
Nata

LumCAT: 3-2042-M
Luminaire: 92.70.135.00
Report No: GC2017103106
Test No: NT-0010
LampCAT: NICHIA NFCWD084B-V2
Lamp flux(lm): 2537.0
Number of Lamps: 1
Length(mm): 84
Phm Type: C

Voltage(V): 34.3000
Current(A): 0.5000
Power (W): 17.1500
PF: 0.0000
Ballast type: DC
Width(mm): 84
Height(mm): 0

Photometric Results

Lumens(lm): 2246.47
Efficiency(%): 88.55%
Lumens(lm)/Power(W): 130.99
Central intensity(cd): 22697.000
Maximum intensity(cd): 22697.000
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=12.6
 [C90/270]Total=12.6
Field angle(10%Imax): [C0/180]Total=24.9
 [C90/270]Total=24.9
Maximum s/h(1/2): C0_180=0.22 C90_270=0.22
Maximum s/h(1/4): C0_180=0.22 C90_270=0.22
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.55%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.566%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	22697.002	0.000	0	.000%	.000%
1.0	22457.506	21.606	21.606	.852%	.962%
2.0	21555.270	63.171	84.777	2.490%	3.774%
3.0	20045.348	99.495	184.272	3.922%	8.203%
4.0	17988.990	127.313	311.585	5.018%	13.870%
5.0	15016.564	141.988	453.573	5.597%	20.191%
6.0	12134.362	142.685	596.259	5.624%	26.542%
7.0	9594.610	134.871	731.13	5.316%	32.546%
8.0	7135.722	119.736	850.866	4.720%	37.876%
9.0	5216.181	100.105	950.971	3.946%	42.332%
10.0	3919.052	82.671	1033.642	3.259%	46.012%
11.0	3053.910	69.674	1103.316	2.746%	49.113%
12.0	2444.848	60.109	1163.425	2.369%	51.789%
13.0	2050.369	53.347	1216.772	2.103%	54.164%
14.0	1703.307	48.047	1264.819	1.894%	56.303%
15.0	1506.343	44.064	1308.882	1.737%	58.264%
16.0	1362.233	42.033	1350.915	1.657%	60.135%
17.0	1217.565	40.174	1391.089	1.584%	61.923%
18.0	1124.548	38.616	1429.706	1.522%	63.642%
19.0	1061.859	38.039	1467.745	1.499%	65.336%
20.0	1003.162	37.796	1505.54	1.490%	67.018%
21.0	957.493	37.649	1543.189	1.484%	68.694%
22.0	926.269	37.855	1581.044	1.492%	70.379%
23.0	900.069	38.321	1619.365	1.511%	72.085%
24.0	877.303	38.860	1658.225	1.532%	73.815%
25.0	860.483	39.513	1697.739	1.557%	75.574%
26.0	844.235	40.240	1737.979	1.586%	77.365%
27.0	828.220	40.917	1778.896	1.613%	79.186%
28.0	813.252	41.559	1820.454	1.638%	81.036%
29.0	799.997	42.207	1862.661	1.664%	82.915%
30.0	787.066	42.850	1905.512	1.689%	84.823%
31.0	771.024	43.359	1948.871	1.709%	86.753%
32.0	738.272	43.240	1992.111	1.704%	88.678%
33.0	680.463	41.796	2033.907	1.647%	90.538%
34.0	598.243	38.697	2072.605	1.525%	92.261%
35.0	488.509	33.750	2106.355	1.330%	93.763%
36.0	379.249	27.630	2133.985	1.089%	94.993%
37.0	289.762	21.819	2155.804	.860%	95.964%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	185.671	15.869	2171.673	.626%	96.671%
39.0	93.871	9.542	2181.215	.376%	97.095%
40.0	49.324	4.994	2186.209	.197%	97.318%
41.0	31.816	2.889	2189.098	.114%	97.446%
42.0	26.131	2.105	2191.204	.083%	97.540%
43.0	22.353	1.796	2193	.071%	97.620%
44.0	19.621	1.584	2194.584	.062%	97.691%
45.0	17.955	1.444	2196.028	.057%	97.755%
46.0	17.102	1.371	2197.399	.054%	97.816%
47.0	16.427	1.334	2198.732	.053%	97.875%
48.0	15.870	1.306	2200.038	.051%	97.933%
49.0	15.361	1.283	2201.321	.051%	97.990%
50.0	14.900	1.262	2202.582	.050%	98.047%
51.0	14.452	1.242	2203.824	.049%	98.102%
52.0	14.060	1.223	2205.048	.048%	98.156%
53.0	13.620	1.204	2206.252	.047%	98.210%
54.0	13.214	1.183	2207.434	.047%	98.263%
55.0	12.876	1.165	2208.599	.046%	98.314%
56.0	12.601	1.151	2209.75	.045%	98.366%
57.0	12.326	1.140	2210.89	.045%	98.416%
58.0	12.092	1.129	2212.019	.045%	98.467%
59.0	11.913	1.122	2213.141	.044%	98.517%
60.0	11.706	1.116	2214.257	.044%	98.566%
61.0	11.521	1.108	2215.366	.044%	98.616%
62.0	11.362	1.103	2216.468	.043%	98.665%
63.0	11.197	1.097	2217.565	.043%	98.714%
64.0	11.059	1.092	2218.657	.043%	98.762%
65.0	10.922	1.088	2219.745	.043%	98.811%
66.0	10.812	1.084	2220.83	.043%	98.859%
67.0	10.688	1.081	2221.911	.043%	98.907%
68.0	10.585	1.078	2222.988	.042%	98.955%
69.0	10.488	1.075	2224.063	.042%	99.003%
70.0	10.406	1.073	2225.136	.042%	99.051%
71.0	10.323	1.071	2226.208	.042%	99.098%
72.0	10.247	1.070	2227.277	.042%	99.146%
73.0	10.199	1.069	2228.347	.042%	99.193%
74.0	10.137	1.069	2229.416	.042%	99.241%
75.0	10.082	1.068	2230.484	.042%	99.289%

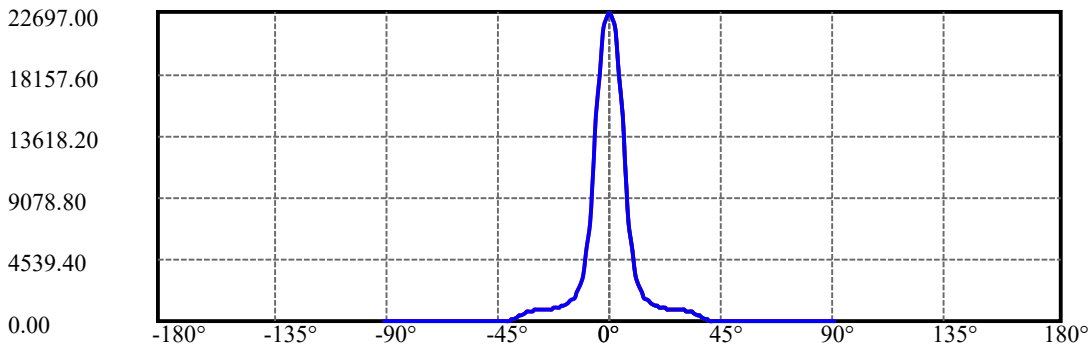
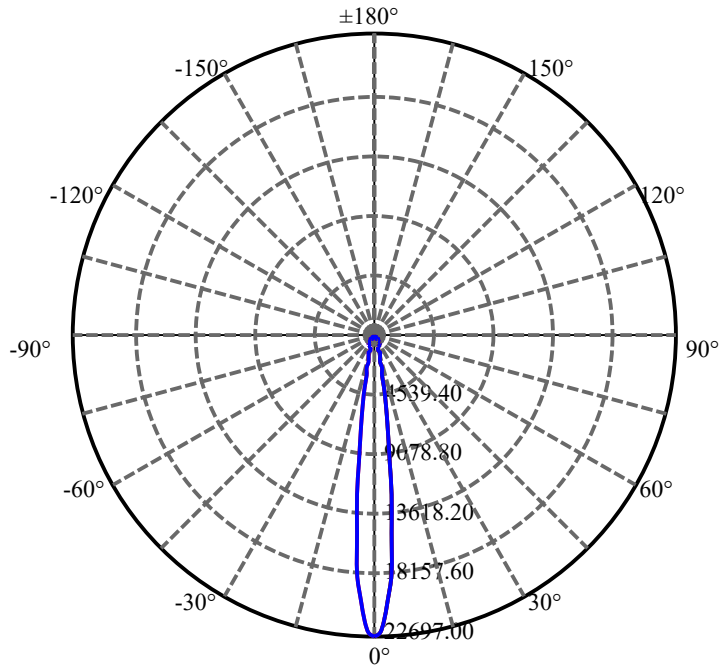
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.013	1.067	2231.551	.042%	99.336%
77.0	10.000	1.067	2232.618	.042%	99.384%
78.0	9.951	1.068	2233.686	.042%	99.431%
79.0	9.910	1.067	2234.753	.042%	99.479%
80.0	9.896	1.068	2235.821	.042%	99.526%
81.0	9.848	1.068	2236.889	.042%	99.574%
82.0	9.841	1.068	2237.956	.042%	99.621%
83.0	9.807	1.068	2239.024	.042%	99.669%
84.0	9.786	1.067	2240.092	.042%	99.716%
85.0	9.752	1.066	2241.158	.042%	99.764%
86.0	9.745	1.066	2242.224	.042%	99.811%
87.0	9.704	1.064	2243.288	.042%	99.859%
88.0	9.669	1.061	2244.349	.042%	99.906%
89.0	9.649	1.059	2245.408	.042%	99.953%
90.0	9.635	1.057	2246.466	.042%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1905.51	75.11%	84.82%
0-40	2186.21	86.17%	97.32%
0-60	2214.26	87.28%	98.57%
0-90	2245.41	88.51%	99.95%
0-120	2245.41	88.51%	99.95%
0-180	2246.47	88.55%	100.00%
60-90	32.27	1.27%	1.44%
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%
0-27.44	1797.17	70.84%	80.00%

ZONAL LUMEN SUMMARY

0-10	1033.64
10-20	471.90
20-30	399.97
30-40	280.70
40-50	16.37
50-60	11.67
60-70	10.88
70-80	10.68
80-90	9.59
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: —————

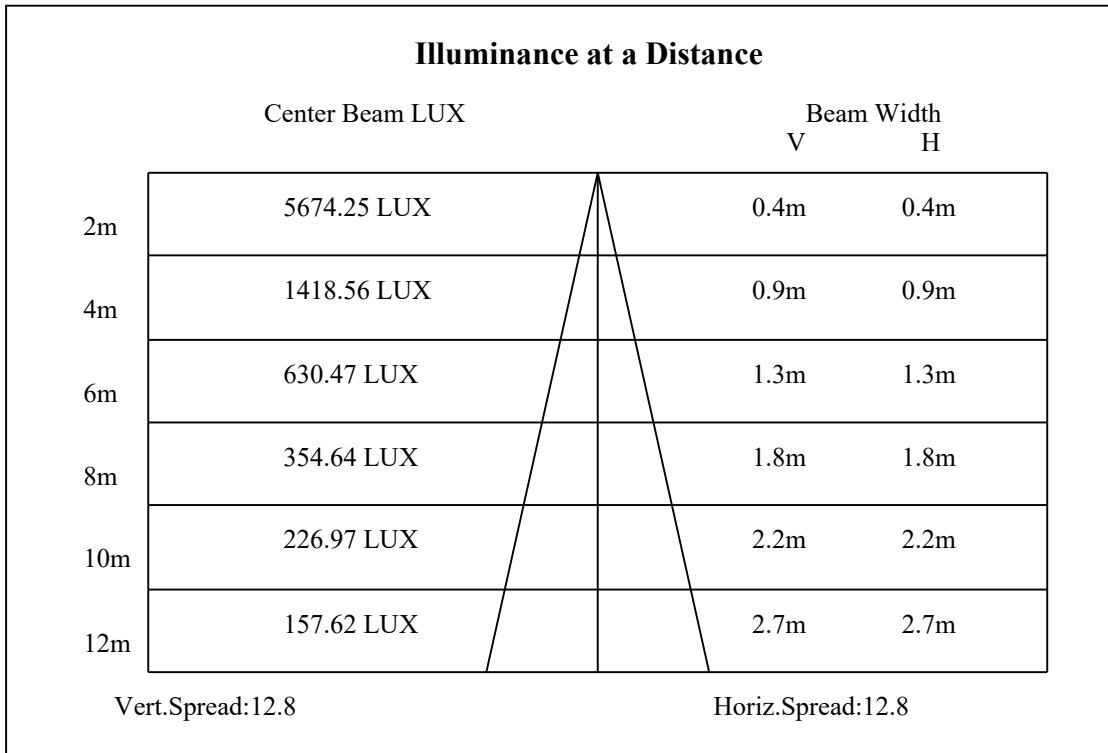
C90/C270: —————

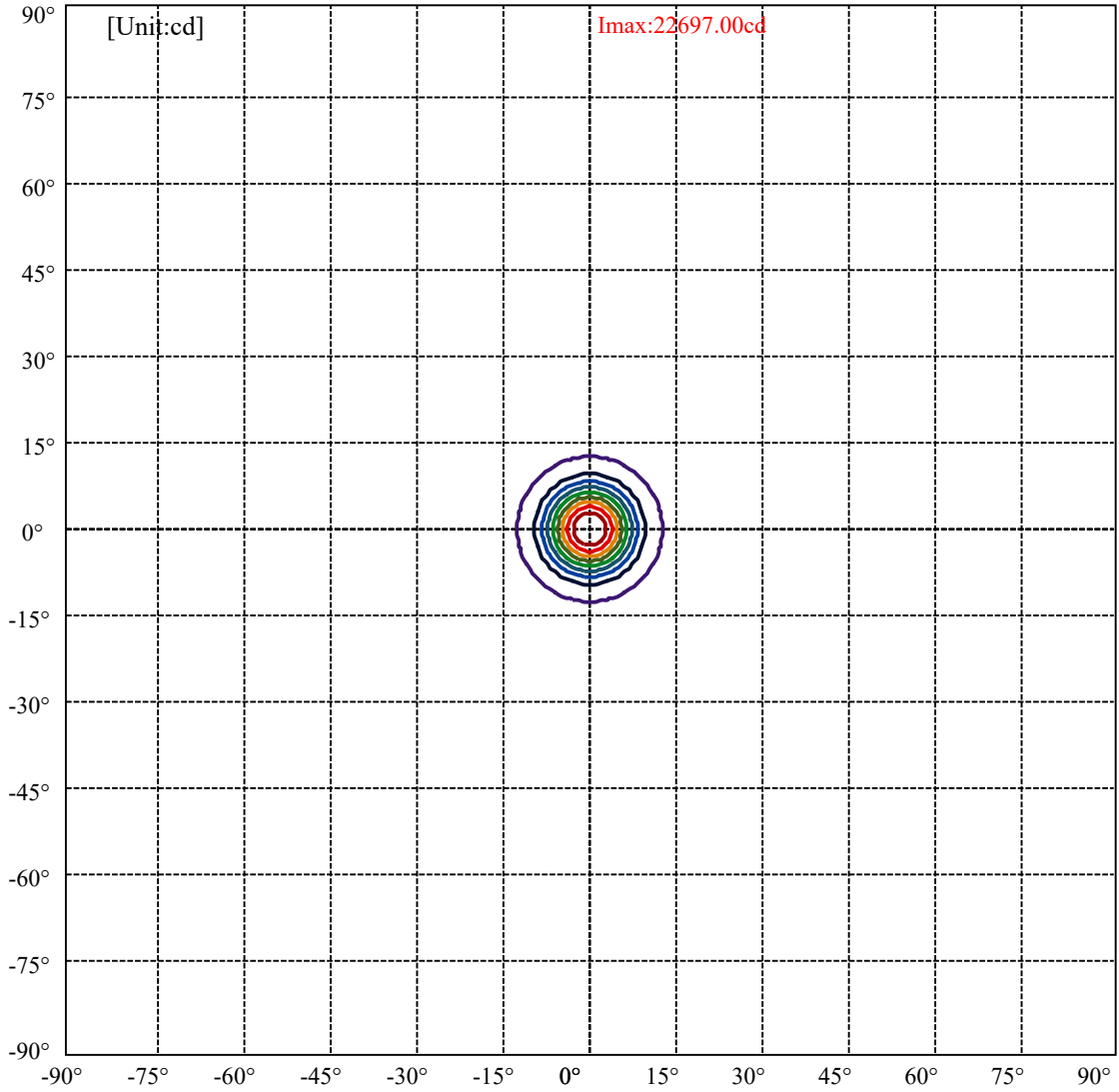
Field angle(10%Imax):C0/180Left:12.4 Right:12.4

:C90/270Left:12.4 Right:12.4

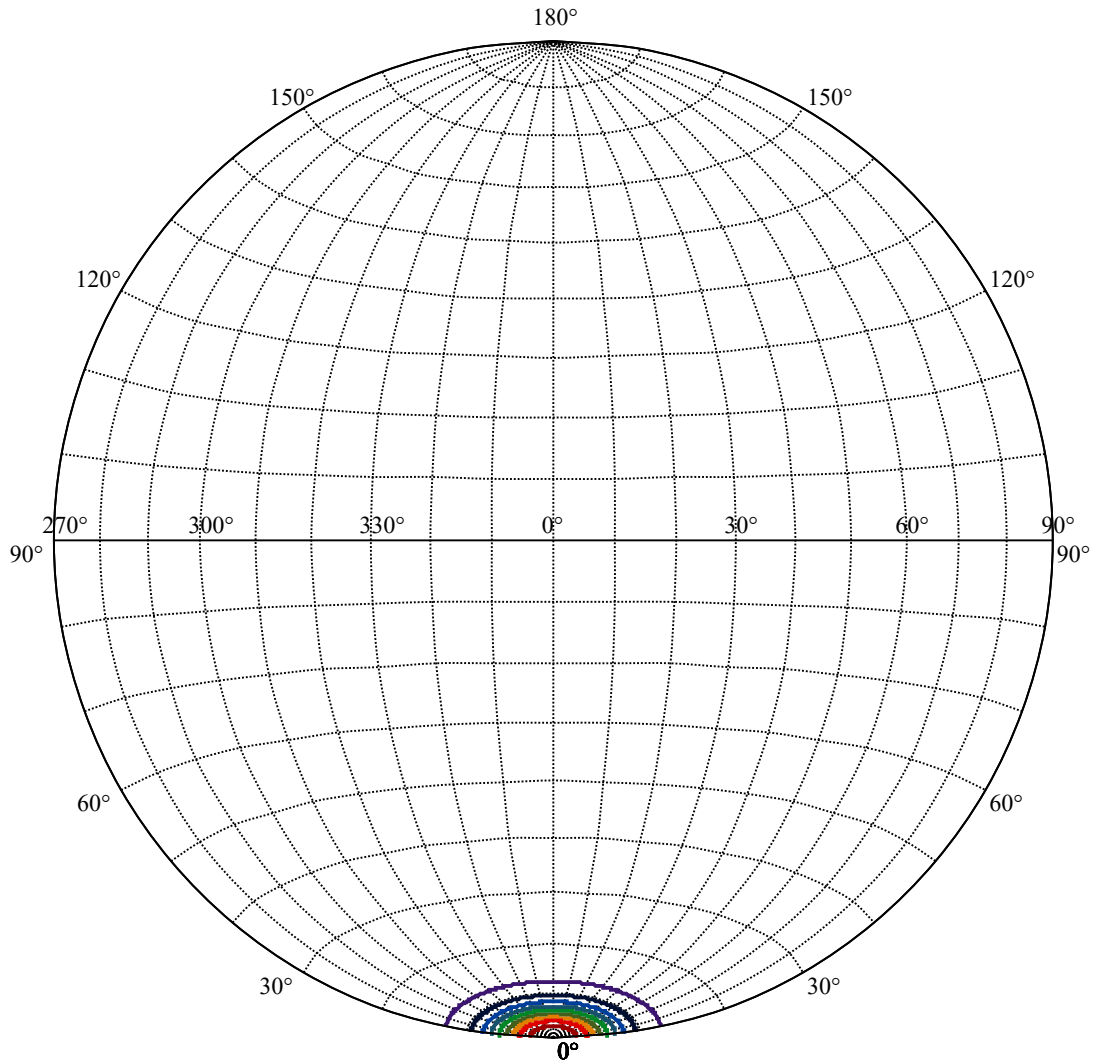
Beam Angle(50%Imax):C0/180Left:6.3 Right:6.3

:C90/270Left:6.3 Right:6.3





(10%Imax) 2269.7	—
(20%Imax) 4539.4	—
(30%Imax) 6809.1	—
(40%Imax) 9078.8	—
(50%Imax) 11348.5	—
(60%Imax) 13618.2	—
(70%Imax) 15887.9	—
(80%Imax) 18157.6	—
(90%Imax) 20427.3	—



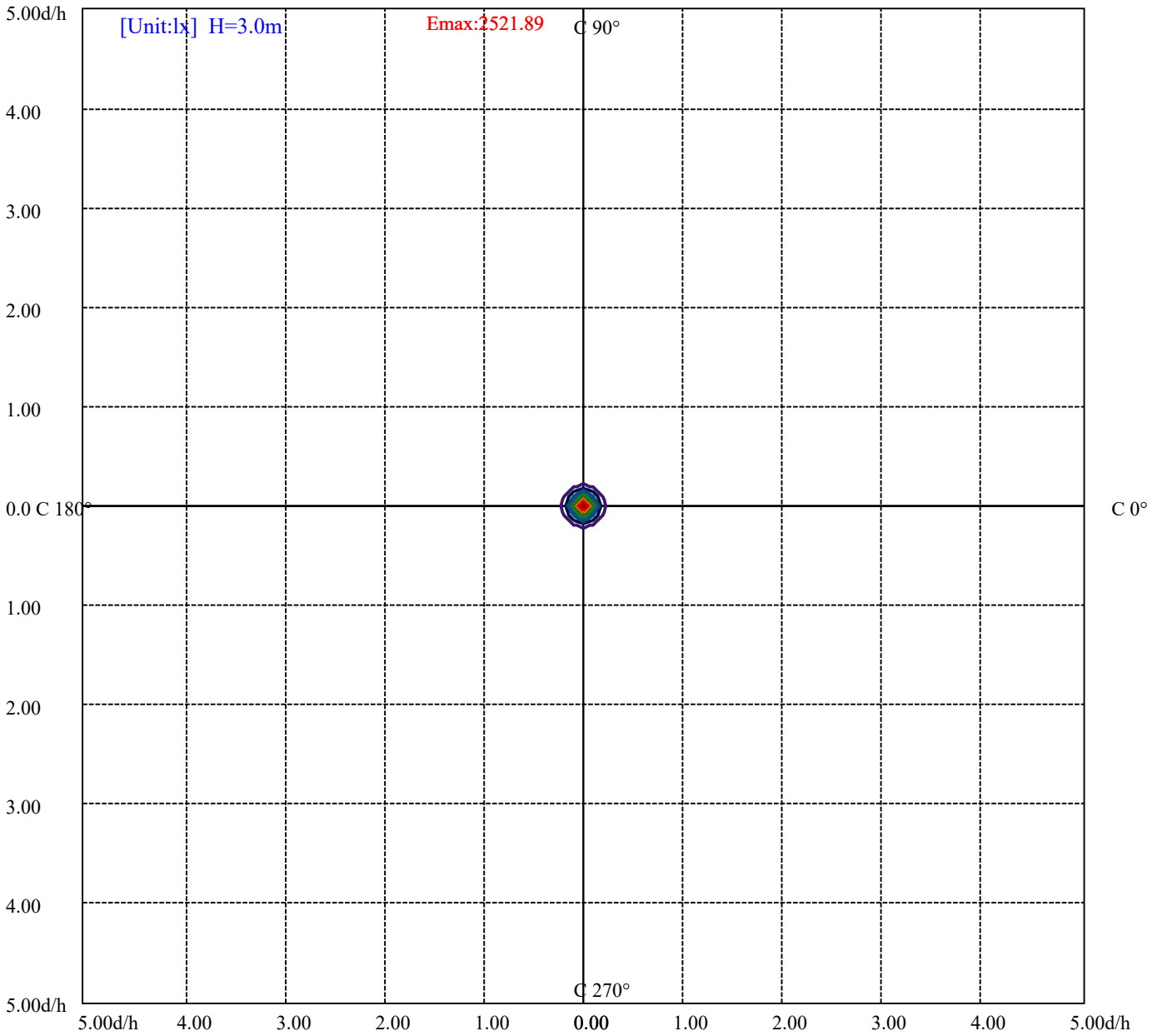
House

[Unit:cd]

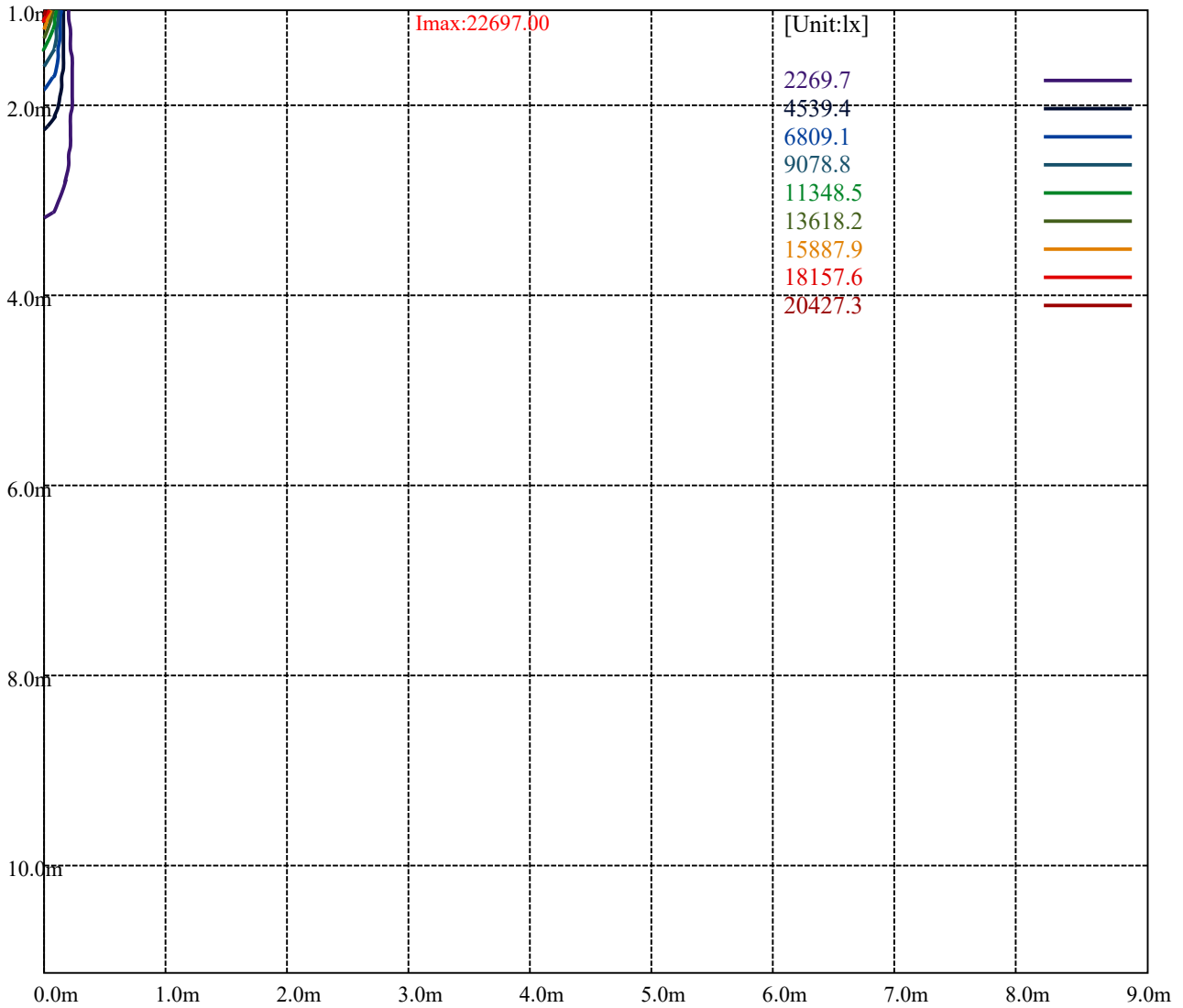
Road

Imax:22697.00

(10%Imax)	2269.7	—
(20%Imax)	4539.4	—
(30%Imax)	6809.1	—
(40%Imax)	9078.8	—
(50%Imax)	11348.5	—
(60%Imax)	13618.2	—
(70%Imax)	15887.9	—
(80%Imax)	18157.6	—
(90%Imax)	20427.3	—



(10%Emax) 252.1889	—
(20%Emax) 504.3767	—
(30%Emax) 756.5656	—
(40%Emax) 1008.754	—
(50%Emax) 1260.944	—
(60%Emax) 1513.133	—
(70%Emax) 1765.322	—
(80%Emax) 2017.511	—
(90%Emax) 2269.7	—



Luminance Table

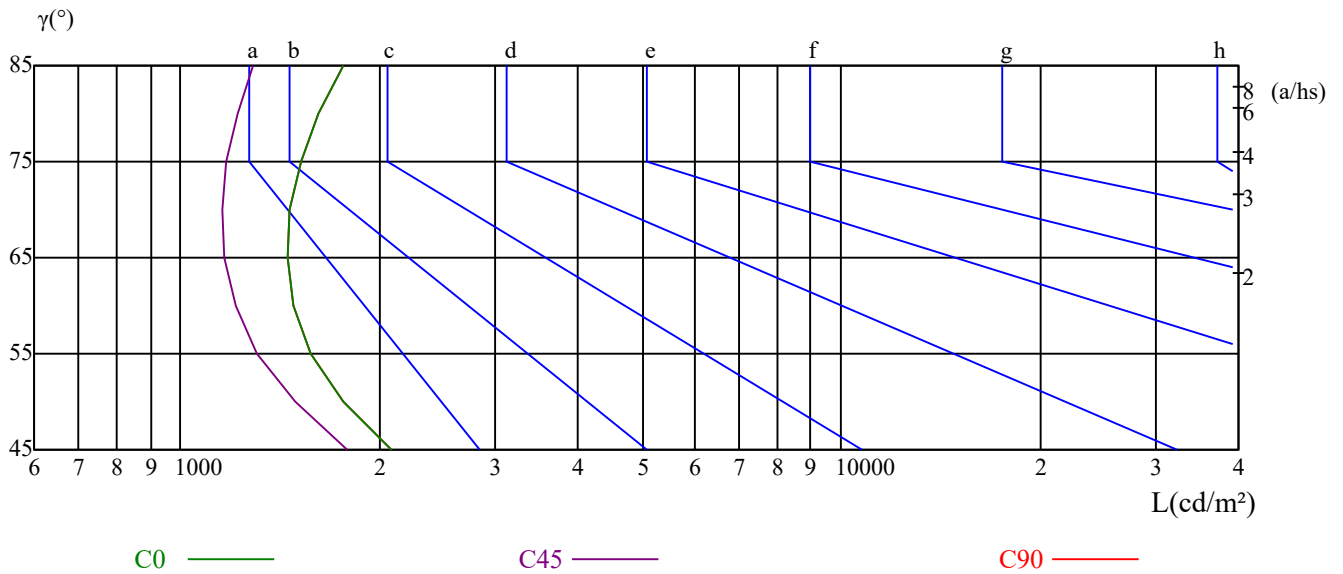
γ	45	50	55	60	65	70	75	80	85
C0	2089	1769	1574	1485	1452	1465	1520	1620	1760
C45	1789	1492	1307	1213	1165	1153	1172	1219	1287
C90	2089	1769	1574	1485	1452	1465	1520	1620	1760

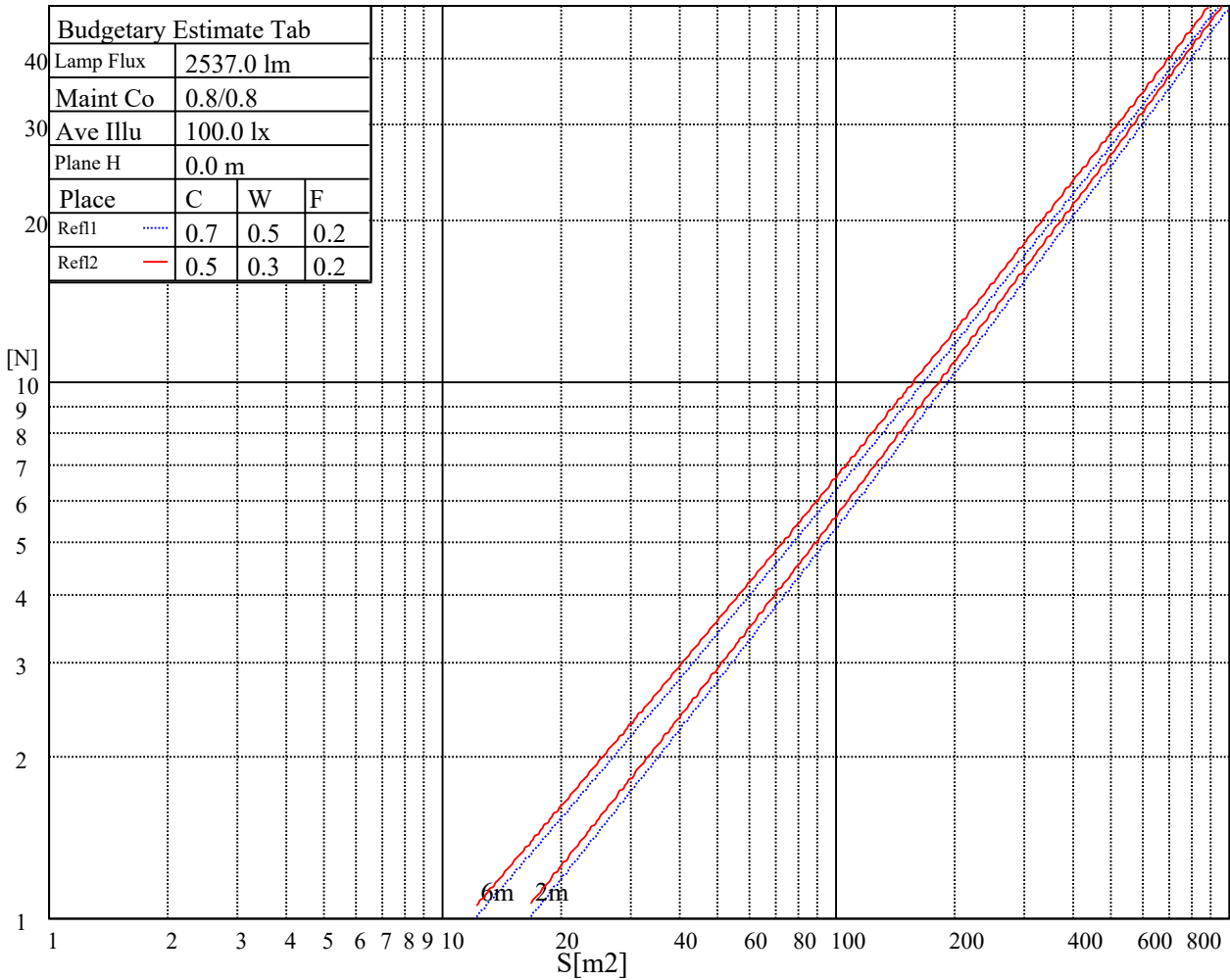
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3577	3577	3577	5392	5392	5392	15487	15487	15487

Glare Table

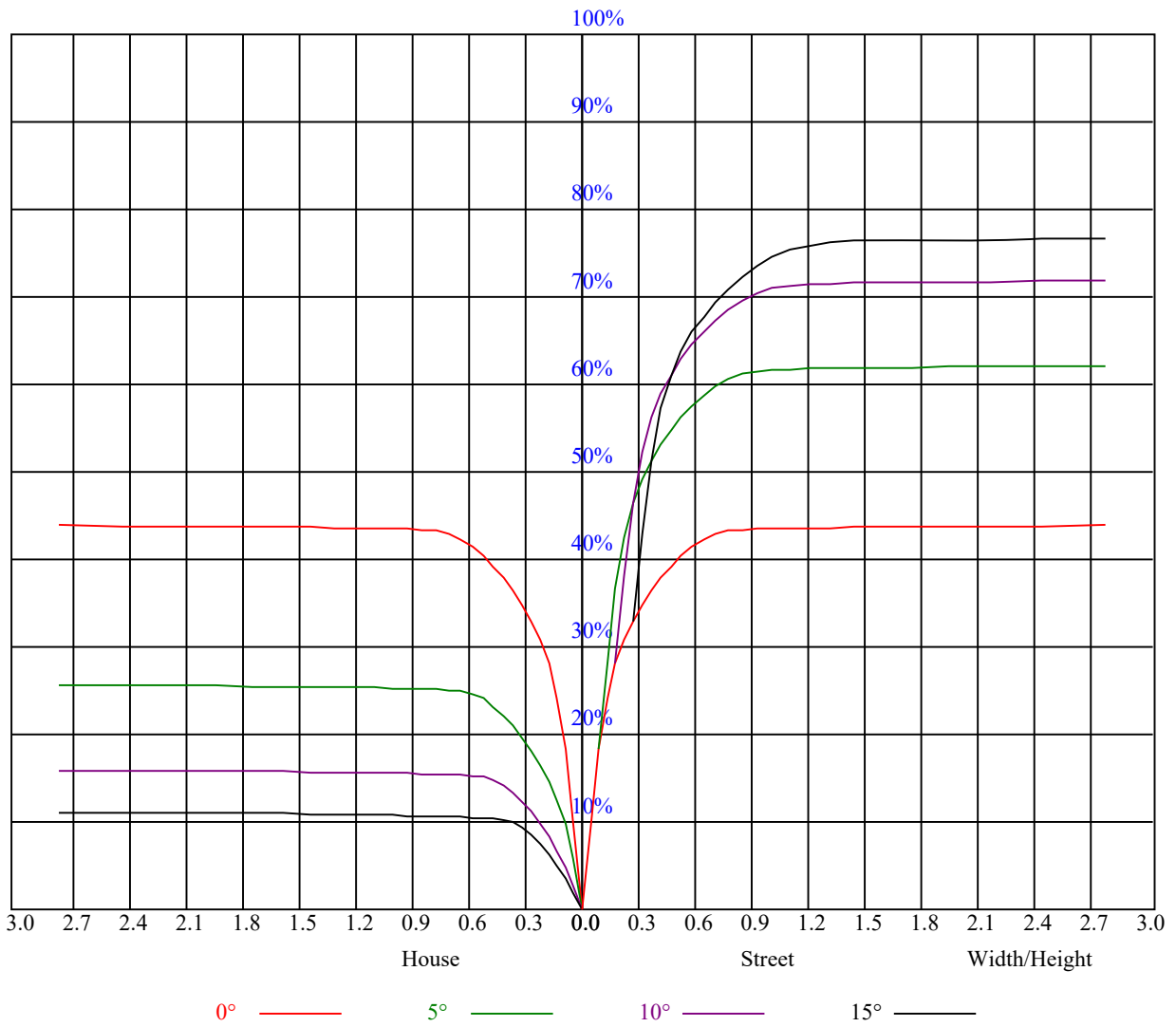
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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 RHOF=20 CU															
0	1.05	1.05	1.05	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.89
1	0.99	0.98	0.96	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85
2	0.94	0.92	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.85	0.85	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	0.86	0.82	0.79	0.84	0.81	0.79	0.82	0.80	0.78	0.81	0.79	0.77	0.76
5	0.83	0.79	0.76	0.82	0.79	0.76	0.81	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.73
6	0.80	0.76	0.74	0.80	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.76	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.72	0.70	0.69
8	0.75	0.71	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.70	0.68	0.67
9	0.73	0.69	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.65	0.69	0.66	0.64	0.64



Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	22738.29	22743.80	22105.14	20965.48	19170.64	16461.86	13455.78	10807.57	8071.27
45.0	22749.30	22209.75	20987.50	19236.71	16621.53	13973.31	10956.22	8148.35	6111.26
90.0	22523.57	21730.76	20134.13	17750.18	15179.05	10718.93	9116.24	6843.51	5089.96
135.0	22776.83	22380.43	21147.16	19456.93	17172.09	13857.70	11110.38	8533.74	6155.31
180.0	22738.29	22297.84	21180.20	19275.25	16940.85	13918.26	10764.08	8207.26	5658.15
225.0	22749.30	22743.80	22281.33	20970.98	19231.20	16885.80	12547.35	10793.81	8290.94
270.0	22523.57	22831.89	22595.15	21873.91	20558.06	18289.74	15448.83	12745.56	9778.02
315.0	22776.83	22721.78	22011.55	20833.34	19038.50	16026.92	13676.01	10677.09	7930.87
360.0	22738.29	22743.80	22105.14	20965.48	19170.64	16461.86	13455.78	10807.57	8071.27

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5852.50	4443.05	3352.93	2840.91	2190.14	1837.23	1612.60	1441.38	1276.76
45.0	4443.05	3325.41	2802.37	2186.84	1788.78	1572.41	1408.89	1278.41	1149.03
90.0	3732.82	2866.79	2347.60	1940.74	1659.40	1483.77	1332.36	1220.60	1094.63
135.0	4454.06	3419.00	2785.85	2181.33	1808.05	1551.49	1393.48	1262.44	1157.84
180.0	4384.69	3270.35	2493.50	2129.03	1783.83	1523.41	1391.28	1275.11	1089.95
225.0	5764.96	4341.20	3354.59	2559.02	2141.14	1837.78	1572.41	1434.22	1297.13
270.0	7162.84	5368.00	3942.04	3094.17	2846.42	2012.31	1741.98	1547.64	1365.95
315.0	5934.53	4318.62	3352.38	2626.74	2185.19	1808.05	1597.74	1438.07	1309.24
360.0	5852.50	4443.05	3352.93	2840.91	2190.14	1837.23	1612.60	1441.38	1276.76

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1174.35	1096.72	1024.05	979.45	944.22	915.59	888.61	870.99	856.68
45.0	1075.80	1027.35	974.50	943.12	919.44	897.97	878.15	863.83	846.22
90.0	1037.87	989.14	952.31	918.40	897.97	882.06	866.37	853.87	837.63
135.0	1079.66	1027.90	973.40	939.26	913.39	888.06	870.99	857.78	840.71
180.0	1073.16	1016.67	970.70	925.99	899.18	877.76	856.79	842.80	827.22
225.0	1150.68	1090.78	1034.62	972.13	933.81	903.81	877.82	856.90	842.31
270.0	1250.33	1152.88	1068.09	1015.79	972.30	933.21	901.82	878.70	857.78
315.0	1154.53	1093.42	1027.63	965.80	929.85	902.10	877.87	858.99	845.34
360.0	1174.35	1096.72	1024.05	979.45	944.22	915.59	888.61	870.99	856.68

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	839.06	822.54	810.43	797.22	782.90	770.79	730.60	659.03	558.82
45.0	832.45	818.69	806.03	794.46	777.40	730.05	657.92	572.04	432.19
90.0	820.23	807.02	794.19	780.48	752.51	680.44	580.02	481.19	366.62
135.0	825.30	813.18	799.42	787.31	769.69	722.89	655.72	542.31	430.54
180.0	812.25	798.92	786.81	772.55	760.11	718.27	634.91	545.66	432.69
225.0	826.78	808.94	796.56	783.84	769.91	755.98	719.15	640.97	537.41
270.0	841.81	822.54	806.58	794.46	781.80	768.04	750.97	703.62	601.77
315.0	827.88	814.17	799.97	786.21	773.87	759.72	714.41	641.13	548.03
360.0	839.06	822.54	810.43	797.22	782.90	770.79	730.60	659.03	558.82

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	445.41	339.15	287.94	125.53	59.96	32.65	27.25	23.40	20.04
45.0	331.99	278.03	127.07	58.19	31.71	27.53	23.23	20.26	18.55
90.0	253.53	160.93	85.34	36.50	29.90	26.10	21.75	19.38	17.95
135.0	329.24	285.74	124.48	56.98	32.81	29.62	24.00	21.09	19.49
180.0	317.57	221.00	135.99	54.56	32.70	29.01	24.11	20.81	18.39
225.0	434.51	317.40	221.27	124.70	57.97	33.58	29.57	23.67	20.26
270.0	504.32	401.36	286.29	173.04	94.31	43.94	31.44	27.31	22.46
315.0	417.44	314.48	216.98	121.45	55.22	32.10	27.69	22.90	19.82
360.0	445.41	339.15	287.94	125.53	59.96	32.65	27.25	23.40	20.04

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	18.00	17.01	16.41	15.80	15.25	14.81	14.37	14.04	13.60
45.0	17.23	16.57	16.02	15.58	15.03	14.59	14.26	13.87	13.32
90.0	17.23	16.57	16.08	15.53	15.09	14.65	14.20	13.82	13.38
135.0	17.51	16.90	16.46	15.86	15.42	15.03	14.53	14.09	13.71
180.0	17.34	16.74	16.13	15.64	15.25	14.76	14.26	13.87	13.49
225.0	18.33	17.23	16.63	16.08	15.47	14.98	14.53	14.09	13.71
270.0	20.26	18.72	17.29	16.68	16.08	15.58	15.14	14.76	14.20
315.0	17.73	17.07	16.41	15.80	15.31	14.81	14.31	13.93	13.54
360.0	18.00	17.01	16.41	15.80	15.25	14.81	14.37	14.04	13.60
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	13.16	12.83	12.55	12.22	12.00	11.84	11.62	11.45	11.29
45.0	12.99	12.66	12.39	12.11	11.95	11.73	11.56	11.40	11.23
90.0	13.05	12.77	12.50	12.28	12.06	11.89	11.67	11.51	11.34
135.0	13.21	12.94	12.72	12.44	12.22	12.06	11.84	11.67	11.51
180.0	13.10	12.83	12.61	12.33	12.11	11.95	11.73	11.51	11.40
225.0	13.32	12.88	12.61	12.39	12.11	11.95	11.78	11.56	11.40
270.0	13.76	13.38	12.94	12.61	12.33	12.11	11.89	11.67	11.51
315.0	13.10	12.72	12.50	12.22	11.95	11.78	11.56	11.40	11.23
360.0	13.16	12.83	12.55	12.22	12.00	11.84	11.62	11.45	11.29
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.12	10.96	10.85	10.74	10.63	10.52	10.41	10.35	10.24
45.0	11.07	10.96	10.79	10.74	10.57	10.52	10.41	10.35	10.24
90.0	11.18	11.07	10.90	10.79	10.68	10.57	10.52	10.35	10.35
135.0	11.34	11.18	11.07	10.96	10.79	10.68	10.57	10.52	10.41
180.0	11.23	11.12	10.96	10.85	10.74	10.63	10.52	10.46	10.35
225.0	11.23	11.12	10.96	10.85	10.74	10.63	10.57	10.41	10.35
270.0	11.34	11.18	11.07	10.90	10.79	10.68	10.57	10.52	10.41
315.0	11.07	10.90	10.79	10.68	10.57	10.46	10.35	10.30	10.24
360.0	11.12	10.96	10.85	10.74	10.63	10.52	10.41	10.35	10.24
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	10.19	10.13	10.08	10.02	9.97	9.97	9.91	9.91	9.86
45.0	10.19	10.13	10.08	10.02	9.97	9.91	9.91	9.86	9.86
90.0	10.24	10.19	10.13	10.08	10.02	10.02	9.97	9.91	9.91
135.0	10.35	10.30	10.24	10.19	10.08	10.08	10.02	9.97	9.91
180.0	10.30	10.24	10.19	10.13	10.02	10.02	9.97	9.91	9.91
225.0	10.30	10.19	10.13	10.08	10.02	10.02	9.97	9.91	9.91
270.0	10.30	10.30	10.19	10.13	10.08	10.02	9.97	9.97	9.91
315.0	10.13	10.13	10.08	10.02	9.97	9.97	9.91	9.86	9.91
360.0	10.19	10.13	10.08	10.02	9.97	9.97	9.91	9.91	9.86
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.86	9.86	9.86	9.80	9.80	9.80	9.74	9.69	9.63
45.0	9.80	9.80	9.74	9.74	9.69	9.69	9.69	9.63	9.63
90.0	9.86	9.86	9.80	9.80	9.74	9.74	9.63	9.63	9.63
135.0	9.86	9.86	9.80	9.80	9.74	9.74	9.69	9.69	9.63
180.0	9.86	9.80	9.80	9.80	9.74	9.69	9.69	9.63	9.63
225.0	9.86	9.86	9.80	9.74	9.74	9.74	9.69	9.69	9.63
270.0	9.86	9.86	9.80	9.80	9.74	9.74	9.74	9.69	9.69
315.0	9.86	9.86	9.86	9.80	9.80	9.80	9.74	9.69	9.69
360.0	9.86	9.86	9.86	9.80	9.80	9.80	9.74	9.69	9.63

Intensity data(cd)

<i>C/γ</i> (°)	90.0
0.0	9.63
45.0	9.63
90.0	9.63
135.0	9.63
180.0	9.63
225.0	9.58
270.0	9.69
315.0	9.63
360.0	9.63