
Nata

LumCAT: 3-2033-M	
Luminaire: 92.70.135.00	
Report No: GC2017122802	Voltage(V): 43.4000
Test No: NT-0010	Current(A): 0.5000
LampCAT: NICHIA NVEWJ048Z-V1	Power (W): 21.7000
Lamp flux(lm): 3051.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 79	Width(mm): 79
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2727.01
Efficiency(%): 89.38%
Lumens(lm)/Power(W): 125.67
Central intensity(cd): 19995.110
Maximum intensity(cd): 19995.110
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=15.0
[C90/270]Total=15.0
Field angle(10%Imax): [C0/180]Total=31.5
[C90/270]Total=31.5
Maximum s/h(1/2): C0_180=0.26 C90_270=0.26
Maximum s/h(1/4): C0_180=0.26 C90_270=0.26
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.38%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.463%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	19995.107	0.000	0	.000%	.000%
1.0	19796.904	19.040	19.04	.624%	.698%
2.0	19078.420	55.798	74.837	1.829%	2.744%
3.0	17989.680	88.655	163.492	2.906%	5.995%
4.0	16614.645	115.832	279.324	3.797%	10.243%
5.0	14888.627	135.525	414.849	4.442%	15.213%
6.0	12669.648	144.826	559.675	4.747%	20.523%
7.0	10841.706	145.935	705.61	4.783%	25.875%
8.0	9120.368	142.865	848.475	4.683%	31.114%
9.0	7313.555	133.188	981.663	4.365%	35.998%
10.0	5786.084	118.547	1100.21	3.886%	40.345%
11.0	4581.862	103.597	1203.807	3.396%	44.144%
12.0	3639.572	89.872	1293.679	2.946%	47.440%
13.0	2975.523	78.505	1372.183	2.573%	50.318%
14.0	2600.658	71.375	1443.558	2.339%	52.936%
15.0	2179.339	65.622	1509.18	2.151%	55.342%
16.0	1940.532	60.368	1569.547	1.979%	57.556%
17.0	1723.954	57.066	1626.613	1.870%	59.648%
18.0	1559.060	54.130	1680.743	1.774%	61.633%
19.0	1447.089	52.301	1733.044	1.714%	63.551%
20.0	1340.692	51.024	1784.068	1.672%	65.422%
21.0	1259.690	49.933	1834.001	1.637%	67.253%
22.0	1201.950	49.468	1883.468	1.621%	69.067%
23.0	1147.836	49.305	1932.773	1.616%	70.875%
24.0	1103.220	49.216	1981.989	1.613%	72.680%
25.0	1079.388	49.628	2031.617	1.627%	74.500%
26.0	1051.956	50.311	2081.928	1.649%	76.345%
27.0	1028.171	50.891	2132.818	1.668%	78.211%
28.0	1008.406	51.562	2184.38	1.690%	80.102%
29.0	989.536	52.272	2236.652	1.713%	82.019%
30.0	970.665	52.925	2289.577	1.735%	83.959%
31.0	948.106	53.397	2342.974	1.750%	85.917%
32.0	898.472	52.902	2395.876	1.734%	87.857%
33.0	820.684	50.647	2446.523	1.660%	89.715%
34.0	726.738	46.830	2493.353	1.535%	91.432%
35.0	607.265	41.429	2534.782	1.358%	92.951%
36.0	493.202	35.039	2569.821	1.148%	94.236%
37.0	384.218	28.617	2598.437	.938%	95.285%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	284.002	22.304	2620.742	.731%	96.103%
39.0	181.418	15.886	2636.628	.521%	96.686%
40.0	93.080	9.573	2646.201	.314%	97.037%
41.0	50.617	5.117	2651.318	.168%	97.225%
42.0	37.108	3.187	2654.505	.104%	97.341%
43.0	31.183	2.530	2657.035	.083%	97.434%
44.0	26.943	2.194	2659.229	.072%	97.515%
45.0	24.273	1.968	2661.197	.065%	97.587%
46.0	22.374	1.824	2663.021	.060%	97.654%
47.0	21.520	1.746	2664.767	.057%	97.718%
48.0	20.798	1.711	2666.478	.056%	97.780%
49.0	20.109	1.680	2668.158	.055%	97.842%
50.0	19.449	1.649	2669.807	.054%	97.903%
51.0	18.877	1.622	2671.429	.053%	97.962%
52.0	18.368	1.598	2673.027	.052%	98.021%
53.0	17.845	1.575	2674.602	.052%	98.078%
54.0	17.357	1.552	2676.154	.051%	98.135%
55.0	16.923	1.530	2677.684	.050%	98.191%
56.0	16.496	1.510	2679.194	.049%	98.247%
57.0	16.132	1.492	2680.686	.049%	98.301%
58.0	15.822	1.478	2682.163	.048%	98.356%
59.0	15.553	1.467	2683.63	.048%	98.409%
60.0	15.299	1.458	2685.088	.048%	98.463%
61.0	15.044	1.448	2686.536	.047%	98.516%
62.0	14.838	1.440	2687.976	.047%	98.569%
63.0	14.624	1.433	2689.409	.047%	98.621%
64.0	14.418	1.425	2690.834	.047%	98.674%
65.0	14.225	1.418	2692.251	.046%	98.726%
66.0	14.067	1.412	2693.663	.046%	98.777%
67.0	13.929	1.408	2695.07	.046%	98.829%
68.0	13.792	1.404	2696.475	.046%	98.880%
69.0	13.661	1.400	2697.875	.046%	98.932%
70.0	13.565	1.398	2699.273	.046%	98.983%
71.0	13.454	1.396	2700.67	.046%	99.034%
72.0	13.372	1.395	2702.065	.046%	99.085%
73.0	13.275	1.393	2703.458	.046%	99.137%
74.0	13.207	1.392	2704.851	.046%	99.188%
75.0	13.138	1.392	2706.242	.046%	99.239%

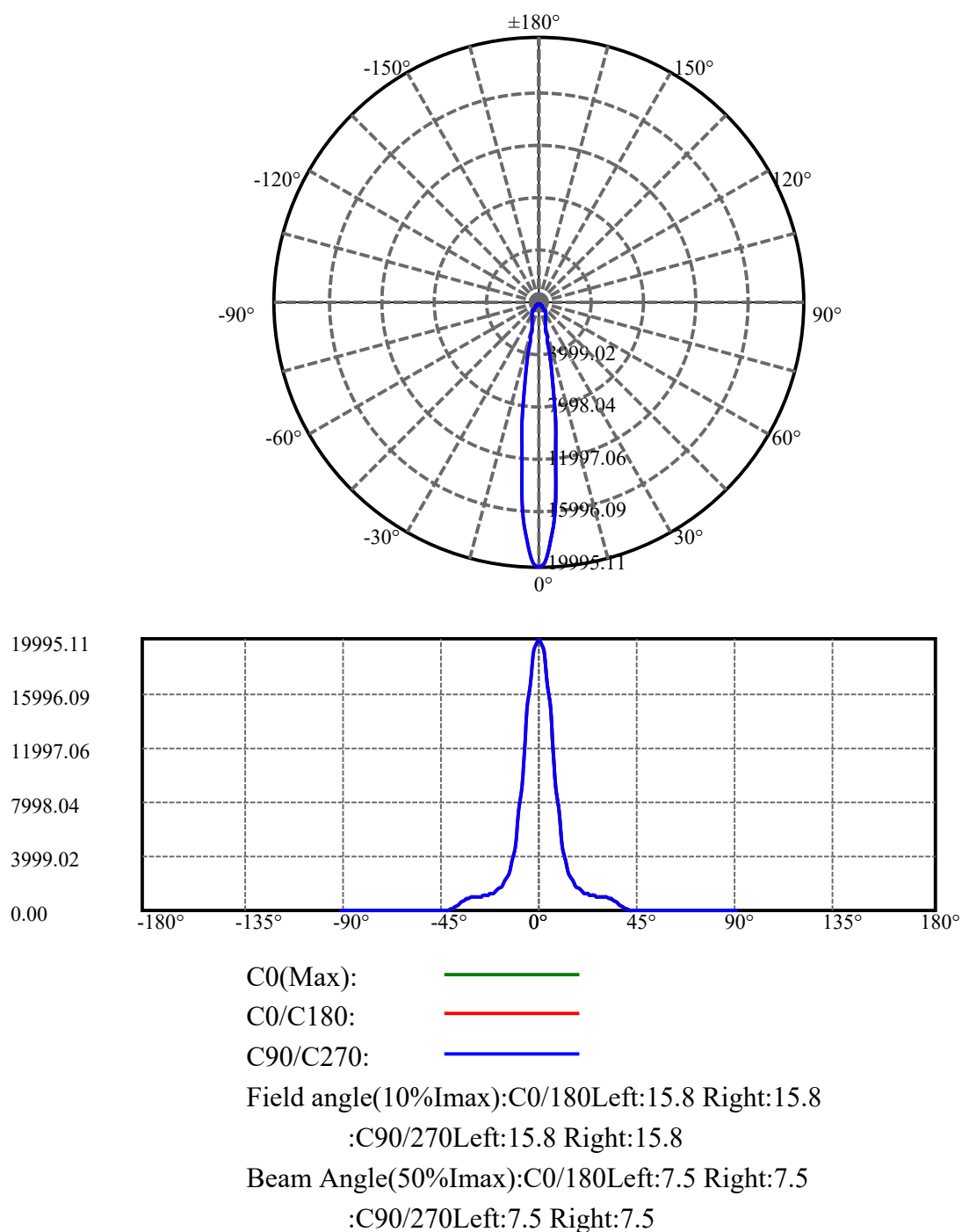
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	13.083	1.392	2707.634	.046%	99.290%
77.0	13.028	1.392	2709.026	.046%	99.341%
78.0	12.959	1.391	2710.418	.046%	99.392%
79.0	12.911	1.390	2711.808	.046%	99.443%
80.0	12.863	1.389	2713.197	.046%	99.494%
81.0	12.814	1.389	2714.586	.046%	99.545%
82.0	12.794	1.389	2715.974	.046%	99.595%
83.0	12.746	1.388	2717.363	.046%	99.646%
84.0	12.704	1.386	2718.749	.045%	99.697%
85.0	12.663	1.384	2720.134	.045%	99.748%
86.0	12.622	1.382	2721.516	.045%	99.799%
87.0	12.560	1.378	2722.894	.045%	99.849%
88.0	12.498	1.373	2724.266	.045%	99.900%
89.0	12.484	1.369	2725.636	.045%	99.950%
90.0	12.491	1.369	2727.005	.045%	100.000%

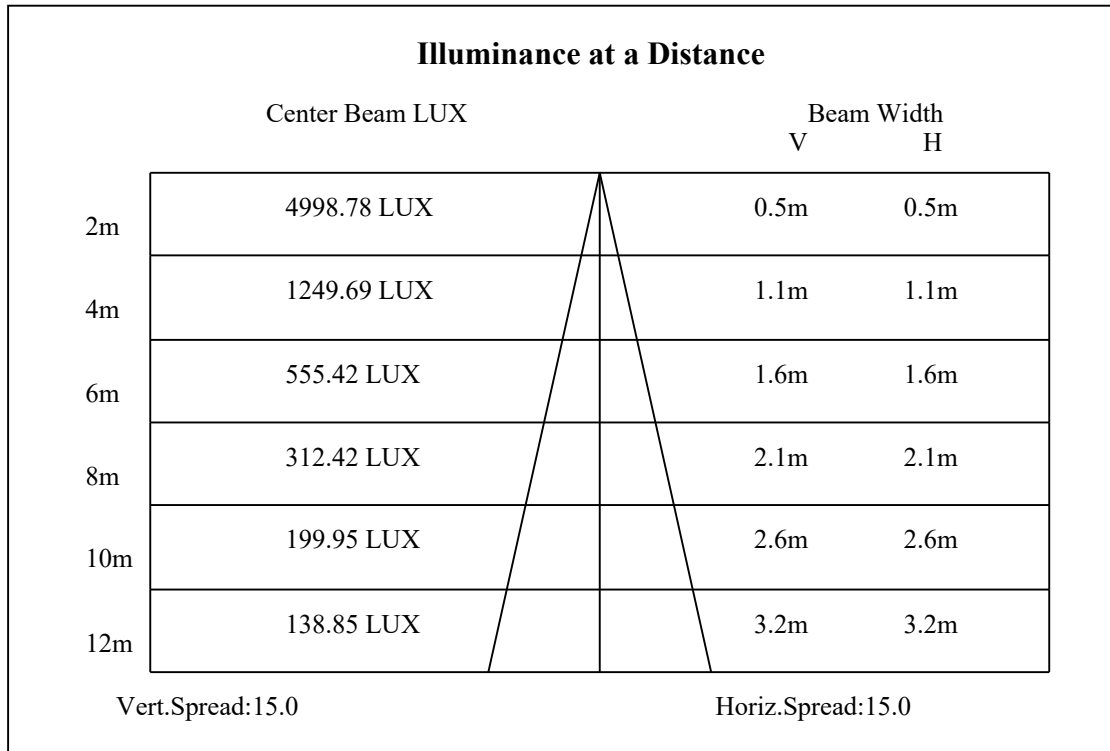
ZONAL LUMEN SUMMARY

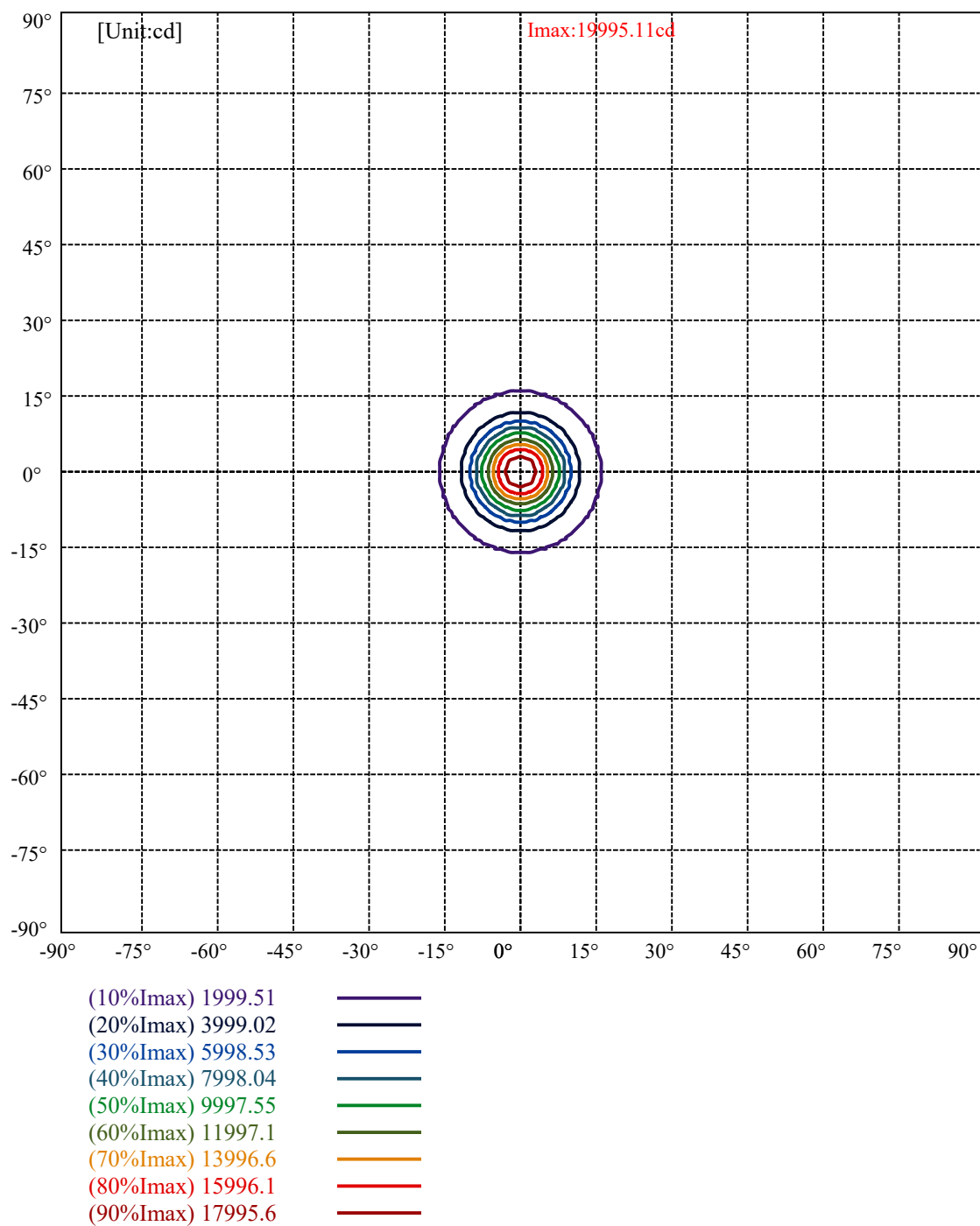
Zone	Lumens	%Lamp	%Fixt
0-30	2289.58	75.04%	83.96%
0-40	2646.20	86.73%	97.04%
0-60	2685.09	88.01%	98.46%
0-90	2725.64	89.34%	99.95%
0-120	2725.64	89.34%	99.95%
0-180	2727.01	89.38%	100.00%
60-90	42.01	1.38%	1.54%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.95	2181.60	71.50%	80.00%

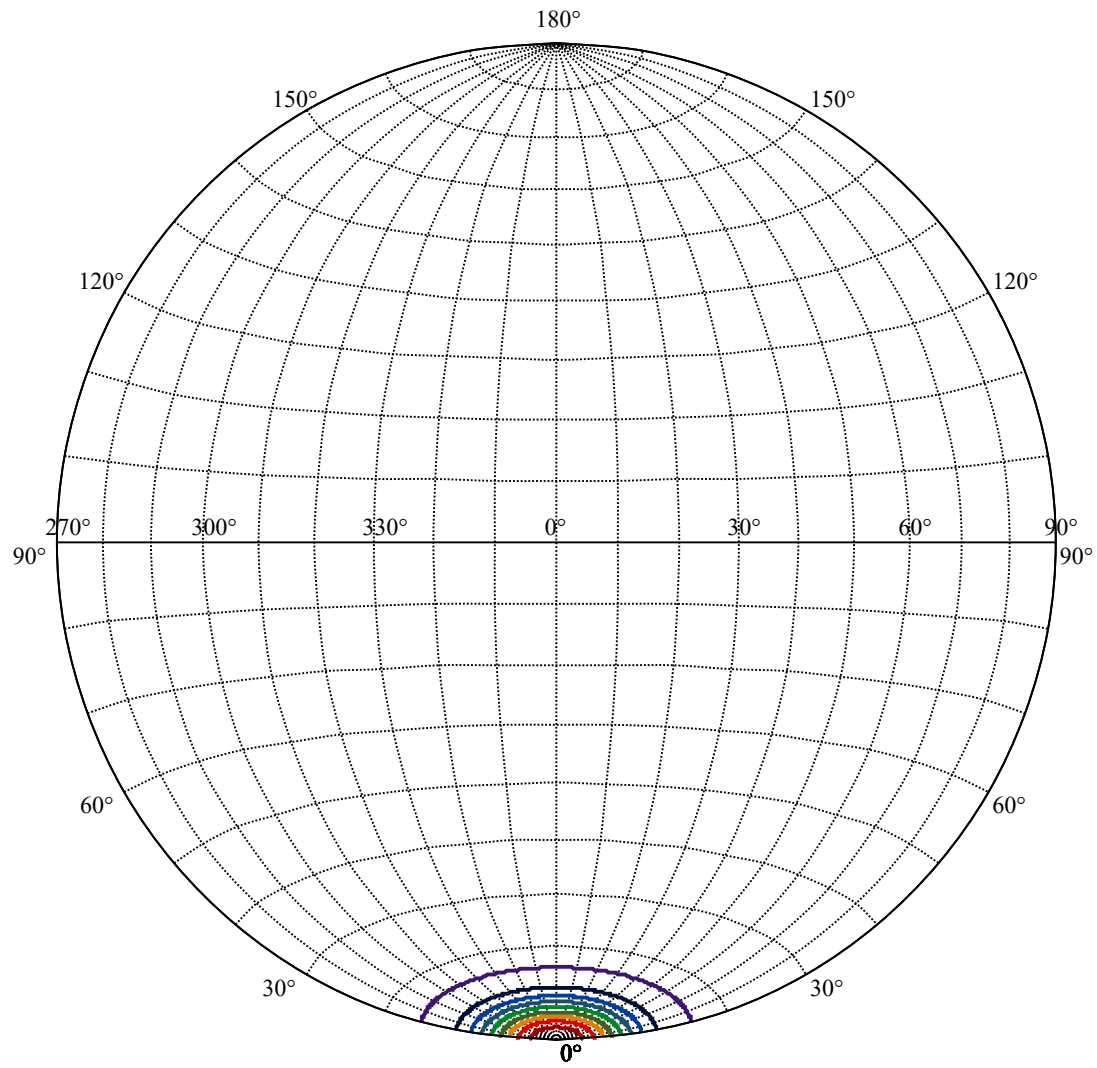
ZONAL LUMEN SUMMARY

0-10	1100.21
10-20	683.86
20-30	505.51
30-40	356.62
40-50	23.61
50-60	15.28
60-70	14.19
70-80	13.92
80-90	12.44
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







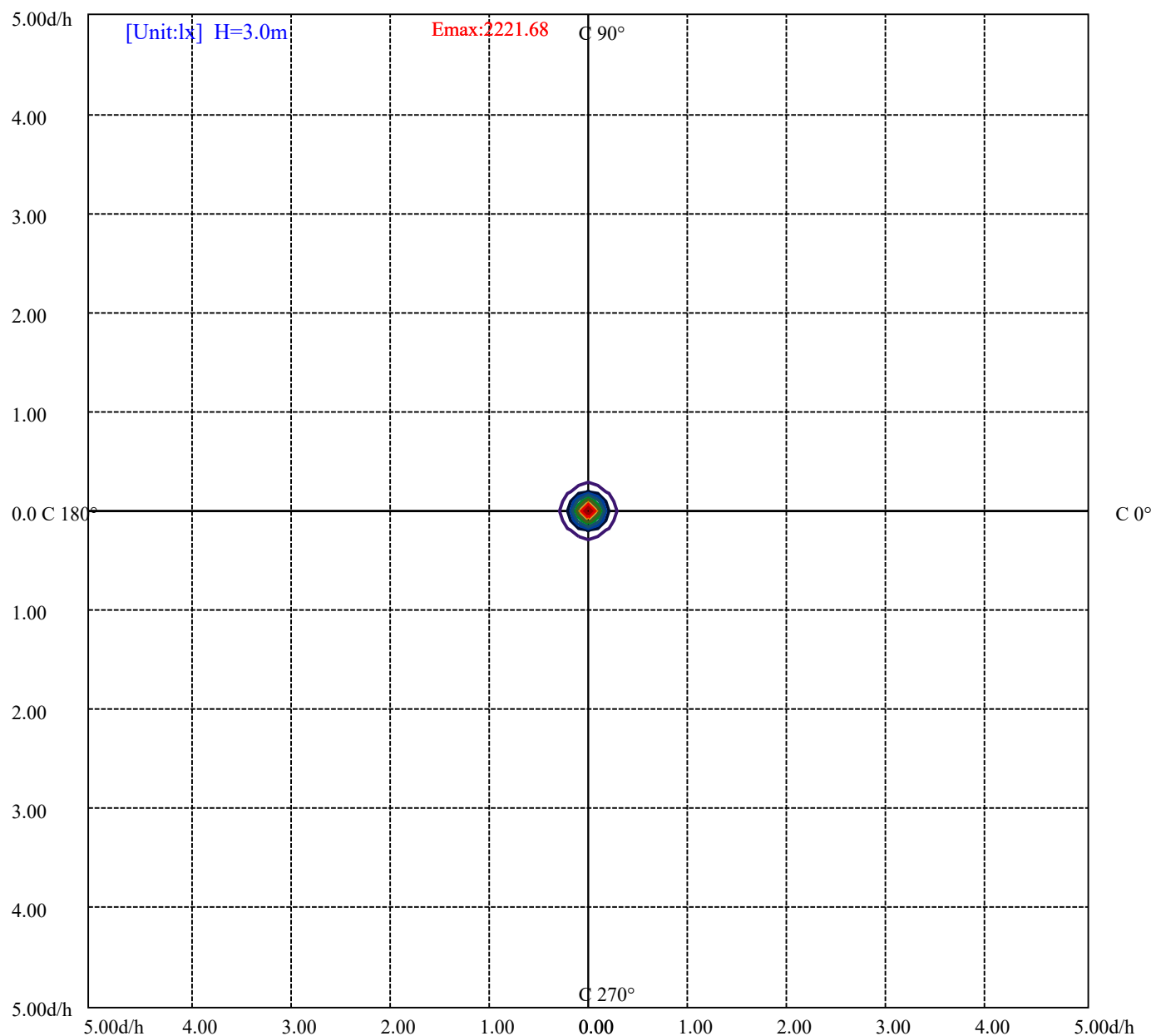


House

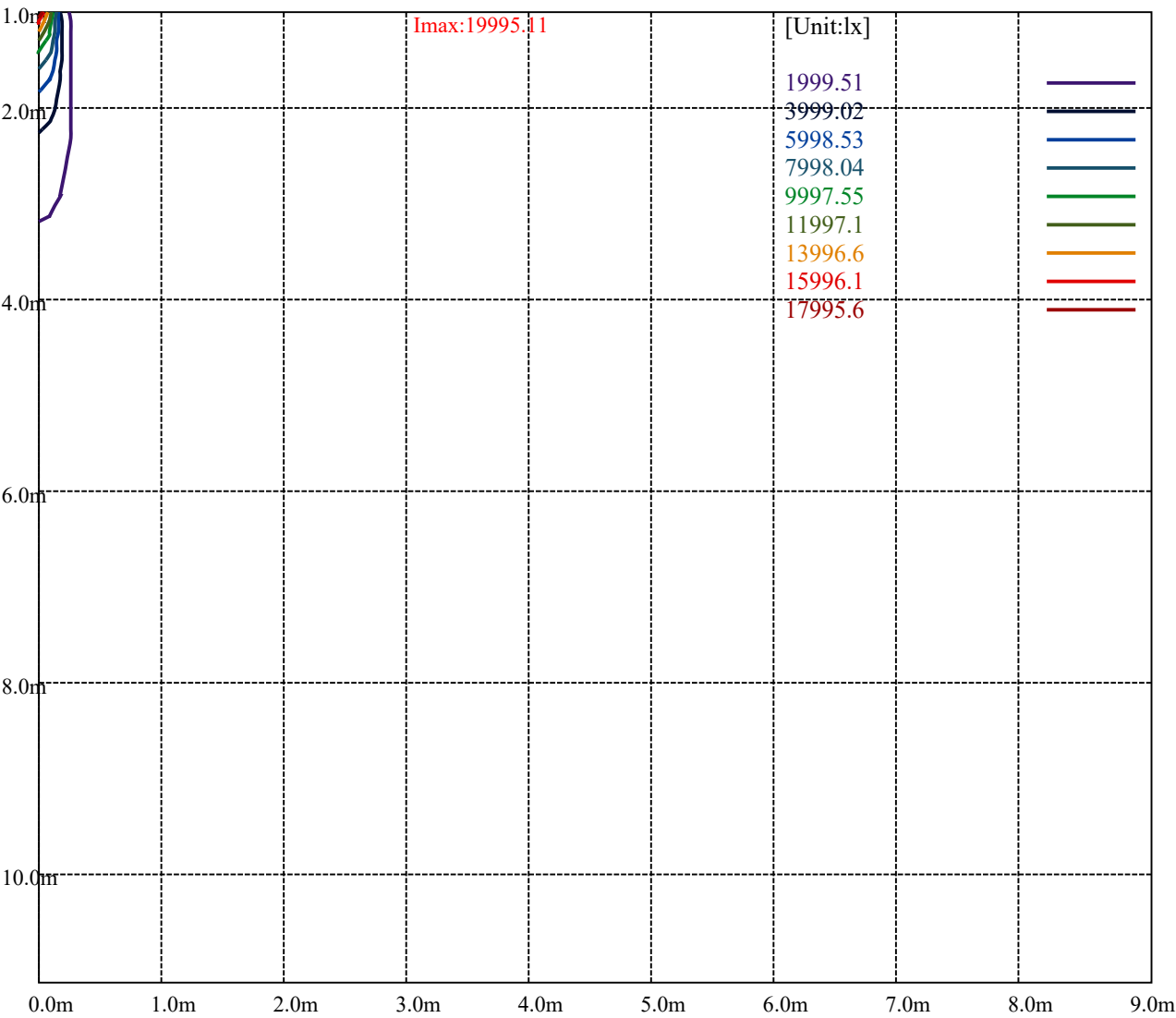
[Unit:cd]

Road

Imax:19995.11		
(10%Imax)	1999.51	—
(20%Imax)	3999.02	—
(30%Imax)	5998.53	—
(40%Imax)	7998.04	—
(50%Imax)	9997.55	—
(60%Imax)	11997.1	—
(70%Imax)	13996.6	—
(80%Imax)	15996.1	—
(90%Imax)	17995.6	—



(10%Emax)	222.1678	—
(20%Emax)	444.3356	—
(30%Emax)	666.5022	—
(40%Emax)	888.67	—
(50%Emax)	1110.838	—
(60%Emax)	1333	—
(70%Emax)	1555.178	—
(80%Emax)	1777.344	—
(90%Emax)	1999.511	—



Luminance Table

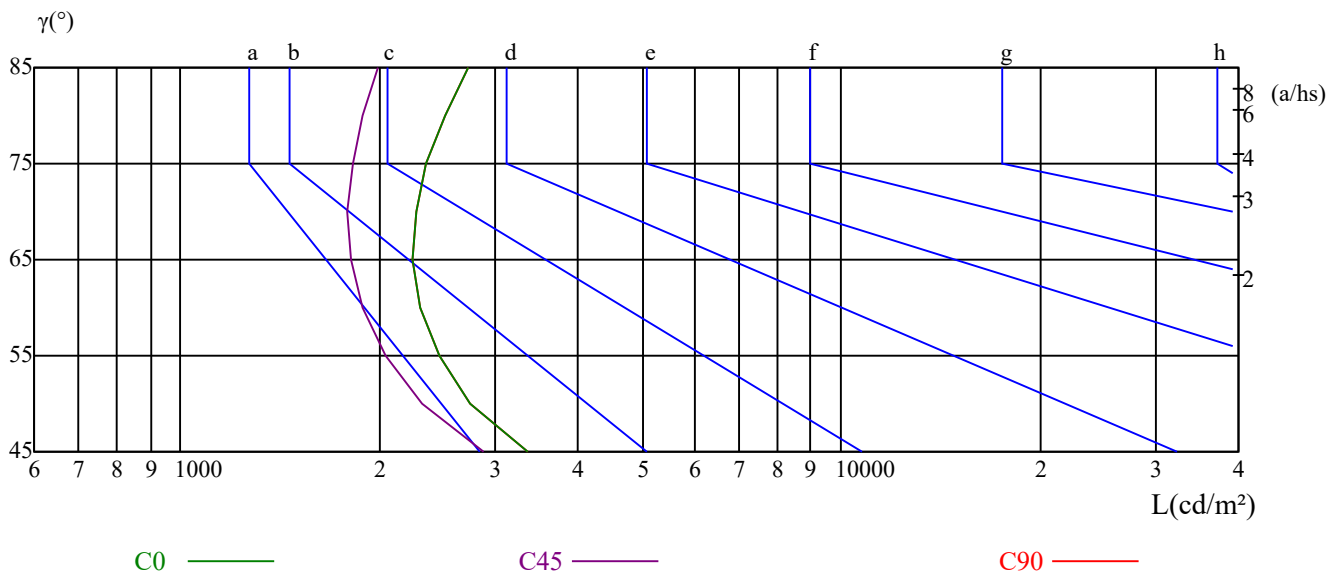
γ	45	50	55	60	65	70	75	80	85
C0	3359	2748	2461	2310	2252	2274	2360	2508	2724
C45	2877	2318	2044	1888	1808	1791	1819	1888	1993
C90	3359	2748	2461	2310	2252	2274	2360	2508	2724

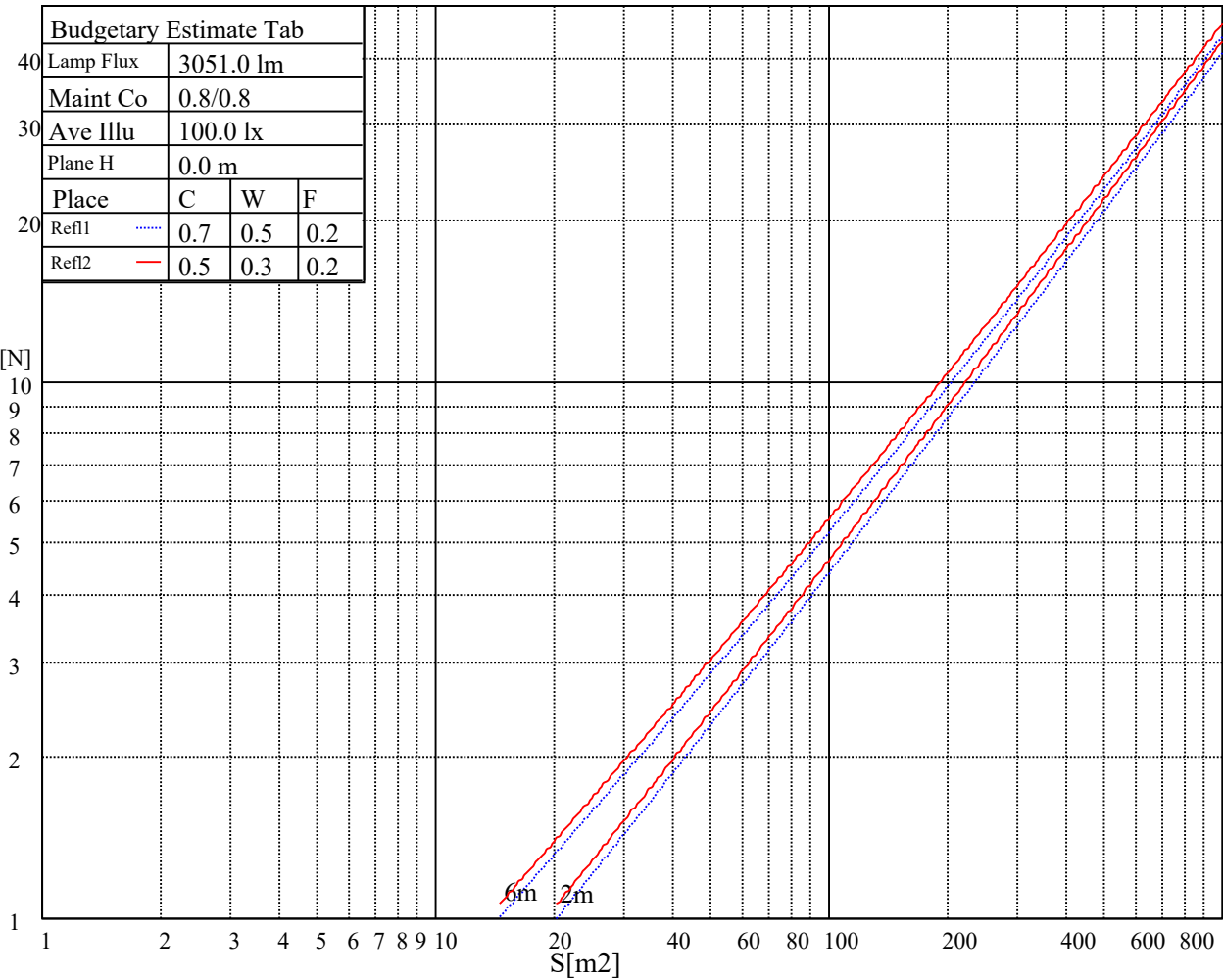
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5532	5532	5532	8343	8343	8343	23881	23881	23881

Glare Table

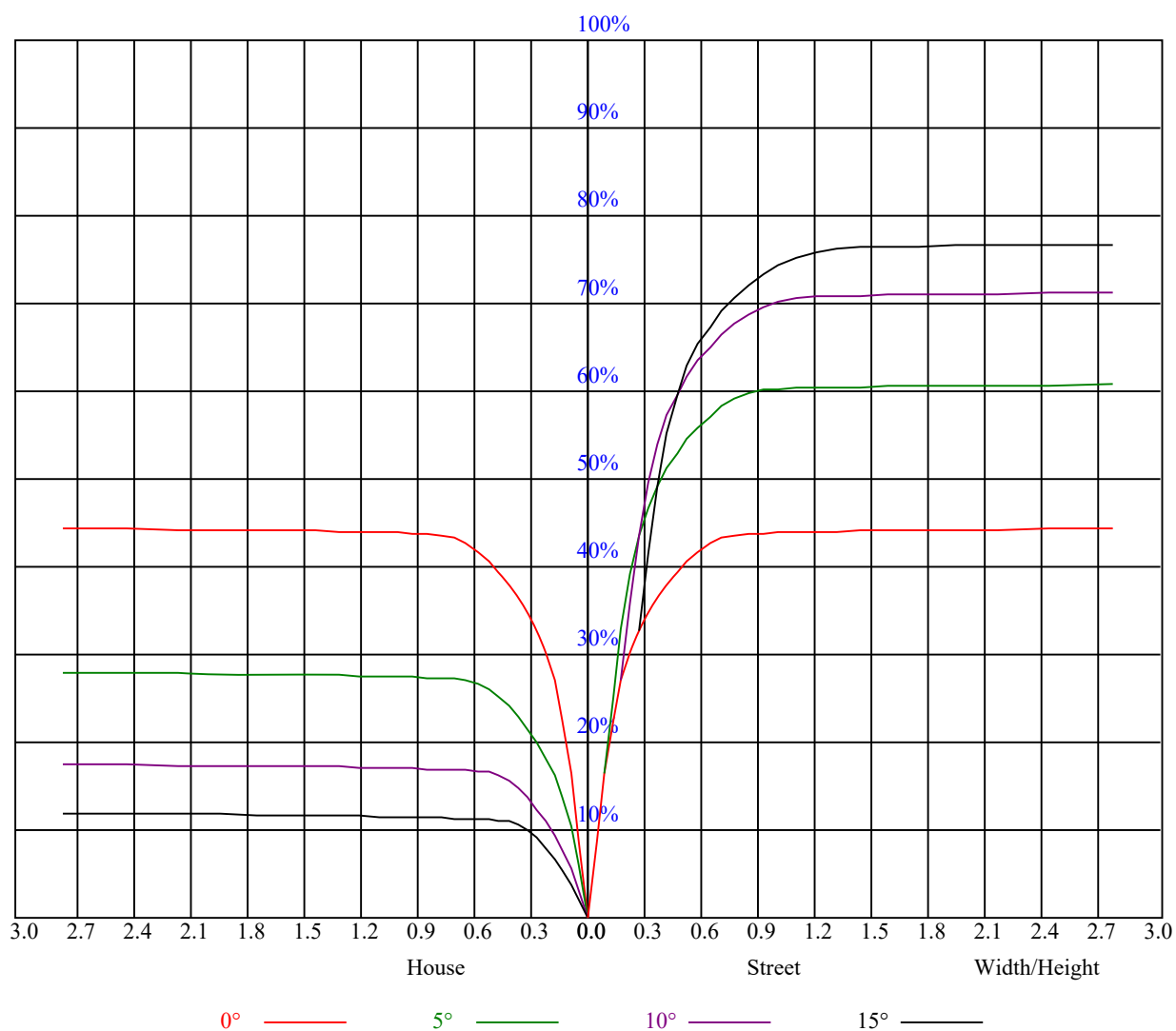
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	1.00	0.98	0.97	0.98	0.97	0.95	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.88	0.87	0.85
2	0.95	0.92	0.90	0.93	0.91	0.89	0.91	0.88	0.87	0.88	0.86	0.85	0.86	0.84	0.83	0.82
3	0.90	0.87	0.84	0.89	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.80	0.78
4	0.86	0.83	0.80	0.85	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.77	0.75
5	0.83	0.79	0.76	0.82	0.78	0.76	0.81	0.77	0.75	0.79	0.77	0.74	0.78	0.76	0.74	0.73
6	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
7	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.74	0.71	0.69	0.68
8	0.74	0.70	0.68	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.69	0.67	0.66
9	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.64
10	0.70	0.66	0.63	0.69	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.62



Intensity data(cd)										Appendix Page: 16 Total:18	
C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0		
0.0	20013.00	19869.85	19137.60	18141.08	16841.75	15046.91	13020.84	11192.97	9199.92		
45.0	20062.55	19677.16	18796.25	17651.08	16032.42	14138.48	12305.11	10201.95	8467.67		
90.0	19902.89	19396.37	18515.47	16935.35	15388.26	13659.49	10916.03	9585.32	7928.67		
135.0	20001.99	19853.34	19093.56	18075.02	16753.66	14980.85	13004.32	11187.46	9243.97		
180.0	20013.00	19798.28	18988.95	17931.87	16599.50	14573.43	12106.90	10854.92	8864.63		
225.0	20062.55	20007.50	19572.55	18498.95	17282.20	15768.15	13819.16	10807.57	9908.50		
270.0	19902.89	20018.51	19622.10	18845.81	17546.47	16092.99	14177.02	12134.43	10334.09		
315.0	20001.99	19754.24	18900.86	17838.27	16472.87	14848.71	12007.80	10769.03	9015.49		
360.0	20013.00	19869.85	19137.60	18141.08	16841.75	15046.91	13020.84	11192.97	9199.92		
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0		
0.0	7377.56	5924.07	4575.19	3661.25	2951.02	2884.96	2178.58	1938.54	1717.21		
45.0	6727.89	5213.84	4134.74	3352.93	2813.38	2350.36	2070.67	1809.15	1648.94		
90.0	6262.67	4879.65	3943.14	3199.88	2675.74	2323.93	2016.17	1808.60	1620.86		
135.0	7476.66	6061.71	4723.84	3837.43	3121.70	2818.89	2287.04	2028.28	1777.77		
180.0	7246.52	5660.90	4524.53	3582.52	2941.11	2522.68	2171.42	1934.13	1719.41		
225.0	7796.54	6282.49	4993.62	3780.72	3194.37	2673.54	2252.91	2029.93	1825.12		
270.0	8423.63	6667.33	5329.46	4233.84	3275.86	2807.88	2377.89	2120.22	1818.51		
315.0	7196.97	5598.69	4430.39	3468.00	2831.00	2423.03	2080.03	1855.40	1663.80		
360.0	7377.56	5924.07	4575.19	3661.25	2951.02	2884.96	2178.58	1938.54	1717.21		
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0		
0.0	1574.06	1455.14	1337.32	1261.34	1199.68	1146.82	1107.18	1080.76	1053.78		
45.0	1503.04	1399.53	1296.03	1229.96	1178.76	1127.00	1093.97	1067.54	1039.46		
90.0	1470.01	1368.15	1288.32	1211.24	1162.79	1096.01	1081.69	1056.70	1030.82		
135.0	1604.89	1482.12	1354.94	1273.45	1210.69	1156.18	1111.04	1081.31	1053.23		
180.0	1549.29	1433.12	1343.38	1254.74	1199.68	1151.78	1098.21	1072.55	1044.81		
225.0	1604.89	1493.13	1389.07	1296.58	1224.45	1173.80	1097.11	1090.23	1064.13		
270.0	1653.89	1536.07	1389.07	1306.49	1248.13	1183.16	1138.57	1111.04	1078.00		
315.0	1512.40	1409.44	1327.41	1243.72	1191.42	1147.93	1097.99	1074.98	1051.41		
360.0	1574.06	1455.14	1337.32	1261.34	1199.68	1146.82	1107.18	1080.76	1053.78		
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0		
0.0	1034.51	1016.34	998.72	980.55	955.23	900.72	822.54	727.85	592.96		
45.0	1015.79	998.17	978.90	960.18	926.60	856.13	773.54	651.32	546.71		
90.0	1007.04	986.94	969.98	949.28	921.20	854.37	760.05	662.55	546.54		
135.0	1029.55	1009.18	988.26	971.19	950.82	912.84	845.67	758.68	631.50		
180.0	1020.14	999.05	981.88	961.50	942.13	890.65	802.06	705.05	585.36		
225.0	1040.29	1018.27	998.83	981.05	961.06	919.11	850.51	751.80	647.90		
270.0	1053.23	1032.31	1009.73	992.67	975.05	948.07	898.52	830.25	700.32		
315.0	1024.82	1006.98	989.97	968.88	952.75	905.90	812.58	726.41	606.83		
360.0	1034.51	1016.34	998.72	980.55	955.23	900.72	822.54	727.85	592.96		
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0		
0.0	485.60	374.38	278.03	144.03	76.97	46.74	36.12	30.89	27.53		
45.0	440.45	336.39	286.29	128.45	66.95	39.37	33.42	28.46	25.55		
90.0	428.94	324.78	226.34	122.39	63.15	39.31	33.97	27.31	24.72		
135.0	526.89	421.18	303.36	281.34	117.60	54.95	37.00	31.88	26.59		
180.0	468.97	365.90	264.33	153.66	85.17	47.35	36.39	30.28	26.21		
225.0	523.64	400.59	293.67	185.49	104.11	56.38	40.03	33.03	27.91		
270.0	591.31	480.64	355.11	286.84	146.84	73.94	42.45	36.56	30.17		
315.0	479.82	369.87	264.88	149.15	83.85	46.91	37.49	31.05	26.87		
360.0	485.60	374.38	278.03	144.03	76.97	46.74	36.12	30.89	27.53		

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	24.72	22.79	22.13	21.20	20.54	19.93	19.21	18.72	18.28
45.0	22.68	21.80	20.98	20.37	19.71	19.10	18.61	18.11	17.51
90.0	22.57	21.36	20.70	20.10	19.43	18.83	18.28	17.84	17.29
135.0	24.28	22.30	21.47	20.81	20.04	19.49	18.94	18.44	17.89
180.0	23.89	21.91	21.14	20.43	19.82	19.16	18.55	18.06	17.62
225.0	25.11	22.63	21.75	21.03	20.26	19.60	19.05	18.50	18.00
270.0	26.15	23.51	22.19	21.42	20.70	19.88	19.32	18.77	18.17
315.0	24.78	22.68	21.80	21.03	20.37	19.60	19.05	18.50	18.00
360.0	24.72	22.79	22.13	21.20	20.54	19.93	19.21	18.72	18.28
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	17.67	17.12	16.57	16.24	15.91	15.64	15.31	15.09	14.87
45.0	17.07	16.63	16.24	15.97	15.69	15.36	15.20	14.98	14.76
90.0	16.85	16.52	16.13	15.80	15.53	15.31	15.09	14.81	14.65
135.0	17.45	17.07	16.68	16.24	15.91	15.64	15.36	15.09	14.92
180.0	17.12	16.74	16.35	15.97	15.69	15.47	15.20	14.98	14.76
225.0	17.51	17.01	16.57	16.24	15.91	15.64	15.42	15.09	14.87
270.0	17.73	17.29	16.79	16.35	16.02	15.75	15.47	15.25	14.98
315.0	17.45	17.01	16.63	16.24	15.91	15.64	15.36	15.09	14.92
360.0	17.67	17.12	16.57	16.24	15.91	15.64	15.31	15.09	14.87
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	14.65	14.42	14.31	14.09	13.98	13.82	13.71	13.60	13.49
45.0	14.53	14.31	14.15	13.98	13.87	13.76	13.60	13.54	13.38
90.0	14.48	14.26	14.09	13.98	13.82	13.71	13.60	13.49	13.43
135.0	14.65	14.48	14.26	14.09	13.98	13.82	13.71	13.60	13.49
180.0	14.59	14.37	14.15	13.98	13.87	13.71	13.60	13.49	13.43
225.0	14.70	14.48	14.26	14.09	13.93	13.82	13.65	13.54	13.43
270.0	14.76	14.53	14.31	14.15	14.04	13.87	13.76	13.65	13.49
315.0	14.65	14.48	14.26	14.15	13.93	13.82	13.65	13.60	13.49
360.0	14.65	14.42	14.31	14.09	13.98	13.82	13.71	13.60	13.49
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	13.38	13.27	13.21	13.16	13.10	13.05	12.94	12.94	12.88
45.0	13.38	13.27	13.16	13.10	13.10	12.99	12.94	12.88	12.83
90.0	13.32	13.21	13.16	13.10	13.05	12.99	12.94	12.88	12.83
135.0	13.38	13.32	13.27	13.16	13.10	13.05	12.99	12.94	12.88
180.0	13.32	13.21	13.16	13.10	13.05	12.99	12.94	12.88	12.83
225.0	13.38	13.27	13.21	13.16	13.05	13.05	12.99	12.94	12.88
270.0	13.43	13.32	13.27	13.16	13.10	13.05	12.99	12.94	12.88
315.0	13.38	13.32	13.21	13.16	13.10	13.05	12.94	12.88	12.88
360.0	13.38	13.27	13.21	13.16	13.10	13.05	12.94	12.94	12.88
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	12.83	12.77	12.77	12.72	12.66	12.61	12.55	12.50	12.44
45.0	12.83	12.77	12.77	12.66	12.66	12.66	12.55	12.50	12.50
90.0	12.77	12.77	12.72	12.66	12.66	12.61	12.55	12.44	12.50
135.0	12.83	12.83	12.77	12.72	12.66	12.61	12.55	12.50	12.50
180.0	12.77	12.77	12.66	12.66	12.61	12.61	12.55	12.44	12.44
225.0	12.83	12.83	12.77	12.77	12.72	12.61	12.55	12.55	12.50
270.0	12.83	12.83	12.77	12.72	12.66	12.61	12.61	12.55	12.50
315.0	12.83	12.77	12.72	12.72	12.66	12.66	12.55	12.50	12.50
360.0	12.83	12.77	12.77	12.72	12.66	12.61	12.55	12.50	12.44

Intensity data(cd)

Appendix Page: 18 Total:18

C/γ(°)	90.0
0.0	12.50
45.0	12.50
90.0	12.50
135.0	12.50
180.0	12.44
225.0	12.50
270.0	12.50
315.0	12.50
360.0	12.50