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NATA

LumCAT: 2-1283-N	
Luminaire: 92.70.064.00	
Report No: NATA0100	Voltage(V): 34.5700
Test No: GC2019032606	Current(A): 0.3000
LampCAT: BRIDGELUX V10	Power (W): 10.3710
Lamp flux(lm): 1520.0	PF: 1.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 57	Width(mm): 57
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1251.52
Efficiency(%): 82.34%
Lumens(lm)/Power(W): 120.67
Central intensity(cd): 7163.297
Maximum intensity(cd): 7163.297
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=14.4
[C90/270]Total=14.4
Field angle(10%Imax): [C0/180]Total=48.2
[C90/270]Total=48.2
Maximum s/h(1/2): C0_180=0.25 C90_270=0.25
Maximum s/h(1/4): C0_180=0.29 C90_270=0.29
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 82.34%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.769%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7163.297	0.000	0	.000%	.000%
1.0	7056.211	6.804	6.804	.448%	.544%
2.0	6716.109	19.767	26.571	1.300%	2.123%
3.0	6236.367	30.978	57.549	2.038%	4.598%
4.0	5674.570	39.870	97.419	2.623%	7.784%
5.0	5022.984	46.020	143.439	3.028%	11.461%
6.0	4361.203	49.316	192.756	3.245%	15.402%
7.0	3704.766	50.065	242.821	3.294%	19.402%
8.0	3133.406	48.939	291.76	3.220%	23.313%
9.0	2652.398	46.891	338.651	3.085%	27.059%
10.0	2283.047	44.664	383.315	2.938%	30.628%
11.0	2011.008	42.906	426.222	2.823%	34.056%
12.0	1787.344	41.521	467.743	2.732%	37.374%
13.0	1606.289	40.274	508.017	2.650%	40.592%
14.0	1454.555	39.179	547.195	2.578%	43.723%
15.0	1332.844	38.267	585.462	2.518%	46.780%
16.0	1205.501	37.194	622.656	2.447%	49.752%
17.0	1116.021	36.152	658.808	2.378%	52.641%
18.0	1043.648	35.608	694.417	2.343%	55.486%
19.0	976.191	35.141	729.558	2.312%	58.294%
20.0	913.922	34.594	764.152	2.276%	61.058%
21.0	856.301	33.992	798.144	2.236%	63.774%
22.0	807.490	33.435	831.578	2.200%	66.446%
23.0	763.038	32.954	864.532	2.168%	69.079%
24.0	720.513	32.436	896.968	2.134%	71.670%
25.0	682.720	31.906	928.875	2.099%	74.220%
26.0	649.420	31.445	960.32	2.069%	76.732%
27.0	614.384	30.919	991.239	2.034%	79.203%
28.0	574.608	30.103	1021.342	1.980%	81.608%
29.0	533.306	28.986	1050.328	1.907%	83.924%
30.0	482.913	27.438	1077.766	1.805%	86.117%
31.0	416.067	25.017	1102.783	1.646%	88.116%
32.0	345.783	21.826	1124.609	1.436%	89.860%
33.0	281.088	18.468	1143.077	1.215%	91.335%
34.0	226.589	15.364	1158.441	1.011%	92.563%
35.0	147.776	11.626	1170.067	.765%	93.492%
36.0	100.772	7.914	1177.981	.521%	94.124%
37.0	67.936	5.502	1183.483	.362%	94.564%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	45.035	3.771	1187.254	.248%	94.865%
39.0	33.652	2.686	1189.94	.177%	95.080%
40.0	29.285	2.195	1192.135	.144%	95.255%
41.0	26.381	1.982	1194.117	.130%	95.413%
42.0	24.659	1.854	1195.972	.122%	95.562%
43.0	23.189	1.772	1197.744	.117%	95.703%
44.0	21.909	1.702	1199.446	.112%	95.839%
45.0	20.714	1.638	1201.084	.108%	95.970%
46.0	19.617	1.577	1202.661	.104%	96.096%
47.0	18.844	1.530	1204.191	.101%	96.218%
48.0	18.239	1.499	1205.69	.099%	96.338%
49.0	17.684	1.475	1207.165	.097%	96.456%
50.0	17.114	1.451	1208.616	.095%	96.572%
51.0	16.699	1.431	1210.047	.094%	96.686%
52.0	16.488	1.424	1211.471	.094%	96.800%
53.0	16.397	1.431	1212.901	.094%	96.914%
54.0	16.446	1.448	1214.349	.095%	97.030%
55.0	16.615	1.476	1215.825	.097%	97.148%
56.0	16.643	1.503	1217.328	.099%	97.268%
57.0	16.748	1.527	1218.854	.100%	97.390%
58.0	16.833	1.553	1220.407	.102%	97.514%
59.0	16.980	1.581	1221.988	.104%	97.640%
60.0	16.966	1.604	1223.592	.106%	97.769%
61.0	16.538	1.599	1225.191	.105%	97.896%
62.0	15.659	1.551	1226.742	.102%	98.020%
63.0	14.604	1.472	1228.214	.097%	98.138%
64.0	13.627	1.385	1229.599	.091%	98.249%
65.0	12.818	1.309	1230.908	.086%	98.353%
66.0	12.094	1.243	1232.151	.082%	98.452%
67.0	11.468	1.185	1233.336	.078%	98.547%
68.0	10.969	1.137	1234.472	.075%	98.638%
69.0	10.680	1.104	1235.577	.073%	98.726%
70.0	9.788	1.051	1236.628	.069%	98.810%
71.0	8.993	0.971	1237.598	.064%	98.888%
72.0	8.677	0.919	1238.517	.060%	98.961%
73.0	8.430	0.895	1239.412	.059%	99.033%
74.0	8.205	0.875	1240.286	.058%	99.103%
75.0	7.973	0.855	1241.141	.056%	99.171%

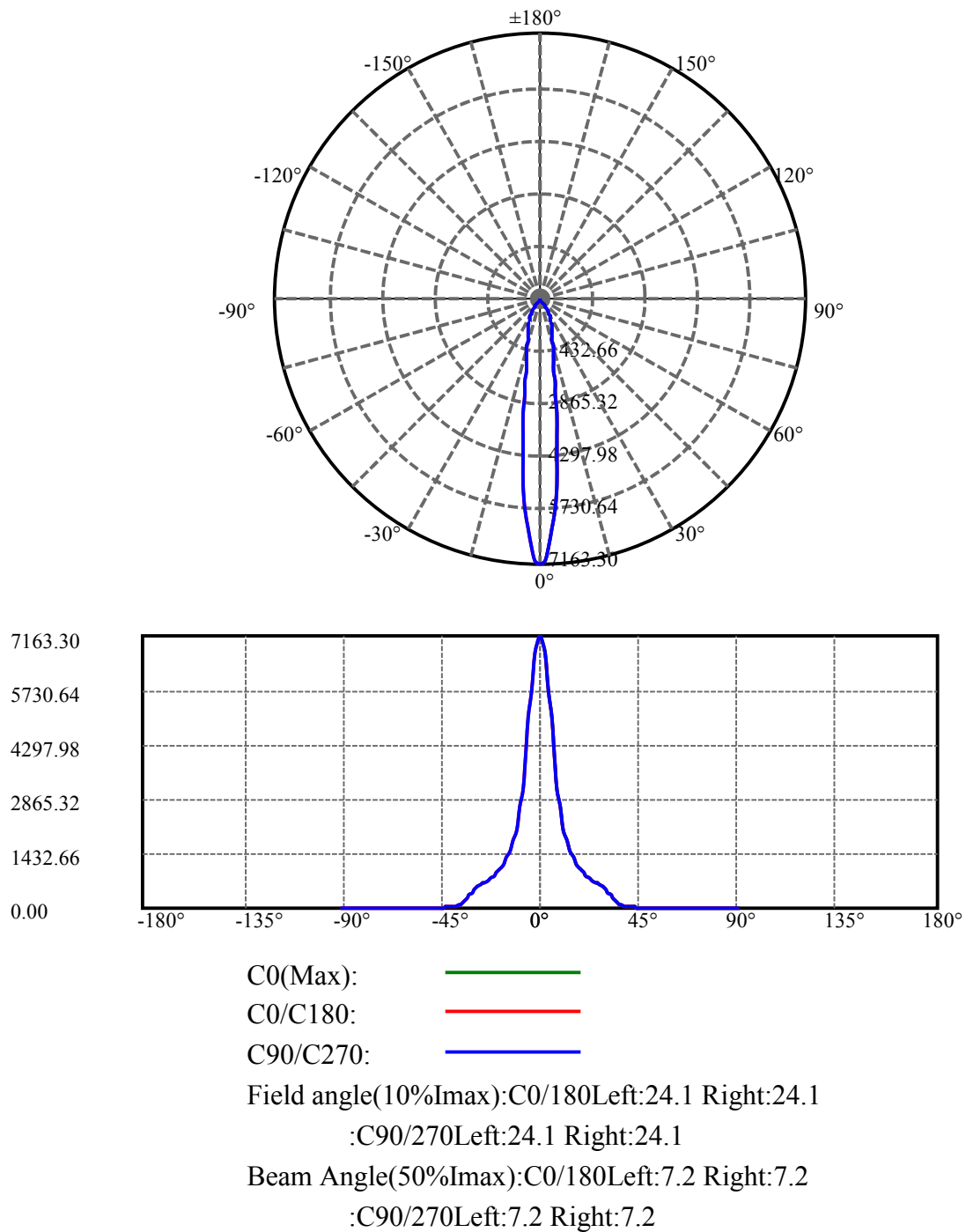
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.763	0.835	1241.977	.055%	99.238%
77.0	7.552	0.816	1242.793	.054%	99.303%
78.0	7.334	0.797	1243.59	.052%	99.366%
79.0	7.109	0.776	1244.366	.051%	99.428%
80.0	6.891	0.755	1245.121	.050%	99.489%
81.0	6.680	0.734	1245.854	.048%	99.547%
82.0	6.469	0.713	1246.567	.047%	99.604%
83.0	6.272	0.693	1247.26	.046%	99.660%
84.0	6.082	0.673	1247.933	.044%	99.714%
85.0	5.899	0.654	1248.587	.043%	99.766%
86.0	5.688	0.633	1249.22	.042%	99.816%
87.0	5.421	0.608	1249.828	.040%	99.865%
88.0	5.182	0.581	1250.409	.038%	99.911%
89.0	5.048	0.561	1250.97	.037%	99.956%
90.0	4.957	0.549	1251.519	.036%	100.000%

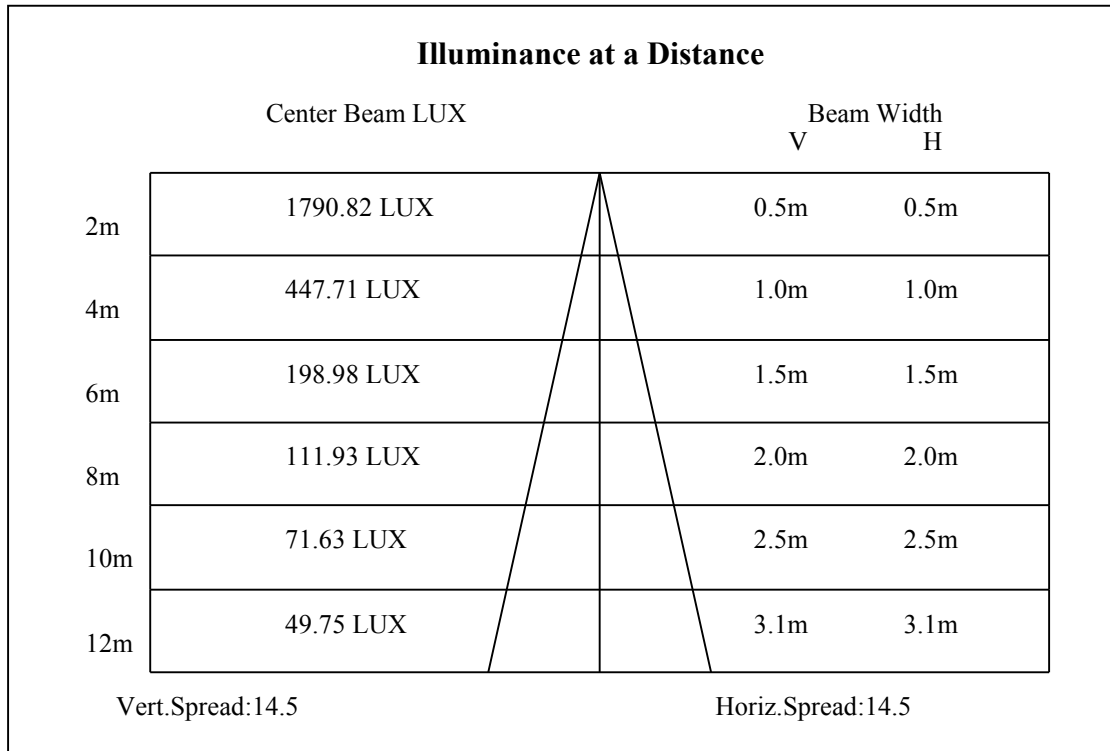
ZONAL LUMEN SUMMARY

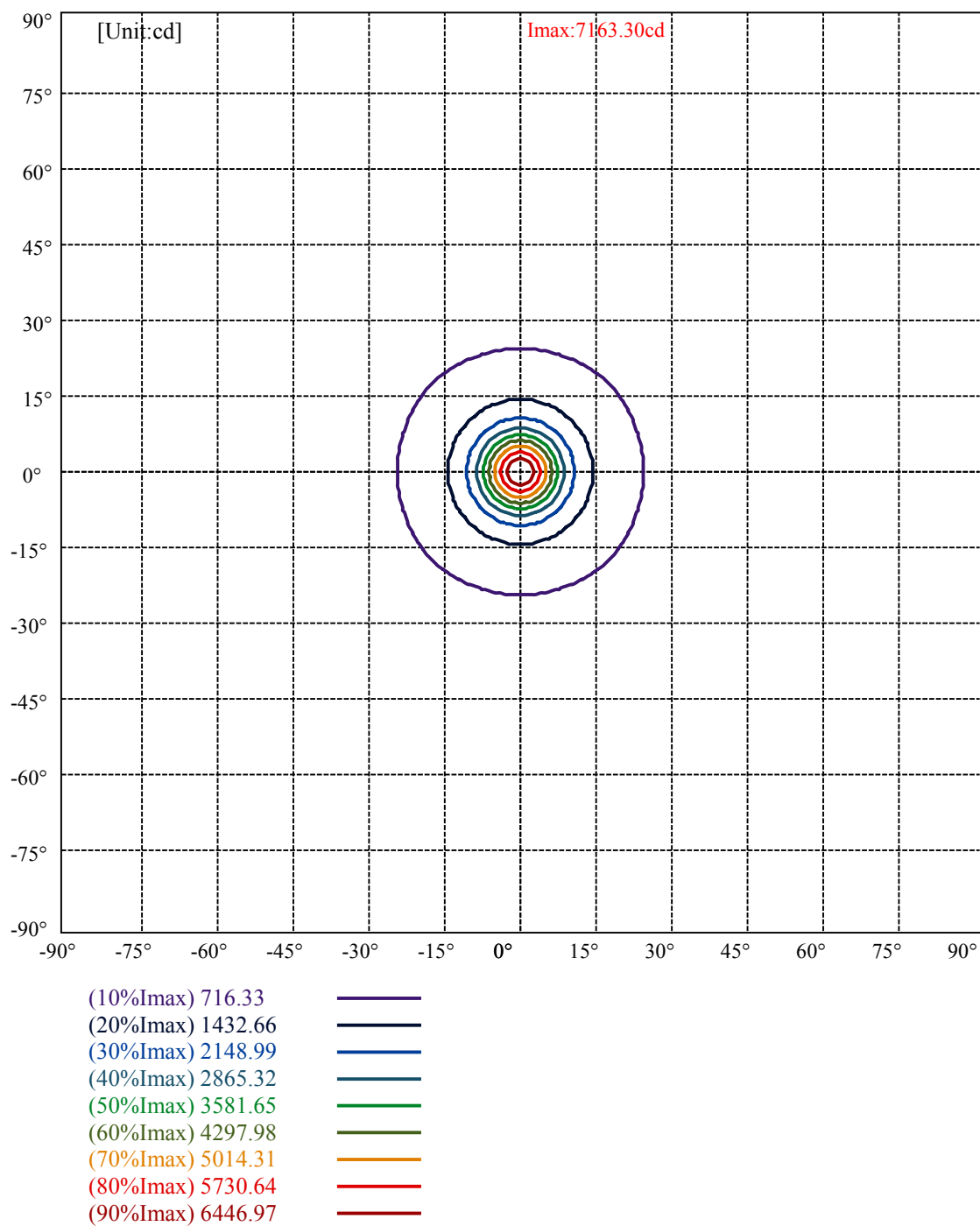
Zone	Lumens	%Lamp	%Fixt
0-30	1077.77	70.91%	86.12%
0-40	1192.13	78.43%	95.26%
0-60	1223.59	80.50%	97.77%
0-90	1250.97	82.30%	99.96%
0-120	1250.97	82.30%	99.96%
0-180	1251.52	82.34%	100.00%
60-90	28.98	1.91%	2.32%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.33	1001.22	65.87%	80.00%

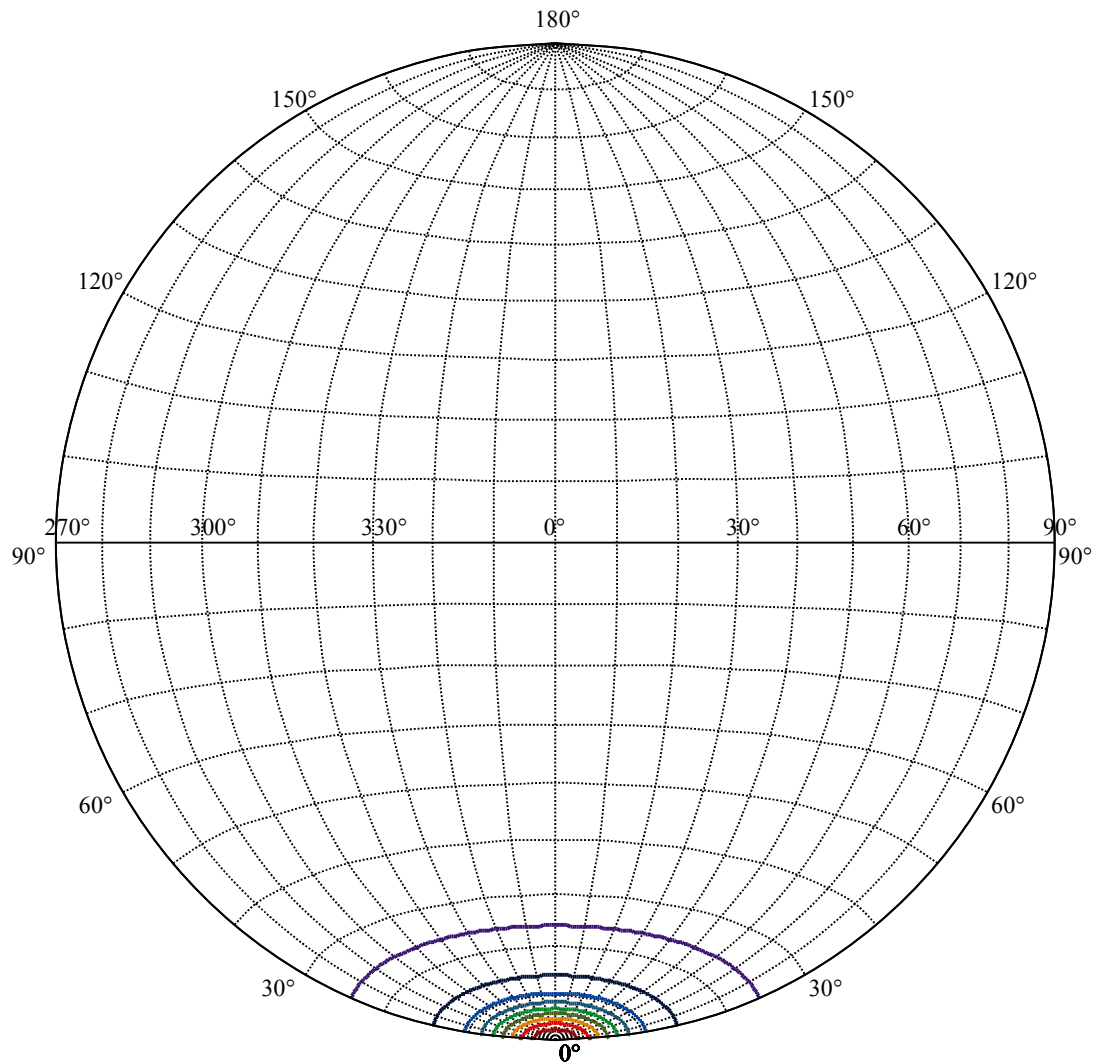
ZONAL LUMEN SUMMARY

0-10	383.32
10-20	380.84
20-30	313.61
30-40	114.37
40-50	16.48
50-60	14.98
60-70	13.04
70-80	8.49
80-90	5.85
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









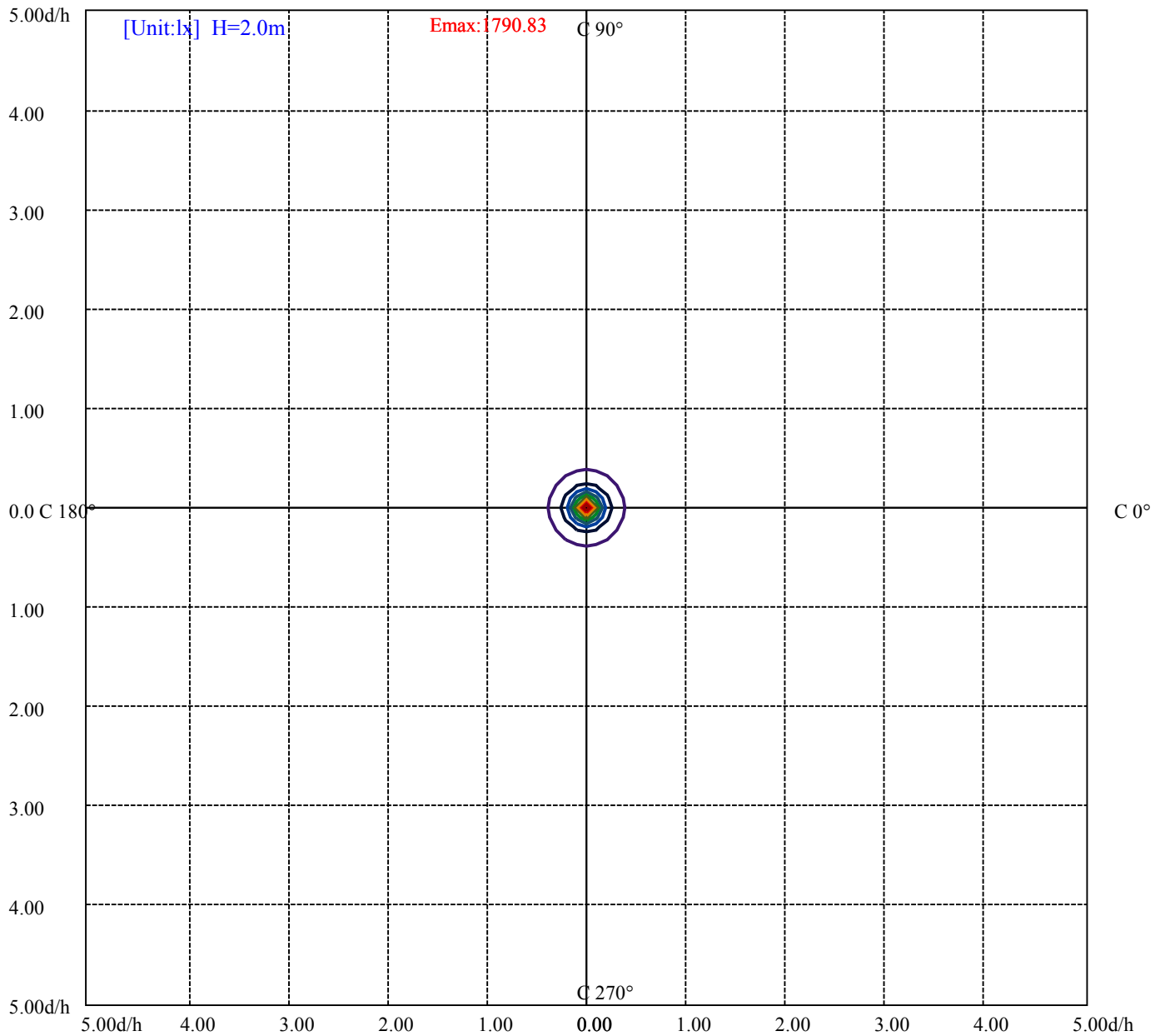
House

[Unit:cd]

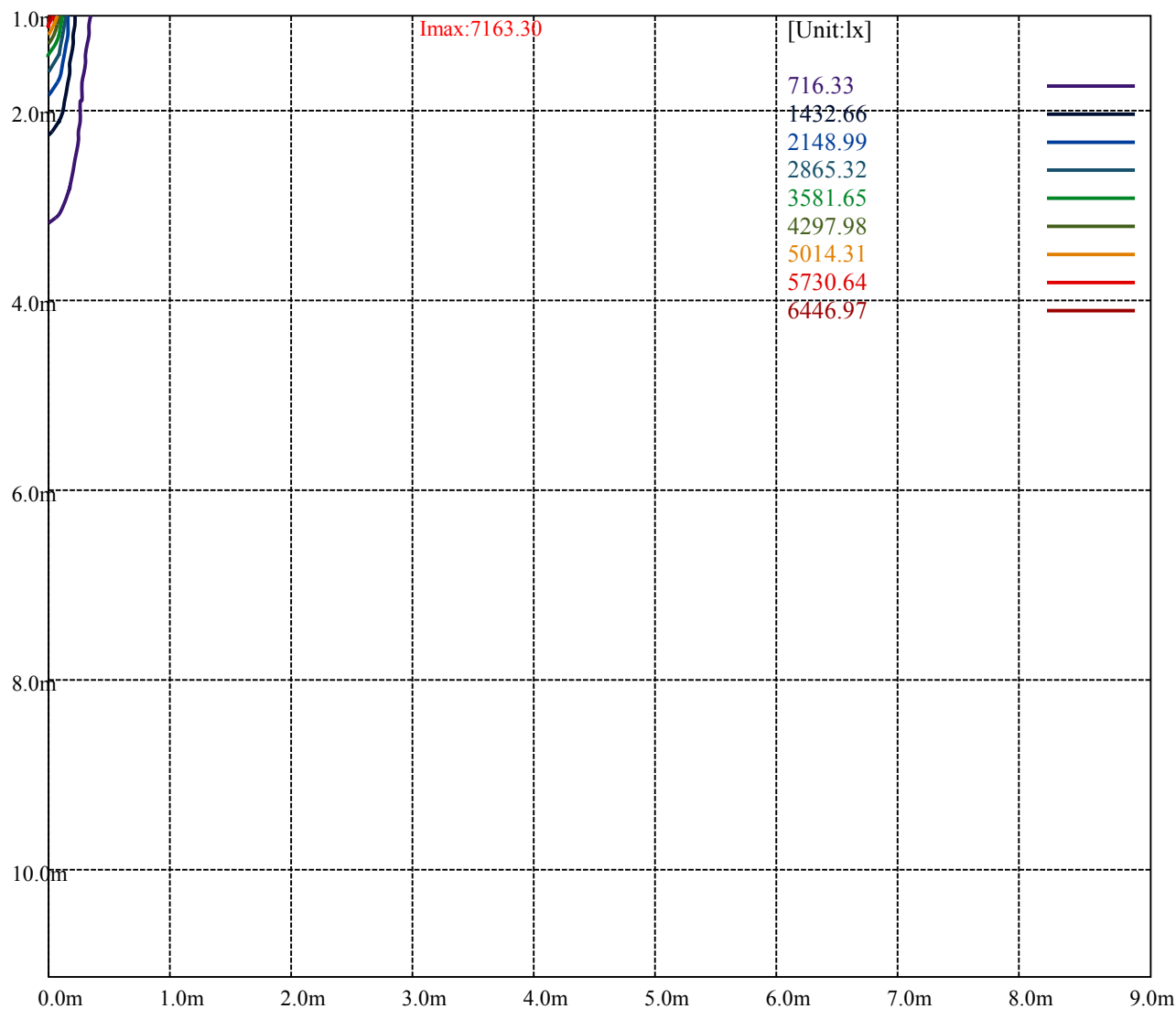
Road

Imax:7163.30

(10%Imax)	716.33	—
(20%Imax)	1432.66	—
(30%Imax)	2148.99	—
(40%Imax)	2865.32	—
(50%Imax)	3581.65	—
(60%Imax)	4297.98	—
(70%Imax)	5014.31	—
(80%Imax)	5730.64	—
(90%Imax)	6446.97	—



(10%Emax)	179.082	
(20%Emax)	358.165	
(30%Emax)	537.245	
(40%Emax)	716.3275	
(50%Emax)	895.41	
(60%Emax)	1074.493	
(70%Emax)	1253.575	
(80%Emax)	1432.657	
(90%Emax)	1611.738	



Luminance Table

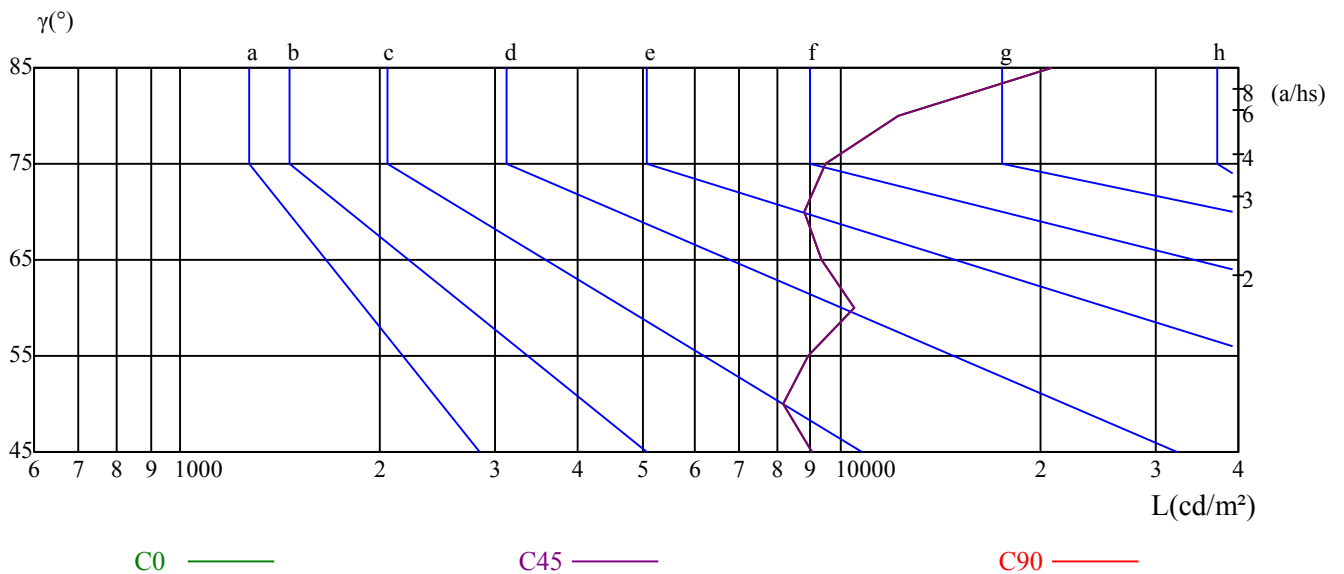
γ	45	50	55	60	65	70	75	80	85
C0	9016	8195	8916	10444	9335	8808	9482	12213	20833
C45	9016	8195	8916	10444	9335	8808	9482	12213	20833
C90	9016	8195	8916	10444	9335	8808	9482	12213	20833

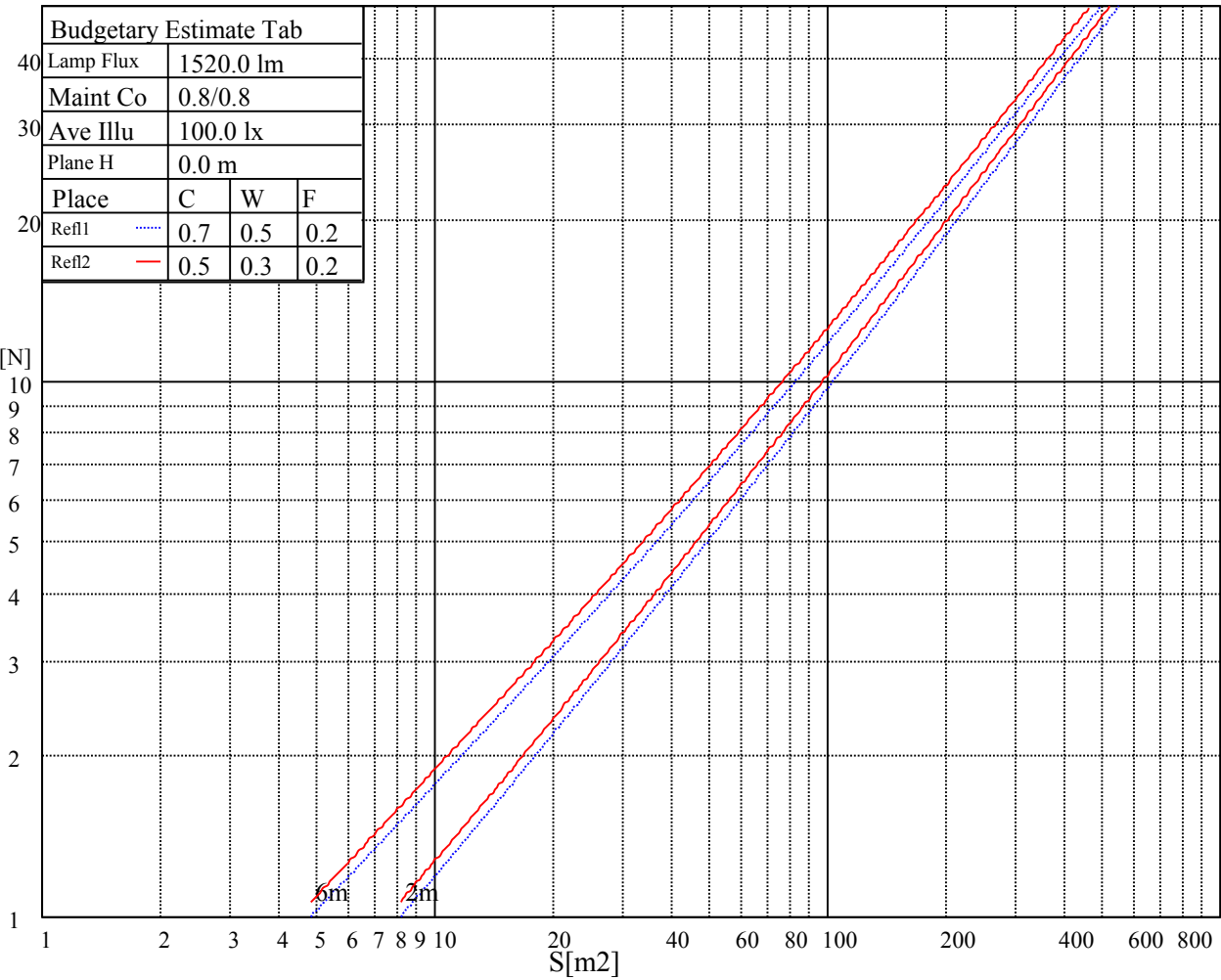
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
9335	9335	9335	9482	9482	9482	20833	20833	20833

Glare Table

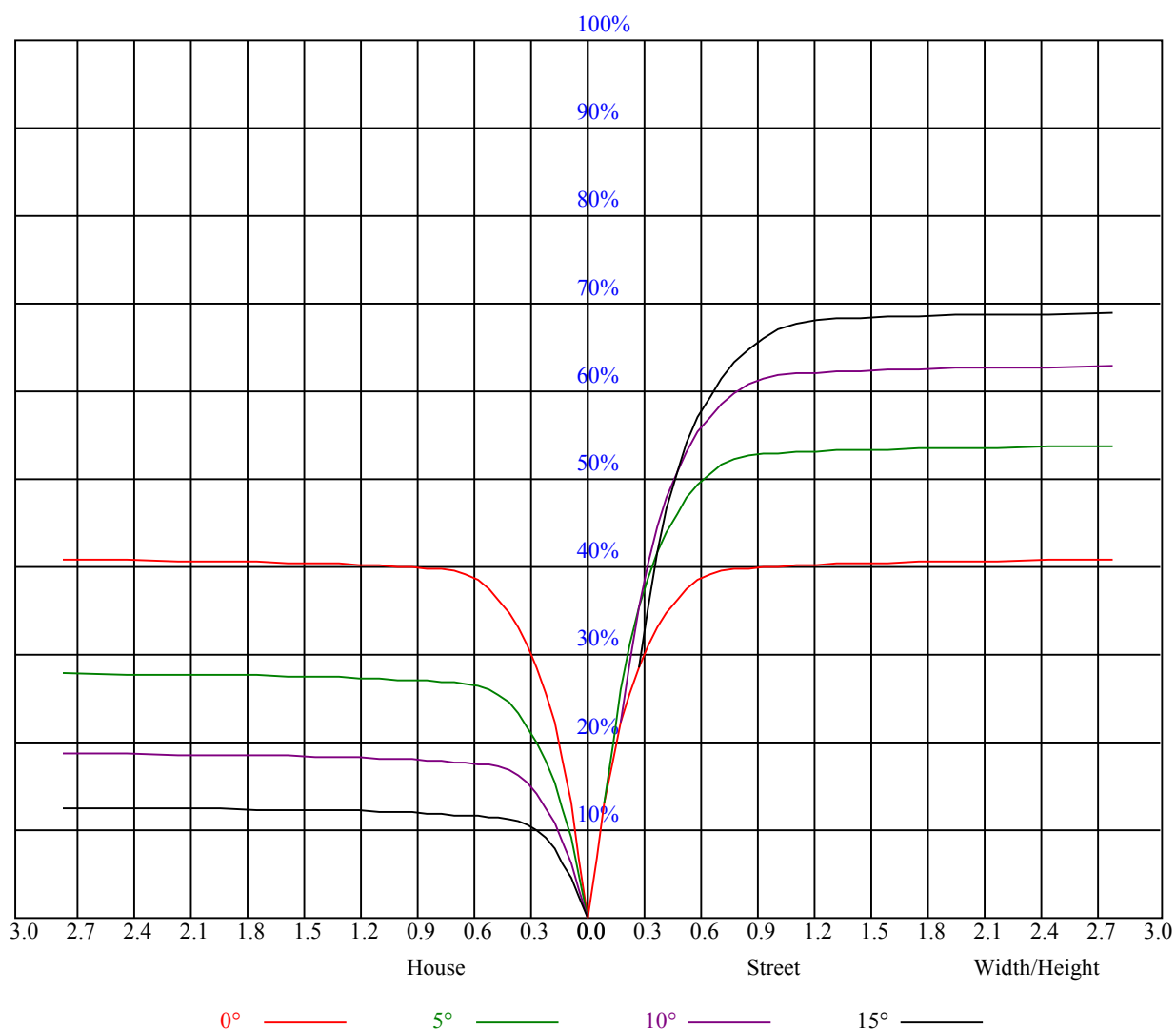
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	0.98	0.98	0.98	0.96	0.96	0.96	0.91	0.91	0.91	0.88	0.88	0.88	0.84	0.84	0.84	0.82
1	0.92	0.90	0.88	0.90	0.89	0.87	0.87	0.86	0.84	0.84	0.83	0.82	0.81	0.80	0.79	0.78
2	0.87	0.84	0.81	0.85	0.83	0.80	0.83	0.81	0.79	0.80	0.79	0.77	0.78	0.77	0.75	0.74
3	0.82	0.79	0.76	0.81	0.78	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.75	0.73	0.72	0.71
4	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.74	0.72	0.69	0.73	0.70	0.69	0.68
5	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.71	0.69	0.66	0.70	0.68	0.66	0.65
6	0.72	0.67	0.65	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.62
7	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.66	0.63	0.61	0.65	0.63	0.61	0.60
8	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.58
9	0.64	0.60	0.57	0.63	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.61	0.59	0.56	0.56
10	0.61	0.58	0.55	0.61	0.57	0.55	0.61	0.57	0.55	0.60	0.57	0.55	0.59	0.57	0.55	0.54



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	7138.13	7187.06	6982.88	6682.50	6118.31	5553.00	4955.63	4198.50	3608.44
45.0	7152.19	7170.75	6919.31	6536.25	6062.63	5342.06	4731.75	4107.94	3428.44
90.0	7166.81	6998.63	6643.69	6044.63	5461.88	4839.19	4061.81	3450.94	2915.44
135.0	7196.06	7066.69	6689.25	6203.81	5572.69	4866.75	4241.25	3559.50	3010.50
180.0	7138.13	6883.31	6437.25	5781.94	5195.81	4565.25	3794.06	3215.81	2733.75
225.0	7152.19	6924.94	6401.81	5892.19	5310.00	4533.75	4002.75	3341.81	2732.63
270.0	7166.81	7132.50	6847.88	6442.88	5874.75	5281.31	4584.94	3905.44	3336.19
315.0	7196.06	7085.81	6806.81	6306.75	5800.50	5202.56	4517.44	3858.19	3301.88
360.0	7138.13	7187.06	6982.88	6682.50	6118.31	5553.00	4955.63	4198.50	3608.44
C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3020.06	2573.44	2274.75	2030.06	1776.38	1611.00	1470.38	1335.94	1221.19
45.0	2854.13	2471.63	2145.38	1903.50	1688.63	1518.19	1392.19	1268.44	1167.75
90.0	2457.56	2124.00	1880.44	1665.00	1497.94	1369.69	1242.00	1119.54	1048.05
135.0	2537.44	2185.31	1932.19	1656.00	1570.50	1419.19	1310.06	1192.50	1110.94
180.0	2375.44	2044.13	1827.00	1658.81	1488.38	1373.06	1268.44	1117.07	1069.59
225.0	2422.69	2112.19	1824.75	1669.50	1521.56	1351.69	1258.31	1119.77	1073.76
270.0	2789.44	2384.44	2103.75	1870.31	1640.25	1488.94	1355.63	1229.06	1123.88
315.0	2762.44	2369.25	2099.81	1845.56	1666.69	1504.69	1365.75	1261.69	1113.02
360.0	3020.06	2573.44	2274.75	2030.06	1776.38	1611.00	1470.38	1335.94	1221.19
C/ γ (°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1137.38	1056.38	984.94	929.25	871.88	825.19	777.38	735.75	700.31
45.0	1089.56	1023.19	947.81	894.94	845.44	792.00	753.75	718.31	681.75
90.0	962.44	909.11	854.21	784.24	747.96	707.63	658.69	631.13	600.58
135.0	1038.94	969.19	907.31	856.13	803.81	757.13	718.88	680.06	645.19
180.0	999.06	932.40	877.84	821.98	772.93	734.23	694.46	657.73	625.39
225.0	1001.98	946.01	892.86	836.21	793.69	756.00	716.34	679.61	650.14
270.0	1042.31	961.88	896.06	843.19	789.75	743.06	696.38	655.88	623.25
315.0	1077.53	1011.38	950.34	884.48	834.47	789.08	748.24	703.29	668.76
360.0	1137.38	1056.38	984.94	929.25	871.88	825.19	777.38	735.75	700.31
C/ γ (°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	666.56	625.50	590.63	550.13	482.63	415.69	345.94	292.50	187.48
45.0	642.94	610.88	569.81	520.31	453.94	378.00	308.81	291.94	163.86
90.0	565.14	526.05	483.02	426.54	369.00	301.11	233.04	177.41	122.18
135.0	605.25	567.00	525.94	471.38	393.75	326.81	285.19	186.08	135.68
180.0	594.17	547.31	499.11	441.73	368.72	292.11	226.86	160.93	106.54
225.0	614.76	577.80	527.57	467.72	402.75	326.19	250.76	187.93	133.76
270.0	590.63	548.44	514.69	472.50	411.19	354.38	294.75	286.88	162.79
315.0	635.63	593.89	555.69	513.00	446.57	371.98	303.36	229.05	169.93
360.0	666.56	625.50	590.63	550.13	482.63	415.69	345.94	292.50	187.48
C/ γ (°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	129.83	80.04	51.08	34.76	28.97	25.65	23.85	22.28	21.04
45.0	116.44	80.66	49.44	36.79	31.39	27.34	24.92	23.63	22.22
90.0	79.99	55.97	40.56	32.01	28.80	26.83	25.48	23.85	22.84
135.0	94.33	63.90	41.57	33.13	29.36	26.61	25.09	23.85	22.78
180.0	71.83	48.04	35.78	30.04	26.78	25.14	23.68	22.16	20.81
225.0	82.80	56.76	40.16	30.49	27.06	24.81	23.29	21.71	20.48
270.0	116.94	85.73	53.72	36.96	32.34	28.01	26.10	24.86	23.29
315.0	114.02	72.39	47.98	35.04	29.59	26.66	24.86	23.18	21.83
360.0	129.83	80.04	51.08	34.76	28.97	25.65	23.85	22.28	21.04

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	19.91	18.51	17.66	16.99	16.31	15.81	15.36	15.13	15.08
45.0	20.87	19.91	19.07	18.45	17.94	17.55	17.16	17.04	16.93
90.0	21.66	20.81	20.42	20.19	19.91	19.52	19.18	18.96	18.73
135.0	21.66	20.64	19.74	19.07	18.34	17.55	16.93	16.48	16.14
180.0	19.69	18.45	17.72	16.99	16.26	15.64	15.13	14.96	14.91
225.0	19.41	18.45	17.78	17.16	16.71	16.09	15.81	15.75	15.81
270.0	21.88	20.76	19.80	19.18	18.79	18.23	17.94	17.83	17.89
315.0	20.64	19.41	18.56	17.89	17.21	16.54	16.09	15.75	15.69
360.0	19.91	18.51	17.66	16.99	16.31	15.81	15.36	15.13	15.08
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	15.19	15.58	15.47	15.81	16.03	16.43	16.59	16.48	15.86
45.0	16.99	17.21	17.27	17.44	17.38	17.66	17.66	17.55	16.71
90.0	18.51	18.34	18.11	17.89	17.61	17.33	17.21	16.43	15.53
135.0	16.09	16.14	16.09	16.20	16.14	16.37	16.26	16.09	15.08
180.0	15.13	15.36	15.58	15.69	16.09	16.20	16.31	15.53	14.51
225.0	16.03	16.31	16.43	16.71	16.99	17.16	17.10	16.43	15.41
270.0	17.94	18.17	18.39	18.28	18.34	18.39	18.17	17.78	16.82
315.0	15.69	15.81	15.81	15.98	16.09	16.31	16.43	16.03	15.36
360.0	15.19	15.58	15.47	15.81	16.03	16.43	16.59	16.48	15.86
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	14.63	13.78	12.94	12.43	11.76	11.19	11.19	10.58	9.28
45.0	15.36	14.29	13.33	12.49	11.76	11.19	11.03	10.07	8.94
90.0	14.46	13.28	12.60	11.93	11.31	10.91	10.46	9.28	8.78
135.0	14.12	13.16	12.21	11.59	10.97	10.52	10.07	9.45	8.66
180.0	13.61	12.66	12.21	11.42	10.97	10.58	10.24	9.06	8.72
225.0	14.34	13.44	12.71	11.81	11.25	10.80	10.46	9.45	8.94
270.0	15.75	14.74	13.84	13.05	12.43	11.70	11.25	10.69	9.56
315.0	14.57	13.67	12.71	12.04	11.31	10.86	10.74	9.73	9.06
360.0	14.63	13.78	12.94	12.43	11.76	11.19	11.19	10.58	9.28
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	8.89	8.66	8.49	8.33	8.16	7.88	7.76	7.48	7.26
45.0	8.66	8.38	8.16	7.93	7.71	7.59	7.26	7.09	6.92
90.0	8.49	8.21	7.99	7.76	7.48	7.31	7.09	6.81	6.53
135.0	8.38	8.21	7.93	7.71	7.48	7.31	7.03	6.86	6.69
180.0	8.49	8.27	8.10	7.88	7.65	7.43	7.20	6.98	6.81
225.0	8.66	8.49	8.16	7.93	7.76	7.54	7.31	7.14	6.92
270.0	9.11	8.83	8.61	8.27	8.04	7.76	7.59	7.31	7.03
315.0	8.72	8.38	8.21	7.99	7.82	7.59	7.43	7.20	6.98
360.0	8.89	8.66	8.49	8.33	8.16	7.88	7.76	7.48	7.26
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.09	6.86	6.69	6.47	6.24	6.08	5.91	5.46	5.29
45.0	6.64	6.47	6.24	6.08	5.85	5.68	5.46	5.23	5.06
90.0	6.36	6.13	5.91	5.68	5.57	5.29	5.06	5.01	4.89
135.0	6.47	6.30	6.08	5.91	5.74	5.51	5.23	5.06	5.01
180.0	6.64	6.41	6.24	6.08	5.91	5.51	5.29	5.18	5.06
225.0	6.64	6.47	6.30	6.08	5.96	5.74	5.29	5.12	5.01
270.0	6.81	6.53	6.30	6.13	5.91	5.79	5.57	5.12	5.01
315.0	6.81	6.58	6.41	6.24	6.02	5.91	5.57	5.29	5.06
360.0	7.09	6.86	6.69	6.47	6.24	6.08	5.91	5.46	5.29

Intensity data(cd)

Appendix Page: 18 Total:18

C/ γ (°)	90.0
0.0	5.12
45.0	4.95
90.0	4.89
135.0	4.89
180.0	4.95
225.0	4.95
270.0	4.95
315.0	4.95
360.0	5.12