

X	Y	Z	x	y	L*	a*	b*	a'	b'	OYLCVM_ONW_0
CIE Illuminant E										
48.7	24.62	0.91	0.656	0.331	56.7	80.0	83.4	0.2704	-0.0287	%00 (r>0,009) 00 590_770
83.6	95.66	8.37	0.445	0.509	98.3	-21.6	109.5	0.2059	-0.0382	%Y0 (r>0,009) 01 490_770
35.75	71.91	8.35	0.308	0.619	87.9	-93.0	91.7	0.1706	-0.042	%L0 (r>0,009) 02 490_590
52.15	76.24	99.98	0.228	0.333	89.9	-54.3	-17.2	0.1898	-0.0943	%C0 (r>0,009) 03 380_590
17.29	5.22	92.5	0.15	0.045	27.3	91.6	-120.1	0.3211	-0.2246	%V0 (r>0,009) 04 380_490
65.1	28.94	92.52	0.348	0.155	60.7	102.6	-62.5	0.2822	-0.1269	%M0 (r>0,009) 05 380_490 . . 590-770
48.7	24.62	0.91	0.656	0.331	56.7	80.0	83.4	0.2704	-0.0287	%00 (r>0,009) 06 590_770
0.9	0.9	0.9	0.333	0.333	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.1	0.1	0.332	0.332	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Standard Illuminant D65										
42.77	21.83	0.99	0.651	0.332	53.8	82.0	78.6	0.2741	-0.0299	%00 (r>0,009) 00 590_770
77.37	95.05	9.14	0.426	0.523	98.0	-24.7	109.0	0.2045	-0.0383	%Y0 (r>0,009) 01 490_770
35.41	74.08	9.12	0.298	0.624	88.9	-92.6	93.4	0.1713	-0.0416	%L0 (r>0,009) 02 490_590
53.08	79.03	108.87	0.22	0.327	91.2	-50.5	-15.0	0.1918	-0.0932	%C0 (r>0,009) 03 380_590
18.52	5.83	100.7	0.148	0.046	29.0	95.9	-117.2	0.3219	-0.2164	%V0 (r>0,009) 04 380_490
60.44	26.77	100.72	0.321	0.142	58.7	107.7	-65.9	0.2874	-0.1302	%M0 (r>0,009) 05 380_490 . . 590-770
42.77	21.83	0.99	0.651	0.332	53.8	82.0	78.6	0.2741	-0.0299	%00 (r>0,009) 06 590_770
0.85	0.9	0.98	0.312	0.328	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.1	0.1	0.311	0.327	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Illuminant A										
68.59	33.77	0.34	0.667	0.328	64.7	79.1	96.6	0.2644	-0.0263	%00 (r>0,009) 00 590_770
104.61	98.12	5.02	0.503	0.472	99.2	-4.9	94.5	0.2133	-0.0451	%Y0 (r>0,009) 01 490_770
36.95	65.2	5.0	0.344	0.608	84.5	-85.8	69.4	0.1727	-0.0516	%L0 (r>0,009) 02 490_590
42.19	67.08	35.55	0.291	0.463	85.5	-74.2	-24.8	0.1789	-0.0984	%C0 (r>0,009) 03 380_590
6.22	2.77	30.86	0.156	0.069	19.1	40.7	-130.2	0.2734	-0.2715	%V0 (r>0,009) 04 380_490
73.82	35.64	30.88	0.525	0.253	66.2	83.4	-48.9	0.2661	-0.1159	%M0 (r>0,009) 05 380_490 . . 590-770
68.59	33.77	0.34	0.667	0.328	64.7	79.1	96.6	0.2644	-0.0263	%00 (r>0,009) 06 590_770
0.98	0.9	0.32	0.447	0.407	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.09	0.03	0.445	0.405	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770

$$\begin{aligned}
 a^* &= 500 \left[\left(\frac{X}{X_n} \right)^{1/3} - \left(\frac{Y}{Y_n} \right)^{1/3} \right] & b^* &= 200 \left[\left(\frac{Y}{Y_n} \right)^{1/3} - \left(\frac{Z}{Z_n} \right)^{1/3} \right] & a' &= \left(\frac{1}{X_n} \right)^{1/3} (x/y)^{1/3} & b' &= -0.4 \left(\frac{1}{Z_n} \right)^{1/3} (z/y)^{1/3} & (X, Y, Z \geq 0.89) \\
 &= 500 (a' - a'_n) Y^{1/3} & &= 500 (b' - b'_n) Y^{1/3} & &= 0.2191 (x/y)^{1/3} & &= -0.08376 (z/y)^{1/3} & \text{CIELAB für } n=D65
 \end{aligned}$$

X	Y	Z	x	y	L*	a*	b*	a'	b'	OYLCVM_ONW_1
CIE Illuminant E										
38.96	18.18	0.9	0.671	0.313	49.7	81.9	71.5	0.2777	-0.0317	%01(r>0,009) 00 600_770
83.45	93.23	5.03	0.459	0.513	97.3	-17.7	121.5	0.2076	-0.0325	%Y1(r>0,009) 01 500_770
45.34	75.92	5.02	0.359	0.601	89.8	-72.0	108.6	0.1814	-0.0348	%L1(r>0,009) 02 500_600
61.89	82.69	99.99	0.253	0.338	92.8	-43.1	-12.2	0.1956	-0.0918	%C1(r>0,009) 03 380_600
17.45	7.65	95.85	0.144	0.063	33.2	67.1	-112.2	0.2835	-0.2001	%V1(r>0,009) 04 380_500
55.51	24.93	95.86	0.314	0.141	57.0	96.2	-71.3	0.2813	-0.135	%M1(r>0,009) 05 380_500..600-770
38.96	18.18	0.9	0.671	0.313	49.7	81.9	71.5	0.2777	-0.0317	%01(r>0,009) 06 600_770
0.9	0.9	0.9	0.333	0.333	8.1	0.0	0.0	0.2154	-0.0861	%N0(r=0,009) 07 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1(r=1,000) 08 380_770
0.1	0.1	0.1	0.332	0.332	0.9	0.0	0.0	0.2154	-0.0861	%N0(r=0,001) 09 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1(r=1,000) 10 380_770
CIE Standard Illuminant D65										
33.97	16.02	0.98	0.666	0.314	47.0	83.2	66.9	0.2815	-0.033	%01(r>0,009) 00 600_770
77.2	92.36	5.45	0.441	0.527	96.9	-20.4	121.0	0.2064	-0.0326	%Y1(r>0,009) 01 500_770
44.04	77.21	5.44	0.347	0.609	90.4	-71.7	109.7	0.1817	-0.0346	%L1(r>0,009) 02 500_600
61.88	84.85	108.88	0.242	0.331	93.8	-39.9	-10.6	0.1972	-0.091	%C1(r>0,009) 03 380_600
18.69	8.51	104.4	0.142	0.064	35.0	70.7	-109.2	0.2847	-0.1931	%V1(r>0,009) 04 380_500
51.81	23.64	104.41	0.288	0.131	55.7	99.2	-73.5	0.2846	-0.1374	%M1(r>0,009) 05 380_500..600-770
33.97	16.02	0.98	0.666	0.314	47.0	83.2	66.9	0.2815	-0.033	%01(r>0,009) 06 600_770
0.85	0.9	0.98	0.312	0.328	8.1	0.0	0.0	0.2154	-0.0861	%N0(r=0,009) 07 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1(r=1,000) 08 380_770
0.09	0.1	0.1	0.311	0.327	0.9	0.0	0.0	0.2154	-0.0861	%N0(r=0,001) 09 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1(r=1,000) 10 380_770
CIE Illuminant A										
56.48	25.78	0.33	0.683	0.312	57.8	82.3	85.1	0.2711	-0.0285	%01(r>0,009) 00 600_770
104.52	96.74	3.15	0.511	0.473	98.7	-2.7	108.6	0.2142	-0.0388	%Y1(r>0,009) 01 500_770
48.97	71.82	3.14	0.395	0.579	87.8	-65.8	90.0	0.1837	-0.0428	%L1(r>0,009) 02 500_600
54.29	75.07	35.56	0.329	0.455	89.4	-59.1	-18.2	0.1874	-0.0948	%C1(r>0,009) 03 380_600
6.31	4.14	32.73	0.146	0.096	24.1	19.8	-125.2	0.2401	-0.2421	%V1(r>0,009) 04 380_500
61.8	29.03	32.75	0.5	0.234	60.8	81.6	-62.1	0.2685	-0.1265	%M1(r>0,009) 05 380_500..600-770
56.48	25.78	0.33	0.683	0.312	57.8	82.3	85.1	0.2711	-0.0285	%01(r>0,009) 06 600_770
0.98	0.9	0.32	0.447	0.407	8.1	0.0	0.0	0.2154	-0.0861	%N0(r=0,009) 07 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1(r=1,000) 08 380_770
0.1	0.09	0.03	0.445	0.405	0.9	0.0	0.0	0.2154	-0.0861	%N0(r=0,001) 09 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1(r=1,000) 10 380_770

$$\begin{aligned}
 a^* &= 500 \left[\left(\frac{X}{X_n} \right)^{1/3} - \left(\frac{Y}{Y_n} \right)^{1/3} \right] & b^* &= 200 \left[\left(\frac{Y}{Y_n} \right)^{1/3} - \left(\frac{Z}{Z_n} \right)^{1/3} \right] & a' &= \left(\frac{1}{X_n} \right)^{1/3} (x/y)^{1/3} & b' &= -0.4 \left(\frac{1}{Z_n} \right)^{1/3} (z/y)^{1/3} & (X, Y, Z \geq 0.89) \\
 &= 500 (a' - a'_n) Y^{1/3} & &= 500 (b' - b'_n) Y^{1/3} & &= 0.2191 (x/y)^{1/3} & &= -0.08376 (z/y)^{1/3} & \text{CIELAB für } n=D65
 \end{aligned}$$

X	Y	Z	x	y	L*	a*	b*	a'	b'	OYLCVM_ONW_2
CIE Illuminant E										
61.82	36.31	0.93	0.624	0.366	66.7	69.2	100.4	0.2572	-0.0254	%02 (r>0,009) 00 575_770
83.45	93.23	5.03	0.459	0.513	97.3	-17.7	121.5	0.2076	-0.0325	%Y2 (r>0,009) 01 500_770
22.48	57.78	4.99	0.263	0.677	80.6	-112.4	92.9	0.1572	-0.038	%L2 (r>0,009) 02 500_575
39.03	64.54	99.96	0.191	0.317	84.2	-66.6	-27.1	0.1821	-0.0997	%C2 (r>0,009) 03 380_575
17.45	7.65	95.85	0.144	0.063	33.2	67.1	-112.2	0.2835	-0.2001	%V2 (r>0,009) 04 380_500
78.37	43.06	95.89	0.36	0.198	71.5	83.4	-46.1	0.263	-0.1125	%M2 (r>0,009) 05 380_500 . . 575-770
61.82	36.31	0.93	0.624	0.366	66.7	69.2	100.4	0.2572	-0.0254	%02 (r>0,009) 06 575_770
0.9	0.9	0.9	0.333	0.333	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.1	0.1	0.332	0.332	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Standard Illuminant D65										
55.16	32.9	1.01	0.619	0.369	64.0	71.8	95.9	0.2602	-0.0262	%02 (r>0,009) 00 575_770
77.2	92.36	5.45	0.441	0.527	96.9	-20.4	121.0	0.2064	-0.0326	%Y2 (r>0,009) 01 500_770
22.86	60.32	5.41	0.258	0.68	82.0	-111.5	95.4	0.1585	-0.0375	%L2 (r>0,009) 02 500_575
40.7	67.95	108.85	0.187	0.312	85.9	-62.6	-24.1	0.1847	-0.098	%C2 (r>0,009) 03 380_575
18.69	8.51	104.4	0.142	0.064	35.0	70.7	-109.2	0.2847	-0.1931	%V2 (r>0,009) 04 380_500
73.0	40.52	104.43	0.334	0.185	69.8	87.8	-49.2	0.2666	-0.1148	%M2 (r>0,009) 05 380_500 . . 575-770
55.16	32.9	1.01	0.619	0.369	64.0	71.8	95.9	0.2602	-0.0262	%02 (r>0,009) 06 575_770
0.85	0.9	0.98	0.312	0.328	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.1	0.1	0.311	0.327	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Illuminant A										
83.73	47.21	0.36	0.637	0.359	74.3	67.3	112.1	0.2527	-0.0241	%02 (r>0,009) 00 575_770
104.52	96.74	3.15	0.511	0.473	98.7	-2.7	108.6	0.2142	-0.0388	%Y2 (r>0,009) 01 500_770
21.74	50.38	3.1	0.289	0.669	76.3	-106.4	70.3	0.1577	-0.048	%L2 (r>0,009) 02 500_575
27.06	53.64	35.53	0.232	0.461	78.2	-92.7	-37.4	0.1662	-0.106	%C2 (r>0,009) 03 380_575
6.31	4.14	32.73	0.146	0.096	24.1	19.8	-125.2	0.2401	-0.2421	%V2 (r>0,009) 04 380_500
89.05	50.46	32.78	0.516	0.292	76.3	68.1	-35.3	0.2523	-0.1053	%M2 (r>0,009) 05 380_500 . . 575-770
83.73	47.21	0.36	0.637	0.359	74.3	67.3	112.1	0.2527	-0.0241	%02 (r>0,009) 06 575_770
0.98	0.9	0.32	0.447	0.407	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.09	0.03	0.445	0.405	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770

$$a^* = 500 \left[\left(\frac{X}{X_n} \right)^{1/3} - \left(\frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[\left(\frac{Y}{Y_n} \right)^{1/3} - \left(\frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left(\frac{1}{X_n} \right)^{1/3} (x/y)^{1/3} \quad b' = -0.4 \left(\frac{1}{Z_n} \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0.89)$$

$$= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0.2191 (x/y)^{1/3} \quad = -0.08376 (z/y)^{1/3} \quad \text{CIELAB für } n=D65$$

X	Y	Z	x	y	L*	a*	b*	a'	b'	OYLCVM_ONW_3
CIE Illuminant E										
61.82	36.31	0.93	0.624	0.366	66.7	69.2	100.4	0.2572	-0.0254	%03 (r>0,009) 00 575_770
84.71	97.84	18.48	0.421	0.486	99.1	-23.2	84.6	0.2053	-0.0494	%Y3 (r>0,009) 01 475_770
23.75	62.39	18.44	0.227	0.596	83.1	-117.5	57.0	0.1561	-0.0574	%L3 (r>0,009) 02 475_575
39.03	64.54	99.96	0.191	0.317	84.2	-66.6	-27.1	0.1821	-0.0997	%C3 (r>0,009) 03 380_575
16.17	3.05	82.37	0.159	0.03	20.2	116.1	-124.9	0.3756	-0.2585	%V3 (r>0,009) 04 380_475
77.1	38.46	82.41	0.389	0.194	68.3	94.8	-42.0	0.2716	-0.111	%M3 (r>0,009) 05 380_475 . . 575-770
61.82	36.31	0.93	0.624	0.366	66.7	69.2	100.4	0.2572	-0.0254	%03 (r>0,009) 06 575_770
0.9	0.9	0.9	0.333	0.333	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.1	0.1	0.332	0.332	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Standard Illuminant D65										
55.16	32.9	1.01	0.619	0.369	64.0	71.8	95.9	0.2602	-0.0262	%03 (r>0,009) 00 575_770
78.66	97.53	20.8	0.399	0.495	99.0	-26.4	83.1	0.2039	-0.05	%Y3 (r>0,009) 01 475_770
24.32	65.49	20.76	0.219	0.592	84.7	-116.7	58.5	0.1575	-0.0571	%L3 (r>0,009) 02 475_575
40.7	67.95	108.85	0.187	0.312	85.9	-62.6	-24.1	0.1847	-0.098	%C3 (r>0,009) 03 380_575
17.23	3.35	89.01	0.157	0.03	21.4	121.6	-122.4	0.3779	-0.2497	%V3 (r>0,009) 04 380_475
71.53	35.36	89.05	0.365	0.18	66.0	101.2	-45.6	0.2771	-0.1139	%M3 (r>0,009) 05 380_475 . . 575-770
55.16	32.9	1.01	0.619	0.369	64.0	71.8	95.9	0.2602	-0.0262	%03 (r>0,009) 06 575_770
0.85	0.9	0.98	0.312	0.328	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.1	0.1	0.311	0.327	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Illuminant A										
83.73	47.21	0.36	0.637	0.359	74.3	67.3	112.1	0.2527	-0.0241	%03 (r>0,009) 00 575_770
105.14	99.2	9.93	0.49	0.462	99.6	-5.9	68.7	0.2128	-0.0564	%Y3 (r>0,009) 01 475_770
22.36	52.84	9.88	0.262	0.621	77.7	-110.0	31.1	0.1567	-0.0695	%L3 (r>0,009) 02 475_575
27.06	53.64	35.53	0.232	0.461	78.2	-92.7	-37.4	0.1662	-0.106	%C3 (r>0,009) 03 380_575
5.68	1.69	25.94	0.17	0.05	13.7	57.9	-128.6	0.3126	-0.302	%V3 (r>0,009) 04 380_475
88.43	48.01	25.99	0.544	0.295	74.8	73.6	-23.5	0.2559	-0.0991	%M3 (r>0,009) 05 380_475 . . 575-770
83.73	47.21	0.36	0.637	0.359	74.3	67.3	112.1	0.2527	-0.0241	%03 (r>0,009) 06 575_770
0.98	0.9	0.32	0.447	0.407	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.09	0.03	0.445	0.405	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770

$$a^* = 500 \left[\left(\frac{X}{X_n} \right)^{1/3} - \left(\frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[\left(\frac{Y}{Y_n} \right)^{1/3} - \left(\frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left(\frac{1}{X_n} \right)^{1/3} (x/y)^{1/3} \quad b' = -0.4 \left(\frac{1}{Z_n} \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0.89)$$

$$= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0.2191 (x/y)^{1/3} \quad = -0.08376 (z/y)^{1/3} \quad \text{CIELAB für } n=D65$$

X	Y	Z	x	y	L*	a*	b*	a'	b'	OYLCVM_ONW_4
CIE Illuminant E										
61.82	36.31	0.93	0.624	0.366	66.7	69.2	100.4	0.2572	-0.0254	%04 (r>0,009) 00 575_770
90.71	99.45	53.87	0.371	0.407	99.7	-15.0	36.8	0.2089	-0.0702	%Y4 (r>0,009) 01 450_770
29.75	64.0	53.83	0.201	0.433	83.9	-97.0	9.6	0.1668	-0.0813	%L4 (r>0,009) 02 450_575
39.03	64.54	99.96	0.191	0.317	84.2	-66.6	-27.1	0.1821	-0.0997	%C4 (r>0,009) 03 380_575
16.17	3.05	82.37	0.159	0.03	20.2	116.1	-124.9	0.3756	-0.2585	%V4 (r>0,009) 04 380_450
71.09	36.85	46.98	0.458	0.237	67.1	87.7	-12.0	0.2681	-0.0934	%M4 (r>0,009) 05 380_450 . . 575-770
61.82	36.31	0.93	0.624	0.366	66.7	69.2	100.4	0.2572	-0.0254	%04 (r>0,009) 06 575_770
0.9	0.9	0.9	0.333	0.333	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.1	0.1	0.332	0.332	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Standard Illuminant D65										
55.16	32.9	1.01	0.619	0.369	64.0	71.8	95.9	0.2602	-0.0262	%04 (r>0,009) 00 575_770
85.74	99.43	62.55	0.346	0.401	99.7	-15.9	33.3	0.2085	-0.0717	%Y4 (r>0,009) 01 450_770
31.4	67.39	62.52	0.194	0.417	85.7	-92.6	9.1	0.1698	-0.0816	%L4 (r>0,009) 02 450_575
40.7	67.95	108.85	0.187	0.312	85.9	-62.6	-24.1	0.1847	-0.098	%C4 (r>0,009) 03 380_575
17.23	3.35	89.01	0.157	0.03	21.4	121.6	-122.4	0.3779	-0.2497	%V4 (r>0,009) 04 380_450
64.44	33.46	47.26	0.443	0.23	64.5	92.1	-12.5	0.2726	-0.0939	%M4 (r>0,009) 05 380_450 . . 575-770
55.16	32.9	1.01	0.619	0.369	64.0	71.8	95.9	0.2602	-0.0262	%04 (r>0,009) 06 575_770
0.85	0.9	0.98	0.312	0.328	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.1	0.1	0.311	0.327	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Illuminant A										
83.73	47.21	0.36	0.637	0.359	74.3	67.3	112.1	0.2527	-0.0241	%04 (r>0,009) 00 575_770
107.42	99.84	23.46	0.465	0.432	99.9	-3.4	25.8	0.2139	-0.075	%Y4 (r>0,009) 01 450_770
24.63	53.49	23.41	0.242	0.526	78.1	-102.0	-11.6	0.1612	-0.0923	%L4 (r>0,009) 02 450_575
27.06	53.64	35.53	0.232	0.461	78.2	-92.7	-37.4	0.1662	-0.106	%C4 (r>0,009) 03 380_575
5.68	1.69	25.94	0.17	0.05	13.7	57.9	-128.6	0.3126	-0.302	%V4 (r>0,009) 04 380_450
86.15	47.36	12.46	0.59	0.324	74.4	71.3	14.9	0.2548	-0.0779	%M4 (r>0,009) 05 380_450 . . 575-770
83.73	47.21	0.36	0.637	0.359	74.3	67.3	112.1	0.2527	-0.0241	%04 (r>0,009) 06 575_770
0.98	0.9	0.32	0.447	0.407	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.09	0.03	0.445	0.405	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770

$$\begin{aligned}
 a^* &= 500 \left[\left(X/X_n \right)^{1/3} - \left(Y/Y_n \right)^{1/3} \right] & b^* &= 200 \left[\left(Y/Y_n \right)^{1/3} - \left(Z/Z_n \right)^{1/3} \right] & a' &= \left(1/X_n \right)^{1/3} (x/y)^{1/3} & b' &= -0,4 \left(1/Z_n \right)^{1/3} (z/y)^{1/3} & (X, Y, Z \geq 0,89) \\
 &= 500 (a' - a'_n) Y^{1/3} & &= 500 (b' - b'_n) Y^{1/3} & &= 0,2191 (x/y)^{1/3} & &= -0,08376 (z/y)^{1/3} & \text{CIELAB für } n=D65
 \end{aligned}$$

X	Y	Z	x	y	L*	a*	b*	a'	b'	OYLCVM_ONW_5
CIE Illuminant E										
38.96	18.18	0.9	0.671	0.313	49.7	81.9	71.5	0.2777	-0.0317	%05 (r>0,009) 00 600_770
90.71	99.45	53.87	0.371	0.407	99.7	-15.0	36.8	0.2089	-0.0702	%Y5 (r>0,009) 01 450_770
52.61	82.15	53.86	0.278	0.435	92.6	-64.6	24.5	0.1857	-0.0748	%L5 (r>0,009) 02 450_600
61.89	82.69	99.99	0.253	0.338	92.8	-43.1	-12.2	0.1956	-0.0918	%C5 (r>0,009) 03 380_600
10.16	1.43	46.95	0.173	0.024	12.2	111.7	-106.7	0.4134	-0.2753	%V5 (r>0,009) 04 380_450
48.22	18.72	46.95	0.423	0.164	50.3	106.0	-41.0	0.2953	-0.117	%M5 (r>0,009) 05 380_450 . . 600-770
38.96	18.18	0.9	0.671	0.313	49.7	81.9	71.5	0.2777	-0.0317	%05 (r>0,009) 06 600_770
0.9	0.9	0.9	0.333	0.333	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.1	0.1	0.332	0.332	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Standard Illuminant D65										
33.97	16.02	0.98	0.666	0.314	47.0	83.2	66.9	0.2815	-0.033	%05 (r>0,009) 00 600_770
85.74	99.43	62.55	0.346	0.401	99.7	-15.9	33.3	0.2085	-0.0717	%Y5 (r>0,009) 01 450_770
52.58	84.28	62.54	0.263	0.422	93.5	-61.8	22.6	0.1872	-0.0758	%L5 (r>0,009) 02 450_600
61.88	84.85	108.88	0.242	0.331	93.8	-39.9	-10.6	0.1972	-0.091	%C5 (r>0,009) 03 380_600
10.13	1.46	47.22	0.172	0.024	12.3	114.8	-102.4	0.4177	-0.2667	%V5 (r>0,009) 04 380_450
43.25	16.58	47.23	0.403	0.154	47.7	109.8	-41.5	0.3016	-0.1187	%M5 (r>0,009) 05 380_450 . . 600-770
33.97	16.02	0.98	0.666	0.314	47.0	83.2	66.9	0.2815	-0.033	%05 (r>0,009) 06 600_770
0.85	0.9	0.98	0.312	0.328	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.1	0.1	0.311	0.327	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Illuminant A										
56.48	25.78	0.33	0.683	0.312	57.8	82.3	85.1	0.2711	-0.0285	%05 (r>0,009) 00 600_770
107.42	99.84	23.46	0.465	0.432	99.9	-3.4	25.8	0.2139	-0.075	%Y5 (r>0,009) 01 450_770
51.86	74.92	23.45	0.345	0.498	89.3	-64.7	7.5	0.1847	-0.0825	%L5 (r>0,009) 02 450_600
54.29	75.07	35.56	0.329	0.455	89.4	-59.1	-18.2	0.1874	-0.0948	%C5 (r>0,009) 03 380_600
3.41	1.05	12.41	0.202	0.062	9.4	47.6	-97.0	0.3092	-0.277	%V5 (r>0,009) 04 380_450
58.9	25.94	12.42	0.605	0.266	57.9	87.3	-13.2	0.2744	-0.0951	%M5 (r>0,009) 05 380_450 . . 600-770
56.48	25.78	0.33	0.683	0.312	57.8	82.3	85.1	0.2711	-0.0285	%05 (r>0,009) 06 600_770
0.98	0.9	0.32	0.447	0.407	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.09	0.03	0.445	0.405	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770

$$a^* = 500 \left[\left(\frac{X}{X_n} \right)^{1/3} - \left(\frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[\left(\frac{Y}{Y_n} \right)^{1/3} - \left(\frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left(\frac{1}{X_n} \right)^{1/3} (x/y)^{1/3} \quad b' = -0.4 \left(\frac{1}{Z_n} \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0.89)$$

$$= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0.2191 (x/y)^{1/3} \quad = -0.08376 (z/y)^{1/3} \quad \text{CIELAB für } n=D65$$

X	Y	Z	x	y	L*	a*	b*	a'	b'	OYLCVM_ONW_6
CIE Illuminant E										
38.96	18.18	0.9	0.671	0.313	49.7	81.9	71.5	0.2777	-0.0317	%06 (r>0,009) 00 600_770
82.69	80.3	1.67	0.502	0.487	91.8	4.5	134.7	0.2175	-0.0237	%Y6 (r>0,009) 01 525_770
44.59	62.99	1.66	0.408	0.576	83.4	-46.6	120.3	0.192	-0.0256	%L6 (r>0,009) 02 525_600
61.89	82.69	99.99	0.253	0.338	92.8	-43.1	-12.2	0.1956	-0.0918	%C6 (r>0,009) 03 380_600
18.19	20.56	99.22	0.131	0.149	52.4	-11.7	-81.4	0.2068	-0.1456	%V6 (r>0,009) 04 380_525
56.25	37.84	99.23	0.29	0.195	67.9	51.0	-54.8	0.2458	-0.1188	%M6 (r>0,009) 05 380_525 . 600-770
38.96	18.18	0.9	0.671	0.313	49.7	81.9	71.5	0.2777	-0.0317	%06 (r>0,009) 06 600_770
0.9	0.9	0.9	0.333	0.333	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.1	0.1	0.332	0.332	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Standard Illuminant D65										
33.97	16.02	0.98	0.666	0.314	47.0	83.2	66.9	0.2815	-0.033	%06 (r>0,009) 00 600_770
76.4	78.41	1.79	0.487	0.5	90.9	3.8	133.4	0.2172	-0.0237	%Y6 (r>0,009) 01 525_770
43.23	63.26	1.79	0.399	0.584	83.5	-44.6	120.8	0.193	-0.0255	%L6 (r>0,009) 02 525_600
61.88	84.85	108.88	0.242	0.331	93.8	-39.9	-10.6	0.1972	-0.091	%C6 (r>0,009) 03 380_600
19.49	22.45	108.07	0.129	0.149	54.5	-9.0	-77.9	0.209	-0.1414	%V6 (r>0,009) 04 380_525
52.61	37.57	108.07	0.265	0.189	67.7	49.7	-55.1	0.2451	-0.1191	%M6 (r>0,009) 05 380_525 . 600-770
33.97	16.02	0.98	0.666	0.314	47.0	83.2	66.9	0.2815	-0.033	%06 (r>0,009) 06 600_770
0.85	0.9	0.98	0.312	0.328	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.1	0.1	0.311	0.327	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Illuminant A										
56.48	25.78	0.33	0.683	0.312	57.8	82.3	85.1	0.2711	-0.0285	%06 (r>0,009) 00 600_770
103.98	87.91	0.97	0.539	0.455	95.1	11.9	131.2	0.2208	-0.0271	%Y6 (r>0,009) 01 525_770
48.43	62.98	0.96	0.43	0.56	83.4	-48.0	111.3	0.1912	-0.0301	%L6 (r>0,009) 02 525_600
54.29	75.07	35.56	0.329	0.455	89.4	-59.1	-18.2	0.1874	-0.0948	%C6 (r>0,009) 03 380_600
6.84	12.96	34.92	0.125	0.236	42.7	-54.8	-97.5	0.1687	-0.1692	%V6 (r>0,009) 04 380_525
62.34	37.85	34.93	0.461	0.28	67.9	52.2	-54.1	0.2465	-0.1184	%M6 (r>0,009) 05 380_525 . 600-770
56.48	25.78	0.33	0.683	0.312	57.8	82.3	85.1	0.2711	-0.0285	%06 (r>0,009) 06 600_770
0.98	0.9	0.32	0.447	0.407	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.09	0.03	0.445	0.405	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770

$$a^* = 500 \left[\left(\frac{X}{X_n} \right)^{1/3} - \left(\frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[\left(\frac{Y}{Y_n} \right)^{1/3} - \left(\frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left(\frac{1}{X_n} \right)^{1/3} (x/y)^{1/3} \quad b' = -0.4 \left(\frac{1}{Z_n} \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0.89)$$

$$= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0.2191 (x/y)^{1/3} \quad = -0.08376 (z/y)^{1/3} \quad \text{CIELAB für } n=D65$$

X	Y	Z	x	y	L*	a*	b*	a'	b'	OYLCVM_ONW_7
CIE Illuminant E										
38.96	18.18	0.9	0.671	0.313	49.7	81.9	71.5	0.2777	-0.0317	%07 (r>0,009) 00 600_770
83.38	88.27	2.68	0.478	0.506	95.2	-9.0	131.9	0.2113	-0.0269	%Y7 (r>0,009) 01 512,5_770
45.27	70.96	2.67	0.38	0.596	87.4	-62.0	118.5	0.1854	-0.0289	%L7 (r>0,009) 02 512,5_600
61.89	82.69	99.99	0.253	0.338	92.8	-43.1	-12.2	0.1956	-0.0918	%C7 (r>0,009) 03 380_600
17.51	12.62	98.21	0.136	0.098	42.1	28.9	-98.4	0.2402	-0.1707	%V7 (r>0,009) 04 380_512,5
55.57	29.91	98.22	0.302	0.162	61.5	76.7	-65.0	0.2648	-0.128	%M7 (r>0,009) 05 380_512,5...600-770
38.96	18.18	0.9	0.671	0.313	49.7	81.9	71.5	0.2777	-0.0317	%07 (r>0,009) 06 600_770
0.9	0.9	0.9	0.333	0.333	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.1	0.1	0.332	0.332	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Standard Illuminant D65										
33.97	16.02	0.98	0.666	0.314	47.0	83.2	66.9	0.2815	-0.033	%07 (r>0,009) 00 600_770
77.13	86.92	2.88	0.462	0.52	94.7	-10.8	131.2	0.2105	-0.0269	%Y7 (r>0,009) 01 512,5_770
43.96	71.78	2.87	0.37	0.605	87.8	-60.9	119.5	0.186	-0.0286	%L7 (r>0,009) 02 512,5_600
61.88	84.85	108.88	0.242	0.331	93.8	-39.9	-10.6	0.1972	-0.091	%C7 (r>0,009) 03 380_600
18.76	13.97	106.98	0.134	0.099	44.1	31.7	-95.0	0.2417	-0.1651	%V7 (r>0,009) 04 380_512,5
51.88	29.09	106.99	0.276	0.154	60.8	77.3	-66.3	0.2657	-0.1292	%M7 (r>0,009) 05 380_512,5...600-770
33.97	16.02	0.98	0.666	0.314	47.0	83.2	66.9	0.2815	-0.033	%07 (r>0,009) 06 600_770
0.85	0.9	0.98	0.312	0.328	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.1	0.1	0.311	0.327	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Illuminant A										
56.48	25.78	0.33	0.683	0.312	57.8	82.3	85.1	0.2711	-0.0285	%07 (r>0,009) 00 600_770
104.48	93.6	1.69	0.522	0.468	97.4	2.6	123.1	0.2166	-0.0319	%Y7 (r>0,009) 01 512,5_770
48.92	68.67	1.68	0.41	0.575	86.3	-59.2	104.1	0.1864	-0.0353	%L7 (r>0,009) 02 512,5_600
54.29	75.07	35.56	0.329	0.455	89.4	-59.1	-18.2	0.1874	-0.0948	%C7 (r>0,009) 03 380_600
6.35	7.29	34.2	0.132	0.152	32.4	-15.5	-113.8	0.1993	-0.2035	%V7 (r>0,009) 04 380_512,5
61.85	32.18	34.22	0.482	0.25	63.4	70.2	-60.3	0.2595	-0.1241	%M7 (r>0,009) 05 380_512,5...600-770
56.48	25.78	0.33	0.683	0.312	57.8	82.3	85.1	0.2711	-0.0285	%07 (r>0,009) 06 600_770
0.98	0.9	0.32	0.447	0.407	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.09	0.03	0.445	0.405	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770

$$a^* = 500 \left[\left(\frac{X}{X_n} \right)^{1/3} - \left(\frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[\left(\frac{Y}{Y_n} \right)^{1/3} - \left(\frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left(\frac{1}{X_n} \right)^{1/3} (x/y)^{1/3} \quad b' = -0.4 \left(\frac{1}{Z_n} \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0.89)$$

$$= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0.2191 (x/y)^{1/3} \quad = -0.08376 (z/y)^{1/3} \quad \text{CIELAB für } n=D65$$

X	Y	Z	x	y	L*	a*	b*	a'	b'	OYLCVM_ONW_8
CIE Illuminant E										
61.82	36.31	0.93	0.624	0.366	66.7	69.2	100.4	0.2572	-0.0254	%08 (r>0,009) 00 575_770
83.38	88.27	2.68	0.478	0.506	95.2	-9.0	131.9	0.2113	-0.0269	%Y8 (r>0,009) 01 512,5_770
22.42	52.81	2.64	0.287	0.678	77.7	-100.4	102.0	0.1619	-0.0317	%L8 (r>0,009) 02 512,5_575
39.03	64.54	99.96	0.191	0.317	84.2	-66.6	-27.1	0.1821	-0.0997	%C8 (r>0,009) 03 380_575
17.51	12.62	98.21	0.136	0.098	42.1	28.9	-98.4	0.2402	-0.1707	%V8 (r>0,009) 04 380_512,5
78.44	48.04	98.25	0.349	0.213	74.8	69.5	-42.1	0.2536	-0.1093	%M8 (r>0,009) 05 380_512,5...575-770
61.82	36.31	0.93	0.624	0.366	66.7	69.2	100.4	0.2572	-0.0254	%08 (r>0,009) 06 600_770
0.9	0.9	0.9	0.333	0.333	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.1	0.1	0.332	0.332	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Standard Illuminant D65										
55.16	32.9	1.01	0.619	0.369	64.0	71.8	95.9	0.2602	-0.0262	%08 (r>0,009) 00 575_770
77.13	86.92	2.88	0.462	0.52	94.7	-10.8	131.2	0.2105	-0.0269	%Y8 (r>0,009) 01 512,5_770
22.79	54.88	2.84	0.283	0.681	78.9	-98.7	104.3	0.1634	-0.0312	%L8 (r>0,009) 02 512,5_575
40.7	67.95	108.85	0.187	0.312	85.9	-62.6	-24.1	0.1847	-0.098	%C8 (r>0,009) 03 380_575
18.76	13.97	106.98	0.134	0.099	44.1	31.7	-95.0	0.2417	-0.1651	%V8 (r>0,009) 04 380_512,5
73.07	45.97	107.02	0.323	0.203	73.5	72.1	-44.4	0.2557	-0.111	%M8 (r>0,009) 05 380_512,5...575-770
55.16	32.9	1.01	0.619	0.369	64.0	71.8	95.9	0.2602	-0.0262	%08 (r>0,009) 06 600_770
0.85	0.9	0.98	0.312	0.328	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.1	0.1	0.311	0.327	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Illuminant A										
83.73	47.21	0.36	0.637	0.359	74.3	67.3	112.1	0.2527	-0.0241	%08 (r>0,009) 00 575_770
104.48	93.6	1.69	0.522	0.468	97.4	2.6	123.1	0.2166	-0.0319	%Y8 (r>0,009) 01 512,5_770
21.7	47.24	1.64	0.307	0.669	74.3	-98.2	83.9	0.1611	-0.0397	%L8 (r>0,009) 02 512,5_575
27.06	53.64	35.53	0.232	0.461	78.2	-92.7	-37.4	0.1662	-0.106	%C8 (r>0,009) 03 380_575
6.35	7.29	34.2	0.132	0.152	32.4	-15.5	-113.8	0.1993	-0.2035	%V8 (r>0,009) 04 380_512,5
89.09	53.61	34.25	0.503	0.302	78.2	60.0	-35.0	0.2473	-0.1047	%M8 (r>0,009) 05 380_512,5...575-770
83.73	47.21	0.36	0.637	0.359	74.3	67.3	112.1	0.2527	-0.0241	%08 (r>0,009) 06 600_770
0.98	0.9	0.32	0.447	0.407	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.1	0.09	0.03	0.445	0.405	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770

$$a^* = 500 \left[\left(\frac{X}{X_n} \right)^{1/3} - \left(\frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[\left(\frac{Y}{Y_n} \right)^{1/3} - \left(\frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left(\frac{1}{X_n} \right)^{1/3} (x/y)^{1/3} \quad b' = -0.4 \left(\frac{1}{Z_n} \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0.89)$$

$$= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0.2191 (x/y)^{1/3} \quad = -0.08376 (z/y)^{1/3} \quad \text{CIELAB für } n=D65$$

X	Y	Z	x	y	L*	a*	b*	a'	b'	OYLCVM_ONW_9
CIE Illuminant E										
61.82	36.31	0.93	0.624	0.366	66.7	69.2	100.4	0.2572	-0.0254	%R91 (r>0,009) 00 575_770
83.38	88.27	2.68	0.478	0.506	95.2	-9.0	131.9	0.2113	-0.0269	%J90 (r>0,009) 01 512,5_770
22.42	52.81	2.64	0.287	0.678	77.7	-100.4	102.0	0.1619	-0.0317	%G92 (r>0,009) 02 512,5_575
23.75	62.39	18.44	0.227	0.596	83.1	-117.5	57.0	0.1561	-0.0574	%G90 (r>0,009) 03 475_575
16.17	3.05	82.37	0.159	0.03	20.2	116.1	-124.9	0.3756	-0.2585	%R92 (r>0,009) 04 380_475
77.1	38.46	82.41	0.389	0.194	68.3	94.8	-42.0	0.2716	-0.111	%R90 (r>0,009) 05 380_475..575_770
2.23	10.47	16.69	0.075	0.356	38.6	-94.8	-15.8	0.1287	-0.1006	%G91 (r>0,009) 06 475_512,5
17.51	12.62	98.21	0.136	0.098	42.1	28.9	-98.4	0.2402	-0.1707	%B90 (r>0,009) 07 380_512,5
9.78	26.1	12.27	0.203	0.542	58.1	-89.1	28.4	0.1553	-0.067	%G9x 0.625(475_512,5)..0.375(512,5-575)
0.1	0.1	0.1	0.332	0.332	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Standard Illuminant D65										
55.16	32.9	1.01	0.619	0.369	64.0	71.8	95.9	0.2602	-0.0262	%R91 (r>0,009) 00 575_770
77.13	86.92	2.88	0.462	0.52	94.7	-10.8	131.2	0.2105	-0.0269	%J90 (r>0,009) 01 512,5_770
22.79	54.88	2.84	0.283	0.681	78.9	-98.7	104.3	0.1634	-0.0312	%G92 (r>0,009) 02 512,5_575
24.32	65.49	20.76	0.219	0.592	84.7	-116.7	58.5	0.1575	-0.0571	%G90 (r>0,009) 03 475_575
17.23	3.35	89.01	0.157	0.03	21.4	121.6	-122.4	0.3779	-0.2497	%R92 (r>0,009) 04 380_475
71.53	35.36	89.05	0.365	0.18	66.0	101.2	-45.6	0.2771	-0.1139	%R90 (r>0,009) 05 380_475..575_770
2.38	11.5	18.89	0.072	0.35	40.4	-96.8	-14.2	0.1296	-0.0988	%G91 (r>0,009) 06 475_512,5
18.76	13.97	106.98	0.134	0.099	44.1	31.7	-95.0	0.2417	-0.1651	%B90 (r>0,009) 07 380_512,5
10.03	27.53	13.86	0.195	0.535	59.4	-88.9	29.4	0.1565	-0.0666	%G9x 0.625(475_512,5)..0.375(512,5-575)
0.09	0.1	0.1	0.311	0.327	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Illuminant A										
83.73	47.21	0.36	0.637	0.359	74.3	67.3	112.1	0.2527	-0.0241	%R91 (r>0,009) 00 575_770
104.48	93.6	1.69	0.522	0.468	97.4	2.6	123.1	0.2166	-0.0319	%J90 (r>0,009) 01 512,5_770
21.7	47.24	1.64	0.307	0.669	74.3	-98.2	83.9	0.1611	-0.0397	%G92 (r>0,009) 02 512,5_575
22.36	52.84	9.88	0.262	0.621	77.7	-110.0	31.1	0.1567	-0.0695	%G90 (r>0,009) 03 475_575
5.68	1.69	25.94	0.17	0.05	13.7	57.9	-128.6	0.3126	-0.302	%R92 (r>0,009) 04 380_475
88.43	48.01	25.99	0.544	0.295	74.8	73.6	-23.5	0.2559	-0.0991	%R90 (r>0,009) 05 380_475..575_770
1.64	6.5	8.56	0.098	0.389	30.6	-77.7	-43.9	0.1321	-0.1332	%G91 (r>0,009) 06 475_512,5
6.35	7.29	34.2	0.132	0.152	32.4	-15.5	-113.8	0.1993	-0.2035	%B90 (r>0,009) 07 380_512,5
9.09	21.52	6.33	0.245	0.582	53.5	-81.7	7.3	0.1566	-0.0809	%G9x 0.625(475_512,5)..0.375(512,5-575)
0.1	0.09	0.03	0.445	0.405	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770

$$\begin{aligned} a^* &= 500 \left[\left(\frac{X}{X_n} \right)^{1/3} - \left(\frac{Y}{Y_n} \right)^{1/3} \right] & b^* &= 200 \left[\left(\frac{Y}{Y_n} \right)^{1/3} - \left(\frac{Z}{Z_n} \right)^{1/3} \right] & a' &= \left(\frac{1}{X_n} \right)^{1/3} (x/y)^{1/3} & b' &= -0,4 \left(\frac{1}{Z_n} \right)^{1/3} (z/y)^{1/3} & (X, Y, Z \geq 0,89) \\ &= 500 (a' - a'_n) Y^{1/3} & &= 500 (b' - b'_n) Y^{1/3} & &= 0,2191 (x/y)^{1/3} & &= -0,08376 (z/y)^{1/3} & \text{CIELAB für } n=D65 \end{aligned}$$

X	Y	Z	x	y	L*	a*	b*	a'	b'	OYLCVM_ONW_10
CIE Illuminant E										
61.82	36.31	0.93	0.624	0.366	66.7	69.2	100.4	0.2572	-0.0254	%RA1 (r>0,009) 00 575_770
83.1	83.79	1.98	0.492	0.496	93.3	-1.2	134.3	0.2148	-0.0247	%JAx (r>0,009) 01 520_770
22.13	48.33	1.94	0.305	0.667	75.0	-89.9	103.1	0.166	-0.0295	%GA2 (r>0,009) 02 520_575
23.75	62.39	18.44	0.227	0.596	83.1	-117.5	57.0	0.1561	-0.0574	%GA0 (r>0,009) 03 475_575
16.17	3.05	82.37	0.159	0.03	20.2	116.1	-124.9	0.3756	-0.2585	%RA2 (r>0,009) 04 380_475
77.1	38.46	82.41	0.389	0.194	68.3	94.8	-42.0	0.2716	-0.111	%RA0 (r>0,009) 05 380_475..575_770
2.51	14.92	17.39	0.072	0.428	45.5	-118.7	-5.5	0.1189	-0.0906	%GA1 (r>0,009) 06 475_520
17.79	17.07	98.91	0.133	0.127	48.3	3.8	-88.3	0.2184	-0.1547	%BA0 (r>0,009) 07 380_520
55.92	32.09	10.45	0.567	0.325	63.4	69.6	42.7	0.2592	-0.0592	%Rax 0.125(380-475)..0.875(575-770)
0.1	0.1	0.1	0.332	0.332	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Standard Illuminant D65										
55.16	32.9	1.01	0.619	0.369	64.0	71.8	95.9	0.2602	-0.0262	%RA1 (r>0,009) 00 575_770
76.82	82.13	2.13	0.476	0.509	92.6	-2.4	133.3	0.2143	-0.0248	%JAx (r>0,009) 01 520_770
22.48	50.09	2.09	0.301	0.67	76.1	-87.8	105.2	0.1677	-0.029	%GA2 (r>0,009) 02 520_575
24.32	65.49	20.76	0.219	0.592	84.7	-116.7	58.5	0.1575	-0.0571	%GA0 (r>0,009) 03 475_575
17.23	3.35	89.01	0.157	0.03	21.4	121.6	-122.4	0.3779	-0.2497	%RA2 (r>0,009) 04 380_475
71.53	35.36	89.05	0.365	0.18	66.0	101.2	-45.6	0.2771	-0.1139	%RA0 (r>0,009) 05 380_475..575_770
2.68	16.26	19.64	0.069	0.421	47.3	-120.6	-3.8	0.1201	-0.0891	%GA1 (r>0,009) 06 475_520
19.06	18.73	107.73	0.131	0.128	50.3	6.6	-84.8	0.2204	-0.15	%BA0 (r>0,009) 07 380_520
50.22	29.15	11.29	0.553	0.321	60.9	72.7	38.6	0.2626	-0.061	%Rax 0.125(380-475)..0.875(575-770)
0.09	0.1	0.1	0.311	0.327	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Illuminant A										
83.73	47.21	0.36	0.637	0.359	74.3	67.3	112.1	0.2527	-0.0241	%RA1 (r>0,009) 00 575_770
104.28	90.47	1.2	0.532	0.461	96.1	7.8	128.7	0.2189	-0.0288	%JAx (r>0,009) 01 520_770
21.5	44.11	1.15	0.322	0.66	72.3	-90.3	88.3	0.1643	-0.0361	%GA2 (r>0,009) 02 520_575
22.36	52.84	9.88	0.262	0.621	77.7	-110.0	31.1	0.1567	-0.0695	%GA0 (r>0,009) 03 475_575
5.68	1.69	25.94	0.17	0.05	13.7	57.9	-128.6	0.3126	-0.302	%RA2 (r>0,009) 04 380_475
88.43	48.01	25.99	0.544	0.295	74.8	73.6	-23.5	0.2559	-0.0991	%RA0 (r>0,009) 05 380_475..575_770
1.84	9.6	9.04	0.09	0.468	37.1	-100.9	-35.0	0.1205	-0.1191	%GA1 (r>0,009) 06 475_520
6.54	10.4	34.69	0.126	0.201	38.5	-39.8	-104.2	0.1789	-0.1816	%BA0 (r>0,009) 07 380_520
73.83	41.46	3.35	0.622	0.349	70.4	65.1	58.1	0.253	-0.0525	%Rax 0.125(380-475)..0.875(575-770)
0.1	0.09	0.03	0.445	0.405	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770

$$a^* = 500 \left[\left(\frac{X}{X_n} \right)^{1/3} - \left(\frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[\left(\frac{Y}{Y_n} \right)^{1/3} - \left(\frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left(\frac{1}{X_n} \right)^{1/3} (x/y)^{1/3} \quad b' = -0.4 \left(\frac{1}{Z_n} \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0.89)$$

$$= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0.2191 (x/y)^{1/3} \quad = -0.08376 (z/y)^{1/3} \quad \text{CIELAB für } n=D65$$

X	Y	Z	x	y	L*	a*	b*	a'	b'	OYLCVM_ONW_11
CIE Illuminant E										
61.82	36.31	0.93	0.624	0.366	66.7	69.2	100.4	0.2572	-0.0254	%RB1 (r>0,009) 00 575_770
83.45	93.23	5.03	0.459	0.513	97.3	-17.7	121.5	0.2076	-0.0325	%JB0 (r>0,009) 01 500_770
22.47	56.08	3.86	0.272	0.68	79.6	-108.3	97.2	0.1588	-0.0353	%GB2 (r>0,009) 02 500_575
23.75	62.39	18.44	0.227	0.596	83.1	-117.5	57.0	0.1561	-0.0574	%GB0 (r>0,009) 03 475_575
16.17	3.05	82.37	0.159	0.03	20.2	116.1	-124.9	0.3756	-0.2585	%RB2 (r>0,009) 04 380_475
77.1	38.46	82.41	0.389	0.194	68.3	94.8	-42.0	0.2716	-0.111	%RB0 (r>0,009) 05 380_475..575_770
2.16	5.49	14.34	0.098	0.249	28.0	-50.6	-28.6	0.1579	-0.1186	%GB1 (r>0,009) 06 475_500
17.45	7.65	95.85	0.144	0.063	33.2	67.1	-112.2	0.2835	-0.2001	%BB0 (r>0,009) 07 380_500
63.22	36.5	8.4	0.584	0.337	66.9	71.7	55.3	0.2587	-0.0528	%RBx 0.2 (380-475)..575-770
0.1	0.1	0.1	0.332	0.332	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
100.0	100.0	100.0	0.333	0.333	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Standard Illuminant D65										
55.16	32.9	1.01	0.619	0.369	64.0	71.8	95.9	0.2602	-0.0262	%RB1 (r>0,009) 00 575_770
77.2	92.36	5.45	0.441	0.527	96.9	-20.4	121.0	0.2064	-0.0326	%JB0 (r>0,009) 01 500_770
22.84	58.45	4.18	0.267	0.683	80.9	-107.1	99.7	0.1602	-0.0347	%GB2 (r>0,009) 02 500_575
24.32	65.49	20.76	0.219	0.592	84.7	-116.7	58.5	0.1575	-0.0571	%GB0 (r>0,009) 03 475_575
17.23	3.35	89.01	0.157	0.03	21.4	121.6	-122.4	0.3779	-0.2497	%RB2 (r>0,009) 04 380_475
71.53	35.36	89.05	0.365	0.18	66.0	101.2	-45.6	0.2771	-0.1139	%RB0 (r>0,009) 05 380_475..575_770
2.31	6.05	16.31	0.093	0.245	29.5	-51.4	-27.6	0.1589	-0.1165	%GB1 (r>0,009) 06 475_500
18.69	8.51	104.4	0.142	0.064	35.0	70.7	-109.2	0.2847	-0.1931	%BB0 (r>0,009) 07 380_500
56.66	33.13	9.07	0.573	0.335	64.2	74.8	51.0	0.262	-0.0544	%RBx 0.2 (380-475)..575-770
0.09	0.1	0.1	0.311	0.327	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
95.04	100.0	108.89	0.312	0.329	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770
CIE Illuminant A										
83.73	47.21	0.36	0.637	0.359	74.3	67.3	112.1	0.2527	-0.0241	%RB1 (r>0,009) 00 575_770
104.52	96.74	3.15	0.511	0.473	98.7	-2.7	108.6	0.2142	-0.0388	%JB0 (r>0,009) 01 500_770
21.73	49.35	2.42	0.295	0.671	75.6	-103.7	76.3	0.1588	-0.0445	%GB2 (r>0,009) 02 500_575
22.36	52.84	9.88	0.262	0.621	77.7	-110.0	31.1	0.1567	-0.0695	%GB0 (r>0,009) 03 475_575
5.68	1.69	25.94	0.17	0.05	13.7	57.9	-128.6	0.3126	-0.302	%RB2 (r>0,009) 04 380_475
88.43	48.01	25.99	0.544	0.295	74.8	73.6	-23.5	0.2559	-0.0991	%RB0 (r>0,009) 05 380_475..575_770
1.6	3.35	7.08	0.133	0.278	21.3	-38.8	-52.3	0.1634	-0.1561	%GB1 (r>0,009) 06 475_500
6.31	4.14	32.73	0.146	0.096	24.1	19.8	-125.2	0.2401	-0.2421	%BB0 (r>0,009) 07 380_500
84.16	47.28	2.71	0.627	0.352	74.3	67.9	71.0	0.253	-0.0468	%RBx 0.2 (380-475)..575-770
0.1	0.09	0.03	0.445	0.405	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
109.84	99.99	35.58	0.447	0.407	99.9	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770

$$\begin{aligned}
 a^* &= 500 \left[\left(\frac{X}{X_n} \right)^{1/3} - \left(\frac{Y}{Y_n} \right)^{1/3} \right] & b^* &= 200 \left[\left(\frac{Y}{Y_n} \right)^{1/3} - \left(\frac{Z}{Z_n} \right)^{1/3} \right] & a' &= \left(\frac{1}{X_n} \right)^{1/3} (x/y)^{1/3} & b' &= -0.4 \left(\frac{1}{Z_n} \right)^{1/3} (z/y)^{1/3} & (X, Y, Z \geq 0.89) \\
 &= 500 (a' - a'_n) Y^{1/3} & &= 500 (b' - b'_n) Y^{1/3} & &= 0.2191 (x/y)^{1/3} & &= -0.08376 (z/y)^{1/3} & \text{CIELAB für } n=D65
 \end{aligned}$$