.18	42	43.12	25.83	4.12	0.5901	0.3535	0.2916
	03 o38y	1.0	0.375	0.0	62.22	54.13	63.09	83.13	49	45.55	30.66	5.03	0.5607	0.3774	0.3461
	04 o50y	1.0	0.5	0.0	67.48	40.75	66.3	77.82	58	48.87	37.27	6.37	0.5283	0.4029	0.4207
	05 o63y	1.0	0.625	0.0	73.63	26.18	70.43	75.13	70	53.36	46.12	8.1	0.496	0.4287	0.5206
	06 o75y	1.0	0.75	0.0	80.08	11.91	74.7	75.64	81	58.8	56.82	10.24	0.4672	0.4515	0.6414
	07 o88y	1.0	0.875	0.0	86.52	-1.44	79.12	79.13	91	64.97	69.03	12.67	0.4429	0.4707	0.7793
	08 y00l	1.0	1.0	0.0	94.11	-15.7	84.73	86.17	101	73.49	85.54	15.81	0.4203	0.4892	0.9655
	09 y13l	0.875	1.0	0.0	92.0	-27.11	81.96	86.33	108	64.06	80.71	15.42	0.3999	0.5038	0.911
	10 y25l	0.75	1.0	0.0	90.22	-37.62	79.72	88.15	115	56.42	76.78	15.06	0.3806	0.5179	0.8667
	11 y38l	0.625	1.0	0.0	88.56	-48.49	77.69	91.59	122	49.46	73.23	14.69	0.36	0.5331	0.8266
	12 y50l	0.5	1.0	0.0	87.07	-58.96	75.93	96.14	128	43.48	70.14	14.35	0.3398	0.5481	0.7917
	13 y63l	0.375	1.0	0.0	85.89	-67.96	74.63	100.94	132	38.89	67.76	14.04	0.3222	0.5615	0.7649
	14 y75l	0.25	1.0	0.0	84.97	-75.44	73.43	105.28	136	35.4	65.95	13.88	0.3072	0.5723	0.7444
	15 y88l	0.125	1.0	0.0	84.37	-80.42	72.71	108.42	138	33.21	64.77	13.75	0.2973	0.5797	0.7312
	16 l00c	0.0	1.0	0.0	84.21	-81.64	72.51	109.2	138	32.68	64.47	13.72	0.2948	0.5815	0.7278
	17 l13c	0.0	1.0	0.125	84.25	-81.25	69.95	107.21	139	32.83	64.54	14.83	0.2926	0.5752	0.7285
	18 l25c	0.0	1.0	0.25	84.35	-79.15	60.31	99.51	143	33.55	64.74	19.49	0.2849	0.5497	0.7308
	19 l38c	0.0	1.0	0.375	84.61	-76.0	47.79	89.79	148	34.78	65.24	27.01	0.2738	0.5136	0.7365
	20 l50c	0.0	1.0	0.5	84.97	-71.95	34.43	79.78	154	36.44	65.95	37.07	0.2613	0.4729	0.7444
	21 l63c	0.0	1.0	0.625	85.43	-66.89	20.8	70.06	163	38.61	66.85	49.78	0.2487	0.4306	0.7546
	22 l75c	0.0	1.0	0.75	85.97	-61.66	8.09	62.2	173	41.02	67.93	64.21	0.2369	0.3923	0.7668
	23 l88c	0.0	1.0	0.875	86.54	-56.43	-3.15	56.52	183	43.57	69.07	79.31	0.227	0.3598	0.7796
	24 c00v	0.0	1.0	1.0	87.18	-51.44	-13.34	53.15	195	46.25	70.38	95.2	0.2184	0.3322	0.7944
	25 c13v	0.0	0.875	1.0	78.68	-39.54	-25.37	46.99	213	38.06	54.38	91.34	0.2071	0.2959	0.6138
	26 c25v	0.0	0.75	1.0	71.08	-27.73	-36.23	45.64	233	31.93	42.3	88.11	0.1967	0.2606	0.4775
	27 c38v	0.0	0.675	1.0	63.12	-13.94	-47.83	49.84	254	26.61	31.73	85.14	0.1854	0.2212	0.3582
	28 c50v	0.0	0.5	1.0	54.95	1.67	-59.7	59.74	272	22.1	22.88	82.09	0.1739	0.18	0.2582
	29 c63v	0.0	0.375	1.0	47.37	18.43	-71.36	73.71	284	18.85	16.3	80.21	0.1634	0.1413	0.184
	30 c75v	0.0	0.25	1.0	40.2	35.92	-82.13	89.65	294	16.36	11.37	78.1	0.1546	0.1074	0.1284
	31 c88v	0.0	0.125	1.0	34.57	51.25	-91.02	104.47	299	14.84	8.29	77.05	0.1481	0.0827	0.0935
	32 v00m	0.0	0.0	1.0	33.09	55.26	-93.24	108.4	301	14.45	7.58	76.63	0.1465	0.0768	0.0856
	33 v13m	0.125	0.0	1.0	33.6	56.21	-92.78	108.49	301	14.96	7.82	77.15	0.1497	0.0782	0.0882
	34 v25m	0.25	0.0	1.0	35.64	58.43	-89.19	106.63	303	16.87	8.82	77.06	0.1642	0.0859	0.0996
	35 v38m	0.375	0.0	1.0	38.78	62.05	-84.34	104.72	306	20.16	10.53	77.8	0.1858	0.0971	0.1189
	36 v50m	0.5	0.0	1.0	42.38	66.17	-78.44	102.63	310	24.4	12.75	78.19	0.2116	0.1105	0.1439
	37 v63m	0.625	0.0	1.0	46.58	71.39	-71.92	101.35	315	30.18	15.7	79.14	0.2414	0.1256	0.1772
	38 v75m	0.75	0.0	1.0	50.83	76.25	-65.07	100.25	320	36.76	19.12	79.78	0.271	0.1409	0.2158
	39 v88m	0.875	0.0	1.0	54.98	81.14	-58.49	100.03	324	44.1	22.91	80.55	0.2989	0.1553	0.2586
	40 m00o	1.0	0.0	1.0	59.56	86.88	-51.35	100.93	329	53.4	27.64	81.56	0.3284	0.17	0.312
	41 m13o	1.0	0.0	0.875	58.35	85.1	-41.52	94.69	334	50.73	26.33	66.53	0.3533	0.1834	0.2972
	42 m25o	1.0	0.0	0.75	57.23	83.02	-30.18	88.34	340	48.17	25.16	52.11	0.384	0.2006	0.284
	43 m38o	1.0	0.0	0.675	56.14	80.94	-16.86	82.68	348	45.76	24.05	38.35	0.423	0.2224	0.2715
	44 m50o	1.0	0.0	0.5	55.19	78.72	-1.52	78.73	359	43.58	23.11	26.11	0.4696	0.249	0.2609
	45 m63o	1.0	0.0	0.375	54.35	77.06	14.91	78.48	11	41.82	22.31	16.39	0.5194	0.2771	0.2518
	46 m75o	1.0	0.0	0.25	53.75	75.81	32.96	82.67	24	40.56	21.74	9.05	0.5685	0.3047	0.2454
	47 m88o	1.0	0.0	0.125	53.35	74.87	51.38	90.8	34	39.71	21.37	4.32	0.6072	0.3268	0.2412
	48 o00y	1.0	0.0	0.0	54.21	76.07	58.0	95.66	37	41.29	22.17	3.41	0.6174	0.3315	0.2503
	49 n00w	0.0	0.0	0.0	10.76	0.0	0.0	0.01	0	1.17	1.23	1.34	0.3127	0.329	0.0139
	50 n13w	0.125	0.125	0.125	16.56	-0.23	0.05	0.25	169	2.09	2.21	2.4	0.3119	0.3299	0.025
	51 n25w	0.25	0.25	0.25	30.75	0.0	-0.86	0.87	269	6.22	6.54	7.36	0.3091	0.3252	0.0739
	52 n38w	0.375	0.375	0.375	43.53	0.82	-2.07	2.24	292	12.97	13.52	15.63	0.308	0.3209	0.1526
	53 n50w	0.5	0.5	0.5	55.06	1.55	-3.03	3.42	297	22.18	22.99	26.95	0.3076	0.3188	0.2595
	54 n63w	0.625	0.625	0.625	66.15	1.93	-3.55	4.05	298	34.32	35.52	41.67	0.3077	0.3186	0.401
	55 n75w	0.75	0.75	0.75	76.28	2.17	-3.58	4.19	301	48.64	50.35	58.62	0.3086	0.3195	0.5683
	56 n88w	0.875	0.875	0.875	85.51	1.65	-2.93	3.37	299	64.42	67.02	76.71	0.3095	0.322	0.7565
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.0

IE370-7N, Colorimetric data of Television Luminous System TLS11a for CIE standard illuminant D65; LCD monitor; Page: 3/66

TUB-test chart IE37; Hue circle and colorimetric data

input: olv^* setrgbcolor

Display measurement: LCD, CRT and LCD projector, page 3/66 output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS11a for CIE lightness $L^*=11$ of black for illuminant D65

System TLS11a

LCD monitor

Y Yellow

$LCH^*_a = 94.1 \ 86.2 \ 101$

$LAB^*_a = 94.1 \ -15.7 \ 84.7$

L Leaf green

$LCH^*_a = 84.2 \ 109.2 \ 138$

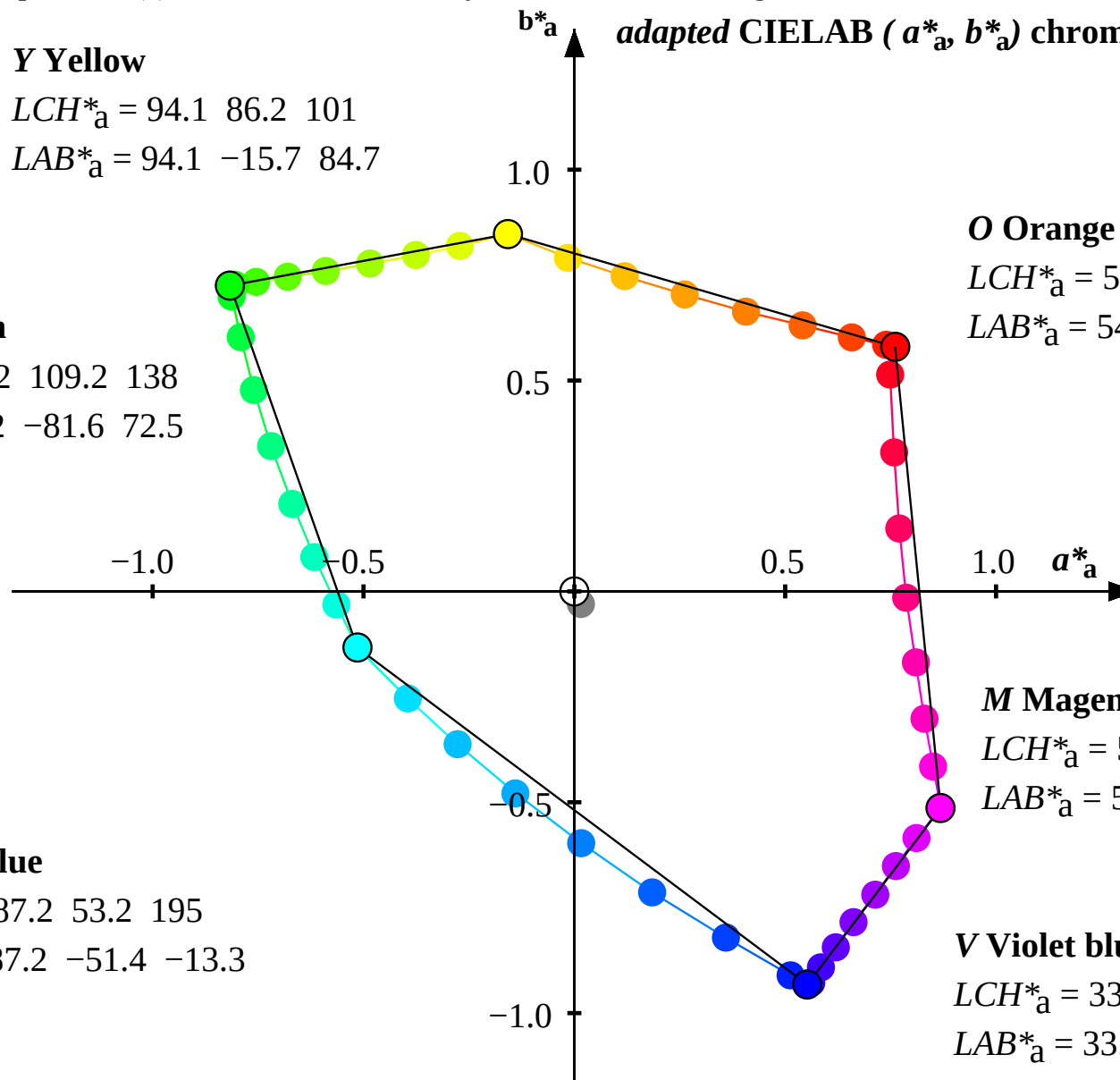
$LAB^*_a = 84.2 \ -81.6 \ 72.5$

C Cyan blue

$LCH^*_a = 87.2 \ 53.2 \ 195$

$LAB^*_a = 87.2 \ -51.4 \ -13.3$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



Colorimetric "Adapted data (a0)": Television Luminous System TLS00a0 for CIE lightness $L^*=00$ of black for illuminant D65

System TLS00a0	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB*1_a$	$a^*_a=LAB*2_a$	$b^*_a=LAB*3_a$	$C^*_{ab,a}=LAB*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD monitor	00 o00y	1.0	0.0	0.0	53.21	78.53	65.65	102.36	40	40.69	21.24	2.1	0.6355	0.3317	0.2484
	01 o13y	1.0	0.125	0.0	53.94	76.28	65.83	100.76	41	40.98	21.92	2.23	0.6292	0.3365	0.2564
	02 o25y	1.0	0.25	0.0	57.02	67.72	66.71	95.06	45	42.54	24.95	2.82	0.605	0.3548	0.2918
	03 o38y	1.0	0.375	0.0	61.52	55.58	68.6	88.29	51	45.0	29.85	3.75	0.5726	0.3797	0.3491
	04 o50y	1.0	0.5	0.0	66.94	41.72	70.89	82.26	60	48.37	36.55	5.1	0.5373	0.406	0.4275
	05 o63y	1.0	0.625	0.0	73.24	26.73	74.3	78.96	70	52.93	45.53	6.85	0.5026	0.4323	0.5325
	06 o75y	1.0	0.75	0.0	79.83	12.13	78.0	78.94	81	58.44	56.38	9.03	0.4719	0.4552	0.6594
	07 o88y	1.0	0.875	0.0	86.38	-1.46	82.01	82.02	91	64.7	68.76	11.49	0.4463	0.4744	0.8042
	08 y00l	1.0	1.0	0.0	94.1	-15.93	87.27	88.72	100	73.34	85.49	14.68	0.4227	0.4927	1.0
	09 y13l	0.875	1.0	0.0	91.95	-27.55	84.51	88.89	108	63.78	80.6	14.28	0.402	0.508	0.9427
	10 y25l	0.75	1.0	0.0	90.14	-38.26	82.28	90.74	115	56.03	76.62	13.91	0.3823	0.5228	0.8962
	11 y38l	0.625	1.0	0.0	88.45	-49.38	80.26	94.24	122	48.97	73.01	13.54	0.3613	0.5388	0.854
	12 y50l	0.5	1.0	0.0	86.94	-60.11	78.52	98.89	127	42.91	69.88	13.19	0.3406	0.5547	0.8174
	13 y63l	0.375	1.0	0.0	85.74	-69.36	77.23	103.81	132	38.25	67.47	12.88	0.3225	0.5689	0.7891
	14 y75l	0.25	1.0	0.0	84.81	-77.08	76.04	108.28	135	34.72	65.63	12.72	0.3071	0.5804	0.7676
	15 y88l	0.125	1.0	0.0	84.19	-82.22	75.33	111.52	138	32.5	64.44	12.58	0.2967	0.5884	0.7537
	16 l00c	0.0	1.0	0.0	84.03	-83.48	75.12	112.31	138	31.96	64.13	12.56	0.2941	0.5903	0.7501
	17 l13c	0.0	1.0	0.125	84.07	-83.08	72.37	110.19	139	32.11	64.2	13.68	0.2919	0.5837	0.7509
	18 l25c	0.0	1.0	0.25	84.18	-80.91	62.13	102.03	142	32.84	64.4	18.41	0.284	0.5569	0.7533
	19 l38c	0.0	1.0	0.375	84.44	-77.67	49.03	91.86	148	34.09	64.92	26.04	0.2726	0.5192	0.7593
	20 l50c	0.0	1.0	0.5	84.81	-73.5	35.21	81.5	154	35.77	65.63	36.23	0.2599	0.4768	0.7676
	21 l63c	0.0	1.0	0.625	85.28	-68.28	21.21	71.51	163	37.96	66.55	49.13	0.2471	0.4331	0.7784
	22 l75c	0.0	1.0	0.75	85.82	-62.91	8.24	63.45	173	40.41	67.64	63.75	0.2352	0.3937	0.7911
	23 l88c	0.0	1.0	0.875	86.4	-57.53	-3.2	57.63	183	43.0	68.79	79.07	0.2253	0.3604	0.8046
	24 c00v	0.0	1.0	1.0	87.06	-52.42	-13.54	54.15	194	45.72	70.12	95.18	0.2167	0.3323	0.8202
	25 c13v	0.0	0.875	1.0	78.4	-40.44	-25.8	47.98	213	37.41	53.89	91.26	0.2049	0.2952	0.6304
	26 c25v	0.0	0.75	1.0	70.63	-28.48	-36.92	46.64	232	31.2	41.65	87.99	0.194	0.2589	0.4871
	27 c38v	0.0	0.675	1.0	62.45	-14.4	-48.87	50.97	254	25.8	30.93	84.99	0.182	0.2183	0.3618
	28 c50v	0.0	0.5	1.0	53.98	1.74	-61.22	61.26	272	21.23	21.95	81.89	0.1697	0.1755	0.2568
	29 c63v	0.0	0.375	1.0	46.02	19.41	-73.51	76.04	285	17.93	15.29	79.98	0.1584	0.135	0.1788
	30 c75v	0.0	0.25	1.0	38.35	38.38	-85.12	93.38	294	15.41	10.29	77.84	0.1488	0.0993	0.1203
	31 c88v	0.0	0.125	1.0	32.16	55.61	-94.97	110.06	300	13.86	7.16	76.77	0.1418	0.0732	0.0837
	32 v00m	0.0	0.0	1.0	30.5	60.26	-97.5	114.62	302	13.47	6.44	76.35	0.14	0.0669	0.0754
	33 v13m	0.125	0.0	1.0	31.07	61.12	-96.93	114.6	302	13.99	6.68	76.88	0.1434	0.0685	0.0781
	34 v25m	0.25	0.0	1.0	33.35	62.93	-92.92	112.23	304	15.93	7.7	76.78	0.1586	0.0767	0.0901
	35 v38m	0.375	0.0	1.0	36.81	66.05	-87.54	109.67	307	19.26	9.44	77.54	0.1813	0.0888	0.1104
	36 v50m	0.5	0.0	1.0	40.7	69.7	-81.13	106.97	311	23.56	11.68	77.94	0.2082	0.1032	0.1366
	37 v63m	0.625	0.0	1.0	45.18	74.51	-74.14	105.11	315	29.42	14.67	78.89	0.2392	0.1193	0.1716
	38 v75m	0.75	0.0	1.0	49.67	79.02	-66.89	103.54	320	36.09	18.14	79.54	0.2698	0.1356	0.2122
	39 v88m	0.875	0.0	1.0	54.01	83.65	-59.99	102.94	324	43.54	21.99	80.32	0.2985	0.1508	0.2572
	40 m00o	1.0	0.0	1.0	58.77	89.16	-52.55	103.5	329	52.97	26.78	81.35	0.3288	0.1663	0.3133
	41 m13o	1.0	0.0	0.875	57.52	87.43	-42.59	97.26	334	50.26	25.46	66.11	0.3543	0.1795	0.2978
	42 m25o	1.0	0.0	0.75	56.35	85.39	-31.06	90.87	340	47.67	24.27	51.49	0.3862	0.1966	0.2838
	43 m38o	1.0	0.0	0.675	55.22	83.35	-17.43	85.15	348	45.22	23.14	37.54	0.427	0.2186	0.2707
	44 m50o	1.0	0.0	0.5	54.23	81.16	-1.58	81.17	359	43.01	22.19	25.13	0.4761	0.2457	0.2596
	45 m63o	1.0	0.0	0.375	53.36	79.52	15.69	81.06	11	41.22	21.38	15.26	0.5294	0.2745	0.25
	46 m75o	1.0	0.0	0.25	52.73	78.3	35.35	85.91	24	39.95	20.8	7.82	0.5826	0.3033	0.2433
	47 m88o	1.0	0.0	0.125	52.31	77.37	57.23	96.24	36	39.08	20.42	3.02	0.6251	0.3266	0.2389
	48 o00y	1.0	0.0	0.0	53.21	78.53	65.65	102.36	40	40.69	21.24	2.1	0.6355	0.3317	0.2484
	49 n00w	0.0	0.0	0.0	0.0	0.0	0.0	0.01	289	0.0	0.0	0.0	0.0	0.0	0.0
	50 n13w	0.125	0.125	0.125	8.96	-0.41	0.08	0.43	169	0.94	1.0	1.08	0.3109	0.3309	0.0117
	51 n25w	0.25	0.25	0.25	27.82	0.0	-0.99	1.0	269	5.12	5.39	6.11	0.3082	0.3244	0.0631
	52 n38w	0.375	0.375	0.375	41.94	0.88	-2.21	2.39	292	11.97	12.46	14.5	0.3075	0.3201	0.1458
	53 n50w	0.5	0.5	0.5	54.1	1.61	-3.16	3.56	297	21.31	22.07	25.97	0.3073	0.3182	0.2581
	54 n63w	0.625	0.625	0.625	65.58	1.98	-3.65	4.16	298	33.61	34.78	40.9	0.3076	0.3182	0.4068
	55 n75w	0.75	0.75	0.75	75.95	2.21	-3.65	4.28	301	48.14	49.81	58.08	0.3085	0.3192	0.5826
	56 n88w	0.875	0.875	0.875	85.36	1.68	-2.98	3.43	299	64.14	66.72	76.43	0.3094	0.3219	0.7804
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.0362

IE370-7N, Colorimetric data of Television Luminous System TLS11a0 for CIE standard illuminant D65; LCD monitor; Page: 5/66

$n = 88.59 / (88.59 - 1.23) = 1.014$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 5/66 output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

See original or copy: <http://web.me.com/klaus.richter/IE37/IE37L0NA.PS/.TXT>
Technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmetrik>

TUB registration: 20090901-IE37/IE37L0NA.PS/.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

<http://130.149.60.45/~farbmetrik/IE37/IE37L0NA.PS/.TXT>; start output
N: No Output Linearization (OL) data in File (F), Startup (S) or Device (D)

Colorimetric "Adapted data (a0)": Television Luminous System TLS00a0 for CIE lightness $L^*=00$ of black for illuminant D65
System TLS00a0
LCD monitor

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*

Y Yellow

$LCH^*_a = 94.1 \ 88.7 \ 100$

$LAB^*_a = 94.1 \ -15.9 \ 87.3$

L Leaf green

$LCH^*_a = 84.0 \ 112.3 \ 138$

$LAB^*_a = 84.0 \ -83.5 \ 75.1$

O Orange red

$LCH^*_a = 53.2 \ 102.4 \ 40$

$LAB^*_a = 53.2 \ 78.5 \ 65.7$

M Magenta red

$LCH^*_a = 58.8 \ 103.5 \ 329$

$LAB^*_a = 58.8 \ 89.2 \ -52.6$

C Cyan blue

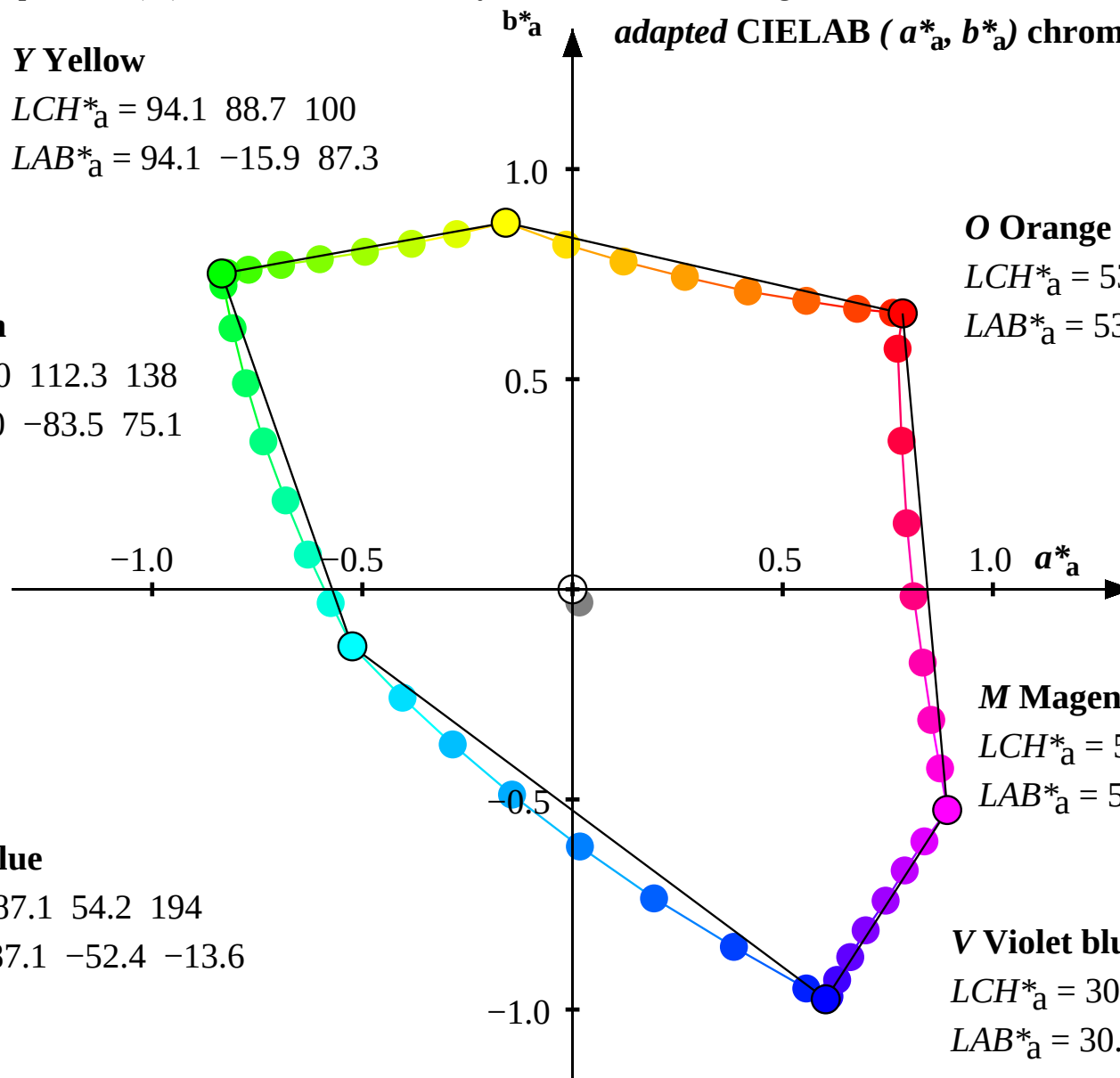
$LCH^*_a = 87.1 \ 54.2 \ 194$

$LAB^*_a = 87.1 \ -52.4 \ -13.6$

V Violet blue

$LCH^*_a = 30.5 \ 114.6 \ 302$

$LAB^*_a = 30.5 \ 60.3 \ -97.5$



Colorimetric "Adapted data (a)": Television Luminous System TLS00a for CIE lightness $L^*=00$ of black for illuminant D65

System TLS00a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD monitor	00 o00y	1.0	0.0	0.0	53.21	78.53	65.65	102.36	40	40.69	21.24	2.1	0.6355	0.3317	0.2484
	01 o13y	1.0	0.125	0.0	53.94	76.28	65.83	100.76	41	40.98	21.92	2.23	0.6292	0.3365	0.2564
D65 reflection:	02 o25y	1.0	0.25	0.0	57.02	67.72	66.71	95.06	45	42.54	24.95	2.82	0.605	0.3548	0.2918
	03 o38y	1.0	0.375	0.0	61.52	55.58	68.6	88.29	51	45.0	29.85	3.75	0.5726	0.3797	0.3491
$Y_N = 0.0$	04 o50y	1.0	0.5	0.0	66.94	41.72	70.89	82.26	60	48.37	36.55	5.1	0.5373	0.406	0.4275
$L^*_N = 0.0$	05 o63y	1.0	0.625	0.0	73.24	26.73	74.3	78.96	70	52.93	45.53	6.85	0.5026	0.4323	0.5325
	06 o75y	1.0	0.75	0.0	79.83	12.13	78.0	78.94	81	58.44	56.38	9.03	0.4719	0.4552	0.6594
	07 o88y	1.0	0.875	0.0	86.38	-1.46	82.01	82.02	91	64.7	68.76	11.49	0.4463	0.4744	0.8042
	08 y00l	1.0	1.0	0.0	94.1	-15.93	87.27	88.72	100	73.34	85.49	14.68	0.4227	0.4927	1.0
	09 y13l	0.875	1.0	0.0	91.95	-27.55	84.51	88.89	108	63.78	80.6	14.28	0.402	0.508	0.9427
	10 y25l	0.75	1.0	0.0	90.14	-38.26	82.28	90.74	115	56.03	76.62	13.91	0.3823	0.5228	0.8962
	11 y38l	0.625	1.0	0.0	88.45	-49.38	80.26	94.24	122	48.97	73.01	13.54	0.3613	0.5388	0.854
	12 y50l	0.5	1.0	0.0	86.94	-60.11	78.52	98.89	127	42.91	69.88	13.19	0.3406	0.5547	0.8174
	13 y63l	0.375	1.0	0.0	85.74	-69.36	77.23	103.81	132	38.25	67.47	12.88	0.3225	0.5689	0.7891
	14 y75l	0.25	1.0	0.0	84.81	-77.08	76.04	108.28	135	34.72	65.63	12.72	0.3071	0.5804	0.7676
	15 y88l	0.125	1.0	0.0	84.19	-82.22	75.33	111.52	138	32.5	64.44	12.58	0.2967	0.5884	0.7537
	16 l00c	0.0	1.0	0.0	84.03	-83.48	75.12	112.31	138	31.96	64.13	12.56	0.2941	0.5903	0.7501
	17 l13c	0.0	1.0	0.125	84.07	-83.08	72.37	110.19	139	32.11	64.2	13.68	0.2919	0.5837	0.7509
	18 l25c	0.0	1.0	0.25	84.18	-80.91	62.13	102.03	142	32.84	64.4	18.41	0.284	0.5569	0.7533
	19 l38c	0.0	1.0	0.375	84.44	-77.67	49.03	91.86	148	34.09	64.92	26.04	0.2726	0.5192	0.7593
	20 l50c	0.0	1.0	0.5	84.81	-73.5	35.21	81.5	154	35.77	65.63	36.23	0.2599	0.4768	0.7676
	21 l63c	0.0	1.0	0.625	85.28	-68.28	21.21	71.51	163	37.96	66.55	49.13	0.2471	0.4331	0.7784
	22 l75c	0.0	1.0	0.75	85.82	-62.91	8.24	63.45	173	40.41	67.64	63.75	0.2352	0.3937	0.7911
	23 l88c	0.0	1.0	0.875	86.4	-57.53	-3.2	57.63	183	43.0	68.79	79.07	0.2253	0.3604	0.8046
	24 c00v	0.0	1.0	1.0	87.06	-52.42	-13.54	54.15	194	45.72	70.12	95.18	0.2167	0.3323	0.8202
	25 c13v	0.0	0.875	1.0	78.4	-40.44	-25.8	47.98	213	37.41	53.89	91.26	0.2049	0.2952	0.6304
	26 c25v	0.0	0.75	1.0	70.63	-28.48	-36.92	46.64	232	31.2	41.65	87.99	0.194	0.2589	0.4871
	27 c38v	0.0	0.675	1.0	62.45	-14.4	-48.87	50.97	254	25.8	30.93	84.99	0.182	0.2183	0.3618
	28 c50v	0.0	0.5	1.0	53.98	1.74	-61.22	61.26	272	21.23	21.95	81.89	0.1697	0.1755	0.2568
	29 c63v	0.0	0.375	1.0	46.02	19.41	-73.51	76.04	285	17.93	15.29	79.98	0.1584	0.135	0.1788
	30 c75v	0.0	0.25	1.0	38.35	38.38	-85.12	93.38	294	15.41	10.29	77.84	0.1488	0.0993	0.1203
	31 c88v	0.0	0.125	1.0	32.16	55.61	-94.97	110.06	300	13.86	7.16	76.77	0.1418	0.0732	0.0837
	32 v00m	0.0	0.0	1.0	30.5	60.26	-97.5	114.62	302	13.47	6.44	76.35	0.14	0.0669	0.0754
	33 v13m	0.125	0.0	1.0	31.07	61.12	-96.93	114.6	302	13.99	6.68	76.88	0.1434	0.0685	0.0781
	34 v25m	0.25	0.0	1.0	33.35	62.93	-92.92	112.23	304	15.93	7.7	76.78	0.1586	0.0767	0.0901
	35 v38m	0.375	0.0	1.0	36.81	66.05	-87.54	109.67	307	19.26	9.44	77.54	0.1813	0.0888	0.1104
	36 v50m	0.5	0.0	1.0	40.7	69.7	-81.13	106.97	311	23.56	11.68	77.94	0.2082	0.1032	0.1366
	37 v63m	0.625	0.0	1.0	45.18	74.51	-74.14	105.11	315	29.42	14.67	78.89	0.2392	0.1193	0.1716
	38 v75m	0.75	0.0	1.0	49.67	79.02	-66.89	103.54	320	36.09	18.14	79.54	0.2698	0.1356	0.2122
	39 v88m	0.875	0.0	1.0	54.01	83.65	-59.99	102.94	324	43.54	21.99	80.32	0.2985	0.1508	0.2572
	40 m00o	1.0	0.0	1.0	58.77	89.16	-52.55	103.5	329	52.97	26.78	81.35	0.3288	0.1663	0.3133
	41 m13o	1.0	0.0	0.875	57.52	87.43	-42.59	97.26	334	50.26	25.46	66.11	0.3543	0.1795	0.2978
	42 m25o	1.0	0.0	0.75	56.35	85.39	-31.06	90.87	340	47.67	24.27	51.49	0.3862	0.1966	0.2838
	43 m38o	1.0	0.0	0.675	55.22	83.35	-17.43	85.15	348	45.22	23.14	37.54	0.427	0.2186	0.2707
	44 m50o	1.0	0.0	0.5	54.23	81.16	-1.58	81.17	359	43.01	22.19	25.13	0.4761	0.2457	0.2596
	45 m63o	1.0	0.0	0.375	53.36	79.52	15.69	81.06	11	41.22	21.38	15.26	0.5294	0.2745	0.25
	46 m75o	1.0	0.0	0.25	52.73	78.3	35.35	85.91	24	39.95	20.8	7.82	0.5826	0.3033	0.2433
	47 m88o	1.0	0.0	0.125	52.31	77.37	57.23	96.24	36	39.08	20.42	3.02	0.6251	0.3266	0.2389
	48 o00y	1.0	0.0	0.0	53.21	78.53	65.65	102.36	40	40.69	21.24	2.1	0.6355	0.3317	0.2484
	49 n00w	0.0	0.0	0.0	0.0	0.0	0.0	0.01	289	0.0	0.0	0.0	0.0	0.0	0.0
	50 n13w	0.125	0.125	0.125	8.96	-0.41	0.08	0.43	169	0.94	1.0	1.08	0.3109	0.3309	0.0117
	51 n25w	0.25	0.25	0.25	27.82	0.0	-0.99	1.0	269	5.12	5.39	6.11	0.3082	0.3244	0.0631
	52 n38w	0.375	0.375	0.375	41.94	0.88	-2.21	2.39	292	11.97	12.46	14.5	0.3075	0.3201	0.1458
	53 n50w	0.5	0.5	0.5	54.1	1.61	-3.16	3.56	297	21.31	22.07	25.97	0.3073	0.3182	0.2581
	54 n63w	0.625	0.625	0.625	65.58	1.98	-3.65	4.16	298	33.61	34.78	40.9	0.3076	0.3182	0.4068
	55 n75w	0.75	0.75	0.75	75.95	2.21	-3.65	4.28	301	48.14	49.81	58.08	0.3085	0.3192	0.5826
	56 n88w	0.875	0.875	0.875	85.36	1.68	-2.98	3.43	299	64.14	66.72	76.43	0.3094	0.3219	0.7804
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.0362

IE370-7N, Colorimetric data of Television Luminous System TLS00a for CIE standard illuminant D65; LCD monitor; Page: 7/66

$$n = 88.59 / (88.59 + 0.0) = 1.0$$

TUB-test chart IE37; Hue circle and colorimetric data

input: olv^* setrgbcolor

Display measurement: LCD, CRT and LCD projector, page 7/66 output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

See original or copy: <http://web.me.com/klaus.richter/IE37/IE37L0NA.PS/.TXT>
Technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmetrik>

TUB registration: 20090901-IE37/IE37L0NA.PS/.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

<http://130.149.60.45/~farbmetrik/IE37/IE37L0NA.PS/.TXT>; start output
N: No Output Linearization (OL) data in File (F), Startup (S) or Device (D)

Colorimetric "Adapted data (a)": Television Luminous System TLS00a for CIE lightness $L^*=00$ of black for illuminant D65
System TLS00a

LCD monitor

D65 reflection:

$Y_N = 0.0$

$L_N^* = 0.0$

Y Yellow

$LCH_a^* = 94.1 \ 88.7 \ 100$

$LAB_a^* = 94.1 \ -15.9 \ 87.3$

L Leaf green

$LCH_a^* = 84.0 \ 112.3 \ 138$

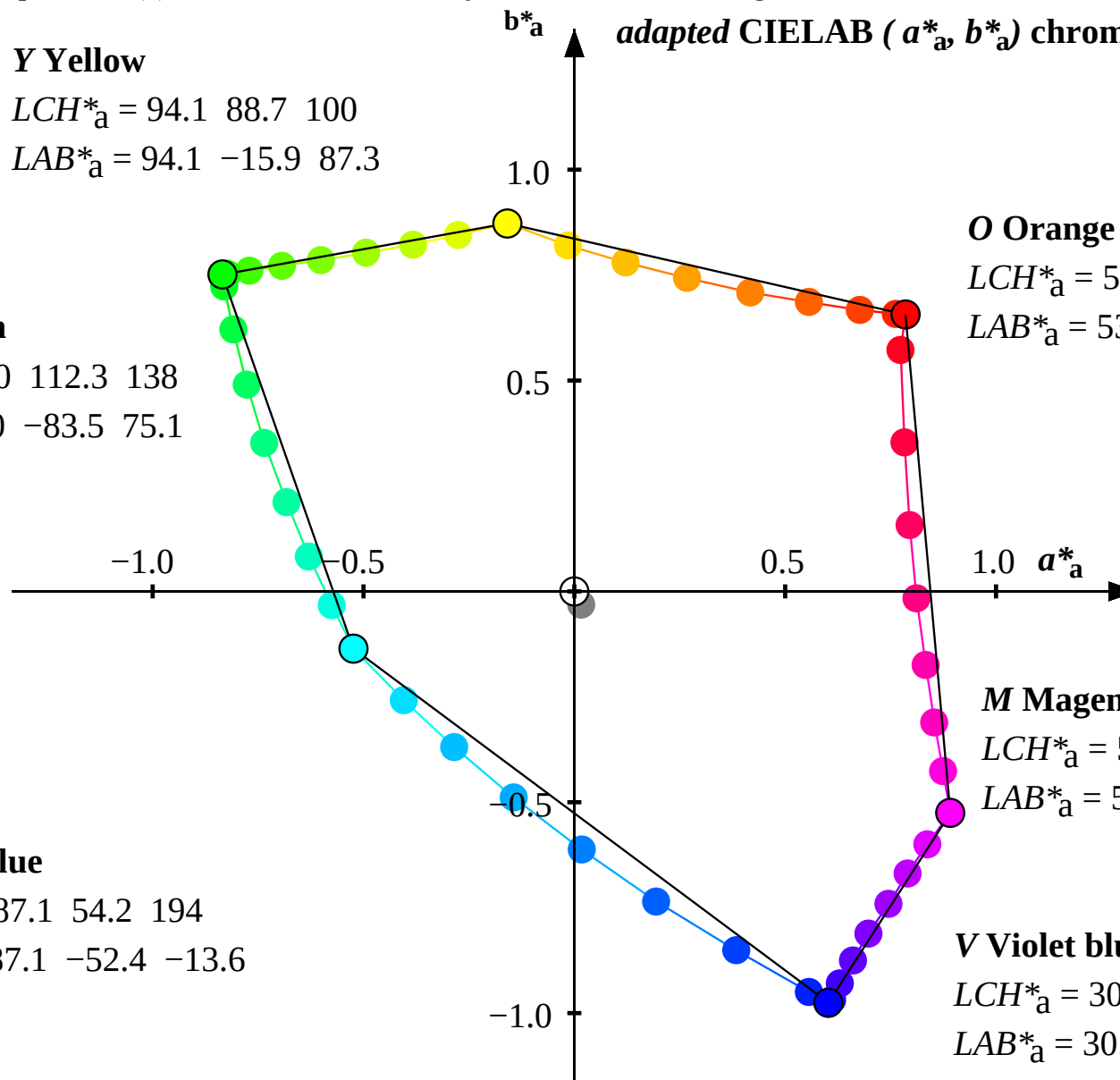
$LAB_a^* = 84.0 \ -83.5 \ 75.1$

C Cyan blue

$LCH_a^* = 87.1 \ 54.2 \ 194$

$LAB_a^* = 87.1 \ -52.4 \ -13.6$

adapted CIELAB (a^ , b^*) chroma diagram*



IE370-7N, Colorimetric data of Television Luminous System TLS00a for CIE standard illuminant D65; LCD monitor; Page: 8/66

TUB-test chart IE37; Hue circle and colorimetric data

input: `olv* setrgbcolor`

Display measurement: LCD, CRT and LCD projector, page 8/66 output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS06a for CIE lightness $L^*=06$ of black for illuminant D65

System TLS06a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB*1_a$	$a^*_a=LAB*2_a$	$b^*_a=LAB*3_a$	$C^*_{ab,a}=LAB*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD monitor	00 o00y	1.0	0.0	0.0	53.72	77.26	61.39	98.68	38	41.0	21.71	2.77	0.6261	0.3316	0.2539
	01 o13y	1.0	0.125	0.0	54.44	75.07	61.72	97.19	39	41.29	22.39	2.9	0.6202	0.3363	0.2618
D65 reflection:	02 o25y	1.0	0.25	0.0	57.46	66.72	63.16	91.87	43	42.84	25.4	3.48	0.5973	0.3541	0.297
	03 o38y	1.0	0.375	0.0	61.88	54.83	65.63	85.52	50	45.28	30.26	4.4	0.5664	0.3785	0.3539
	04 o50y	1.0	0.5	0.0	67.21	41.22	68.45	79.91	59	48.62	36.91	5.75	0.5327	0.4044	0.4317
	05 o63y	1.0	0.625	0.0	73.44	26.45	72.26	76.95	70	53.15	45.83	7.49	0.4992	0.4305	0.5359
	06 o75y	1.0	0.75	0.0	79.96	12.02	76.28	77.22	81	58.62	56.6	9.65	0.4695	0.4533	0.6619
	07 o88y	1.0	0.875	0.0	86.45	-1.45	80.51	80.52	91	64.83	68.9	12.09	0.4446	0.4725	0.8057
	08 y00l	1.0	1.0	0.0	94.11	-15.81	85.96	87.4	100	73.41	85.52	15.25	0.4215	0.4909	1.0
	09 y13l	0.875	1.0	0.0	91.98	-27.33	83.19	87.57	108	63.92	80.65	14.86	0.4009	0.5059	0.9431
	10 y25l	0.75	1.0	0.0	90.18	-37.93	80.96	89.41	115	56.23	76.7	14.49	0.3814	0.5203	0.8969
	11 y38l	0.625	1.0	0.0	88.51	-48.93	78.93	92.87	122	49.22	73.12	14.13	0.3607	0.5358	0.8551
	12 y50l	0.5	1.0	0.0	87.0	-59.52	77.18	97.47	128	43.2	70.01	13.78	0.3402	0.5513	0.8187
	13 y63l	0.375	1.0	0.0	85.81	-68.64	75.88	102.33	132	38.57	67.62	13.47	0.3224	0.5651	0.7907
	14 y75l	0.25	1.0	0.0	84.89	-76.24	74.69	106.73	136	35.07	65.79	13.31	0.3071	0.5763	0.7693
	15 y88l	0.125	1.0	0.0	84.28	-81.3	73.97	109.92	138	32.86	64.61	13.18	0.297	0.5839	0.7555
	16 l00c	0.0	1.0	0.0	84.12	-82.54	73.77	110.71	138	32.33	64.31	13.15	0.2945	0.5858	0.752
	17 l13c	0.0	1.0	0.125	84.16	-82.14	71.12	108.66	139	32.48	64.37	14.26	0.2923	0.5793	0.7528
	18 l25c	0.0	1.0	0.25	84.26	-80.01	61.19	100.74	143	33.2	64.58	18.96	0.2844	0.5532	0.7551
	19 l38c	0.0	1.0	0.375	84.53	-76.82	48.4	90.8	148	34.44	65.08	26.53	0.2732	0.5163	0.7611
	20 l50c	0.0	1.0	0.5	84.89	-72.71	34.81	80.62	154	36.11	65.79	36.66	0.2606	0.4748	0.7693
	21 l63c	0.0	1.0	0.625	85.35	-67.57	21.0	70.77	163	38.29	66.7	49.46	0.2479	0.4319	0.78
	22 l75c	0.0	1.0	0.75	85.9	-62.27	8.17	62.81	173	40.72	67.78	63.98	0.2361	0.393	0.7926
	23 l88c	0.0	1.0	0.875	86.47	-56.97	-3.18	57.07	183	43.29	68.93	79.19	0.2262	0.3601	0.8061
	24 c00v	0.0	1.0	1.0	87.12	-51.92	-13.44	53.64	195	45.99	70.25	95.19	0.2175	0.3323	0.8215
	25 c13v	0.0	0.875	1.0	78.54	-39.98	-25.58	47.48	213	37.74	54.14	91.3	0.206	0.2955	0.6331
	26 c25v	0.0	0.75	1.0	70.86	-28.09	-36.57	46.13	232	31.57	41.98	88.05	0.1954	0.2598	0.4909
	27 c38v	0.0	0.675	1.0	62.79	-14.17	-48.34	50.39	254	26.21	31.34	85.07	0.1838	0.2198	0.3665
	28 c50v	0.0	0.5	1.0	54.47	1.71	-60.44	60.48	272	21.67	22.42	82.0	0.1719	0.1778	0.2622
	29 c63v	0.0	0.375	1.0	46.72	18.9	-72.4	74.84	285	18.4	15.8	80.1	0.1609	0.1383	0.1848
	30 c75v	0.0	0.25	1.0	39.31	37.09	-83.57	91.44	294	15.9	10.84	77.97	0.1518	0.1035	0.1268
	31 c88v	0.0	0.125	1.0	33.42	53.3	-92.91	107.12	300	14.36	7.73	76.91	0.145	0.0781	0.0904
	32 v00m	0.0	0.0	1.0	31.86	57.6	-95.27	111.34	301	13.97	7.02	76.49	0.1433	0.072	0.0821
	33 v13m	0.125	0.0	1.0	32.39	58.51	-94.76	111.38	302	14.49	7.26	77.02	0.1467	0.0735	0.0849
	34 v25m	0.25	0.0	1.0	34.54	60.55	-90.97	109.29	304	16.41	8.27	76.92	0.1615	0.0814	0.0967
	35 v38m	0.375	0.0	1.0	37.83	63.95	-85.88	107.08	307	19.72	9.99	77.67	0.1836	0.0931	0.1169
	36 v50m	0.5	0.0	1.0	41.57	67.86	-79.74	104.71	310	23.99	12.22	78.07	0.2099	0.107	0.1429
	37 v63m	0.625	0.0	1.0	45.9	72.89	-72.99	103.16	315	29.81	15.2	79.02	0.2403	0.1225	0.1777
	38 v75m	0.75	0.0	1.0	50.26	77.59	-65.96	101.84	320	36.43	18.64	79.66	0.2704	0.1384	0.218
	39 v88m	0.875	0.0	1.0	54.51	82.36	-59.22	101.45	324	43.82	22.46	80.44	0.2987	0.1531	0.2626
	40 m00o	1.0	0.0	1.0	59.18	87.99	-51.93	102.18	329	53.19	27.22	81.46	0.3286	0.1682	0.3183
	41 m13o	1.0	0.0	0.875	57.94	86.24	-42.04	95.94	334	50.49	25.9	66.33	0.3538	0.1815	0.3029
	42 m25o	1.0	0.0	0.75	56.8	84.17	-30.61	89.57	340	47.93	24.72	51.81	0.3851	0.1986	0.2891
	43 m38o	1.0	0.0	0.675	55.69	82.11	-17.14	83.88	348	45.49	23.61	37.95	0.425	0.2205	0.276
	44 m50o	1.0	0.0	0.5	54.72	79.9	-1.55	79.92	359	43.3	22.66	25.63	0.4728	0.2474	0.265
	45 m63o	1.0	0.0	0.375	53.87	78.25	15.28	79.73	11	41.52	21.85	15.84	0.5242	0.2758	0.2555
	46 m75o	1.0	0.0	0.25	53.25	77.02	34.09	84.22	24	40.26	21.28	8.45	0.5753	0.304	0.2488
	47 m88o	1.0	0.0	0.125	52.84	76.08	54.03	93.32	35	39.4	20.9	3.68	0.6158	0.3267	0.2444
	48 o00y	1.0	0.0	0.0	53.72	77.26	61.39	98.68	38	41.0	21.71	2.77	0.6261	0.3316	0.2539
	49 n00w	0.0	0.0	0.0	5.65	0.0	0.0	0.01	289	0.59	0.63	0.68	0.3127	0.329	0.0073
	50 n13w	0.125	0.125	0.125	13.32	-0.29	0.06	0.31	169	1.52	1.62	1.75	0.3116	0.3302	0.0189
	51 n25w	0.25	0.25	0.25	29.36	0.0	-0.92	0.93	269	5.68	5.98	6.74	0.3087	0.3249	0.0699
	52 n38w	0.375	0.375	0.375	42.76	0.85	-2.14	2.31	292	12.48	13.0	15.08	0.3077	0.3206	0.152
	53 n50w	0.5	0.5	0.5	54.59	1.58	-3.09	3.48	297	21.76	22.54	26.47	0.3075	0.3185	0.2636
	54 n63w	0.625	0.625	0.625	65.87	1.95	-3.6	4.11	298	33.97	35.16	41.29	0.3076	0.3184	0.4111
	55 n75w	0.75	0.75	0.75	76.12	2.19	-3.62	4.24	301	48.39	50.09	58.36	0.3086	0.3194	0.5857
	56 n88w	0.875	0.875	0.875	85.44	1.66	-2.95	3.4	299	64.28	66.87	76.57	0.3095	0.3219	0.782
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.0359

IE370-7N, Colorimetric data of Television Luminous System TLS06a for CIE standard illuminant D65; LCD monitor; Page: 9/66

$n = 88.59 / (88.59 + 0.63) = 0.993$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 9/66 output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS06a for CIE lightness $L^*=06$ of black for illuminant D65
System TLS06a

LCD monitor

D65 reflection:

$Y_N = 0.63$

$L_N^* = 5.69$

Y Yellow

$LCH_a^* = 94.1 \ 87.4 \ 100$

$LAB_a^* = 94.1 \ -15.8 \ 86.0$

L Leaf green

$LCH_a^* = 84.1 \ 110.7 \ 138$

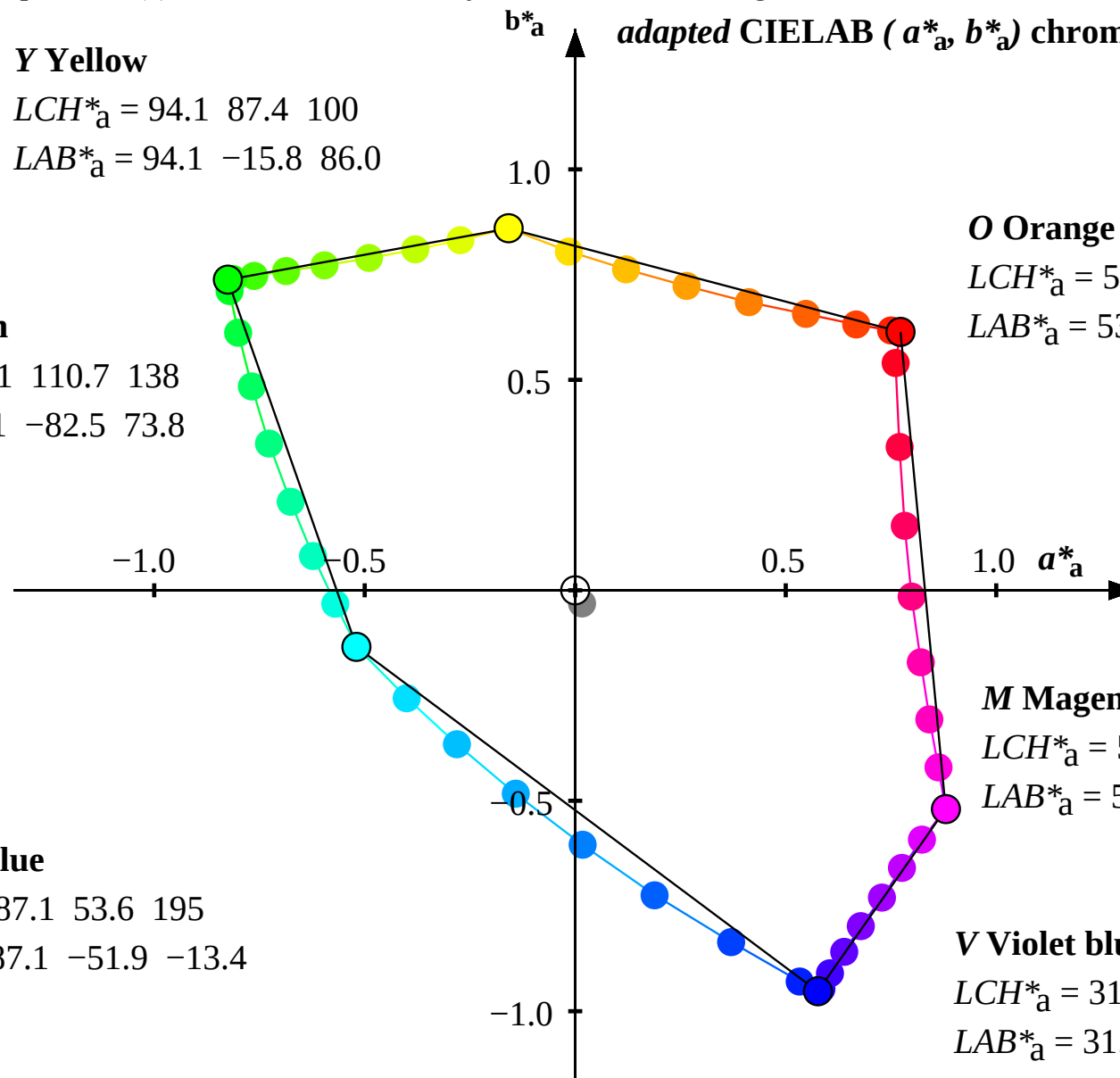
$LAB_a^* = 84.1 \ -82.5 \ 73.8$

C Cyan blue

$LCH_a^* = 87.1 \ 53.6 \ 195$

$LAB_a^* = 87.1 \ -51.9 \ -13.4$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH_a^* = 53.7 \ 98.7 \ 38$

$LAB_a^* = 53.7 \ 77.3 \ 61.4$

M Magenta red

$LCH_a^* = 59.2 \ 102.2 \ 329$

$LAB_a^* = 59.2 \ 88.0 \ -51.9$

V Violet blue

$LCH_a^* = 31.9 \ 111.3 \ 301$

$LAB_a^* = 31.9 \ 57.6 \ -95.3$

Colorimetric "Adapted data (a)": Television Luminous System TLS11a for CIE lightness $L^*=11$ of black for illuminant D65

System TLS11a	Color	$r=olv^*_1$	$g=olv^*_2$	$b=olv^*_3$	$L^*_a=LAB^*_{1a}$	$a^*_a=LAB^*_{2a}$	$b^*_a=LAB^*_{3a}$	$C^*_{ab,a}=LAB^*_{ab,a}$	$h_{ab,a}$	$X_a=XYZ^*_{1a}$	$Y_a=XYZ^*_{2a}$	$Z_a=XYZ^*_{3a}$	x_a	y_a	$Y_a/88.59$
LCD monitor	00 o00y	1.0	0.0	0.0	54.22	76.05	57.92	95.59	37	41.3	22.18	3.43	0.6172	0.3315	0.2593
	01 o13y	1.0	0.125	0.0	54.92	73.9	58.35	94.16	38	41.59	22.85	3.56	0.6116	0.3361	0.2672
D65 reflection:	02 o25y	1.0	0.25	0.0	57.88	65.75	60.15	89.12	42	43.13	25.84	4.14	0.5899	0.3535	0.3021
	03 o38y	1.0	0.375	0.0	62.23	54.11	63.03	83.07	49	45.55	30.67	5.05	0.5605	0.3774	0.3585
	04 o50y	1.0	0.5	0.0	67.48	40.73	66.25	77.77	58	48.87	37.28	6.38	0.5282	0.4029	0.4358
	05 o63y	1.0	0.625	0.0	73.63	26.17	70.38	75.09	70	53.37	46.13	8.11	0.496	0.4287	0.5393
	06 o75y	1.0	0.75	0.0	80.08	11.91	74.66	75.6	81	58.8	56.83	10.26	0.4671	0.4514	0.6644
	07 o88y	1.0	0.875	0.0	86.52	-1.44	79.08	79.1	91	64.97	69.04	12.68	0.4429	0.4706	0.8071
	08 y00l	1.0	1.0	0.0	94.11	-15.69	84.7	86.14	101	73.49	85.54	15.82	0.4203	0.4892	1.0
	09 y13l	0.875	1.0	0.0	92.0	-27.11	81.93	86.3	108	64.07	80.71	15.43	0.3999	0.5038	0.9435
	10 y25l	0.75	1.0	0.0	90.22	-37.61	79.69	88.12	115	56.42	76.78	15.07	0.3805	0.5178	0.8977
	11 y38l	0.625	1.0	0.0	88.56	-48.48	77.66	91.56	122	49.46	73.23	14.7	0.36	0.533	0.8561
	12 y50l	0.5	1.0	0.0	87.07	-58.94	75.9	96.11	128	43.49	70.14	14.36	0.3398	0.548	0.82
	13 y63l	0.375	1.0	0.0	85.89	-67.94	74.6	100.91	132	38.89	67.76	14.05	0.3222	0.5614	0.7922
	14 y75l	0.25	1.0	0.0	84.97	-75.42	73.4	105.25	136	35.41	65.95	13.89	0.3072	0.5722	0.771
	15 y88l	0.125	1.0	0.0	84.37	-80.4	72.68	108.39	138	33.22	64.78	13.76	0.2973	0.5796	0.7573
	16 l00c	0.0	1.0	0.0	84.21	-81.61	72.48	109.16	138	32.69	64.48	13.73	0.2948	0.5814	0.7538
	17 l13c	0.0	1.0	0.125	84.25	-81.22	69.92	107.18	139	32.84	64.54	14.84	0.2926	0.5751	0.7546
	18 l25c	0.0	1.0	0.25	84.35	-79.13	60.29	99.48	143	33.56	64.74	19.5	0.2849	0.5496	0.7569
	19 l38c	0.0	1.0	0.375	84.61	-75.98	47.78	89.77	148	34.79	65.25	27.02	0.2738	0.5135	0.7628
	20 l50c	0.0	1.0	0.5	84.97	-71.94	34.42	79.76	154	36.45	65.95	37.08	0.2613	0.4728	0.771
	21 l63c	0.0	1.0	0.625	85.43	-66.87	20.8	70.04	163	38.61	66.86	49.79	0.2487	0.4306	0.7816
	22 l75c	0.0	1.0	0.75	85.97	-61.65	8.09	62.18	173	41.02	67.93	64.21	0.2369	0.3923	0.7942
	23 l88c	0.0	1.0	0.875	86.54	-56.41	-3.15	56.51	183	43.58	69.07	79.31	0.227	0.3598	0.8075
	24 c00v	0.0	1.0	1.0	87.18	-51.43	-13.34	53.14	195	46.26	70.38	95.2	0.2184	0.3322	0.8228
	25 c13v	0.0	0.875	1.0	78.68	-39.53	-25.37	46.98	213	38.07	54.38	91.34	0.2071	0.2959	0.6357
	26 c25v	0.0	0.75	1.0	71.08	-27.72	-36.22	45.63	233	31.94	42.31	88.11	0.1967	0.2606	0.4946
	27 c38v	0.0	0.675	1.0	63.13	-13.93	-47.82	49.82	254	26.62	31.74	85.15	0.1855	0.2212	0.3711
	28 c50v	0.0	0.5	1.0	54.96	1.67	-59.69	59.72	272	22.11	22.89	82.1	0.174	0.1801	0.2676
	29 c63v	0.0	0.375	1.0	47.38	18.42	-71.34	73.69	284	18.86	16.31	80.21	0.1634	0.1414	0.1907
	30 c75v	0.0	0.25	1.0	40.22	35.9	-82.09	89.61	294	16.38	11.38	78.1	0.1547	0.1075	0.1331
	31 c88v	0.0	0.125	1.0	34.6	51.21	-90.98	104.41	299	14.85	8.3	77.05	0.1482	0.0828	0.097
	32 v00m	0.0	0.0	1.0	33.12	55.21	-93.2	108.33	301	14.46	7.59	76.63	0.1466	0.077	0.0888
	33 v13m	0.125	0.0	1.0	33.62	56.16	-92.73	108.42	301	14.97	7.83	77.15	0.1498	0.0783	0.0915
	34 v25m	0.25	0.0	1.0	35.67	58.38	-89.14	106.57	303	16.88	8.84	77.06	0.1643	0.086	0.1033
	35 v38m	0.375	0.0	1.0	38.8	62.01	-84.3	104.66	306	20.17	10.55	77.8	0.1859	0.0972	0.1233
	36 v50m	0.5	0.0	1.0	42.4	66.13	-78.41	102.58	310	24.41	12.76	78.2	0.2116	0.1106	0.1492
	37 v63m	0.625	0.0	1.0	46.59	71.36	-71.89	101.3	315	30.19	15.71	79.14	0.2414	0.1256	0.1837
	38 v75m	0.75	0.0	1.0	50.84	76.22	-65.05	100.21	320	36.77	19.13	79.78	0.271	0.141	0.2237
	39 v88m	0.875	0.0	1.0	54.99	81.11	-58.47	100.0	324	44.11	22.92	80.55	0.2989	0.1553	0.268
	40 m00o	1.0	0.0	1.0	59.57	86.86	-51.33	100.9	329	53.4	27.65	81.56	0.3284	0.17	0.3233
	41 m13o	1.0	0.0	0.875	58.36	85.07	-41.5	94.66	334	50.73	26.34	66.54	0.3533	0.1834	0.308
	42 m25o	1.0	0.0	0.75	57.24	82.99	-30.17	88.31	340	48.18	25.17	52.12	0.384	0.2006	0.2942
	43 m38o	1.0	0.0	0.675	56.15	80.91	-16.85	82.65	348	45.76	24.06	38.36	0.423	0.2224	0.2813
	44 m50o	1.0	0.0	0.5	55.2	78.69	-1.52	78.71	359	43.59	23.12	26.13	0.4695	0.2491	0.2703
	45 m63o	1.0	0.0	0.375	54.36	77.03	14.9	78.45	11	41.82	22.32	16.4	0.5193	0.2771	0.2609
	46 m75o	1.0	0.0	0.25	53.76	75.78	32.94	82.63	23	40.57	21.75	9.07	0.5683	0.3047	0.2542
	47 m88o	1.0	0.0	0.125	53.36	74.84	51.32	90.75	34	39.72	21.38	4.33	0.607	0.3268	0.2499
	48 o00y	1.0	0.0	0.0	54.22	76.05	57.92	95.59	37	41.3	22.18	3.43	0.6172	0.3315	0.2593
	49 n00w	0.0	0.0	0.0	10.87	0.0	0.0	0.01	341	1.18	1.24	1.35	0.3127	0.329	0.0145
	50 n13w	0.125	0.125	0.125	16.63	-0.23	0.05	0.25	169	2.1	2.23	2.42	0.3119	0.3299	0.026
	51 n25w	0.25	0.25	0.25	30.78	0.0	-0.86	0.87	269	6.23	6.56	7.37	0.3091	0.3252	0.0767
	52 n38w	0.375	0.375	0.375	43.55	0.82	-2.07	2.24	292	12.98	13.53	15.65	0.308	0.3209	0.1582
	53 n50w	0.5	0.5	0.5	55.07	1.55	-3.03	3.41	297	22.19	23.0	26.96	0.3076	0.3188	0.2689
	54 n63w	0.625	0.625	0.625	66.16	1.93	-3.55	4.05	298	34.32	35.53	41.68	0.3077	0.3186	0.4154
	55 n75w	0.75	0.75	0.75	76.29	2.17	-3.58	4.19	301	48.64	50.36	58.62	0.3086	0.3195	0.5887
	56 n88w	0.875	0.875	0.875	85.52	1.65	-2.93	3.37	299	64.42	67.02	76.71	0.3095	0.322	0.7836
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.0357

IE370-7N, Colorimetric data of Television Luminous System TLS11a for CIE standard illuminant D65; LCD monitor; Page: 11/66

$$n = 88.59 / (88.59 + 1.26) = 0.986$$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* \text{ setrgbcolor}$

Display measurement: LCD, CRT and LCD projector, page 11/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Adapted data (a)": Television Luminous System TLS11a for CIE lightness $L^*=11$ of black for illuminant D65
System TLS11a

LCD monitor

D65 reflection:

$Y_N = 1.26$

$L_N^* = 11.0$

Y Yellow

$LCH_a^* = 94.1 \ 86.1 \ 101$

$LAB_a^* = 94.1 \ -15.7 \ 84.7$

L Leaf green

$LCH_a^* = 84.2 \ 109.2 \ 138$

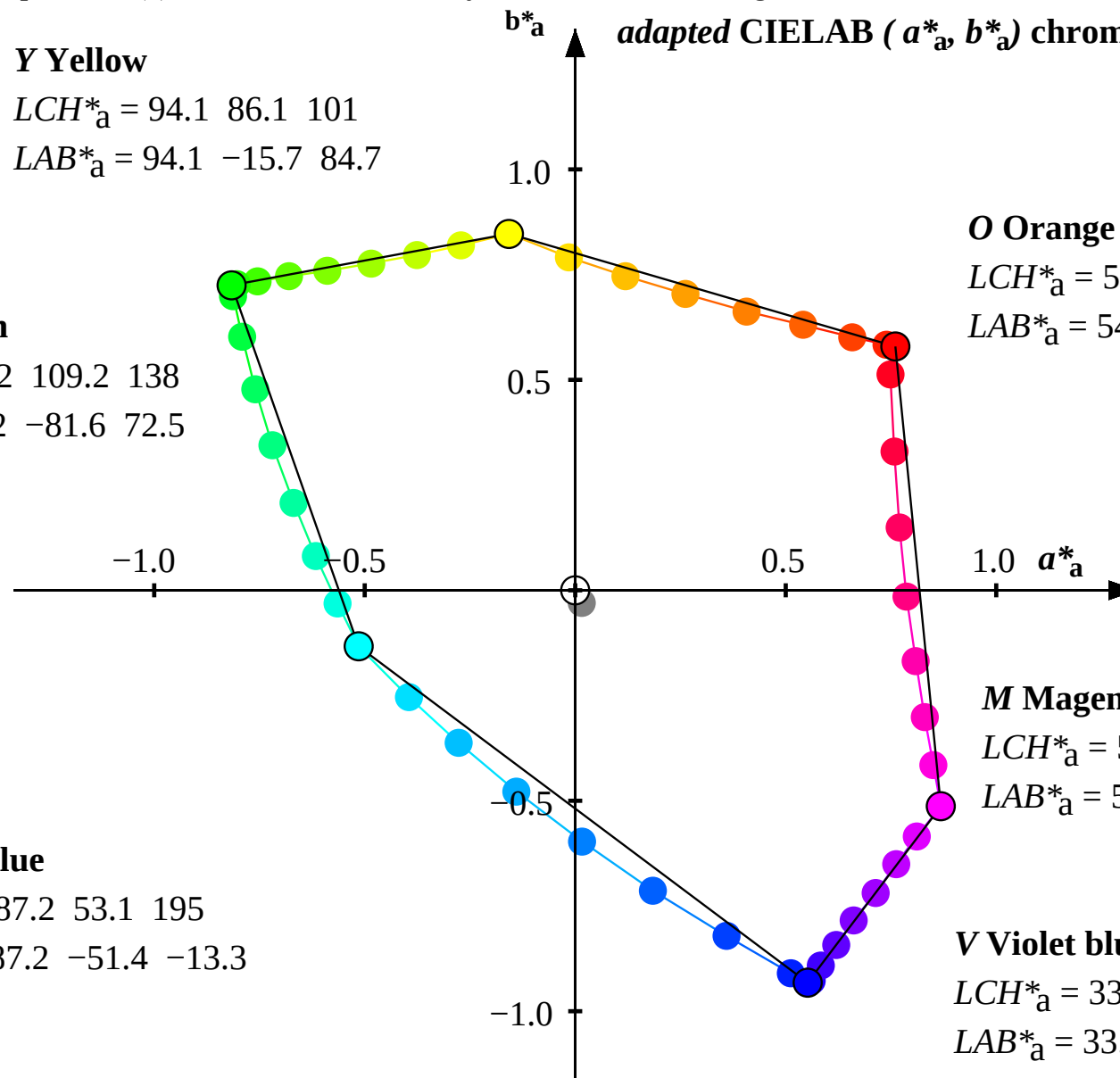
$LAB_a^* = 84.2 \ -81.6 \ 72.5$

C Cyan blue

$LCH_a^* = 87.2 \ 53.1 \ 195$

$LAB_a^* = 87.2 \ -51.4 \ -13.3$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH_a^* = 54.2 \ 95.6 \ 37$

$LAB_a^* = 54.2 \ 76.0 \ 57.9$

M Magenta red

$LCH_a^* = 59.6 \ 100.9 \ 329$

$LAB_a^* = 59.6 \ 86.9 \ -51.3$

V Violet blue

$LCH_a^* = 33.1 \ 108.3 \ 301$

$LAB_a^* = 33.1 \ 55.2 \ -93.2$

Colorimetric "Adapted data (a)": Television Luminous System TLS18a for CIE lightness $L^*=18$ of black for illuminant D65

System TLS18a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD monitor	00 o00y	1.0	0.0	0.0	55.18	73.73	52.49	90.51	35	41.89	23.1	4.71	0.601	0.3314	0.2699
	01 o13y	1.0	0.125	0.0	55.85	71.69	53.03	89.17	36	42.18	23.76	4.84	0.5959	0.3357	0.2777
D65 reflection:	02 o25y	1.0	0.25	0.0	58.7	63.91	55.26	84.48	41	43.69	26.71	5.41	0.5763	0.3523	0.3121
	03 o38y	1.0	0.375	0.0	62.9	52.73	58.64	78.86	48	46.09	31.47	6.31	0.5495	0.3752	0.3677
$Y_N = 2.52$	04 o50y	1.0	0.5	0.0	68.01	39.8	62.4	74.01	57	49.36	37.99	7.63	0.5197	0.4	0.4439
$L^*_N = 18.01$	05 o63y	1.0	0.625	0.0	74.01	25.63	67.01	71.74	69	53.8	46.72	9.33	0.4897	0.4253	0.5459
	06 o75y	1.0	0.75	0.0	80.33	11.69	71.69	72.63	81	59.15	57.27	11.45	0.4626	0.4479	0.6692
	07 o88y	1.0	0.875	0.0	86.66	-1.41	76.43	76.44	91	65.24	69.31	13.84	0.4396	0.4671	0.8099
	08 y00l	1.0	1.0	0.0	94.13	-15.46	82.32	83.76	101	73.64	85.58	16.94	0.418	0.4858	1.0
	09 y13l	0.875	1.0	0.0	92.05	-26.68	79.55	83.91	109	64.34	80.82	16.55	0.3979	0.4998	0.9443
	10 y25l	0.75	1.0	0.0	90.3	-36.99	77.3	85.7	116	56.81	76.95	16.19	0.3788	0.5132	0.8991
	11 y38l	0.625	1.0	0.0	88.66	-47.62	75.27	89.08	122	49.94	73.44	15.83	0.3587	0.5275	0.8582
	12 y50l	0.5	1.0	0.0	87.19	-57.83	73.5	93.53	128	44.05	70.4	15.49	0.339	0.5417	0.8226
	13 y63l	0.375	1.0	0.0	86.03	-66.58	72.18	98.21	133	39.52	68.05	15.19	0.3219	0.5543	0.7952
	14 y75l	0.25	1.0	0.0	85.13	-73.84	70.99	102.44	136	36.09	66.26	15.04	0.3074	0.5645	0.7743
	15 y88l	0.125	1.0	0.0	84.54	-78.65	70.27	105.48	138	33.93	65.11	14.9	0.2978	0.5714	0.7608
	16 l00c	0.0	1.0	0.0	84.39	-79.83	70.06	106.23	139	33.4	64.81	14.88	0.2954	0.5731	0.7573
	17 l13c	0.0	1.0	0.125	84.42	-79.45	67.67	104.37	140	33.55	64.88	15.97	0.2933	0.5671	0.7581
	18 l25c	0.0	1.0	0.25	84.52	-77.42	58.56	97.08	143	34.26	65.07	20.56	0.2858	0.5427	0.7604
	19 l38c	0.0	1.0	0.375	84.78	-74.37	46.59	87.77	148	35.47	65.57	27.98	0.2749	0.5082	0.7662
	20 l50c	0.0	1.0	0.5	85.13	-70.44	33.67	78.09	154	37.11	66.26	37.9	0.2627	0.469	0.7743
	21 l63c	0.0	1.0	0.625	85.58	-65.52	20.4	68.63	163	39.24	67.16	50.44	0.2502	0.4282	0.7847
	22 l75c	0.0	1.0	0.75	86.11	-60.44	7.95	60.97	173	41.62	68.22	64.66	0.2385	0.3909	0.7971
	23 l88c	0.0	1.0	0.875	86.67	-55.34	-3.1	55.44	183	44.14	69.34	79.55	0.2287	0.3592	0.8102
	24 c00v	0.0	1.0	1.0	87.31	-50.48	-13.14	52.17	195	46.79	70.63	95.22	0.22	0.3322	0.8253
	25 c13v	0.0	0.875	1.0	78.96	-38.66	-24.94	46.02	213	38.71	54.85	91.41	0.2093	0.2966	0.641
	26 c25v	0.0	0.75	1.0	71.52	-27.0	-35.55	44.66	233	32.66	42.95	88.23	0.1994	0.2621	0.5018
	27 c38v	0.0	0.675	1.0	63.78	-13.5	-46.82	48.74	254	27.41	32.53	85.3	0.1887	0.224	0.3801
	28 c50v	0.0	0.5	1.0	55.88	1.61	-58.23	58.27	272	22.97	23.8	82.3	0.178	0.1844	0.2781
	29 c63v	0.0	0.375	1.0	48.65	17.53	-69.32	71.51	284	19.76	17.31	80.44	0.1682	0.1473	0.2023
	30 c75v	0.0	0.25	1.0	41.93	33.76	-79.35	86.24	293	17.31	12.45	78.36	0.1601	0.1152	0.1455
	31 c88v	0.0	0.125	1.0	36.76	47.56	-87.46	99.56	299	15.81	9.41	77.32	0.1542	0.0918	0.1099
	32 v00m	0.0	0.0	1.0	35.43	51.08	-89.43	103.0	300	15.43	8.71	76.9	0.1527	0.0862	0.1018
	33 v13m	0.125	0.0	1.0	35.88	52.07	-89.05	103.17	300	15.93	8.95	77.42	0.1557	0.0875	0.1045
	34 v25m	0.25	0.0	1.0	37.73	54.55	-85.79	101.67	302	17.81	9.94	77.33	0.1695	0.0946	0.1161
	35 v38m	0.375	0.0	1.0	40.61	58.51	-81.38	100.24	306	21.05	11.63	78.06	0.1901	0.105	0.1358
	36 v50m	0.5	0.0	1.0	43.96	62.96	-75.91	98.63	310	25.24	13.81	78.45	0.2148	0.1175	0.1613
	37 v63m	0.625	0.0	1.0	47.9	68.5	-69.82	97.81	314	30.94	16.72	79.38	0.2435	0.1316	0.1954
	38 v75m	0.75	0.0	1.0	51.94	73.63	-63.33	97.12	319	37.42	20.09	80.01	0.2721	0.1461	0.2348
	39 v88m	0.875	0.0	1.0	55.92	78.74	-57.04	97.24	324	44.66	23.83	80.77	0.2992	0.1597	0.2784
	40 m00o	1.0	0.0	1.0	60.33	84.67	-50.18	98.43	329	53.83	28.49	81.77	0.328	0.1736	0.3329
	41 m13o	1.0	0.0	0.875	59.16	82.85	-40.47	92.21	334	51.19	27.2	66.95	0.3522	0.1872	0.3179
	42 m25o	1.0	0.0	0.75	58.08	80.74	-29.33	85.9	340	48.68	26.05	52.73	0.3819	0.2044	0.3043
	43 m38o	1.0	0.0	0.675	57.03	78.62	-16.31	80.3	348	46.3	24.95	39.17	0.4193	0.226	0.2916
	44 m50o	1.0	0.0	0.5	56.12	76.39	-1.46	76.4	359	44.15	24.03	27.1	0.4634	0.2522	0.2808
	45 m63o	1.0	0.0	0.375	55.31	74.7	14.19	76.04	11	42.41	23.23	17.51	0.51	0.2794	0.2715
	46 m75o	1.0	0.0	0.25	54.73	73.44	30.9	79.67	23	41.17	22.67	10.28	0.5555	0.3059	0.2649
	47 m88o	1.0	0.0	0.125	54.35	72.49	46.9	86.34	33	40.33	22.31	5.61	0.591	0.3269	0.2607
	48 o00y	1.0	0.0	0.0	55.18	73.73	52.49	90.51	35	41.89	23.1	4.71	0.601	0.3314	0.2699
	49 n00w	0.0	0.0	0.0	17.69	0.0	0.0	0.01	0	2.33	2.45	2.67	0.3127	0.329	0.0286
	50 n13w	0.125	0.125	0.125	21.65	-0.17	0.04	0.18	169	3.24	3.42	3.72	0.3122	0.3296	0.04
	51 n25w	0.25	0.25	0.25	33.33	0.0	-0.76	0.77	269	7.31	7.69	8.61	0.3096	0.3258	0.0899
	52 n38w	0.375	0.375	0.375	45.04	0.77	-1.95	2.1	292	13.97	14.57	16.76	0.3083	0.3216	0.1702
	53 n50w	0.5	0.5	0.5	56.0	1.49	-2.92	3.28	297	23.05	23.91	27.92	0.3078	0.3193	0.2794
	54 n63w	0.625	0.625	0.625	66.72	1.87	-3.46	3.94	298	35.01	36.27	42.44	0.3079	0.3189	0.4238
	55 n75w	0.75	0.75	0.75	76.61	2.12	-3.51	4.11	301	49.14	50.88	59.15	0.3087	0.3197	0.5946
	56 n88w	0.875	0.875	0.875	85.67	1.62	-2.88	3.31	299	64.7	67.32	76.98	0.3095	0.3221	0.7867
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.0352

IE370-7N, Colorimetric data of Television Luminous System TLS18a for CIE standard illuminant D65; LCD monitor; Page: 13/66

$$n = 88.59 / (88.59 + 2.52) = 0.972$$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 13/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Adapted data (a)": Television Luminous System TLS18a for CIE lightness $L^*=18$ of black for illuminant D65
System TLS18a

LCD monitor

D65 reflection:

$Y_N = 2.52$

$L_N^* = 18.01$

Y Yellow

$LCH_a^* = 94.1 \ 83.8 \ 101$

$LAB_a^* = 94.1 \ -15.5 \ 82.3$

L Leaf green

$LCH_a^* = 84.4 \ 106.2 \ 139$

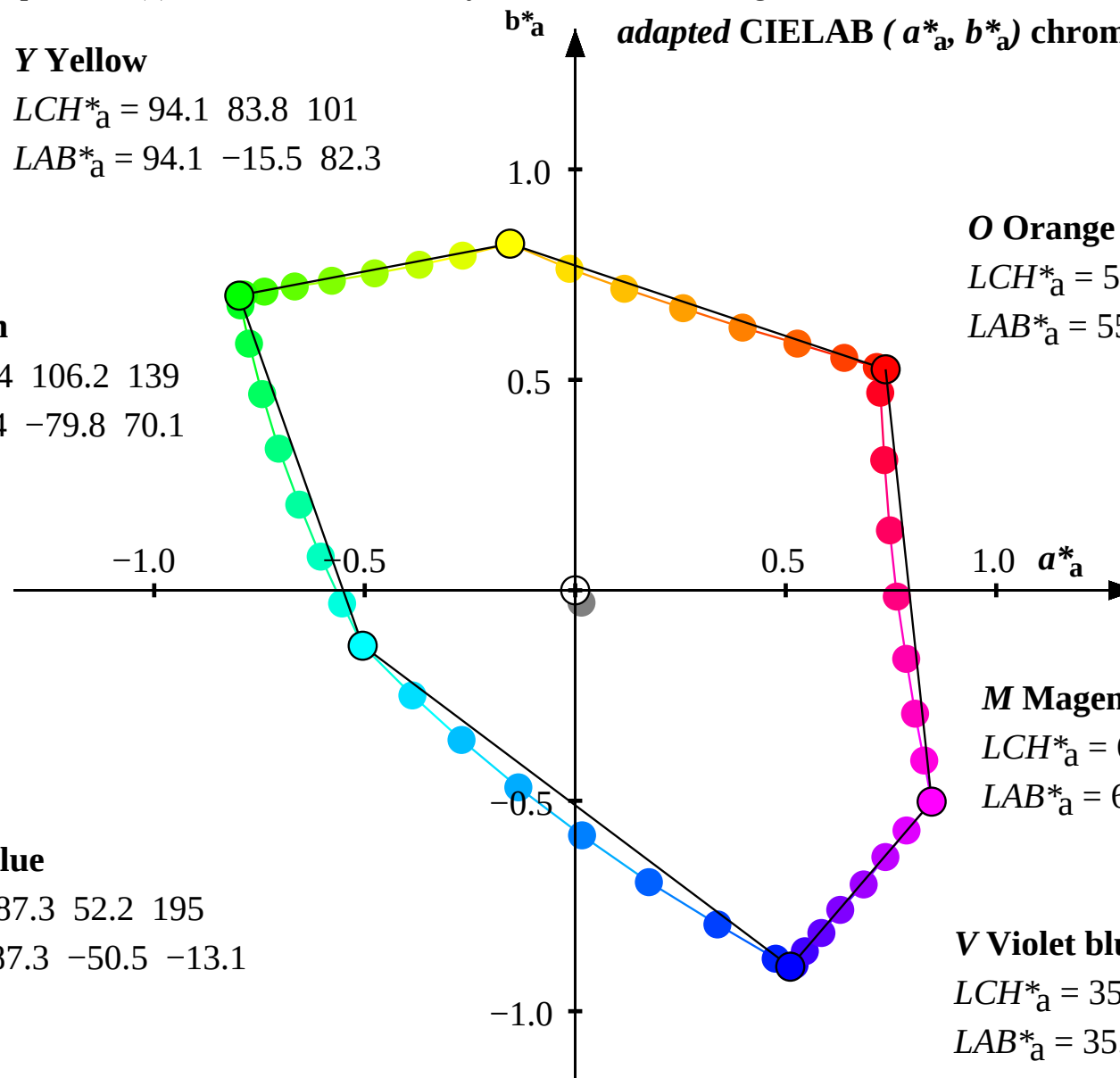
$LAB_a^* = 84.4 \ -79.8 \ 70.1$

C Cyan blue

$LCH_a^* = 87.3 \ 52.2 \ 195$

$LAB_a^* = 87.3 \ -50.5 \ -13.1$

adapted CIELAB (a^ , b^*) chroma diagram*



O Orange red

$LCH_a^* = 55.2 \ 90.5 \ 35$

$LAB_a^* = 55.2 \ 73.7 \ 52.5$

M Magenta red

$LCH_a^* = 60.3 \ 98.4 \ 329$

$LAB_a^* = 60.3 \ 84.7 \ -50.2$

V Violet blue

$LCH_a^* = 35.4 \ 103.0 \ 300$

$LAB_a^* = 35.4 \ 51.1 \ -89.4$

Colorimetric "Adapted data (a)": Television Luminous System TLS27a for CIE lightness $L^*=27$ of black for illuminant D65

System TLS27a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB*1_a$	$a^*_a=LAB*2_a$	$b^*_a=LAB*3_a$	$C^*_{ab,a}=LAB*ab,a$	$h_{ab,a}$	$X_a=XYZ_{1a}$	$Y_a=XYZ_{2a}$	$Z_a=XYZ_{3a}$	x_a	y_a	$Y_a/88.59$
LCD monitor	00 o00y	1.0	0.0	0.0	56.94	69.53	44.95	82.8	33	43.03	24.86	7.18	0.5732	0.3312	0.2903
	01 o13y	1.0	0.125	0.0	57.57	67.66	45.57	81.58	34	43.31	25.51	7.31	0.5689	0.3351	0.2978
D65 reflection:	02 o25y	1.0	0.25	0.0	60.22	60.53	48.13	77.34	38	44.78	28.37	7.86	0.5528	0.3502	0.3312
	03 o38y	1.0	0.375	0.0	64.17	50.17	51.95	72.22	46	47.11	33.01	8.74	0.5302	0.3715	0.3853
$Y_N = 5.04$	04 o50y	1.0	0.5	0.0	69.0	38.05	56.27	67.92	56	50.3	39.35	10.02	0.5047	0.3948	0.4593
$L^*_N = 26.85$	05 o63y	1.0	0.625	0.0	74.73	24.63	61.4	66.16	68	54.61	47.84	11.68	0.4785	0.4192	0.5585
	06 o75y	1.0	0.75	0.0	80.8	11.28	66.59	67.54	80	59.83	58.11	13.74	0.4544	0.4413	0.6784
	07 o88y	1.0	0.875	0.0	86.91	-1.37	71.75	71.76	91	65.75	69.83	16.07	0.4336	0.4605	0.8151
	08 y00l	1.0	1.0	0.0	94.17	-15.02	78.03	79.46	101	73.92	85.66	19.08	0.4138	0.4795	1.0
	09 y13l	0.875	1.0	0.0	92.14	-25.87	75.27	79.6	109	64.88	81.03	18.7	0.3941	0.4922	0.9459
	10 y25l	0.75	1.0	0.0	90.44	-35.79	73.04	81.34	116	57.55	77.26	18.35	0.3757	0.5044	0.9019
	11 y38l	0.625	1.0	0.0	88.85	-45.99	71.0	84.6	123	50.86	73.85	18.0	0.3564	0.5175	0.8621
	12 y50l	0.5	1.0	0.0	87.43	-55.72	69.23	88.87	129	45.13	70.89	17.67	0.3376	0.5302	0.8275
	13 y63l	0.375	1.0	0.0	86.31	-64.02	67.9	93.33	133	40.72	68.6	17.38	0.3214	0.5414	0.8009
	14 y75l	0.25	1.0	0.0	85.44	-70.87	66.72	97.34	137	37.38	66.87	17.23	0.3077	0.5505	0.7806
	15 y88l	0.125	1.0	0.0	84.86	-75.4	66.0	100.21	139	35.28	65.74	17.1	0.2987	0.5566	0.7674
	16 l00c	0.0	1.0	0.0	84.71	-76.5	65.8	100.91	139	34.77	65.45	17.07	0.2964	0.558	0.764
	17 l13c	0.0	1.0	0.125	84.75	-76.15	63.66	99.26	140	34.91	65.51	18.13	0.2945	0.5526	0.7648
	18 l25c	0.0	1.0	0.25	84.85	-74.22	55.44	92.65	143	35.61	65.71	22.61	0.2873	0.5302	0.7671
	19 l38c	0.0	1.0	0.375	85.09	-71.35	44.41	84.05	148	36.79	66.19	29.83	0.277	0.4984	0.7727
	20 l50c	0.0	1.0	0.5	85.44	-67.64	32.28	74.96	154	38.38	66.87	39.48	0.2652	0.462	0.7806
	21 l63c	0.0	1.0	0.625	85.87	-62.99	19.64	65.99	163	40.45	67.73	51.67	0.2531	0.4237	0.7907
	22 l75c	0.0	1.0	0.75	86.39	-58.16	7.68	58.68	172	42.77	68.76	65.51	0.2416	0.3884	0.8027
	23 l88c	0.0	1.0	0.875	86.93	-53.31	-3.0	53.41	183	45.22	69.86	80.0	0.2318	0.3581	0.8155
	24 c00v	0.0	1.0	1.0	87.54	-48.68	-12.75	50.33	195	47.79	71.11	95.25	0.2232	0.3321	0.8302
	25 c13v	0.0	0.875	1.0	79.48	-37.04	-24.14	44.23	213	39.93	55.76	91.54	0.2133	0.2978	0.651
	26 c25v	0.0	0.75	1.0	72.35	-25.67	-34.28	42.84	233	34.05	44.18	88.45	0.2043	0.265	0.5157
	27 c38v	0.0	0.675	1.0	64.99	-12.71	-44.94	46.71	254	28.94	34.04	85.6	0.1948	0.2291	0.3973
	28 c50v	0.0	0.5	1.0	57.6	1.49	-55.56	55.59	272	24.62	25.54	82.68	0.1853	0.1923	0.2982
	29 c63v	0.0	0.375	1.0	50.96	16.02	-65.67	67.6	284	21.49	19.23	80.87	0.1768	0.1582	0.2245
	30 c75v	0.0	0.25	1.0	44.94	30.25	-74.51	80.43	292	19.11	14.5	78.85	0.17	0.1289	0.1693
	31 c88v	0.0	0.125	1.0	40.48	41.83	-81.45	91.57	297	17.65	11.54	77.83	0.1649	0.1078	0.1347
	32 v00m	0.0	0.0	1.0	39.35	44.67	-83.08	94.33	298	17.28	10.86	77.43	0.1637	0.1029	0.1268
	33 v13m	0.125	0.0	1.0	39.73	45.69	-82.8	94.58	299	17.77	11.09	77.93	0.1664	0.1038	0.1295
	34 v25m	0.25	0.0	1.0	41.3	48.41	-80.02	93.54	301	19.6	12.06	77.84	0.179	0.1101	0.1407
	35 v38m	0.375	0.0	1.0	43.79	52.73	-76.27	92.74	305	22.75	13.7	78.55	0.1979	0.1191	0.1599
	36 v50m	0.5	0.0	1.0	46.74	57.57	-71.49	91.79	309	26.83	15.82	78.93	0.2207	0.1301	0.1847
	37 v63m	0.625	0.0	1.0	50.28	63.49	-66.07	91.64	314	32.37	18.65	79.84	0.2474	0.1425	0.2178
	38 v75m	0.75	0.0	1.0	53.96	69.0	-60.18	91.56	319	38.68	21.94	80.45	0.2742	0.1555	0.2561
	39 v88m	0.875	0.0	1.0	57.63	74.42	-54.41	92.19	324	45.72	25.57	81.19	0.2999	0.1677	0.2985
	40 m00o	1.0	0.0	1.0	61.75	80.64	-48.02	93.87	329	54.65	30.11	82.16	0.3274	0.1804	0.3515
	41 m13o	1.0	0.0	0.875	60.65	78.76	-38.57	87.7	334	52.08	28.86	67.75	0.3503	0.1941	0.3369
	42 m25o	1.0	0.0	0.75	59.64	76.6	-27.79	81.49	340	49.63	27.73	53.91	0.3781	0.2112	0.3237
	43 m38o	1.0	0.0	0.675	58.66	74.45	-15.34	76.01	348	47.32	26.67	40.71	0.4125	0.2325	0.3113
	44 m50o	1.0	0.0	0.5	57.81	72.19	-1.35	72.2	359	45.23	25.77	28.97	0.4524	0.2578	0.3008
	45 m63o	1.0	0.0	0.375	57.07	70.48	12.99	71.66	10	43.53	24.99	19.63	0.4938	0.2835	0.2918
	46 m75o	1.0	0.0	0.25	56.53	69.2	27.61	74.5	22	42.33	24.45	12.59	0.5333	0.308	0.2854
	47 m88o	1.0	0.0	0.125	56.18	68.25	40.51	79.36	31	41.51	24.09	8.05	0.5636	0.3271	0.2813
	48 o00y	1.0	0.0	0.0	56.94	69.53	44.95	82.8	33	43.03	24.86	7.18	0.5732	0.3312	0.2903
	49 n00w	0.0	0.0	0.0	26.07	0.0	0.0	0.01	0	4.53	4.77	5.19	0.3127	0.329	0.0557
	50 n13w	0.125	0.125	0.125	28.67	-0.11	0.02	0.13	169	5.42	5.71	6.21	0.3124	0.3293	0.0667
	51 n25w	0.25	0.25	0.25	37.61	0.0	-0.63	0.64	269	9.88	9.87	10.97	0.3104	0.3266	0.1152
	52 n38w	0.375	0.375	0.375	47.7	0.69	-1.74	1.88	291	15.86	16.56	18.91	0.309	0.3227	0.1933
	53 n50w	0.5	0.5	0.5	57.7	1.38	-2.71	3.05	297	24.7	25.65	29.76	0.3083	0.3202	0.2994
	54 n63w	0.625	0.625	0.625	67.78	1.78	-3.29	3.74	298	36.34	37.67	43.89	0.3082	0.3195	0.4398
	55 n75w	0.75	0.75	0.75	77.22	2.04	-3.37	3.95	301	50.08	51.9	60.15	0.3089	0.3201	0.6059
	56 n88w	0.875	0.875	0.875	85.95	1.57	-2.79	3.21	299	65.22	67.9	77.51	0.3097	0.3224	0.7926
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.0342

IE370-7N, Colorimetric data of Television Luminous System TLS27a for CIE standard illuminant D65; LCD monitor; Page: 15/66

$n = 88.59 / (88.59 + 5.04) = 0.946$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 15/66output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS27a for CIE lightness $L^*=27$ of black for illuminant D65
System TLS27a

LCD monitor

D65 reflection:

$Y_N = 5.04$

$L^*_N = 26.85$

Y Yellow

$LCH^*_a = 94.2 \ 79.5 \ 101$

$LAB^*_a = 94.2 \ -15.0 \ 78.0$

L Leaf green

$LCH^*_a = 84.7 \ 100.9 \ 139$

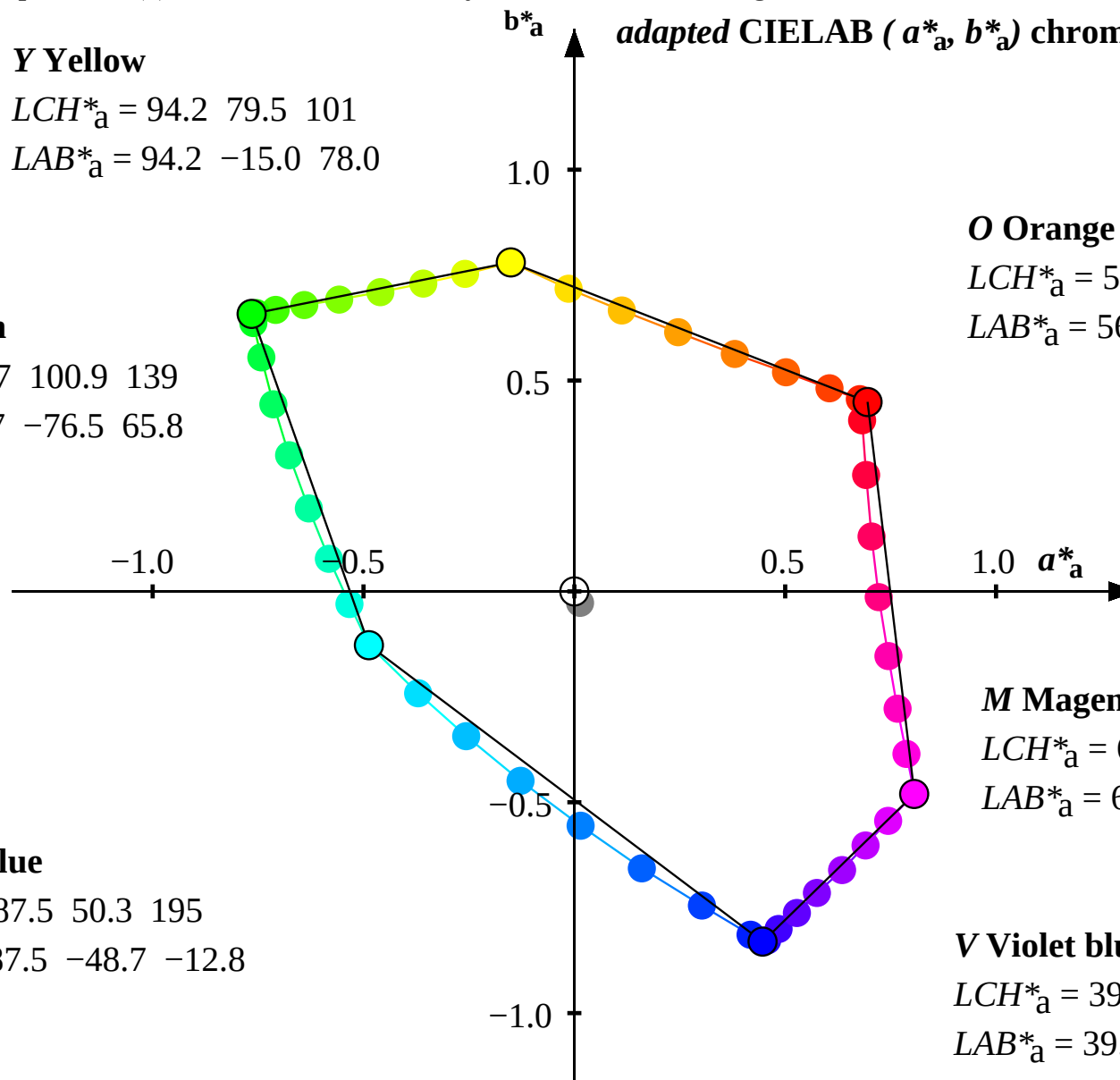
$LAB^*_a = 84.7 \ -76.5 \ 65.8$

C Cyan blue

$LCH^*_a = 87.5 \ 50.3 \ 195$

$LAB^*_a = 87.5 \ -48.7 \ -12.8$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH^*_a = 56.9 \ 82.8 \ 33$

$LAB^*_a = 56.9 \ 69.5 \ 44.9$

M Magenta red

$LCH^*_a = 61.7 \ 93.9 \ 329$

$LAB^*_a = 61.7 \ 80.6 \ -48.0$

V Violet blue

$LCH^*_a = 39.4 \ 94.3 \ 298$

$LAB^*_a = 39.4 \ 44.7 \ -83.1$

Colorimetric "Adapted data (a)": Television Luminous System TLS38a for CIE lightness $L^*=38$ of black for illuminant D65

System TLS38a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD monitor	00 o00y	1.0	0.0	0.0	60.0	62.53	35.83	72.06	30	45.14	28.12	11.74	0.531	0.3308	0.3277
	01 o13y	1.0	0.125	0.0	60.54	60.93	36.46	71.0	31	45.4	28.73	11.86	0.528	0.3341	0.3348
D65 reflection:	02 o25y	1.0	0.25	0.0	62.88	54.81	39.09	67.32	35	46.8	31.45	12.39	0.5163	0.347	0.3665
	03 o38y	1.0	0.375	0.0	66.4	45.77	43.04	62.83	43	49.01	35.85	13.22	0.4997	0.3655	0.4177
$Y_N = 10.08$	04 o50y	1.0	0.5	0.0	70.78	34.99	47.64	59.11	54	52.03	41.86	14.43	0.4803	0.3865	0.4879
$L^*_N = 37.99$	05 o63y	1.0	0.625	0.0	76.02	22.83	53.1	57.81	67	56.13	49.93	16.01	0.4598	0.409	0.5818
	06 o75y	1.0	0.75	0.0	81.66	10.53	58.69	59.62	80	61.07	59.67	17.96	0.4403	0.4302	0.6953
	07 o88y	1.0	0.875	0.0	87.38	-1.29	64.23	64.24	91	66.69	70.78	20.17	0.423	0.449	0.8249
	08 y00l	1.0	1.0	0.0	94.23	-14.21	70.89	72.3	101	74.45	85.81	23.03	0.4062	0.4682	1.0
	09 y13l	0.875	1.0	0.0	92.32	-24.39	68.2	72.43	110	65.87	81.41	22.68	0.3875	0.479	0.9487
	10 y25l	0.75	1.0	0.0	90.71	-33.63	66.01	74.08	117	58.91	77.84	22.34	0.3703	0.4893	0.9071
	11 y38l	0.625	1.0	0.0	89.21	-43.04	64.01	77.14	124	52.57	74.6	22.01	0.3524	0.5001	0.8694
	12 y50l	0.5	1.0	0.0	87.87	-51.94	62.26	81.09	130	47.13	71.79	21.7	0.3352	0.5105	0.8366
	13 y63l	0.375	1.0	0.0	86.81	-59.47	60.95	85.16	134	42.94	69.62	21.42	0.3205	0.5196	0.8114
	14 y75l	0.25	1.0	0.0	85.99	-65.63	59.8	88.79	138	39.77	67.98	21.27	0.3083	0.5269	0.7922
	15 y88l	0.125	1.0	0.0	85.46	-69.67	59.09	91.36	140	37.78	66.91	21.15	0.3002	0.5317	0.7797
	16 l00c	0.0	1.0	0.0	85.32	-70.65	58.9	91.98	140	37.29	66.63	21.13	0.2982	0.5328	0.7765
	17 l13c	0.0	1.0	0.125	85.35	-70.33	57.14	90.62	141	37.43	66.69	22.13	0.2965	0.5282	0.7772
	18 l25c	0.0	1.0	0.25	85.44	-68.6	50.22	85.02	144	38.09	66.88	26.38	0.29	0.5092	0.7793
	19 l38c	0.0	1.0	0.375	85.67	-66.02	40.64	77.54	148	39.21	67.33	33.23	0.2805	0.4817	0.7847
	20 l50c	0.0	1.0	0.5	85.99	-62.68	29.82	69.42	155	40.72	67.98	42.39	0.2695	0.4499	0.7922
	21 l63c	0.0	1.0	0.625	86.4	-58.48	18.29	61.28	163	42.69	68.8	53.96	0.258	0.4158	0.8018
	22 l75c	0.0	1.0	0.75	86.89	-54.1	7.2	54.59	172	44.88	69.78	67.09	0.2469	0.3839	0.8131
	23 l88c	0.0	1.0	0.875	87.4	-49.68	-2.83	49.77	183	47.21	70.82	80.84	0.2374	0.3561	0.8253
	24 c00v	0.0	1.0	1.0	87.97	-45.45	-12.05	47.03	195	49.65	72.01	95.31	0.2288	0.3319	0.8391
	25 c13v	0.0	0.875	1.0	80.43	-34.19	-22.68	41.04	214	42.19	57.44	91.79	0.2204	0.3001	0.6694
	26 c25v	0.0	0.75	1.0	73.83	-23.39	-32.01	39.66	234	36.61	46.44	88.86	0.213	0.2702	0.5412
	27 c38v	0.0	0.675	1.0	67.14	-11.39	-41.63	43.17	255	31.76	36.82	86.16	0.2053	0.238	0.4291
	28 c50v	0.0	0.5	1.0	60.57	1.31	-50.95	50.98	271	27.66	28.76	83.38	0.1979	0.2057	0.3352
	29 c63v	0.0	0.375	1.0	54.84	13.72	-59.57	61.14	283	24.7	22.78	81.66	0.1913	0.1764	0.2654
	30 c75v	0.0	0.25	1.0	49.84	25.23	-66.75	71.37	291	22.44	18.29	79.74	0.1863	0.1518	0.2131
	31 c88v	0.0	0.125	1.0	46.28	34.06	-72.17	79.81	295	21.05	15.48	78.78	0.1825	0.1342	0.1803
	32 v00m	0.0	0.0	1.0	45.41	36.13	-73.38	81.8	296	20.7	14.83	78.4	0.1817	0.1302	0.1729
	33 v13m	0.125	0.0	1.0	45.7	37.1	-73.23	82.11	297	21.16	15.05	78.88	0.1839	0.1308	0.1754
	34 v25m	0.25	0.0	1.0	46.93	39.89	-71.05	81.5	299	22.9	15.96	78.79	0.1946	0.1357	0.186
	35 v38m	0.375	0.0	1.0	48.91	44.34	-68.15	81.31	303	25.89	17.52	79.47	0.2107	0.1426	0.2042
	36 v50m	0.5	0.0	1.0	51.31	49.39	-64.28	81.07	308	29.76	19.54	79.83	0.2305	0.1513	0.2277
	37 v63m	0.625	0.0	1.0	54.27	55.58	-59.83	81.67	313	35.02	22.23	80.69	0.2539	0.1611	0.259
	38 v75m	0.75	0.0	1.0	57.41	61.42	-54.85	82.35	318	41.01	25.34	81.27	0.2778	0.1717	0.2953
	39 v88m	0.875	0.0	1.0	60.6	67.16	-49.87	83.66	323	47.69	28.79	81.97	0.301	0.1817	0.3355
	40 m00o	1.0	0.0	1.0	64.24	73.7	-44.27	85.98	329	56.16	33.1	82.89	0.3262	0.1923	0.3857
	41 m13o	1.0	0.0	0.875	63.27	71.75	-35.29	79.97	334	53.72	31.91	69.21	0.3469	0.2061	0.3718
	42 m25o	1.0	0.0	0.75	62.37	69.56	-25.19	73.99	340	51.4	30.84	56.08	0.3716	0.2229	0.3594
	43 m38o	1.0	0.0	0.675	61.51	67.39	-13.72	68.77	348	49.2	29.83	43.56	0.4013	0.2433	0.3476
	44 m50o	1.0	0.0	0.5	60.76	65.14	-1.19	65.15	359	47.22	28.97	32.41	0.4348	0.2668	0.3377
	45 m63o	1.0	0.0	0.375	60.11	63.42	11.15	64.39	10	45.61	28.24	23.56	0.4682	0.2899	0.3291
	46 m75o	1.0	0.0	0.25	59.64	62.14	22.97	66.25	20	44.47	27.72	16.88	0.4992	0.3113	0.3231
	47 m88o	1.0	0.0	0.125	59.33	61.19	32.51	69.29	28	43.69	27.39	12.57	0.5224	0.3274	0.3192
	48 o00y	1.0	0.0	0.0	60.0	62.53	35.83	72.06	30	45.14	28.12	11.74	0.531	0.3308	0.3277
	49 n00w	0.0	0.0	0.0	36.08	0.0	0.0	0.01	0	8.6	9.05	9.85	0.3127	0.329	0.1055
	50 n13w	0.125	0.125	0.125	37.74	-0.07	0.02	0.08	169	9.44	9.95	10.82	0.3125	0.3292	0.1159
	51 n25w	0.25	0.25	0.25	44.08	0.0	-0.47	0.48	269	13.2	13.89	15.34	0.3111	0.3274	0.1619
	52 n38w	0.375	0.375	0.375	52.11	0.57	-1.45	1.57	291	19.35	20.24	22.87	0.3098	0.3241	0.2359
	53 n50w	0.5	0.5	0.5	60.66	1.21	-2.39	2.69	297	27.74	28.86	33.17	0.309	0.3215	0.3364
	54 n63w	0.625	0.625	0.625	69.66	1.61	-2.99	3.41	298	38.78	40.27	46.58	0.3087	0.3206	0.4693
	55 n75w	0.75	0.75	0.75	78.33	1.89	-3.13	3.66	301	51.82	53.77	62.0	0.3092	0.3208	0.6267
	56 n88w	0.875	0.875	0.875	86.48	1.47	-2.62	3.01	299	66.19	68.95	78.48	0.3099	0.3228	0.8035
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.0324

IE370-7N, Colorimetric data of Television Luminous System TLS38a for CIE standard illuminant D65; LCD monitor; Page: 17/66

$$n = 88.59 / (88.59 + 10.08) = 0.898$$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 17/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Adapted data (a)": Television Luminous System TLS38a for CIE lightness $L^*=38$ of black for illuminant D65
System TLS38a

LCD monitor

D65 reflection:

$Y_N = 10.08$

$L^*_N = 37.99$

Y Yellow

$LCH^*_a = 94.2 \ 72.3 \ 101$

$LAB^*_a = 94.2 \ -14.2 \ 70.9$

L Leaf green

$LCH^*_a = 85.3 \ 92.0 \ 140$

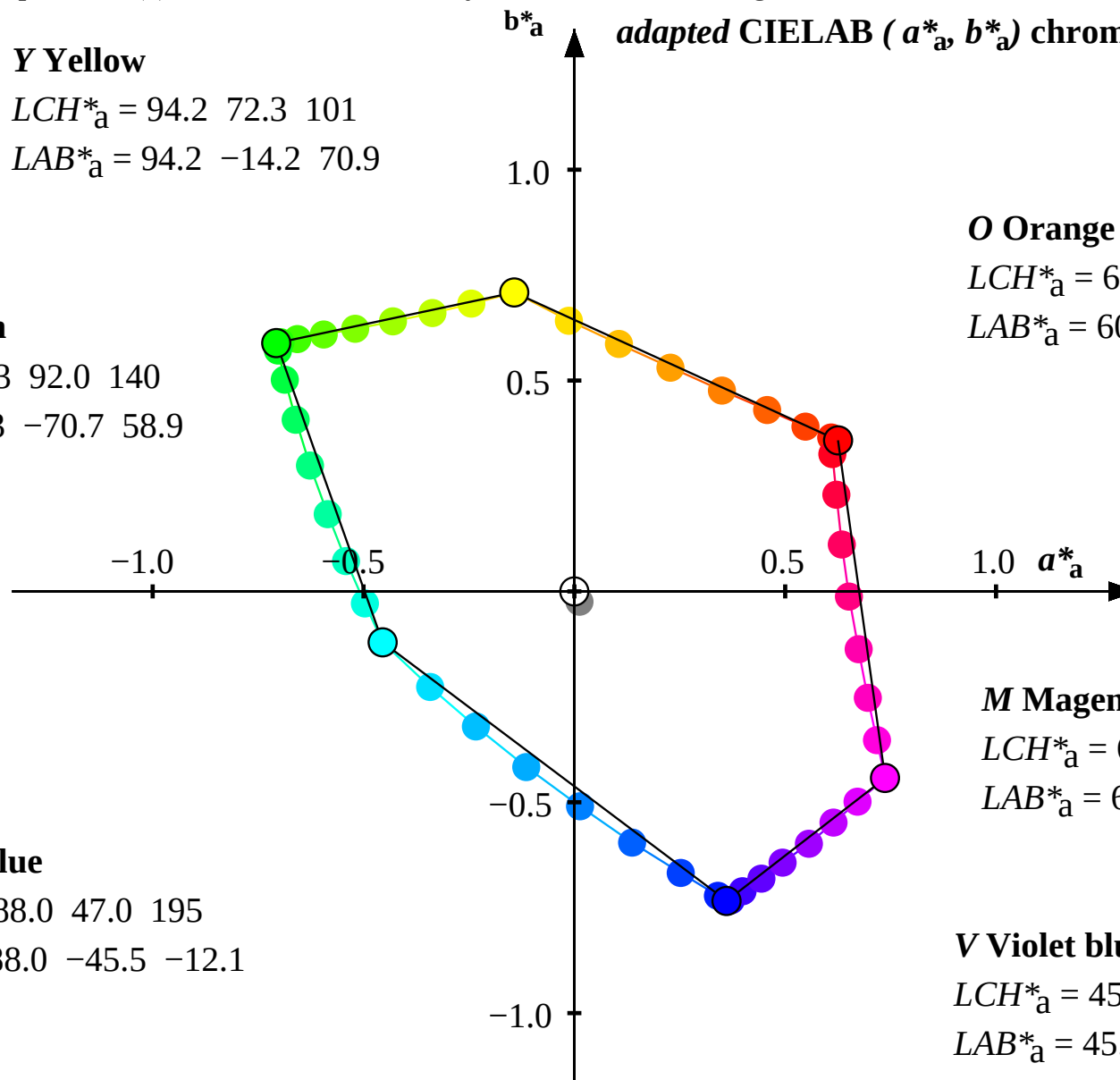
$LAB^*_a = 85.3 \ -70.7 \ 58.9$

C Cyan blue

$LCH^*_a = 88.0 \ 47.0 \ 195$

$LAB^*_a = 88.0 \ -45.5 \ -12.1$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH^*_a = 60.0 \ 72.1 \ 30$

$LAB^*_a = 60.0 \ 62.5 \ 35.8$

M Magenta red

$LCH^*_a = 64.2 \ 86.0 \ 329$

$LAB^*_a = 64.2 \ 73.7 \ -44.3$

V Violet blue

$LCH^*_a = 45.4 \ 81.8 \ 296$

$LAB^*_a = 45.4 \ 36.1 \ -73.4$

Colorimetric "Adapted data (a)": Television Luminous System TLS52a for CIE lightness $L^*=52$ of black for illuminant D65

System TLS52a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD monitor	00 o00y	1.0	0.0	0.0	64.74	52.23	26.29	58.48	27	48.76	33.72	19.6	0.4776	0.3304	0.3918
	01 o13y	1.0	0.125	0.0	65.18	50.98	26.85	57.62	28	48.99	34.28	19.7	0.4758	0.3329	0.3983
D65 reflection:	02 o25y	1.0	0.25	0.0	67.09	46.22	29.22	54.68	32	50.26	36.75	20.18	0.4689	0.3428	0.4269
	03 o38y	1.0	0.375	0.0	69.99	39.01	32.83	50.98	40	52.27	40.74	20.93	0.4588	0.3575	0.4733
	04 o50y	1.0	0.5	0.0	73.67	30.18	37.18	47.89	51	55.01	46.19	22.04	0.4464	0.3748	0.5367
	05 o63y	1.0	0.625	0.0	78.17	19.95	42.46	46.91	65	58.73	53.51	23.46	0.4328	0.3943	0.6217
	06 o75y	1.0	0.75	0.0	83.1	9.31	48.0	48.9	79	63.22	62.35	25.24	0.4192	0.4134	0.7244
	07 o88y	1.0	0.875	0.0	88.18	-1.15	53.59	53.6	91	68.31	72.44	27.24	0.4066	0.4312	0.8416
	08 y00l	1.0	1.0	0.0	94.34	-12.83	60.34	61.69	102	75.35	86.07	29.84	0.394	0.45	1.0
	09 y13l	0.875	1.0	0.0	92.61	-21.89	57.82	61.83	111	67.56	82.08	29.51	0.3771	0.4581	0.9536
	10 y25l	0.75	1.0	0.0	91.16	-30.0	55.76	63.32	118	61.25	78.84	29.21	0.3618	0.4657	0.916
	11 y38l	0.625	1.0	0.0	89.81	-38.16	53.89	66.03	125	55.5	75.9	28.91	0.3462	0.4735	0.8818
	12 y50l	0.5	1.0	0.0	88.61	-45.76	52.24	69.46	131	50.57	73.35	28.63	0.3315	0.4808	0.8522
	13 y63l	0.375	1.0	0.0	87.67	-52.1	50.99	72.91	136	46.77	71.38	28.37	0.3192	0.4872	0.8294
	14 y75l	0.25	1.0	0.0	86.94	-57.22	49.93	75.95	139	43.89	69.89	28.24	0.309	0.4921	0.812
	15 y88l	0.125	1.0	0.0	86.46	-60.55	49.28	78.07	141	42.08	68.92	28.13	0.3025	0.4953	0.8007
	16 l00c	0.0	1.0	0.0	86.34	-61.34	49.09	78.58	141	41.64	68.67	28.11	0.3008	0.4961	0.7978
	17 l13c	0.0	1.0	0.125	86.37	-61.08	47.78	77.56	142	41.77	68.72	29.02	0.2994	0.4926	0.7985
	18 l25c	0.0	1.0	0.25	86.45	-59.64	42.46	73.22	145	42.36	68.89	32.87	0.2939	0.478	0.8004
	19 l38c	0.0	1.0	0.375	86.65	-57.5	34.84	67.24	149	43.38	69.3	39.09	0.2858	0.4566	0.8052
	20 l50c	0.0	1.0	0.5	86.94	-54.72	25.91	60.55	155	44.75	69.89	47.4	0.2762	0.4313	0.812
	21 l63c	0.0	1.0	0.625	87.31	-51.19	16.08	53.67	163	46.53	70.63	57.9	0.2658	0.4035	0.8207
	22 l75c	0.0	1.0	0.75	87.74	-47.5	6.39	47.94	172	48.53	71.52	69.82	0.2556	0.3767	0.831
	23 l88c	0.0	1.0	0.875	88.19	-43.75	-2.53	43.83	183	50.64	72.46	82.29	0.2465	0.3528	0.8419
	24 c00v	0.0	1.0	1.0	88.71	-40.14	-10.86	41.59	195	52.85	73.54	95.42	0.2383	0.3316	0.8545
	25 c13v	0.0	0.875	1.0	82.02	-29.65	-20.23	35.91	214	46.09	60.33	92.23	0.232	0.3037	0.7009
	26 c25v	0.0	0.75	1.0	76.28	-19.9	-28.27	34.59	235	41.02	50.35	89.56	0.2267	0.2783	0.585
	27 c38v	0.0	0.675	1.0	70.61	-9.46	-36.33	37.56	255	36.62	41.62	87.11	0.2215	0.2517	0.4836
	28 c50v	0.0	0.5	1.0	65.21	1.06	-43.84	43.87	271	32.9	34.31	84.59	0.2167	0.226	0.3986
	29 c63v	0.0	0.375	1.0	60.67	10.76	-50.52	51.67	282	30.21	28.88	83.03	0.2126	0.2032	0.3355
	30 c75v	0.0	0.25	1.0	56.88	19.19	-55.77	58.99	289	28.16	24.8	81.29	0.2098	0.1847	0.2882
	31 c88v	0.0	0.125	1.0	54.29	25.3	-59.58	64.74	293	26.9	22.25	80.42	0.2076	0.1717	0.2585
	32 v00m	0.0	0.0	1.0	53.68	26.66	-60.39	66.02	294	26.58	21.67	80.08	0.2071	0.1689	0.2518
	33 v13m	0.125	0.0	1.0	53.88	27.49	-60.35	66.33	294	27.0	21.86	80.51	0.2087	0.169	0.254
	34 v25m	0.25	0.0	1.0	54.76	30.0	-58.79	66.01	297	28.58	22.7	80.43	0.217	0.1723	0.2637
	35 v38m	0.375	0.0	1.0	56.2	34.08	-56.77	66.22	301	31.3	24.11	81.04	0.2294	0.1767	0.2801
	36 v50m	0.5	0.0	1.0	57.98	38.85	-53.94	66.48	306	34.8	25.94	81.37	0.2449	0.1825	0.3014
	37 v63m	0.625	0.0	1.0	60.23	44.8	-50.64	67.62	311	39.57	28.38	82.15	0.2637	0.1891	0.3297
	38 v75m	0.75	0.0	1.0	62.68	50.61	-46.8	68.94	317	45.01	31.2	82.68	0.2833	0.1964	0.3625
	39 v88m	0.875	0.0	1.0	65.23	56.39	-42.87	70.84	323	51.07	34.33	83.31	0.3027	0.2035	0.3989
	40 m00o	1.0	0.0	1.0	68.2	63.02	-38.36	73.78	329	58.76	38.24	84.15	0.3244	0.2111	0.4443
	41 m13o	1.0	0.0	0.875	67.4	61.07	-30.23	68.14	334	56.55	37.16	71.74	0.3418	0.2246	0.4318
	42 m25o	1.0	0.0	0.75	66.67	58.93	-21.27	62.65	340	54.44	36.19	59.82	0.3618	0.2405	0.4205
	43 m38o	1.0	0.0	0.675	65.96	56.82	-11.37	57.95	349	52.44	35.28	48.46	0.3851	0.259	0.4099
	44 m50o	1.0	0.0	0.5	65.36	54.68	-0.96	54.69	359	50.64	34.5	38.35	0.4101	0.2794	0.4009
	45 m63o	1.0	0.0	0.375	64.83	53.03	8.77	53.75	9	49.19	33.84	30.32	0.434	0.2985	0.3931
	46 m75o	1.0	0.0	0.25	64.45	51.8	17.48	54.67	19	48.15	33.36	24.25	0.4552	0.3155	0.3877
	47 m88o	1.0	0.0	0.125	64.21	50.92	23.96	56.27	25	47.45	33.06	20.34	0.4705	0.3278	0.3841
	48 o00y	1.0	0.0	0.0	64.74	52.23	26.29	58.48	27	48.76	33.72	19.6	0.4776	0.3304	0.3918
	49 n00w	0.0	0.0	0.0	47.52	0.0	0.0	0.01	0	15.61	16.42	17.88	0.3127	0.329	0.1908
	50 n13w	0.125	0.125	0.125	48.55	-0.04	0.01	0.05	169	16.37	17.23	18.76	0.3126	0.3291	0.2002
	51 n25w	0.25	0.25	0.25	52.75	0.0	-0.32	0.34	269	19.78	20.81	22.86	0.3118	0.328	0.2418
	52 n38w	0.375	0.375	0.375	58.58	0.43	-1.1	1.19	291	25.36	26.58	29.69	0.3107	0.3256	0.3088
	53 n50w	0.5	0.5	0.5	65.28	0.98	-1.93	2.18	297	32.97	34.4	39.04	0.3098	0.3233	0.3997
	54 n63w	0.625	0.625	0.625	72.73	1.37	-2.54	2.89	298	42.99	44.75	51.2	0.3094	0.3221	0.52
	55 n75w	0.75	0.75	0.75	80.18	1.65	-2.74	3.2	301	54.82	57.0	65.2	0.3097	0.322	0.6623
	56 n88w	0.875	0.875	0.875	87.37	1.31	-2.34	2.69	299	67.86	70.77	80.14	0.3102	0.3235	0.8223
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	275	84.2	88.59	96.46	0.3127	0.329	1.0293

IE370-7N, Colorimetric data of Television Luminous System TLS52a for CIE standard illuminant D65; LCD monitor; Page: 19/66

$$n = 88.59 / (88.59 + 20.16) = 0.815$$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 19/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Adapted data (a)": Television Luminous System TLS52a for CIE lightness $L^*=52$ of black for illuminant D65
System TLS52a

LCD monitor

D65 reflection:

$Y_N = 20.16$

$L_N^* = 52.02$

Y Yellow

$LCH_a^* = 94.3 \ 61.7 \ 102$

$LAB_a^* = 94.3 \ -12.8 \ 60.3$

L Leaf green

$LCH_a^* = 86.3 \ 78.6 \ 141$

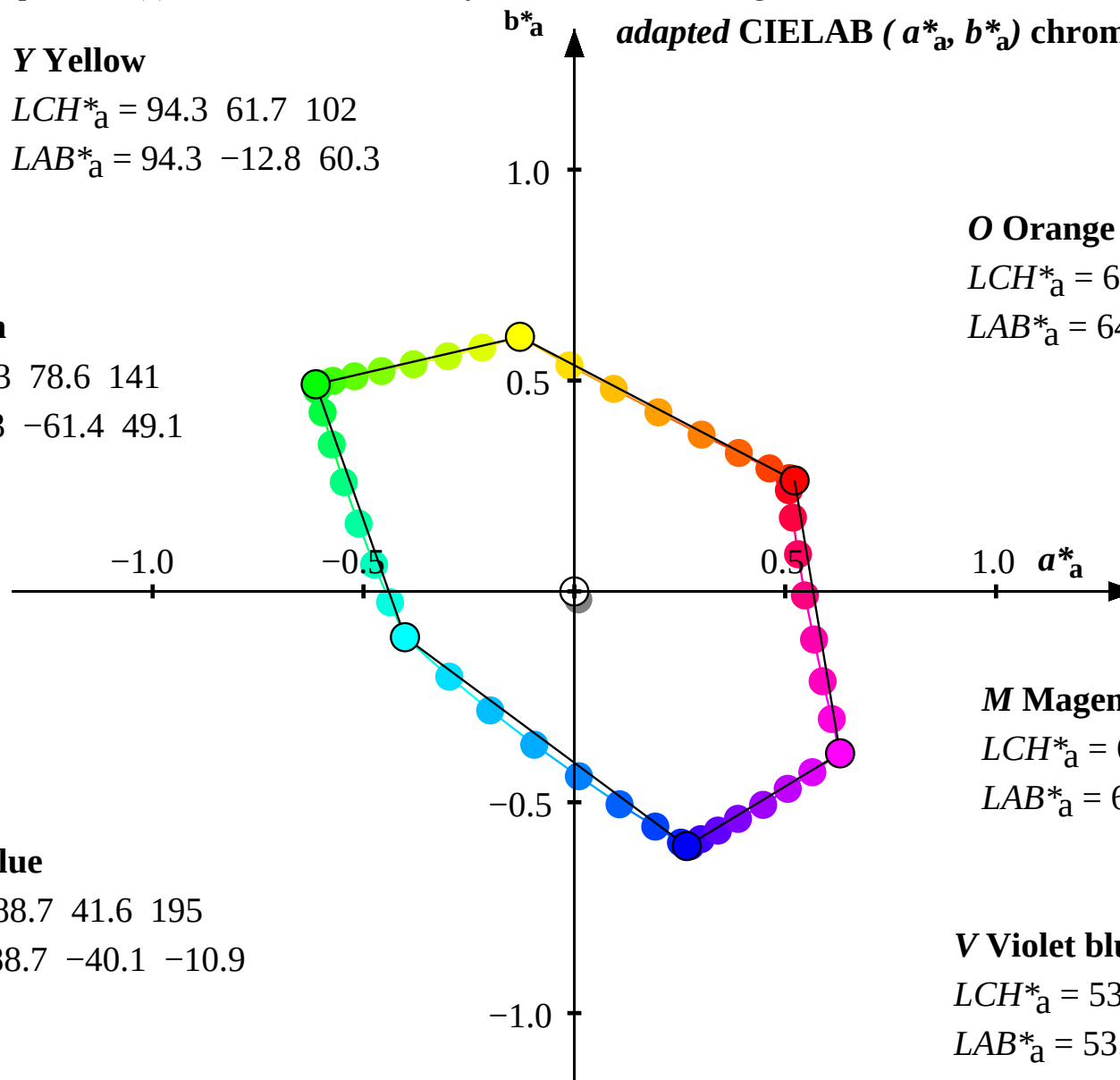
$LAB_a^* = 86.3 \ -61.4 \ 49.1$

C Cyan blue

$LCH_a^* = 88.7 \ 41.6 \ 195$

$LAB_a^* = 88.7 \ -40.1 \ -10.9$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH_a^* = 64.7 \ 58.5 \ 27$

$LAB_a^* = 64.7 \ 52.2 \ 26.3$

M Magenta red

$LCH_a^* = 68.2 \ 73.8 \ 329$

$LAB_a^* = 68.2 \ 63.0 \ -38.4$

V Violet blue

$LCH_a^* = 53.7 \ 66.0 \ 294$

$LAB_a^* = 53.7 \ 26.7 \ -60.4$

Colorimetric "Adapted data (a)": Television Luminous System TLS70a for CIE lightness $L^*=70$ of black for illuminant D65

System TLS70a	Color	$r=olv^*_1$	$g=olv^*_2$	$b=olv^*_3$	$L^*_a=LAB^*_{1a}$	$a^*_a=LAB^*_{2a}$	$b^*_a=LAB^*_{3a}$	$C^*_{ab,a}=LAB^*_{ab,a}$	$h_{ab,a}$	$X_a=XYZ^*_{1a}$	$Y_a=XYZ^*_{2a}$	$Z_a=XYZ^*_{3a}$	x_a	y_a	$Y_a/88.59$
LCD monitor	00 o00y	1.0	0.0	0.0	71.08	39.54	17.7	43.32	24	54.3	42.31	31.62	0.4235	0.3299	0.4893
	01 o13y	1.0	0.125	0.0	71.4	38.67	18.13	42.71	25	54.5	42.77	31.7	0.4226	0.3316	0.4947
D65 reflection:	02 o25y	1.0	0.25	0.0	72.8	35.37	19.97	40.61	29	55.57	44.85	32.11	0.4193	0.3384	0.5188
	03 o38y	1.0	0.375	0.0	74.96	30.22	22.84	37.88	37	57.26	48.22	32.74	0.4143	0.3488	0.5577
	04 o50y	1.0	0.5	0.0	77.77	23.73	26.42	35.51	48	59.57	52.82	33.67	0.4078	0.3616	0.6109
	05 o63y	1.0	0.625	0.0	81.29	15.94	30.89	34.76	63	62.71	59.0	34.88	0.4005	0.3768	0.6823
	06 o75y	1.0	0.75	0.0	85.23	7.56	35.75	36.54	78	66.5	66.45	36.38	0.3927	0.3925	0.7686
	07 o88y	1.0	0.875	0.0	89.38	-0.94	40.79	40.8	91	70.8	74.96	38.07	0.3851	0.4078	0.867
	08 y00l	1.0	1.0	0.0	94.51	-10.74	46.99	48.2	103	76.73	86.46	40.26	0.3772	0.425	1.0
	09 y13l	0.875	1.0	0.0	93.06	-18.16	44.81	48.35	112	70.17	83.1	39.98	0.3631	0.43	0.9611
	10 y25l	0.75	1.0	0.0	91.85	-24.68	43.03	49.61	120	64.84	80.36	39.73	0.3506	0.4346	0.9294
	11 y38l	0.625	1.0	0.0	90.73	-31.12	41.4	51.8	127	59.99	77.88	39.47	0.3382	0.4392	0.9008
	12 y50l	0.5	1.0	0.0	89.74	-37.01	39.98	54.48	133	55.83	75.73	39.23	0.3269	0.4434	0.8759
	13 y63l	0.375	1.0	0.0	88.96	-41.82	38.9	57.12	137	52.62	74.07	39.02	0.3175	0.447	0.8567
	14 y75l	0.25	1.0	0.0	88.36	-45.65	38.0	59.4	140	50.19	72.81	38.91	0.31	0.4497	0.8421
	15 y88l	0.125	1.0	0.0	87.97	-48.1	37.44	60.96	142	48.67	71.99	38.82	0.3052	0.4514	0.8326
	16 l00c	0.0	1.0	0.0	87.86	-48.68	37.28	61.32	143	48.3	71.78	38.8	0.304	0.4518	0.8302
	17 l13c	0.0	1.0	0.125	87.89	-48.49	36.39	60.63	143	48.4	71.83	39.57	0.3029	0.4495	0.8308
	18 l25c	0.0	1.0	0.25	87.95	-47.4	32.7	57.59	145	48.9	71.97	42.82	0.2988	0.4397	0.8324
	19 l38c	0.0	1.0	0.375	88.12	-45.8	27.24	53.3	149	49.76	72.32	48.06	0.2925	0.4251	0.8364
	20 l50c	0.0	1.0	0.5	88.36	-43.71	20.58	48.32	155	50.92	72.81	55.07	0.2848	0.4072	0.8421
	21 l63c	0.0	1.0	0.625	88.66	-41.04	12.97	43.05	162	52.42	73.44	63.93	0.2762	0.387	0.8494
	22 l75c	0.0	1.0	0.75	89.01	-38.23	5.23	38.6	172	54.11	74.19	73.98	0.2675	0.3668	0.8581
	23 l88c	0.0	1.0	0.875	89.39	-35.35	-2.09	35.42	183	55.88	74.99	84.51	0.2595	0.3482	0.8673
	24 c00v	0.0	1.0	1.0	89.81	-32.56	-9.06	33.81	196	57.76	75.9	95.58	0.2519	0.3311	0.8778
	25 c13v	0.0	0.875	1.0	84.35	-23.47	-16.65	28.8	215	52.05	64.75	92.89	0.2482	0.3088	0.7488
	26 c25v	0.0	0.75	1.0	79.8	-15.37	-22.96	27.64	236	47.77	56.33	90.64	0.2453	0.2893	0.6515
	27 c38v	0.0	0.675	1.0	75.43	-7.1	-29.05	29.92	256	44.06	48.97	88.57	0.2426	0.2696	0.5663
	28 c50v	0.0	0.5	1.0	71.42	0.77	-34.47	34.49	271	40.92	42.8	86.45	0.2405	0.2515	0.495
	29 c63v	0.0	0.375	1.0	68.18	7.62	-39.11	39.85	281	38.65	38.21	85.13	0.2386	0.2359	0.442
	30 c75v	0.0	0.25	1.0	65.58	13.23	-42.53	44.55	287	36.93	34.78	83.67	0.2377	0.2238	0.4022
	31 c88v	0.0	0.125	1.0	63.86	17.09	-44.95	48.1	291	35.86	32.63	82.93	0.2368	0.2155	0.3774
	32 v00m	0.0	0.0	1.0	63.46	17.92	-45.43	48.85	292	35.59	32.14	82.64	0.2367	0.2137	0.3717
	33 v13m	0.125	0.0	1.0	63.59	18.54	-45.47	49.11	292	35.95	32.3	83.0	0.2377	0.2136	0.3736
	34 v25m	0.25	0.0	1.0	64.16	20.48	-44.43	48.94	295	37.28	33.0	82.94	0.2433	0.2154	0.3817
	35 v38m	0.375	0.0	1.0	65.12	23.72	-43.17	49.26	299	39.57	34.19	83.45	0.2517	0.2175	0.3955
	36 v50m	0.5	0.0	1.0	66.32	27.62	-41.3	49.69	304	42.53	35.74	83.73	0.2625	0.2206	0.4133
	37 v63m	0.625	0.0	1.0	67.87	32.64	-39.1	50.94	310	46.55	37.79	84.39	0.2759	0.224	0.4371
	38 v75m	0.75	0.0	1.0	69.6	37.73	-36.45	52.47	316	51.14	40.18	84.83	0.2903	0.2281	0.4647
	39 v88m	0.875	0.0	1.0	71.43	42.95	-33.67	54.58	322	56.25	42.82	85.37	0.305	0.2322	0.4952
	40 m00o	1.0	0.0	1.0	73.62	49.05	-30.4	57.71	328	62.73	46.12	86.07	0.3218	0.2366	0.5334
	41 m13o	1.0	0.0	0.875	73.03	47.26	-23.6	52.83	333	60.87	45.2	75.6	0.335	0.2488	0.5228
	42 m25o	1.0	0.0	0.75	72.49	45.35	-16.31	48.2	340	59.09	44.39	65.55	0.3496	0.2626	0.5133
	43 m38o	1.0	0.0	0.675	71.97	43.48	-8.53	44.31	349	57.41	43.61	55.97	0.3657	0.2778	0.5044
	44 m50o	1.0	0.0	0.5	71.53	41.63	-0.7	41.64	359	55.89	42.96	47.44	0.3821	0.2937	0.4969
	45 m63o	1.0	0.0	0.375	71.14	40.19	6.23	40.67	9	54.66	42.4	40.66	0.3969	0.3079	0.4904
	46 m75o	1.0	0.0	0.25	70.87	39.13	12.07	40.95	17	53.79	42.0	35.55	0.4095	0.3198	0.4858
	47 m88o	1.0	0.0	0.125	70.69	38.37	16.16	41.64	23	53.19	41.74	32.25	0.4182	0.3282	0.4828
	48 o00y	1.0	0.0	0.0	71.08	39.54	17.7	43.32	24	54.3	42.31	31.62	0.4235	0.3299	0.4893
	49 n00w	0.0	0.0	0.0	59.62	0.0	0.0	0.01	158	26.33	27.71	30.17	0.3127	0.329	0.3205
	50 n13w	0.125	0.125	0.125	60.24	-0.02	0.01	0.03	169	26.98	28.39	30.91	0.3127	0.3291	0.3284
	51 n25w	0.25	0.25	0.25	62.86	0.0	-0.21	0.22	269	29.86	31.41	34.37	0.3122	0.3285	0.3633
	52 n38w	0.375	0.375	0.375	66.73	0.3	-0.75	0.82	291	34.56	36.27	40.13	0.3115	0.3269	0.4195
	53 n50w	0.5	0.5	0.5	71.47	0.71	-1.41	1.59	297	40.98	42.88	48.02	0.3108	0.3251	0.4959
	54 n63w	0.625	0.625	0.625	77.05	1.05	-1.95	2.22	298	49.43	51.61	58.28	0.3103	0.3239	0.5969
	55 n75w	0.75	0.75	0.75	82.88	1.32	-2.19	2.56	301	59.42	61.94	70.09	0.3104	0.3235	0.7164
	56 n88w	0.875	0.875	0.875	88.71	1.08	-1.93	2.22	299	70.41	73.56	82.69	0.3106	0.3245	0.8508
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.0246

IE370-7N, Colorimetric data of Television Luminous System TLS70a for CIE standard illuminant D65; LCD monitor; Page: 21/66

$$n = 88.59 / (88.59 + 40.32) = 0.687$$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* \text{ setrgbcolor}$

Display measurement: LCD, CRT and LCD projector, page 21/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Adapted data (a)": Television Luminous System TLS70a for CIE lightness $L^*=70$ of black for illuminant D65
System TLS70a

LCD monitor

Y Yellow

D65 reflection:

$Y_N = 40.32$

$L_N^* = 69.7$

$LCH_a^* = 94.5 \ 48.2 \ 103$

$LAB_a^* = 94.5 \ -10.8 \ 47.0$

L Leaf green

$LCH_a^* = 87.9 \ 61.3 \ 143$

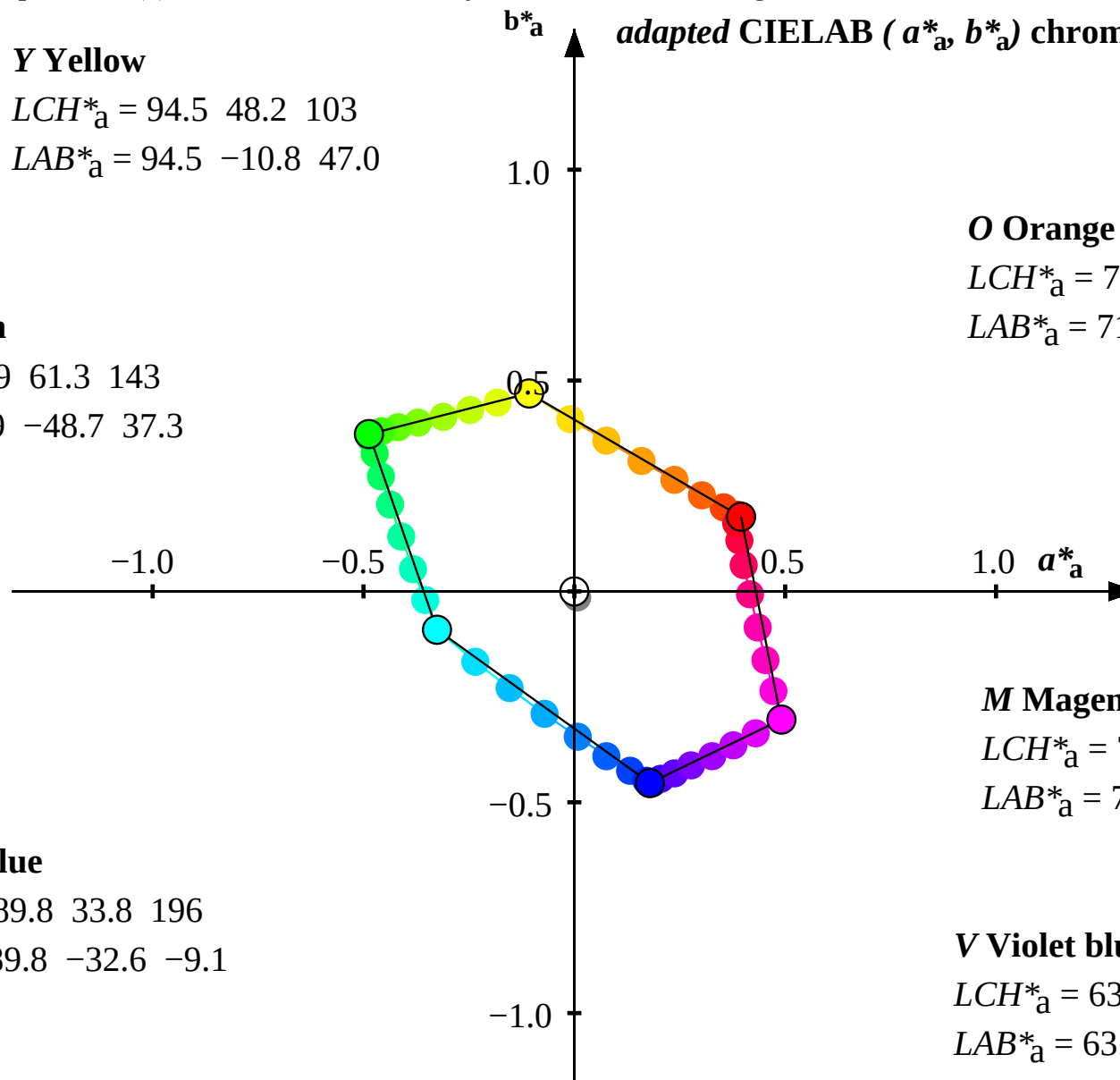
$LAB_a^* = 87.9 \ -48.7 \ 37.3$

C Cyan blue

$LCH_a^* = 89.8 \ 33.8 \ 196$

$LAB_a^* = 89.8 \ -32.6 \ -9.1$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH_a^* = 71.1 \ 43.3 \ 24$

$LAB_a^* = 71.1 \ 39.5 \ 17.7$

M Magenta red

$LCH_a^* = 73.6 \ 57.7 \ 328$

$LAB_a^* = 73.6 \ 49.1 \ -30.4$

V Violet blue

$LCH_a^* = 63.5 \ 48.8 \ 292$

$LAB_a^* = 63.5 \ 17.9 \ -45.4$

Colorimetric "Standard data": Television Luminous System TLS00 for CIE lightness $L^*=00$ of black for illuminant D65

System TLS00
CRT monitor

Color	$r=olv^*_1$	$g=olv^*_2$	$b=olv^*_3$	$L^*=LAB^*_1$	$a^*=LAB^*_2$	$b^*=LAB^*_3$	$C^*_{ab}=LAB^*_r$	h_{ab}	$X=XYZ_1$	$Y=XYZ_2$	$Z=XYZ_3$	x	y	Y/88.59
00 o00y	1.0	0.0	0.0	56.02	77.48	66.45	102.07	42	44.38	23.93	2.62	0.6257	0.3374	0.2701
01 o13y	1.0	0.125	0.0	56.02	77.28	66.41	101.9	42	44.31	23.93	2.62	0.6253	0.3377	0.2701
02 o25y	1.0	0.25	0.0	57.92	71.8	67.19	98.34	45	45.26	25.88	2.98	0.6106	0.3492	0.2921
03 o38y	1.0	0.375	0.0	62.19	59.5	69.13	91.21	51	47.4	30.62	3.86	0.5789	0.374	0.3457
04 o50y	1.0	0.5	0.0	67.72	44.39	72.09	84.66	61	50.6	37.59	5.13	0.5422	0.4028	0.4243
05 o63y	1.0	0.625	0.0	73.76	28.82	75.54	80.86	72	54.63	46.33	6.76	0.5071	0.4301	0.523
06 o75y	1.0	0.75	0.0	79.96	13.76	79.39	80.57	83	59.35	56.61	8.67	0.4762	0.4542	0.639
07 o88y	1.0	0.875	0.0	86.01	0.2	83.63	83.63	93	64.73	68.01	10.69	0.4513	0.4742	0.7677
08 y00l	1.0	1.0	0.0	91.93	-12.99	87.13	88.09	101	70.31	80.55	13.19	0.4286	0.491	0.9092
09 y13l	0.875	1.0	0.0	89.64	-24.0	84.58	87.92	108	61.01	75.52	12.63	0.409	0.5063	0.8525
10 y25l	0.75	1.0	0.0	87.47	-35.92	82.12	89.64	116	52.43	70.97	12.15	0.3868	0.5236	0.8011
11 y38l	0.625	1.0	0.0	85.44	-48.24	79.84	93.29	123	44.75	66.87	11.69	0.3629	0.5423	0.7548
12 y50l	0.5	1.0	0.0	83.56	-60.65	77.73	98.6	129	38.03	63.22	11.28	0.338	0.5618	0.7136
13 y63l	0.375	1.0	0.0	82.02	-72.3	75.94	104.86	134	32.65	60.33	10.97	0.3141	0.5804	0.681
14 y75l	0.25	1.0	0.0	80.88	-82.0	74.62	110.88	138	28.73	58.25	10.74	0.294	0.5961	0.6575
15 y88l	0.125	1.0	0.0	80.25	-87.72	73.89	114.7	140	26.61	57.12	10.61	0.2821	0.6054	0.6447
16 l00c	0.0	1.0	0.0	80.17	-88.48	73.79	115.22	141	26.35	56.98	10.61	0.2805	0.6066	0.6432
17 l13c	0.0	1.0	0.125	80.16	-88.43	73.41	114.94	141	26.35	56.96	10.73	0.2802	0.6057	0.643
18 l25c	0.0	1.0	0.25	80.28	-86.86	66.19	109.21	143	26.86	57.18	13.53	0.2753	0.586	0.6454
19 l38c	0.0	1.0	0.375	80.6	-83.19	51.95	98.09	148	28.12	57.74	20.48	0.2644	0.543	0.6518
20 l50c	0.0	1.0	0.5	81.07	-77.87	35.94	85.77	155	30.02	58.59	30.89	0.2512	0.4903	0.6614
21 l63c	0.0	1.0	0.625	81.71	-71.7	20.47	74.58	163	32.45	59.76	44.11	0.238	0.4384	0.6746
22 l75c	0.0	1.0	0.75	82.43	-64.7	5.72	64.96	174	35.34	61.1	60.02	0.2259	0.3905	0.6897
23 l88c	0.0	1.0	0.875	83.26	-57.4	-7.78	57.93	185	38.65	62.66	77.97	0.2156	0.3495	0.7073
24 c00v	0.0	1.0	1.0	84.22	-50.12	-20.03	53.99	198	42.33	64.49	97.58	0.2071	0.3155	0.728
25 c13v	0.0	0.875	1.0	77.24	-38.2	-30.47	48.88	214	36.57	51.93	95.19	0.1991	0.2827	0.5862
26 c25v	0.0	0.75	1.0	69.81	-24.32	-41.97	48.52	235	31.36	40.48	93.23	0.19	0.2452	0.4569
27 c38v	0.0	0.675	1.0	61.76	-8.13	-54.27	54.89	258	26.59	30.12	90.95	0.1801	0.204	0.34
28 c50v	0.0	0.5	1.0	53.37	10.02	-67.62	68.37	276	22.44	21.38	89.33	0.1685	0.1606	0.2414
29 c63v	0.0	0.375	1.0	44.84	31.31	-81.6	87.41	290	19.23	14.43	88.29	0.1577	0.1183	0.1628
30 c75v	0.0	0.25	1.0	37.25	52.3	-94.04	107.62	298	17.02	9.67	87.38	0.1492	0.0848	0.1092
31 c88v	0.0	0.125	1.0	33.58	63.94	-100.42	119.06	302	16.27	7.81	87.45	0.1459	0.07	0.0881
32 v00m	0.0	0.0	1.0	33.4	63.27	-100.11	118.43	302	16.02	7.72	86.57	0.1452	0.07	0.0872
33 v13m	0.125	0.0	1.0	33.76	63.95	-100.02	118.72	302	16.41	7.89	87.32	0.147	0.0707	0.0891
34 v25m	0.25	0.0	1.0	36.14	65.42	-95.89	116.09	304	18.57	9.08	87.28	0.1616	0.079	0.1025
35 v38m	0.375	0.0	1.0	39.92	68.67	-89.58	112.88	307	22.58	11.2	87.57	0.1861	0.0923	0.1264
36 v50m	0.5	0.0	1.0	44.48	73.01	-82.23	109.98	311	28.25	14.17	88.31	0.2161	0.1084	0.16
37 v63m	0.625	0.0	1.0	49.17	76.2	-73.8	106.09	315	34.63	17.73	87.83	0.247	0.1265	0.2002
38 v75m	0.75	0.0	1.0	54.0	80.89	-66.0	104.41	320	42.59	21.98	88.59	0.2781	0.1435	0.2481
39 v88m	0.875	0.0	1.0	58.64	85.03	-58.09	102.99	325	51.17	26.64	88.71	0.3073	0.16	0.3008
40 m00o	1.0	0.0	1.0	63.05	89.51	-50.96	103.0	330	60.56	31.65	89.38	0.3335	0.1743	0.3573
41 m13o	1.0	0.0	0.875	61.53	87.25	-38.83	95.5	336	56.9	29.85	69.87	0.3633	0.1906	0.337
42 m25o	1.0	0.0	0.75	60.16	84.9	-25.02	88.51	344	53.63	28.3	52.01	0.4004	0.2113	0.3194
43 m38o	1.0	0.0	0.675	58.9	82.72	-9.32	83.25	354	50.72	26.92	36.13	0.4458	0.2366	0.3038
44 m50o	1.0	0.0	0.5	57.81	85.9	4.99	86.05	4	50.15	25.76	24.88	0.4976	0.2556	0.2908
45 m63o	1.0	0.0	0.375	56.92	79.09	28.43	84.05	21	46.29	24.84	12.53	0.5533	0.2969	0.2804
46 m75o	1.0	0.0	0.25	56.33	78.02	50.44	92.9	35	45.03	24.24	5.58	0.6016	0.3239	0.2737
47 m88o	1.0	0.0	0.125	56.09	77.63	65.6	101.63	42	44.54	24.01	2.75	0.6247	0.3367	0.271
48 o00y	1.0	0.0	0.0	56.02	77.48	66.45	102.07	42	44.38	23.93	2.62	0.6257	0.3374	0.2701
49 n00w	0.0	0.0	0.0	0.46	-0.16	-0.09	0.2	0	0.04	0.05	0.06	0.2802	0.323	0.0006
50 n13w	0.125	0.125	0.125	2.38	4.33	1.25	4.5	18	0.36	0.26	0.2	0.435	0.3218	0.003
51 n25w	0.25	0.25	0.25	22.26	7.95	2.57	8.36	25	3.93	3.59	3.47	0.3576	0.3267	0.0405
52 n38w	0.375	0.375	0.375	39.92	6.15	1.68	6.38	33	11.48	11.2	11.57	0.3352	0.327	0.1264
53 n50w	0.5	0.5	0.5	54.11	5.42	0.6	5.45	37	22.13	22.08	23.68	0.326	0.3252	0.2492
54 n63w	0.625	0.625	0.625	66.29	5.06	-0.08	5.06	44	35.4	35.7	38.95	0.3217	0.3244	0.403
55 n75w	0.75	0.75	0.75	77.06	4.96	-1.02	5.06	43	50.91	51.63	57.3	0.3185	0.323	0.5828
56 n88w	0.875	0.875	0.875	86.67	5.13	-1.86	5.46	27	68.21	69.33	77.9	0.3166	0.3218	0.7826
57 n99w	1.0	1.0	1.0	95.41	4.95	-2.4	5.51	0	86.83	88.59	100.14	0.3151	0.3215	1.0

IE370-7N, Colorimetric data of Television Luminous System TLS00 for CIE standard illuminant D65; CRT monitor; Page: 23/66

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 23/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

See original or copy: <http://web.me.com/klaus.richter/IE37/IE37L0NA.PS/.TXT>
Technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmetrik>

TUB registration: 20090901-IE37/IE37L0NA.PS/.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

<http://130.149.60.45/~farbmetrik/IE37/IE37L0NA.PS/.TXT>; start output
N: No Output Linearization (OL) data in File (F), Startup (S) or Device (D)

Colorimetric "Standard data": Television Luminous System TLS00 for CIE lightness $L^*=00$ of black for illuminant D65

System TLS00
CRT monitor

Y Yellow

$LCH^* = 91.9 \ 88.1 \ 98$

$LAB^* = 91.9 \ -13.0 \ 87.1$

L Leaf green

$LCH^* = 80.2 \ 115.2 \ 140$

$LAB^* = 80.2 \ -88.5 \ 73.8$

C Cyan blue

$LCH^* = 84.2 \ 54.0 \ 202$

$LAB^* = 84.2 \ -50.1 \ -20.0$

standard CIELAB (a^* , b^*) chroma diagram

O Orange red

$LCH^* = 56.0 \ 102.1 \ 41$

$LAB^* = 56.0 \ 77.5 \ 66.4$

M Magenta red

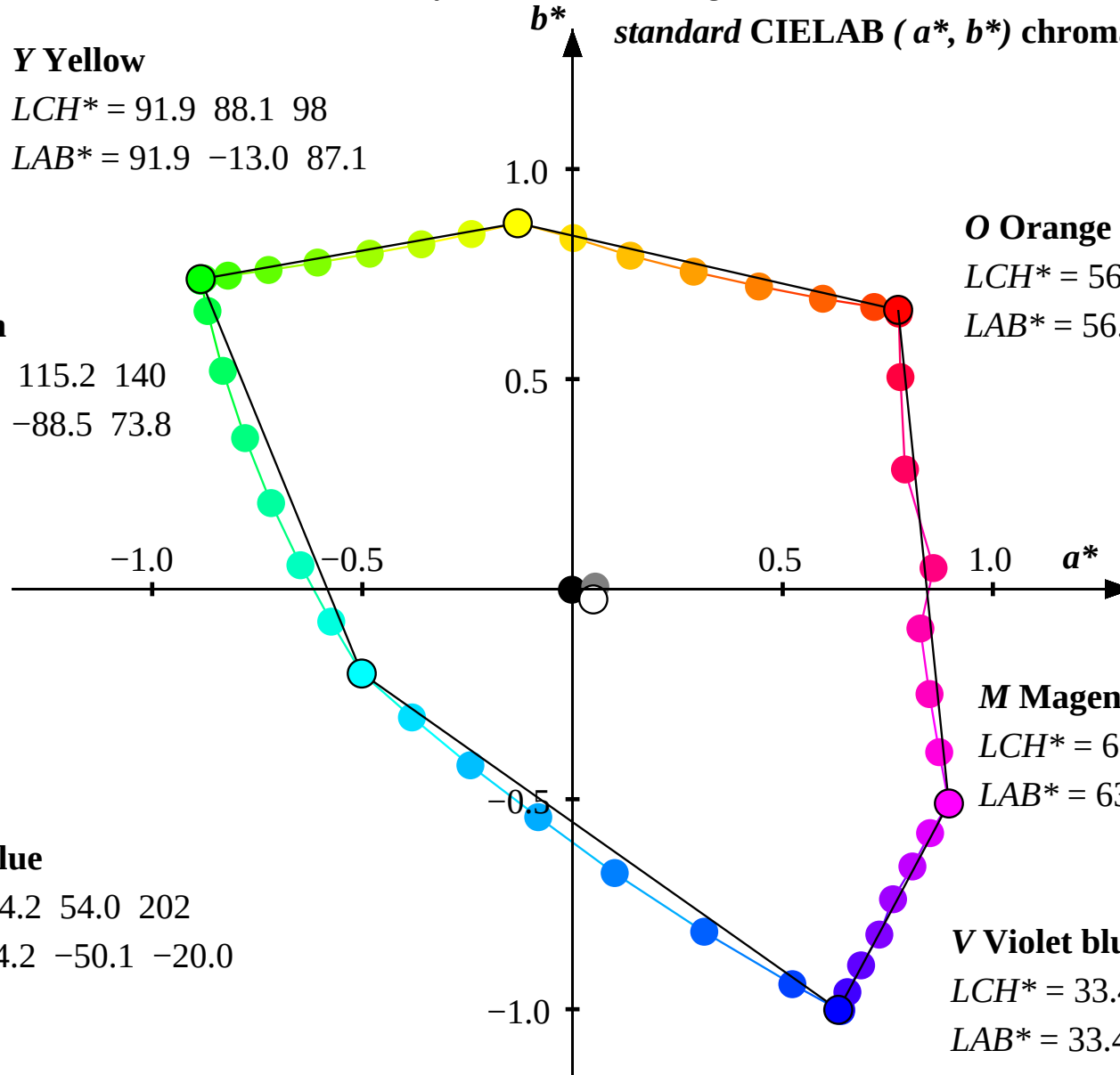
$LCH^* = 63.1 \ 103.0 \ 330$

$LAB^* = 63.1 \ 89.5 \ -51.0$

V Violet blue

$LCH^* = 33.4 \ 118.4 \ 302$

$LAB^* = 33.4 \ 63.3 \ -100.1$



Colorimetric "Adapted data (a)": Television Luminous System TLS00a for CIE lightness $L^*=00$ of black for illuminant D65

System TLS00a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*_ra$	$h_{ab,a}$	$X_a=XYZ^*1_a$	$Y_a=XYZ^*2_a$	$Z_a=XYZ^*3_a$	x_a	y_a	$Y_a/88.59$
CRT monitor	00 o00y	1.0	0.0	0.0	56.02	74.66	67.9	100.92	42	43.41	23.93	2.42	0.6223	0.343	0.2701
	01 o13y	1.0	0.125	0.0	56.02	74.46	67.87	100.75	42	43.35	23.93	2.43	0.6219	0.3433	0.2701
	02 o25y	1.0	0.25	0.0	57.92	68.88	68.69	97.27	45	44.24	25.88	2.76	0.607	0.3551	0.2921
	03 o38y	1.0	0.375	0.0	62.19	56.34	70.73	90.43	51	46.28	30.62	3.58	0.575	0.3805	0.3457
	04 o50y	1.0	0.5	0.0	67.72	40.94	73.83	84.42	61	49.32	37.59	4.77	0.5379	0.41	0.4243
	05 o63y	1.0	0.625	0.0	73.76	25.04	77.43	81.38	72	53.15	46.33	6.29	0.5025	0.438	0.523
	06 o75y	1.0	0.75	0.0	79.96	9.64	81.42	81.99	83	57.65	56.61	8.07	0.4713	0.4627	0.639
	07 o88y	1.0	0.875	0.0	86.01	-4.23	85.82	85.92	93	62.79	68.01	9.94	0.4461	0.4832	0.7677
	08 y00l	1.0	1.0	0.0	91.93	-17.76	89.45	91.2	101	68.11	80.55	12.28	0.4232	0.5005	0.9092
	09 y13l	0.875	1.0	0.0	89.64	-28.64	86.85	91.46	108	59.06	75.52	11.77	0.4035	0.516	0.8525
	10 y25l	0.75	1.0	0.0	87.47	-40.44	84.34	93.54	116	50.72	70.97	11.32	0.3813	0.5336	0.8011
	11 y38l	0.625	1.0	0.0	85.44	-52.65	82.01	97.46	123	43.24	66.87	10.91	0.3573	0.5526	0.7548
	12 y50l	0.5	1.0	0.0	83.56	-64.96	79.85	102.95	129	36.72	63.22	10.53	0.3324	0.5723	0.7136
	13 y63l	0.375	1.0	0.0	82.02	-76.53	78.03	109.3	134	31.48	60.33	10.25	0.3085	0.5911	0.681
	14 y75l	0.25	1.0	0.0	80.88	-86.16	76.68	115.35	138	27.67	58.25	10.04	0.2884	0.607	0.6575
	15 y88l	0.125	1.0	0.0	80.25	-91.85	75.94	119.18	140	25.62	57.12	9.92	0.2765	0.6164	0.6447
	16 l00c	0.0	1.0	0.0	80.17	-92.61	75.83	119.7	141	25.36	56.98	9.92	0.2749	0.6176	0.6432
	17 l13c	0.0	1.0	0.125	80.16	-92.56	75.45	119.42	141	25.36	56.96	10.04	0.2746	0.6167	0.643
	18 l25c	0.0	1.0	0.25	80.28	-90.99	68.23	113.74	143	25.86	57.18	12.72	0.2701	0.5971	0.6454
	19 l38c	0.0	1.0	0.375	80.6	-87.34	54.0	102.7	148	27.08	57.74	19.4	0.2598	0.554	0.6518
	20 l50c	0.0	1.0	0.5	81.07	-82.05	38.0	90.43	155	28.93	58.59	29.46	0.2473	0.5009	0.6614
	21 l63c	0.0	1.0	0.625	81.71	-75.92	22.55	79.2	163	31.29	59.76	42.28	0.2346	0.4482	0.6746
	22 l75c	0.0	1.0	0.75	82.43	-68.95	7.82	69.4	174	34.11	61.1	57.75	0.223	0.3995	0.6897
	23 l88c	0.0	1.0	0.875	83.26	-61.69	-5.66	61.96	185	37.32	62.66	75.23	0.213	0.3576	0.7073
	24 c00v	0.0	1.0	1.0	84.22	-54.47	-17.89	57.34	198	40.9	64.49	94.37	0.2048	0.3228	0.728
	25 c13v	0.0	0.875	1.0	77.24	-42.17	-28.5	50.91	214	35.39	51.93	92.28	0.197	0.2891	0.5862
	26 c25v	0.0	0.75	1.0	69.81	-27.89	-40.18	48.93	235	30.4	40.48	90.62	0.1882	0.2506	0.4569
	27 c38v	0.0	0.675	1.0	61.76	-11.26	-52.68	53.88	258	25.84	30.12	88.66	0.1787	0.2083	0.34
	28 c50v	0.0	0.5	1.0	53.37	7.34	-66.23	66.65	276	21.86	21.38	87.36	0.1674	0.1637	0.2414
	29 c63v	0.0	0.375	1.0	44.84	29.09	-80.42	85.52	290	18.8	14.43	86.62	0.1568	0.1204	0.1628
	30 c75v	0.0	0.25	1.0	37.25	50.49	-93.04	105.87	298	16.69	9.67	85.98	0.1486	0.0861	0.1092
	31 c88v	0.0	0.125	1.0	33.58	62.33	-99.51	117.43	302	15.99	7.81	86.17	0.1454	0.071	0.0881
	32 v00m	0.0	0.0	1.0	33.4	61.66	-99.21	116.82	302	15.74	7.72	85.31	0.1447	0.071	0.0872
	33 v13m	0.125	0.0	1.0	33.76	62.32	-99.11	117.08	302	16.12	7.89	86.04	0.1465	0.0717	0.0891
	34 v25m	0.25	0.0	1.0	36.14	63.67	-94.92	114.3	304	18.24	9.08	85.92	0.1611	0.0802	0.1025
	35 v38m	0.375	0.0	1.0	39.92	66.72	-88.51	110.85	307	22.16	11.2	86.08	0.1855	0.0938	0.1264
	36 v50m	0.5	0.0	1.0	44.48	70.81	-81.06	107.64	311	27.69	14.17	86.65	0.2155	0.1103	0.16
	37 v63m	0.625	0.0	1.0	49.17	73.75	-72.52	103.43	315	33.92	17.73	86.03	0.2464	0.1288	0.2002
	38 v75m	0.75	0.0	1.0	54.0	78.18	-64.6	101.42	320	41.69	21.98	86.6	0.2774	0.1463	0.2481
	39 v88m	0.875	0.0	1.0	58.64	82.07	-56.57	99.68	325	50.06	26.64	86.57	0.3066	0.1632	0.3008
	40 m00o	1.0	0.0	1.0	63.05	86.31	-49.33	99.42	330	59.22	31.65	87.07	0.3328	0.1779	0.3573
	41 m13o	1.0	0.0	0.875	61.53	84.13	-37.24	92.0	336	55.65	29.85	67.96	0.3626	0.1945	0.337
	42 m25o	1.0	0.0	0.75	60.16	81.85	-23.47	85.15	344	52.45	28.3	50.47	0.3997	0.2157	0.3194
	43 m38o	1.0	0.0	0.675	58.9	79.74	-7.8	80.12	354	49.61	26.92	34.95	0.445	0.2415	0.3038
	44 m50o	1.0	0.0	0.5	57.81	82.98	6.49	83.23	4	49.07	25.76	23.97	0.4967	0.2607	0.2908
	45 m63o	1.0	0.0	0.375	56.92	76.22	29.91	81.88	21	45.28	24.84	11.97	0.5516	0.3026	0.2804
	46 m75o	1.0	0.0	0.25	56.33	75.18	51.9	91.35	35	44.05	24.24	5.25	0.5989	0.3296	0.2737
	47 m88o	1.0	0.0	0.125	56.09	74.8	67.06	100.46	42	43.57	24.01	2.55	0.6213	0.3423	0.271
	48 o00y	1.0	0.0	0.0	56.02	74.66	67.9	100.92	42	43.41	23.93	2.42	0.6223	0.343	0.2701
	49 n00w	0.0	0.0	0.0	0.46	0.0	0.0	0.01	0	0.05	0.05	0.06	0.3127	0.329	0.0006
	50 n13w	0.125	0.125	0.125	2.38	4.39	1.4	4.61	18	0.36	0.26	0.19	0.4418	0.3253	0.003
	51 n25w	0.25	0.25	0.25	22.26	6.95	3.2	7.65	25	3.86	3.59	3.37	0.357	0.3319	0.0405
	52 n38w	0.375	0.375	0.375	39.92	4.2	2.74	5.01	33	11.21	11.2	11.19	0.3337	0.3334	0.1264
	53 n50w	0.5	0.5	0.5	54.11	2.7	2.01	3.37	37	21.55	22.08	22.86	0.3241	0.3321	0.2492
	54 n63w	0.625	0.625	0.625	66.29	1.68	1.61	2.33	44	34.41	35.7	37.56	0.3196	0.3315	0.403
	55 n75w	0.75	0.75	0.75	77.06	1.0	0.93	1.37	43	49.43	51.63	55.23	0.3163	0.3303	0.5828
	56 n88w	0.875	0.875	0.875	86.67	0.65	0.33	0.73	27	66.18	69.33	75.06	0.3143	0.3292	0.7826
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.0

IE370-7N, Colorimetric data of Television Luminous System TLS00a for CIE standard illuminant D65; CRT monitor; Page: 25/66

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 25/66output: no change compared to input

See original or copy: <http://web.me.com/klaus.richter/IE37/IE37L0NA.PS/.TXT>
Technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmetrik>

TUB registration: 20090901-IE37/IE37L0NA.PS/.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

<http://130.149.60.45/~farbmetrik/IE37/IE37L0NA.PS/.TXT>; start output
N: No Output Linearization (OL) data in File (F), Startup (S) or Device (D)

Colorimetric "Adapted data (a)": Television Luminous System TLS00a for CIE lightness $L^*=00$ of black for illuminant D65
System TLS00a
CRT monitor

Y Yellow

$LCH^*_a = 91.9 \ 91.2 \ 101$

$LAB^*_a = 91.9 \ -17.8 \ 89.5$

L Leaf green

$LCH^*_a = 80.2 \ 119.7 \ 141$

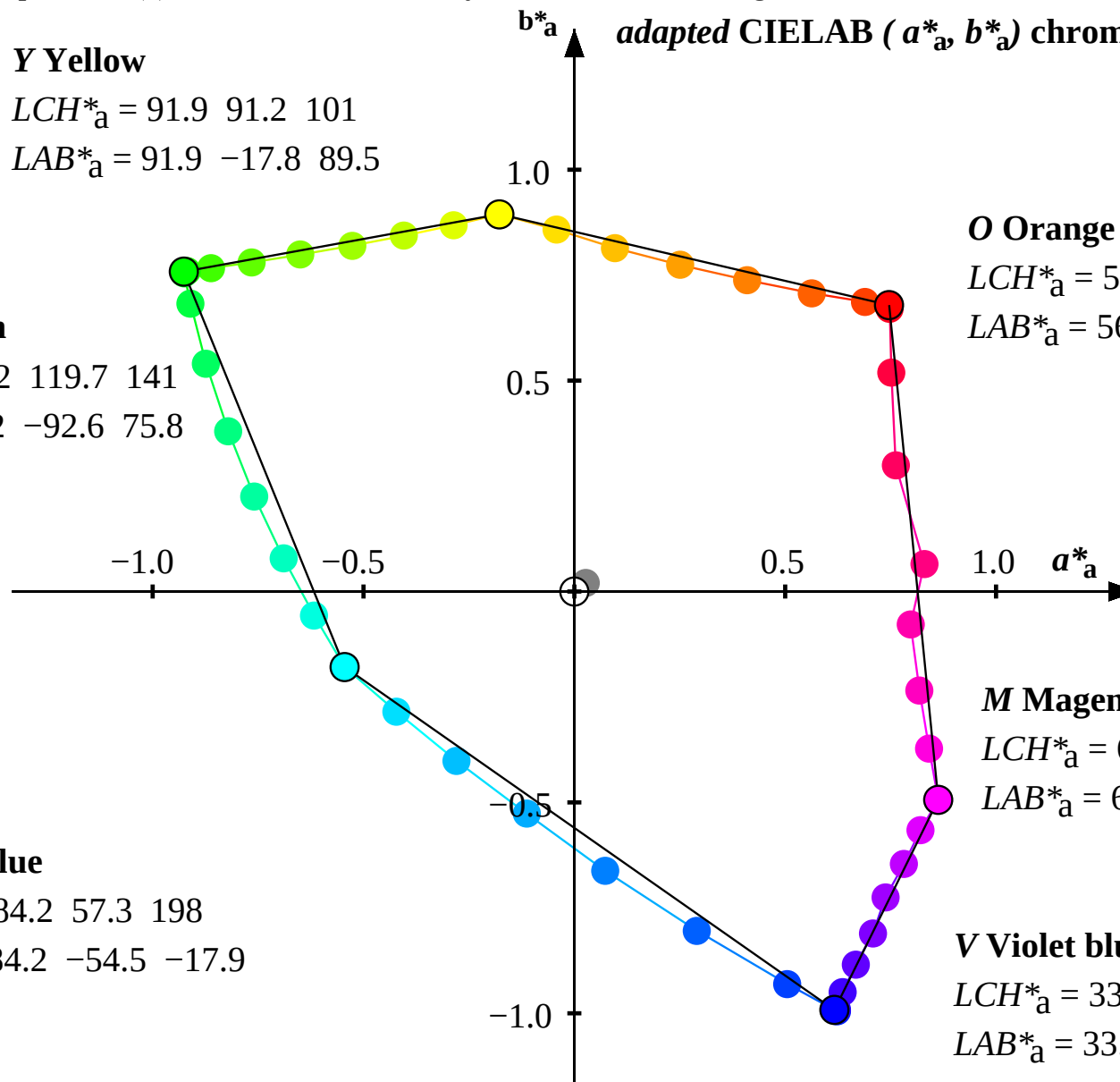
$LAB^*_a = 80.2 \ -92.6 \ 75.8$

C Cyan blue

$LCH^*_a = 84.2 \ 57.3 \ 198$

$LAB^*_a = 84.2 \ -54.5 \ -17.9$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



Colorimetric "Adapted data (a0)": Television Luminous System TLS00a0 for CIE lightness $L^*=00$ of black for illuminant D65

System TLS00a0
CRT monitor

Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB*1_a$	$a^*_a=LAB*2_a$	$b^*_a=LAB*3_a$	$C^*_{ab,a}=LAB*ab,a$	$h_{ab,a}$	$X_a=XYZ_{1a}$	$Y_a=XYZ_{2a}$	$Z_a=XYZ_{3a}$	x_a	y_a	$Y_a/88.59$
00 o00y	1.0	0.0	0.0	55.98	74.75	68.26	101.23	42	43.39	23.89	2.37	0.623	0.343	0.2966
01 o13y	1.0	0.125	0.0	55.98	74.55	68.22	101.06	42	43.32	23.89	2.37	0.6226	0.3433	0.2966
02 o25y	1.0	0.25	0.0	57.89	68.96	69.01	97.56	45	44.22	25.85	2.71	0.6076	0.3551	0.3209
03 o38y	1.0	0.375	0.0	62.16	56.4	71.0	90.68	52	46.26	30.59	3.53	0.5755	0.3806	0.3798
04 o50y	1.0	0.5	0.0	67.7	40.98	74.05	84.63	61	49.3	37.56	4.72	0.5383	0.4102	0.4664
05 o63y	1.0	0.625	0.0	73.74	25.06	77.62	81.56	72	53.13	46.31	6.24	0.5028	0.4382	0.575
06 o75y	1.0	0.75	0.0	79.95	9.65	81.58	82.15	83	57.64	56.59	8.02	0.4715	0.4629	0.7026
07 o88y	1.0	0.875	0.0	86.01	-4.23	85.96	86.06	93	62.77	68.0	9.89	0.4463	0.4834	0.8443
08 y00l	1.0	1.0	0.0	91.93	-17.77	89.58	91.32	101	68.1	80.54	12.23	0.4233	0.5006	1.0
09 y13l	0.875	1.0	0.0	89.63	-28.66	86.98	91.58	108	59.05	75.51	11.72	0.4036	0.5162	0.9376
10 y25l	0.75	1.0	0.0	87.47	-40.47	84.47	93.67	116	50.7	70.96	11.28	0.3814	0.5338	0.8811
11 y38l	0.625	1.0	0.0	85.43	-52.7	82.13	97.59	123	43.22	66.85	10.86	0.3574	0.5528	0.8301
12 y50l	0.5	1.0	0.0	83.55	-65.02	79.98	103.08	129	36.69	63.2	10.48	0.3324	0.5727	0.7847
13 y63l	0.375	1.0	0.0	82.01	-76.6	78.16	109.44	134	31.45	60.32	10.2	0.3085	0.5915	0.7489
14 y75l	0.25	1.0	0.0	80.87	-86.25	76.81	115.5	138	27.64	58.23	9.99	0.2883	0.6075	0.723
15 y88l	0.125	1.0	0.0	80.24	-91.95	76.07	119.34	140	25.59	57.1	9.87	0.2764	0.6169	0.7089
16 l00c	0.0	1.0	0.0	80.16	-92.71	75.96	119.86	141	25.33	56.96	9.87	0.2748	0.6181	0.7073
17 l13c	0.0	1.0	0.125	80.15	-92.66	75.58	119.58	141	25.33	56.95	9.99	0.2745	0.6172	0.707
18 l25c	0.0	1.0	0.25	80.27	-91.09	68.34	113.88	143	25.83	57.16	12.67	0.27	0.5976	0.7097
19 l38c	0.0	1.0	0.375	80.59	-87.43	54.07	102.81	148	27.05	57.73	19.36	0.2597	0.5544	0.7167
20 l50c	0.0	1.0	0.5	81.06	-82.13	38.04	90.52	155	28.9	58.58	29.42	0.2472	0.5011	0.7273
21 l63c	0.0	1.0	0.625	81.7	-75.99	22.57	79.28	163	31.26	59.75	42.25	0.2346	0.4484	0.7418
22 l75c	0.0	1.0	0.75	82.42	-69.01	7.82	69.46	174	34.08	61.08	57.72	0.2229	0.3995	0.7584
23 l88c	0.0	1.0	0.875	83.25	-61.74	-5.67	62.02	185	37.3	62.64	75.22	0.2129	0.3576	0.7778
24 c00v	0.0	1.0	1.0	84.21	-54.52	-17.9	57.39	198	40.88	64.48	94.37	0.2047	0.3228	0.8005
25 c13v	0.0	0.875	1.0	77.23	-42.21	-28.52	50.96	214	35.36	51.91	92.28	0.1969	0.2891	0.6445
26 c25v	0.0	0.75	1.0	69.79	-27.93	-40.21	48.97	235	30.37	40.45	90.62	0.1881	0.2505	0.5022
27 c38v	0.0	0.675	1.0	61.73	-11.28	-52.73	53.93	258	25.8	30.09	88.66	0.1785	0.2082	0.3736
28 c50v	0.0	0.5	1.0	53.33	7.35	-66.3	66.72	276	21.82	21.35	87.35	0.1672	0.1635	0.265
29 c63v	0.0	0.375	1.0	44.78	29.15	-80.52	85.64	290	18.76	14.38	86.61	0.1566	0.1201	0.1786
30 c75v	0.0	0.25	1.0	37.17	50.63	-93.18	106.06	299	16.66	9.63	85.98	0.1484	0.0858	0.1195
31 c88v	0.0	0.125	1.0	33.48	62.53	-99.68	117.67	302	15.95	7.76	86.17	0.1452	0.0706	0.0964
32 v00m	0.0	0.0	1.0	33.3	61.86	-99.37	117.06	302	15.7	7.68	85.31	0.1445	0.0706	0.0953
33 v13m	0.125	0.0	1.0	33.66	62.52	-99.27	117.33	302	16.08	7.85	86.04	0.1463	0.0713	0.0974
34 v25m	0.25	0.0	1.0	36.05	63.85	-95.06	114.52	304	18.2	9.03	85.91	0.1609	0.0798	0.1122
35 v38m	0.375	0.0	1.0	39.84	66.87	-88.64	111.04	307	22.12	11.16	86.07	0.1854	0.0935	0.1385
36 v50m	0.5	0.0	1.0	44.42	70.94	-81.16	107.8	311	27.66	14.13	86.65	0.2154	0.11	0.1754
37 v63m	0.625	0.0	1.0	49.12	73.86	-72.6	103.57	315	33.89	17.69	86.02	0.2463	0.1286	0.2197
38 v75m	0.75	0.0	1.0	53.96	78.28	-64.67	101.54	320	41.67	21.94	86.6	0.2774	0.1461	0.2724
39 v88m	0.875	0.0	1.0	58.61	82.16	-56.63	99.79	325	50.04	26.61	86.56	0.3066	0.163	0.3304
40 m00o	1.0	0.0	1.0	63.03	86.39	-49.38	99.51	330	59.2	31.62	87.07	0.3328	0.1777	0.3926
41 m13o	1.0	0.0	0.875	61.5	84.21	-37.28	92.1	336	55.63	29.82	67.94	0.3627	0.1944	0.3702
42 m25o	1.0	0.0	0.75	60.13	81.94	-23.49	85.24	344	52.43	28.26	50.44	0.3998	0.2155	0.3509
43 m38o	1.0	0.0	0.675	58.86	79.83	-7.81	80.21	354	49.59	26.88	34.92	0.4452	0.2413	0.3338
44 m50o	1.0	0.0	0.5	57.78	83.07	6.5	83.33	4	49.05	25.73	23.93	0.4969	0.2606	0.3194
45 m63o	1.0	0.0	0.375	56.88	76.31	29.98	81.98	21	45.26	24.8	11.92	0.5521	0.3025	0.3079
46 m75o	1.0	0.0	0.25	56.29	75.27	52.08	91.53	35	44.03	24.21	5.2	0.5995	0.3296	0.3005
47 m88o	1.0	0.0	0.125	56.06	74.89	67.4	100.75	42	43.55	23.97	2.5	0.622	0.3423	0.2976
48 o00y	1.0	0.0	0.0	55.98	74.75	68.26	101.23	42	43.39	23.89	2.37	0.623	0.343	0.2966
49 n00w	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0	0.0	0.0	0.0	0.0	0.0	0.0
50 n13w	0.125	0.125	0.125	1.92	4.4	1.4	4.62	18	0.31	0.21	0.13	0.4723	0.3244	0.0026
51 n25w	0.25	0.25	0.25	22.09	7.01	3.24	7.72	25	3.81	3.54	3.31	0.3576	0.3319	0.044
52 n38w	0.375	0.375	0.375	39.84	4.21	2.75	5.03	33	11.17	11.16	11.14	0.3338	0.3334	0.1385
53 n50w	0.5	0.5	0.5	54.07	2.7	2.01	3.37	37	21.52	22.04	22.82	0.3242	0.3321	0.2737
54 n63w	0.625	0.625	0.625	66.27	1.69	1.61	2.33	44	34.39	35.67	37.53	0.3196	0.3316	0.4429
55 n75w	0.75	0.75	0.75	77.04	1.0	0.94	1.37	43	49.41	51.61	55.21	0.3163	0.3303	0.6407
56 n88w	0.875	0.875	0.875	86.66	0.65	0.33	0.73	27	66.17	69.32	75.05	0.3143	0.3292	0.8606
57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	85	84.2	88.59	96.46	0.3127	0.329	1.0999

IE370-7N, Colorimetric data of Television Luminous System TLS00a0 for CIE standard illuminant D65; CRT monitor; Page: 27/66

$n = 88.59 / (88.59 - 0.05) = 1.001$

TUB-test chart IE37; Hue circle and colorimetric data

input: olv^* setrgbcolor

Display measurement: LCD, CRT and LCD projector, page 27/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

See original or copy: <http://web.me.com/klaus.richter/IE37/IE37L0NA.PS/.TXT>
Technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmetrik>

TUB registration: 20090901-IE37/IE37L0NA.PS/.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

<http://130.149.60.45/~farbmetrik/IE37/IE37L0NA.PS/.TXT>; start output
N: No Output Linearization (OL) data in File (F), Startup (S) or Device (D)

Colorimetric "Adapted data (a0)": Television Luminous System TLS00a0 for CIE lightness $L^*=00$ of black for illuminant D65
System TLS00a0
CRT monitor

Y Yellow

$LCH^*_a = 91.9 \ 91.3 \ 101$

$LAB^*_a = 91.9 \ -17.8 \ 89.6$

L Leaf green

$LCH^*_a = 80.2 \ 119.9 \ 141$

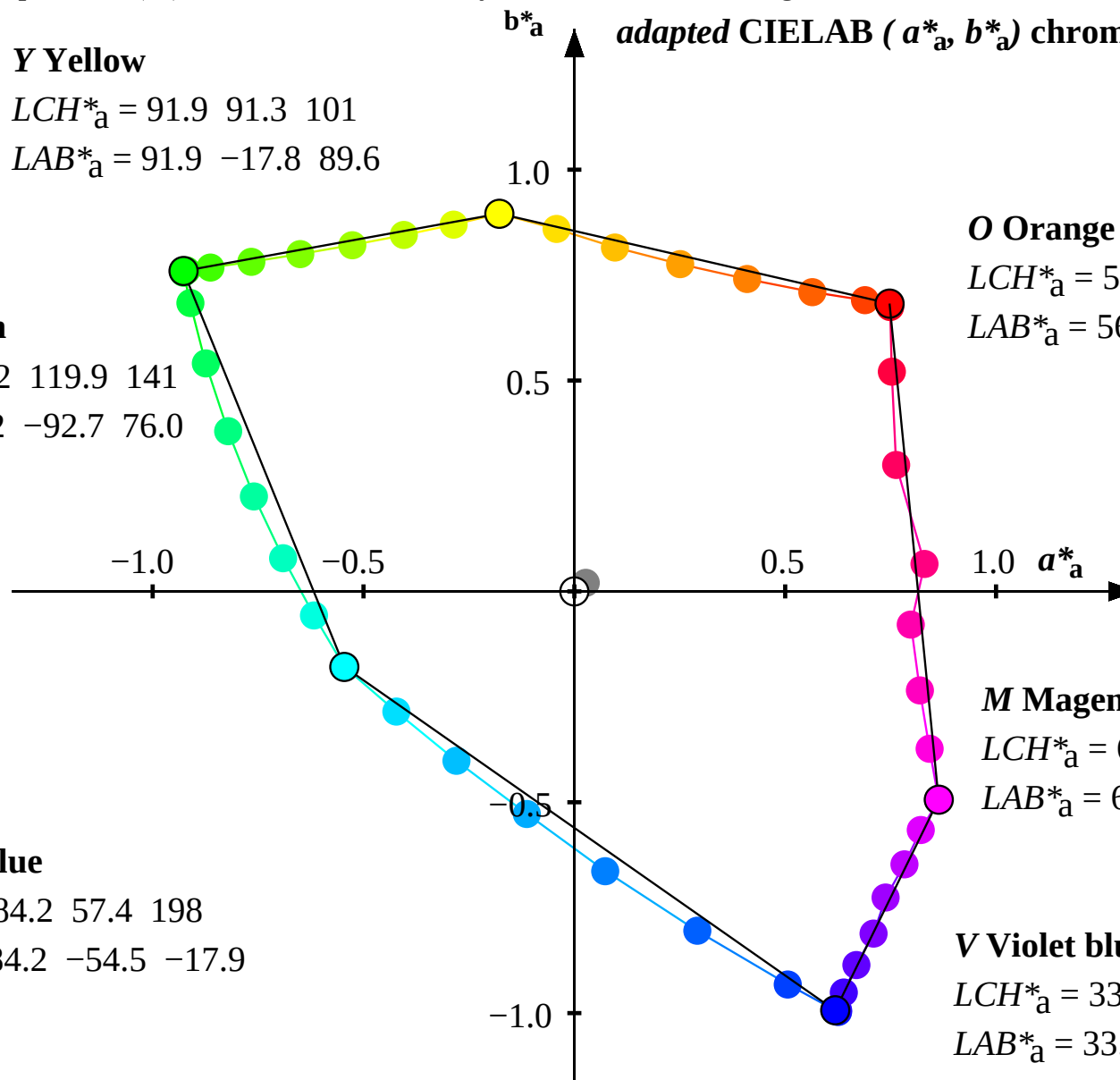
$LAB^*_a = 80.2 \ -92.7 \ 76.0$

C Cyan blue

$LCH^*_a = 84.2 \ 57.4 \ 198$

$LAB^*_a = 84.2 \ -54.5 \ -17.9$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH^*_a = 56.0 \ 101.2 \ 42$

$LAB^*_a = 56.0 \ 74.7 \ 68.3$

M Magenta red

$LCH^*_a = 63.0 \ 99.5 \ 330$

$LAB^*_a = 63.0 \ 86.4 \ -49.4$

V Violet blue

$LCH^*_a = 33.3 \ 117.1 \ 302$

$LAB^*_a = 33.3 \ 61.9 \ -99.4$

Colorimetric "Adapted data (a)": Television Luminous System TLS00a for CIE lightness $L^*=00$ of black for illuminant D65

System TLS00a	Color	$r=olv^*_1$	$g=olv^*_2$	$b=olv^*_3$	$L^*_a=LAB^*_{1a}$	$a^*_a=LAB^*_{2a}$	$b^*_a=LAB^*_{3a}$	$C^*_{ab,a}=LAB^*_{ab,a}$	$h_{ab,a}$	$X_a=XYZ^*_{1a}$	$Y_a=XYZ^*_{2a}$	$Z_a=XYZ^*_{3a}$	x_a	y_a	$Y_a/88.59$
CRT monitor	00 o00y	1.0	0.0	0.0	55.98	74.75	68.26	101.23	42	43.39	23.89	2.37	0.623	0.343	0.2966
	01 o13y	1.0	0.125	0.0	55.98	74.55	68.22	101.06	42	43.32	23.89	2.37	0.6226	0.3433	0.2966
	02 o25y	1.0	0.25	0.0	57.89	68.96	69.01	97.56	45	44.22	25.85	2.71	0.6076	0.3551	0.3209
D65 reflection:	03 o38y	1.0	0.375	0.0	62.16	56.4	71.0	90.68	52	46.26	30.59	3.53	0.5755	0.3806	0.3798
	04 o50y	1.0	0.5	0.0	67.7	40.98	74.05	84.63	61	49.3	37.56	4.72	0.5383	0.4102	0.4664
	05 o63y	1.0	0.625	0.0	73.74	25.06	77.62	81.56	72	53.13	46.31	6.24	0.5028	0.4382	0.575
$Y_N = 0.0$ $L^*_N = 0.0$	06 o75y	1.0	0.75	0.0	79.95	9.65	81.58	82.15	83	57.64	56.59	8.02	0.4715	0.4629	0.7026
	07 o88y	1.0	0.875	0.0	86.01	-4.23	85.96	86.06	93	62.77	68.0	9.89	0.4463	0.4834	0.8443
	08 y00l	1.0	1.0	0.0	91.93	-17.77	89.58	91.32	101	68.1	80.54	12.23	0.4233	0.5006	1.0
	09 y13l	0.875	1.0	0.0	89.63	-28.66	86.98	91.58	108	59.05	75.51	11.72	0.4036	0.5162	0.9376
	10 y25l	0.75	1.0	0.0	87.47	-40.47	84.47	93.67	116	50.7	70.96	11.28	0.3814	0.5338	0.8811
	11 y38l	0.625	1.0	0.0	85.43	-52.7	82.13	97.59	123	43.22	66.85	10.86	0.3574	0.5528	0.8301
	12 y50l	0.5	1.0	0.0	83.55	-65.02	79.98	103.08	129	36.69	63.2	10.48	0.3324	0.5727	0.7847
	13 y63l	0.375	1.0	0.0	82.01	-76.6	78.16	109.44	134	31.45	60.32	10.2	0.3085	0.5915	0.7489
	14 y75l	0.25	1.0	0.0	80.87	-86.25	76.81	115.5	138	27.64	58.23	9.99	0.2883	0.6075	0.723
	15 y88l	0.125	1.0	0.0	80.24	-91.95	76.07	119.34	140	25.59	57.1	9.87	0.2764	0.6169	0.7089
	16 l00c	0.0	1.0	0.0	80.16	-92.71	75.96	119.86	141	25.33	56.96	9.87	0.2748	0.6181	0.7073
	17 l13c	0.0	1.0	0.125	80.15	-92.66	75.58	119.58	141	25.33	56.95	9.99	0.2745	0.6172	0.707
	18 l25c	0.0	1.0	0.25	80.27	-91.09	68.34	113.88	143	25.83	57.16	12.67	0.27	0.5976	0.7097
	19 l38c	0.0	1.0	0.375	80.59	-87.43	54.07	102.81	148	27.05	57.73	19.36	0.2597	0.5544	0.7167
	20 l50c	0.0	1.0	0.5	81.06	-82.13	38.04	90.52	155	28.9	58.58	29.42	0.2472	0.5011	0.7273
	21 l63c	0.0	1.0	0.625	81.7	-75.99	22.57	79.28	163	31.26	59.75	42.25	0.2346	0.4484	0.7418
	22 l75c	0.0	1.0	0.75	82.42	-69.01	7.82	69.46	174	34.08	61.08	57.72	0.2229	0.3995	0.7584
	23 l88c	0.0	1.0	0.875	83.25	-61.74	-5.67	62.02	185	37.3	62.64	75.22	0.2129	0.3576	0.7778
	24 c00v	0.0	1.0	1.0	84.21	-54.52	-17.9	57.39	198	40.88	64.48	94.37	0.2047	0.3228	0.8005
	25 c13v	0.0	0.875	1.0	77.23	-42.21	-28.52	50.96	214	35.36	51.91	92.28	0.1969	0.2891	0.6445
	26 c25v	0.0	0.75	1.0	69.79	-27.93	-40.21	48.97	235	30.37	40.45	90.62	0.1881	0.2505	0.5022
	27 c38v	0.0	0.675	1.0	61.73	-11.28	-52.73	53.93	258	25.8	30.09	88.66	0.1785	0.2082	0.3736
	28 c50v	0.0	0.5	1.0	53.33	7.35	-66.3	66.72	276	21.82	21.35	87.35	0.1672	0.1635	0.265
	29 c63v	0.0	0.375	1.0	44.78	-80.52	-80.52	85.64	290	18.76	14.38	86.61	0.1566	0.1201	0.1786
	30 c75v	0.0	0.25	1.0	37.17	29.15	-93.18	106.06	299	16.66	9.63	85.98	0.1484	0.0858	0.1195
	31 c88v	0.0	0.125	1.0	33.48	62.53	-99.68	117.67	302	15.95	7.76	86.17	0.1452	0.0706	0.0964
	32 v00m	0.0	0.0	1.0	33.3	61.86	-99.37	117.06	302	15.7	7.68	85.31	0.1445	0.0706	0.0953
	33 v13m	0.125	0.0	1.0	33.66	62.52	-99.27	117.33	302	16.08	7.85	86.04	0.1463	0.0713	0.0974
	34 v25m	0.25	0.0	1.0	36.05	63.85	-95.06	114.52	304	18.2	9.03	85.91	0.1609	0.0798	0.1122
	35 v38m	0.375	0.0	1.0	39.84	66.87	-88.64	111.04	307	22.12	11.16	86.07	0.1854	0.0935	0.1385
	36 v50m	0.5	0.0	1.0	44.42	70.94	-81.16	107.8	311	27.66	14.13	86.65	0.2154	0.11	0.1754
	37 v63m	0.625	0.0	1.0	49.12	73.86	-72.6	103.57	315	33.89	17.69	86.02	0.2463	0.1286	0.2197
	38 v75m	0.75	0.0	1.0	53.96	78.28	-64.67	101.54	320	41.67	21.94	86.6	0.2774	0.1461	0.2724
	39 v88m	0.875	0.0	1.0	58.61	82.16	-56.63	99.79	325	50.04	26.61	86.56	0.3066	0.163	0.3304
	40 m00o	1.0	0.0	1.0	63.03	86.39	-49.38	99.51	330	59.2	31.62	87.07	0.3328	0.1777	0.3926
	41 m13o	1.0	0.0	0.875	61.5	84.21	-37.28	92.1	336	55.63	29.82	67.94	0.3627	0.1944	0.3702
	42 m25o	1.0	0.0	0.75	60.13	81.94	-23.49	85.24	344	52.43	28.26	50.44	0.3998	0.2155	0.3509
	43 m38o	1.0	0.0	0.675	58.86	79.83	-7.81	80.21	354	49.59	26.88	34.92	0.4452	0.2413	0.3338
	44 m50o	1.0	0.0	0.5	57.78	83.07	6.5	83.33	4	49.05	25.73	23.93	0.4969	0.2606	0.3194
	45 m63o	1.0	0.0	0.375	56.88	76.31	29.98	81.98	21	45.26	24.8	11.92	0.5521	0.3025	0.3079
	46 m75o	1.0	0.0	0.25	56.29	75.27	52.08	91.53	35	44.03	24.21	5.2	0.5995	0.3296	0.3005
	47 m88o	1.0	0.0	0.125	56.06	74.89	67.4	100.75	42	43.55	23.97	2.5	0.622	0.3423	0.2976
	48 o00y	1.0	0.0	0.0	55.98	74.75	68.26	101.23	42	43.39	23.89	2.37	0.623	0.343	0.2966
	49 n00w	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0	0.0	0.0	0.0	0.0	0.0	0.0
	50 n13w	0.125	0.125	0.125	1.92	4.4	1.4	4.62	18	0.31	0.21	0.13	0.4723	0.3244	0.0026
	51 n25w	0.25	0.25	0.25	22.09	7.01	3.24	7.72	25	3.81	3.54	3.31	0.3576	0.3319	0.044
	52 n38w	0.375	0.375	0.375	39.84	4.21	2.75	5.03	33	11.17	11.16	11.14	0.3338	0.3334	0.1385
	53 n50w	0.5	0.5	0.5	54.07	2.7	2.01	3.37	37	21.52	22.04	22.82	0.3242	0.3321	0.2737
	54 n63w	0.625	0.625	0.625	66.27	1.69	1.61	2.33	44	34.39	35.67	37.53	0.3196	0.3316	0.4429
	55 n75w	0.75	0.75	0.75	77.04	1.0	0.94	1.37	43	49.41	51.61	55.21	0.3163	0.3303	0.6407
	56 n88w	0.875	0.875	0.875	86.66	0.65	0.33	0.73	27	66.17	69.32	75.05	0.3143	0.3292	0.8606
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	85	84.2	88.59	96.46	0.3127	0.329	1.0999

IE370-7N, Colorimetric data of Television Luminous System TLS00a for CIE standard illuminant D65; CRT monitor; Page: 29/66

$$n = 88.59 / (88.59 + 0.0) = 1.0$$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 29/66output: no change compared to input

See original or copy: <http://web.me.com/klaus.richter/IE37/IE37L0NA.PS/.TXT>
Technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmetrik>

TUB registration: 20090901-IE37/IE37L0NA.PS/.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

<http://130.149.60.45/~farbmetrik/IE37/IE37L0NA.PS/.TXT>; start output
N: No Output Linearization (OL) data in File (F), Startup (S) or Device (D)

Colorimetric "Adapted data (a)": Television Luminous System TLS00a for CIE lightness $L^*=00$ of black for illuminant D65
System TLS00a

CRT monitor

D65 reflection:

$Y_N = 0.0$

$L_N^* = 0.0$

Y Yellow

$LCH_a^* = 91.9 \ 91.3 \ 101$

$LAB_a^* = 91.9 \ -17.8 \ 89.6$

L Leaf green

$LCH_a^* = 80.2 \ 119.9 \ 141$

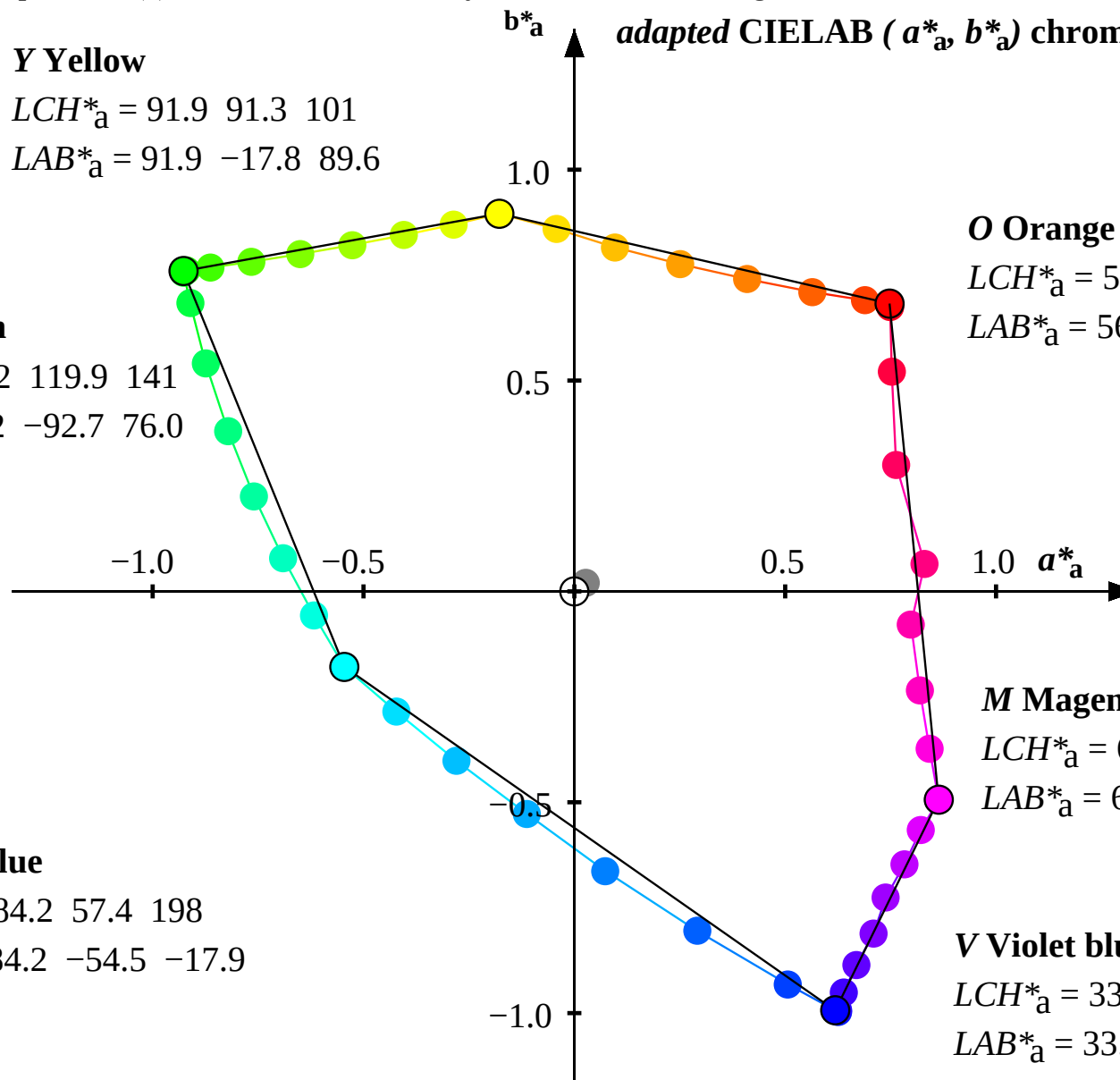
$LAB_a^* = 80.2 \ -92.7 \ 76.0$

C Cyan blue

$LCH_a^* = 84.2 \ 57.4 \ 198$

$LAB_a^* = 84.2 \ -54.5 \ -17.9$

adapted CIELAB (a^ , b^*) chroma diagram*



IE370-7N, Colorimetric data of Television Luminous System TLS00a for CIE standard illuminant D65; CRT monitor; Page: 30/66

TUB-test chart IE37; Hue circle and colorimetric data

input: `olv* setrgbcolor`

Display measurement: LCD, CRT and LCD projector, page 30/66output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS06a for CIE lightness $L^*=06$ of black for illuminant D65

System TLS06a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
CRT monitor	00 o00y	1.0	0.0	0.0	56.44	73.63	64.25	97.72	41	43.68	24.35	3.03	0.6147	0.3426	0.3021
	01 o13y	1.0	0.125	0.0	56.44	73.44	64.22	97.56	41	43.61	24.35	3.04	0.6143	0.3429	0.3021
	02 o25y	1.0	0.25	0.0	58.31	67.97	65.32	94.27	44	44.5	26.29	3.37	0.6001	0.3545	0.3262
D65 reflection:	03 o38y	1.0	0.375	0.0	62.51	55.66	67.87	87.78	51	46.53	31.0	4.18	0.5694	0.3794	0.3846
	04 o50y	1.0	0.5	0.0	67.96	40.49	71.44	82.11	60	49.54	37.92	5.37	0.5337	0.4085	0.4705
	05 o63y	1.0	0.625	0.0	73.94	24.8	75.41	79.38	72	53.35	46.61	6.88	0.4994	0.4362	0.5783
$Y_N = 0.63$ $L^*_N = 5.69$	06 o75y	1.0	0.75	0.0	80.08	9.56	79.68	80.25	83	57.82	56.82	8.65	0.469	0.4608	0.7049
	07 o88y	1.0	0.875	0.0	86.08	-4.2	84.27	84.37	93	62.93	68.15	10.51	0.4445	0.4813	0.8455
	08 y00l	1.0	1.0	0.0	91.95	-17.63	88.08	89.83	101	68.22	80.6	12.83	0.422	0.4986	1.0
	09 y13l	0.875	1.0	0.0	89.68	-28.42	85.46	90.07	108	59.22	75.61	12.32	0.4025	0.5138	0.9381
	10 y25l	0.75	1.0	0.0	87.53	-40.1	82.93	92.12	116	50.93	71.09	11.88	0.3804	0.5309	0.882
	11 y38l	0.625	1.0	0.0	85.51	-52.18	80.58	96.0	123	43.51	67.01	11.46	0.3567	0.5493	0.8314
	12 y50l	0.5	1.0	0.0	83.64	-64.32	78.41	101.42	129	37.02	63.38	11.09	0.3321	0.5685	0.7864
	13 y63l	0.375	1.0	0.0	82.12	-75.7	76.57	107.69	135	31.82	60.52	10.81	0.3085	0.5867	0.7508
	14 y75l	0.25	1.0	0.0	80.98	-85.18	75.21	113.64	139	28.04	58.44	10.6	0.2888	0.602	0.7251
	15 y88l	0.125	1.0	0.0	80.36	-90.75	74.47	117.4	141	26.0	57.32	10.48	0.2772	0.6111	0.7112
	16 l00c	0.0	1.0	0.0	80.28	-91.5	74.36	117.91	141	25.74	57.19	10.48	0.2756	0.6122	0.7095
	17 l13c	0.0	1.0	0.125	80.27	-91.45	74.0	117.64	141	25.75	57.17	10.6	0.2753	0.6114	0.7093
	18 l25c	0.0	1.0	0.25	80.39	-89.91	67.05	112.17	143	26.24	57.38	13.26	0.2708	0.5923	0.7119
	19 l38c	0.0	1.0	0.375	80.71	-86.33	53.23	101.43	148	27.45	57.94	19.9	0.2607	0.5503	0.7189
	20 l50c	0.0	1.0	0.5	81.17	-81.12	37.55	89.4	155	29.29	58.79	29.89	0.2483	0.4983	0.7294
	21 l63c	0.0	1.0	0.625	81.81	-75.1	22.32	78.35	163	31.63	59.95	42.63	0.2357	0.4467	0.7438
	22 l75c	0.0	1.0	0.75	82.53	-68.24	7.75	68.68	174	34.43	61.27	58.0	0.224	0.3987	0.7603
	23 l88c	0.0	1.0	0.875	83.35	-61.08	-5.62	61.35	185	37.63	62.83	75.37	0.214	0.3573	0.7795
	24 c00v	0.0	1.0	1.0	84.3	-53.96	-17.76	56.82	198	41.18	64.65	94.39	0.2057	0.3229	0.8021
	25 c13v	0.0	0.875	1.0	77.38	-41.71	-28.28	50.41	214	35.71	52.17	92.31	0.1982	0.2895	0.6473
	26 c25v	0.0	0.75	1.0	70.03	-27.54	-39.82	48.43	235	30.75	40.79	90.66	0.1896	0.2515	0.5061
	27 c38v	0.0	0.675	1.0	62.09	-11.09	-52.16	53.33	258	26.22	30.5	88.71	0.1803	0.2097	0.3785
	28 c50v	0.0	0.5	1.0	53.84	7.2	-65.47	65.87	276	22.26	21.82	87.42	0.1693	0.1659	0.2707
	29 c63v	0.0	0.375	1.0	45.51	28.38	-79.31	84.24	290	19.22	14.91	86.68	0.1591	0.1234	0.185
	30 c75v	0.0	0.25	1.0	38.17	48.94	-91.5	103.77	298	17.13	10.19	86.05	0.1511	0.0898	0.1264
	31 c88v	0.0	0.125	1.0	34.66	60.17	-97.69	114.74	302	16.43	8.33	86.24	0.148	0.0751	0.1034
	32 v00m	0.0	0.0	1.0	34.49	59.5	-97.37	114.12	301	16.18	8.25	85.39	0.1474	0.0751	0.1023
	33 v13m	0.125	0.0	1.0	34.83	60.19	-97.3	114.42	302	16.56	8.42	86.11	0.1491	0.0758	0.1044
	34 v25m	0.25	0.0	1.0	37.11	61.73	-93.29	111.88	303	18.67	9.6	85.99	0.1634	0.084	0.1191
	35 v38m	0.375	0.0	1.0	40.74	65.02	-87.14	108.73	307	22.56	11.7	86.15	0.1874	0.0972	0.1452
	36 v50m	0.5	0.0	1.0	45.16	69.34	-79.94	105.83	311	28.06	14.65	86.72	0.2168	0.1132	0.1818
	37 v63m	0.625	0.0	1.0	49.73	72.47	-71.6	101.88	315	34.25	18.19	86.09	0.2472	0.1313	0.2257
	38 v75m	0.75	0.0	1.0	54.46	77.05	-63.86	100.08	320	41.97	22.41	86.67	0.2779	0.1484	0.278
	39 v88m	0.875	0.0	1.0	59.02	81.05	-55.98	98.51	325	50.28	27.05	86.63	0.3067	0.165	0.3356
	40 m00o	1.0	0.0	1.0	63.36	85.38	-48.85	98.37	330	59.38	32.02	87.13	0.3326	0.1794	0.3973
	41 m13o	1.0	0.0	0.875	61.86	83.17	-36.83	90.97	336	55.83	30.23	68.14	0.3621	0.1961	0.3751
	42 m25o	1.0	0.0	0.75	60.51	80.88	-23.17	84.14	344	52.65	28.69	50.77	0.3986	0.2172	0.356
	43 m38o	1.0	0.0	0.675	59.27	78.76	-7.68	79.13	354	49.83	27.32	35.35	0.4429	0.2428	0.3389
	44 m50o	1.0	0.0	0.5	58.2	81.93	6.37	82.18	4	49.3	26.17	24.44	0.4934	0.2619	0.3247
	45 m63o	1.0	0.0	0.375	57.32	75.21	29.16	80.66	21	45.53	25.25	12.52	0.5466	0.3031	0.3133
	46 m75o	1.0	0.0	0.25	56.74	74.16	49.97	89.43	34	44.31	24.66	5.85	0.5923	0.3296	0.306
	47 m88o	1.0	0.0	0.125	56.51	73.77	63.54	97.37	41	43.84	24.43	3.16	0.6138	0.342	0.303
	48 o00y	1.0	0.0	0.0	56.44	73.63	64.25	97.72	41	43.68	24.35	3.03	0.6147	0.3426	0.3021
	49 n00w	0.0	0.0	0.0	5.65	0.0	0.0	0.01	0	0.59	0.63	0.68	0.3127	0.329	0.0078
	50 n13w	0.125	0.125	0.125	7.55	4.31	1.39	4.53	18	0.9	0.84	0.81	0.3534	0.3278	0.0104
	51 n25w	0.25	0.25	0.25	24.13	6.31	2.87	6.93	24	4.38	4.14	3.97	0.3508	0.3315	0.0514
	52 n38w	0.375	0.375	0.375	40.74	4.05	2.64	4.84	33	11.69	11.7	11.74	0.3326	0.3332	0.1452
	53 n50w	0.5	0.5	0.5	54.57	2.65	1.97	3.3	37	21.96	22.51	23.34	0.3238	0.332	0.2793
	54 n63w	0.625	0.625	0.625	66.55	1.66	1.59	2.3	44	34.74	36.04	37.94	0.3195	0.3315	0.4472
	55 n75w	0.75	0.75	0.75	77.2	0.99	0.93	1.35	43	49.66	51.87	55.5	0.3162	0.3303	0.6435
	56 n88w	0.875	0.875	0.875	86.73	0.65	0.33	0.72	27	66.3	69.45	75.2	0.3143	0.3292	0.8617
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	85	84.2	88.59	96.46	0.3127	0.329	1.0992

IE370-7N, Colorimetric data of Television Luminous System TLS06a for CIE standard illuminant D65; CRT monitor; Page: 31/66

$n = 88.59 / (88.59 + 0.63) = 0.993$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 31/66output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS06a for CIE lightness $L^*=06$ of black for illuminant D65

System TLS06a

CRT monitor

D65 reflection:

$Y_N = 0.63$

$L_N^* = 5.69$

Y Yellow

$LCH_a^* = 92.0 \ 89.8 \ 101$

$LAB_a^* = 92.0 \ -17.6 \ 88.1$

L Leaf green

$LCH_a^* = 80.3 \ 117.9 \ 141$

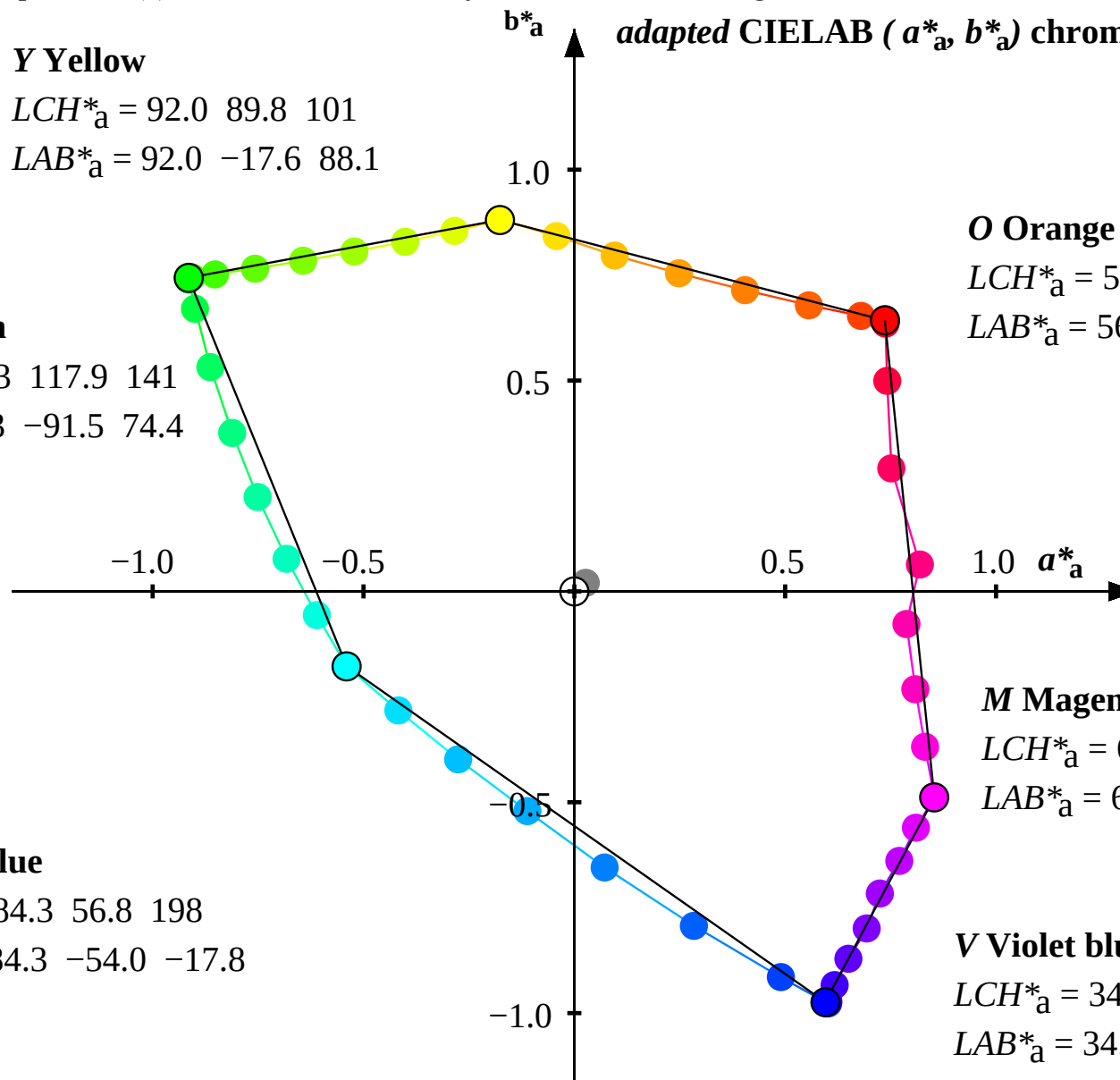
$LAB_a^* = 80.3 \ -91.5 \ 74.4$

C Cyan blue

$LCH_a^* = 84.3 \ 56.8 \ 198$

$LAB_a^* = 84.3 \ -54.0 \ -17.8$

adapted CIELAB (a^ , b^*) chroma diagram*



O Orange red

$LCH_a^* = 56.4 \ 97.7 \ 41$

$LAB_a^* = 56.4 \ 73.6 \ 64.3$

M Magenta red

$LCH_a^* = 63.4 \ 98.4 \ 330$

$LAB_a^* = 63.4 \ 85.4 \ -48.9$

V Violet blue

$LCH_a^* = 34.5 \ 114.1 \ 301$

$LAB_a^* = 34.5 \ 59.5 \ -97.4$

Colorimetric "Adapted data (a)": Television Luminous System TLS11a for CIE lightness $L^*=11$ of black for illuminant D65

System TLS11a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
CRT monitor	00 o00y	1.0	0.0	0.0	56.88	72.55	60.93	94.75	40	43.96	24.8	3.69	0.6068	0.3423	0.3075
	01 o13y	1.0	0.125	0.0	56.88	72.36	60.91	94.58	40	43.9	24.8	3.69	0.6064	0.3426	0.3075
	02 o25y	1.0	0.25	0.0	58.72	67.01	62.21	91.44	43	44.78	26.73	4.02	0.5929	0.3538	0.3314
D65 reflection:	03 o38y	1.0	0.375	0.0	62.85	54.95	65.14	85.22	50	46.79	31.4	4.83	0.5636	0.3783	0.3894
	04 o50y	1.0	0.5	0.0	68.22	40.02	69.09	79.84	60	49.79	38.28	6.01	0.5293	0.4069	0.4746
	05 o63y	1.0	0.625	0.0	74.13	24.54	73.38	77.38	72	53.57	46.9	7.51	0.4961	0.4344	0.5815
$Y_N = 1.26$ $L^*_N = 11.0$	06 o75y	1.0	0.75	0.0	80.2	9.47	77.9	78.48	83	58.01	57.04	9.26	0.4666	0.4588	0.7072
	07 o88y	1.0	0.875	0.0	86.15	-4.16	82.67	82.77	93	63.07	68.29	11.11	0.4427	0.4793	0.8467
	08 y00l	1.0	1.0	0.0	91.98	-17.49	86.65	88.4	101	68.33	80.65	13.41	0.4208	0.4967	1.0
	09 y13l	0.875	1.0	0.0	89.72	-28.18	84.01	88.62	109	59.4	75.7	12.91	0.4013	0.5114	0.9386
	10 y25l	0.75	1.0	0.0	87.59	-39.74	81.47	90.65	116	51.17	71.21	12.47	0.3794	0.5281	0.8829
	11 y38l	0.625	1.0	0.0	85.58	-51.66	79.1	94.48	123	43.79	67.16	12.06	0.356	0.546	0.8327
	12 y50l	0.5	1.0	0.0	83.74	-63.63	76.92	99.83	130	37.35	63.56	11.68	0.3317	0.5645	0.7881
	13 y63l	0.375	1.0	0.0	82.22	-74.83	75.07	106.01	135	32.19	60.71	11.41	0.3086	0.582	0.7528
	14 y75l	0.25	1.0	0.0	81.1	-84.13	73.71	111.86	139	28.43	58.65	11.2	0.2893	0.5968	0.7272
	15 y88l	0.125	1.0	0.0	80.48	-89.59	72.95	115.55	141	26.41	57.54	11.09	0.2779	0.6055	0.7134
	16 l00c	0.0	1.0	0.0	80.41	-90.32	72.85	116.05	141	26.15	57.41	11.08	0.2763	0.6066	0.7118
	17 l13c	0.0	1.0	0.125	80.4	-90.27	72.5	115.79	141	26.16	57.39	11.2	0.2761	0.6057	0.7116
	18 l25c	0.0	1.0	0.25	80.52	-88.76	65.83	110.52	143	26.64	57.6	13.85	0.2716	0.5872	0.7141
	19 l38c	0.0	1.0	0.375	80.83	-85.25	52.43	100.09	148	27.85	58.16	20.44	0.2616	0.5464	0.7211
	20 l50c	0.0	1.0	0.5	81.29	-80.15	37.08	88.32	155	29.67	59.0	30.36	0.2493	0.4956	0.7315
	21 l63c	0.0	1.0	0.625	81.92	-74.23	22.08	77.45	163	32.0	60.15	43.01	0.2367	0.445	0.7458
	22 l75c	0.0	1.0	0.75	82.63	-67.48	7.67	67.92	174	34.78	61.47	58.27	0.2251	0.3978	0.7621
	23 l88c	0.0	1.0	0.875	83.45	-60.43	-5.57	60.7	185	37.95	63.01	75.52	0.2151	0.357	0.7812
	24 c00v	0.0	1.0	1.0	84.39	-53.41	-17.62	56.25	198	41.49	64.82	94.4	0.2067	0.3229	0.8036
	25 c13v	0.0	0.875	1.0	77.53	-41.23	-28.03	49.87	214	36.05	52.43	92.34	0.1994	0.2899	0.65
	26 c25v	0.0	0.75	1.0	70.26	-27.16	-39.45	47.91	235	31.13	41.12	90.7	0.191	0.2524	0.5099
	27 c38v	0.0	0.675	1.0	62.43	-10.91	-51.6	52.75	258	26.62	30.91	88.76	0.182	0.2113	0.3833
	28 c50v	0.0	0.5	1.0	54.33	7.05	-64.66	65.05	276	22.7	22.29	87.48	0.1713	0.1683	0.2763
	29 c63v	0.0	0.375	1.0	46.21	27.65	-78.15	82.9	289	19.68	15.42	86.75	0.1615	0.1266	0.1912
	30 c75v	0.0	0.25	1.0	39.13	47.37	-89.9	101.63	298	17.6	10.74	86.12	0.1538	0.0938	0.1331
	31 c88v	0.0	0.125	1.0	35.78	58.02	-95.81	112.02	301	16.91	8.89	86.31	0.1508	0.0793	0.1103
	32 v00m	0.0	0.0	1.0	35.62	57.35	-95.49	111.4	301	16.66	8.81	85.46	0.1502	0.0794	0.1092
	33 v13m	0.125	0.0	1.0	35.94	58.05	-95.44	111.72	301	17.04	8.98	86.18	0.1519	0.08	0.1113
	34 v25m	0.25	0.0	1.0	38.11	59.78	-91.62	109.4	303	19.13	10.15	86.06	0.1658	0.088	0.1258
	35 v38m	0.375	0.0	1.0	41.6	63.29	-85.71	106.55	306	22.99	12.24	86.22	0.1893	0.1008	0.1518
	36 v50m	0.5	0.0	1.0	45.87	67.82	-78.75	103.94	311	28.46	15.17	86.78	0.2182	0.1163	0.1881
	37 v63m	0.625	0.0	1.0	50.32	71.14	-70.64	100.26	315	34.6	18.69	86.17	0.2481	0.134	0.2317
	38 v75m	0.75	0.0	1.0	54.94	75.86	-63.08	98.66	320	42.26	22.87	86.73	0.2783	0.1506	0.2836
	39 v88m	0.875	0.0	1.0	59.41	79.98	-55.34	97.26	325	50.52	27.48	86.7	0.3068	0.1668	0.3407
	40 m00o	1.0	0.0	1.0	63.69	84.39	-48.33	97.25	330	59.55	32.42	87.2	0.3324	0.1809	0.4019
	41 m13o	1.0	0.0	0.875	62.2	82.16	-36.4	89.87	336	56.03	30.64	68.34	0.3614	0.1977	0.3799
	42 m25o	1.0	0.0	0.75	60.88	79.85	-22.85	83.06	344	52.88	29.11	51.09	0.3973	0.2188	0.3609
	43 m38o	1.0	0.0	0.675	59.66	77.71	-7.56	78.08	354	50.07	27.75	35.78	0.4408	0.2443	0.344
	44 m50o	1.0	0.0	0.5	58.61	80.82	6.25	81.06	4	49.55	26.61	24.95	0.4901	0.2632	0.3299
	45 m63o	1.0	0.0	0.375	57.75	74.14	28.4	79.39	21	45.8	25.7	13.11	0.5414	0.3037	0.3186
	46 m75o	1.0	0.0	0.25	57.18	73.09	48.09	87.49	33	44.59	25.11	6.48	0.5853	0.3296	0.3113
	47 m88o	1.0	0.0	0.125	56.95	72.7	60.33	94.47	40	44.12	24.87	3.82	0.606	0.3416	0.3084
	48 o00y	1.0	0.0	0.0	56.88	72.55	60.93	94.75	40	43.96	24.8	3.69	0.6068	0.3423	0.3075
	49 n00w	0.0	0.0	0.0	10.87	0.0	0.0	0.01	341	1.18	1.24	1.35	0.3127	0.329	0.0154
	50 n13w	0.125	0.125	0.125	12.3	3.04	1.02	3.21	18	1.49	1.45	1.48	0.336	0.3284	0.018
	51 n25w	0.25	0.25	0.25	25.96	5.76	2.6	6.32	24	4.94	4.73	4.62	0.3457	0.3311	0.0587
	52 n38w	0.375	0.375	0.375	41.6	3.91	2.54	4.66	33	12.19	12.24	12.33	0.3316	0.3329	0.1518
	53 n50w	0.5	0.5	0.5	55.05	2.59	1.93	3.23	37	22.39	22.97	23.85	0.3235	0.3319	0.2849
	54 n63w	0.625	0.625	0.625	66.83	1.64	1.57	2.27	44	35.08	36.41	38.35	0.3194	0.3315	0.4514
	55 n75w	0.75	0.75	0.75	77.35	0.98	0.92	1.34	43	49.9	52.12	55.79	0.3162	0.3303	0.6463
	56 n88w	0.875	0.875	0.875	86.79	0.64	0.32	0.72	27	66.42	69.59	75.35	0.3143	0.3292	0.8628
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	85	84.2	88.59	96.46	0.3127	0.329	1.0984

IE370-7N, Colorimetric data of Television Luminous System TLS11a for CIE standard illuminant D65; CRT monitor; Page: 33/66

$n = 88.59 / (88.59 + 1.26) = 0.986$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 33/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

See original or copy: <http://web.me.com/klaus.richter/IE37/IE37L0NA.PS/.TXT>
Technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmeterik>

TUB registration: 20090901-IE37/IE37L0NA.PS/.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

<http://130.149.60.45/~farbmeterik/IE37/IE37L0NA.PS/.TXT>; start output
N: No Output Linearization (OL) data in File (F), Startup (S) or Device (D)

Colorimetric "Adapted data (a)": Television Luminous System TLS11a for CIE lightness $L^*=11$ of black for illuminant D65
System TLS11a

CRT monitor

D65 reflection:

$Y_N = 1.26$

$L_N^* = 11.0$

Y Yellow

$LCH_a^* = 92.0 \ 88.4 \ 101$

$LAB_a^* = 92.0 \ -17.5 \ 86.7$

L Leaf green

$LCH_a^* = 80.4 \ 116.0 \ 141$

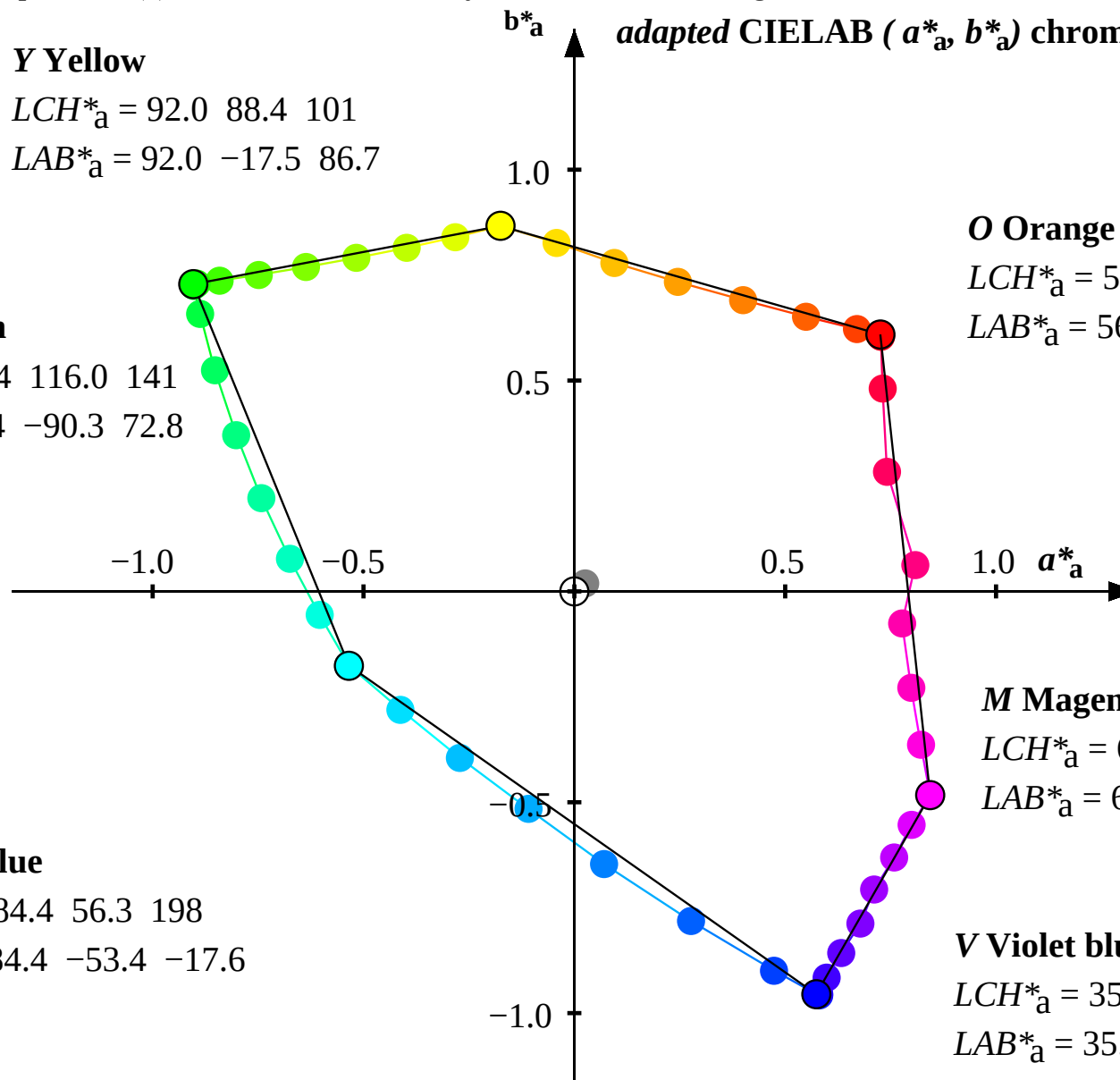
$LAB_a^* = 80.4 \ -90.3 \ 72.8$

C Cyan blue

$LCH_a^* = 84.4 \ 56.3 \ 198$

$LAB_a^* = 84.4 \ -53.4 \ -17.6$

adapted CIELAB (a^ , b^*) chroma diagram*



O Orange red

$LCH_a^* = 56.9 \ 94.7 \ 40$

$LAB_a^* = 56.9 \ 72.6 \ 60.9$

M Magenta red

$LCH_a^* = 63.7 \ 97.3 \ 330$

$LAB_a^* = 63.7 \ 84.4 \ -48.3$

V Violet blue

$LCH_a^* = 35.6 \ 111.4 \ 301$

$LAB_a^* = 35.6 \ 57.4 \ -95.5$

IE370-7N, Colorimetric data of Television Luminous System TLS11a for CIE standard illuminant D65; CRT monitor; Page: 34/66

TUB-test chart IE37; Hue circle and colorimetric data

input: `olv* setrgbcolor`

Display measurement: LCD, CRT and LCD projector, page 34/66output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS18a for CIE lightness $L^*=18$ of black for illuminant D65

System TLS18a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
CRT monitor	00 o00y	1.0	0.0	0.0	57.73	70.5	55.64	89.81	38	44.52	25.68	4.97	0.5922	0.3416	0.318
	01 o13y	1.0	0.125	0.0	57.73	70.31	55.62	89.65	38	44.45	25.68	4.98	0.5918	0.3419	0.318
	02 o25y	1.0	0.25	0.0	59.51	65.19	57.15	86.69	41	45.33	27.58	5.3	0.5796	0.3526	0.3415
	03 o38y	1.0	0.375	0.0	63.5	53.57	60.56	80.85	49	47.31	32.2	6.1	0.5526	0.3761	0.3986
	04 o50y	1.0	0.5	0.0	68.73	39.12	65.0	75.87	59	50.26	38.97	7.26	0.5209	0.4039	0.4826
D65 reflection:	05 o63y	1.0	0.625	0.0	74.49	24.04	69.76	73.79	71	53.99	47.48	8.74	0.4899	0.4308	0.5878
	06 o75y	1.0	0.75	0.0	80.45	9.3	74.66	75.24	83	58.37	57.47	10.47	0.4621	0.455	0.7116
	07 o88y	1.0	0.875	0.0	86.29	-4.09	79.71	79.82	93	63.37	68.57	12.29	0.4394	0.4754	0.849
	08 y00l	1.0	1.0	0.0	92.03	-17.22	83.97	85.72	102	68.55	80.76	14.56	0.4183	0.4928	1.0
	09 y13l	0.875	1.0	0.0	89.8	-27.72	81.31	85.91	109	59.74	75.88	14.07	0.3991	0.5069	0.9395
	10 y25l	0.75	1.0	0.0	87.7	-39.03	78.75	87.89	116	51.62	71.45	13.63	0.3776	0.5227	0.8847
	11 y38l	0.625	1.0	0.0	85.73	-50.67	76.35	91.64	124	44.35	67.46	13.23	0.3547	0.5395	0.8352
	12 y50l	0.5	1.0	0.0	83.92	-62.31	74.15	96.86	130	38.0	63.91	12.86	0.3311	0.5568	0.7913
	13 y63l	0.375	1.0	0.0	82.43	-73.15	72.29	102.85	135	32.91	61.1	12.58	0.3088	0.5732	0.7565
	14 y75l	0.25	1.0	0.0	81.33	-82.12	70.92	108.51	139	29.2	59.07	12.38	0.2901	0.5869	0.7314
	15 y88l	0.125	1.0	0.0	80.72	-87.37	70.16	112.06	141	27.21	57.97	12.27	0.2792	0.5949	0.7178
	16 l00c	0.0	1.0	0.0	80.65	-88.07	70.06	112.54	142	26.96	57.84	12.26	0.2777	0.5959	0.7161
	17 l13c	0.0	1.0	0.125	80.64	-88.02	69.73	112.3	142	26.96	57.82	12.38	0.2775	0.5951	0.7159
	18 l25c	0.0	1.0	0.25	80.75	-86.57	63.55	107.4	144	27.44	58.03	14.99	0.2732	0.5776	0.7185
	19 l38c	0.0	1.0	0.375	81.06	-83.19	50.9	97.53	149	28.63	58.58	21.49	0.2634	0.5389	0.7253
	20 l50c	0.0	1.0	0.5	81.51	-78.26	36.17	86.23	155	30.43	59.41	31.28	0.2512	0.4905	0.7356
	21 l63c	0.0	1.0	0.625	82.13	-72.55	21.61	75.71	163	32.72	60.55	43.75	0.2388	0.4419	0.7497
	22 l75c	0.0	1.0	0.75	82.83	-66.01	7.53	66.45	173	35.46	61.84	58.79	0.2272	0.3962	0.7657
	23 l88c	0.0	1.0	0.875	83.63	-59.18	-5.48	59.44	185	38.59	63.36	75.81	0.2171	0.3564	0.7845
	24 c00v	0.0	1.0	1.0	84.56	-52.35	-17.34	55.16	198	42.08	65.14	94.43	0.2087	0.3231	0.8066
	25 c13v	0.0	0.875	1.0	77.83	-40.29	-27.56	48.83	214	36.71	52.93	92.4	0.2017	0.2907	0.6553
	26 c25v	0.0	0.75	1.0	70.72	-26.44	-38.72	46.9	236	31.86	41.78	90.78	0.1938	0.2541	0.5173
	27 c38v	0.0	0.675	1.0	63.1	-10.56	-50.52	51.62	258	27.42	31.71	88.87	0.1853	0.2142	0.3926
	28 c50v	0.0	0.5	1.0	55.28	6.78	-63.11	63.48	276	23.55	23.21	87.6	0.1753	0.1727	0.2873
	29 c63v	0.0	0.375	1.0	47.54	26.31	-75.94	80.38	289	20.57	16.44	86.88	0.166	0.1327	0.2035
	30 c75v	0.0	0.25	1.0	40.92	44.57	-86.93	97.69	297	18.52	11.81	86.27	0.1589	0.1013	0.1463
	31 c88v	0.0	0.125	1.0	37.84	54.23	-92.37	107.12	300	17.84	10.0	86.45	0.1561	0.0875	0.1238
	32 v00m	0.0	0.0	1.0	37.69	53.56	-92.03	106.49	300	17.6	9.91	85.62	0.1555	0.0876	0.1227
	33 v13m	0.125	0.0	1.0	37.98	54.28	-92.02	106.85	301	17.97	10.08	86.32	0.1571	0.0881	0.1248
	34 v25m	0.25	0.0	1.0	39.97	56.27	-88.51	104.89	302	20.03	11.23	86.21	0.1705	0.0956	0.1391
	35 v38m	0.375	0.0	1.0	43.21	60.12	-83.04	102.53	306	23.84	13.3	86.36	0.193	0.1077	0.1647
	36 v50m	0.5	0.0	1.0	47.22	64.99	-76.52	100.4	310	29.23	16.19	86.92	0.2209	0.1223	0.2004
	37 v63m	0.625	0.0	1.0	51.45	68.64	-68.8	97.19	315	35.28	19.66	86.31	0.2498	0.1392	0.2434
	38 v75m	0.75	0.0	1.0	55.87	73.6	-61.57	95.96	320	42.84	23.78	86.87	0.2791	0.1549	0.2945
	39 v88m	0.875	0.0	1.0	60.18	77.92	-54.12	94.87	325	50.99	28.32	86.83	0.3069	0.1705	0.3507
	40 m00o	1.0	0.0	1.0	64.32	82.48	-47.33	95.1	330	59.89	33.19	87.33	0.332	0.184	0.411
	41 m13o	1.0	0.0	0.875	62.88	80.22	-35.55	87.75	336	56.42	31.44	68.73	0.3603	0.2008	0.3893
	42 m25o	1.0	0.0	0.75	61.6	77.88	-22.25	81.0	344	53.31	29.93	51.72	0.395	0.2218	0.3706
	43 m38o	1.0	0.0	0.675	60.42	75.71	-7.32	76.07	354	50.54	28.59	36.62	0.4367	0.247	0.354
	44 m50o	1.0	0.0	0.5	59.4	78.7	6.02	78.93	4	50.03	27.46	25.94	0.4837	0.2655	0.3401
	45 m63o	1.0	0.0	0.375	58.57	72.1	27.0	76.99	21	46.33	26.57	14.26	0.5316	0.3048	0.3289
	46 m75o	1.0	0.0	0.25	58.02	71.04	44.83	84.0	32	45.14	25.99	7.73	0.5725	0.3296	0.3218
	47 m88o	1.0	0.0	0.125	57.8	70.64	55.17	89.63	38	44.67	25.76	5.1	0.5915	0.341	0.3189
	48 o00y	1.0	0.0	0.0	57.73	70.5	55.64	89.81	38	44.52	25.68	4.97	0.5922	0.3416	0.318
	49 n00w	0.0	0.0	0.0	17.69	0.0	0.0	0.01	0	2.33	2.45	2.67	0.3127	0.329	0.0303
	50 n13w	0.125	0.125	0.125	18.61	2.03	0.66	2.13	18	2.63	2.66	2.8	0.3253	0.3287	0.0329
	51 n25w	0.25	0.25	0.25	29.14	4.94	2.19	5.4	24	6.04	5.89	5.89	0.3388	0.3307	0.073
	52 n38w	0.375	0.375	0.375	43.21	3.65	2.36	4.35	33	13.19	13.3	13.5	0.3299	0.3326	0.1647
	53 n50w	0.5	0.5	0.5	55.97	2.49	1.85	3.11	37	23.25	23.88	24.86	0.323	0.3318	0.2957
	54 n63w	0.625	0.625	0.625	67.38	1.6	1.53	2.21	44	35.76	37.13	39.16	0.3192	0.3314	0.4598
	55 n75w	0.75	0.75	0.75	77.66	0.96	0.9	1.31	43	50.37	52.63	56.35	0.3161	0.3303	0.6516
	56 n88w	0.875	0.875	0.875	86.92	0.63	0.32	0.71	27	66.67	69.85	75.64	0.3142	0.3292	0.8649
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	158	84.2	88.59	96.46	0.3127	0.329	1.0969

IE370-7N, Colorimetric data of Television Luminous System TLS18a for CIE standard illuminant D65; CRT monitor; Page: 35/66

$n = 88.59 / (88.59 + 2.52) = 0.972$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 35/66output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS18a for CIE lightness $L^*=18$ of black for illuminant D65
System TLS18a

CRT monitor

D65 reflection:

$Y_N = 2.52$

$L_N^* = 18.01$

Y Yellow

$LCH_a^* = 92.0 \ 85.7 \ 102$

$LAB_a^* = 92.0 \ -17.2 \ 84.0$

L Leaf green

$LCH_a^* = 80.6 \ 112.5 \ 142$

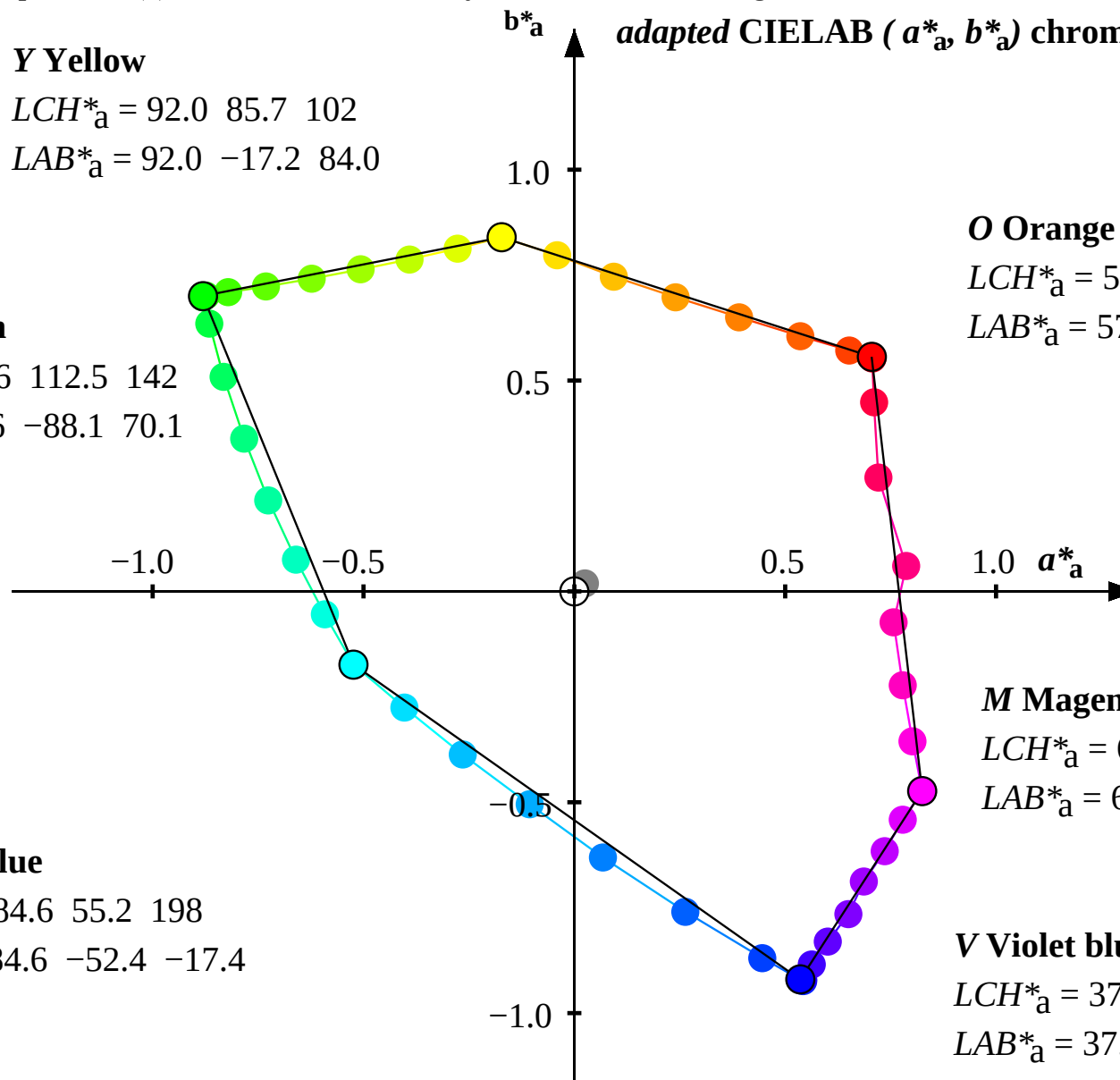
$LAB_a^* = 80.6 \ -88.1 \ 70.1$

C Cyan blue

$LCH_a^* = 84.6 \ 55.2 \ 198$

$LAB_a^* = 84.6 \ -52.4 \ -17.4$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH_a^* = 57.7 \ 89.8 \ 38$

$LAB_a^* = 57.7 \ 70.5 \ 55.6$

M Magenta red

$LCH_a^* = 64.3 \ 95.1 \ 330$

$LAB_a^* = 64.3 \ 82.5 \ -47.3$

V Violet blue

$LCH_a^* = 37.7 \ 106.5 \ 300$

$LAB_a^* = 37.7 \ 53.6 \ -92.0$

Colorimetric "Adapted data (a)": Television Luminous System TLS27a for CIE lightness $L^*=27$ of black for illuminant D65

System TLS27a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*_{1a}$	$a^*_a=LAB^*_{2a}$	$b^*_a=LAB^*_{3a}$	$C^*_{ab,a}=LAB^*_{ab,a}$	$h_{ab,a}$	$X_a=XYZ_{1a}$	$Y_a=XYZ_{2a}$	$Z_a=XYZ_{3a}$	x_a	y_a	$Y_a/88.59$
CRT monitor	00 o00y	1.0	0.0	0.0	59.32	66.74	48.11	82.28	36	45.59	27.37	7.43	0.567	0.3405	0.3381
	01 o13y	1.0	0.125	0.0	59.32	66.56	48.1	82.12	36	45.52	27.37	7.44	0.5667	0.3407	0.3381
	02 o25y	1.0	0.25	0.0	60.98	61.83	49.82	79.4	39	46.37	29.22	7.76	0.5564	0.3506	0.3609
	03 o38y	1.0	0.375	0.0	64.73	51.02	53.62	74.01	46	48.3	33.71	8.53	0.5334	0.3723	0.4163
	04 o50y	1.0	0.5	0.0	69.69	37.43	58.55	69.49	57	51.18	40.31	9.66	0.506	0.3985	0.4978
D65 reflection:	05 o63y	1.0	0.625	0.0	75.19	23.1	63.8	67.86	70	54.8	48.58	11.1	0.4787	0.4244	0.6
	06 o75y	1.0	0.75	0.0	80.91	8.97	69.16	69.74	83	59.07	58.31	12.78	0.4538	0.448	0.7201
	07 o88y	1.0	0.875	0.0	86.56	-3.96	74.56	74.67	93	63.93	69.11	14.55	0.4331	0.4682	0.8535
	08 y00l	1.0	1.0	0.0	92.12	-16.71	79.22	80.96	102	68.97	80.97	16.77	0.4137	0.4857	1.0
	09 y13l	0.875	1.0	0.0	89.96	-26.84	76.53	81.1	109	60.4	76.22	16.28	0.395	0.4985	0.9413
	10 y25l	0.75	1.0	0.0	87.93	-37.7	73.95	83.01	117	52.5	71.91	15.86	0.3743	0.5127	0.8881
	11 y38l	0.625	1.0	0.0	86.02	-48.8	71.54	86.61	124	45.42	68.02	15.47	0.3524	0.5277	0.8401
	12 y50l	0.5	1.0	0.0	84.26	-59.82	69.33	91.57	131	39.25	64.57	15.11	0.33	0.543	0.7974
	13 y63l	0.375	1.0	0.0	82.83	-70.01	67.47	97.24	136	34.29	61.84	14.84	0.309	0.5573	0.7637
	14 y75l	0.25	1.0	0.0	81.76	-78.38	66.09	102.53	140	30.68	59.86	14.64	0.2917	0.5691	0.7393
	15 y88l	0.125	1.0	0.0	81.18	-83.25	65.34	105.84	142	28.74	58.79	14.53	0.2816	0.576	0.7261
	16 l00c	0.0	1.0	0.0	81.11	-83.9	65.23	106.28	142	28.5	58.67	14.53	0.2802	0.5769	0.7245
	17 l13c	0.0	1.0	0.125	81.1	-83.85	64.95	106.07	142	28.5	58.65	14.64	0.28	0.5762	0.7243
	18 l25c	0.0	1.0	0.25	81.21	-82.51	59.53	101.75	144	28.97	58.85	17.18	0.2759	0.5605	0.7268
	19 l38c	0.0	1.0	0.375	81.5	-79.36	48.13	92.83	149	30.12	59.39	23.51	0.2665	0.5255	0.7334
	20 l50c	0.0	1.0	0.5	81.94	-74.77	34.48	82.35	155	31.87	60.19	33.03	0.2548	0.4812	0.7433
	21 l63c	0.0	1.0	0.625	82.54	-69.42	20.73	72.46	163	34.11	61.3	45.17	0.2426	0.4361	0.757
	22 l75c	0.0	1.0	0.75	83.21	-63.28	7.26	63.7	173	36.77	62.56	59.81	0.2311	0.3931	0.7726
	23 l88c	0.0	1.0	0.875	83.99	-56.82	-5.3	57.08	185	39.82	64.04	76.37	0.221	0.3553	0.7909
	24 c00v	0.0	1.0	1.0	84.88	-16.82	-16.82	53.1	198	43.21	65.77	94.48	0.2124	0.3233	0.8123
	25 c13v	0.0	0.875	1.0	78.39	-38.54	-26.66	46.88	215	37.99	53.89	92.5	0.206	0.2923	0.6655
	26 c25v	0.0	0.75	1.0	71.58	-25.12	-37.33	45.01	236	33.27	43.04	90.94	0.1989	0.2573	0.5315
	27 c38v	0.0	0.675	1.0	64.35	-9.93	-48.5	49.52	258	28.95	33.24	89.08	0.1914	0.2197	0.4105
	28 c50v	0.0	0.5	1.0	57.04	6.29	-60.24	60.58	276	25.18	24.96	87.84	0.1825	0.1809	0.3083
	29 c63v	0.0	0.375	1.0	49.95	24.04	-71.97	75.89	288	22.28	18.38	87.14	0.1743	0.1438	0.227
	30 c75v	0.0	0.25	1.0	44.06	39.96	-81.7	90.96	296	20.29	13.88	86.54	0.1681	0.115	0.1714
	31 c88v	0.0	0.125	1.0	41.39	48.14	-86.43	98.94	299	19.62	12.11	86.72	0.1657	0.1022	0.1496
	32 v00m	0.0	0.0	1.0	41.27	47.5	-86.07	98.31	299	19.39	12.03	85.91	0.1652	0.1025	0.1486
	33 v13m	0.125	0.0	1.0	41.52	48.23	-86.12	98.72	299	19.75	12.19	86.6	0.1666	0.1028	0.1506
	34 v25m	0.25	0.0	1.0	43.24	50.52	-83.08	97.24	301	21.75	13.32	86.48	0.179	0.1096	0.1645
	35 v38m	0.375	0.0	1.0	46.08	54.77	-78.29	95.56	305	25.46	15.32	86.63	0.1998	0.1203	0.1893
	36 v50m	0.5	0.0	1.0	49.66	60.07	-72.49	94.15	310	30.71	18.14	87.17	0.2257	0.1333	0.224
	37 v63m	0.625	0.0	1.0	53.5	64.18	-65.45	91.67	314	36.6	21.51	86.58	0.2529	0.1487	0.2656
	38 v75m	0.75	0.0	1.0	57.59	69.49	-58.8	91.04	320	43.96	25.53	87.13	0.2807	0.163	0.3153
	39 v88m	0.875	0.0	1.0	61.61	74.13	-51.84	90.46	325	51.88	29.95	87.09	0.3071	0.1773	0.3698
	40 m00o	1.0	0.0	1.0	65.5	78.93	-45.46	91.09	330	60.55	34.69	87.57	0.3312	0.1897	0.4284
	41 m13o	1.0	0.0	0.875	64.15	76.61	-33.99	83.82	336	57.17	32.98	69.48	0.3581	0.2066	0.4073
	42 m25o	1.0	0.0	0.75	62.94	74.23	-21.14	77.19	344	54.14	31.51	52.92	0.3907	0.2274	0.3892
	43 m38o	1.0	0.0	0.675	61.83	72.03	-6.9	72.36	355	51.45	30.2	38.23	0.4292	0.2519	0.373
	44 m50o	1.0	0.0	0.5	60.88	74.79	5.62	75.0	4	50.95	29.11	27.84	0.4722	0.2698	0.3595
	45 m63o	1.0	0.0	0.375	60.1	68.37	24.64	72.67	20	47.35	28.23	16.47	0.5144	0.3067	0.3487
	46 m75o	1.0	0.0	0.25	59.59	67.29	39.75	78.16	31	46.19	27.67	10.11	0.55	0.3295	0.3417
	47 m88o	1.0	0.0	0.125	59.39	66.89	47.79	82.2	36	45.74	27.45	7.56	0.5665	0.3399	0.339
	48 o00y	1.0	0.0	0.0	59.32	66.74	48.11	82.28	36	45.59	27.37	7.43	0.567	0.3405	0.3381
	49 n00w	0.0	0.0	0.0	26.07	0.0	0.0	0.01	0	4.53	4.77	5.19	0.3127	0.329	0.0589
	50 n13w	0.125	0.125	0.125	26.65	1.31	0.42	1.37	18	4.82	4.97	5.32	0.3193	0.3288	0.0614
	51 n25w	0.25	0.25	0.25	34.23	3.91	1.71	4.27	24	8.14	8.12	8.33	0.3311	0.3302	0.1003
	52 n38w	0.375	0.375	0.375	46.08	3.24	2.08	3.85	33	15.1	15.32	15.73	0.3272	0.332	0.1893
	53 n50w	0.5	0.5	0.5	57.68	2.32	1.72	2.88	37	24.89	25.62	26.78	0.322	0.3315	0.3164
	54 n63w	0.625	0.625	0.625	68.4	1.52	1.45	2.1	44	37.07	38.52	40.7	0.3188	0.3312	0.4757
	55 n75w	0.75	0.75	0.75	78.23	0.92	0.86	1.26	43	51.28	53.6	57.43	0.316	0.3302	0.6619
	56 n88w	0.875	0.875	0.875	87.17	0.61	0.31	0.68	27	67.14	70.35	76.2	0.3142	0.3292	0.8688
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	85	84.2	88.59	96.46	0.3127	0.329	1.0941

IE370-7N, Colorimetric data of Television Luminous System TLS27a for CIE standard illuminant D65; CRT monitor; Page: 37/66

$n = 88.59 / (88.59 + 5.04) = 0.946$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 37/66output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS27a for CIE lightness $L^*=27$ of black for illuminant D65
System TLS27a

CRT monitor

D65 reflection:

$Y_N = 5.04$

$L_N^* = 26.85$

Y Yellow

$LCH_a^* = 92.1 \ 81.0 \ 102$

$LAB_a^* = 92.1 \ -16.7 \ 79.2$

L Leaf green

$LCH_a^* = 81.1 \ 106.3 \ 142$

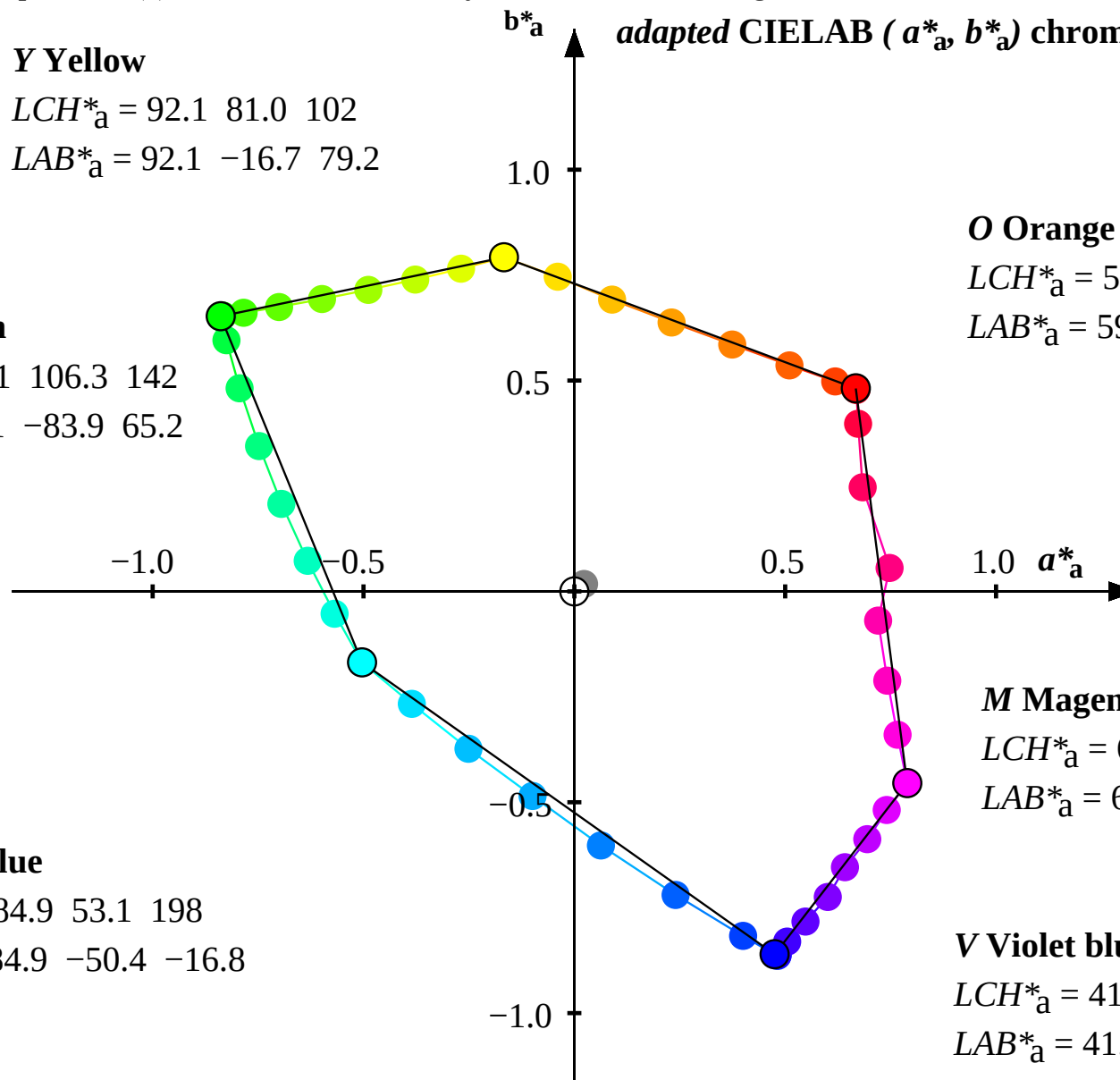
$LAB_a^* = 81.1 \ -83.9 \ 65.2$

C Cyan blue

$LCH_a^* = 84.9 \ 53.1 \ 198$

$LAB_a^* = 84.9 \ -50.4 \ -16.8$

adapted CIELAB (a_a^ , b_a^*) chroma diagram*



O Orange red

$LCH_a^* = 59.3 \ 82.3 \ 36$

$LAB_a^* = 59.3 \ 66.7 \ 48.1$

M Magenta red

$LCH_a^* = 65.5 \ 91.1 \ 330$

$LAB_a^* = 65.5 \ 78.9 \ -45.5$

V Violet blue

$LCH_a^* = 41.3 \ 98.3 \ 299$

$LAB_a^* = 41.3 \ 47.5 \ -86.1$

Colorimetric "Adapted data (a)": Television Luminous System TLS38a for CIE lightness $L^*=38$ of black for illuminant D65

System TLS38a	Color	$r=olv^*_1$	$g=olv^*_2$	$b=olv^*_3$	$L^*_a=LAB^*_{1a}$	$a^*_a=LAB^*_{2a}$	$b^*_a=LAB^*_{3a}$	$C^*_{ab,a}=LAB^*_{ab,a}$	$h_{ab,a}$	$X_a=XYZ_{1a}$	$Y_a=XYZ_{2a}$	$Z_a=XYZ_{3a}$	x_a	y_a	$Y_a/88.59$
CRT monitor	00 o00y	1.0	0.0	0.0	62.08	60.39	38.79	71.77	33	47.56	30.5	11.98	0.5282	0.3387	0.3749
	01 o13y	1.0	0.125	0.0	62.08	60.22	38.78	71.62	33	47.5	30.5	11.99	0.5278	0.339	0.3749
	02 o25y	1.0	0.25	0.0	63.55	56.12	40.51	69.22	36	48.31	32.26	12.29	0.5203	0.3474	0.3964
D65 reflection:	03 o38y	1.0	0.375	0.0	66.91	46.61	44.42	64.39	44	50.13	36.52	13.02	0.503	0.3664	0.4488
	04 o50y	1.0	0.5	0.0	71.4	34.46	49.53	60.34	55	52.86	42.77	14.09	0.4818	0.3898	0.5257
	05 o63y	1.0	0.625	0.0	76.45	21.43	55.07	59.09	69	56.3	50.63	15.46	0.46	0.4137	0.6222
$Y_N = 10.08$ $L^*_N = 37.99$	06 o75y	1.0	0.75	0.0	81.76	8.37	60.74	61.31	82	60.35	59.86	17.06	0.4397	0.4361	0.7357
	07 o88y	1.0	0.875	0.0	87.05	-3.72	66.42	66.53	93	64.96	70.1	18.74	0.4224	0.4558	0.8616
	08 y00l	1.0	1.0	0.0	92.29	-15.77	71.46	73.18	102	69.75	81.36	20.84	0.4056	0.4732	1.0
	09 y13l	0.875	1.0	0.0	90.25	-25.23	68.79	73.27	110	61.62	76.85	20.38	0.3879	0.4838	0.9445
	10 y25l	0.75	1.0	0.0	88.34	-35.28	66.24	75.06	118	54.12	72.76	19.98	0.3685	0.4955	0.8943
	11 y38l	0.625	1.0	0.0	86.54	-45.45	63.86	78.39	125	47.4	69.07	19.6	0.3483	0.5076	0.849
	12 y50l	0.5	1.0	0.0	84.89	-55.42	61.68	82.92	132	41.54	65.8	19.26	0.3281	0.5197	0.8087
	13 y63l	0.375	1.0	0.0	83.55	-64.52	59.86	88.02	137	36.84	63.2	19.01	0.3094	0.5309	0.7768
	14 y75l	0.25	1.0	0.0	82.56	-71.9	58.51	92.71	141	33.42	61.33	18.82	0.2942	0.54	0.7538
	15 y88l	0.125	1.0	0.0	82.01	-76.16	57.77	95.6	143	31.57	60.32	18.72	0.2855	0.5453	0.7413
	16 l00c	0.0	1.0	0.0	81.94	-76.72	57.67	95.99	143	31.34	60.19	18.71	0.2843	0.546	0.7398
	17 l13c	0.0	1.0	0.125	81.94	-76.68	57.45	95.82	143	31.34	60.18	18.82	0.2841	0.5454	0.7396
	18 l25c	0.0	1.0	0.25	82.04	-75.49	53.06	92.28	145	31.79	60.37	21.23	0.2804	0.5324	0.742
	19 l38c	0.0	1.0	0.375	82.31	-72.74	43.49	84.76	149	32.88	60.88	27.23	0.2718	0.5031	0.7482
	20 l50c	0.0	1.0	0.5	82.72	-68.68	31.57	75.6	155	34.55	61.64	36.27	0.2608	0.4654	0.7576
	21 l63c	0.0	1.0	0.625	83.28	-63.94	19.18	66.77	163	36.66	62.69	47.79	0.2492	0.4261	0.7705
	22 l75c	0.0	1.0	0.75	83.91	-58.45	6.77	58.86	173	39.2	63.89	61.68	0.2379	0.3878	0.7853
	23 l88c	0.0	1.0	0.875	84.63	-52.65	-4.97	52.89	185	42.09	65.29	77.39	0.2278	0.3534	0.8025
	24 c00v	0.0	1.0	1.0	85.47	-46.79	-15.87	49.42	199	45.3	66.94	94.58	0.219	0.3237	0.8227
	25 c13v	0.0	0.875	1.0	79.42	-35.48	-25.04	43.44	215	40.35	55.66	92.71	0.2138	0.2949	0.6841
	26 c25v	0.0	0.75	1.0	73.13	-22.85	-34.85	41.69	237	35.87	45.37	91.22	0.208	0.2631	0.5576
	27 c38v	0.0	0.675	1.0	66.57	-8.89	-44.94	45.83	259	31.77	36.07	89.45	0.202	0.2293	0.4433
	28 c50v	0.0	0.5	1.0	60.08	5.52	-55.31	55.6	276	28.19	28.21	88.28	0.1949	0.195	0.3468
	29 c63v	0.0	0.375	1.0	53.99	20.58	-65.35	68.52	287	25.44	21.96	87.62	0.1884	0.1627	0.2699
	30 c75v	0.0	0.25	1.0	49.12	33.37	-73.33	80.57	294	23.55	17.69	87.05	0.1836	0.1379	0.2175
	31 c88v	0.0	0.125	1.0	47.0	39.69	-77.12	86.74	297	22.92	16.02	87.22	0.1817	0.127	0.1969
	32 v00m	0.0	0.0	1.0	46.9	39.1	-76.74	86.14	297	22.7	15.94	86.45	0.1815	0.1274	0.1959
	33 v13m	0.125	0.0	1.0	47.1	39.8	-76.86	86.57	297	23.04	16.09	87.1	0.1825	0.1275	0.1978
	34 v25m	0.25	0.0	1.0	48.46	42.27	-74.43	85.6	300	24.94	17.16	86.99	0.1932	0.1329	0.2109
	35 v38m	0.375	0.0	1.0	50.77	46.75	-70.56	84.65	304	28.46	19.07	87.13	0.2114	0.1416	0.2343
	36 v50m	0.5	0.0	1.0	53.74	52.35	-65.79	84.09	309	33.44	21.74	87.65	0.2341	0.1522	0.2671
	37 v63m	0.625	0.0	1.0	57.01	56.93	-59.75	82.54	314	39.03	24.94	87.09	0.2584	0.1651	0.3065
	38 v75m	0.75	0.0	1.0	60.56	62.61	-54.01	82.69	319	46.01	28.75	87.6	0.2834	0.1771	0.3533
	39 v88m	0.875	0.0	1.0	64.11	67.61	-47.86	82.84	325	53.53	32.94	87.57	0.3076	0.1893	0.4049
	40 m00o	1.0	0.0	1.0	67.6	72.71	-42.16	84.05	330	61.76	37.44	88.03	0.3299	0.2	0.4601
	41 m13o	1.0	0.0	0.875	66.38	70.34	-31.26	76.98	336	58.55	35.82	70.86	0.3544	0.2168	0.4403
	42 m25o	1.0	0.0	0.75	65.3	67.93	-19.24	70.6	344	55.67	34.43	55.14	0.3833	0.237	0.4231
	43 m38o	1.0	0.0	0.675	64.31	65.7	-6.19	65.99	355	53.12	33.19	41.2	0.4166	0.2603	0.4079
	44 m50o	1.0	0.0	0.5	63.47	68.11	4.96	68.29	4	52.64	32.15	31.34	0.4533	0.2768	0.3951
	45 m63o	1.0	0.0	0.375	62.77	62.02	21.08	65.51	19	49.24	31.32	20.56	0.4869	0.3097	0.3849
	46 m75o	1.0	0.0	0.25	62.32	60.94	32.85	69.23	28	48.13	30.78	14.52	0.5151	0.3295	0.3784
	47 m88o	1.0	0.0	0.125	62.14	60.53	38.58	71.78	33	47.7	30.57	12.1	0.5279	0.3383	0.3757
	48 o00y	1.0	0.0	0.0	62.08	60.39	38.79	71.77	33	47.56	30.5	11.98	0.5282	0.3387	0.3749
	49 n00w	0.0	0.0	0.0	36.08	0.0	0.0	0.01	0	8.6	9.05	9.85	0.3127	0.329	0.1112
	50 n13w	0.125	0.125	0.125	36.44	0.82	0.26	0.87	18	8.88	9.24	9.97	0.3161	0.3289	0.1136
	51 n25w	0.25	0.25	0.25	41.58	2.84	1.23	3.09	23	12.03	12.23	12.83	0.3243	0.3298	0.1503
	52 n38w	0.375	0.375	0.375	50.77	2.67	1.7	3.16	33	18.63	19.07	19.85	0.3237	0.3313	0.2343
	53 n50w	0.5	0.5	0.5	60.64	2.03	1.5	2.53	36	27.92	28.84	30.34	0.3205	0.3311	0.3545
	54 n63w	0.625	0.625	0.625	70.23	1.38	1.31	1.9	44	39.47	41.08	43.55	0.3181	0.331	0.5048
	55 n75w	0.75	0.75	0.75	79.26	0.85	0.8	1.17	43	52.97	55.38	59.42	0.3157	0.3301	0.6807
	56 n88w	0.875	0.875	0.875	87.62	0.58	0.29	0.64	27	68.01	71.29	77.24	0.3141	0.3292	0.8761
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	85	84.2	88.59	96.46	0.3127	0.329	1.0888

IE370-7N, Colorimetric data of Television Luminous System TLS38a for CIE standard illuminant D65; CRT monitor; Page: 39/66

$$n = 88.59 / (88.59 + 10.08) = 0.898$$

TUB-test chart IE37; Hue circle and colorimetric data

input: olv^* setrgbcolor

Display measurement: LCD, CRT and LCD projector, page 39/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Adapted data (a)": Television Luminous System TLS38a for CIE lightness $L^*=38$ of black for illuminant D65
System TLS38a

CRT monitor

D65 reflection:

$Y_N = 10.08$

$L^*_N = 37.99$

Y Yellow

$LCH^*_a = 92.3 \ 73.2 \ 102$

$LAB^*_a = 92.3 \ -15.8 \ 71.5$

L Leaf green

$LCH^*_a = 81.9 \ 96.0 \ 143$

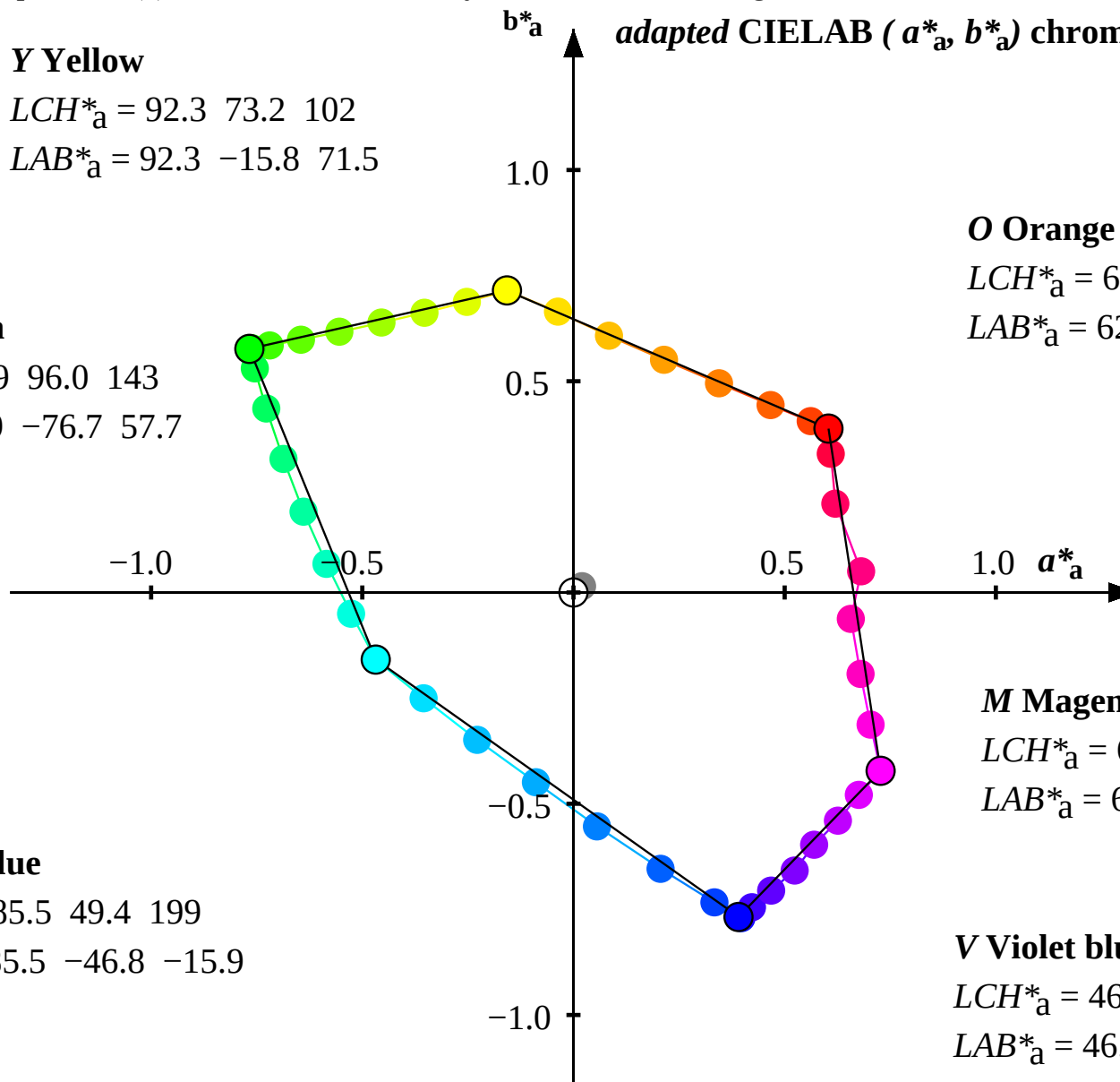
$LAB^*_a = 81.9 \ -76.7 \ 57.7$

C Cyan blue

$LCH^*_a = 85.5 \ 49.4 \ 199$

$LAB^*_a = 85.5 \ -46.8 \ -15.9$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH^*_a = 62.1 \ 71.8 \ 33$

$LAB^*_a = 62.1 \ 60.4 \ 38.8$

M Magenta red

$LCH^*_a = 67.6 \ 84.1 \ 330$

$LAB^*_a = 67.6 \ 72.7 \ -42.2$

V Violet blue

$LCH^*_a = 46.9 \ 86.1 \ 297$

$LAB^*_a = 46.9 \ 39.1 \ -76.8$

Colorimetric "Adapted data (a)": Television Luminous System TLS52a for CIE lightness $L^*=52$ of black for illuminant D65

System TLS52a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
CRT monitor	00 o00y	1.0	0.0	0.0	66.43	50.88	28.79	58.46	30	50.96	35.89	19.81	0.4778	0.3365	0.4375
	01 o13y	1.0	0.125	0.0	66.43	50.73	28.79	58.33	30	50.9	35.89	19.82	0.4775	0.3366	0.4375
	02 o25y	1.0	0.25	0.0	67.63	47.49	30.34	56.36	33	51.63	37.48	20.09	0.4728	0.3432	0.4568
D65 reflection:	03 o38y	1.0	0.375	0.0	70.42	39.82	33.89	52.29	40	53.29	41.34	20.75	0.4618	0.3583	0.504
	04 o50y	1.0	0.5	0.0	74.2	29.79	38.65	48.8	52	55.77	47.02	21.72	0.4479	0.3776	0.5732
	05 o63y	1.0	0.625	0.0	78.55	18.74	43.96	47.79	67	58.89	54.15	22.97	0.433	0.3981	0.66
$Y_N = 20.16$ $L^*_N = 52.02$	06 o75y	1.0	0.75	0.0	83.19	7.4	49.51	50.06	81	62.56	62.52	24.42	0.4185	0.4182	0.7622
	07 o88y	1.0	0.875	0.0	87.88	-3.32	55.12	55.22	93	66.75	71.82	25.94	0.4057	0.4366	0.8755
	08 y00l	1.0	1.0	0.0	92.59	-14.18	60.27	61.92	103	71.09	82.03	27.85	0.3928	0.4533	1.0
	09 y13l	0.875	1.0	0.0	90.75	-22.54	57.74	61.98	111	63.71	77.94	27.43	0.3768	0.461	0.9501
	10 y25l	0.75	1.0	0.0	89.03	-31.29	55.33	63.57	119	56.91	74.23	27.07	0.3597	0.4692	0.9049
	11 y38l	0.625	1.0	0.0	87.43	-39.99	53.1	66.48	127	50.81	70.88	26.73	0.3424	0.4776	0.8641
	12 y50l	0.5	1.0	0.0	85.96	-48.35	51.05	70.32	133	45.49	67.91	26.42	0.3254	0.4857	0.8278
	13 y63l	0.375	1.0	0.0	84.77	-55.84	49.36	74.54	139	41.23	65.56	26.19	0.3101	0.493	0.7992
	14 y75l	0.25	1.0	0.0	83.89	-61.81	48.12	78.34	142	38.12	63.86	26.02	0.2978	0.4989	0.7784
	15 y88l	0.125	1.0	0.0	83.41	-65.2	47.44	80.64	144	36.45	62.94	25.92	0.2909	0.5022	0.7672
	16 l00c	0.0	1.0	0.0	83.35	-65.65	47.34	80.95	144	36.24	62.83	25.92	0.29	0.5027	0.7659
	17 l13c	0.0	1.0	0.125	83.34	-65.61	47.18	80.82	144	36.24	62.81	26.02	0.2898	0.5022	0.7657
	18 l25c	0.0	1.0	0.25	83.43	-64.66	43.95	78.19	146	36.65	62.98	28.2	0.2867	0.4927	0.7678
	19 l38c	0.0	1.0	0.375	83.68	-62.45	36.64	72.41	150	37.64	63.45	33.65	0.2794	0.4709	0.7734
	20 l50c	0.0	1.0	0.5	84.04	-59.17	27.07	65.07	155	39.15	64.14	41.85	0.2697	0.4419	0.7819
	21 l63c	0.0	1.0	0.625	84.53	-55.3	16.7	57.78	163	41.07	65.09	52.3	0.2592	0.4108	0.7935
	22 l75c	0.0	1.0	0.75	85.09	-50.78	5.97	51.14	173	43.37	66.18	64.9	0.2486	0.3794	0.8068
	23 l88c	0.0	1.0	0.875	85.73	-45.94	-4.43	46.17	186	45.99	67.45	79.16	0.2388	0.3502	0.8223
	24 c00v	0.0	1.0	1.0	86.48	-41.02	-14.25	43.44	199	48.91	68.95	94.76	0.23	0.3243	0.8405
	25 c13v	0.0	0.875	1.0	81.13	-30.65	-22.32	37.93	216	44.41	58.71	93.05	0.2264	0.2993	0.7157
	26 c25v	0.0	0.75	1.0	75.68	-19.38	-30.79	36.4	238	40.35	49.37	91.7	0.2224	0.2721	0.6019
	27 c38v	0.0	0.675	1.0	70.13	-7.38	-39.26	39.96	259	36.63	40.93	90.1	0.2185	0.2441	0.499
	28 c50v	0.0	0.5	1.0	64.81	4.46	-47.69	47.91	275	33.38	33.81	89.04	0.2137	0.2164	0.4122
	29 c63v	0.0	0.375	1.0	60.01	16.13	-55.54	57.84	286	30.89	28.14	88.44	0.2095	0.1908	0.343
	30 c75v	0.0	0.25	1.0	56.35	25.43	-61.48	66.54	292	29.18	24.27	87.92	0.2064	0.1717	0.2958
	31 c88v	0.0	0.125	1.0	54.81	29.86	-64.26	70.87	295	28.6	22.74	88.07	0.2051	0.1631	0.2773
	32 v00m	0.0	0.0	1.0	54.74	29.37	-63.89	70.32	295	28.4	22.68	87.37	0.2051	0.1638	0.2764
	33 v13m	0.125	0.0	1.0	54.88	29.97	-64.06	70.73	295	28.71	22.81	87.97	0.2058	0.1635	0.2781
	34 v25m	0.25	0.0	1.0	55.87	32.3	-62.28	70.17	297	30.43	23.78	87.87	0.2142	0.1674	0.2899
	35 v38m	0.375	0.0	1.0	57.57	36.54	-59.44	69.78	302	33.63	25.51	88.0	0.2286	0.1734	0.311
	36 v50m	0.5	0.0	1.0	59.83	41.97	-55.88	69.89	307	38.14	27.93	88.47	0.2468	0.1807	0.3405
	37 v63m	0.625	0.0	1.0	62.37	46.69	-51.14	69.25	312	43.22	30.84	87.95	0.2668	0.1903	0.3759
	38 v75m	0.75	0.0	1.0	65.2	52.44	-46.59	70.16	318	49.55	34.3	88.42	0.2876	0.1991	0.4181
	39 v88m	0.875	0.0	1.0	68.09	57.64	-41.58	71.07	324	56.37	38.1	88.4	0.3083	0.2083	0.4644
	40 m00o	1.0	0.0	1.0	70.99	62.9	-36.87	72.92	330	63.84	42.18	88.81	0.3277	0.2165	0.5142
	41 m13o	1.0	0.0	0.875	69.97	60.54	-26.99	66.29	336	60.93	40.71	73.23	0.3484	0.2328	0.4963
	42 m25o	1.0	0.0	0.75	69.07	58.18	-16.34	60.44	344	58.32	39.45	58.97	0.3721	0.2517	0.4809
	43 m38o	1.0	0.0	0.675	68.26	56.01	-5.15	56.25	355	56.0	38.32	46.32	0.3982	0.2725	0.4671
	44 m50o	1.0	0.0	0.5	67.56	57.92	4.03	58.06	4	55.57	37.38	37.38	0.4264	0.2868	0.4557
	45 m63o	1.0	0.0	0.375	67.0	52.45	16.53	55.0	17	52.48	36.63	27.59	0.4497	0.3139	0.4465
	46 m75o	1.0	0.0	0.25	66.63	51.41	24.89	57.12	26	51.47	36.14	22.12	0.4691	0.3294	0.4406
	47 m88o	1.0	0.0	0.125	66.48	51.02	28.68	58.52	29	51.08	35.95	19.92	0.4777	0.3361	0.4382
	48 o00y	1.0	0.0	0.0	66.43	50.88	28.79	58.46	30	50.96	35.89	19.81	0.4778	0.3365	0.4375
	49 n00w	0.0	0.0	0.0	47.52	0.0	0.0	0.01	0	15.61	16.42	17.88	0.3127	0.329	0.2002
	50 n13w	0.125	0.125	0.125	47.75	0.51	0.16	0.53	18	15.86	16.6	17.99	0.3144	0.329	0.2023
	51 n25w	0.25	0.25	0.25	51.04	1.91	0.82	2.08	23	18.72	19.31	20.58	0.3194	0.3295	0.2354
	52 n38w	0.375	0.375	0.375	57.57	2.0	1.26	2.37	32	24.71	25.51	26.95	0.3202	0.3306	0.311
	53 n50w	0.5	0.5	0.5	65.26	1.64	1.21	2.04	36	33.14	34.38	36.47	0.3187	0.3306	0.4191
	54 n63w	0.625	0.625	0.625	73.21	1.17	1.11	1.61	44	43.62	45.48	48.45	0.3171	0.3306	0.5544
	55 n75w	0.75	0.75	0.75	80.99	0.75	0.7	1.02	43	55.86	58.46	62.86	0.3153	0.33	0.7127
	56 n88w	0.875	0.875	0.875	88.39	0.51	0.26	0.58	27	69.51	72.89	79.02	0.3139	0.3292	0.8885
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.0799

IE370-7N, Colorimetric data of Television Luminous System TLS52a for CIE standard illuminant D65; CRT monitor; Page: 41/66

$n = 88.59 / (88.59 + 20.16) = 0.815$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 41/66output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS52a for CIE lightness $L^*=52$ of black for illuminant D65
System TLS52a

CRT monitor

D65 reflection:

$Y_N = 20.16$

$L_N^* = 52.02$

Y Yellow

$LCH_a^* = 92.6 \ 61.9 \ 103$

$LAB_a^* = 92.6 \ -14.2 \ 60.3$

L Leaf green

$LCH_a^* = 83.4 \ 80.9 \ 144$

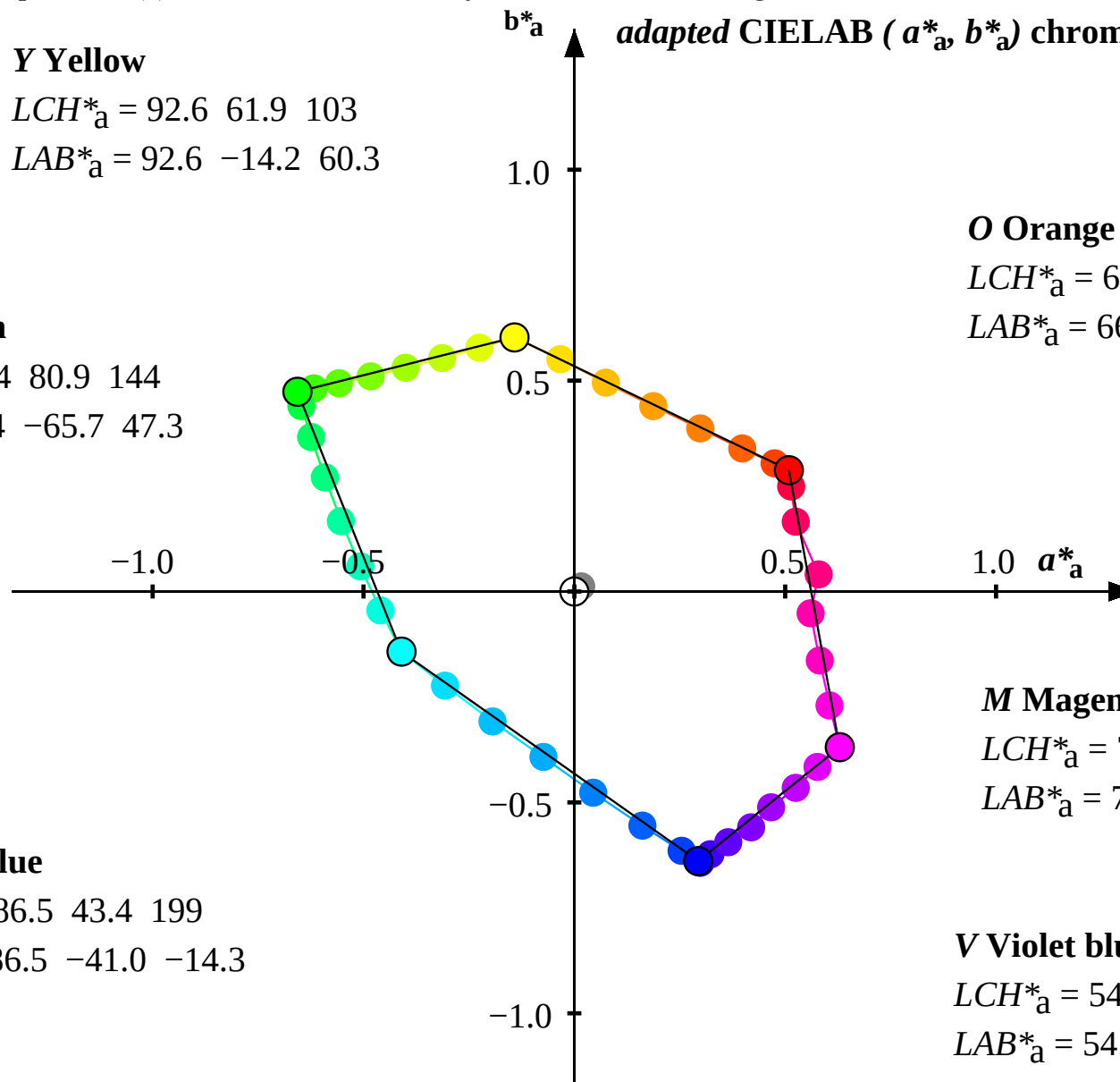
$LAB_a^* = 83.4 \ -65.7 \ 47.3$

C Cyan blue

$LCH_a^* = 86.5 \ 43.4 \ 199$

$LAB_a^* = 86.5 \ -41.0 \ -14.3$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH_a^* = 66.4 \ 58.5 \ 30$

$LAB_a^* = 66.4 \ 50.9 \ 28.8$

M Magenta red

$LCH_a^* = 71.0 \ 72.9 \ 330$

$LAB_a^* = 71.0 \ 62.9 \ -36.9$

V Violet blue

$LCH_a^* = 54.7 \ 70.3 \ 295$

$LAB_a^* = 54.7 \ 29.4 \ -63.9$

Colorimetric "Adapted data (a)": Television Luminous System TLS70a for CIE lightness $L^*=70$ of black for illuminant D65

System TLS70a	Color	$r=olv^*_1$	$g=olv^*_2$	$b=olv^*_3$	$L^*_a=LAB^*_{1a}$	$a^*_a=LAB^*_{2a}$	$b^*_a=LAB^*_{3a}$	$C^*_{ab,a}=LAB^*_{ab,a}$	$h_{ab,a}$	$X_a=XYZ^*_{1a}$	$Y_a=XYZ^*_{2a}$	$Z_a=XYZ^*_{3a}$	x_a	y_a	$Y_a/88.59$
CRT monitor	00 o00y	1.0	0.0	0.0	72.31	38.9	19.57	43.54	27	56.15	44.13	31.8	0.4251	0.3341	0.5313
	01 o13y	1.0	0.125	0.0	72.31	38.78	19.57	43.44	27	56.11	44.13	31.8	0.4249	0.3342	0.5313
	02 o25y	1.0	0.25	0.0	73.2	36.49	20.78	41.99	30	56.72	45.47	32.03	0.4226	0.3388	0.5474
D65 reflection:	03 o38y	1.0	0.375	0.0	75.28	30.94	23.6	38.91	37	58.12	48.73	32.59	0.4168	0.3495	0.5867
	04 o50y	1.0	0.5	0.0	78.18	23.48	27.48	36.14	49	60.21	53.52	33.41	0.4092	0.3637	0.6444
	05 o63y	1.0	0.625	0.0	81.58	14.99	31.95	35.29	65	62.85	59.53	34.46	0.4007	0.3796	0.7168
$Y_N = 40.32$ $L^*_N = 69.7$	06 o75y	1.0	0.75	0.0	85.3	6.01	36.77	37.25	81	65.94	66.6	35.68	0.392	0.3959	0.8018
	07 o88y	1.0	0.875	0.0	89.13	-2.73	41.73	41.82	94	69.47	74.44	36.97	0.3841	0.4115	0.8962
	08 y00l	1.0	1.0	0.0	93.04	-11.8	46.48	47.96	104	73.14	83.06	38.58	0.3755	0.4264	1.0
	09 y13l	0.875	1.0	0.0	91.51	-18.58	44.27	48.01	113	66.91	79.6	38.23	0.3622	0.4309	0.9584
	10 y25l	0.75	1.0	0.0	90.08	-25.52	42.19	49.31	121	61.17	76.48	37.92	0.3484	0.4356	0.9208
	11 y38l	0.625	1.0	0.0	88.76	-32.27	40.26	51.6	129	56.03	73.65	37.63	0.3349	0.4402	0.8868
	12 y50l	0.5	1.0	0.0	87.55	-38.59	38.51	54.53	135	51.55	71.14	37.37	0.322	0.4445	0.8565
	13 y63l	0.375	1.0	0.0	86.58	-44.12	37.08	57.64	140	47.95	69.16	37.18	0.3108	0.4483	0.8327
	14 y75l	0.25	1.0	0.0	85.87	-48.43	36.03	60.37	143	45.33	67.72	37.03	0.302	0.4512	0.8154
	15 y88l	0.125	1.0	0.0	85.48	-50.84	35.45	61.99	145	43.92	66.95	36.95	0.2971	0.4529	0.806
	16 l00c	0.0	1.0	0.0	85.43	-51.16	35.38	62.21	145	43.74	66.86	36.95	0.2965	0.4531	0.8049
	17 l13c	0.0	1.0	0.125	85.42	-51.12	35.26	62.12	145	43.74	66.84	37.03	0.2963	0.4528	0.8048
	18 l25c	0.0	1.0	0.25	85.5	-50.44	33.11	60.35	147	44.08	66.99	38.88	0.294	0.4467	0.8065
	19 l38c	0.0	1.0	0.375	85.7	-48.85	28.07	56.35	150	44.92	67.38	43.47	0.2884	0.4326	0.8112
	20 l50c	0.0	1.0	0.5	85.99	-46.47	21.14	51.07	156	46.19	67.96	50.39	0.2807	0.413	0.8183
	21 l63c	0.0	1.0	0.625	86.39	-43.66	13.29	45.64	163	47.81	68.77	59.21	0.272	0.3912	0.828
	22 l75c	0.0	1.0	0.75	86.84	-40.3	4.83	40.6	173	49.75	69.68	69.84	0.2629	0.3682	0.839
	23 l88c	0.0	1.0	0.875	87.37	-36.68	-3.63	36.87	186	51.97	70.76	81.86	0.254	0.3459	0.8519
	24 c00v	0.0	1.0	1.0	87.98	-32.95	-11.85	35.03	200	54.43	72.02	95.02	0.2458	0.3252	0.8671
	25 c13v	0.0	0.875	1.0	83.64	-24.15	-18.35	30.34	217	50.64	63.38	93.59	0.2439	0.3053	0.7631
	26 c25v	0.0	0.75	1.0	79.33	-14.93	-25.01	29.14	239	47.21	55.51	92.45	0.2419	0.2844	0.6683
	27 c38v	0.0	0.675	1.0	75.07	-5.53	-31.43	31.93	260	44.07	48.39	91.1	0.2401	0.2636	0.5826
	28 c50v	0.0	0.5	1.0	71.13	3.25	-37.6	37.75	275	41.33	42.38	90.2	0.2377	0.2437	0.5102
	29 c63v	0.0	0.375	1.0	67.72	11.41	-43.13	44.62	285	39.23	37.59	89.69	0.2356	0.2258	0.4526
	30 c75v	0.0	0.25	1.0	65.22	17.55	-47.13	50.31	290	37.78	34.33	89.26	0.2341	0.2127	0.4133
	31 c88v	0.0	0.125	1.0	64.19	20.39	-48.99	53.08	293	37.3	33.04	89.39	0.2335	0.2069	0.3978
	32 v00m	0.0	0.0	1.0	64.15	20.04	-48.66	52.63	292	37.12	32.98	88.79	0.2336	0.2076	0.3971
	33 v13m	0.125	0.0	1.0	64.24	20.49	-48.85	52.98	293	37.39	33.1	89.3	0.234	0.2072	0.3985
	34 v25m	0.25	0.0	1.0	64.9	22.36	-47.66	52.66	295	38.84	33.92	89.21	0.2398	0.2094	0.4084
	35 v38m	0.375	0.0	1.0	66.04	25.82	-45.77	52.56	299	41.54	35.38	89.32	0.2499	0.2128	0.4259
	36 v50m	0.5	0.0	1.0	67.59	30.4	-43.37	52.97	305	45.34	37.42	89.72	0.2629	0.2169	0.4505
	37 v63m	0.625	0.0	1.0	69.38	34.63	-39.99	52.9	311	49.62	39.87	89.28	0.2776	0.223	0.48
	38 v75m	0.75	0.0	1.0	71.41	39.82	-36.76	54.2	317	54.97	42.79	89.68	0.2933	0.2283	0.5151
	39 v88m	0.875	0.0	1.0	73.54	44.69	-33.07	55.6	323	60.73	46.0	89.66	0.3092	0.2342	0.5538
	40 m00o	1.0	0.0	1.0	75.72	49.69	-29.55	57.81	329	67.02	49.44	90.0	0.3246	0.2395	0.5952
	41 m13o	1.0	0.0	0.875	74.95	47.51	-21.26	52.05	336	64.56	48.2	76.86	0.3405	0.2542	0.5803
	42 m25o	1.0	0.0	0.75	74.27	45.38	-12.61	47.1	344	62.37	47.13	64.84	0.3577	0.2704	0.5675
	43 m38o	1.0	0.0	0.675	73.66	43.43	-3.87	43.6	355	60.41	46.18	54.16	0.3758	0.2873	0.556
	44 m50o	1.0	0.0	0.5	73.15	44.78	2.96	44.88	4	60.05	45.39	46.62	0.3949	0.2985	0.5465
	45 m63o	1.0	0.0	0.375	72.73	40.28	11.72	41.95	16	57.44	44.75	38.36	0.4087	0.3184	0.5388
	46 m75o	1.0	0.0	0.25	72.46	39.36	17.17	42.94	24	56.59	44.34	33.74	0.4202	0.3293	0.5339
	47 m88o	1.0	0.0	0.125	72.35	39.02	19.51	43.62	27	56.26	44.18	31.89	0.4252	0.3339	0.5319
	48 o00y	1.0	0.0	0.0	72.31	38.9	19.57	43.54	27	56.15	44.13	31.8	0.4251	0.3341	0.5313
	49 n00w	0.0	0.0	0.0	59.62	0.0	0.0	0.01	158	26.33	27.71	30.17	0.3127	0.329	0.3336
	50 n13w	0.125	0.125	0.125	59.76	0.3	0.1	0.32	18	26.55	27.85	30.26	0.3136	0.329	0.3354
	51 n25w	0.25	0.25	0.25	61.78	1.2	0.51	1.31	23	28.96	30.14	32.45	0.3163	0.3293	0.3629
	52 n38w	0.375	0.375	0.375	66.04	1.36	0.85	1.61	32	34.01	35.38	37.82	0.3172	0.33	0.4259
	53 n50w	0.5	0.5	0.5	71.46	1.2	0.88	1.49	36	41.12	42.86	45.85	0.3167	0.3301	0.516
	54 n63w	0.625	0.625	0.625	77.41	0.9	0.85	1.24	43	49.96	52.22	55.96	0.3159	0.3302	0.6287
	55 n75w	0.75	0.75	0.75	83.53	0.6	0.56	0.82	43	60.29	63.17	68.11	0.3147	0.3298	0.7606
	56 n88w	0.875	0.875	0.875	89.55	0.42	0.21	0.48	27	71.81	75.34	81.75	0.3137	0.3292	0.9071
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	85	84.2	88.59	96.46	0.3127	0.329	1.0666

IE370-7N, Colorimetric data of Television Luminous System TLS70a for CIE standard illuminant D65; CRT monitor; Page: 43/66

$$n = 88.59 / (88.59 + 40.32) = 0.687$$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* \text{ setrgbcolor}$

Display measurement: LCD, CRT and LCD projector, page 43/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Adapted data (a)": Television Luminous System TLS70a for CIE lightness $L^*=70$ of black for illuminant D65
System TLS70a

CRT monitor

D65 reflection:

$Y_N = 40.32$

$L_N^* = 69.7$

Y Yellow

$LCH_a^* = 93.0 \ 48.0 \ 104$

$LAB_a^* = 93.0 \ -11.8 \ 46.5$

L Leaf green

$LCH_a^* = 85.4 \ 62.2 \ 145$

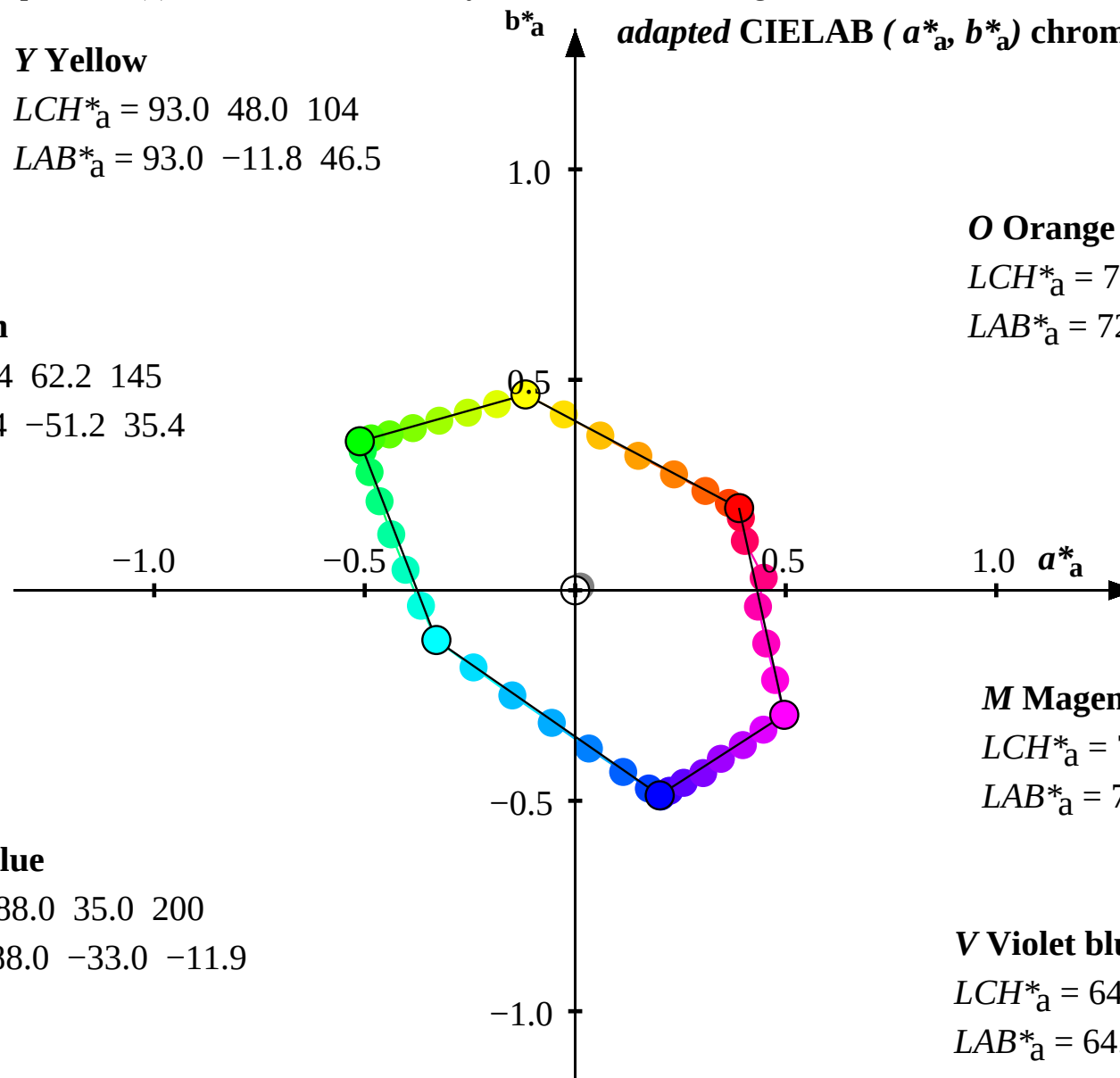
$LAB_a^* = 85.4 \ -51.2 \ 35.4$

C Cyan blue

$LCH_a^* = 88.0 \ 35.0 \ 200$

$LAB_a^* = 88.0 \ -33.0 \ -11.9$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH_a^* = 72.3 \ 43.5 \ 27$

$LAB_a^* = 72.3 \ 38.9 \ 19.6$

M Magenta red

$LCH_a^* = 75.7 \ 57.8 \ 329$

$LAB_a^* = 75.7 \ 49.7 \ -29.6$

V Violet blue

$LCH_a^* = 64.1 \ 52.6 \ 292$

$LAB_a^* = 64.1 \ 20.0 \ -48.7$

Colorimetric "Standard data": Television Luminous System TLS03 for CIE lightness $L^*=03$ of black for illuminant D65

System TLS03
LCD projector

Color	$r=olv*_1$	$g=olv*_2$	$b=olv*_3$	$L^*=LAB*_1$	$a^*=LAB*_2$	$b^*=LAB*_3$	$C^*_{ab}=LAB*_r$	h_{ab}	$X=XYZ_1$	$Y=XYZ_2$	$Z=XYZ_3$	x	y	Y/88.59
00 o00y	1.0	0.0	0.0	37.1	58.78	56.51	81.54	44	18.1	9.59	0.52	0.6415	0.34	0.1083
01 o13y	1.0	0.125	0.0	37.41	58.02	56.42	80.93	44	18.21	9.76	0.57	0.6381	0.3421	0.1102
02 o25y	1.0	0.25	0.0	38.83	54.44	57.1	78.89	46	18.69	10.56	0.69	0.6243	0.3527	0.1192
03 o38y	1.0	0.375	0.0	42.44	42.95	59.04	73.01	54	19.48	12.78	0.99	0.5859	0.3844	0.1443
04 o50y	1.0	0.5	0.0	47.08	35.41	60.09	69.75	59	22.06	16.08	1.57	0.5556	0.4049	0.1815
05 o63y	1.0	0.625	0.0	54.15	21.26	63.91	67.35	71	25.77	22.11	2.53	0.5112	0.4387	0.2496
06 o75y	1.0	0.75	0.0	62.27	7.09	69.0	69.37	84	31.07	30.71	3.9	0.473	0.4676	0.3467
07 o88y	1.0	0.875	0.0	70.64	-4.64	74.95	75.09	93	38.14	41.66	5.61	0.4465	0.4878	0.4703
08 y00l	1.0	1.0	0.0	83.13	-16.8	84.65	86.31	101	52.58	62.4	8.73	0.425	0.5044	0.7044
09 y13l	0.875	1.0	0.0	81.19	-24.79	81.99	85.66	106	46.56	58.82	8.53	0.4087	0.5164	0.664
10 y25l	0.75	1.0	0.0	75.03	-33.74	75.48	82.68	114	35.07	48.33	7.36	0.3864	0.5325	0.5455
11 y38l	0.625	1.0	0.0	74.08	-40.51	73.85	84.23	118	31.97	46.83	7.36	0.3711	0.5435	0.5286
12 y50l	0.5	1.0	0.0	73.46	-45.58	72.79	85.89	122	29.89	45.87	7.36	0.3596	0.5519	0.5178
13 y63l	0.375	1.0	0.0	73.1	-48.78	72.15	87.1	124	28.66	45.32	7.36	0.3523	0.5572	0.5116
14 y75l	0.25	1.0	0.0	72.92	-50.49	71.84	87.82	125	28.02	45.04	7.36	0.3484	0.5601	0.5084
15 y88l	0.125	1.0	0.0	72.84	-51.23	71.69	88.12	125	27.75	44.92	7.36	0.3467	0.5613	0.5071
16 l00c	0.0	1.0	0.0	72.83	-51.36	71.66	88.17	125	27.7	44.91	7.37	0.3464	0.5615	0.5069
17 l13c	0.0	1.0	0.125	72.87	-51.21	70.8	87.39	126	27.78	44.96	7.62	0.3457	0.5595	0.5075
18 l25c	0.0	1.0	0.25	72.97	-50.7	67.1	84.11	127	28.02	45.12	8.75	0.3422	0.551	0.5093
19 l38c	0.0	1.0	0.375	73.17	-49.55	59.71	77.6	129	28.53	45.42	11.31	0.3346	0.5327	0.5127
20 l50c	0.0	1.0	0.5	73.55	-47.47	48.77	68.07	134	29.49	46.01	16.04	0.3222	0.5026	0.5193
21 l63c	0.0	1.0	0.625	74.19	-44.2	34.93	56.34	141	31.09	47.0	23.86	0.305	0.461	0.5305
22 l75c	0.0	1.0	0.75	74.8	-39.66	19.62	44.25	153	33.08	47.96	34.95	0.2852	0.4135	0.5414
23 l88c	0.0	1.0	0.875	76.29	-33.9	3.44	34.08	174	36.63	50.36	51.35	0.2648	0.364	0.5684
24 c00v	0.0	1.0	1.0	77.63	-27.89	-10.73	29.9	201	40.31	52.59	69.46	0.2483	0.3239	0.5936
25 c13v	0.0	0.875	1.0	69.94	-19.11	-22.45	29.5	230	32.97	40.66	67.61	0.2334	0.2879	0.459
26 c25v	0.0	0.75	1.0	60.8	-7.27	-36.62	37.35	260	25.8	29.02	65.75	0.214	0.2407	0.3276
27 c38v	0.0	0.675	1.0	51.55	6.79	-51.31	51.77	278	20.11	19.75	64.29	0.1931	0.1896	0.2229
28 c50v	0.0	0.5	1.0	43.25	21.59	-64.77	68.28	289	16.15	13.32	63.31	0.1741	0.1436	0.1504
29 c63v	0.0	0.375	1.0	36.87	34.74	-75.21	82.86	295	13.78	9.47	62.69	0.1603	0.1102	0.1069
30 c75v	0.0	0.25	1.0	32.68	44.51	-82.18	93.47	299	12.51	7.39	62.38	0.152	0.0898	0.0834
31 c88v	0.0	0.125	1.0	30.75	49.23	-85.41	98.59	300	11.99	6.55	62.29	0.1483	0.081	0.0739
32 v00m	0.0	0.0	1.0	30.28	50.46	-86.21	99.9	301	11.87	6.35	62.28	0.1475	0.0789	0.0717
33 v13m	0.125	0.0	1.0	30.52	50.74	-86.47	100.26	301	12.06	6.45	63.03	0.1479	0.0791	0.0728
34 v25m	0.25	0.0	1.0	30.67	50.94	-85.47	99.51	301	12.18	6.51	62.19	0.1506	0.0805	0.0735
35 v38m	0.375	0.0	1.0	31.48	51.96	-83.92	98.71	302	12.85	6.86	62.02	0.1572	0.0839	0.0774
36 v50m	0.5	0.0	1.0	33.02	53.8	-81.29	97.49	304	14.17	7.55	62.06	0.1691	0.0901	0.0852
37 v63m	0.625	0.0	1.0	35.31	56.61	-76.94	95.53	307	16.3	8.66	61.6	0.1883	0.1	0.0977
38 v75m	0.75	0.0	1.0	38.29	60.25	-71.06	93.17	310	19.37	10.25	60.77	0.2143	0.1134	0.1157
39 v88m	0.875	0.0	1.0	43.55	65.86	-65.4	92.82	315	25.51	13.53	64.62	0.2461	0.1305	0.1527
40 m00o	1.0	0.0	1.0	48.39	71.08	-60.47	93.32	320	32.22	17.11	68.65	0.2731	0.145	0.1931
41 m13o	1.0	0.0	0.875	44.49	67.04	-44.55	80.49	327	26.78	14.18	44.89	0.3119	0.1652	0.1601
42 m25o	1.0	0.0	0.75	41.5	64.08	-26.13	69.21	338	23.08	12.18	26.76	0.3721	0.1964	0.1375
43 m38o	1.0	0.0	0.675	39.82	62.04	-9.33	62.74	351	21.08	11.14	16.02	0.4369	0.231	0.1258
44 m50o	1.0	0.0	0.5	38.6	60.58	8.07	61.11	7	19.7	10.43	8.68	0.5077	0.2687	0.1177
45 m63o	1.0	0.0	0.375	37.83	59.69	25.05	64.73	23	18.87	9.99	4.23	0.5702	0.3019	0.1128
46 m75o	1.0	0.0	0.25	37.41	59.19	40.82	71.9	34	18.43	9.76	1.83	0.6138	0.3251	0.1102
47 m88o	1.0	0.0	0.125	37.23	58.94	53.08	79.32	42	18.24	9.67	0.78	0.6359	0.337	0.1091
48 o00y	1.0	0.0	0.0	37.1	58.78	56.51	81.54	44	18.1	9.59	0.52	0.6415	0.34	0.1083
49 n00w	0.0	0.0	0.0	2.5	-0.41	0.23	0.48	0	0.25	0.28	0.29	0.3103	0.3398	0.0031
50 n13w	0.125	0.125	0.125	4.56	-0.87	-0.48	1.01	238	0.46	0.5	0.58	0.2962	0.3263	0.0057
51 n25w	0.25	0.25	0.25	12.6	-0.76	-1.6	1.79	260	1.4	1.5	1.8	0.2978	0.3193	0.0169
52 n38w	0.375	0.375	0.375	23.36	-0.66	-1.79	1.92	264	3.67	3.91	4.6	0.3013	0.3208	0.0441
53 n50w	0.5	0.5	0.5	34.78	-0.55	-1.92	2.01	267	7.91	8.39	9.75	0.3037	0.322	0.0947
54 n63w	0.625	0.625	0.625	46.81	-0.46	-2.0	2.06	270	15.01	15.88	18.26	0.3054	0.323	0.1792
55 n75w	0.75	0.75	0.75	61.39	-0.67	-1.71	1.84	264	28.05	29.7	33.6	0.3071	0.3251	0.3352
56 n88w	0.875	0.875	0.875	80.86	-0.46	-0.03	0.48	324	55.14	58.21	63.43	0.3119	0.3293	0.6571
57 n99w	1.0	1.0	1.0	95.41	-0.54	-0.04	0.55	0	83.91	88.59	96.53	0.3119	0.3293	1.0

IE370-7N, Colorimetric data of Television Luminous System TLS03 for CIE standard illuminant D65; LCD projector; Page: 45/66

TUB-test chart IE37; Hue circle and colorimetric data

input: olv^* setrgbcolor

Display measurement: LCD, CRT and LCD projector, page 45/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Standard data": Television Luminous System TLS03 for CIE lightness $L^*=03$ of black for illuminant D65

System TLS03

LCD projector

Y Yellow

$LCH^* = 83.1 \ 86.3 \ 101$

$LAB^* = 83.1 \ -16.8 \ 84.7$

L Leaf green

$LCH^* = 72.8 \ 88.2 \ 126$

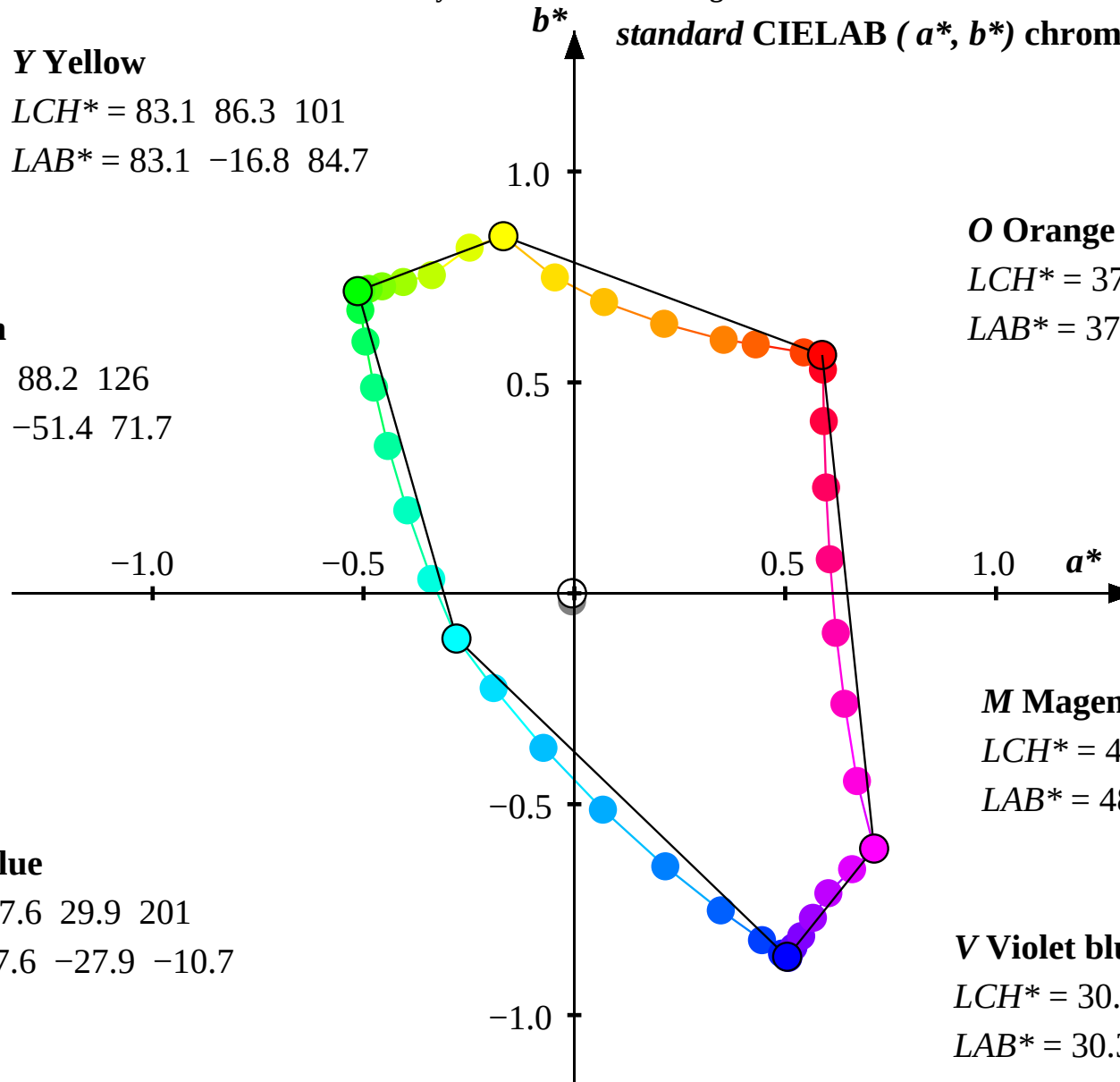
$LAB^* = 72.8 \ -51.4 \ 71.7$

C Cyan blue

$LCH^* = 77.6 \ 29.9 \ 201$

$LAB^* = 77.6 \ -27.9 \ -10.7$

standard CIELAB (a^* , b^*) chroma diagram



O Orange red

$LCH^* = 37.1 \ 81.5 \ 44$

$LAB^* = 37.1 \ 58.8 \ 56.5$

M Magenta red

$LCH^* = 48.4 \ 93.3 \ 320$

$LAB^* = 48.4 \ 71.1 \ -60.5$

V Violet blue

$LCH^* = 30.3 \ 99.9 \ 300$

$LAB^* = 30.3 \ 50.5 \ -86.2$

Colorimetric "Adapted data (a)": Television Luminous System TLS03a for CIE lightness $L^*=03$ of black for illuminant D65

System TLS03a
LCD projector

Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*=LAB*1a$	$a^*=LAB*2a$	$b^*=LAB*3a$	$C^*_{ab,a}=LAB*ra$	$h_{ab,a}$	$X_a=XYZ1a$	$Y_a=XYZ2a$	$Z_a=XYZ3a$	x_a	y_a	$Y_a/88.59$
00 o00y	1.0	0.0	0.0	37.1	59.25	56.38	81.79	44	18.19	9.59	0.53	0.6424	0.3388	0.1083
01 o13y	1.0	0.125	0.0	37.41	58.49	56.29	81.18	44	18.3	9.76	0.57	0.639	0.3409	0.1102
02 o25y	1.0	0.25	0.0	38.83	54.91	56.97	79.13	46	18.78	10.56	0.7	0.6253	0.3515	0.1192
03 o38y	1.0	0.375	0.0	42.44	43.43	58.93	73.2	54	19.58	12.78	1.0	0.5869	0.3832	0.1443
04 o50y	1.0	0.5	0.0	47.08	35.89	59.99	69.91	59	22.17	16.08	1.58	0.5566	0.4037	0.1815
05 o63y	1.0	0.625	0.0	54.15	21.75	63.83	67.43	71	25.88	22.11	2.54	0.5122	0.4376	0.2496
06 o75y	1.0	0.75	0.0	62.27	7.59	68.95	69.37	84	31.21	30.71	3.91	0.474	0.4666	0.3467
07 o88y	1.0	0.875	0.0	70.64	-4.13	74.92	75.03	93	38.3	41.66	5.62	0.4475	0.4869	0.4703
08 y00l	1.0	1.0	0.0	83.13	-16.27	84.66	86.21	101	52.78	62.4	8.73	0.426	0.5036	0.7044
09 y13l	0.875	1.0	0.0	81.19	-24.26	82.0	85.51	106	46.74	58.82	8.53	0.4097	0.5156	0.664
10 y25l	0.75	1.0	0.0	75.03	-33.22	75.46	82.45	114	35.22	48.33	7.36	0.3874	0.5316	0.5455
11 y38l	0.625	1.0	0.0	74.08	-40.0	73.83	83.97	118	32.12	46.83	7.36	0.3721	0.5426	0.5286
12 y50l	0.5	1.0	0.0	73.46	-45.07	72.77	85.6	122	30.03	45.87	7.36	0.3606	0.551	0.5178
13 y63l	0.375	1.0	0.0	73.1	-48.26	72.13	86.79	124	28.79	45.32	7.37	0.3533	0.5563	0.5116
14 y75l	0.25	1.0	0.0	72.92	-49.98	71.82	87.5	125	28.15	45.04	7.36	0.3494	0.5592	0.5084
15 y88l	0.125	1.0	0.0	72.84	-50.71	71.67	87.8	125	27.88	44.92	7.37	0.3477	0.5603	0.5071
16 l00c	0.0	1.0	0.0	72.83	-50.84	71.64	87.85	125	27.83	44.91	7.37	0.3474	0.5605	0.5069
17 l13c	0.0	1.0	0.125	72.87	-50.69	70.78	87.07	126	27.91	44.96	7.62	0.3467	0.5586	0.5075
18 l25c	0.0	1.0	0.25	72.97	-50.18	67.08	83.78	127	28.15	45.12	8.75	0.3432	0.5501	0.5093
19 l38c	0.0	1.0	0.375	73.17	-49.03	59.69	77.25	129	28.66	45.42	11.32	0.3356	0.5318	0.5127
20 l50c	0.0	1.0	0.5	73.55	-46.95	48.75	67.69	134	29.63	46.01	16.05	0.3232	0.5018	0.5193
21 l63c	0.0	1.0	0.625	74.19	-43.69	34.91	55.93	141	31.23	47.0	23.87	0.3059	0.4603	0.5305
22 l75c	0.0	1.0	0.75	74.8	-39.14	19.6	43.78	153	33.23	47.96	34.96	0.2861	0.4129	0.5414
23 l88c	0.0	1.0	0.875	76.29	-33.38	3.42	33.56	174	36.79	50.36	51.36	0.2656	0.3636	0.5684
24 c00v	0.0	1.0	1.0	77.63	-27.37	-10.73	29.41	201	40.48	52.59	69.47	0.2491	0.3235	0.5936
25 c13v	0.0	0.875	1.0	69.94	-18.6	-22.48	29.19	230	33.11	40.66	67.65	0.2341	0.2875	0.459
26 c25v	0.0	0.75	1.0	60.8	-6.77	-36.68	37.31	260	25.92	29.02	65.82	0.2147	0.2403	0.3276
27 c38v	0.0	0.675	1.0	51.55	7.28	-51.4	51.92	278	20.21	19.75	64.39	0.1937	0.1892	0.2229
28 c50v	0.0	0.5	1.0	43.25	22.07	-64.88	68.54	289	16.24	13.32	63.43	0.1746	0.1433	0.1504
29 c63v	0.0	0.375	1.0	36.87	35.21	-75.34	83.17	295	13.85	9.47	62.84	0.1607	0.1099	0.1069
30 c75v	0.0	0.25	1.0	32.68	44.97	-82.32	93.81	299	12.57	7.39	62.54	0.1524	0.0895	0.0834
31 c88v	0.0	0.125	1.0	30.75	49.69	-85.56	98.95	300	12.05	6.55	62.46	0.1487	0.0808	0.0739
32 v00m	0.0	0.0	1.0	30.28	50.92	-86.36	100.27	301	11.94	6.35	62.45	0.1479	0.0787	0.0717
33 v13m	0.125	0.0	1.0	30.52	51.2	-86.62	100.62	301	12.13	6.45	63.2	0.1483	0.0789	0.0728
34 v25m	0.25	0.0	1.0	30.67	51.4	-85.62	99.88	301	12.25	6.51	62.36	0.151	0.0803	0.0735
35 v38m	0.375	0.0	1.0	31.48	52.42	-84.07	99.08	302	12.92	6.86	62.19	0.1576	0.0837	0.0774
36 v50m	0.5	0.0	1.0	33.02	54.26	-81.43	97.86	304	14.24	7.55	62.22	0.1695	0.0898	0.0852
37 v63m	0.625	0.0	1.0	35.31	57.08	-77.07	95.92	307	16.38	8.66	61.75	0.1887	0.0997	0.0977
38 v75m	0.75	0.0	1.0	38.29	60.72	-71.18	93.57	310	19.46	10.25	60.91	0.2148	0.1131	0.1157
39 v88m	0.875	0.0	1.0	43.55	66.34	-65.51	93.24	315	25.62	13.53	64.75	0.2466	0.1302	0.1527
40 m00o	1.0	0.0	1.0	48.39	71.56	-60.56	93.75	320	32.35	17.11	68.77	0.2737	0.1447	0.1931
41 m13o	1.0	0.0	0.875	44.49	67.52	-44.66	80.95	327	26.9	14.18	44.99	0.3125	0.1648	0.1601
42 m25o	1.0	0.0	0.75	41.5	64.56	-26.25	69.69	338	23.18	12.18	26.84	0.3727	0.1958	0.1375
43 m38o	1.0	0.0	0.675	39.82	62.51	-9.45	63.22	351	21.18	11.14	16.08	0.4375	0.2303	0.1258
44 m50o	1.0	0.0	0.5	38.6	61.05	7.94	61.56	7	19.8	10.43	8.71	0.5084	0.2678	0.1177
45 m63o	1.0	0.0	0.375	37.83	60.16	24.93	65.12	23	18.97	9.99	4.26	0.571	0.3009	0.1128
46 m75o	1.0	0.0	0.25	37.41	59.66	40.69	72.21	34	18.52	9.76	1.85	0.6147	0.324	0.1102
47 m88o	1.0	0.0	0.125	37.23	59.41	52.95	79.58	42	18.33	9.67	0.79	0.6368	0.3359	0.1091
48 o00y	1.0	0.0	0.0	37.1	59.25	56.38	81.79	44	18.19	9.59	0.53	0.6424	0.3388	0.1083
49 n00w	0.0	0.0	0.0	2.5	0.0	0.0	0.01	0	0.26	0.28	0.3	0.3127	0.329	0.0031
50 n13w	0.125	0.125	0.125	4.56	-0.45	-0.71	0.85	238	0.47	0.5	0.6	0.2978	0.3208	0.0057
51 n25w	0.25	0.25	0.25	12.6	-0.33	-1.81	1.85	260	1.41	1.5	1.82	0.2987	0.3168	0.0169
52 n38w	0.375	0.375	0.375	23.36	-0.21	-1.97	1.99	264	3.7	3.91	4.64	0.3021	0.3191	0.0441
53 n50w	0.5	0.5	0.5	34.78	-0.08	-2.06	2.07	267	7.96	8.39	9.8	0.3045	0.3208	0.0947
54 n63w	0.625	0.625	0.625	46.81	0.02	-2.1	2.11	270	15.09	15.88	18.31	0.3062	0.3221	0.1792
55 n75w	0.75	0.75	0.75	61.39	-0.17	-1.76	1.78	264	28.18	29.7	33.64	0.3079	0.3245	0.3352
56 n88w	0.875	0.875	0.875	80.86	0.05	-0.03	0.07	324	55.35	58.21	63.43	0.3127	0.3289	0.6571
57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.0

IE370-7N, Colorimetric data of Television Luminous System TLS03a for CIE standard illuminant D65; LCD projector; Page: 47/66

TUB-test chart IE37; Hue circle and colorimetric data

input: olv^* setrgbcolor

Display measurement: LCD, CRT and LCD projector, page 47/66output: no change compared to input

See original or copy: <http://web.me.com/klaus.richter/IE37/IE37L0NA.PS/.TXT>
Technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmetrik>

TUB registration: 20090901-IE37/IE37L0NA.PS/.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

<http://130.149.60.45/~farbmetrik/IE37/IE37L0NA.PS/.TXT>; start output
N: No Output Linearization (OL) data in File (F), Startup (S) or Device (D)

Colorimetric "Adapted data (a)": Television Luminous System TLS03a for CIE lightness $L^*=03$ of black for illuminant D65
System TLS03a
LCD projector

Y Yellow

$LCH^*_a = 83.1 \ 86.2 \ 101$

$LAB^*_a = 83.1 \ -16.3 \ 84.7$

L Leaf green

$LCH^*_a = 72.8 \ 87.9 \ 125$

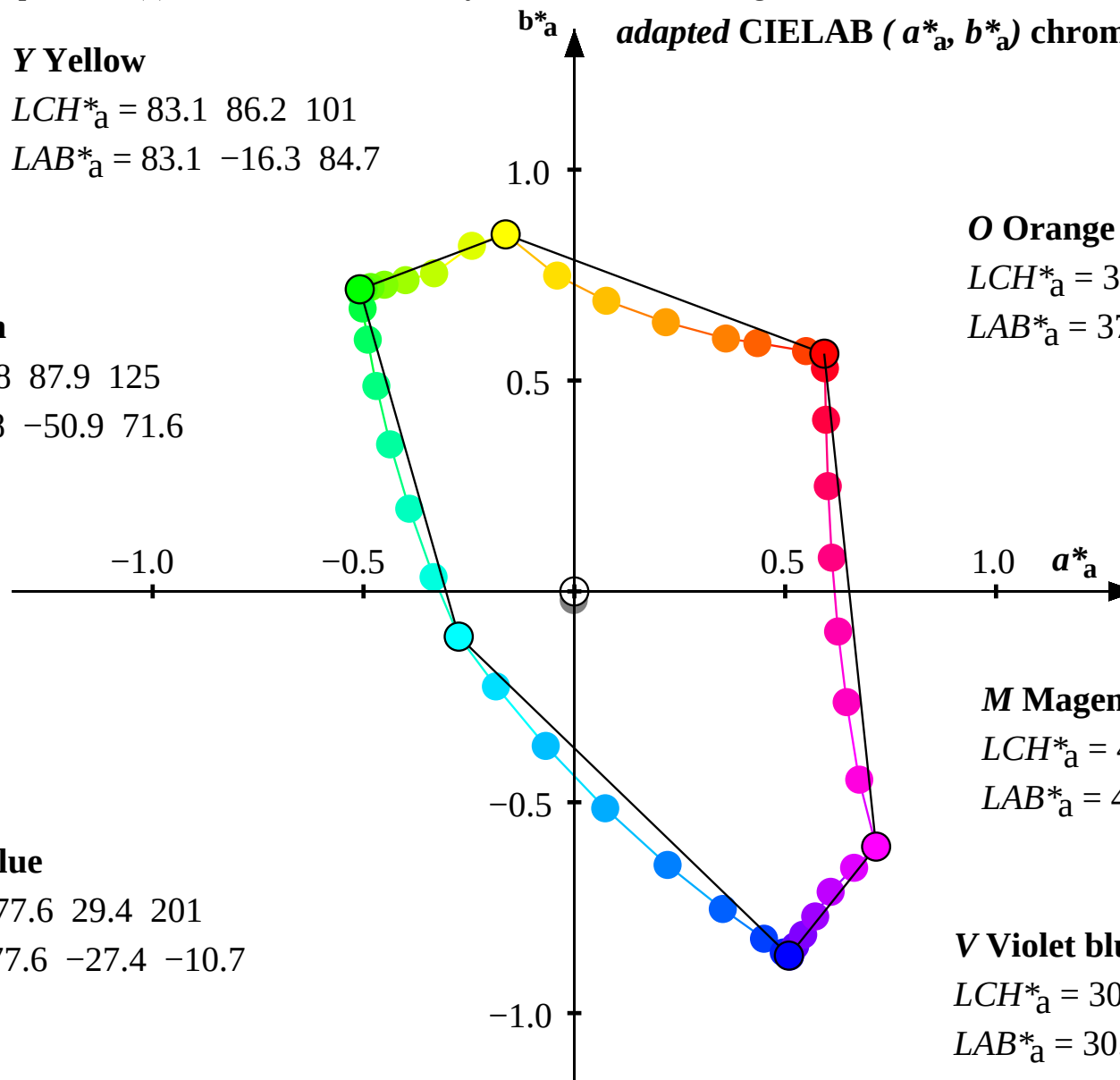
$LAB^*_a = 72.8 \ -50.9 \ 71.6$

C Cyan blue

$LCH^*_a = 77.6 \ 29.4 \ 201$

$LAB^*_a = 77.6 \ -27.4 \ -10.7$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH^*_a = 37.1 \ 81.8 \ 44$

$LAB^*_a = 37.1 \ 59.3 \ 56.4$

M Magenta red

$LCH^*_a = 48.4 \ 93.8 \ 320$

$LAB^*_a = 48.4 \ 71.6 \ -60.6$

V Violet blue

$LCH^*_a = 30.3 \ 100.3 \ 301$

$LAB^*_a = 30.3 \ 50.9 \ -86.4$

Colorimetric "Adapted data (a0)": Television Luminous System TLS00a0 for CIE lightness $L^*=00$ of black for illuminant D65

System TLS00a0	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB*1_a$	$a^*_a=LAB*2_a$	$b^*_a=LAB*3_a$	$C^*_{ab,a}=LAB*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD projector	00 o00y	1.0	0.0	0.0	36.64	60.14	59.89	84.88	45	17.98	9.35	0.23	0.6525	0.3391	0.15
	01 o13y	1.0	0.125	0.0	36.96	59.36	59.82	84.27	45	18.09	9.52	0.27	0.6489	0.3413	0.1527
	02 o25y	1.0	0.25	0.0	38.4	55.69	60.54	82.25	47	18.58	10.32	0.4	0.6343	0.3522	0.1655
	03 o38y	1.0	0.375	0.0	42.07	43.97	62.58	76.48	55	19.38	12.55	0.7	0.594	0.3846	0.2013
	04 o50y	1.0	0.5	0.0	46.78	36.28	62.76	72.49	60	21.97	15.85	1.28	0.5619	0.4054	0.2544
	05 o63y	1.0	0.625	0.0	53.92	21.94	65.75	69.31	72	25.7	21.9	2.24	0.5156	0.4394	0.3515
	06 o75y	1.0	0.75	0.0	62.11	7.64	70.36	70.77	84	31.04	30.53	3.62	0.4761	0.4683	0.4899
	07 o88y	1.0	0.875	0.0	70.54	-4.15	76.03	76.14	93	38.15	41.52	5.33	0.4488	0.4884	0.6662
	08 y00l	1.0	1.0	0.0	83.08	-16.34	85.5	87.05	101	52.69	62.32	8.46	0.4267	0.5048	1.0
	09 y13l	0.875	1.0	0.0	81.14	-24.37	82.84	86.35	106	46.63	58.73	8.26	0.4104	0.5169	0.9424
	10 y25l	0.75	1.0	0.0	74.95	-33.4	76.37	83.36	114	35.07	48.2	7.08	0.3881	0.5335	0.7734
	11 y38l	0.625	1.0	0.0	74.0	-40.23	74.73	84.87	118	31.95	46.7	7.08	0.3727	0.5447	0.7493
	12 y50l	0.5	1.0	0.0	73.38	-45.34	73.66	86.5	122	29.86	45.74	7.08	0.3611	0.5532	0.7339
	13 y63l	0.375	1.0	0.0	73.02	-48.56	73.02	87.7	124	28.62	45.19	7.09	0.3538	0.5586	0.7251
	14 y75l	0.25	1.0	0.0	72.83	-50.28	72.71	88.41	125	27.97	44.9	7.08	0.3498	0.5616	0.7205
	15 y88l	0.125	1.0	0.0	72.75	-51.03	72.56	88.71	125	27.7	44.79	7.09	0.3481	0.5628	0.7187
	16 l00c	0.0	1.0	0.0	72.74	-51.16	72.53	88.76	125	27.66	44.77	7.09	0.3478	0.563	0.7184
	17 l13c	0.0	1.0	0.125	72.78	-51.0	71.64	87.95	125	27.73	44.82	7.35	0.3471	0.561	0.7192
	18 l25c	0.0	1.0	0.25	72.88	-50.49	67.84	84.57	127	27.98	44.98	8.48	0.3435	0.5524	0.7218
	19 l38c	0.0	1.0	0.375	73.08	-49.33	60.28	77.9	129	28.49	45.29	11.05	0.3358	0.5338	0.7266
	20 l50c	0.0	1.0	0.5	73.46	-47.23	49.16	68.18	134	29.46	45.87	15.79	0.3233	0.5034	0.736
	21 l63c	0.0	1.0	0.625	74.1	-43.94	35.15	56.27	141	31.07	46.87	23.64	0.3059	0.4614	0.752
	22 l75c	0.0	1.0	0.75	74.72	-39.36	19.71	44.03	153	33.07	47.84	34.77	0.2859	0.4135	0.7676
	23 l88c	0.0	1.0	0.875	76.21	-33.56	3.44	33.74	174	36.64	50.24	51.22	0.2653	0.3638	0.8061
	24 c00v	0.0	1.0	1.0	77.56	-27.51	-10.78	29.55	201	40.34	52.47	69.38	0.2487	0.3235	0.842
	25 c13v	0.0	0.875	1.0	69.83	-18.71	-22.59	29.34	230	32.95	40.51	67.56	0.2337	0.2873	0.6501
	26 c25v	0.0	0.75	1.0	60.64	-6.82	-36.88	37.52	260	25.74	28.84	65.72	0.214	0.2397	0.4627
	27 c38v	0.0	0.675	1.0	51.3	7.35	-51.74	52.27	278	20.01	19.53	64.29	0.1927	0.1881	0.3134
	28 c50v	0.0	0.5	1.0	42.9	22.36	-65.4	69.12	289	16.02	13.09	63.33	0.1733	0.1416	0.21
	29 c63v	0.0	0.375	1.0	36.41	35.81	-76.05	84.07	295	13.63	9.22	62.73	0.1592	0.1078	0.148
	30 c75v	0.0	0.25	1.0	32.11	45.89	-83.2	95.03	299	12.35	7.13	62.44	0.1508	0.0871	0.1145
	31 c88v	0.0	0.125	1.0	30.13	50.78	-86.54	100.35	300	11.83	6.29	62.35	0.147	0.0782	0.1009
	32 v00m	0.0	0.0	1.0	29.65	52.07	-87.36	101.71	301	11.71	6.09	62.34	0.1461	0.076	0.0978
	33 v13m	0.125	0.0	1.0	29.89	52.33	-87.61	102.06	301	11.9	6.19	63.09	0.1466	0.0763	0.0993
	34 v25m	0.25	0.0	1.0	30.04	52.53	-86.6	101.3	301	12.02	6.25	62.26	0.1493	0.0777	0.1003
	35 v38m	0.375	0.0	1.0	30.88	53.51	-85.01	100.46	302	12.69	6.6	62.08	0.156	0.0811	0.1059
	36 v50m	0.5	0.0	1.0	32.47	55.29	-82.3	99.16	304	14.02	7.29	62.11	0.1681	0.0874	0.117
	37 v63m	0.625	0.0	1.0	34.81	58.03	-77.84	97.1	307	16.17	8.4	61.64	0.1875	0.0975	0.1349
	38 v75m	0.75	0.0	1.0	37.85	61.58	-71.84	94.62	311	19.26	10.0	60.8	0.2139	0.1111	0.1605
	39 v88m	0.875	0.0	1.0	43.2	67.07	-66.02	94.12	315	25.44	13.29	64.65	0.2461	0.1286	0.2133
	40 m00o	1.0	0.0	1.0	48.11	72.19	-60.98	94.51	320	32.19	16.88	68.68	0.2734	0.1434	0.2709
	41 m13o	1.0	0.0	0.875	44.16	68.22	-45.05	81.76	327	26.72	13.95	44.83	0.3125	0.1632	0.2238
	42 m25o	1.0	0.0	0.75	41.12	65.33	-26.56	70.53	338	22.99	11.94	26.62	0.3735	0.194	0.1916
	43 m38o	1.0	0.0	0.675	39.41	63.33	-9.6	64.05	351	20.98	10.9	15.83	0.4398	0.2285	0.1749
	44 m50o	1.0	0.0	0.5	38.17	61.9	8.12	62.43	7	19.59	10.18	8.44	0.5127	0.2664	0.1634
	45 m63o	1.0	0.0	0.375	37.38	61.03	25.73	66.23	23	18.76	9.75	3.97	0.5777	0.3001	0.1564
	46 m75o	1.0	0.0	0.25	36.96	60.54	42.82	74.15	35	18.32	9.52	1.55	0.6234	0.3238	0.1527
	47 m88o	1.0	0.0	0.125	36.78	60.29	56.46	82.6	43	18.12	9.42	0.49	0.6466	0.3361	0.1511
	48 o00y	1.0	0.0	0.0	36.64	60.14	59.89	84.88	45	17.98	9.35	0.23	0.6525	0.3391	0.15
	49 n00w	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0	0.0	0.0	0.0	0.0	0.0	0.0
	50 n13w	0.125	0.125	0.125	2.06	-0.45	-0.71	0.86	238	0.21	0.23	0.3	0.2807	0.3114	0.0037
	51 n25w	0.25	0.25	0.25	10.74	-0.38	-2.06	2.1	259	1.15	1.23	1.52	0.2956	0.3142	0.0197
	52 n38w	0.375	0.375	0.375	22.45	-0.22	-2.06	2.09	264	3.45	3.64	4.35	0.3014	0.3184	0.0584
	53 n50w	0.5	0.5	0.5	34.27	-0.08	-2.1	2.12	267	7.72	8.14	9.52	0.3043	0.3205	0.1306
	54 n63w	0.625	0.625	0.625	46.51	0.02	-2.12	2.13	270	14.87	15.65	18.07	0.3061	0.322	0.2511
	55 n75w	0.75	0.75	0.75	61.23	-0.17	-1.78	1.79	264	28.0	29.51	33.44	0.3079	0.3245	0.4735
	56 n88w	0.875	0.875	0.875	80.8	0.05	-0.03	0.07	324	55.26	58.12	63.32	0.3127	0.3289	0.9326
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.4215

IE370-7N, Colorimetric data of Television Luminous System TLS03a0 for CIE standard illuminant D65; LCD projector; Page: 49/66

$n = 88.59 / (88.59 - 0.28) = 1.003$

TUB-test chart IE37; Hue circle and colorimetric data

input: olv^* setrgbcolor

Display measurement: LCD, CRT and LCD projector, page 49/66output: no change compared to input

See original or copy: <http://web.me.com/klaus.richter/IE37/IE37L0NA.PS/.TXT>
Technical information: <http://www.ps.bam.de> or <http://130.149.60.45/~farbmetrik>

TUB registration: 20090901-IE37/IE37L0NA.PS/.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

<http://130.149.60.45/~farbmetrik/IE37/IE37L0NA.PS/.TXT>; start output
N: No Output Linearization (OL) data in File (F), Startup (S) or Device (D)

Colorimetric "Adapted data (a0)": Television Luminous System TLS00a0 for CIE lightness $L^*=00$ of black for illuminant D65
System TLS00a0
LCD projector

Y Yellow

$LCH^*_a = 83.1 \ 87.1 \ 101$

$LAB^*_a = 83.1 \ -16.3 \ 85.5$

L Leaf green

$LCH^*_a = 72.7 \ 88.8 \ 125$

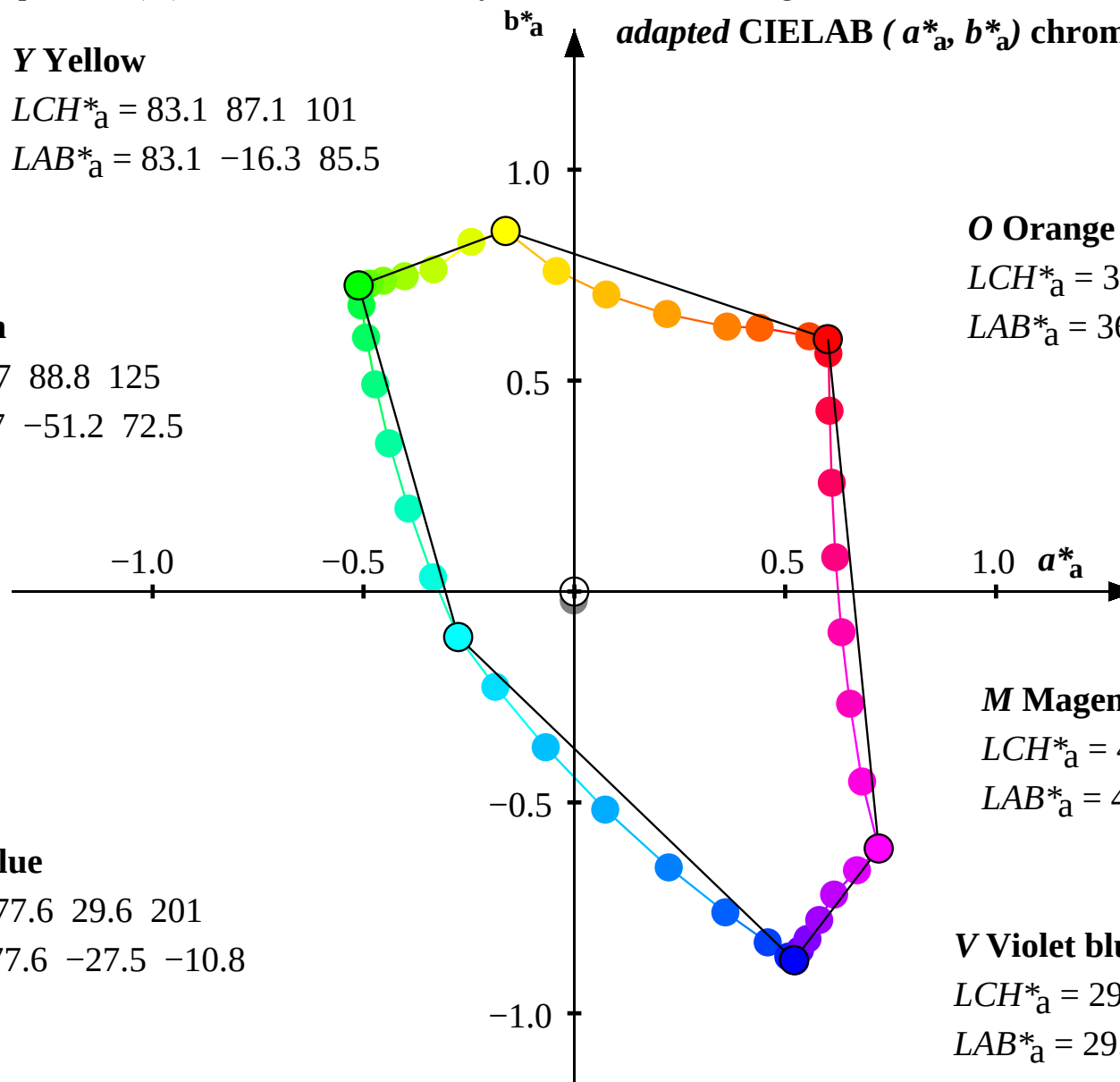
$LAB^*_a = 72.7 \ -51.2 \ 72.5$

C Cyan blue

$LCH^*_a = 77.6 \ 29.6 \ 201$

$LAB^*_a = 77.6 \ -27.5 \ -10.8$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



Colorimetric "Adapted data (a)": Television Luminous System TLS00a for CIE lightness $L^*=00$ of black for illuminant D65

System TLS00a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD projector	00 o00y	1.0	0.0	0.0	36.64	60.14	59.89	84.88	45	17.98	9.35	0.23	0.6525	0.3391	0.15
	01 o13y	1.0	0.125	0.0	36.96	59.36	59.82	84.27	45	18.09	9.52	0.27	0.6489	0.3413	0.1527
D65 reflection:	02 o25y	1.0	0.25	0.0	38.4	55.69	60.54	82.25	47	18.58	10.32	0.4	0.6343	0.3522	0.1655
	03 o38y	1.0	0.375	0.0	42.07	43.97	62.58	76.48	55	19.38	12.55	0.7	0.594	0.3846	0.2013
	04 o50y	1.0	0.5	0.0	46.78	36.28	62.76	72.49	60	21.97	15.85	1.28	0.5619	0.4054	0.2544
	05 o63y	1.0	0.625	0.0	53.92	21.94	65.75	69.31	72	25.7	21.9	2.24	0.5156	0.4394	0.3515
	06 o75y	1.0	0.75	0.0	62.11	7.64	70.36	70.77	84	31.04	30.53	3.62	0.4761	0.4683	0.4899
	07 o88y	1.0	0.875	0.0	70.54	-4.15	76.03	76.14	93	38.15	41.52	5.33	0.4488	0.4884	0.6662
	08 y00l	1.0	1.0	0.0	83.08	-16.34	85.5	87.05	101	52.69	62.32	8.46	0.4267	0.5048	1.0
	09 y13l	0.875	1.0	0.0	81.14	-24.37	82.84	86.35	106	46.63	58.73	8.26	0.4104	0.5169	0.9424
	10 y25l	0.75	1.0	0.0	74.95	-33.4	76.37	83.36	114	35.07	48.2	7.08	0.3881	0.5335	0.7734
	11 y38l	0.625	1.0	0.0	74.0	-40.23	74.73	84.87	118	31.95	46.7	7.08	0.3727	0.5447	0.7493
	12 y50l	0.5	1.0	0.0	73.38	-45.34	73.66	86.5	122	29.86	45.74	7.08	0.3611	0.5532	0.7339
	13 y63l	0.375	1.0	0.0	73.02	-48.56	73.02	87.7	124	28.62	45.19	7.09	0.3538	0.5586	0.7251
	14 y75l	0.25	1.0	0.0	72.83	-50.28	72.71	88.41	125	27.97	44.9	7.08	0.3498	0.5616	0.7205
	15 y88l	0.125	1.0	0.0	72.75	-51.03	72.56	88.71	125	27.7	44.79	7.09	0.3481	0.5628	0.7187
	16 l00c	0.0	1.0	0.0	72.74	-51.16	72.53	88.76	125	27.66	44.77	7.09	0.3478	0.563	0.7184
	17 l13c	0.0	1.0	0.125	72.78	-51.0	71.64	87.95	125	27.73	44.82	7.35	0.3471	0.561	0.7192
	18 l25c	0.0	1.0	0.25	72.88	-50.49	67.84	84.57	127	27.98	44.98	8.48	0.3435	0.5524	0.7218
	19 l38c	0.0	1.0	0.375	73.08	-49.33	60.28	77.9	129	28.49	45.29	11.05	0.3358	0.5338	0.7266
	20 l50c	0.0	1.0	0.5	73.46	-47.23	49.16	68.18	134	29.46	45.87	15.79	0.3233	0.5034	0.736
	21 l63c	0.0	1.0	0.625	74.1	-43.94	35.15	56.27	141	31.07	46.87	23.64	0.3059	0.4614	0.752
	22 l75c	0.0	1.0	0.75	74.72	-39.36	19.71	44.03	153	33.07	47.84	34.77	0.2859	0.4135	0.7676
	23 l88c	0.0	1.0	0.875	76.21	-33.56	3.44	33.74	174	36.64	50.24	51.22	0.2653	0.3638	0.8061
	24 c00v	0.0	1.0	1.0	77.56	-27.51	-10.78	29.55	201	40.34	52.47	69.38	0.2487	0.3235	0.842
	25 c13v	0.0	0.875	1.0	69.83	-18.71	-22.59	29.34	230	32.95	40.51	67.56	0.2337	0.2873	0.6501
	26 c25v	0.0	0.75	1.0	60.64	-6.82	-36.88	37.52	260	25.74	28.84	65.72	0.214	0.2397	0.4627
	27 c38v	0.0	0.675	1.0	51.3	7.35	-51.74	52.27	278	20.01	19.53	64.29	0.1927	0.1881	0.3134
	28 c50v	0.0	0.5	1.0	42.9	22.36	-65.4	69.12	289	16.02	13.09	63.33	0.1733	0.1416	0.21
	29 c63v	0.0	0.375	1.0	36.41	35.81	-76.05	84.07	295	13.63	9.22	62.73	0.1592	0.1078	0.148
	30 c75v	0.0	0.25	1.0	32.11	45.89	-83.2	95.03	299	12.35	7.13	62.44	0.1508	0.0871	0.1145
	31 c88v	0.0	0.125	1.0	30.13	50.78	-86.54	100.35	300	11.83	6.29	62.35	0.147	0.0782	0.1009
	32 v00m	0.0	0.0	1.0	29.65	52.07	-87.36	101.71	301	11.71	6.09	62.34	0.1461	0.076	0.0978
	33 v13m	0.125	0.0	1.0	29.89	52.33	-87.61	102.06	301	11.9	6.19	63.09	0.1466	0.0763	0.0993
	34 v25m	0.25	0.0	1.0	30.04	52.53	-86.6	101.3	301	12.02	6.25	62.26	0.1493	0.0777	0.1003
	35 v38m	0.375	0.0	1.0	30.88	53.51	-85.01	100.46	302	12.69	6.6	62.08	0.156	0.0811	0.1059
	36 v50m	0.5	0.0	1.0	32.47	55.29	-82.3	99.16	304	14.02	7.29	62.11	0.1681	0.0874	0.117
	37 v63m	0.625	0.0	1.0	34.81	58.03	-77.84	97.1	307	16.17	8.4	61.64	0.1875	0.0975	0.1349
	38 v75m	0.75	0.0	1.0	37.85	61.58	-71.84	94.62	311	19.26	10.0	60.8	0.2139	0.1111	0.1605
	39 v88m	0.875	0.0	1.0	43.2	67.07	-66.02	94.12	315	25.44	13.29	64.65	0.2461	0.1286	0.2133
	40 m00o	1.0	0.0	1.0	48.11	72.19	-60.98	94.51	320	32.19	16.88	68.68	0.2734	0.1434	0.2709
	41 m13o	1.0	0.0	0.875	44.16	68.22	-45.05	81.76	327	26.72	13.95	44.83	0.3125	0.1632	0.2238
	42 m25o	1.0	0.0	0.75	41.12	65.33	-26.56	70.53	338	22.99	11.94	26.62	0.3735	0.194	0.1916
	43 m38o	1.0	0.0	0.675	39.41	63.33	-9.6	64.05	351	20.98	10.9	15.83	0.4398	0.2285	0.1749
	44 m50o	1.0	0.0	0.5	38.17	61.9	8.12	62.43	7	19.59	10.18	8.44	0.5127	0.2664	0.1634
	45 m63o	1.0	0.0	0.375	37.38	61.03	25.73	66.23	23	18.76	9.75	3.97	0.5777	0.3001	0.1564
	46 m75o	1.0	0.0	0.25	36.96	60.54	42.82	74.15	35	18.32	9.52	1.55	0.6234	0.3238	0.1527
	47 m88o	1.0	0.0	0.125	36.78	60.29	56.46	82.6	43	18.12	9.42	0.49	0.6466	0.3361	0.1511
	48 o00y	1.0	0.0	0.0	36.64	60.14	59.89	84.88	45	17.98	9.35	0.23	0.6525	0.3391	0.15
	49 n00w	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0	0.0	0.0	0.0	0.0	0.0	0.0
	50 n13w	0.125	0.125	0.125	2.06	-0.45	-0.71	0.86	238	0.21	0.23	0.3	0.2807	0.3114	0.0037
	51 n25w	0.25	0.25	0.25	10.74	-0.38	-2.06	2.1	259	1.15	1.23	1.52	0.2956	0.3142	0.0197
	52 n38w	0.375	0.375	0.375	22.45	-0.22	-2.06	2.09	264	3.45	3.64	4.35	0.3014	0.3184	0.0584
	53 n50w	0.5	0.5	0.5	34.27	-0.08	-2.1	2.12	267	7.72	8.14	9.52	0.3043	0.3205	0.1306
	54 n63w	0.625	0.625	0.625	46.51	0.02	-2.12	2.13	270	14.87	15.65	18.07	0.3061	0.322	0.2511
	55 n75w	0.75	0.75	0.75	61.23	-0.17	-1.78	1.79	264	28.0	29.51	33.44	0.3079	0.3245	0.4735
	56 n88w	0.875	0.875	0.875	80.8	0.05	-0.03	0.07	324	55.26	58.12	63.32	0.3127	0.3289	0.9326
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.4215

IE370-7N, Colorimetric data of Television Luminous System TLS00a for CIE standard illuminant D65; LCD projector; Page: 51/66

$n = 88.59 / (88.59 + 0.0) = 1.0$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 51/66output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS00a for CIE lightness $L^*=00$ of black for illuminant D65
System TLS00a
LCD projector

Y Yellow

$LCH^*_a = 83.1 \ 87.1 \ 101$

$LAB^*_a = 83.1 \ -16.3 \ 85.5$

L Leaf green

$LCH^*_a = 72.7 \ 88.8 \ 125$

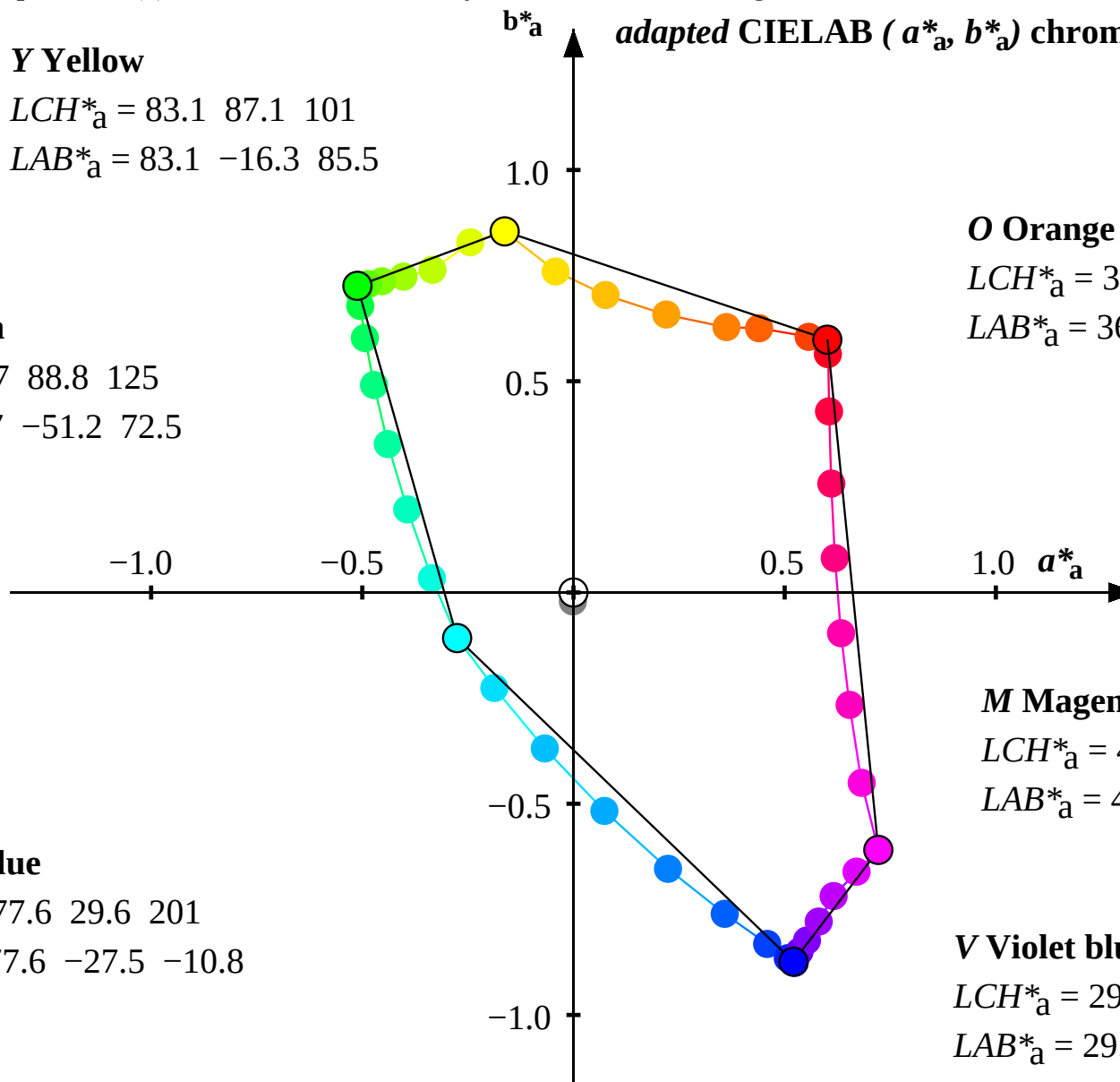
$LAB^*_a = 72.7 \ -51.2 \ 72.5$

C Cyan blue

$LCH^*_a = 77.6 \ 29.6 \ 201$

$LAB^*_a = 77.6 \ -27.5 \ -10.8$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH^*_a = 36.6 \ 84.9 \ 45$

$LAB^*_a = 36.6 \ 60.1 \ 59.9$

M Magenta red

$LCH^*_a = 48.1 \ 94.5 \ 320$

$LAB^*_a = 48.1 \ 72.2 \ -61.0$

V Violet blue

$LCH^*_a = 29.6 \ 101.7 \ 301$

$LAB^*_a = 29.6 \ 52.1 \ -87.4$

Colorimetric "Adapted data (a)": Television Luminous System TLS06a for CIE lightness $L^*=06$ of black for illuminant D65

System TLS06a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD projector	00 o00y	1.0	0.0	0.0	37.67	58.17	51.95	77.99	42	18.45	9.91	0.91	0.6305	0.3385	0.1585
	01 o13y	1.0	0.125	0.0	37.97	57.43	51.85	77.38	42	18.56	10.07	0.95	0.6273	0.3405	0.1612
D65 reflection:	02 o25y	1.0	0.25	0.0	39.36	53.96	52.54	75.31	44	19.04	10.87	1.07	0.6145	0.3508	0.1739
	03 o38y	1.0	0.375	0.0	42.89	42.75	54.99	69.65	52	19.83	13.08	1.37	0.5784	0.3815	0.2093
	04 o50y	1.0	0.5	0.0	47.45	35.42	57.05	67.15	58	22.41	16.37	1.95	0.5503	0.4018	0.2618
	05 o63y	1.0	0.625	0.0	54.42	21.51	61.65	65.29	71	26.11	22.37	2.91	0.5081	0.4353	0.358
	06 o75y	1.0	0.75	0.0	62.46	7.52	67.29	67.71	84	31.41	30.94	4.28	0.4715	0.4644	0.495
	07 o88y	1.0	0.875	0.0	70.77	-4.1	73.59	73.7	93	38.48	41.85	5.98	0.4458	0.4849	0.6695
	08 y00l	1.0	1.0	0.0	83.18	-16.18	83.63	85.19	101	52.91	62.51	9.08	0.425	0.5021	1.0
	09 y13l	0.875	1.0	0.0	81.26	-24.12	80.96	84.48	107	46.89	58.94	8.88	0.4088	0.5138	0.943
	10 y25l	0.75	1.0	0.0	75.13	-33.0	74.36	81.35	114	35.41	48.49	7.72	0.3865	0.5292	0.7757
	11 y38l	0.625	1.0	0.0	74.19	-39.71	72.73	82.87	119	32.32	46.99	7.71	0.3714	0.54	0.7518
	12 y50l	0.5	1.0	0.0	73.57	-44.73	71.68	84.5	122	30.24	46.04	7.71	0.36	0.5482	0.7366
	13 y63l	0.375	1.0	0.0	73.22	-47.9	71.05	85.69	124	29.01	45.49	7.72	0.3528	0.5533	0.7278
	14 y75l	0.25	1.0	0.0	73.03	-49.59	70.74	86.4	125	28.37	45.21	7.72	0.349	0.5561	0.7233
	15 y88l	0.125	1.0	0.0	72.96	-50.32	70.59	86.7	125	28.1	45.1	7.72	0.3473	0.5573	0.7215
	16 l00c	0.0	1.0	0.0	72.94	-50.45	70.56	86.75	126	28.06	45.08	7.72	0.347	0.5575	0.7212
	17 l13c	0.0	1.0	0.125	72.98	-50.3	69.73	85.99	126	28.13	45.13	7.97	0.3463	0.5556	0.722
	18 l25c	0.0	1.0	0.25	73.08	-49.8	66.15	82.81	127	28.37	45.29	9.1	0.3428	0.5472	0.7246
	19 l38c	0.0	1.0	0.375	73.28	-48.66	58.96	76.45	130	28.88	45.59	11.66	0.3353	0.5293	0.7294
	20 l50c	0.0	1.0	0.5	73.66	-46.6	48.25	67.09	134	29.84	46.17	16.36	0.323	0.4998	0.7387
	21 l63c	0.0	1.0	0.625	74.29	-43.37	34.61	55.49	141	31.44	47.16	24.15	0.306	0.459	0.7545
	22 l75c	0.0	1.0	0.75	74.9	-38.87	19.46	43.47	153	33.43	48.12	35.2	0.2863	0.4122	0.7699
	23 l88c	0.0	1.0	0.875	76.38	-33.16	3.4	33.34	174	36.98	50.51	51.54	0.266	0.3633	0.808
	24 c00v	0.0	1.0	1.0	77.72	-27.2	-10.68	29.23	201	40.65	52.73	69.57	0.2495	0.3236	0.8436
	25 c13v	0.0	0.875	1.0	70.07	-18.46	-22.35	29.0	230	33.31	40.85	67.76	0.2347	0.2878	0.6536
	26 c25v	0.0	0.75	1.0	61.01	-6.7	-36.43	37.05	260	26.15	29.26	65.94	0.2155	0.2411	0.4681
	27 c38v	0.0	0.675	1.0	51.86	7.19	-50.98	51.49	278	20.46	20.02	64.52	0.1949	0.1907	0.3203
	28 c50v	0.0	0.5	1.0	43.68	21.7	-64.24	67.82	289	16.51	13.62	63.56	0.1762	0.1454	0.2179
	29 c63v	0.0	0.375	1.0	37.45	34.48	-74.47	82.07	295	14.13	9.78	62.97	0.1626	0.1126	0.1565
	30 c75v	0.0	0.25	1.0	33.37	43.88	-81.25	92.35	298	12.86	7.71	62.68	0.1545	0.0926	0.1233
	31 c88v	0.0	0.125	1.0	31.51	48.38	-84.38	97.27	300	12.34	6.87	62.59	0.1508	0.084	0.1099
	32 v00m	0.0	0.0	1.0	31.06	49.56	-85.15	98.53	300	12.23	6.68	62.58	0.15	0.0819	0.1068
	33 v13m	0.125	0.0	1.0	31.29	49.85	-85.41	98.9	300	12.41	6.77	63.33	0.1504	0.0821	0.1084
	34 v25m	0.25	0.0	1.0	31.43	50.06	-84.43	98.16	301	12.53	6.84	62.5	0.1531	0.0835	0.1093
	35 v38m	0.375	0.0	1.0	32.21	51.11	-82.93	97.42	302	13.2	7.18	62.32	0.1596	0.0868	0.1149
	36 v50m	0.5	0.0	1.0	33.71	53.02	-80.38	96.3	303	14.52	7.87	62.35	0.1713	0.0928	0.1259
	37 v63m	0.625	0.0	1.0	35.93	55.93	-76.13	94.48	306	16.65	8.97	61.89	0.1902	0.1025	0.1435
	38 v75m	0.75	0.0	1.0	38.83	59.68	-70.38	92.28	310	19.72	10.56	61.05	0.2159	0.1156	0.1689
	39 v88m	0.875	0.0	1.0	43.98	65.45	-64.87	92.16	315	25.86	13.82	64.88	0.2473	0.1322	0.2212
	40 m00o	1.0	0.0	1.0	48.75	70.78	-60.05	92.82	320	32.56	17.39	68.88	0.274	0.1463	0.2782
	41 m13o	1.0	0.0	0.875	44.91	66.65	-44.17	79.96	326	27.12	14.48	45.19	0.3125	0.1668	0.2316
	42 m25o	1.0	0.0	0.75	41.97	63.61	-25.86	68.67	338	23.42	12.48	27.11	0.3717	0.1981	0.1997
	43 m38o	1.0	0.0	0.675	40.33	61.51	-9.27	62.21	351	21.43	11.45	16.39	0.4349	0.2324	0.1832
	44 m50o	1.0	0.0	0.5	39.13	60.02	7.74	60.51	7	20.05	10.74	9.06	0.5032	0.2694	0.1717
	45 m63o	1.0	0.0	0.375	38.38	59.1	24.0	63.78	22	19.22	10.3	4.62	0.5629	0.3017	0.1648
	46 m75o	1.0	0.0	0.25	37.97	58.59	38.41	70.05	33	18.78	10.07	2.22	0.6044	0.3242	0.1612
	47 m88o	1.0	0.0	0.125	37.8	58.33	48.71	75.99	40	18.59	9.98	1.16	0.6253	0.3356	0.1596
	48 o00y	1.0	0.0	0.0	37.67	58.17	51.95	77.99	42	18.45	9.91	0.91	0.6305	0.3385	0.1585
	49 n00w	0.0	0.0	0.0	5.65	0.0	0.0	0.01	0	0.59	0.63	0.68	0.3127	0.329	0.01
	50 n13w	0.125	0.125	0.125	7.7	-0.44	-0.71	0.85	238	0.8	0.85	0.98	0.3038	0.3241	0.0136
	51 n25w	0.25	0.25	0.25	14.64	-0.28	-1.58	1.61	260	1.74	1.84	2.19	0.3012	0.3191	0.0295
	52 n38w	0.375	0.375	0.375	24.45	-0.2	-1.86	1.88	264	4.02	4.24	5.0	0.303	0.3199	0.0679
	53 n50w	0.5	0.5	0.5	35.41	-0.08	-2.0	2.01	267	8.26	8.71	10.14	0.3049	0.3211	0.1393
	54 n63w	0.625	0.625	0.625	47.19	0.02	-2.07	2.08	270	15.36	16.16	18.62	0.3064	0.3223	0.2586
	55 n75w	0.75	0.75	0.75	61.59	-0.16	-1.75	1.77	264	28.4	29.93	33.89	0.308	0.3246	0.4788
	56 n88w	0.875	0.875	0.875	80.92	0.05	-0.03	0.06	324	55.46	58.33	63.56	0.3127	0.3289	0.9332
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.4173

IE370-7N, Colorimetric data of Television Luminous System TLS06a for CIE standard illuminant D65; LCD projector; Page: 53/66

$n = 88.59 / (88.59 + 0.63) = 0.993$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 53/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Adapted data (a)": Television Luminous System TLS06a for CIE lightness $L^*=06$ of black for illuminant D65
System TLS06a

LCD projector

Y Yellow

D65 reflection:

$Y_N = 0.63$

$L^*_N = 5.69$

$LCH^*_a = 83.2 \ 85.2 \ 101$

$LAB^*_a = 83.2 \ -16.2 \ 83.6$

L Leaf green

$LCH^*_a = 72.9 \ 86.7 \ 126$

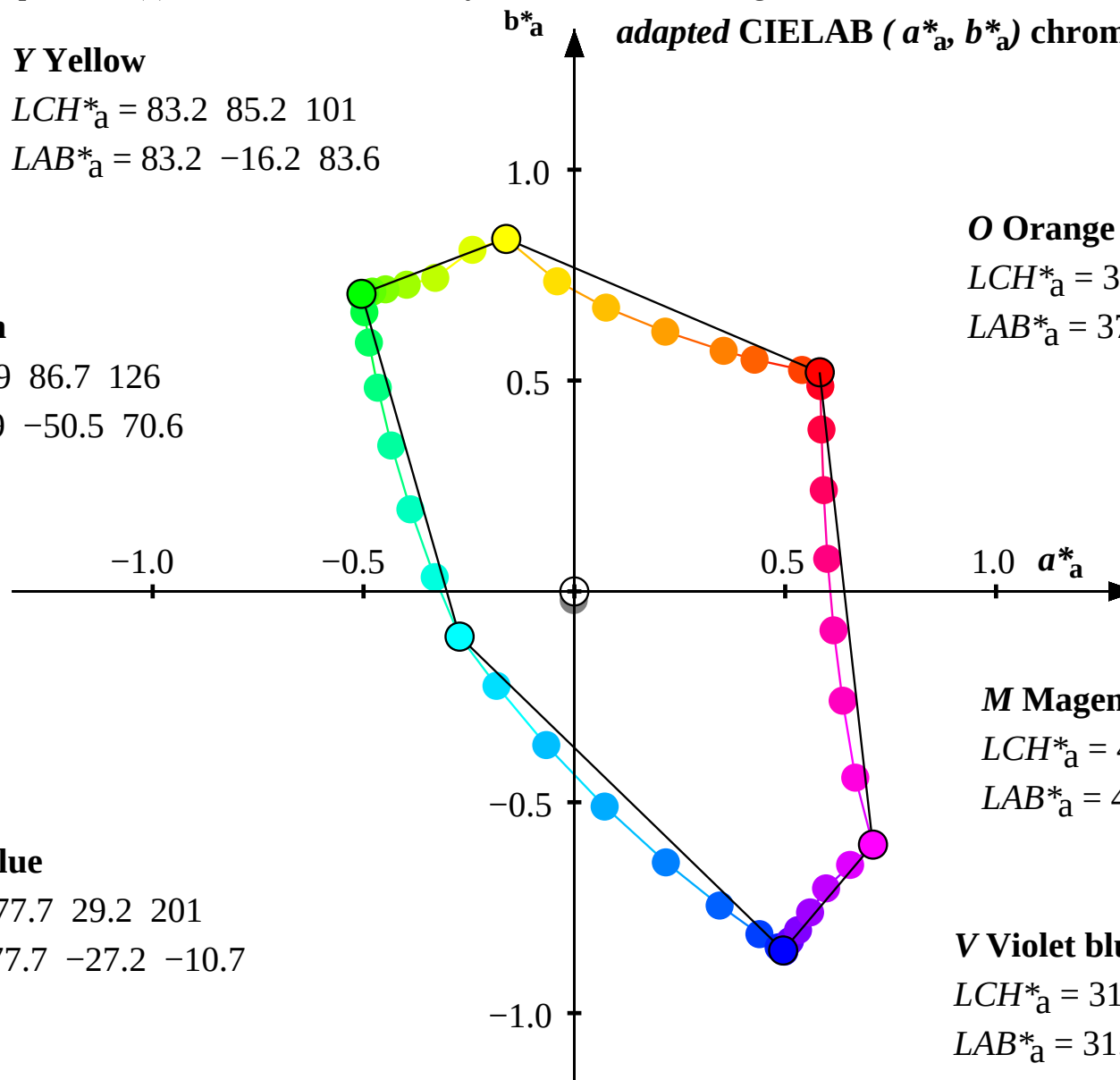
$LAB^*_a = 72.9 \ -50.5 \ 70.6$

C Cyan blue

$LCH^*_a = 77.7 \ 29.2 \ 201$

$LAB^*_a = 77.7 \ -27.2 \ -10.7$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH^*_a = 37.7 \ 78.0 \ 42$

$LAB^*_a = 37.7 \ 58.2 \ 51.9$

M Magenta red

$LCH^*_a = 48.7 \ 92.8 \ 320$

$LAB^*_a = 48.7 \ 70.8 \ -60.1$

V Violet blue

$LCH^*_a = 31.1 \ 98.5 \ 300$

$LAB^*_a = 31.1 \ 49.6 \ -85.2$

Colorimetric "Adapted data (a)": Television Luminous System TLS11a for CIE lightness $L^*=11$ of black for illuminant D65

System TLS11a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_{ab}=LAB^*1_a$	$a^*_{ab}=LAB^*2_a$	$b^*_{ab}=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD projector	00 o00y	1.0	0.0	0.0	38.65	56.34	45.45	72.39	39	18.91	10.46	1.58	0.6111	0.3379	0.1668
	01 o13y	1.0	0.125	0.0	38.94	55.65	45.51	71.89	39	19.02	10.62	1.62	0.6083	0.3398	0.1695
D65 reflection:	02 o25y	1.0	0.25	0.0	40.27	52.36	46.6	70.09	42	19.5	11.41	1.74	0.5971	0.3495	0.1821
	03 o38y	1.0	0.375	0.0	43.67	41.61	49.77	64.87	50	20.29	13.61	2.04	0.5645	0.3788	0.2171
	04 o50y	1.0	0.5	0.0	48.1	34.6	52.81	63.14	57	22.85	16.87	2.62	0.5397	0.3986	0.2691
	05 o63y	1.0	0.625	0.0	54.91	21.11	58.29	61.99	70	26.52	22.84	3.56	0.5011	0.4316	0.3643
	06 o75y	1.0	0.75	0.0	62.8	7.41	64.61	65.04	83	31.78	31.35	4.92	0.467	0.4606	0.5
	07 o88y	1.0	0.875	0.0	70.99	-4.05	71.38	71.5	93	38.8	42.18	6.61	0.443	0.4816	0.6728
	08 y00l	1.0	1.0	0.0	83.28	-16.03	81.88	83.43	101	53.13	62.69	9.69	0.4233	0.4995	1.0
	09 y13l	0.875	1.0	0.0	81.37	-23.88	79.2	82.73	107	47.15	59.15	9.49	0.4072	0.5108	0.9435
	10 y25l	0.75	1.0	0.0	75.31	-32.6	72.49	79.49	114	35.75	48.77	8.34	0.385	0.5252	0.7779
	11 y38l	0.625	1.0	0.0	74.37	-39.21	70.89	81.01	119	32.69	47.29	8.34	0.3701	0.5355	0.7543
	12 y50l	0.5	1.0	0.0	73.77	-44.15	69.85	82.63	122	30.62	46.34	8.34	0.359	0.5433	0.7392
	13 y63l	0.375	1.0	0.0	73.41	-47.26	69.22	83.82	124	29.39	45.8	8.34	0.3519	0.5483	0.7305
	14 y75l	0.25	1.0	0.0	73.23	-48.92	68.92	84.52	125	28.76	45.52	8.34	0.3481	0.551	0.726
	15 y88l	0.125	1.0	0.0	73.16	-49.64	68.77	84.82	126	28.49	45.4	8.34	0.3465	0.5521	0.7242
	16 l00c	0.0	1.0	0.0	73.14	-49.76	68.74	84.87	126	28.45	45.38	8.35	0.3462	0.5523	0.7239
	17 l13c	0.0	1.0	0.125	73.18	-49.61	67.96	84.15	126	28.52	45.44	8.59	0.3455	0.5504	0.7248
	18 l25c	0.0	1.0	0.25	73.28	-49.12	64.58	81.14	127	28.76	45.59	9.71	0.3422	0.5423	0.7273
	19 l38c	0.0	1.0	0.375	73.48	-48.01	57.71	75.07	130	29.27	45.89	12.25	0.3348	0.525	0.7321
	20 l50c	0.0	1.0	0.5	73.85	-45.99	47.38	66.03	134	30.22	46.47	16.92	0.3228	0.4964	0.7413
	21 l63c	0.0	1.0	0.625	74.48	-42.82	34.09	54.73	141	31.81	47.45	24.66	0.3061	0.4566	0.7569
	22 l75c	0.0	1.0	0.75	75.08	-38.39	19.21	42.93	153	33.78	48.41	35.63	0.2867	0.4108	0.7722
	23 l88c	0.0	1.0	0.875	76.54	-32.77	3.37	32.96	174	37.31	50.77	51.86	0.2666	0.3628	0.8099
	24 c00v	0.0	1.0	1.0	77.86	-26.9	-10.57	28.92	201	40.96	52.98	69.76	0.2502	0.3236	0.8451
	25 c13v	0.0	0.875	1.0	70.31	-18.21	-22.11	28.66	231	33.67	41.19	67.96	0.2357	0.2884	0.657
	26 c25v	0.0	0.75	1.0	61.37	-6.59	-35.98	36.59	260	26.56	29.67	66.15	0.217	0.2425	0.4733
	27 c38v	0.0	0.675	1.0	52.4	7.03	-50.24	50.74	278	20.91	20.5	64.74	0.197	0.1931	0.327
	28 c50v	0.0	0.5	1.0	44.44	21.08	-63.14	66.57	288	16.98	14.15	63.8	0.1789	0.149	0.2257
	29 c63v	0.0	0.375	1.0	38.44	33.25	-72.97	80.2	294	14.62	10.33	63.21	0.1658	0.1172	0.1649
	30 c75v	0.0	0.25	1.0	34.55	42.07	-79.42	89.88	298	13.36	8.28	62.91	0.158	0.0979	0.132
	31 c88v	0.0	0.125	1.0	32.8	46.24	-82.37	94.47	299	12.84	7.44	62.83	0.1545	0.0896	0.1187
	32 v00m	0.0	0.0	1.0	32.37	47.33	-83.09	95.64	300	12.73	7.25	62.82	0.1537	0.0876	0.1157
	33 v13m	0.125	0.0	1.0	32.58	47.63	-83.38	96.03	300	12.91	7.35	63.56	0.1541	0.0877	0.1172
	34 v25m	0.25	0.0	1.0	32.72	47.85	-82.42	95.31	300	13.03	7.41	62.73	0.1567	0.0891	0.1182
	35 v38m	0.375	0.0	1.0	33.46	48.96	-80.99	94.65	301	13.7	7.75	62.56	0.163	0.0923	0.1236
	36 v50m	0.5	0.0	1.0	34.87	50.97	-78.58	93.67	303	15.0	8.43	62.59	0.1744	0.098	0.1345
	37 v63m	0.625	0.0	1.0	36.98	54.01	-74.53	92.05	306	17.12	9.53	62.13	0.1928	0.1073	0.152
	38 v75m	0.75	0.0	1.0	39.76	57.91	-69.0	90.08	310	20.17	11.11	61.3	0.2179	0.12	0.1772
	39 v88m	0.875	0.0	1.0	44.73	63.92	-63.77	90.3	315	26.26	14.35	65.1	0.2485	0.1357	0.2289
	40 m00o	1.0	0.0	1.0	49.36	69.42	-59.15	91.21	320	32.92	17.89	69.07	0.2746	0.1492	0.2853
	41 m13o	1.0	0.0	0.875	45.63	65.15	-43.32	78.24	326	27.52	15.0	45.55	0.3125	0.1703	0.2392
	42 m25o	1.0	0.0	0.75	42.79	61.99	-25.21	66.92	338	23.85	13.02	27.6	0.37	0.2019	0.2076
	43 m38o	1.0	0.0	0.675	41.2	59.82	-8.97	60.49	351	21.87	11.99	16.96	0.4303	0.236	0.1913
	44 m50o	1.0	0.0	0.5	40.05	58.26	7.39	58.73	7	20.5	11.28	9.67	0.4945	0.2721	0.18
	45 m63o	1.0	0.0	0.375	39.33	57.31	22.53	61.58	21	19.68	10.85	5.27	0.5497	0.3032	0.1731
	46 m75o	1.0	0.0	0.25	38.94	56.78	35.12	66.76	32	19.24	10.62	2.88	0.5875	0.3244	0.1695
	47 m88o	1.0	0.0	0.125	38.77	56.51	43.19	71.12	37	19.05	10.53	1.83	0.6065	0.3352	0.1679
	48 o00y	1.0	0.0	0.0	38.65	56.34	45.45	72.39	39	18.91	10.46	1.58	0.6111	0.3379	0.1668
	49 n00w	0.0	0.0	0.0	10.87	0.0	0.0	0.01	341	1.18	1.24	1.35	0.3127	0.329	0.0198
	50 n13w	0.125	0.125	0.125	12.4	-0.31	-0.49	0.6	237	1.38	1.47	1.65	0.3076	0.3262	0.0234
	51 n25w	0.25	0.25	0.25	17.69	-0.23	-1.3	1.33	260	2.32	2.45	2.85	0.3041	0.3215	0.0391
	52 n38w	0.375	0.375	0.375	26.25	-0.18	-1.7	1.72	264	4.58	4.83	5.64	0.3042	0.3211	0.0771
	53 n50w	0.5	0.5	0.5	36.49	-0.07	-1.91	1.92	267	8.8	9.27	10.74	0.3054	0.3217	0.1478
	54 n63w	0.625	0.625	0.625	47.84	0.02	-2.01	2.02	270	15.85	16.67	19.17	0.3066	0.3225	0.2659
	55 n75w	0.75	0.75	0.75	61.95	-0.16	-1.72	1.74	264	28.79	30.34	34.32	0.3081	0.3246	0.484
	56 n88w	0.875	0.875	0.875	81.04	0.05	-0.03	0.06	324	55.66	58.55	63.79	0.3127	0.3289	0.9339
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.4132

IE370-7N, Colorimetric data of Television Luminous System TLS11a for CIE standard illuminant D65; LCD projector; Page: 55/66

$n = 88.59 / (88.59 + 1.26) = 0.986$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 55/66output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS11a for CIE lightness $L^*=11$ of black for illuminant D65
System TLS11a

LCD projector

Y Yellow

D65 reflection:

$Y_N = 1.26$

$L_N^* = 11.0$

$LCH_a^* = 83.3 \ 83.4 \ 101$

$LAB_a^* = 83.3 \ -16.0 \ 81.9$

L Leaf green

$LCH_a^* = 73.1 \ 84.9 \ 126$

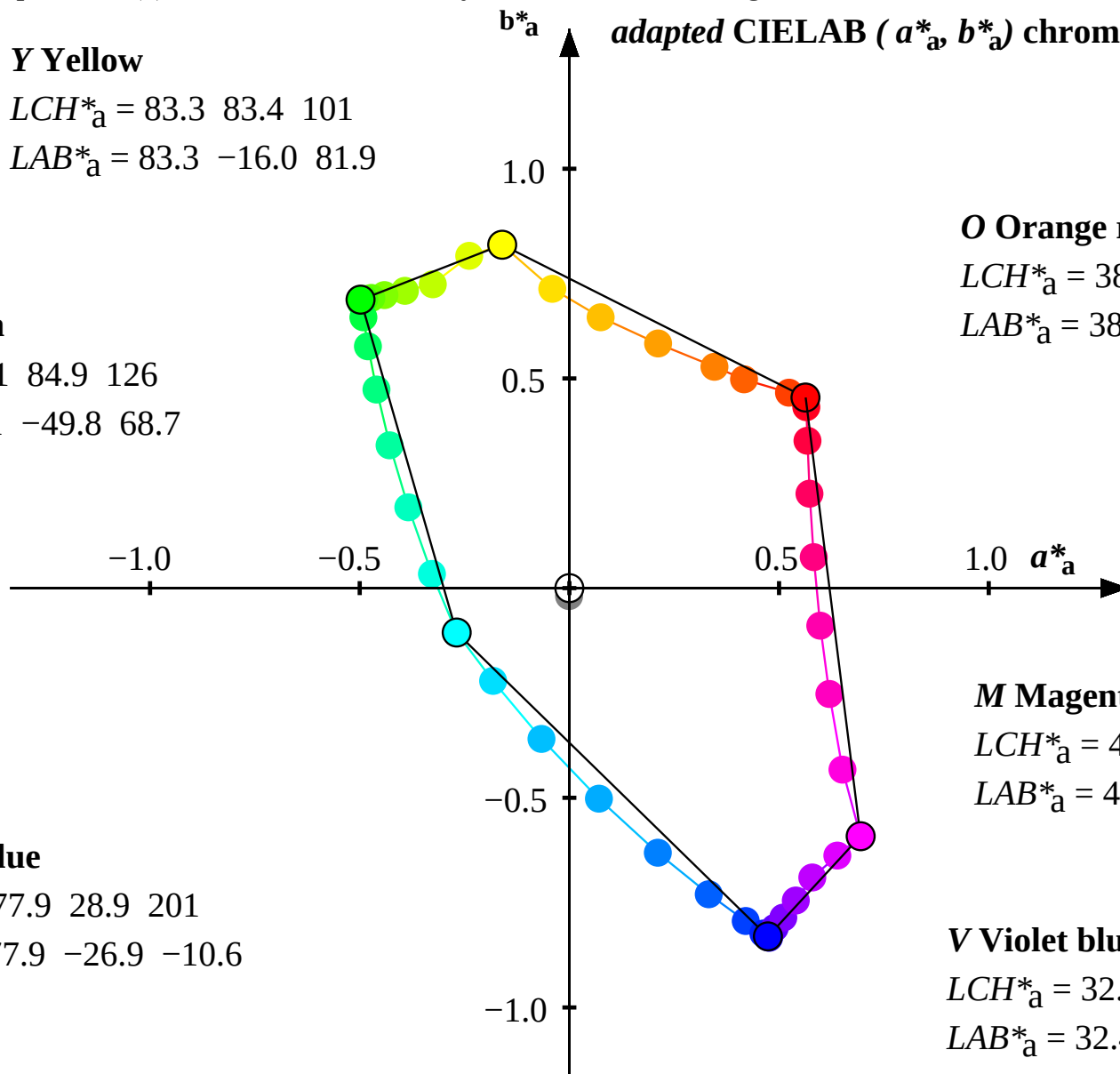
$LAB_a^* = 73.1 \ -49.8 \ 68.7$

C Cyan blue

$LCH_a^* = 77.9 \ 28.9 \ 201$

$LAB_a^* = 77.9 \ -26.9 \ -10.6$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH_a^* = 38.7 \ 72.4 \ 39$

$LAB_a^* = 38.7 \ 56.3 \ 45.5$

M Magenta red

$LCH_a^* = 49.4 \ 91.2 \ 320$

$LAB_a^* = 49.4 \ 69.4 \ -59.2$

V Violet blue

$LCH_a^* = 32.4 \ 95.6 \ 300$

$LAB_a^* = 32.4 \ 47.3 \ -83.1$

Colorimetric "Adapted data (a)": Television Luminous System TLS18a for CIE lightness $L^*=18$ of black for illuminant D65

System TLS18a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_{a}=LAB^*_{1a}$	$a^*_{a}=LAB^*_{2a}$	$b^*_{a}=LAB^*_{3a}$	$C^*_{ab,a}=LAB^*_{ab,a}$	$h_{ab,a}$	$X_a=XYZ^*_{1a}$	$Y_a=XYZ^*_{2a}$	$Z_a=XYZ^*_{3a}$	x_a	y_a	$Y_a/88.59$
LCD projector	00 o00y	1.0	0.0	0.0	40.47	53.07	37.7	65.09	35	19.82	11.54	2.89	0.5786	0.3369	0.183
	01 o13y	1.0	0.125	0.0	40.74	52.44	37.87	64.69	36	19.92	11.7	2.93	0.5765	0.3386	0.1856
D65 reflection:	02 o25y	1.0	0.25	0.0	41.97	49.47	39.18	63.11	38	20.39	12.48	3.05	0.5676	0.3474	0.1979
	03 o38y	1.0	0.375	0.0	45.15	39.51	42.79	58.25	47	21.17	14.65	3.34	0.5405	0.3741	0.2323
	04 o50y	1.0	0.5	0.0	49.33	33.09	46.64	57.19	55	23.69	17.86	3.91	0.5211	0.3929	0.2833
	05 o63y	1.0	0.625	0.0	55.83	20.35	52.97	56.75	69	27.32	23.75	4.85	0.4886	0.4247	0.3767
	06 o75y	1.0	0.75	0.0	63.46	7.19	60.1	60.53	83	32.51	32.14	6.19	0.4589	0.4537	0.5097
	07 o88y	1.0	0.875	0.0	71.43	-3.95	67.49	67.61	93	39.43	42.82	7.85	0.4376	0.4752	0.6792
	08 y00l	1.0	1.0	0.0	83.47	-15.74	78.66	80.22	101	53.56	63.05	10.89	0.4201	0.4945	1.0
	09 y13l	0.875	1.0	0.0	81.6	-23.41	75.99	79.52	107	47.66	59.56	10.69	0.4042	0.5051	0.9446
	10 y25l	0.75	1.0	0.0	75.65	-31.84	69.13	76.11	115	36.42	49.32	9.56	0.3822	0.5175	0.7822
	11 y38l	0.625	1.0	0.0	74.73	-38.24	67.56	77.64	120	33.4	47.86	9.56	0.3678	0.527	0.7591
	12 y50l	0.5	1.0	0.0	74.14	-43.02	66.54	79.25	123	31.36	46.92	9.55	0.357	0.5342	0.7443
	13 y63l	0.375	1.0	0.0	73.8	-46.03	65.93	80.41	125	30.15	46.39	9.56	0.3502	0.5388	0.7358
	14 y75l	0.25	1.0	0.0	73.62	-47.64	65.63	81.1	126	29.53	46.11	9.56	0.3466	0.5413	0.7314
	15 y88l	0.125	1.0	0.0	73.54	-48.32	65.49	81.4	126	29.26	46.0	9.56	0.345	0.5423	0.7296
	16 l00c	0.0	1.0	0.0	73.53	-48.45	65.46	81.45	127	29.22	45.98	9.56	0.3447	0.5425	0.7293
	17 l13c	0.0	1.0	0.125	73.57	-48.31	64.77	80.8	127	29.29	46.03	9.81	0.3441	0.5407	0.7301
	18 l25c	0.0	1.0	0.25	73.67	-47.83	61.71	78.08	128	29.53	46.19	10.91	0.3409	0.5332	0.7326
	19 l38c	0.0	1.0	0.375	73.86	-46.76	55.4	72.5	130	30.03	46.48	13.42	0.3339	0.5169	0.7373
	20 l50c	0.0	1.0	0.5	74.22	-44.81	45.74	64.04	134	30.97	47.05	18.02	0.3224	0.4899	0.7463
	21 l63c	0.0	1.0	0.625	74.84	-41.75	33.09	53.28	142	32.54	48.02	25.65	0.3063	0.4521	0.7617
	22 l75c	0.0	1.0	0.75	75.43	-37.46	18.73	41.89	153	34.48	48.96	36.47	0.2875	0.4083	0.7766
	23 l88c	0.0	1.0	0.875	76.86	-32.03	3.3	32.21	174	37.96	51.3	52.47	0.2678	0.3619	0.8136
	24 c00v	0.0	1.0	1.0	78.15	-26.32	-10.38	28.31	202	41.56	53.47	70.13	0.2516	0.3238	0.8481
	25 c13v	0.0	0.875	1.0	70.76	-17.75	-21.65	28.01	231	34.37	41.84	68.36	0.2377	0.2894	0.6637
	26 c25v	0.0	0.75	1.0	62.07	-6.38	-35.13	35.72	260	27.36	30.49	66.57	0.2199	0.245	0.4836
	27 c38v	0.0	0.675	1.0	53.43	6.74	-48.84	49.32	278	21.78	21.44	65.18	0.201	0.1978	0.3401
	28 c50v	0.0	0.5	1.0	45.87	19.96	-61.06	64.25	288	17.91	15.18	64.25	0.184	0.1559	0.2407
	29 c63v	0.0	0.375	1.0	40.27	31.09	-70.21	76.79	294	15.58	11.42	63.67	0.1718	0.1259	0.1811
	30 c75v	0.0	0.25	1.0	36.72	38.93	-76.09	85.48	297	14.34	9.39	63.38	0.1646	0.1078	0.1489
	31 c88v	0.0	0.125	1.0	35.13	42.57	-78.75	89.53	298	13.83	8.57	63.3	0.1614	0.1	0.1359
	32 v00m	0.0	0.0	1.0	34.75	43.52	-79.4	90.55	299	13.72	8.38	63.29	0.1607	0.0981	0.1328
	33 v13m	0.125	0.0	1.0	34.94	43.84	-79.7	90.97	299	13.9	8.47	64.01	0.1609	0.0981	0.1344
	34 v25m	0.25	0.0	1.0	35.07	44.07	-78.78	90.28	299	14.02	8.53	63.2	0.1635	0.0995	0.1353
	35 v38m	0.375	0.0	1.0	35.73	45.25	-77.49	89.74	300	14.67	8.87	63.03	0.1695	0.1024	0.1407
	36 v50m	0.5	0.0	1.0	37.01	47.38	-75.31	88.98	302	15.96	9.54	63.06	0.1802	0.1077	0.1513
	37 v63m	0.625	0.0	1.0	38.94	50.6	-71.58	87.67	305	18.05	10.62	62.61	0.1977	0.1164	0.1685
	38 v75m	0.75	0.0	1.0	41.5	54.71	-66.44	86.07	309	21.06	12.18	61.78	0.2216	0.1282	0.1931
	39 v88m	0.875	0.0	1.0	46.14	61.1	-61.71	86.85	315	27.07	15.37	65.53	0.2507	0.1424	0.2439
	40 m00o	1.0	0.0	1.0	50.53	66.89	-57.44	88.17	319	33.63	18.87	69.45	0.2758	0.1547	0.2992
	41 m13o	1.0	0.0	0.875	46.99	62.39	-41.73	75.06	326	28.31	16.01	46.26	0.3125	0.1768	0.254
	42 m25o	1.0	0.0	0.75	44.32	59.01	-24.0	63.71	338	24.69	14.06	28.55	0.3668	0.2089	0.223
	43 m38o	1.0	0.0	0.675	42.84	56.74	-8.42	57.36	352	22.73	13.05	18.06	0.4222	0.2424	0.207
	44 m50o	1.0	0.0	0.5	41.77	55.09	6.81	55.51	7	21.38	12.35	10.87	0.4793	0.2769	0.1959
	45 m63o	1.0	0.0	0.375	41.1	54.08	20.18	57.72	20	20.57	11.93	6.53	0.5271	0.3056	0.1892
	46 m75o	1.0	0.0	0.25	40.74	53.52	30.37	61.54	30	20.14	11.7	4.18	0.5591	0.3249	0.1856
	47 m88o	1.0	0.0	0.125	40.59	53.24	36.23	64.4	34	19.95	11.61	3.14	0.5749	0.3345	0.1841
	48 o00y	1.0	0.0	0.0	40.47	53.07	37.7	65.09	35	19.82	11.54	2.89	0.5786	0.3369	0.183
	49 n00w	0.0	0.0	0.0	17.69	0.0	0.0	0.01	0	2.33	2.45	2.67	0.3127	0.329	0.0389
	50 n13w	0.125	0.125	0.125	18.68	-0.2	-0.32	0.4	237	2.53	2.67	2.96	0.3099	0.3275	0.0424
	51 n25w	0.25	0.25	0.25	22.45	-0.17	-0.99	1.02	260	3.45	3.64	4.15	0.3069	0.324	0.0578
	52 n38w	0.375	0.375	0.375	29.39	-0.15	-1.45	1.47	264	5.68	5.99	6.9	0.3059	0.3227	0.095
	53 n50w	0.5	0.5	0.5	38.49	-0.07	-1.75	1.76	267	9.84	10.36	11.93	0.3062	0.3225	0.1644
	54 n63w	0.625	0.625	0.625	49.09	0.02	-1.91	1.92	270	16.79	17.66	20.24	0.307	0.323	0.2802
	55 n75w	0.75	0.75	0.75	62.63	-0.16	-1.67	1.68	264	29.56	31.14	35.18	0.3083	0.3248	0.494
	56 n88w	0.875	0.875	0.875	81.27	0.05	-0.03	0.06	324	56.06	58.96	64.24	0.3127	0.3289	0.9352
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.4051

IE370-7N, Colorimetric data of Television Luminous System TLS18a for CIE standard illuminant D65; LCD projector; Page: 57/66

$n = 88.59 / (88.59 + 2.52) = 0.972$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 57/66output: no change compared to input

Colorimetric "Adapted data (a)": Television Luminous System TLS18a for CIE lightness $L^*=18$ of black for illuminant D65
System TLS18a

LCD projector

Y Yellow

D65 reflection:

$Y_N = 2.52$

$L_N^* = 18.01$

$LCH_a^* = 83.5 \ 80.2 \ 101$

$LAB_a^* = 83.5 \ -15.7 \ 78.7$

L Leaf green

$LCH_a^* = 73.5 \ 81.4 \ 127$

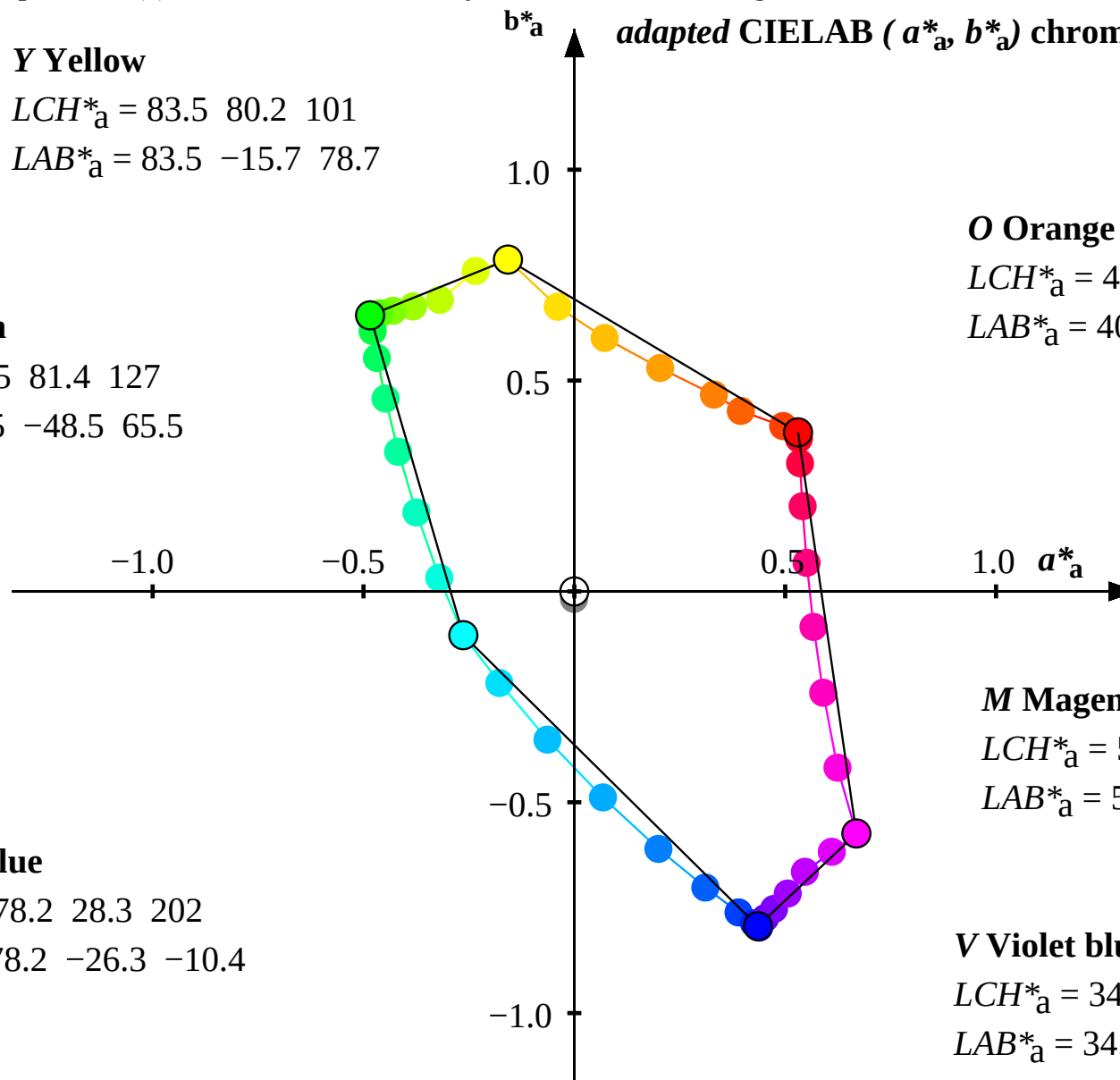
$LAB_a^* = 73.5 \ -48.5 \ 65.5$

C Cyan blue

$LCH_a^* = 78.2 \ 28.3 \ 202$

$LAB_a^* = 78.2 \ -26.3 \ -10.4$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH_a^* = 40.5 \ 65.1 \ 35$

$LAB_a^* = 40.5 \ 53.1 \ 37.7$

M Magenta red

$LCH_a^* = 50.5 \ 88.2 \ 319$

$LAB_a^* = 50.5 \ 66.9 \ -57.5$

V Violet blue

$LCH_a^* = 34.8 \ 90.5 \ 299$

$LAB_a^* = 34.8 \ 43.5 \ -79.4$

Colorimetric "Adapted data (a)": Television Luminous System TLS27a for CIE lightness $L^*=27$ of black for illuminant D65

System TLS27a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD projector	00 o00y	1.0	0.0	0.0	43.67	47.68	29.36	55.99	32	21.55	13.61	5.41	0.5311	0.3355	0.2136
	01 o13y	1.0	0.125	0.0	43.9	47.16	29.57	55.67	32	21.65	13.77	5.45	0.5297	0.3369	0.2161
D65 reflection:	02 o25y	1.0	0.25	0.0	44.98	44.66	30.91	54.31	35	22.11	14.53	5.57	0.5239	0.3442	0.228
	03 o38y	1.0	0.375	0.0	47.8	35.97	34.53	49.86	44	22.87	16.64	5.85	0.5041	0.3669	0.2611
	04 o50y	1.0	0.5	0.0	51.57	30.48	38.73	49.28	52	25.32	19.77	6.4	0.4918	0.3839	0.3101
	05 o63y	1.0	0.625	0.0	57.55	18.99	45.52	49.32	67	28.85	25.49	7.31	0.4679	0.4135	0.4
	06 o75y	1.0	0.75	0.0	64.69	6.8	53.25	53.68	83	33.9	33.66	8.62	0.445	0.4418	0.5281
	07 o88y	1.0	0.875	0.0	72.26	-3.77	61.23	61.35	94	40.63	44.05	10.24	0.4281	0.4641	0.6912
	08 y00l	1.0	1.0	0.0	83.83	-15.18	73.15	74.71	102	54.38	63.74	13.19	0.4141	0.4854	1.0
	09 y13l	0.875	1.0	0.0	82.02	-22.53	70.51	74.03	108	48.65	60.34	13.0	0.3988	0.4946	0.9467
	10 y25l	0.75	1.0	0.0	76.3	-30.41	63.52	70.43	116	37.71	50.37	11.9	0.3772	0.5038	0.7904
	11 y38l	0.625	1.0	0.0	75.42	-36.46	62.02	71.94	120	34.77	48.95	11.89	0.3636	0.512	0.7681
	12 y50l	0.5	1.0	0.0	74.85	-40.95	61.04	73.51	124	32.78	48.04	11.89	0.3536	0.5182	0.7538
	13 y63l	0.375	1.0	0.0	74.52	-43.76	60.46	74.64	126	31.61	47.52	11.9	0.3472	0.5221	0.7456
	14 y75l	0.25	1.0	0.0	74.35	-45.27	60.17	75.3	127	31.0	47.25	11.89	0.3439	0.5242	0.7414
	15 y88l	0.125	1.0	0.0	74.28	-45.91	60.04	75.59	127	30.74	47.15	11.9	0.3424	0.5251	0.7397
	16 l00c	0.0	1.0	0.0	74.27	-46.02	60.01	75.63	127	30.7	47.13	11.9	0.3421	0.5252	0.7394
	17 l13c	0.0	1.0	0.125	74.3	-45.9	59.43	75.09	128	30.77	47.18	12.14	0.3416	0.5237	0.7402
	18 l25c	0.0	1.0	0.25	74.4	-45.46	56.85	72.79	129	31.0	47.33	13.21	0.3387	0.517	0.7426
	19 l38c	0.0	1.0	0.375	74.58	-44.46	51.41	67.97	131	31.49	47.62	15.65	0.3323	0.5025	0.7471
	20 l50c	0.0	1.0	0.5	74.93	-42.64	42.83	60.45	135	32.4	48.17	20.14	0.3217	0.4783	0.7558
	21 l63c	0.0	1.0	0.625	75.52	-39.79	31.28	50.62	142	33.93	49.11	27.56	0.3068	0.4441	0.7706
	22 l75c	0.0	1.0	0.75	76.09	-35.75	17.85	39.97	153	35.82	50.03	38.09	0.289	0.4037	0.785
	23 l88c	0.0	1.0	0.875	77.46	-30.64	3.16	30.82	174	39.2	52.3	53.66	0.2701	0.3603	0.8206
	24 c00v	0.0	1.0	1.0	78.71	-25.24	-10.01	27.16	202	42.71	54.42	70.84	0.2543	0.324	0.8538
	25 c13v	0.0	0.875	1.0	71.62	-16.88	-20.8	26.8	231	35.71	43.1	69.11	0.2414	0.2914	0.6762
	26 c25v	0.0	0.75	1.0	63.39	-5.99	-33.55	34.09	260	28.89	32.05	67.38	0.2251	0.2498	0.5029
	27 c38v	0.0	0.675	1.0	55.33	6.23	-46.29	46.72	278	23.46	23.25	66.02	0.2081	0.2062	0.3648
	28 c50v	0.0	0.5	1.0	48.45	18.07	-57.37	60.16	287	19.69	17.15	65.11	0.1932	0.1682	0.2691
	29 c63v	0.0	0.375	1.0	43.5	27.6	-65.42	71.01	293	17.43	13.49	64.55	0.1825	0.1413	0.2117
	30 c75v	0.0	0.25	1.0	40.44	34.05	-70.45	78.26	296	16.22	11.52	64.27	0.1763	0.1252	0.1807
	31 c88v	0.0	0.125	1.0	39.1	36.96	-72.68	81.55	297	15.72	10.72	64.19	0.1735	0.1183	0.1682
	32 v00m	0.0	0.0	1.0	38.79	37.71	-73.22	82.37	297	15.62	10.53	64.18	0.1729	0.1166	0.1653
	33 v13m	0.125	0.0	1.0	38.94	38.04	-73.56	82.83	297	15.79	10.63	64.89	0.1729	0.1164	0.1667
	34 v25m	0.25	0.0	1.0	39.05	38.28	-72.7	82.18	298	15.91	10.69	64.1	0.1754	0.1178	0.1677
	35 v38m	0.375	0.0	1.0	39.6	39.5	-71.6	81.78	299	16.54	11.01	63.93	0.1808	0.1204	0.1728
	36 v50m	0.5	0.0	1.0	40.69	41.73	-69.76	81.29	301	17.8	11.67	63.96	0.1905	0.1249	0.1831
	37 v63m	0.625	0.0	1.0	42.34	45.09	-66.52	80.37	304	19.83	12.72	63.52	0.2064	0.1324	0.1996
	38 v75m	0.75	0.0	1.0	44.57	49.41	-61.97	79.27	309	22.76	14.23	62.72	0.2282	0.1428	0.2233
	39 v88m	0.875	0.0	1.0	48.69	56.23	-58.02	80.81	314	28.6	17.35	66.36	0.2547	0.1544	0.2721
	40 m00o	1.0	0.0	1.0	52.67	62.38	-54.36	82.75	319	34.99	20.74	70.18	0.2779	0.1647	0.3254
	41 m13o	1.0	0.0	0.875	49.46	57.58	-38.94	69.51	326	29.81	17.97	47.61	0.3125	0.1884	0.2819
	42 m25o	1.0	0.0	0.75	47.06	53.95	-21.95	58.25	338	26.29	16.07	30.38	0.3614	0.2209	0.2521
	43 m38o	1.0	0.0	0.675	45.75	51.55	-7.53	52.1	352	24.38	15.08	20.17	0.4089	0.2529	0.2367
	44 m50o	1.0	0.0	0.5	44.8	49.82	5.91	50.17	7	23.07	14.4	13.18	0.4555	0.2843	0.226
	45 m63o	1.0	0.0	0.375	44.22	48.75	16.88	51.59	19	22.28	13.99	8.95	0.4928	0.3094	0.2195
	46 m75o	1.0	0.0	0.25	43.9	48.15	24.48	54.02	27	21.86	13.77	6.66	0.5169	0.3256	0.2161
	47 m88o	1.0	0.0	0.125	43.77	47.87	28.44	55.68	31	21.68	13.68	5.65	0.5286	0.3336	0.2146
	48 o00y	1.0	0.0	0.0	43.67	47.68	29.36	55.99	32	21.55	13.61	5.41	0.5311	0.3355	0.2136
	49 n00w	0.0	0.0	0.0	26.07	0.0	0.0	0.01	0	4.53	4.77	5.19	0.3127	0.329	0.0748
	50 n13w	0.125	0.125	0.125	26.69	-0.13	-0.21	0.26	238	4.73	4.98	5.48	0.3113	0.3282	0.0782
	51 n25w	0.25	0.25	0.25	29.23	-0.12	-0.7	0.72	260	5.62	5.93	6.63	0.3092	0.326	0.093
	52 n38w	0.375	0.375	0.375	34.43	-0.12	-1.15	1.17	264	7.79	8.21	9.31	0.3079	0.3245	0.1289
	53 n50w	0.5	0.5	0.5	41.95	-0.06	-1.51	1.52	268	11.84	12.47	14.2	0.3074	0.3237	0.1956
	54 n63w	0.625	0.625	0.625	51.35	0.01	-1.74	1.75	270	18.61	19.57	22.29	0.3077	0.3237	0.3071
	55 n75w	0.75	0.75	0.75	63.91	-0.15	-1.57	1.59	264	31.03	32.69	36.83	0.3086	0.3251	0.5129
	56 n88w	0.875	0.875	0.875	81.71	0.05	-0.03	0.06	324	56.81	59.76	65.11	0.3127	0.3289	0.9376
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.39

IE370-7N, Colorimetric data of Television Luminous System TLS27a for CIE standard illuminant D65; LCD projector; Page: 59/66

$$n = 88.59 / (88.59 + 5.04) = 0.946$$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 59/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Adapted data (a)": Television Luminous System TLS27a for CIE lightness $L^*=27$ of black for illuminant D65
System TLS27a

LCD projector

Y Yellow

D65 reflection:

$Y_N = 5.04$

$L_N^* = 26.85$

$LCH_a^* = 83.8 \ 74.7 \ 102$

$LAB_a^* = 83.8 \ -15.2 \ 73.1$

L Leaf green

$LCH_a^* = 74.3 \ 75.6 \ 127$

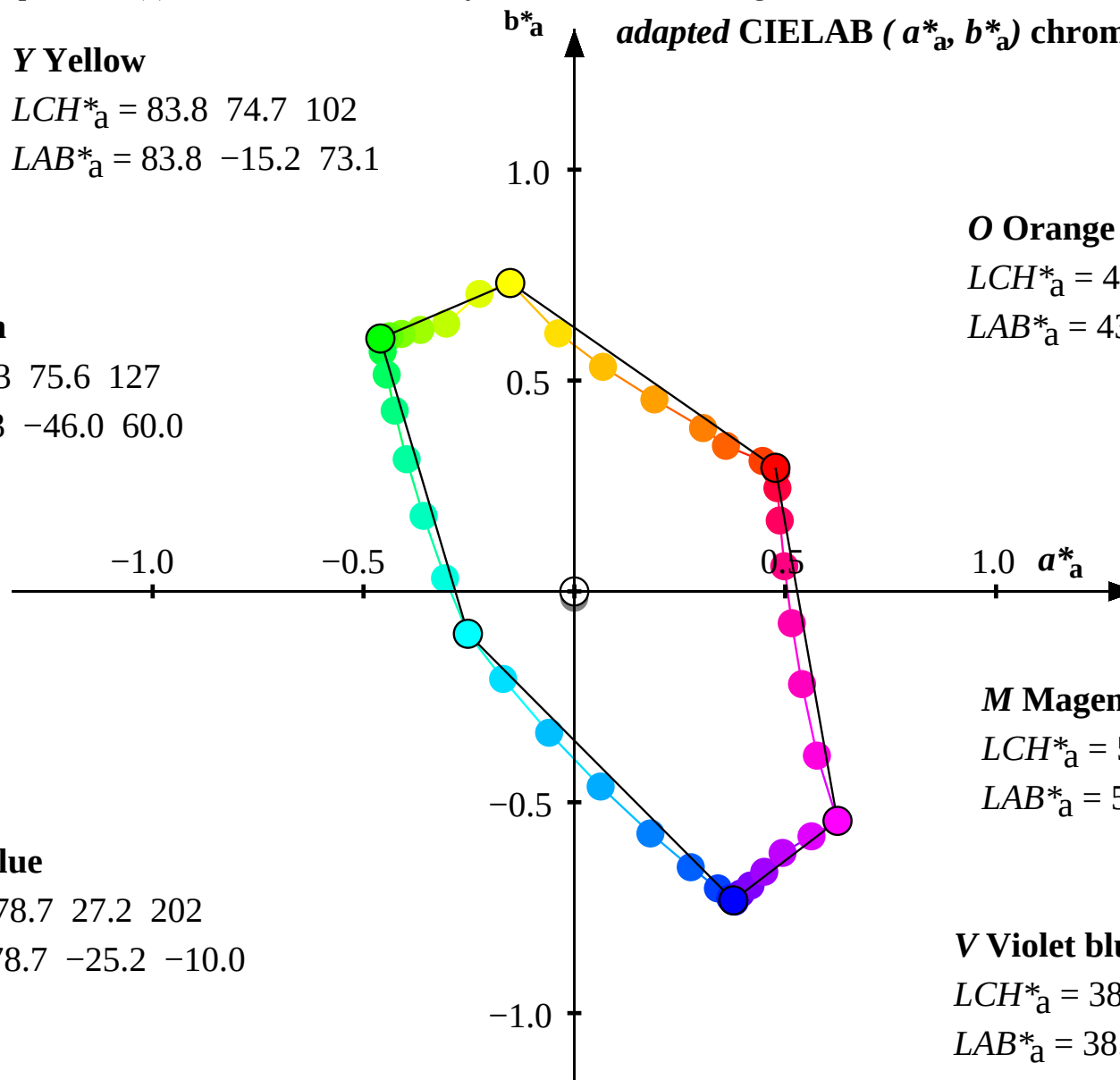
$LAB_a^* = 74.3 \ -46.0 \ 60.0$

C Cyan blue

$LCH_a^* = 78.7 \ 27.2 \ 202$

$LAB_a^* = 78.7 \ -25.2 \ -10.0$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH_a^* = 43.7 \ 56.0 \ 32$

$LAB_a^* = 43.7 \ 47.7 \ 29.4$

M Magenta red

$LCH_a^* = 52.7 \ 82.8 \ 319$

$LAB_a^* = 52.7 \ 62.4 \ -54.4$

V Violet blue

$LCH_a^* = 38.8 \ 82.4 \ 297$

$LAB_a^* = 38.8 \ 37.7 \ -73.2$

Colorimetric "Adapted data (a)": Television Luminous System TLS38a for CIE lightness $L^*=38$ of black for illuminant D65

System TLS38a	Color	$r=ol^*1$	$g=ol^*2$	$b=ol^*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD projector	00 o00y	1.0	0.0	0.0	48.81	39.92	21.33	45.26	28	24.75	17.44	10.06	0.4736	0.3338	0.2683
	01 o13y	1.0	0.125	0.0	49.0	39.54	21.53	45.02	29	24.85	17.59	10.1	0.4729	0.3349	0.2706
D65 reflection:	02 o25y	1.0	0.25	0.0	49.87	37.63	22.71	43.95	31	25.28	18.31	10.21	0.4699	0.3403	0.2817
	03 o38y	1.0	0.375	0.0	52.19	30.65	25.92	40.14	40	26.0	20.31	10.48	0.4578	0.3577	0.3125
	04 o50y	1.0	0.5	0.0	55.36	26.41	29.88	39.88	49	28.33	23.28	11.0	0.4524	0.3718	0.3582
	05 o63y	1.0	0.625	0.0	60.53	16.8	36.42	40.1	65	31.68	28.72	11.87	0.4384	0.3974	0.4418
	06 o75y	1.0	0.75	0.0	66.87	6.13	44.14	44.56	82	36.47	36.46	13.1	0.4239	0.4238	0.5609
	07 o88y	1.0	0.875	0.0	73.76	-3.45	52.29	52.4	94	42.86	46.33	14.64	0.4128	0.4462	0.7127
	08 y00l	1.0	1.0	0.0	84.49	-14.18	64.62	66.16	102	55.9	65.0	17.45	0.4041	0.4698	1.0
	09 y13l	0.875	1.0	0.0	82.8	-20.96	62.09	65.53	109	50.46	61.78	17.27	0.3896	0.477	0.9504
	10 y25l	0.75	1.0	0.0	77.48	-27.93	55.15	61.83	117	40.09	52.33	16.21	0.369	0.4817	0.805
	11 y38l	0.625	1.0	0.0	76.67	-33.36	52.76	63.28	122	37.29	50.98	16.21	0.3569	0.4879	0.7842
	12 y50l	0.5	1.0	0.0	76.14	-37.37	53.86	64.74	125	35.41	50.12	16.21	0.348	0.4926	0.771
	13 y63l	0.375	1.0	0.0	75.84	-39.87	52.32	65.79	127	34.29	49.62	16.22	0.3425	0.4956	0.7633
	14 y75l	0.25	1.0	0.0	75.68	-41.21	52.06	66.4	128	33.71	49.37	16.21	0.3395	0.4972	0.7594
	15 y88l	0.125	1.0	0.0	75.61	-41.78	51.93	66.66	129	33.47	49.26	16.22	0.3383	0.4978	0.7578
	16 l00c	0.0	1.0	0.0	75.6	-41.88	51.91	66.7	129	33.43	49.25	16.22	0.338	0.4979	0.7576
	17 l13c	0.0	1.0	0.125	75.63	-41.76	51.47	66.29	129	33.5	49.29	16.45	0.3376	0.4967	0.7583
	18 l25c	0.0	1.0	0.25	75.72	-41.38	49.48	64.51	130	33.72	49.44	17.46	0.3351	0.4913	0.7605
	19 l38c	0.0	1.0	0.375	75.89	-40.5	45.16	60.67	132	34.18	49.71	19.78	0.3297	0.4795	0.7647
	20 l50c	0.0	1.0	0.5	76.21	-38.91	38.12	54.47	136	35.05	50.24	24.03	0.3206	0.4595	0.7728
	21 l63c	0.0	1.0	0.625	76.76	-36.38	28.24	46.07	142	36.5	51.13	31.08	0.3075	0.4307	0.7865
	22 l75c	0.0	1.0	0.75	77.28	-32.77	16.32	36.62	154	38.29	52.0	41.07	0.2915	0.3959	0.7999
	23 l88c	0.0	1.0	0.875	78.55	-28.21	2.93	28.37	174	41.5	54.15	55.84	0.2739	0.3575	0.8331
	24 c00v	0.0	1.0	1.0	79.71	-23.32	-9.34	25.13	202	44.82	56.16	72.15	0.2589	0.3244	0.864
	25 c13v	0.0	0.875	1.0	73.17	-15.4	-19.28	24.69	231	38.18	45.42	70.51	0.2478	0.2947	0.6988
	26 c25v	0.0	0.75	1.0	65.7	-5.36	-30.8	31.27	260	31.71	34.94	68.86	0.234	0.2578	0.5375
	27 c38v	0.0	0.675	1.0	58.59	5.42	-41.99	42.35	277	26.57	26.59	67.58	0.2201	0.2202	0.409
	28 c50v	0.0	0.5	1.0	52.73	15.28	-51.36	53.59	287	22.99	20.8	66.72	0.208	0.1882	0.32
	29 c63v	0.0	0.375	1.0	48.67	22.73	-57.9	62.21	291	20.84	17.33	66.18	0.1997	0.1661	0.2666
	30 c75v	0.0	0.25	1.0	46.25	27.53	-61.85	67.71	294	19.69	15.46	65.91	0.1948	0.1529	0.2378
	31 c88v	0.0	0.125	1.0	45.22	29.62	-63.57	70.14	295	19.22	14.7	65.84	0.1927	0.1473	0.2261
	32 v00m	0.0	0.0	1.0	44.97	30.16	-63.98	70.74	295	19.12	14.52	65.83	0.1922	0.146	0.2234
	33 v13m	0.125	0.0	1.0	45.09	30.48	-64.34	71.21	295	19.28	14.61	66.5	0.1921	0.1455	0.2247
	34 v25m	0.25	0.0	1.0	45.17	30.7	-63.57	70.6	296	19.4	14.67	65.75	0.1943	0.1469	0.2256
	35 v38m	0.375	0.0	1.0	45.6	31.87	-62.69	70.34	297	20.0	14.98	65.59	0.1989	0.1489	0.2304
	36 v50m	0.5	0.0	1.0	46.44	34.03	-61.27	70.09	299	21.19	15.6	65.62	0.2069	0.1523	0.24
	37 v63m	0.625	0.0	1.0	47.75	37.34	-58.66	69.54	302	23.12	16.6	65.2	0.2203	0.1582	0.2553
	38 v75m	0.75	0.0	1.0	49.54	41.66	-54.92	68.94	307	25.89	18.03	64.44	0.2389	0.1664	0.2774
	39 v88m	0.875	0.0	1.0	52.93	48.69	-52.01	71.25	313	31.44	20.98	67.9	0.2613	0.1744	0.3228
	40 m00o	1.0	0.0	1.0	56.3	55.12	-49.2	73.89	318	37.5	24.21	71.52	0.2815	0.1817	0.3724
	41 m13o	1.0	0.0	0.875	53.57	50.08	-34.45	60.79	325	32.59	21.57	50.1	0.3125	0.2069	0.3319
	42 m25o	1.0	0.0	0.75	51.58	46.28	-18.84	49.97	338	29.25	19.77	33.75	0.3533	0.2389	0.3042
	43 m38o	1.0	0.0	0.675	50.5	43.83	-6.26	44.28	352	27.44	18.84	24.06	0.3901	0.2678	0.2898
	44 m50o	1.0	0.0	0.5	49.73	42.08	4.73	42.34	6	26.19	18.19	17.43	0.4237	0.2943	0.2799
	45 m63o	1.0	0.0	0.375	49.25	40.99	12.98	43.0	18	25.45	17.8	13.42	0.4491	0.3142	0.2738
	46 m75o	1.0	0.0	0.25	49.0	40.4	18.23	44.32	24	25.05	17.59	11.25	0.4648	0.3265	0.2706
	47 m88o	1.0	0.0	0.125	48.89	40.11	20.78	45.17	27	24.87	17.51	10.29	0.4722	0.3324	0.2693
	48 o00y	1.0	0.0	0.0	48.81	39.92	21.33	45.26	28	24.75	17.44	10.06	0.4736	0.3338	0.2683
	49 n00w	0.0	0.0	0.0	36.08	0.0	0.0	0.01	0	8.6	9.05	9.85	0.3127	0.329	0.1392
	50 n13w	0.125	0.125	0.125	36.47	-0.08	-0.13	0.16	238	8.79	9.26	10.12	0.312	0.3286	0.1424
	51 n25w	0.25	0.25	0.25	38.11	-0.07	-0.46	0.48	260	9.64	10.15	11.22	0.3108	0.3274	0.1562
	52 n38w	0.375	0.375	0.375	41.72	-0.08	-0.83	0.85	264	11.7	12.32	13.76	0.3096	0.3261	0.1895
	53 n50w	0.5	0.5	0.5	47.44	-0.04	-1.2	1.21	268	15.54	16.36	18.41	0.3089	0.3252	0.2516
	54 n63w	0.625	0.625	0.625	55.17	0.01	-1.48	1.49	270	21.96	23.1	26.08	0.3087	0.3247	0.3553
	55 n75w	0.75	0.75	0.75	66.17	-0.13	-1.41	1.43	264	33.74	35.55	39.88	0.3091	0.3256	0.5468
	56 n88w	0.875	0.875	0.875	82.5	0.05	-0.02	0.06	324	58.21	61.23	66.71	0.3127	0.3289	0.9419
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.3628

IE370-7N, Colorimetric data of Television Luminous System TLS38a for CIE standard illuminant D65; LCD projector; Page: 61/66

$$n = 88.59 / (88.59 + 10.08) = 0.898$$

TUB-test chart IE37; Hue circle and colorimetric data

input: $ol^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 61/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Adapted data (a)": Television Luminous System TLS38a for CIE lightness $L^*=38$ of black for illuminant D65
System TLS38a

LCD projector

Y Yellow

D65 reflection:

$Y_N = 10.08$

$L^*_N = 37.99$

$LCH^*_a = 84.5 \ 66.2 \ 102$

$LAB^*_a = 84.5 \ -14.2 \ 64.6$

L Leaf green

$LCH^*_a = 75.6 \ 66.7 \ 129$

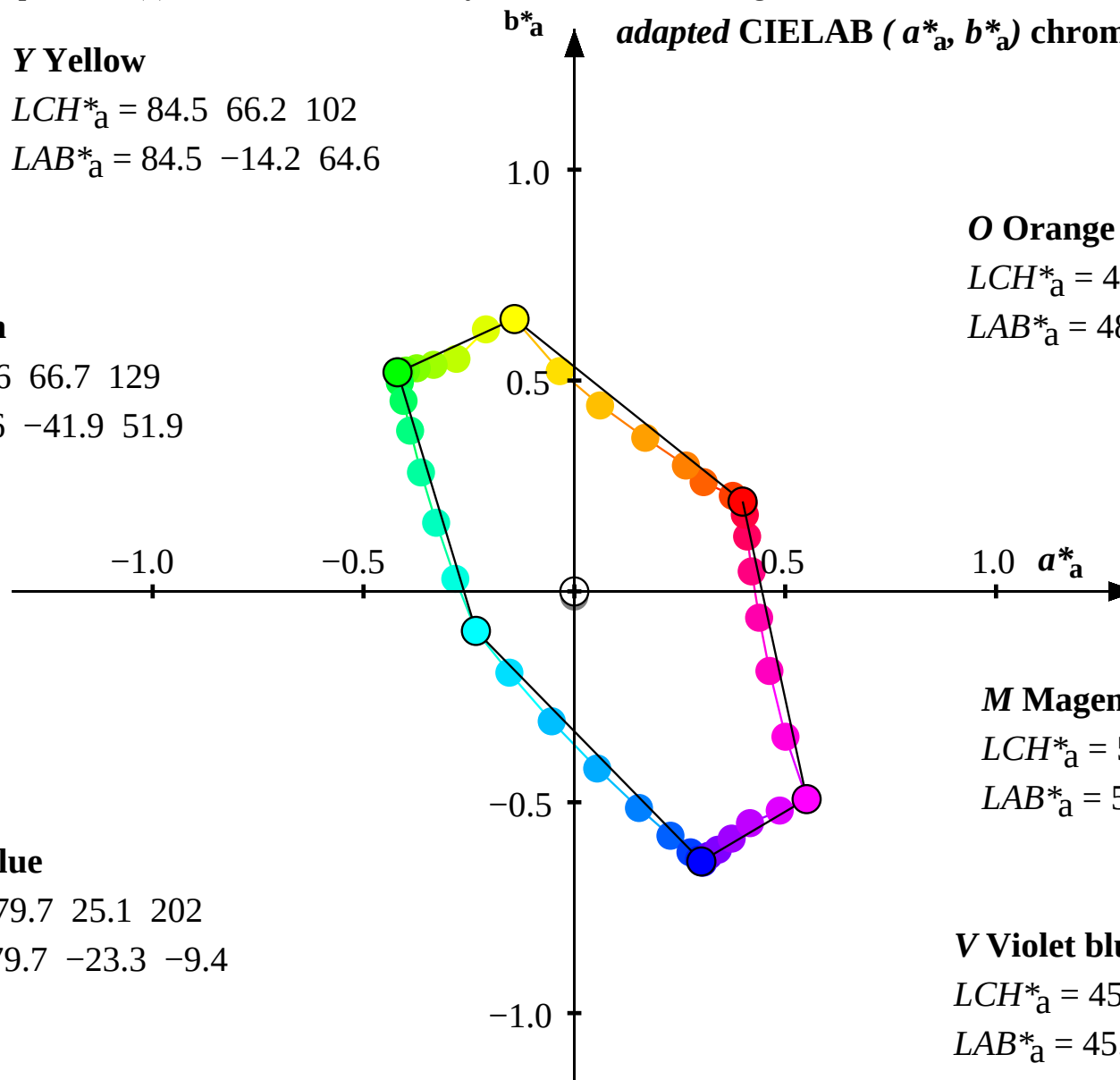
$LAB^*_a = 75.6 \ -41.9 \ 51.9$

C Cyan blue

$LCH^*_a = 79.7 \ 25.1 \ 202$

$LAB^*_a = 79.7 \ -23.3 \ -9.4$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH^*_a = 48.8 \ 45.3 \ 28$

$LAB^*_a = 48.8 \ 39.9 \ 21.3$

M Magenta red

$LCH^*_a = 56.3 \ 73.9 \ 318$

$LAB^*_a = 56.3 \ 55.1 \ -49.2$

V Violet blue

$LCH^*_a = 45.0 \ 70.7 \ 295$

$LAB^*_a = 45.0 \ 30.2 \ -64.0$

Colorimetric "Adapted data (a)": Television Luminous System TLS52a for CIE lightness $L^*=52$ of black for illuminant D65

System TLS52a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ1_a$	$Y_a=XYZ2_a$	$Z_a=XYZ3_a$	x_a	y_a	$Y_a/88.59$
LCD projector	00 o00y	1.0	0.0	0.0	56.12	30.53	14.45	33.78	25	30.26	24.04	18.07	0.4181	0.3322	0.3577
	01 o13y	1.0	0.125	0.0	56.26	30.27	14.61	33.62	26	30.35	24.17	18.1	0.4179	0.3329	0.3598
	02 o25y	1.0	0.25	0.0	56.91	28.98	15.52	32.87	28	30.74	24.83	18.2	0.4167	0.3365	0.3695
D65 reflection:	03 o38y	1.0	0.375	0.0	58.64	23.9	18.02	29.93	37	31.39	26.64	18.45	0.4104	0.3483	0.3965
	04 o50y	1.0	0.5	0.0	61.08	21.0	21.28	29.89	45	33.51	29.34	18.92	0.4098	0.3588	0.4366
	05 o63y	1.0	0.625	0.0	65.17	13.7	26.82	30.12	63	36.54	34.27	19.71	0.4037	0.3786	0.51
	06 o75y	1.0	0.75	0.0	70.38	5.13	33.69	34.08	81	40.89	41.3	20.83	0.3969	0.4009	0.6146
	07 o88y	1.0	0.875	0.0	76.22	-2.96	41.24	41.34	94	46.69	50.24	22.23	0.3918	0.4217	0.7478
	08 y00l	1.0	1.0	0.0	85.6	-12.53	53.08	54.54	103	58.53	67.19	24.77	0.3889	0.4465	1.0
	09 y13l	0.875	1.0	0.0	84.1	-18.4	50.77	54.01	110	53.59	64.27	24.61	0.3762	0.4511	0.9565
	10 y25l	0.75	1.0	0.0	79.44	-24.04	44.32	50.42	118	44.17	55.69	23.65	0.3576	0.4509	0.8288
	11 y38l	0.625	1.0	0.0	78.73	-28.56	43.1	51.71	124	41.64	54.46	23.65	0.3477	0.4548	0.8106
	12 y50l	0.5	1.0	0.0	78.28	-31.87	42.32	52.99	127	39.93	53.68	23.65	0.3405	0.4578	0.7989
	13 y63l	0.375	1.0	0.0	78.01	-33.92	41.86	53.88	129	38.92	53.23	23.65	0.3361	0.4597	0.7923
	14 y75l	0.25	1.0	0.0	77.88	-35.01	41.63	54.4	130	38.39	53.0	23.65	0.3337	0.4607	0.7888
	15 y88l	0.125	1.0	0.0	77.82	-35.47	41.52	54.62	131	38.17	52.91	23.66	0.3327	0.4611	0.7874
	16 l00c	0.0	1.0	0.0	77.81	-35.56	41.51	54.66	131	38.14	52.89	23.66	0.3325	0.4612	0.7872
	17 l13c	0.0	1.0	0.125	77.84	-35.47	41.2	54.37	131	38.2	52.94	23.86	0.3322	0.4603	0.7879
	18 l25c	0.0	1.0	0.25	77.91	-35.16	39.8	53.11	131	38.4	53.07	24.79	0.3303	0.4565	0.7898
	19 l38c	0.0	1.0	0.375	78.06	-34.45	36.7	50.34	133	38.81	53.31	26.89	0.3261	0.448	0.7935
	20 l50c	0.0	1.0	0.5	78.34	-33.16	31.44	45.7	137	39.6	53.79	30.75	0.319	0.4333	0.8006
	21 l63c	0.0	1.0	0.625	78.81	-31.11	23.73	39.14	143	40.92	54.6	37.14	0.3084	0.4116	0.8126
	22 l75c	0.0	1.0	0.75	79.27	-28.13	13.96	31.41	154	42.55	55.39	46.2	0.2952	0.3843	0.8244
	23 l88c	0.0	1.0	0.875	80.37	-24.37	2.55	24.52	174	45.46	57.35	59.61	0.2799	0.3531	0.8535
	24 c00v	0.0	1.0	1.0	81.38	-20.26	-8.24	21.89	202	48.47	59.17	74.4	0.2663	0.325	0.8806
	25 c13v	0.0	0.875	1.0	75.72	-13.11	-16.84	21.36	232	42.45	49.43	72.92	0.2576	0.2999	0.7356
	26 c25v	0.0	0.75	1.0	69.41	-4.43	-26.51	26.89	260	36.58	39.91	71.42	0.2473	0.2698	0.594
	27 c38v	0.0	0.675	1.0	63.62	4.33	-35.54	35.82	277	31.91	32.33	70.25	0.2372	0.2404	0.4812
	28 c50v	0.0	0.5	1.0	59.05	11.8	-42.77	44.38	285	28.66	27.08	69.47	0.2289	0.2163	0.4031
	29 c63v	0.0	0.375	1.0	56.02	17.07	-47.59	50.57	290	26.71	23.94	68.99	0.2233	0.2001	0.3562
	30 c75v	0.0	0.25	1.0	54.27	20.29	-50.4	54.34	292	25.67	22.23	68.74	0.2201	0.1906	0.3309
	31 c88v	0.0	0.125	1.0	53.54	21.65	-51.61	55.97	293	25.24	21.55	68.68	0.2186	0.1866	0.3207
	32 v00m	0.0	0.0	1.0	53.37	22.0	-51.9	56.38	293	25.15	21.39	68.67	0.2183	0.1856	0.3183
	33 v13m	0.125	0.0	1.0	53.46	22.27	-52.26	56.81	293	25.3	21.47	69.28	0.218	0.185	0.3195
	34 v25m	0.25	0.0	1.0	53.51	22.46	-51.6	56.28	294	25.4	21.52	68.6	0.2199	0.1863	0.3202
	35 v38m	0.375	0.0	1.0	53.81	23.45	-50.96	56.1	295	25.95	21.8	68.45	0.2233	0.1876	0.3244
	36 v50m	0.5	0.0	1.0	54.41	25.32	-49.95	56.01	297	27.03	22.36	68.48	0.2293	0.1897	0.3328
	37 v63m	0.625	0.0	1.0	55.35	28.22	-48.01	55.7	300	28.78	23.27	68.1	0.2395	0.1937	0.3463
	38 v75m	0.75	0.0	1.0	56.66	32.11	-45.18	55.43	305	31.3	24.57	67.41	0.2539	0.1993	0.3657
	39 v88m	0.875	0.0	1.0	59.21	38.72	-43.39	58.16	312	36.33	27.25	70.55	0.2709	0.2032	0.4056
	40 m00o	1.0	0.0	1.0	61.81	44.97	-41.55	61.23	317	41.83	30.18	73.83	0.2868	0.2069	0.4491
	41 m13o	1.0	0.0	0.875	59.7	40.04	-28.18	48.97	325	37.37	27.79	54.4	0.3126	0.2324	0.4135
	42 m25o	1.0	0.0	0.75	58.18	36.38	-14.81	39.28	338	34.34	26.15	39.57	0.3432	0.2614	0.3892
	43 m38o	1.0	0.0	0.675	57.37	34.11	-4.74	34.44	352	32.7	25.3	30.77	0.3683	0.285	0.3766
	44 m50o	1.0	0.0	0.5	56.8	32.49	3.45	32.67	6	31.57	24.72	24.76	0.3895	0.305	0.3679
	45 m63o	1.0	0.0	0.375	56.45	31.5	9.15	32.8	16	30.89	24.36	21.11	0.4045	0.319	0.3626
	46 m75o	1.0	0.0	0.25	56.26	30.96	12.54	33.4	22	30.53	24.17	19.15	0.4134	0.3273	0.3598
	47 m88o	1.0	0.0	0.125	56.18	30.7	14.13	33.8	25	30.37	24.09	18.28	0.4175	0.3312	0.3586
	48 o00y	1.0	0.0	0.0	56.12	30.53	14.45	33.78	25	30.26	24.04	18.07	0.4181	0.3322	0.3577
	49 n00w	0.0	0.0	0.0	47.52	0.0	0.0	0.01	0	15.61	16.42	17.88	0.3127	0.329	0.2444
	50 n13w	0.125	0.125	0.125	47.76	-0.04	-0.07	0.1	238	15.78	16.61	18.12	0.3123	0.3288	0.2472
	51 n25w	0.25	0.25	0.25	48.79	-0.04	-0.29	0.3	260	16.55	17.42	19.12	0.3117	0.3281	0.2593
	52 n38w	0.375	0.375	0.375	51.14	-0.05	-0.56	0.57	264	18.42	19.39	21.42	0.3109	0.3274	0.2886
	53 n50w	0.5	0.5	0.5	55.13	-0.03	-0.87	0.88	268	21.9	23.05	25.64	0.3102	0.3265	0.3431
	54 n63w	0.625	0.625	0.625	60.93	0.01	-1.15	1.16	270	27.72	29.17	32.6	0.3098	0.3259	0.4341
	55 n75w	0.75	0.75	0.75	69.8	-0.11	-1.17	1.19	264	38.42	40.46	45.12	0.3098	0.3263	0.6022
	56 n88w	0.875	0.875	0.875	83.84	0.04	-0.02	0.05	324	60.62	63.77	69.46	0.3127	0.3289	0.949
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	275	84.2	88.59	96.46	0.3127	0.329	1.3185

IE370-7N, Colorimetric data of Television Luminous System TLS52a for CIE standard illuminant D65; LCD projector; Page: 63/66

$n = 88.59 / (88.59 + 20.16) = 0.815$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 63/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Adapted data (a)": Television Luminous System TLS52a for CIE lightness $L^*=52$ of black for illuminant D65
System TLS52a

LCD projector

Y Yellow

D65 reflection:

$Y_N = 20.16$

$L^*_N = 52.02$

$LCH^*_a = 85.6 \ 54.5 \ 103$

$LAB^*_a = 85.6 \ -12.5 \ 53.1$

L Leaf green

$LCH^*_a = 77.8 \ 54.7 \ 131$

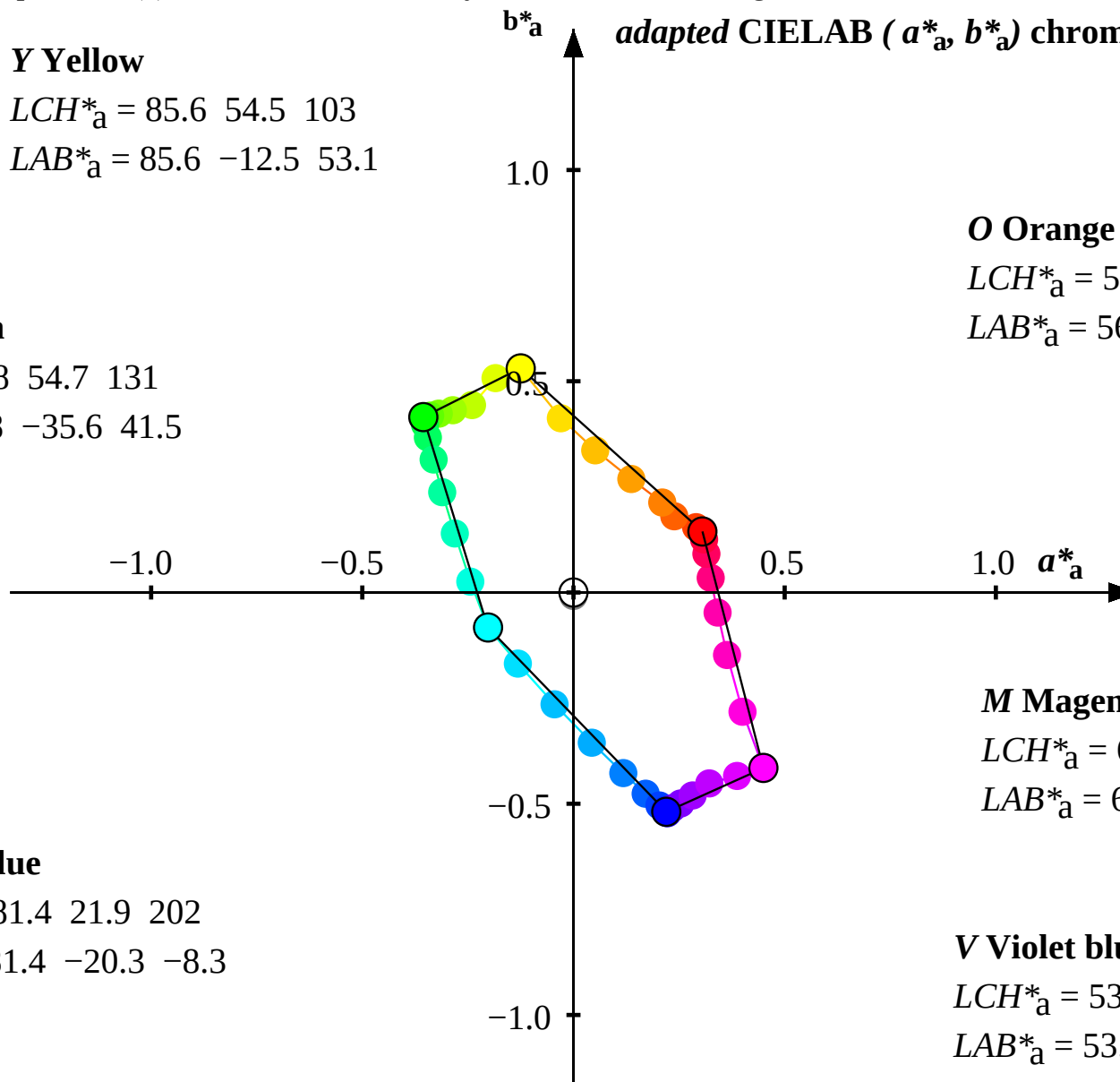
$LAB^*_a = 77.8 \ -35.6 \ 41.5$

C Cyan blue

$LCH^*_a = 81.4 \ 21.9 \ 202$

$LAB^*_a = 81.4 \ -20.3 \ -8.3$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH^*_a = 56.1 \ 33.8 \ 25$

$LAB^*_a = 56.1 \ 30.5 \ 14.4$

M Magenta red

$LCH^*_a = 61.8 \ 61.2 \ 317$

$LAB^*_a = 61.8 \ 45.0 \ -41.6$

V Violet blue

$LCH^*_a = 53.4 \ 56.4 \ 293$

$LAB^*_a = 53.4 \ 22.0 \ -51.9$

Colorimetric "Adapted data (a)": Television Luminous System TLS70a for CIE lightness $L^*=70$ of black for illuminant D65

System TLS70a	Color	$r=olv*1$	$g=olv*2$	$b=olv*3$	$L^*_a=LAB^*1_a$	$a^*_a=LAB^*2_a$	$b^*_a=LAB^*3_a$	$C^*_{ab,a}=LAB^*ab,a$	$h_{ab,a}$	$X_a=XYZ^*1_a$	$Y_a=XYZ^*2_a$	$Z_a=XYZ^*3_a$	x_a	y_a	$Y_a/88.59$
LCD projector	00 o00y	1.0	0.0	0.0	65.07	21.15	9.16	23.05	23	38.69	34.13	30.33	0.3751	0.3309	0.4839
	01 o13y	1.0	0.125	0.0	65.16	20.99	9.27	22.95	24	38.77	34.25	30.36	0.375	0.3313	0.4855
D65 reflection:	02 o25y	1.0	0.25	0.0	65.59	20.19	9.89	22.49	26	39.1	34.8	30.44	0.3747	0.3335	0.4933
	03 o38y	1.0	0.375	0.0	66.77	16.83	11.64	20.46	35	39.65	36.33	30.65	0.3719	0.3407	0.5151
	04 o50y	1.0	0.5	0.0	68.46	15.07	13.98	20.56	43	41.43	38.6	31.05	0.373	0.3475	0.5473
	05 o63y	1.0	0.625	0.0	71.39	10.1	18.11	20.73	61	44.0	42.76	31.71	0.3714	0.361	0.6062
	06 o75y	1.0	0.75	0.0	75.26	3.9	23.47	23.79	81	47.67	48.69	32.66	0.3695	0.3774	0.6903
	07 o88y	1.0	0.875	0.0	79.75	-2.31	29.62	29.71	94	52.55	56.24	33.83	0.3685	0.3943	0.7973
	08 y00l	1.0	1.0	0.0	87.26	-10.17	39.76	41.04	104	62.54	70.54	35.98	0.3699	0.4172	1.0
	09 y13l	0.875	1.0	0.0	86.04	-14.8	37.84	40.63	111	58.38	68.07	35.84	0.3597	0.4194	0.965
	10 y25l	0.75	1.0	0.0	82.29	-18.85	32.41	37.5	120	50.43	60.83	35.04	0.3447	0.4158	0.8624
	11 y38l	0.625	1.0	0.0	81.73	-22.25	31.45	38.52	125	48.29	59.8	35.04	0.3374	0.4178	0.8478
	12 y50l	0.5	1.0	0.0	81.37	-24.7	30.83	39.51	129	46.85	59.14	35.04	0.3322	0.4194	0.8384
	13 y63l	0.375	1.0	0.0	81.16	-26.22	30.46	40.2	131	46.0	58.76	35.04	0.329	0.4203	0.8331
	14 y75l	0.25	1.0	0.0	81.05	-27.01	30.28	40.58	132	45.56	58.57	35.04	0.3274	0.4209	0.8303
	15 y88l	0.125	1.0	0.0	81.01	-27.36	30.2	40.75	132	45.37	58.49	35.04	0.3266	0.4211	0.8292
	16 l00c	0.0	1.0	0.0	81.0	-27.42	30.18	40.78	132	45.34	58.48	35.04	0.3265	0.4211	0.829
	17 l13c	0.0	1.0	0.125	81.02	-27.35	29.99	40.6	132	45.39	58.51	35.22	0.3263	0.4206	0.8295
	18 l25c	0.0	1.0	0.25	81.08	-27.13	29.09	39.79	133	45.56	58.62	35.99	0.325	0.4182	0.8311
	19 l38c	0.0	1.0	0.375	81.2	-26.62	27.06	37.97	135	45.91	58.83	37.77	0.3222	0.4128	0.834
	20 l50c	0.0	1.0	0.5	81.42	-25.69	23.51	34.83	138	46.58	59.23	41.02	0.3172	0.4034	0.8397
	21 l63c	0.0	1.0	0.625	81.79	-24.2	18.09	30.22	143	47.69	59.92	46.41	0.3096	0.389	0.8494
	22 l75c	0.0	1.0	0.75	82.15	-21.98	10.86	24.52	154	49.06	60.58	54.06	0.2997	0.3701	0.8589
	23 l88c	0.0	1.0	0.875	83.04	-19.2	2.03	19.32	174	51.51	62.23	65.37	0.2876	0.3474	0.8822
	24 c00v	0.0	1.0	1.0	83.85	-16.08	-6.68	17.43	203	54.06	63.77	77.85	0.2763	0.3259	0.9041
	25 c13v	0.0	0.875	1.0	79.36	-10.14	-13.46	16.87	233	48.98	55.55	76.6	0.2704	0.3067	0.7875
	26 c25v	0.0	0.75	1.0	74.52	-3.31	-20.81	21.08	261	44.02	47.53	75.33	0.2638	0.2848	0.6738
	27 c38v	0.0	0.675	1.0	70.27	3.13	-27.37	27.56	277	40.09	41.13	74.35	0.2577	0.2644	0.5831
	28 c50v	0.0	0.5	1.0	67.05	8.24	-32.39	33.43	284	37.35	36.7	73.69	0.2528	0.2484	0.5203
	29 c63v	0.0	0.375	1.0	65.0	11.63	-35.61	37.47	288	35.7	34.05	73.28	0.2496	0.238	0.4827
	30 c75v	0.0	0.25	1.0	63.84	13.62	-37.44	39.85	290	34.82	32.61	73.08	0.2478	0.2321	0.4623
	31 c88v	0.0	0.125	1.0	63.37	14.44	-38.21	40.86	291	34.46	32.03	73.02	0.247	0.2296	0.4541
	32 v00m	0.0	0.0	1.0	63.26	14.65	-38.4	41.11	291	34.38	31.9	73.01	0.2468	0.229	0.4522
	33 v13m	0.125	0.0	1.0	63.31	14.85	-38.71	41.47	291	34.51	31.96	73.53	0.2465	0.2283	0.4531
	34 v25m	0.25	0.0	1.0	63.35	14.99	-38.19	41.04	291	34.6	32.01	72.95	0.2479	0.2293	0.4538
	35 v38m	0.375	0.0	1.0	63.54	15.72	-37.76	40.91	293	35.06	32.24	72.83	0.2502	0.2301	0.4571
	36 v50m	0.5	0.0	1.0	63.93	17.13	-37.1	40.87	295	35.97	32.72	72.85	0.2541	0.2312	0.4639
	37 v63m	0.625	0.0	1.0	64.55	19.35	-35.78	40.68	298	37.45	33.48	72.53	0.261	0.2334	0.4747
	38 v75m	0.75	0.0	1.0	65.42	22.39	-33.81	40.56	304	39.57	34.58	71.95	0.2708	0.2367	0.4903
	39 v88m	0.875	0.0	1.0	67.16	27.82	-32.93	43.11	310	43.82	36.84	74.6	0.2822	0.2373	0.5223
	40 m00o	1.0	0.0	1.0	68.98	33.17	-31.95	46.06	316	48.46	39.31	77.37	0.2934	0.2381	0.5573
	41 m13o	1.0	0.0	0.875	67.5	28.92	-20.88	35.68	324	44.69	37.3	60.98	0.3126	0.2609	0.5287
	42 m25o	1.0	0.0	0.75	66.46	25.85	-10.53	27.91	338	42.14	35.92	48.46	0.3331	0.2839	0.5092
	43 m38o	1.0	0.0	0.675	65.9	24.0	-3.25	24.22	352	40.75	35.2	41.05	0.3483	0.3009	0.499
	44 m50o	1.0	0.0	0.5	65.52	22.7	2.29	22.82	6	39.8	34.71	35.97	0.3603	0.3142	0.492
	45 m63o	1.0	0.0	0.375	65.28	21.91	5.94	22.7	15	39.23	34.41	32.9	0.3682	0.323	0.4878
	46 m75o	1.0	0.0	0.25	65.16	21.48	8.02	22.93	20	38.92	34.25	31.24	0.3728	0.328	0.4855
	47 m88o	1.0	0.0	0.125	65.11	21.28	8.97	23.1	23	38.79	34.18	30.5	0.3749	0.3303	0.4846
	48 o00y	1.0	0.0	0.0	65.07	21.15	9.16	23.05	23	38.69	34.13	30.33	0.3751	0.3309	0.4839
	49 n00w	0.0	0.0	0.0	59.62	0.0	0.0	0.01	158	26.33	27.71	30.17	0.3127	0.329	0.3928
	50 n13w	0.125	0.125	0.125	59.77	-0.02	-0.04	0.06	238	26.48	27.87	30.38	0.3125	0.3289	0.395
	51 n25w	0.25	0.25	0.25	60.38	-0.02	-0.17	0.19	260	27.13	28.55	31.22	0.3122	0.3286	0.4048
	52 n38w	0.375	0.375	0.375	61.84	-0.03	-0.35	0.36	264	28.7	30.21	33.16	0.3117	0.3281	0.4283
	53 n50w	0.5	0.5	0.5	64.4	-0.02	-0.57	0.58	268	31.64	33.3	36.72	0.3113	0.3276	0.4721
	54 n63w	0.625	0.625	0.625	68.36	0.01	-0.81	0.82	270	36.56	38.46	42.59	0.3108	0.327	0.5453
	55 n75w	0.75	0.75	0.75	74.82	-0.08	-0.88	0.9	264	45.58	47.99	53.15	0.3107	0.3271	0.6803
	56 n88w	0.875	0.875	0.875	85.83	0.03	-0.01	0.04	324	64.31	67.65	73.69	0.3127	0.329	0.959
	57 n99w	1.0	1.0	1.0	95.41	0.0	0.0	0.01	0	84.2	88.59	96.46	0.3127	0.329	1.2559

IE370-7N, Colorimetric data of Television Luminous System TLS70a for CIE standard illuminant D65; LCD projector; Page: 65/66

$n = 88.59 / (88.59 + 40.32) = 0.687$

TUB-test chart IE37; Hue circle and colorimetric data

input: $olv^* setrgbcolor$

Display measurement: LCD, CRT and LCD projector, page 65/66output: no change compared to input

TUB registration: 20090901-IE37/IE37L0NA.PS /.TXT
application for measurement of printer or monitor systems

TUB material: code=rha4ta

Colorimetric "Adapted data (a)": Television Luminous System TLS70a for CIE lightness $L^*=70$ of black for illuminant D65
System TLS70a

LCD projector

Y Yellow

D65 reflection:

$Y_N = 40.32$

$L_N^* = 69.7$

$LCH_a^* = 87.3 \ 41.0 \ 104$

$LAB_a^* = 87.3 \ -10.2 \ 39.8$

L Leaf green

$LCH_a^* = 81.0 \ 40.8 \ 132$

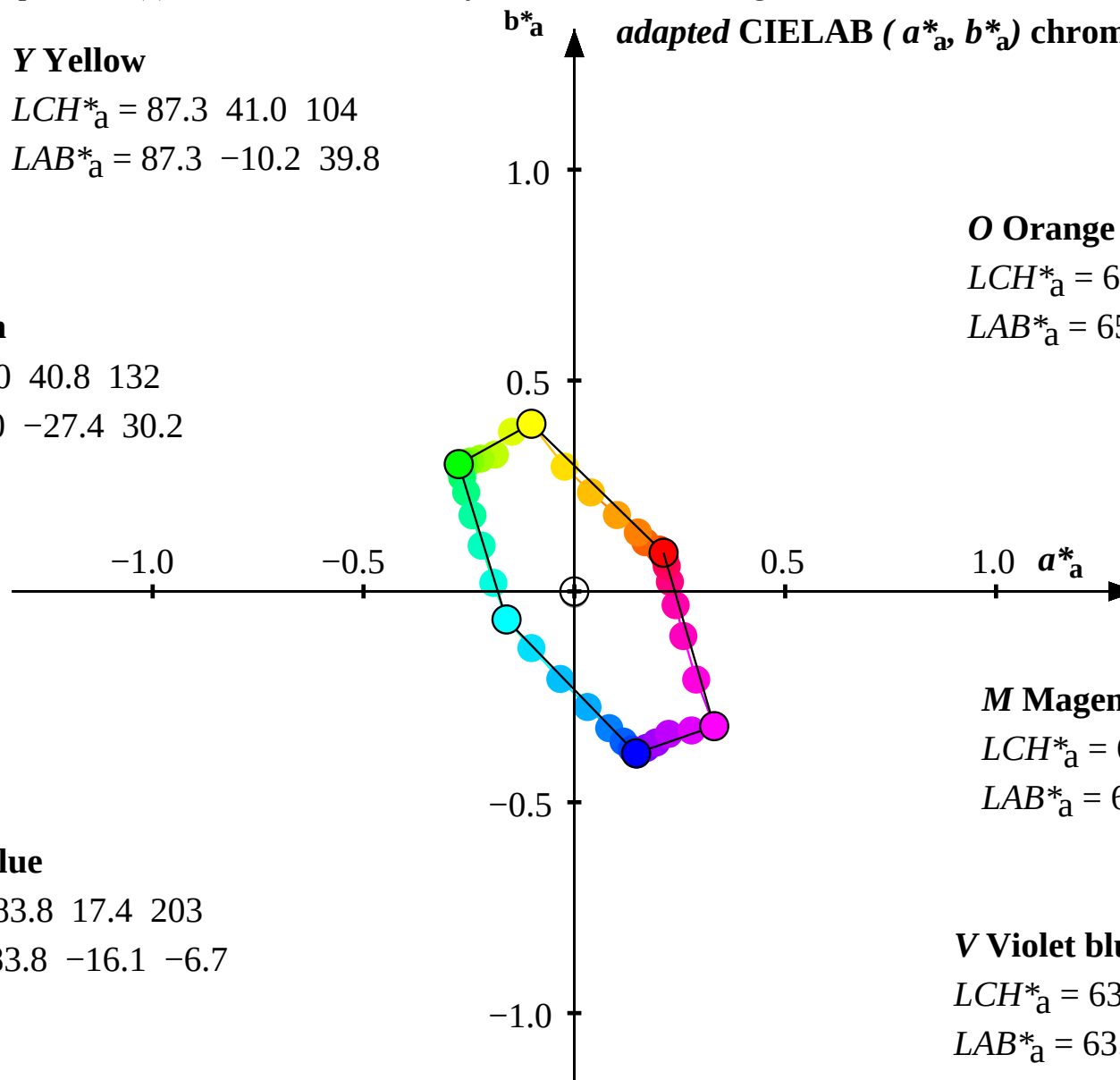
$LAB_a^* = 81.0 \ -27.4 \ 30.2$

C Cyan blue

$LCH_a^* = 83.8 \ 17.4 \ 203$

$LAB_a^* = 83.8 \ -16.1 \ -6.7$

*adapted CIELAB (a^*_a , b^*_a) chroma diagram*



O Orange red

$LCH_a^* = 65.1 \ 23.0 \ 23$

$LAB_a^* = 65.1 \ 21.2 \ 9.2$

M Magenta red

$LCH_a^* = 69.0 \ 46.1 \ 316$

$LAB_a^* = 69.0 \ 33.2 \ -32.0$

V Violet blue

$LCH_a^* = 63.3 \ 41.1 \ 291$

$LAB_a^* = 63.3 \ 14.7 \ -38.4$