X	Y	Z	x	y	A	B	Cr	a	b	c	L*	a*	b*	C*ab	a'	b'	c'	OYLCVM_ONW_0	
CIE Lichtart E																			
61.4	35.7	0.0	0.632	0.367	25.7	14.2	29.4	0.71	0.39	0.82	66.3	70.3	113.7	133.7	0.258	−0.008	0.258	%O=JR	00 575_770
83.1	86.7	1.5	0.485	0.505	−3.5	34.0	34.2	−0.04	0.39	0.39	94.6	−6.6	140.9	141.1	0.212	−0.022	0.213	%Y=J=JG+JR	01 515_770
21.6	50.9	1.5	0.292	0.687	−29.3	19.7	35.3	−0.57	0.38	0.69	76.6	−99.1	110.4	148.3	0.161	−0.026	0.164	%L=JG	02 515_575
8.5	25.0	11.0	0.19	0.561	−16.5	5.5	17.4	−0.66	0.22	0.69	57.1	−95.3	30.0	99.9	0.15	−0.065	0.163	%Gs	03 0,35*JG+0,65*BG
1.4	11.0	16.2	0.049	0.385	−9.6	−2.0	9.8	−0.87	−0.18	0.89	39.7	−119.2	−13.0	119.9	0.108	−0.097	0.146	%Cs=BG	04 475_515
16.8	13.2	98.4	0.13	0.103	3.5	−34.0	34.2	0.26	−2.57	2.58	43.1	21.1	−96.9	99.2	0.233	−0.168	0.287	%V=B=BR+BG	05 380_515
15.4	2.1	82.2	0.154	0.021	13.2	−32.0	34.6	6.09	−14.73	15.94	16.3	128.5	−131.5	183.9	0.413	−0.289	0.505	%Ms=BR	06 380_475
55.0	31.0	11.5	0.563	0.318	23.9	7.8	25.2	0.77	0.25	0.81	62.5	71.1	38.0	80.7	0.26	−0.061	0.268	%Rs	07 0,14*BR+0,86*JR
61.4	35.7	0.0	0.632	0.367	25.7	14.2	29.4	0.71	0.39	0.82	66.3	70.3	113.7	133.7	0.258	−0.008	0.258	%O=JR	08 575_770
0.1	0.1	0.1	0.332	0.332	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.215	−0.086	0.232	%N0(β=0,001)	09 380_770
100.0	100.0	100.0	0.333	0.333	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.215	−0.086	0.232	%W1(β=1,000)	10 380_770
3BS 475,530,600																			
66.1	39.2	0.0	0.627	0.372	32.6	10.6	34.3	0.83	0.26	0.87	68.9	93.1	117.7	150.1	0.292	−0.01	0.292	%O=JR	00 575_770
76.4	92.9	2.6	0.444	0.54	−2.8	24.0	24.2	−0.03	0.25	0.26	97.2	−5.9	127.0	127.1	0.23	−0.03	0.231	%Y=J=JG+JR	01 515_770
10.3	53.6	2.6	0.154	0.805	−35.4	13.4	37.9	−0.66	0.25	0.7	78.2	−159.1	94.8	185.2	0.141	−0.035	0.146	%L=JG	02 515_575
6.4	21.0	22.0	0.13	0.425	−11.4	−3.1	11.9	−0.54	−0.14	0.56	53.0	−85.7	−18.6	87.7	0.165	−0.099	0.193	%Gs	03 0,35*JG+0,65*BG
4.4	3.5	32.4	0.109	0.086	1.4	−12.0	12.1	0.4	−3.43	3.45	21.9	22.8	−91.1	93.9	0.265	−0.206	0.336	%Cs=BG	04 475_515
8.8	7.0	64.8	0.109	0.086	2.8	−24.0	24.2	0.4	−3.43	3.45	31.8	28.7	−114.8	118.3	0.265	−0.206	0.336	%V=B=BR+BG	05 380_515
4.4	3.5	32.4	0.109	0.086	1.4	−12.0	12.1	0.4	−3.43	3.45	21.9	22.8	−91.1	93.9	0.265	−0.206	0.336	%Ms=BR	06 380_475
57.5	34.2	4.5	0.596	0.355	28.2	7.4	29.2	0.82	0.21	0.85	65.1	88.4	58.4	105.9	0.291	−0.05	0.296	%Rs	07 0,14*BR+0,86*JR
66.1	39.2	0.0	0.627	0.372	32.6	10.6	34.3	0.83	0.26	0.87	68.9	93.1	117.7	150.1	0.292	−0.01	0.292	%O=JR	08 575_770
0.0	0.1	0.0	0.336	0.393	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.232	−0.086	0.248	%N0(β=0,001)	09 380_770
85.3	100.0	67.5	0.337	0.395	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.232	−0.086	0.248	%W1(β=1,000)	10 380_770
3BW 450,530,620																			
55.4	24.7	0.0	0.691	0.308	33.4	13.9	36.2	1.35	0.56	1.46	56.8	113.1	97.8	149.6	0.251	−0.006	0.251	%O=JR	00 575_770
66.2	80.7	2.7	0.442	0.539	−5.6	44.3	44.7	−0.06	0.54	0.55	92.0	−12.5	132.3	132.9	0.179	−0.024	0.181	%Y=J=JG+JR	01 515_770
10.7	55.9	2.7	0.154	0.805	−39.1	30.4	49.5	−0.69	0.54	0.88	79.6	−164.9	111.0	198.8	0.11	−0.028	0.114	%L=JG	02 515_575
4.3	30.5	15.8	0.086	0.6	−22.7	10.8	25.2	−0.74	0.35	0.82	62.0	−153.3	38.0	158.0	0.1	−0.061	0.118	%Gs	03 0,35*JG+0,65*BG
0.9	16.7	22.9	0.023	0.412	−14.0	0.2	14.0	−0.83	0.01	0.83	48.0	−165.6	1.1	165.6	0.073	−0.085	0.112	%Cs=BG	04 475_515
22.7	19.2	138.0	0.126	0.106	5.6	−44.3	44.7	0.29	−2.3	2.32	50.9	28.6	−83.1	87.9	0.203	−0.148	0.251	%V=B=BR+BG	05 380_515
21.8	2.4	115.1	0.156	0.017	19.6	−44.6	48.7	7.95	−18.09	19.76	17.7	167.3	−128.7	211.1	0.397	−0.276	0.484	%Ms=BR	06 380_475
50.7	21.6	16.1	0.573	0.244	31.5	5.7	32.0	1.45	0.26	1.48	53.6	114.5	22.9	116.7	0.255	−0.069	0.264	%Rs	07 0,14*BR+0,86*JR
55.4	24.7	0.0	0.691	0.308	33.4	13.9	36.2	1.35	0.56	1.46	56.8	113.1	97.8	149.6	0.251	−0.006	0.251	%O=JR	08 575_770
0.0	0.1	0.1	0.269	0.302	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.184	−0.086	0.204	%N0(β=0,001)	09 380_770
89.0	100.0	140.7	0.269	0.303	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.184	−0.086	0.204	%W1(β=1,000)	10 380_770
4BW 450,495,530,620																			
51.7	23.0	0.0	0.691	0.308	30.5	17.9	35.4	1.32	0.77	1.53	55.1	106.6	94.9	142.8	0.226	−0.005	0.226	%O=JR	00 575_770
61.7	75.2	2.5	0.442	0.539	−7.1	57.4	57.8	−0.09	0.76	0.76	89.5	−16.3	134.6	135.6	0.161	−0.022	0.163	%Y=J=JG+JR	01 515_770
10.0	52.1	2.5	0.154	0.805	−37.7	39.5	54.6	−0.72	0.75	1.04	77.3	−163.3	113.8	199.1	0.099	−0.025	0.102	%L=JG	02 515_575
6.8	30.6	35.2	0.094	0.42	−21.1	9.7	23.3	−0.69	0.31	0.76	62.2	−126.1	21.5	127.9	0.104	−0.072	0.127	%Gs	03 0,35*JG+0,65*BG
5.1	19.0	52.9	0.067	0.246	−12.2	−6.3	13.8	−0.64	−0.33	0.72	50.7	−95.6	−14.5	96.7	0.111	−0.097	0.148	%Cs=BG	04 475_515
29.8	24.7	191.7	0.121	0.1	7.1	−57.4	57.8	0.28	−2.31	2.33	56.8	30.0	−73.5	79.4	0.183	−0.136	0.228	%V=B=BR+BG	05 380_515
24.6	5.7	138.7	0.145	0.033	19.4	−51.0	54.6	3.4	−8.94	9.57	28.6	130.3	−101.7	165.3	0.281	−0.2	0.345	%Ms=BR	06 380_475
47.9	20.6	19.4	0.544	0.234	29.0	8.2	30.1	1.4	0.4	1.46	52.5	107.4	25.3	110.4	0.228	−0.067	0.238	%Rs	07 0,14*BR+0,86*JR
51.7	23.0	0.0	0.691	0.308	30.5	17.9	35.4	1.32	0.77	1.53	55.1	106.6	94.9	142.8	0.226	−0.005	0.226	%O=JR	08 575_770
0.0	0.1	0.1	0.236	0.258	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.167	−0.086	0.188	%N0(β=0,001)	09 380_770
91.5	100.0	194.2	0.237	0.259	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.167	−0.086	0.188	%W1(β=1,000)	10 380_770

$A = [\,(X/X_n) - (Y/Y_n)\,]Y = [\,a - a_n]Y$ $B = -0{,}4[\,(Z/Z_n) - (Y/Y_n)\,]Y = -0{,}4[\,b - b_n]Y$ $a = X/Y = x/y$ $b = -0{,}4\,Z/Y = -0{,}4\,z/y$ $(X, Y, Z \geq 0{,}89)$

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

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

X	Y	Z	x	y	A	B	Cr	a	b	c	L*	a*	b*	C*ab	a'	b'	c'	OYLCVM_ONW_1	
CIE Lichtart E																			
61.4	35.7	0.0	0.632	0.367	25.7	14.2	29.4	0.71	0.39	0.82	66.3	70.3	113.7	133.7	0.258	−0.008	0.258	%O=JR	00 575_770
83.1	86.7	1.5	0.485	0.505	−3.5	34.0	34.2	−0.04	0.39	0.39	94.6	−6.6	140.9	141.1	0.212	−0.022	0.213	%Y=J=JG+JR	01 515_770
21.6	50.9	1.5	0.292	0.687	−29.3	19.7	35.3	−0.57	0.38	0.69	76.6	−99.1	110.4	148.3	0.161	−0.026	0.164	%L=JG	02 515_575
26.7	54.9	31.0	0.237	0.487	−28.2	9.5	29.8	−0.51	0.17	0.54	79.0	−87.5	28.4	92.0	0.169	−0.071	0.183	%G	03 0,70*L+0,30*C
38.5	64.2	99.9	0.189	0.316	−25.7	−14.2	29.4	−0.4	−0.22	0.45	84.0	−67.6	−27.3	73.0	0.181	−0.099	0.207	%C=L+V	04 380_575
16.8	13.2	98.4	0.13	0.103	3.5	−34.0	34.2	0.26	−2.57	2.58	43.1	21.1	−96.9	99.2	0.233	−0.168	0.287	%V=B=BR+BG	05 380_515
78.3	49.0	98.4	0.346	0.217	29.3	−19.7	35.3	0.59	−0.4	0.72	75.4	66.6	−41.3	78.4	0.251	−0.108	0.274	%M=V+O	06 380_515+575_770
64.5	38.1	17.7	0.535	0.316	26.3	8.1	27.6	0.69	0.21	0.72	68.1	69.4	32.6	76.7	0.256	−0.066	0.265	%R	07 0,18*M+0,82*O
61.4	35.7	0.0	0.632	0.367	25.7	14.2	29.4	0.71	0.39	0.82	66.3	70.3	113.7	133.7	0.258	−0.008	0.258	%O=JR	08 575_770
0.1	0.1	0.1	0.332	0.332	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.215	−0.086	0.232	%N0(β=0,001)	09 380_770
100.0	100.0	100.0	0.333	0.333	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.215	−0.086	0.232	%W1(β=1,000)	10 380_770
3BS 475,530,600																			
66.1	39.2	0.0	0.627	0.372	32.6	10.6	34.3	0.83	0.26	0.87	68.9	93.1	117.7	150.1	0.292	−0.01	0.292	%O=JR	00 575_770
76.4	92.9	2.6	0.444	0.54	−2.8	24.0	24.2	−0.03	0.25	0.26	97.2	−5.9	127.0	127.1	0.23	−0.03	0.231	%Y=J=JG+JR	01 515_770
10.3	53.6	2.6	0.154	0.805	−35.4	13.4	37.9	−0.66	0.25	0.7	78.2	−159.1	94.8	185.2	0.141	−0.035	0.146	%L=JG	02 515_575
12.9	55.7	22.0	0.142	0.614	−34.6	6.2	35.1	−0.62	0.11	0.63	79.4	−144.8	26.8	147.2	0.15	−0.072	0.167	%G	03 0,70*L+0,30*C
19.1	60.7	67.5	0.129	0.411	−32.6	−10.6	34.3	−0.53	−0.17	0.56	82.2	−119.4	−30.6	123.2	0.167	−0.101	0.195	%C=L+V	04 380_575
8.8	7.0	64.8	0.109	0.086	2.8	−24.0	24.2	0.4	−3.43	3.45	31.8	28.7	−114.8	118.3	0.265	−0.206	0.336	%V=B=BR+BG	05 380_515
75.0	46.3	64.9	0.402	0.248	35.4	−13.4	37.9	0.76	−0.29	0.81	73.7	92.1	−42.6	101.5	0.288	−0.109	0.308	%M=V+O	06 380_515+575_770
67.7	40.5	11.7	0.564	0.337	33.1	6.2	33.7	0.81	0.15	0.83	69.8	92.8	36.4	99.8	0.291	−0.064	0.298	%R	07 0,18*M+0,82*O
66.1	39.2	0.0	0.627	0.372	32.6	10.6	34.3	0.83	0.26	0.87	68.9	93.1	117.7	150.1	0.292	−0.01	0.292	%O=JR	08 575_770
0.0	0.1	0.0	0.336	0.393	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.232	−0.086	0.248	%N0(β=0,001)	09 380_770
85.3	100.0	67.5	0.337	0.395	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.232	−0.086	0.248	%W1(β=1,000)	10 380_770
3BW 450,530,620																			
55.4	24.7	0.0	0.691	0.308	33.4	13.9	36.2	1.35	0.56	1.46	56.8	113.1	97.8	149.6	0.251	−0.006	0.251	%O=JR	00 575_770
66.2	80.7	2.7	0.442	0.539	−5.6	44.3	44.7	−0.06	0.54	0.55	92.0	−12.5	132.3	132.9	0.179	−0.024	0.181	%Y=J=JG+JR	01 515_770
10.7	55.9	2.7	0.154	0.805	−39.1	30.4	49.5	−0.69	0.54	0.88	79.6	−164.9	111.0	198.8	0.11	−0.028	0.114	%L=JG	02 515_575
17.5	61.7	44.1	0.142	0.5	−37.4	17.1	41.1	−0.6	0.27	0.66	82.7	−134.6	34.4	138.9	0.126	−0.068	0.143	%G	03 0,70*L+0,30*C
33.5	75.2	140.7	0.134	0.301	−33.4	−13.9	36.2	−0.44	−0.18	0.48	89.5	−93.6	−18.0	95.4	0.146	−0.094	0.174	%C=L+V	04 380_575
22.7	19.2	138.0	0.126	0.106	5.6	−44.3	44.7	0.29	−2.3	2.32	50.9	28.6	−83.1	87.9	0.203	−0.148	0.251	%V=B=BR+BG	05 380_515
78.2	44.0	138.0	0.3	0.169	39.1	−30.4	49.5	0.88	−0.69	1.12	72.2	98.6	−46.5	109.1	0.232	−0.112	0.258	%M=V+O	06 380_515+575_770
59.5	28.2	24.8	0.528	0.25	34.4	5.9	34.9	1.22	0.21	1.23	60.0	109.4	18.9	111.0	0.246	−0.073	0.257	%R	07 0,18*M+0,82*O
55.4	24.7	0.0	0.691	0.308	33.4	13.9	36.2	1.35	0.56	1.46	56.8	113.1	97.8	149.6	0.251	−0.006	0.251	%O=JR	08 575_770
0.0	0.1	0.1	0.269	0.302	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.184	−0.086	0.204	%N0(β=0,001)	09 380_770
89.0	100.0	140.7	0.269	0.303	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.184	−0.086	0.204	%W1(β=1,000)	10 380_770
4BW 450,495,530,620																			
51.7	23.0	0.0	0.691	0.308	30.5	17.9	35.4	1.32	0.77	1.53	55.1	106.6	94.9	142.8	0.226	−0.005	0.226	%O=JR	00 575_770
61.7	75.2	2.5	0.442	0.539	−7.1	57.4	57.8	−0.09	0.76	0.76	89.5	−16.3	134.6	135.6	0.161	−0.022	0.163	%Y=J=JG+JR	01 515_770
10.0	52.1	2.5	0.154	0.805	−37.7	39.5	54.6	−0.72	0.75	1.04	77.3	−163.3	113.8	199.1	0.099	−0.025	0.102	%L=JG	02 515_575
18.9	59.6	60.0	0.136	0.429	−35.6	22.2	42.0	−0.59	0.37	0.7	81.6	−124.9	33.0	129.2	0.117	−0.069	0.136	%G	03 0,70*L+0,30*C
39.8	76.9	194.2	0.128	0.247	−30.5	−17.9	35.4	−0.39	−0.23	0.46	90.2	−79.2	−16.7	80.9	0.138	−0.094	0.167	%C=L+V	04 380_575
29.8	24.7	191.7	0.121	0.1	7.1	−57.4	57.8	0.28	−2.31	2.33	56.8	30.0	−73.5	79.4	0.183	−0.136	0.228	%V=B=BR+BG	05 380_515
81.5	47.8	191.7	0.253	0.148	37.7	−39.5	54.6	0.78	−0.82	1.14	74.7	90.0	−42.7	99.6	0.206	−0.109	0.233	%M=V+O	06 380_515+575_770
57.0	27.5	34.5	0.479	0.231	31.8	7.5	32.7	1.15	0.27	1.19	59.4	101.9	17.6	103.4	0.22	−0.074	0.232	%R	07 0,18*M+0,82*O
51.7	23.0	0.0	0.691	0.308	30.5	17.9	35.4	1.32	0.77	1.53	55.1	106.6	94.9	142.8	0.226	−0.005	0.226	%O=JR	08 575_770
0.0	0.1	0.1	0.236	0.258	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.167	−0.086	0.188	%N0(β=0,001)	09 380_770
91.5	100.0	194.2	0.237	0.259	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.167	−0.086	0.188	%W1(β=1,000)	10 380_770

$A = [\,(X/X_n) - (Y/Y_n)\,]Y = [\,a - a_n]Y$ $B = -0{,}4[\,(Z/Z_n) - (Y/Y_n)\,]Y = -0{,}4[\,b - b_n]Y$ $a = X/Y = x/y$ $b = -0{,}4\,Z/Y = -0{,}4\,z/y$ $(X, Y, Z \geq 0{,}89)$

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

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