
Report No	:		Voltage	:	V
Test No	:	A2508086A001	Current	:	A
LumCAT	:	LIT by CARDI	Power	:	32.000 W
Luminaire	:	0028920281 Palma Panel 32W 4000K 3840lm	PF	:	
LampCAT	:		Ballast type	:	
Lamp flux	:	3840.0 lm	Width	:	555 mm
Number of Lamps	:	1	Length	:	555 mm
Phm Type	:	C	Height	:	0 mm

Photometric Results

Lumens(lm)	:	3840.00	Central intensity(cd)	:	1786.233
Efficiency(%)	:	100.00%	Maximum intensity(cd)	:	1786.233
Luminous Efficacy(lm/W)	:	120.00	Angle of maximum intensity	:	C=0.0 γ =0.0
Beam Angle(50%Imax)	:	[C0/180]Total=89.2 [C90/270]Total=89.2			
Field angle(10%Imax)	:	[C0/180]Total=143.8 [C90/270]Total=143.8			
Maximum s/h(1/2)	:	C0_180=1.26 C90_270=1.26			
Maximum s/h(1/4)	:	C0_180=1.27 C90_270=1.27			
Up flux rate of lamp(%)	:	0.00%			
Down flux rate of lamp(%)	:	100.00%			
Up flux rate of LUM(%)	:	--			
Down flux rate of LUM(%)	:	100.00%			
CIE Type	:	Direct lighting			
Output flux ratio in π solid angle	:	86.872%			

Zonal flux distribution table

Appendix Page: 2 Total:15

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1786.233	0.000	0	0.00%	0.00%
0.5	1786.118	0.427	0.427	0.01%	0.01%
1.0	1785.908	1.282	1.709	0.03%	0.04%
1.5	1785.532	2.136	3.845	0.06%	0.10%
2.0	1784.995	2.989	6.834	0.08%	0.18%
2.5	1784.382	3.842	10.676	0.10%	0.28%
3.0	1783.639	4.693	15.369	0.12%	0.40%
3.5	1782.742	5.543	20.913	0.14%	0.54%
4.0	1781.737	6.391	27.304	0.17%	0.71%
4.5	1780.585	7.238	34.542	0.19%	0.90%
5.0	1779.308	8.082	42.623	0.21%	1.11%
5.5	1777.893	8.923	51.547	0.23%	1.34%
6.0	1776.336	9.762	61.309	0.25%	1.60%
6.5	1774.627	10.598	71.908	0.28%	1.87%
7.0	1772.860	11.431	83.339	0.30%	2.17%
7.5	1770.895	12.261	95.599	0.32%	2.49%
8.0	1768.788	13.086	108.686	0.34%	2.83%
8.5	1766.519	13.908	122.593	0.36%	3.19%
9.0	1764.197	14.725	137.318	0.38%	3.58%
9.5	1761.697	15.538	152.856	0.40%	3.98%
10.0	1759.027	16.346	169.202	0.43%	4.41%
10.5	1756.222	17.149	186.351	0.45%	4.85%
11.0	1753.313	17.947	204.298	0.47%	5.32%
11.5	1750.328	18.739	223.037	0.49%	5.81%
12.0	1747.093	19.526	242.563	0.51%	6.32%
12.5	1743.659	20.306	262.868	0.53%	6.85%
13.0	1740.144	21.079	283.947	0.55%	7.39%
13.5	1736.414	21.845	305.793	0.57%	7.96%
14.0	1732.546	22.605	328.397	0.59%	8.55%
14.5	1728.564	23.357	351.754	0.61%	9.16%
15.0	1724.478	24.102	375.857	0.63%	9.79%
15.5	1720.185	24.840	400.696	0.65%	10.43%
16.0	1715.793	25.569	426.266	0.67%	11.10%
16.5	1711.213	26.291	452.557	0.68%	11.79%
17.0	1706.559	27.004	479.561	0.70%	12.49%
17.5	1701.938	27.710	507.271	0.72%	13.21%
18.0	1697.161	28.410	535.681	0.74%	13.95%
18.5	1692.061	29.098	564.779	0.76%	14.71%

Equipment: GMS1800
Temperature($^{\circ}$ C): 25

Date:
Humidity(%): 55%

Operator: CWR

Zonal flux distribution table

Appendix Page: 3 Total:15

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
19.0	1686.720	29.775	594.554	0.78%	15.48%
19.5	1681.281	30.442	624.996	0.79%	16.28%
20.0	1675.734	31.100	656.096	0.81%	17.09%
20.5	1669.982	31.747	687.844	0.83%	17.91%
21.0	1664.059	32.384	720.227	0.84%	18.76%
21.5	1658.036	33.010	753.237	0.86%	19.62%
22.0	1651.912	33.626	786.863	0.88%	20.49%
22.5	1645.533	34.230	821.093	0.89%	21.38%
23.0	1638.933	34.821	855.915	0.91%	22.29%
23.5	1632.175	35.400	891.315	0.92%	23.21%
24.0	1625.175	35.966	927.281	0.94%	24.15%
24.5	1618.007	36.518	963.799	0.95%	25.10%
25.0	1610.589	37.057	1000.856	0.97%	26.06%
25.5	1603.039	37.582	1038.438	0.98%	27.04%
26.0	1595.306	38.094	1076.532	0.99%	28.03%
26.5	1587.268	38.590	1115.123	1.00%	29.04%
27.0	1578.974	39.070	1154.193	1.02%	30.06%
27.5	1570.469	39.534	1193.728	1.03%	31.09%
28.0	1561.613	39.981	1233.709	1.04%	32.13%
28.5	1552.561	40.410	1274.119	1.05%	33.18%
29.0	1543.209	40.822	1314.942	1.06%	34.24%
29.5	1533.480	41.215	1356.156	1.07%	35.32%
30.0	1523.446	41.586	1397.743	1.08%	36.40%
30.5	1513.129	41.939	1439.682	1.09%	37.49%
31.0	1502.477	42.271	1481.952	1.10%	38.59%
31.5	1491.541	42.582	1524.534	1.11%	39.70%
32.0	1480.141	42.871	1567.405	1.12%	40.82%
32.5	1468.197	43.132	1610.537	1.12%	41.94%
33.0	1455.754	43.365	1653.903	1.13%	43.07%
33.5	1442.922	43.572	1697.475	1.13%	44.21%
34.0	1429.548	43.751	1741.226	1.14%	45.34%
34.5	1415.603	43.899	1785.125	1.14%	46.49%
35.0	1401.037	44.015	1829.14	1.15%	47.63%
35.5	1385.875	44.097	1873.237	1.15%	48.78%
36.0	1370.056	44.143	1917.38	1.15%	49.93%
36.5	1353.254	44.148	1961.528	1.15%	51.08%
37.0	1335.605	44.106	2005.634	1.15%	52.23%
37.5	1316.936	44.017	2049.651	1.15%	53.38%

Equipment: GMS1800
Temperature($^{\circ}$ C): 25Date:
Humidity(%): 55%

Operator: CWR

Zonal flux distribution table

Appendix Page: 4 Total:15

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	1296.900	43.871	2093.522	1.14%	54.52%
38.5	1275.394	43.659	2137.181	1.14%	55.66%
39.0	1252.408	43.377	2180.558	1.13%	56.79%
39.5	1227.724	43.020	2223.579	1.12%	57.91%
40.0	1200.944	42.576	2266.154	1.11%	59.01%
40.5	1172.356	42.040	2308.195	1.09%	60.11%
41.0	1141.756	41.413	2349.607	1.08%	61.19%
41.5	1109.316	40.691	2390.298	1.06%	62.25%
42.0	1075.407	39.883	2430.182	1.04%	63.29%
42.5	1040.705	39.007	2469.188	1.02%	64.30%
43.0	1005.642	38.082	2507.27	0.99%	65.29%
43.5	970.267	37.117	2544.387	0.97%	66.26%
44.0	934.816	36.117	2580.504	0.94%	67.20%
44.5	899.683	35.094	2615.598	0.91%	68.11%
45.0	865.034	34.061	2649.659	0.89%	69.00%
45.5	831.528	33.032	2682.691	0.86%	69.86%
46.0	800.273	32.045	2714.736	0.83%	70.70%
46.5	771.280	31.123	2745.859	0.81%	71.51%
47.0	744.169	30.261	2776.12	0.79%	72.29%
47.5	718.960	29.455	2805.576	0.77%	73.06%
48.0	695.488	28.704	2834.28	0.75%	73.81%
48.5	673.233	27.995	2862.275	0.73%	74.54%
49.0	651.371	27.303	2889.578	0.71%	75.25%
49.5	630.079	26.614	2916.192	0.69%	75.94%
50.0	608.983	25.927	2942.119	0.68%	76.62%
50.5	588.487	25.240	2967.359	0.66%	77.27%
51.0	568.472	24.563	2991.922	0.64%	77.91%
51.5	548.779	23.888	3015.81	0.62%	78.54%
52.0	529.237	23.210	3039.019	0.60%	79.14%
52.5	510.016	22.528	3061.547	0.59%	79.73%
53.0	491.228	21.850	3083.397	0.57%	80.30%
53.5	473.298	21.188	3104.585	0.55%	80.85%
54.0	456.495	20.557	3125.142	0.54%	81.38%
54.5	440.854	19.966	3145.107	0.52%	81.90%
55.0	426.435	19.417	3164.525	0.51%	82.41%
55.5	413.056	18.910	3183.435	0.49%	82.90%
56.0	400.537	18.437	3201.872	0.48%	83.38%
56.5	388.959	17.997	3219.869	0.47%	83.85%

Equipment: GMS1800
Temperature($^{\circ}$ C): 25Date:
Humidity(%): 55%

Operator: CWR

Zonal flux distribution table

Appendix Page: 5 Total:15

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
57.0	378.074	17.586	3237.455	0.46%	84.31%
57.5	367.980	17.202	3254.657	0.45%	84.76%
58.0	358.601	16.847	3271.503	0.44%	85.20%
58.5	349.934	16.518	3288.021	0.43%	85.63%
59.0	341.937	16.216	3304.237	0.42%	86.05%
59.5	334.570	15.939	3320.176	0.42%	86.46%
60.0	327.857	15.688	3335.864	0.41%	86.87%
60.5	321.680	15.460	3351.325	0.40%	87.27%
61.0	315.940	15.252	3366.576	0.40%	87.67%
61.5	310.630	15.060	3381.637	0.39%	88.06%
62.0	305.639	14.883	3396.52	0.39%	88.45%
62.5	300.852	14.715	3411.234	0.38%	88.83%
63.0	296.203	14.552	3425.786	0.38%	89.21%
63.5	291.560	14.389	3440.176	0.37%	89.59%
64.0	286.833	14.222	3454.397	0.37%	89.96%
64.5	281.965	14.045	3468.443	0.37%	90.32%
65.0	276.913	13.858	3482.301	0.36%	90.68%
65.5	271.603	13.656	3495.957	0.36%	91.04%
66.0	265.885	13.435	3509.392	0.35%	91.39%
66.5	259.798	13.191	3522.584	0.34%	91.73%
67.0	253.244	12.923	3535.507	0.34%	92.07%
67.5	246.317	12.630	3548.137	0.33%	92.40%
68.0	239.316	12.323	3560.46	0.32%	92.72%
68.5	232.333	12.010	3572.469	0.31%	93.03%
69.0	225.480	11.698	3584.167	0.30%	93.34%
69.5	218.669	11.387	3595.554	0.30%	93.63%
70.0	211.906	11.075	3606.629	0.29%	93.92%
70.5	205.271	10.764	3617.393	0.28%	94.20%
71.0	198.812	10.459	3627.852	0.27%	94.48%
71.5	192.566	10.160	3638.012	0.26%	94.74%
72.0	186.623	9.873	3647.885	0.26%	95.00%
72.5	181.025	9.599	3657.484	0.25%	95.25%
73.0	175.739	9.341	3666.825	0.24%	95.49%
73.5	170.794	9.097	3675.923	0.24%	95.73%
74.0	166.205	8.870	3684.792	0.23%	95.96%
74.5	161.884	8.657	3693.449	0.23%	96.18%
75.0	157.762	8.455	3701.904	0.22%	96.40%
75.5	153.839	8.261	3710.165	0.22%	96.62%

Equipment: GMS1800
Temperature($^{\circ}$ C): 25Date:
Humidity(%): 55%

Operator: CWR

Zonal flux distribution table

Appendix Page: 6 Total:15

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	149.997	8.073	3718.239	0.21%	96.83%
76.5	146.163	7.887	3726.125	0.21%	97.03%
77.0	142.286	7.697	3733.823	0.20%	97.23%
77.5	138.358	7.504	3741.327	0.20%	97.43%
78.0	134.396	7.307	3748.635	0.19%	97.62%
78.5	130.474	7.109	3755.744	0.19%	97.81%
79.0	126.616	6.913	3762.657	0.18%	97.99%
79.5	122.705	6.715	3769.372	0.17%	98.16%
80.0	118.674	6.512	3775.884	0.17%	98.33%
80.5	114.407	6.298	3782.182	0.16%	98.49%
81.0	109.759	6.066	3788.247	0.16%	98.65%
81.5	104.692	5.811	3794.058	0.15%	98.80%
82.0	99.150	5.531	3799.589	0.14%	98.95%
82.5	93.195	5.225	3804.814	0.14%	99.08%
83.0	86.866	4.897	3809.711	0.13%	99.21%
83.5	80.166	4.548	3814.258	0.12%	99.33%
84.0	73.184	4.179	3818.438	0.11%	99.44%
84.5	65.900	3.794	3822.231	0.10%	99.54%
85.0	58.488	3.396	3825.627	0.09%	99.63%
85.5	51.103	2.994	3828.621	0.08%	99.70%
86.0	43.813	2.595	3831.216	0.07%	99.77%
86.5	36.757	2.204	3833.421	0.06%	99.83%
87.0	30.111	1.830	3835.251	0.05%	99.88%
87.5	23.976	1.481	3836.732	0.04%	99.91%
88.0	18.376	1.160	3837.892	0.03%	99.95%
88.5	13.438	0.872	3838.764	0.02%	99.97%
89.0	9.175	0.620	3839.384	0.02%	99.98%
89.5	5.673	0.407	3839.791	0.01%	99.99%
90.0	1.954	0.209	3840	0.01%	100.00%

Equipment: GMS1800
Temperature($^{\circ}$ C): 25

Date:
Humidity(%): 55%

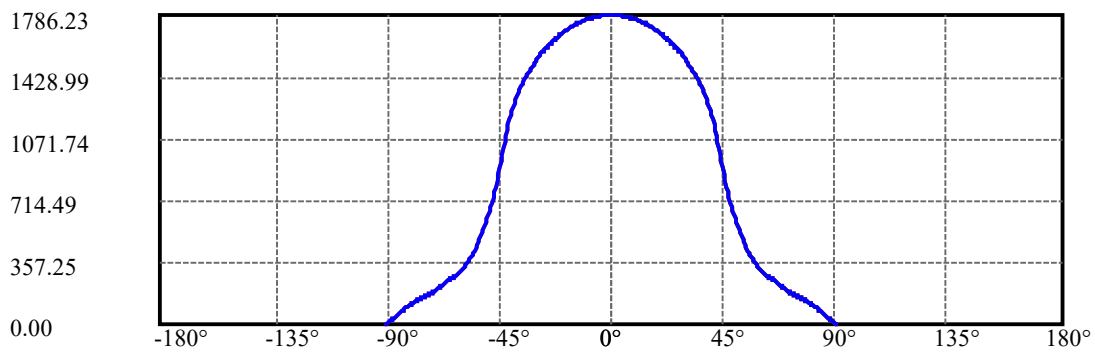
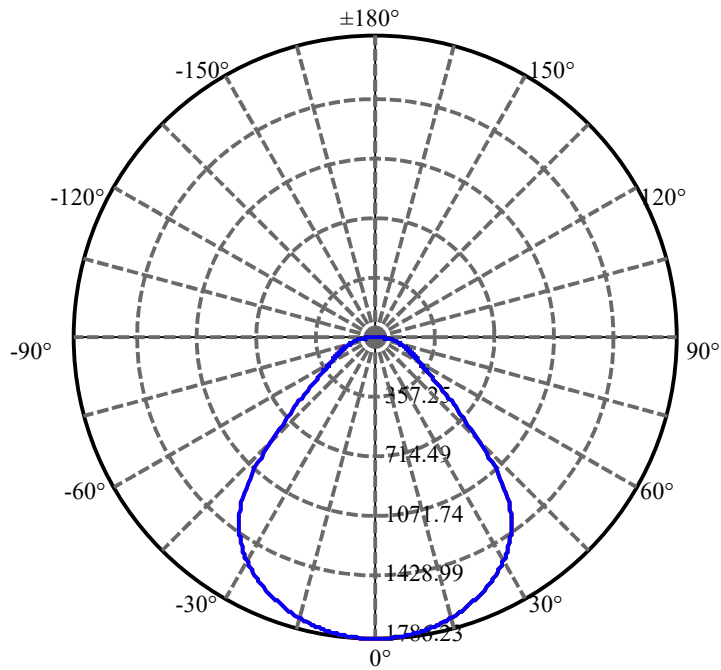
Operator: CWR

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1397.74	36.40%	36.40%
0-40	2266.15	59.01%	59.01%
0-60	3335.86	86.87%	86.87%
0-90	3839.79	99.99%	99.99%
0-120	3839.79	99.99%	99.99%
0-180	3840.00	100.00%	100.00%
60-90	503.93	13.12%	13.12%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-52.74	3072.00	80.00%	80.00%

ZONAL LUMEN SUMMARY

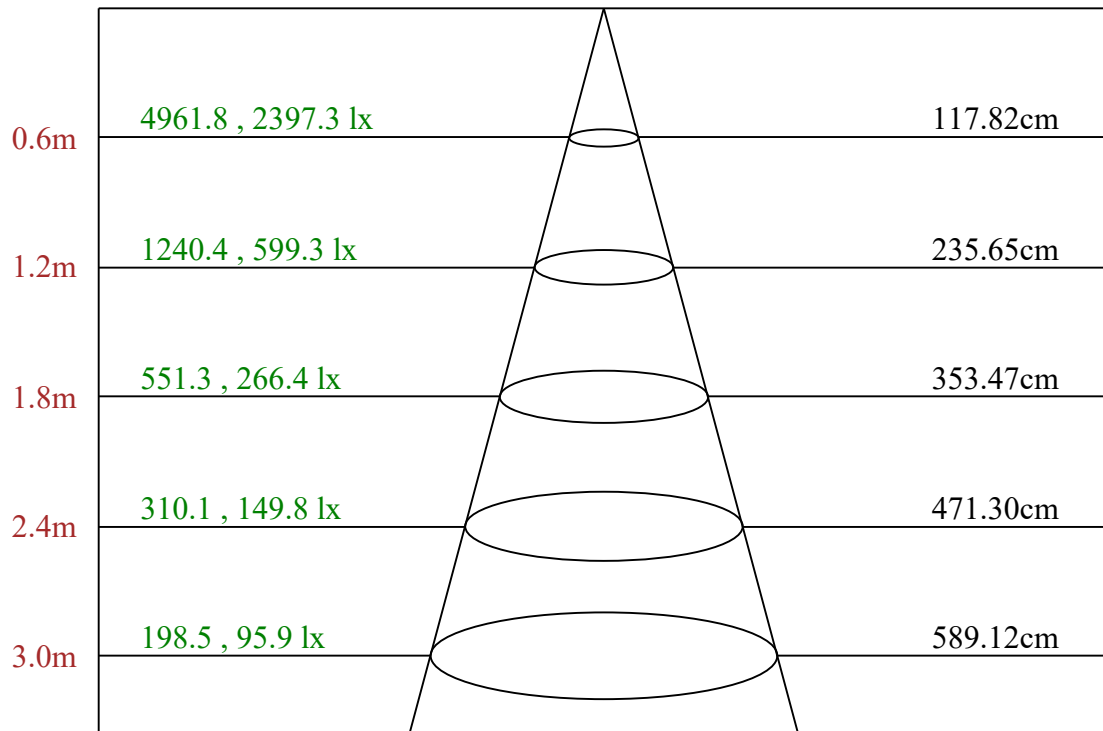
0-10	169.20
10-20	486.89
20-30	741.65
30-40	868.41
40-50	675.96
50-60	393.75
60-70	270.76
70-80	169.26
80-90	63.91
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



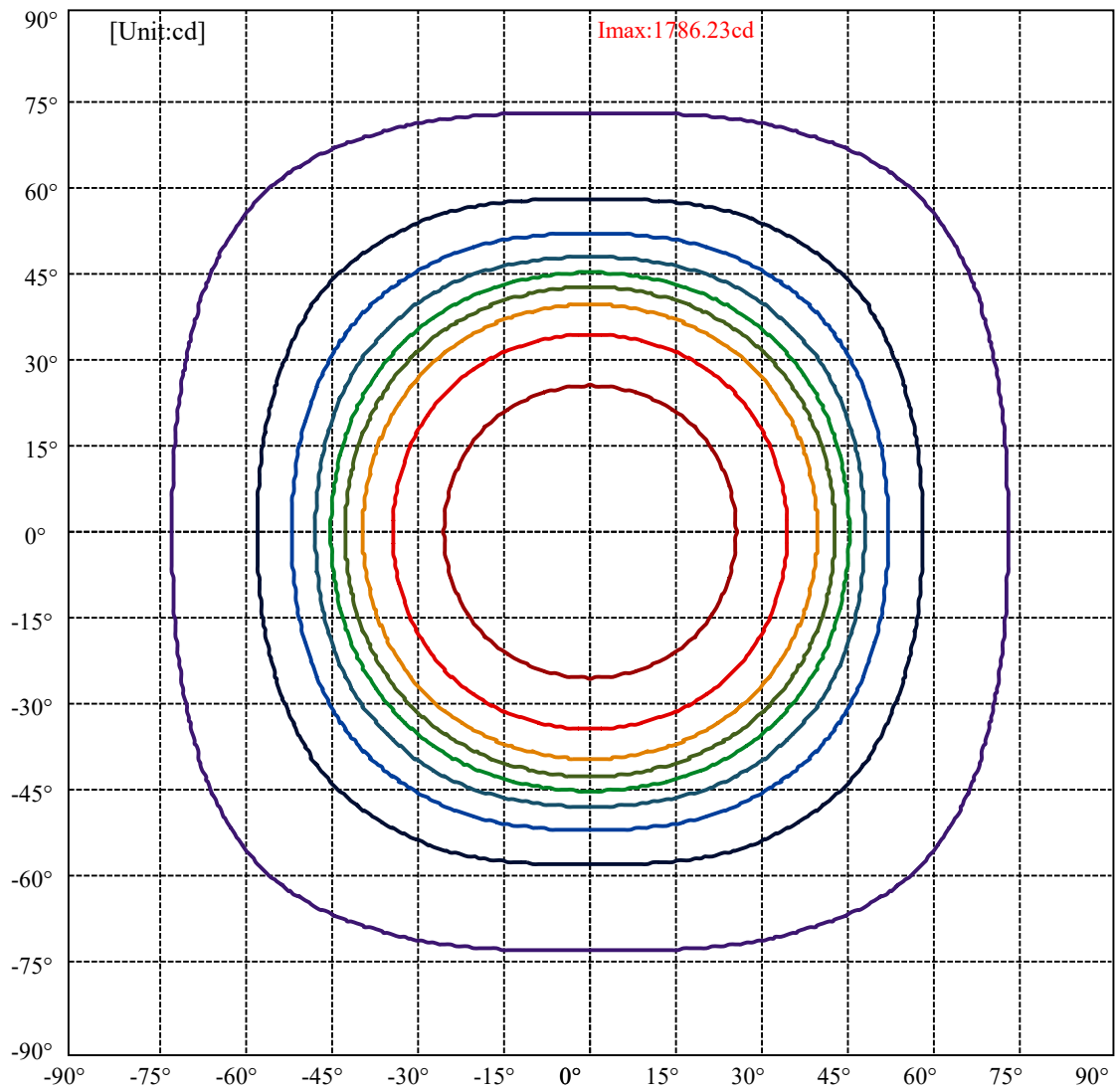
C0(Max): ———
 C0/C180: ———
 C90/C270: ———

Field angle(10%Imax):C0/180Left:71.9 Right:71.9
 :C90/270Left:71.9 Right:71.9

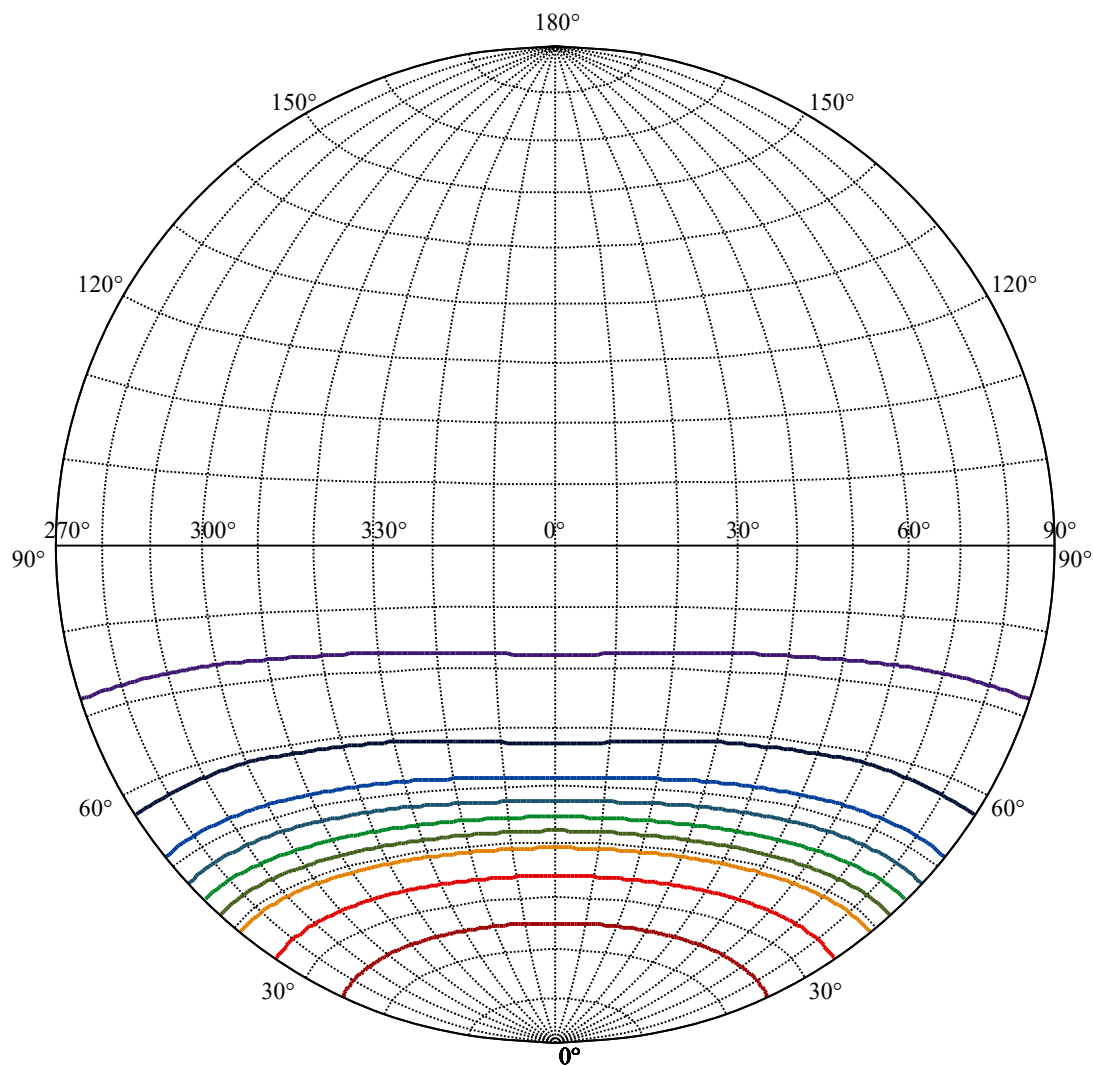
Beam Angle(50%Imax):C0/180Left:44.6 Right:44.6
 :C90/270Left:44.6 Right:44.6



Max , Ave Beam angle of C0 plane 88.95



(10%Imax) 178.623	—
(20%Imax) 357.247	—
(30%Imax) 535.87	—
(40%Imax) 714.493	—
(50%Imax) 893.117	—
(60%Imax) 1071.74	—
(70%Imax) 1250.36	—
(80%Imax) 1428.99	—
(90%Imax) 1607.61	—












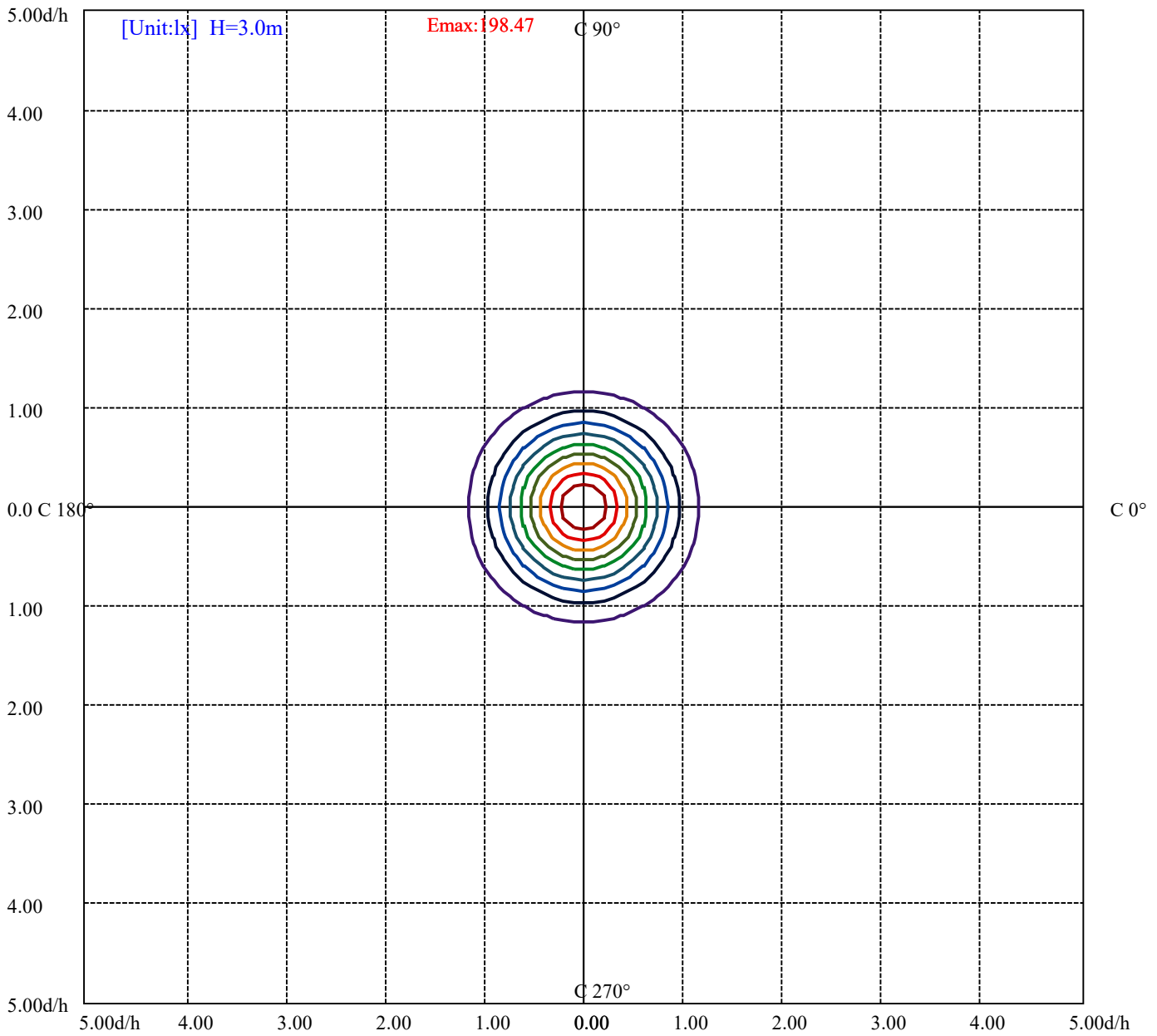
House

[Unit:cd]

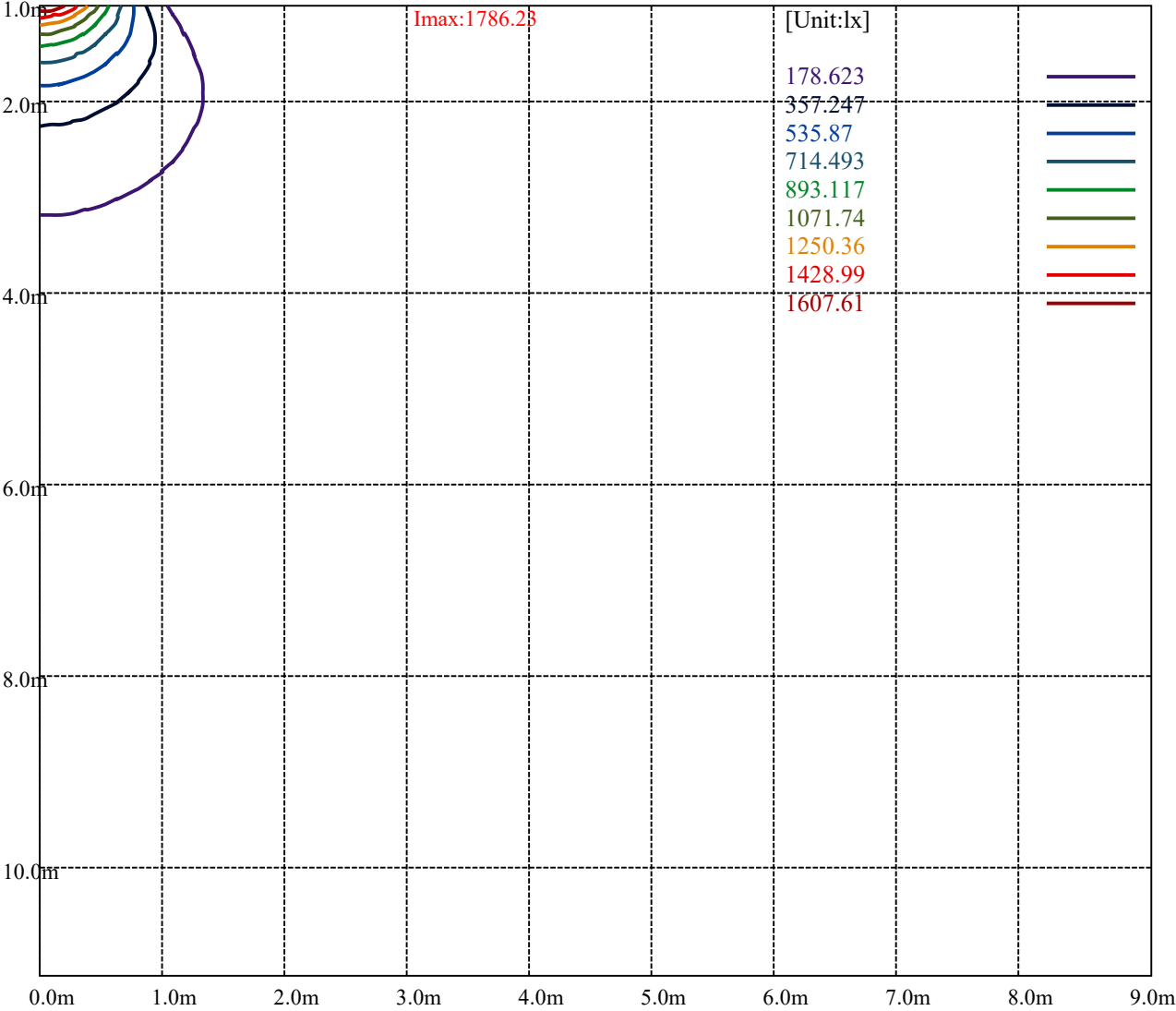
Road

Imax:1786.23

(10%Imax) 178.623	
(20%Imax) 357.247	
(30%Imax) 535.87	
(40%Imax) 714.493	
(50%Imax) 893.117	
(60%Imax) 1071.74	
(70%Imax) 1250.36	
(80%Imax) 1428.99	
(90%Imax) 1607.61	



- (10%Emax) 19.847
- (20%Emax) 39.69411
- (30%Emax) 59.54111
- (40%Emax) 79.38811
- (50%Emax) 99.23522
- (60%Emax) 119.0822
- (70%Emax) 138.9289
- (80%Emax) 158.7767
- (90%Emax) 178.6233



Luminance Limiting Curve(no luminous side)

Luminance Table

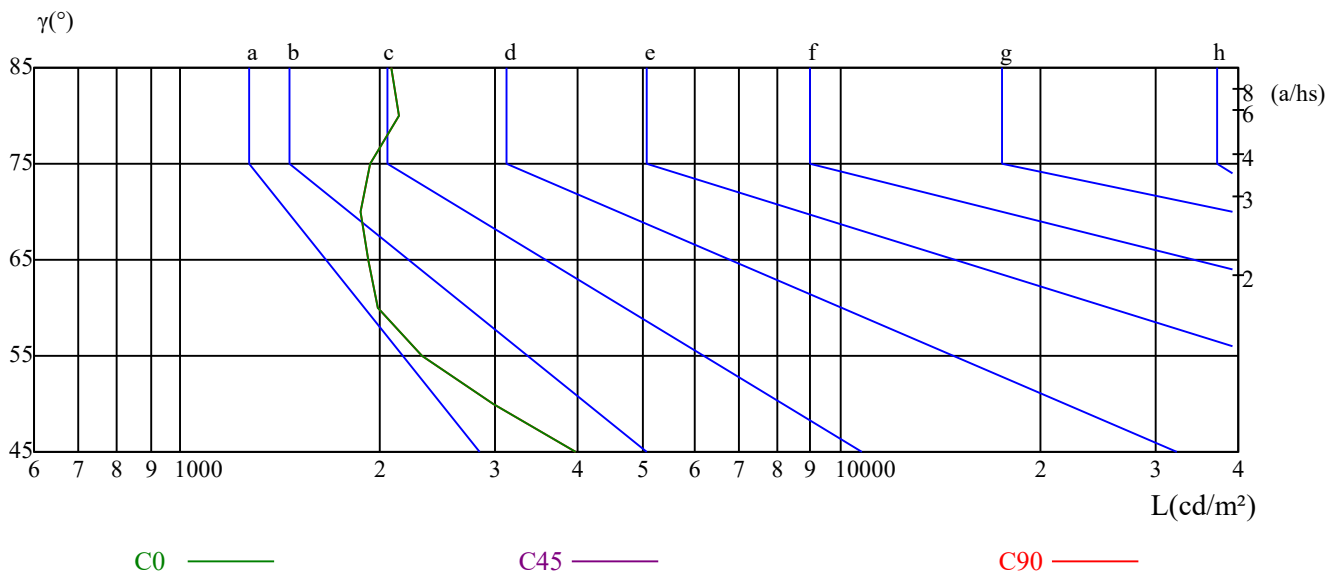
γ	45	50	55	60	65	70	75	80	85
C0	3976	2968	2325	1993	1930	1876	1936	2145	2081
C45	0	0	0	0	0	0	0	0	0
C90	3976	2968	2325	1993	1930	1876	1936	2145	2081

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1930	1930	0	1936	1936	0	2081	2081	0

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve



Illumination assessment according UGR											
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30	
Rf of Wall	50	30	50	30	30	50	30	50	30	30	
Rf of Floor	20	20	20	20	20	20	20	20	20	20	
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	15.18	16.64	15.54	16.95	17.27	15.18	16.64	15.54	16.95	17.27
	3H	16.25	17.56	16.63	17.89	18.23	16.25	17.56	16.63	17.89	18.23
	4H	16.74	17.97	17.14	18.32	18.68	16.74	17.97	17.14	18.32	18.68
	6H	17.29	18.43	17.70	18.80	19.19	17.29	18.43	17.70	18.80	19.19
	8H	17.51	18.61	17.93	18.98	19.39	17.51	18.61	17.93	18.98	19.39
	12H	17.67	18.71	18.08	19.10	19.51	17.67	18.71	18.08	19.10	19.51
4H	2H	15.63	16.86	16.03	17.21	17.57	15.63	16.86	16.03	17.21	17.57
	3H	16.92	17.95	17.33	18.34	18.75	16.92	17.95	17.33	18.34	18.75
	4H	17.61	18.53	18.05	18.94	19.38	17.61	18.53	18.05	18.94	19.38
	6H	18.29	19.10	18.75	19.55	19.99	18.29	19.10	18.75	19.55	19.99
	8H	18.62	19.38	19.09	19.83	20.29	18.62	19.38	19.09	19.83	20.29
8H	12H	18.86	19.57	19.34	20.01	20.51	18.86	19.57	19.34	20.01	20.51
	4H	17.87	18.63	18.35	19.08	19.55	17.87	18.63	18.35	19.08	19.55
	6H	18.75	19.38	19.24	19.85	20.35	18.75	19.38	19.24	19.85	20.35
	8H	19.24	19.80	19.76	20.31	20.80	19.24	19.80	19.76	20.31	20.80
12H	12H	19.58	20.05	20.11	20.56	21.07	19.58	20.05	20.11	20.56	21.07
	4H	17.92	18.63	18.40	19.07	19.57	17.92	18.63	18.40	19.07	19.57
	6H	18.90	19.45	19.41	19.96	20.45	18.90	19.45	19.41	19.96	20.45
	8H	19.41	19.87	19.93	20.38	20.89	19.41	19.87	19.93	20.38	20.89
Variation with the observer position at spacings:											
S = 1.0H	0.4/-0.9					0.4/-0.9					
S = 1.5H	0.9/-1.1					0.9/-1.1					
S = 2.0H	1.3/-1.1					1.3/-1.1					
Standard tables:	BK4					BK4					
Uncorrected UGR	0.9					0.9					

UGR calculation is based on CIE Publ. 117 ,S/H = 0.25