

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 D50										
48.32	24.41	0.76	0.657	0.332	56.4	84.6	83.0	0.2738	-0.0289	%00 (r>0,009) 00 590_770
83.37	96.03	8.01	0.444	0.512	98.4	-16.9	105.3	0.208	-0.0401	%Y0 (r>0,009) 01 490_770
35.87	72.48	7.99	0.308	0.622	88.2	-89.5	87.7	0.1725	-0.044	%L0 (r>0,009) 02 490_590
48.92	76.45	82.47	0.235	0.367	90.0	-58.4	-17.0	0.1879	-0.0942	%C0 (r>0,009) 03 380_590
13.91	4.85	75.2	0.148	0.051	26.3	79.7	-120.9	0.3096	-0.2289	%V0 (r>0,009) 04 380_490
61.37	28.37	75.22	0.372	0.171	60.2	101.5	-62.5	0.282	-0.1271	%M0 (r>0,009) 05 380_490 . . 590-770
48.32	24.41	0.76	0.657	0.332	56.4	84.6	83.0	0.2738	-0.0289	%00 (r>0,009) 06 590_770
0.86	0.9	0.74	0.345	0.358	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
96.42	100.0	82.49	0.345	0.358	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.09	0.08	0.344	0.357	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
96.42	100.0	82.49	0.345	0.358	100.0	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 D50										
38.84	18.15	0.75	0.672	0.314	49.6	86.1	71.4	0.281	-0.0317	%01(r>0,009) 00 600_770
83.23	93.7	4.83	0.457	0.515	97.5	-13.2	118.0	0.2096	-0.0342	%Y1(r>0,009) 01 500_770
45.2	76.42	4.82	0.357	0.604	90.0	-68.6	105.2	0.183	-0.0365	%L1(r>0,009) 02 500_600
58.39	82.71	82.48	0.261	0.369	92.8	-46.3	-12.2	0.1941	-0.0918	%C1(r>0,009) 03 380_600
14.05	7.18	78.39	0.141	0.072	32.2	55.3	-113.4	0.2727	-0.2038	%V1(r>0,009) 04 380_500
52.03	24.43	78.4	0.335	0.157	56.5	94.4	-71.5	0.2805	-0.1355	%M1(r>0,009) 05 380_500..600-770
38.84	18.15	0.75	0.672	0.314	49.6	86.1	71.4	0.281	-0.0317	%01(r>0,009) 06 600_770
0.86	0.9	0.74	0.345	0.358	8.1	0.0	0.0	0.2154	-0.0861	%N0(r=0,009) 07 380_770
96.42	100.0	82.49	0.345	0.358	100.0	0.0	0.0	0.2154	-0.0861	%W1(r=1,000) 08 380_770
0.09	0.09	0.08	0.344	0.357	0.9	0.0	0.0	0.2154	-0.0861	%N0(r=0,001) 09 380_770
96.42	100.0	82.49	0.345	0.358	100.0	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_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 D50										
61.26	35.96	0.78	0.625	0.366	66.4	74.2	99.9	0.2604	-0.0256	%02 (r>0,009) 00 575_770
83.23	93.7	4.83	0.457	0.515	97.5	-13.2	118.0	0.2096	-0.0342	%Y2 (r>0,009) 01 500_770
22.8	58.6	4.79	0.264	0.679	81.0	-109.2	89.9	0.1592	-0.0398	%L2 (r>0,009) 02 500_575
35.99	64.89	82.45	0.196	0.353	84.4	-72.8	-26.8	0.1791	-0.0995	%C2 (r>0,009) 03 380_575
14.05	7.18	78.39	0.141	0.072	32.2	55.3	-113.4	0.2727	-0.2038	%V2 (r>0,009) 04 380_500
74.45	42.24	78.43	0.381	0.216	71.0	83.5	-46.5	0.2634	-0.1129	%M2 (r>0,009) 05 380_500 . . 575-770
61.26	35.96	0.78	0.625	0.366	66.4	74.2	99.9	0.2604	-0.0256	%02 (r>0,009) 06 575_770
0.86	0.9	0.74	0.345	0.358	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
96.42	100.0	82.49	0.345	0.358	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.09	0.08	0.344	0.357	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
96.42	100.0	82.49	0.345	0.358	100.0	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_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 D50										
61.26	35.96	0.78	0.625	0.366	66.4	74.2	99.9	0.2604	-0.0256	%03 (r>0,009) 00 575_770
84.44	98.1	17.66	0.421	0.489	99.2	-18.4	79.0	0.2074	-0.0518	%Y3 (r>0,009) 01 475_770
24.01	63.0	17.63	0.229	0.602	83.4	-114.0	51.8	0.1581	-0.0601	%L3 (r>0,009) 02 475_575
35.99	64.89	82.45	0.196	0.353	84.4	-72.8	-26.8	0.1791	-0.0995	%C3 (r>0,009) 03 380_575
12.84	2.79	65.52	0.158	0.034	19.1	103.6	-124.5	0.3626	-0.263	%V3 (r>0,009) 04 380_475
73.23	37.85	65.56	0.414	0.214	67.9	94.5	-40.5	0.2717	-0.1103	%M3 (r>0,009) 05 380_475 . . 575-770
61.26	35.96	0.78	0.625	0.366	66.4	74.2	99.9	0.2604	-0.0256	%03 (r>0,009) 06 575_770
0.86	0.9	0.74	0.345	0.358	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
96.42	100.0	82.49	0.345	0.358	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.09	0.08	0.344	0.357	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
96.42	100.0	82.49	0.345	0.358	100.0	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_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 D50										
61.26	35.96	0.78	0.625	0.366	66.4	74.2	99.9	0.2604	-0.0256	%04 (r>0,009) 00 575_770
89.94	99.59	50.15	0.375	0.415	99.8	-10.7	30.3	0.2107	-0.0731	%Y4 (r>0,009) 01 450_770
29.51	64.49	50.11	0.204	0.447	84.2	-95.0	3.4	0.168	-0.0844	%L4 (r>0,009) 02 450_575
35.99	64.89	82.45	0.196	0.353	84.4	-72.8	-26.8	0.1791	-0.0995	%C4 (r>0,009) 03 380_575
12.84	2.79	65.52	0.158	0.034	19.1	103.6	-124.5	0.3626	-0.263	%V4 (r>0,009) 04 380_450
67.73	36.36	33.06	0.493	0.265	66.7	87.5	-4.6	0.2683	-0.089	%M4 (r>0,009) 05 380_450 . . 575-770
61.26	35.96	0.78	0.625	0.366	66.4	74.2	99.9	0.2604	-0.0256	%04 (r>0,009) 06 575_770
0.86	0.9	0.74	0.345	0.358	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
96.42	100.0	82.49	0.345	0.358	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.09	0.08	0.344	0.357	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
96.42	100.0	82.49	0.345	0.358	100.0	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_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 D50										
38.84	18.15	0.75	0.672	0.314	49.6	86.1	71.4	0.281	-0.0317	%05 (r>0,009) 00 600_770
89.94	99.59	50.15	0.375	0.415	99.8	-10.7	30.3	0.2107	-0.0731	%Y5 (r>0,009) 01 450_770
51.91	82.31	50.14	0.281	0.446	92.7	-61.8	18.0	0.187	-0.0778	%L5 (r>0,009) 02 450_600
58.39	82.71	82.48	0.261	0.369	92.8	-46.3	-12.2	0.1941	-0.0918	%C5 (r>0,009) 03 380_600
7.33	1.3	33.02	0.176	0.031	11.2	94.2	-100.3	0.3881	-0.27	%V5 (r>0,009) 04 380_450
45.31	18.55	33.03	0.467	0.191	50.1	103.5	-33.3	0.2936	-0.1113	%M5 (r>0,009) 05 380_450 . . 600-770
38.84	18.15	0.75	0.672	0.314	49.6	86.1	71.4	0.281	-0.0317	%05 (r>0,009) 06 600_770
0.86	0.9	0.74	0.345	0.358	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
96.42	100.0	82.49	0.345	0.358	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.09	0.08	0.344	0.357	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
96.42	100.0	82.49	0.345	0.358	100.0	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_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 D50										
38.84	18.15	0.75	0.672	0.314	49.6	86.1	71.4	0.281	-0.0317	%06 (r>0,009) 00 600_770
82.48	80.93	1.53	0.5	0.49	92.1	8.6	133.3	0.2194	-0.0245	%Y6 (r>0,009) 01 525_770
44.46	63.64	1.52	0.405	0.58	83.7	-43.8	119.1	0.1934	-0.0264	%L6 (r>0,009) 02 525_600
58.39	82.71	82.48	0.261	0.369	92.8	-46.3	-12.2	0.1941	-0.0918	%C6 (r>0,009) 03 380_600
14.8	19.93	81.7	0.127	0.171	51.7	-24.3	-82.5	0.1974	-0.147	%V6 (r>0,009) 04 380_525
52.78	37.19	81.71	0.307	0.216	67.4	49.4	-55.5	0.245	-0.1194	%M6 (r>0,009) 05 380_525 . 600-770
38.84	18.15	0.75	0.672	0.314	49.6	86.1	71.4	0.281	-0.0317	%06 (r>0,009) 06 600_770
0.86	0.9	0.74	0.345	0.358	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
96.42	100.0	82.49	0.345	0.358	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.09	0.08	0.344	0.357	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
96.42	100.0	82.49	0.345	0.358	100.0	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 D50										
38.84	18.15	0.75	0.672	0.314	49.6	86.1	71.4	0.281	-0.0317	%07 (r>0,009) 00 600_770
83.16	88.84	2.53	0.476	0.508	95.5	-4.7	129.5	0.2133	-0.028	%Y7 (r>0,009) 01 512,5_770
45.14	71.55	2.53	0.378	0.6	87.7	-58.9	116.2	0.187	-0.0301	%L7 (r>0,009) 02 512,5_600
58.39	82.71	82.48	0.261	0.369	92.8	-46.3	-12.2	0.1941	-0.0918	%C7 (r>0,009) 03 380_600
14.12	12.05	80.69	0.132	0.112	41.3	16.5	-99.7	0.2298	-0.1731	%V7 (r>0,009) 04 380_512,5
52.1	29.31	80.7	0.321	0.18	61.0	75.1	-65.6	0.2641	-0.1287	%M7 (r>0,009) 05 380_512,5...600-770
38.84	18.15	0.75	0.672	0.314	49.6	86.1	71.4	0.281	-0.0317	%07 (r>0,009) 06 600_770
0.86	0.9	0.74	0.345	0.358	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
96.42	100.0	82.49	0.345	0.358	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.09	0.08	0.344	0.357	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
96.42	100.0	82.49	0.345	0.358	100.0	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 D50										
61.26	35.96	0.78	0.625	0.366	66.4	74.2	99.9	0.2604	-0.0256	%08 (r>0,009) 00 575_770
83.16	88.84	2.53	0.476	0.508	95.5	-4.7	129.5	0.2133	-0.028	%Y8 (r>0,009) 01 512,5_770
22.73	53.73	2.5	0.287	0.68	78.3	-97.5	100.2	0.1637	-0.033	%L8 (r>0,009) 02 512,5_575
35.99	64.89	82.45	0.196	0.353	84.4	-72.8	-26.8	0.1791	-0.0995	%C8 (r>0,009) 03 380_575
14.12	12.05	80.69	0.132	0.112	41.3	16.5	-99.7	0.2298	-0.1731	%V8 (r>0,009) 04 380_512,5
74.51	47.12	80.73	0.368	0.232	74.2	69.7	-42.9	0.254	-0.1099	%M8 (r>0,009) 05 380_512,5...575-770
61.26	35.96	0.78	0.625	0.366	66.4	74.2	99.9	0.2604	-0.0256	%08 (r>0,009) 06 600_770
0.86	0.9	0.74	0.345	0.358	8.1	0.0	0.0	0.2154	-0.0861	%N0 (r=0,009) 07 380_770
96.42	100.0	82.49	0.345	0.358	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 08 380_770
0.09	0.09	0.08	0.344	0.357	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
96.42	100.0	82.49	0.345	0.358	100.0	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_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 D50										
61.26	35.96	0.78	0.625	0.366	66.4	74.2	99.9	0.2604	-0.0256	%R91 (r>0,009) 00 575_770
83.16	88.84	2.53	0.476	0.508	95.5	-4.7	129.5	0.2133	-0.028	%J90 (r>0,009) 01 512,5_770
22.73	53.73	2.5	0.287	0.68	78.3	-97.5	100.2	0.1637	-0.033	%G92 (r>0,009) 02 512,5_575
24.01	63.0	17.63	0.229	0.602	83.4	-114.0	51.8	0.1581	-0.0601	%G90 (r>0,009) 03 475_575
12.84	2.79	65.52	0.158	0.034	19.1	103.6	-124.5	0.3626	-0.263	%R92 (r>0,009) 04 380_475
73.23	37.85	65.56	0.414	0.214	67.9	94.5	-40.5	0.2717	-0.1103	%R90 (r>0,009) 05 380_475..575_770
2.14	10.16	15.87	0.076	0.36	38.1	-92.7	-22.1	0.1297	-0.1066	%G91 (r>0,009) 06 475_512,5
14.12	12.05	80.69	0.132	0.112	41.3	16.5	-99.7	0.2298	-0.1731	%B90 (r>0,009) 07 380_512,5
9.84	26.25	11.65	0.206	0.549	58.2	-86.4	23.8	0.1572	-0.07	%G9x 0.625(475_512,5)..0.375(512,5-575)
0.09	0.09	0.08	0.344	0.357	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
96.42	100.0	82.49	0.345	0.358	100.0	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_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 D50										
61.26	35.96	0.78	0.625	0.366	66.4	74.2	99.9	0.2604	-0.0256	%RA1 (r>0,009) 00 575_770
82.88	84.42	1.84	0.489	0.499	93.6	2.8	132.6	0.2167	-0.0257	%JAx (r>0,009) 01 520_770
22.45	49.32	1.81	0.305	0.67	75.6	-87.4	102.0	0.1677	-0.0305	%GA2 (r>0,009) 02 520_575
24.01	63.0	17.63	0.229	0.602	83.4	-114.0	51.8	0.1581	-0.0601	%GA0 (r>0,009) 03 475_575
12.84	2.79	65.52	0.158	0.034	19.1	103.6	-124.5	0.3626	-0.263	%RA2 (r>0,009) 04 380_475
73.23	37.85	65.56	0.414	0.214	67.9	94.5	-40.5	0.2717	-0.1103	%RA0 (r>0,009) 05 380_475..575_770
2.41	14.54	16.55	0.072	0.433	45.0	-116.6	-11.9	0.1198	-0.0959	%GA1 (r>0,009) 06 475_520
14.39	16.44	81.38	0.128	0.146	47.5	-8.6	-89.5	0.2086	-0.1565	%BA0 (r>0,009) 07 380_520
55.03	31.75	8.34	0.578	0.333	63.1	73.6	43.2	0.2619	-0.0588	%Rax 0.125(380-475)..0.875(575-770)
0.09	0.09	0.08	0.344	0.357	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
96.42	100.0	82.49	0.345	0.358	100.0	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 D50										
61.26	35.96	0.78	0.625	0.366	66.4	74.2	99.9	0.2604	-0.0256	%RB1 (r>0,009) 00 575_770
83.23	93.7	4.83	0.457	0.515	97.5	-13.2	118.0	0.2096	-0.0342	%JB0 (r>0,009) 01 500_770
22.78	56.94	3.69	0.273	0.682	80.1	-105.3	94.7	0.1606	-0.0369	%GB2 (r>0,009) 02 500_575
24.01	63.0	17.63	0.229	0.602	83.4	-114.0	51.8	0.1581	-0.0601	%GB0 (r>0,009) 03 475_575
12.84	2.79	65.52	0.158	0.034	19.1	103.6	-124.5	0.3626	-0.263	%RB2 (r>0,009) 04 380_475
73.23	37.85	65.56	0.414	0.214	67.9	94.5	-40.5	0.2717	-0.1103	%RB0 (r>0,009) 05 380_475..575_770
2.07	5.28	13.56	0.099	0.252	27.5	-48.5	-34.5	0.1597	-0.1258	%GB1 (r>0,009) 06 475_500
14.05	7.18	78.39	0.141	0.072	32.2	55.3	-113.4	0.2727	-0.2038	%BB0 (r>0,009) 07 380_500
62.35	36.13	6.71	0.592	0.343	66.6	76.2	55.7	0.2615	-0.0524	%RBx 0.2 (380-475)..575-770
0.09	0.09	0.08	0.344	0.357	0.9	0.0	0.0	0.2154	-0.0861	%N0 (r=0,001) 09 380_770
96.42	100.0	82.49	0.345	0.358	100.0	0.0	0.0	0.2154	-0.0861	%W1 (r=1,000) 10 380_770

$$a^* = 500 \left[\left(\frac{X}{X_n} \right)^{1/3} - \left(\frac{Y}{Y_n} \right)^{1/3} \right] \quad b^* = 200 \left[\left(\frac{Y}{Y_n} \right)^{1/3} - \left(\frac{Z}{Z_n} \right)^{1/3} \right] \quad a' = \left(\frac{1}{X_n} \right)^{1/3} (x/y)^{1/3} \quad b' = -0,4 \left(\frac{1}{Z_n} \right)^{1/3} (z/y)^{1/3} \quad (X, Y, Z \geq 0,89)$$

$$= 500 (a' - a'_n) Y^{1/3} \quad = 500 (b' - b'_n) Y^{1/3} \quad = 0,2191 (x/y)^{1/3} \quad = -0,08376 (z/y)^{1/3} \quad \text{CIELAB für } n=D65$$