
Nata

LumCAT: 3-2025-M	
Luminaire: 92.70.131.00	
Report No: GC2017071907	Voltage(V): 34.7600
Test No: NT-0010	Current(A): 0.6000
LampCAT: SEOUL SAWx15	Power (W): 20.8560
Lamp flux(lm): 2937.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 84	Width(mm): 84
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2609.87
Efficiency(%): 88.86%
Lumens(lm)/Power(W): 125.14
Central intensity(cd): 22309.340
Maximum intensity(cd): 22309.340
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=14.1
 [C90/270]Total=14.1
Field angle(10%Imax): [C0/180]Total=28.4
 [C90/270]Total=28.4
Maximum s/h(1/2): C0_180=0.24 C90_270=0.24
Maximum s/h(1/4): C0_180=0.24 C90_270=0.24
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.86%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.739%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	22309.336	0.000	0	.000%	.000%
1.0	22092.990	21.246	21.246	.723%	.814%
2.0	21357.693	62.365	83.61	2.123%	3.204%
3.0	19978.229	98.862	182.472	3.366%	6.992%
4.0	17955.920	126.978	309.45	4.323%	11.857%
5.0	15960.392	145.906	455.356	4.968%	17.447%
6.0	13574.817	155.215	610.571	5.285%	23.395%
7.0	11279.745	154.272	764.843	5.253%	29.306%
8.0	9211.940	146.655	911.498	4.993%	34.925%
9.0	7063.371	131.903	1043.401	4.491%	39.979%
10.0	5472.639	113.446	1156.847	3.863%	44.326%
11.0	4369.277	98.341	1255.188	3.348%	48.094%
12.0	3397.808	84.905	1340.094	2.891%	51.347%
13.0	2760.876	73.088	1413.182	2.489%	54.148%
14.0	2298.550	64.760	1477.942	2.205%	56.629%
15.0	1984.536	58.800	1536.742	2.002%	58.882%
16.0	1702.522	54.026	1590.768	1.839%	60.952%
17.0	1530.210	50.342	1641.11	1.714%	62.881%
18.0	1386.247	48.086	1689.196	1.637%	64.723%
19.0	1274.262	46.287	1735.483	1.576%	66.497%
20.0	1188.579	45.077	1780.56	1.535%	68.224%
21.0	1127.731	44.478	1825.038	1.514%	69.928%
22.0	1077.137	44.308	1869.346	1.509%	71.626%
23.0	1040.601	44.436	1913.782	1.513%	73.329%
24.0	1012.643	44.891	1958.673	1.528%	75.049%
25.0	986.188	45.449	2004.122	1.547%	76.790%
26.0	967.183	46.110	2050.232	1.570%	78.557%
27.0	949.006	46.880	2097.112	1.596%	80.353%
28.0	931.441	47.609	2144.721	1.621%	82.177%
29.0	911.142	48.207	2192.928	1.641%	84.024%
30.0	883.121	48.445	2241.372	1.649%	85.881%
31.0	835.331	47.822	2289.194	1.628%	87.713%
32.0	774.733	46.126	2335.321	1.571%	89.480%
33.0	706.490	43.637	2378.958	1.486%	91.152%
34.0	610.136	39.845	2418.803	1.357%	92.679%
35.0	522.221	35.167	2453.97	1.197%	94.026%
36.0	414.597	29.828	2483.799	1.016%	95.169%
37.0	312.317	23.708	2507.506	.807%	96.078%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	231.740	18.160	2525.666	.618%	96.774%
39.0	156.708	13.259	2538.925	.451%	97.282%
40.0	97.794	8.876	2547.801	.302%	97.622%
41.0	53.314	5.381	2553.182	.183%	97.828%
42.0	30.421	3.042	2556.224	.104%	97.944%
43.0	20.619	1.891	2558.115	.064%	98.017%
44.0	17.718	1.447	2559.562	.049%	98.072%
45.0	15.756	1.286	2560.848	.044%	98.122%
46.0	14.525	1.184	2562.033	.040%	98.167%
47.0	13.718	1.123	2563.156	.038%	98.210%
48.0	13.384	1.096	2564.252	.037%	98.252%
49.0	13.071	1.086	2565.338	.037%	98.294%
50.0	12.772	1.077	2566.415	.037%	98.335%
51.0	12.536	1.071	2567.486	.036%	98.376%
52.0	12.299	1.066	2568.552	.036%	98.417%
53.0	12.056	1.059	2569.611	.036%	98.457%
54.0	11.875	1.055	2570.666	.036%	98.498%
55.0	11.701	1.052	2571.718	.036%	98.538%
56.0	11.548	1.051	2572.769	.036%	98.578%
57.0	11.422	1.050	2573.819	.036%	98.619%
58.0	11.297	1.051	2574.87	.036%	98.659%
59.0	11.172	1.050	2575.92	.036%	98.699%
60.0	11.089	1.052	2576.972	.036%	98.739%
61.0	11.005	1.054	2578.026	.036%	98.780%
62.0	10.929	1.057	2579.083	.036%	98.820%
63.0	10.873	1.060	2580.144	.036%	98.861%
64.0	10.810	1.064	2581.208	.036%	98.902%
65.0	10.741	1.067	2582.274	.036%	98.943%
66.0	10.699	1.070	2583.344	.036%	98.984%
67.0	10.629	1.072	2584.416	.037%	99.025%
68.0	10.581	1.074	2585.491	.037%	99.066%
69.0	10.567	1.079	2586.57	.037%	99.107%
70.0	10.546	1.084	2587.654	.037%	99.149%
71.0	10.490	1.087	2588.741	.037%	99.190%
72.0	10.463	1.089	2589.831	.037%	99.232%
73.0	10.456	1.094	2590.924	.037%	99.274%
74.0	10.428	1.098	2592.022	.037%	99.316%
75.0	10.400	1.100	2593.123	.037%	99.358%

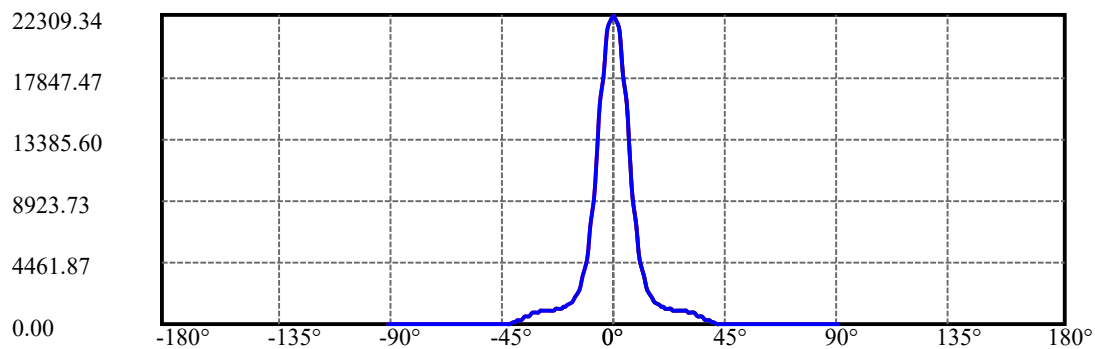
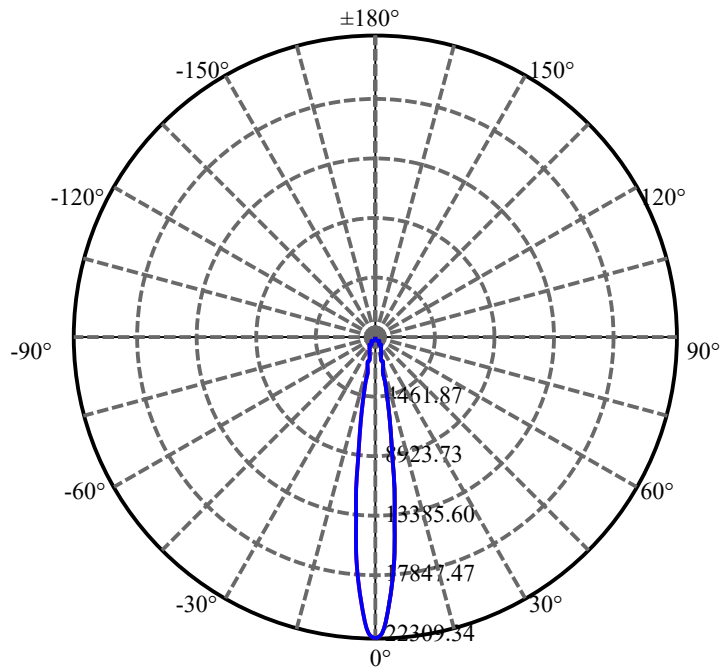
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.372	1.103	2594.225	.038%	99.400%
77.0	10.365	1.106	2595.331	.038%	99.443%
78.0	10.365	1.110	2596.441	.038%	99.485%
79.0	10.365	1.114	2597.555	.038%	99.528%
80.0	10.337	1.116	2598.671	.038%	99.571%
81.0	10.330	1.118	2599.788	.038%	99.614%
82.0	10.296	1.119	2600.907	.038%	99.656%
83.0	10.309	1.120	2602.027	.038%	99.699%
84.0	10.303	1.123	2603.15	.038%	99.742%
85.0	10.282	1.123	2604.273	.038%	99.785%
86.0	10.254	1.122	2605.396	.038%	99.828%
87.0	10.226	1.121	2606.517	.038%	99.871%
88.0	10.212	1.120	2607.636	.038%	99.914%
89.0	10.191	1.118	2608.755	.038%	99.957%
90.0	10.198	1.118	2609.872	.038%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2241.37	76.32%	85.88%
0-40	2547.80	86.75%	97.62%
0-60	2576.97	87.74%	98.74%
0-90	2608.75	88.82%	99.96%
0-120	2608.75	88.82%	99.96%
0-180	2609.87	88.86%	100.00%
60-90	32.83	1.12%	1.26%
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%
0-26.80	2087.90	71.09%	80.00%

ZONAL LUMEN SUMMARY

0-10	1156.85
10-20	623.71
20-30	460.81
30-40	306.43
40-50	18.61
50-60	10.56
60-70	10.68
70-80	11.02
80-90	10.08
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:

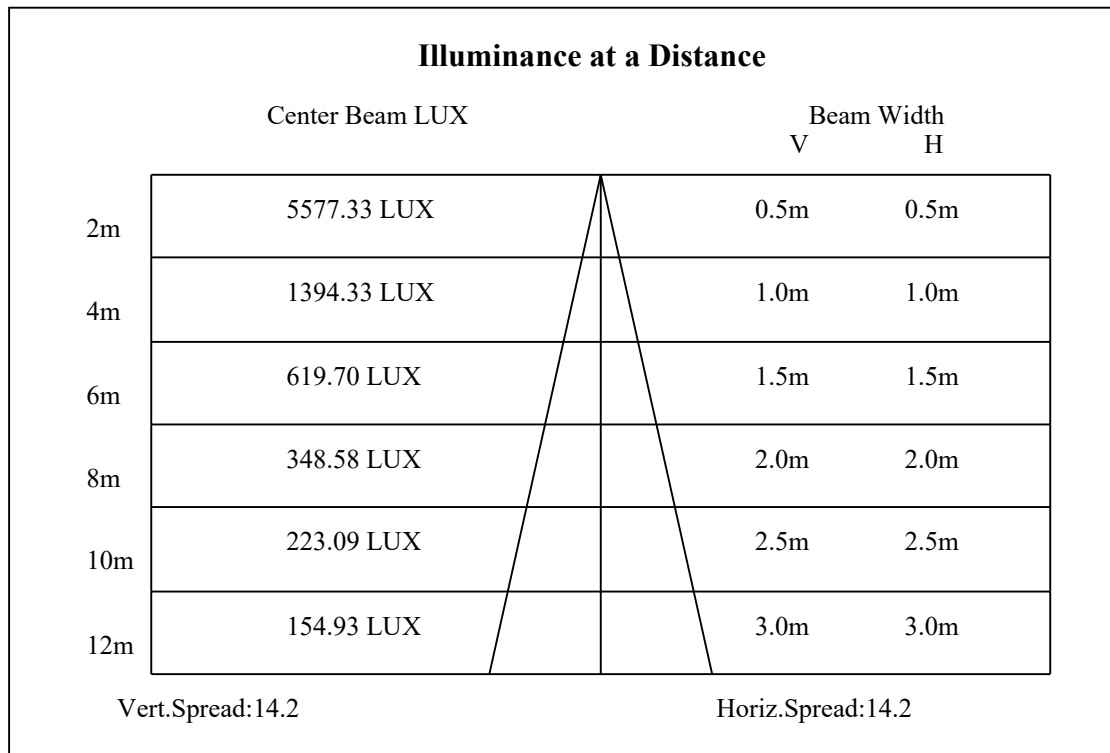
C90/C270:

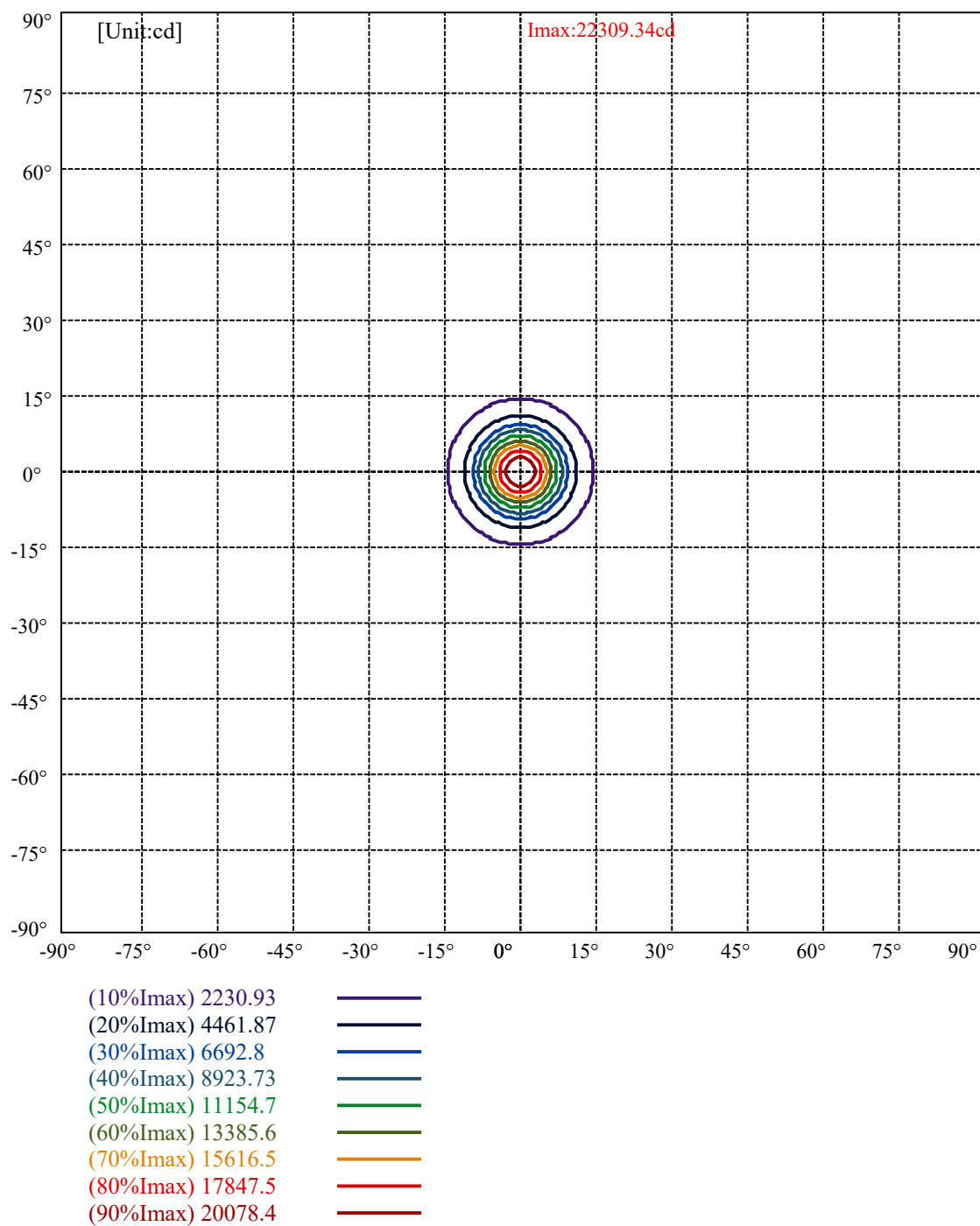
Field angle(10%Imax):C0/180Left:14.2 Right:14.2

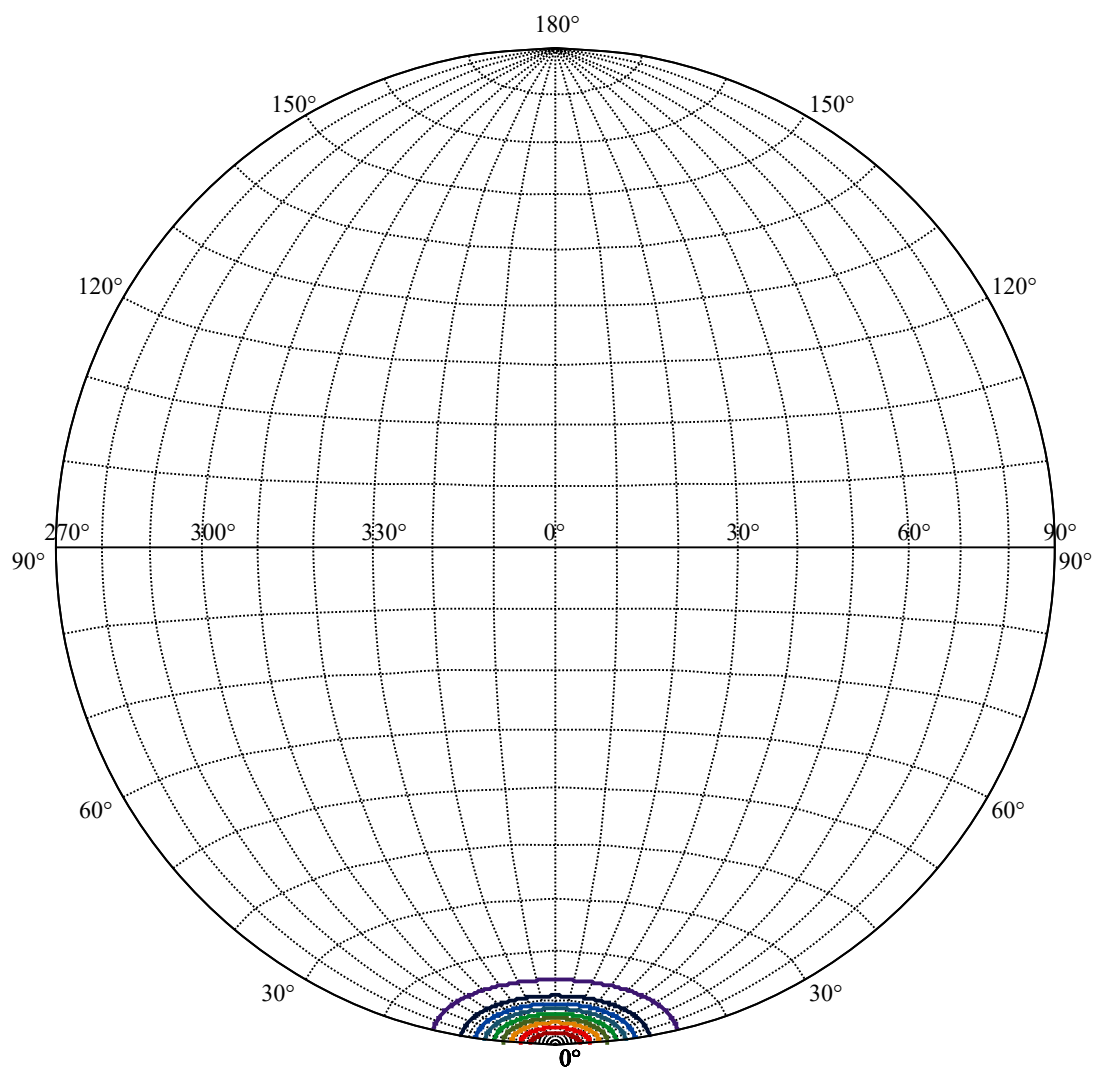
:C90/270Left:14.2 Right:14.2

Beam Angle(50%Imax):C0/180Left:7.1 Right:7.1

:C90/270Left:7.1 Right:7.1







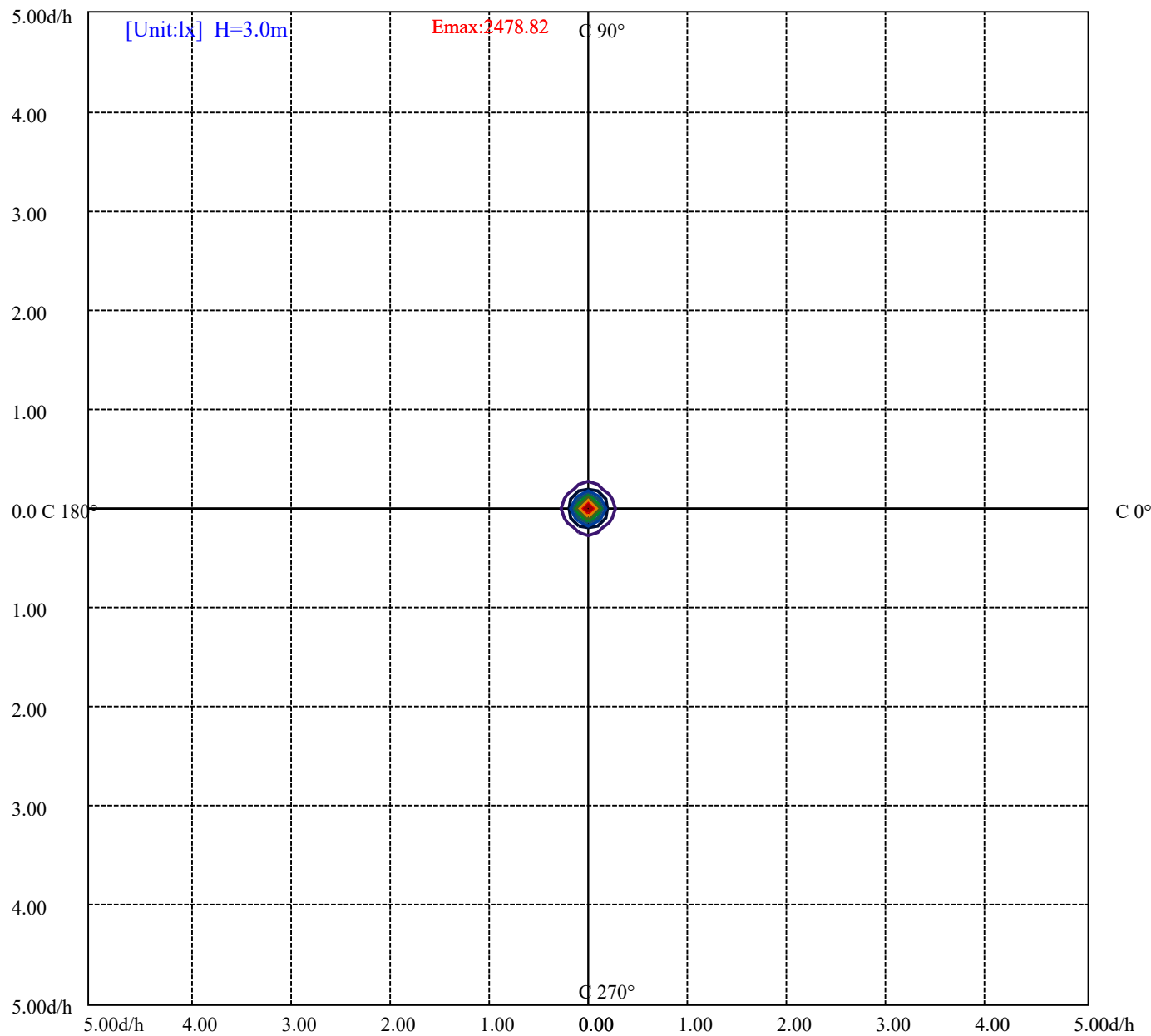
House

[Unit:cd]

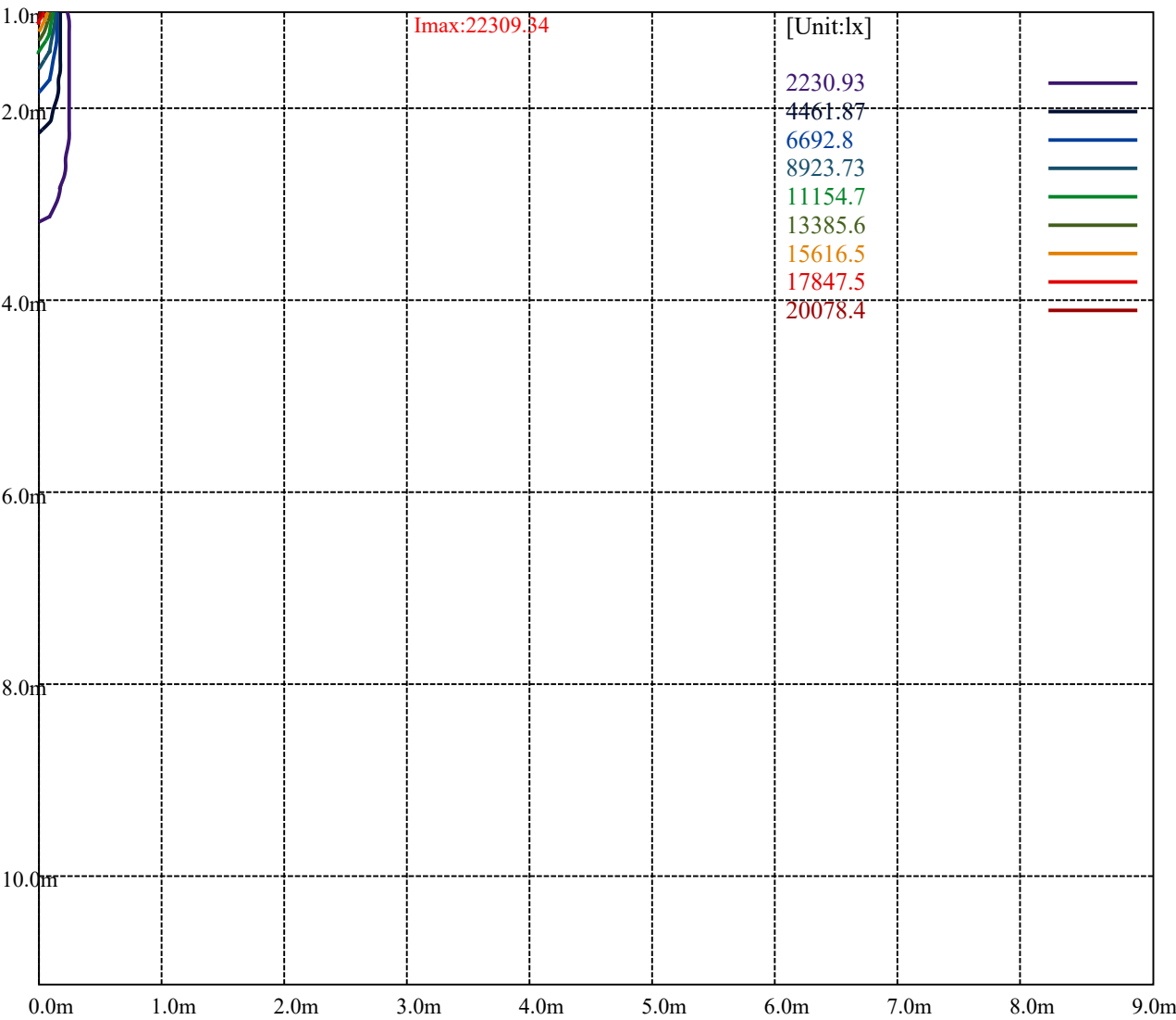
Road

Imax:22309.34

(10%Imax)	2230.93	—
(20%Imax)	4461.87	—
(30%Imax)	6692.8	—
(40%Imax)	8923.73	—
(50%Imax)	11154.7	—
(60%Imax)	13385.6	—
(70%Imax)	15616.5	—
(80%Imax)	17847.5	—
(90%Imax)	20078.4	—



(10%Emax)	247.8811	—
(20%Emax)	495.7622	—
(30%Emax)	743.6433	—
(40%Emax)	991.5244	—
(50%Emax)	1239.411	—
(60%Emax)	1487.289	—
(70%Emax)	1735.167	—
(80%Emax)	1983.044	—
(90%Emax)	2230.933	—



Luminance Table

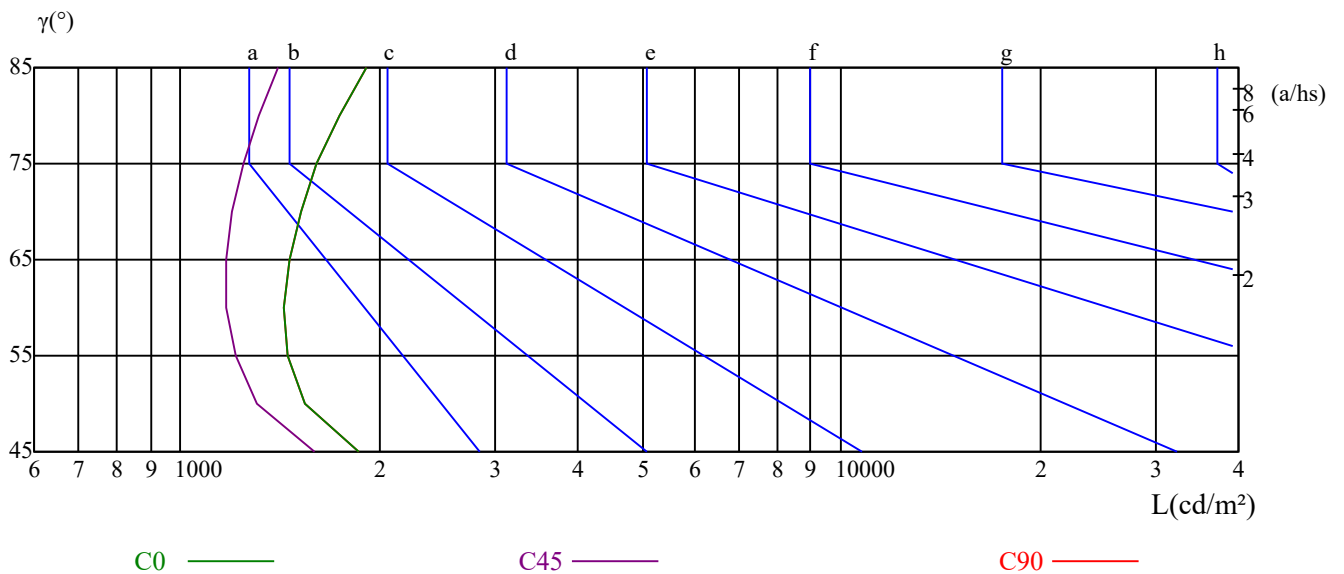
γ	45	50	55	60	65	70	75	80	85
C0	1859	1541	1455	1434	1458	1519	1608	1740	1914
C45	1597	1303	1211	1174	1173	1199	1242	1311	1402
C90	1859	1541	1455	1434	1458	1519	1608	1740	1914

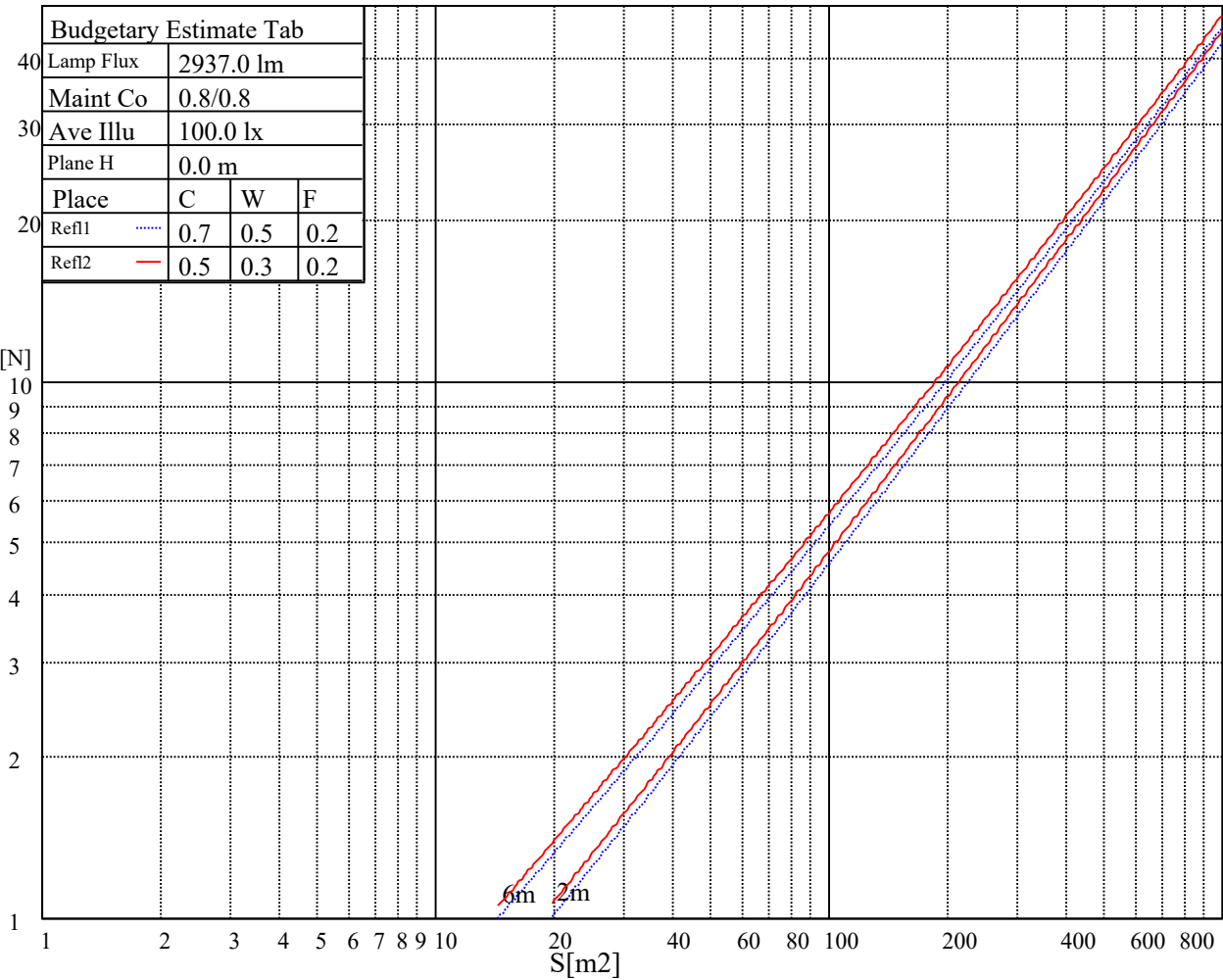
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3518	3518	3518	5562	5562	5562	16328	16328	16328

Glare Table

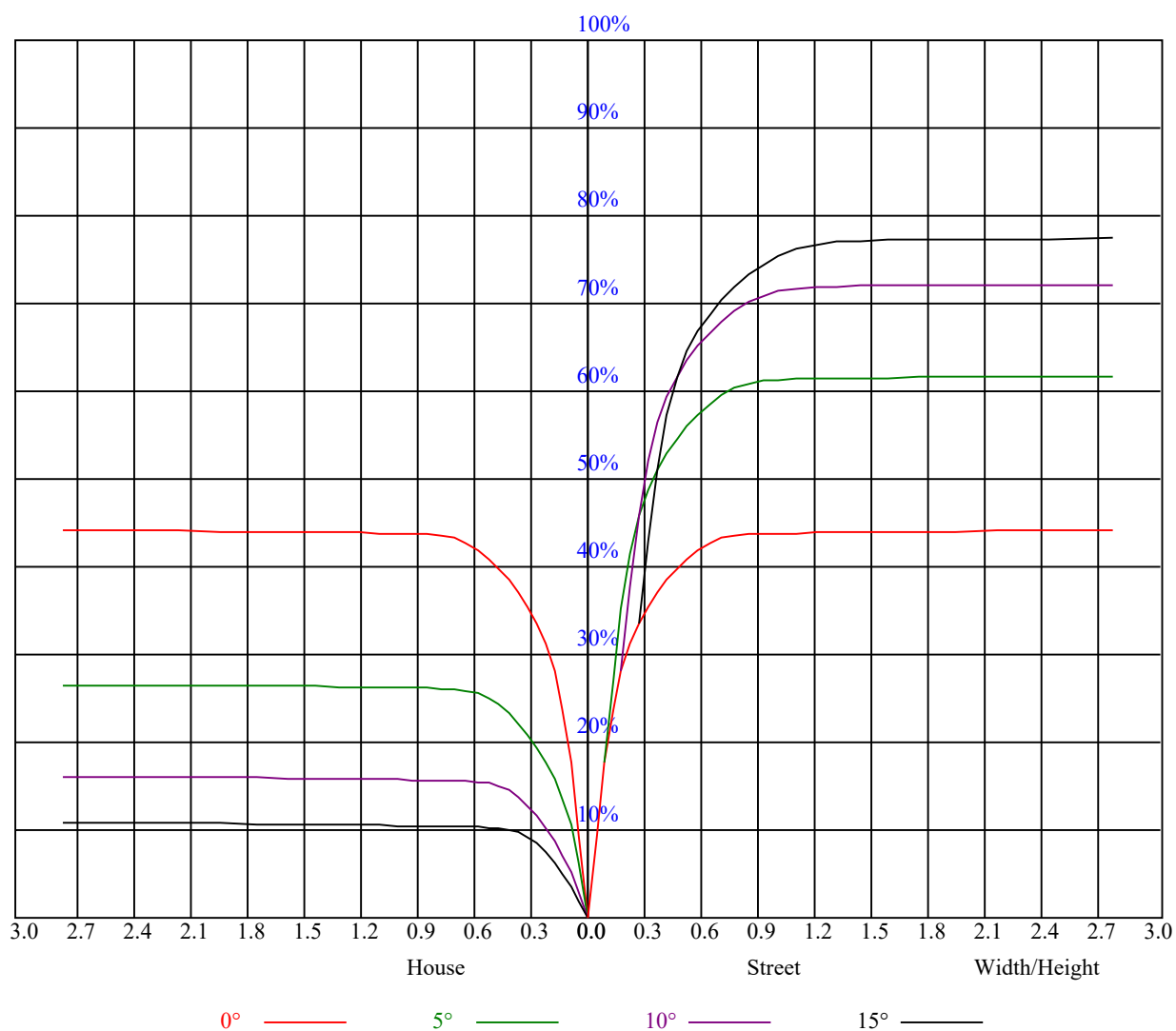
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





RHOC	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	1.06	1.06	1.06	1.03	1.03	1.03	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	0.96	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.87	0.85
2	0.95	0.92	0.90	0.93	0.91	0.89	0.91	0.89	0.87	0.88	0.86	0.85	0.86	0.84	0.83	0.82
3	0.91	0.87	0.85	0.89	0.86	0.84	0.87	0.85	0.83	0.85	0.83	0.81	0.83	0.82	0.80	0.79
4	0.87	0.83	0.80	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.81	0.79	0.77	0.76
5	0.84	0.80	0.77	0.83	0.79	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.79	0.76	0.75	0.74
6	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.73	0.70	0.75	0.72	0.70	0.69
8	0.75	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.73	0.70	0.68	0.67
9	0.73	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.69	0.66	0.71	0.68	0.66	0.65
10	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.65	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	21876.64	22889.50	23440.45	23356.98	22739.24	21692.99	20357.36	18092.34	15643.66
45.0	22744.81	22622.38	21965.69	20941.70	19433.54	17079.48	14235.68	11614.49	9176.95
90.0	22238.38	21219.96	19845.36	17558.08	14786.63	10847.05	9593.78	6870.75	5263.53
135.0	22377.51	21275.61	19405.71	17073.91	14124.38	11174.84	8392.26	6349.85	4875.08
180.0	21876.64	20585.53	18632.16	15510.10	10806.98	10163.10	7803.47	5516.19	4251.23
225.0	22744.81	22260.64	21514.91	20118.05	17936.51	15521.23	10929.42	9711.20	7538.57
270.0	22238.38	22722.55	22672.46	22166.03	21414.74	19873.19	17524.69	15070.45	12504.91
315.0	22377.51	23167.76	23384.80	23100.98	22405.33	21331.26	19761.88	17012.69	14441.59
360.0	21876.64	22889.50	23440.45	23356.98	22739.24	21692.99	20357.36	18092.34	15643.66
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	12699.70	9833.64	7613.14	5693.16	4340.82	3489.36	2949.53	2339.59	2021.27
45.0	6639.24	5131.08	4045.87	3199.97	2849.36	2247.77	1938.35	1707.39	1537.10
90.0	4123.23	3156.56	2627.87	2249.44	1912.75	1709.06	1543.78	1374.59	1281.10
135.0	3706.40	2899.45	2827.10	2058.00	1751.36	1573.83	1430.25	1297.24	1217.66
180.0	3350.78	2587.24	2184.33	1893.27	1656.19	1474.21	1348.44	1248.82	1180.37
225.0	5783.87	4233.42	3394.19	2793.15	2308.43	1971.74	1752.47	1557.69	1412.44
270.0	9416.25	7279.23	5626.38	4173.87	3361.36	2843.80	2346.83	1954.48	1729.10
315.0	10787.51	8660.50	6635.34	5121.62	3906.74	3078.65	2566.65	2140.36	1862.66
360.0	12699.70	9833.64	7613.14	5693.16	4340.82	3489.36	2949.53	2339.59	2021.27
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1785.30	1583.84	1421.90	1303.36	1206.53	1133.07	1084.65	1045.69	1016.75
45.0	1377.38	1274.98	1190.94	1126.39	1081.31	1042.91	1013.97	993.38	976.13
90.0	1186.49	1106.58	1068.90	1033.34	1006.18	987.54	971.96	950.36	934.61
135.0	1153.10	1098.01	1055.15	1025.66	998.95	980.02	961.66	942.74	928.27
180.0	1109.41	1068.68	1037.85	1010.58	986.98	969.95	952.81	932.22	917.36
225.0	1284.44	1193.73	1106.58	1079.97	1045.97	1017.53	999.56	981.47	963.00
270.0	1558.80	1405.76	1287.22	1205.41	1139.19	1088.55	1052.93	1022.88	1001.17
315.0	1635.04	1462.52	1340.09	1237.14	1151.99	1105.24	1063.61	1020.76	1000.17
360.0	1785.30	1583.84	1421.90	1303.36	1206.53	1133.07	1084.65	1045.69	1016.75
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	990.60	973.35	954.42	938.29	921.03	905.45	890.43	859.26	805.28
45.0	952.76	936.62	921.03	907.12	888.20	851.47	767.44	651.12	561.52
90.0	919.03	904.23	883.80	849.30	771.39	658.30	554.96	449.44	330.57
135.0	913.24	895.99	875.96	828.65	729.59	632.76	520.90	368.41	281.04
180.0	906.18	887.31	857.03	785.30	673.55	566.76	455.01	317.55	229.45
225.0	946.75	931.27	913.41	899.16	876.57	793.09	707.44	609.27	486.01
270.0	982.25	960.55	944.41	932.16	913.24	897.66	878.74	793.04	706.78
315.0	981.25	962.22	939.07	924.99	909.07	892.37	877.01	832.99	777.12
360.0	990.60	973.35	954.42	938.29	921.03	905.45	890.43	859.26	805.28
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	712.90	601.59	478.05	367.86	286.61	147.31	67.12	33.11	25.04
45.0	444.10	331.68	291.06	141.63	57.49	28.49	23.37	17.92	16.25
90.0	222.77	139.13	58.38	27.44	22.98	18.14	15.86	14.30	13.91
135.0	159.22	78.19	36.84	24.82	20.42	17.14	15.19	14.25	13.91
180.0	124.77	52.09	30.27	24.32	19.14	16.97	15.53	14.14	13.80
225.0	362.79	264.68	160.67	74.85	35.23	26.60	21.87	17.81	15.25
270.0	623.30	487.51	365.07	285.49	148.92	71.79	32.50	25.88	20.93
315.0	666.93	543.66	433.58	307.25	191.55	100.06	51.92	27.55	22.65
360.0	712.90	601.59	478.05	367.86	286.61	147.31	67.12	33.11	25.04

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	19.42	16.75	14.80	14.36	13.97	13.52	13.19	12.97	12.69
45.0	15.19	13.91	13.63	13.30	13.02	12.80	12.58	12.30	12.02
90.0	13.63	13.30	12.91	12.69	12.41	12.19	12.02	11.80	11.58
135.0	13.52	13.19	12.97	12.74	12.52	12.30	12.13	11.91	11.69
180.0	13.52	13.25	13.02	12.74	12.52	12.24	12.08	11.85	11.69
225.0	14.58	14.14	13.69	13.36	13.08	12.74	12.47	12.30	12.08
270.0	17.70	15.03	14.41	13.97	13.47	13.19	12.91	12.58	12.35
315.0	18.48	16.64	14.30	13.91	13.58	13.19	12.91	12.69	12.35
360.0	19.42	16.75	14.80	14.36	13.97	13.52	13.19	12.97	12.69
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	12.47	12.24	11.97	11.80	11.63	11.46	11.41	11.35	11.24
45.0	11.85	11.69	11.58	11.46	11.35	11.24	11.07	10.96	10.91
90.0	11.41	11.30	11.24	11.13	11.02	10.85	10.80	10.74	10.69
135.0	11.58	11.35	11.24	11.13	11.13	11.02	10.96	10.91	10.85
180.0	11.58	11.52	11.41	11.35	11.19	11.13	11.07	11.02	10.91
225.0	11.85	11.69	11.46	11.35	11.19	11.13	11.07	11.02	10.91
270.0	12.13	11.91	11.74	11.58	11.41	11.30	11.13	11.02	10.91
315.0	12.13	11.91	11.74	11.58	11.46	11.24	11.19	11.02	11.02
360.0	12.47	12.24	11.97	11.80	11.63	11.46	11.41	11.35	11.24
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.13	11.02	10.96	10.91	10.91	10.80	10.80	10.80	10.69
45.0	10.85	10.80	10.74	10.74	10.57	10.52	10.52	10.46	10.46
90.0	10.69	10.63	10.52	10.46	10.41	10.41	10.41	10.41	10.30
135.0	10.80	10.69	10.63	10.57	10.57	10.57	10.52	10.52	10.41
180.0	10.85	10.85	10.80	10.80	10.69	10.63	10.57	10.57	10.57
225.0	10.85	10.80	10.69	10.63	10.57	10.57	10.57	10.57	10.46
270.0	10.85	10.85	10.80	10.74	10.63	10.57	10.52	10.46	10.46
315.0	10.96	10.85	10.80	10.74	10.69	10.57	10.63	10.57	10.57
360.0	11.13	11.02	10.96	10.91	10.91	10.80	10.80	10.80	10.69
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	10.69	10.63	10.63	10.57	10.57	10.57	10.63	10.63	10.63
45.0	10.46	10.46	10.46	10.41	10.35	10.35	10.35	10.35	10.35
90.0	10.30	10.24	10.24	10.24	10.30	10.24	10.24	10.24	10.18
135.0	10.41	10.41	10.35	10.41	10.35	10.35	10.30	10.30	10.24
180.0	10.57	10.57	10.52	10.52	10.41	10.41	10.41	10.41	10.46
225.0	10.41	10.41	10.41	10.35	10.35	10.35	10.35	10.35	10.24
270.0	10.41	10.46	10.41	10.35	10.30	10.24	10.24	10.30	10.30
315.0	10.46	10.46	10.41	10.35	10.35	10.41	10.41	10.35	10.30
360.0	10.69	10.63	10.63	10.57	10.57	10.57	10.63	10.63	10.63
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.57	10.57	10.52	10.52	10.52	10.46	10.46	10.46	10.35
45.0	10.35	10.24	10.30	10.30	10.24	10.18	10.13	10.07	10.13
90.0	10.18	10.24	10.18	10.18	10.18	10.13	10.07	10.07	10.13
135.0	10.24	10.30	10.24	10.30	10.30	10.30	10.24	10.18	10.24
180.0	10.46	10.35	10.41	10.35	10.41	10.35	10.41	10.35	10.30
225.0	10.24	10.24	10.24	10.24	10.18	10.13	10.13	10.13	10.07
270.0	10.30	10.18	10.30	10.24	10.18	10.18	10.13	10.13	10.13
315.0	10.30	10.24	10.30	10.30	10.24	10.30	10.24	10.30	10.18
360.0	10.57	10.57	10.52	10.52	10.52	10.46	10.46	10.46	10.35

Intensity data(cd)

Appendix Page: 18 Total:18

C/ γ (°)	90.0
0.0	10.41
45.0	10.13
90.0	10.07
135.0	10.18
180.0	10.30
225.0	10.13
270.0	10.13
315.0	10.24
360.0	10.41