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Nata

LumCAT: 1-0926-M	
Luminaire: 92.70.124.00	
Report No: 210716-B004	Voltage(V): 36.2700
Test No: 210716-C004	Current(A): 0.4510
LampCAT: Fortimo LED SLM 1203 G7N	Power (W): 16.3570
Lamp flux(lm): 1566.1	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 570	Width(mm): 45
Phm Type: C	Height(mm): 20

Photometric Results

Lumens(lm): 1309.97
Efficiency(%): 83.65%
Lumens(lm)/Power(W): 80.09
Central intensity(cd): 9253.266
Maximum intensity(cd): 9253.266
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=18.2
[C90/270]Total=18.2
Field angle(10%Imax): [C0/180]Total=39.4
[C90/270]Total=39.4
Maximum s/h(1/2): C0_180=0.31 C90_270=0.31
Maximum s/h(1/4): C0_180=0.35 C90_270=0.35
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 83.65%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.582%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9253.266	0.000	0	.000%	.000%
1.0	9143.086	8.802	8.802	.562%	.672%
2.0	8828.438	25.794	34.597	1.647%	2.641%
3.0	8338.922	41.059	75.655	2.622%	5.775%
4.0	7792.102	53.996	129.651	3.448%	9.897%
5.0	7239.375	64.665	194.316	4.129%	14.834%
6.0	6537.094	72.399	266.715	4.623%	20.360%
7.0	5888.320	77.124	343.839	4.925%	26.248%
8.0	5317.594	80.199	424.038	5.121%	32.370%
9.0	4695.258	81.149	505.186	5.182%	38.565%
10.0	4116.656	79.745	584.931	5.092%	44.652%
11.0	3670.734	77.812	662.743	4.969%	50.592%
12.0	3235.289	75.493	738.236	4.820%	56.355%
13.0	2798.930	71.611	809.847	4.573%	61.822%
14.0	2454.328	67.241	877.088	4.294%	66.955%
15.0	2130.961	62.949	940.037	4.020%	71.760%
16.0	1832.695	58.079	998.116	3.709%	76.194%
17.0	1547.726	52.642	1050.758	3.361%	80.213%
18.0	1281.403	46.646	1097.404	2.979%	83.773%
19.0	1073.841	40.976	1138.38	2.616%	86.902%
20.0	858.108	35.360	1173.74	2.258%	89.601%
21.0	655.530	29.065	1202.805	1.856%	91.820%
22.0	488.095	22.982	1225.787	1.467%	93.574%
23.0	347.435	17.532	1243.319	1.119%	94.912%
24.0	216.513	12.330	1255.649	.787%	95.854%
25.0	118.350	7.614	1263.263	.486%	96.435%
26.0	62.501	4.269	1267.532	.273%	96.761%
27.0	33.638	2.352	1269.884	.150%	96.940%
28.0	20.841	1.379	1271.263	.088%	97.046%
29.0	17.065	0.992	1272.255	.063%	97.121%
30.0	15.216	0.872	1273.126	.056%	97.188%
31.0	13.753	0.806	1273.932	.051%	97.249%
32.0	12.600	0.755	1274.687	.048%	97.307%
33.0	11.721	0.717	1275.404	.046%	97.362%
34.0	10.948	0.686	1276.09	.044%	97.414%
35.0	10.266	0.659	1276.749	.042%	97.464%
36.0	9.759	0.638	1277.386	.041%	97.513%
37.0	9.288	0.621	1278.008	.040%	97.560%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	8.923	0.608	1278.615	.039%	97.607%
39.0	8.585	0.598	1279.213	.038%	97.652%
40.0	8.297	0.589	1279.802	.038%	97.697%
41.0	8.051	0.582	1280.384	.037%	97.742%
42.0	7.861	0.578	1280.962	.037%	97.786%
43.0	7.650	0.575	1281.537	.037%	97.830%
44.0	7.516	0.572	1282.109	.037%	97.873%
45.0	7.376	0.572	1282.681	.037%	97.917%
46.0	7.249	0.572	1283.253	.037%	97.961%
47.0	7.137	0.572	1283.825	.037%	98.005%
48.0	7.024	0.572	1284.398	.037%	98.048%
49.0	6.947	0.574	1284.972	.037%	98.092%
50.0	6.848	0.575	1285.547	.037%	98.136%
51.0	6.764	0.576	1286.123	.037%	98.180%
52.0	6.708	0.578	1286.701	.037%	98.224%
53.0	6.623	0.580	1287.281	.037%	98.268%
54.0	6.574	0.582	1287.862	.037%	98.313%
55.0	6.504	0.584	1288.446	.037%	98.357%
56.0	6.462	0.586	1289.032	.037%	98.402%
57.0	6.391	0.588	1289.62	.038%	98.447%
58.0	6.335	0.589	1290.208	.038%	98.492%
59.0	6.279	0.590	1290.798	.038%	98.537%
60.0	6.244	0.592	1291.39	.038%	98.582%
61.0	6.209	0.594	1291.984	.038%	98.627%
62.0	6.173	0.597	1292.581	.038%	98.673%
63.0	6.124	0.598	1293.179	.038%	98.719%
64.0	6.110	0.600	1293.779	.038%	98.764%
65.0	6.054	0.602	1294.381	.038%	98.810%
66.0	6.054	0.604	1294.985	.039%	98.856%
67.0	6.019	0.607	1295.592	.039%	98.903%
68.0	6.005	0.609	1296.201	.039%	98.949%
69.0	5.970	0.611	1296.812	.039%	98.996%
70.0	5.948	0.612	1297.424	.039%	99.043%
71.0	5.948	0.615	1298.039	.039%	99.090%
72.0	5.920	0.617	1298.656	.039%	99.137%
73.0	5.892	0.618	1299.274	.039%	99.184%
74.0	5.885	0.619	1299.893	.040%	99.231%
75.0	5.878	0.622	1300.515	.040%	99.279%

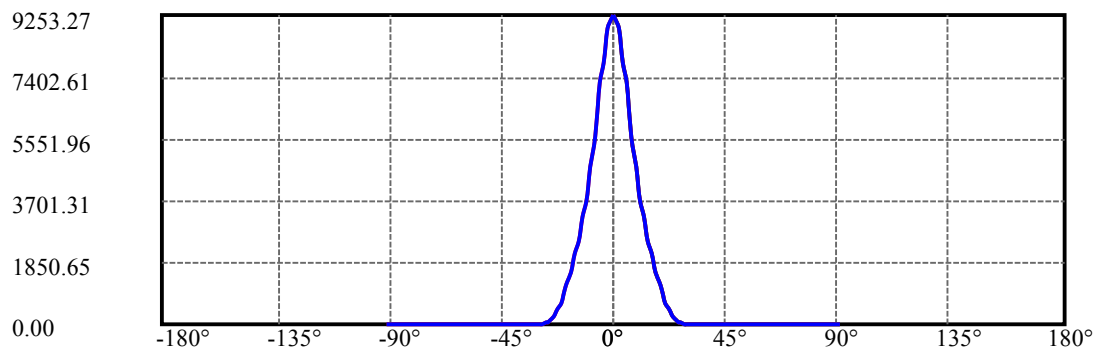
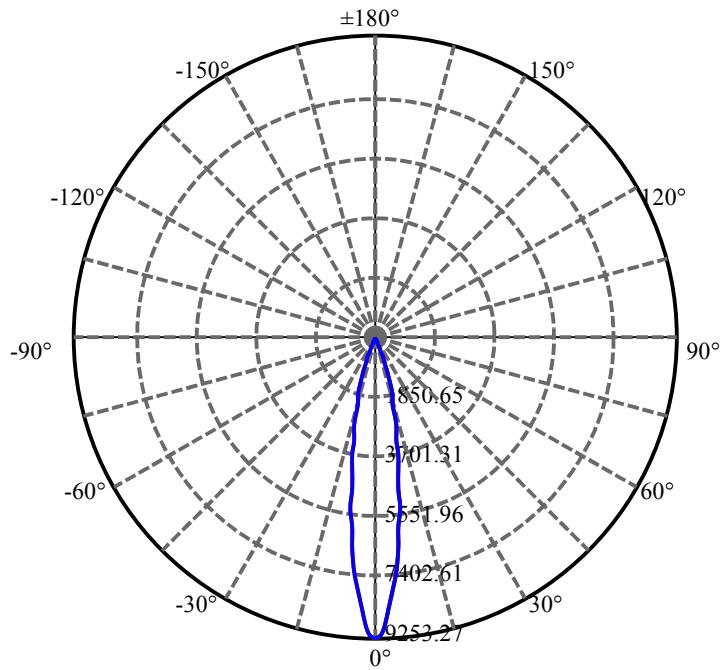
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	5.864	0.623	1301.138	.040%	99.326%
77.0	5.864	0.625	1301.763	.040%	99.374%
78.0	5.850	0.627	1302.39	.040%	99.422%
79.0	5.829	0.628	1303.018	.040%	99.470%
80.0	5.822	0.628	1303.646	.040%	99.518%
81.0	5.808	0.629	1304.275	.040%	99.566%
82.0	5.836	0.631	1304.906	.040%	99.614%
83.0	5.836	0.634	1305.541	.041%	99.662%
84.0	5.822	0.635	1306.176	.041%	99.711%
85.0	5.822	0.635	1306.811	.041%	99.759%
86.0	5.773	0.634	1307.445	.040%	99.808%
87.0	5.752	0.631	1308.076	.040%	99.856%
88.0	5.745	0.630	1308.705	.040%	99.904%
89.0	5.752	0.630	1309.336	.040%	99.952%
90.0	5.738	0.630	1309.966	.040%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1273.13	81.29%	97.19%
0-40	1279.80	81.72%	97.70%
0-60	1291.39	82.46%	98.58%
0-90	1309.34	83.61%	99.95%
0-120	1309.34	83.61%	99.95%
0-180	1309.97	83.65%	100.00%
60-90	18.54	1.18%	1.42%
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%
0-16.95	1047.97	66.92%	80.00%

ZONAL LUMEN SUMMARY

0-10	584.93
10-20	588.81
20-30	99.39
30-40	6.68
40-50	5.75
50-60	5.84
60-70	6.03
70-80	6.22
80-90	5.69
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:

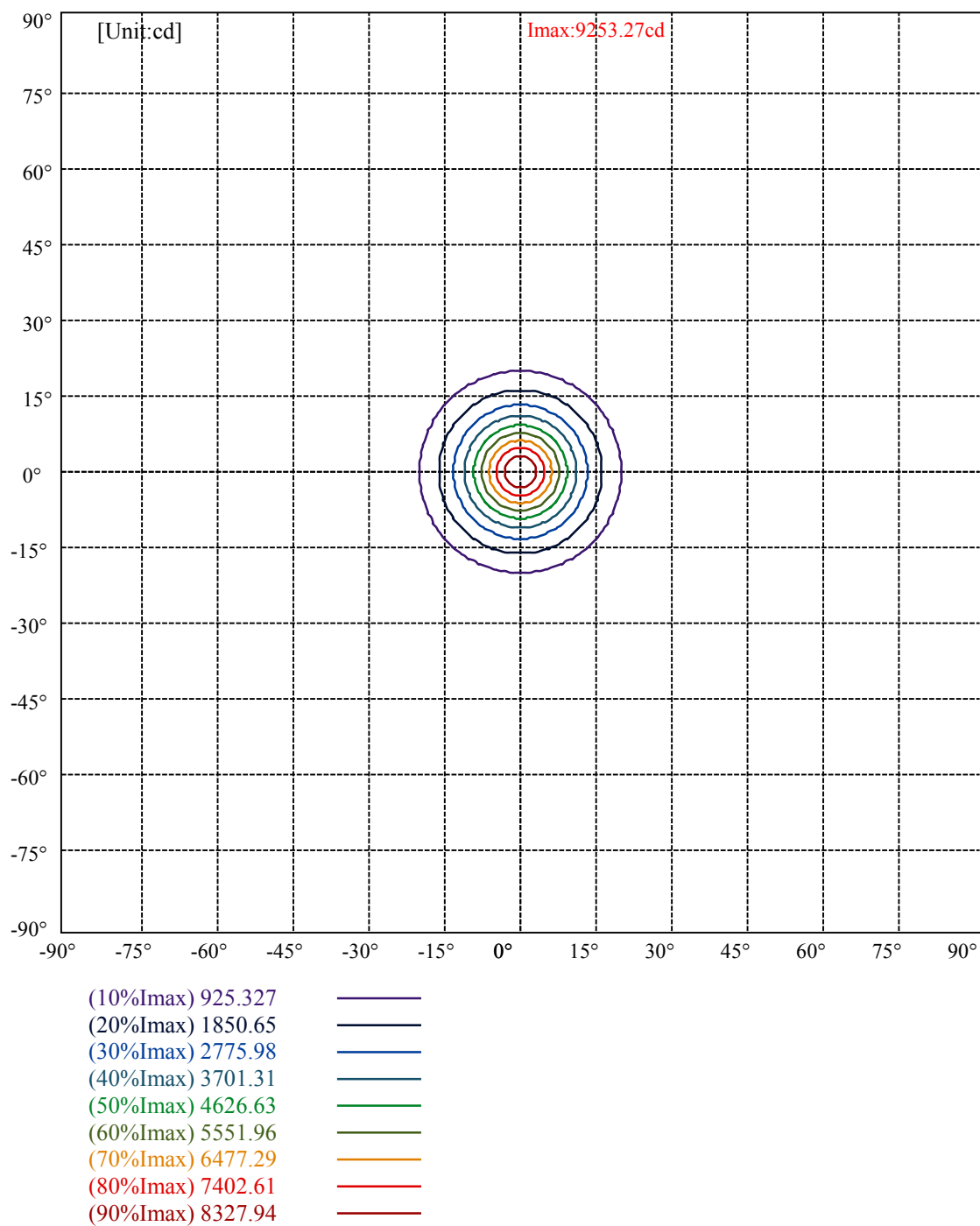
C90/C270:

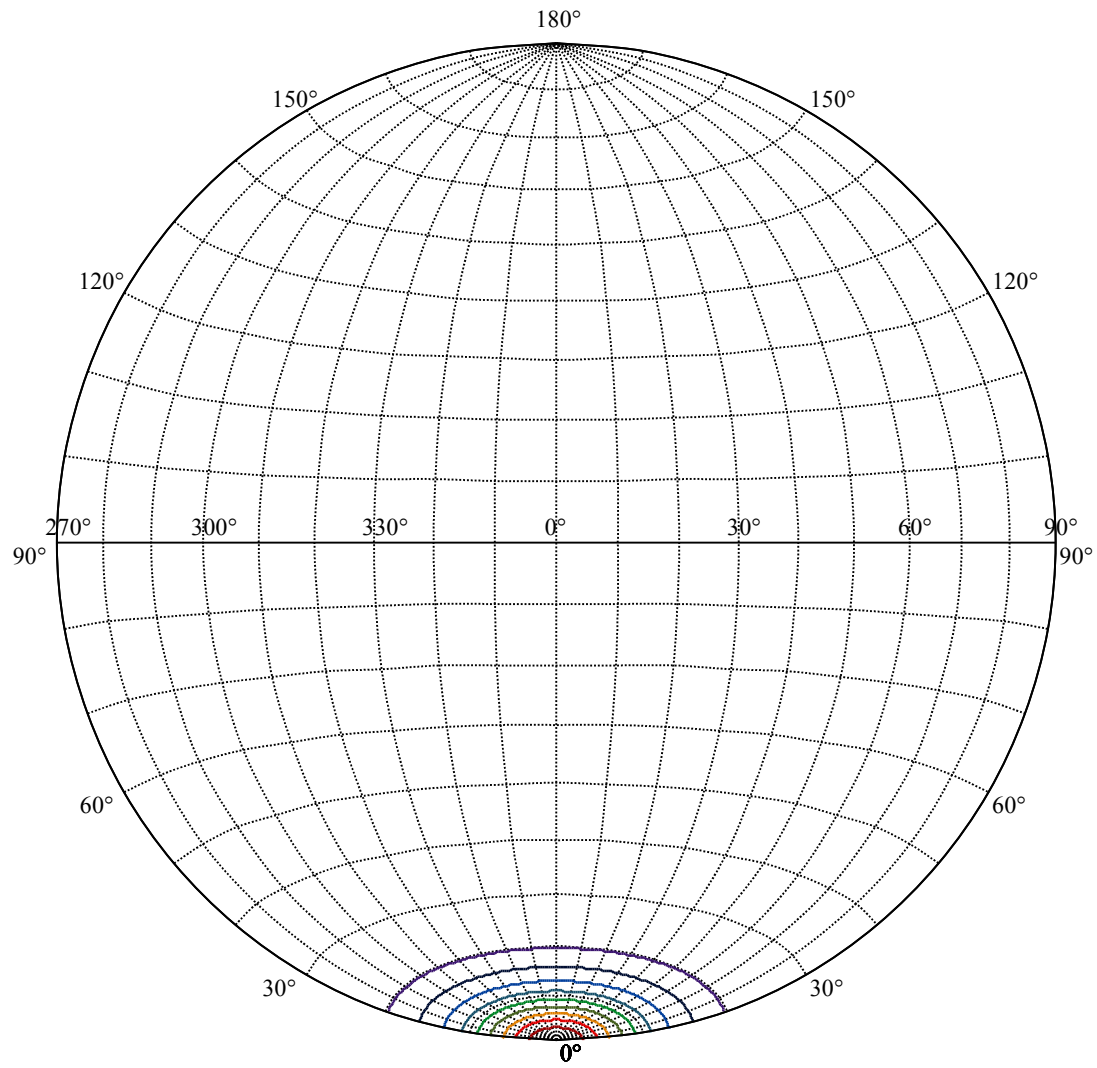
Field angle(10%Imax):C0/180Left:19.7 Right:19.7

:C90/270Left:19.7 Right:19.7

Beam Angle(50%Imax):C0/180Left:9.1 Right:9.1

:C90/270Left:9.1 Right:9.1



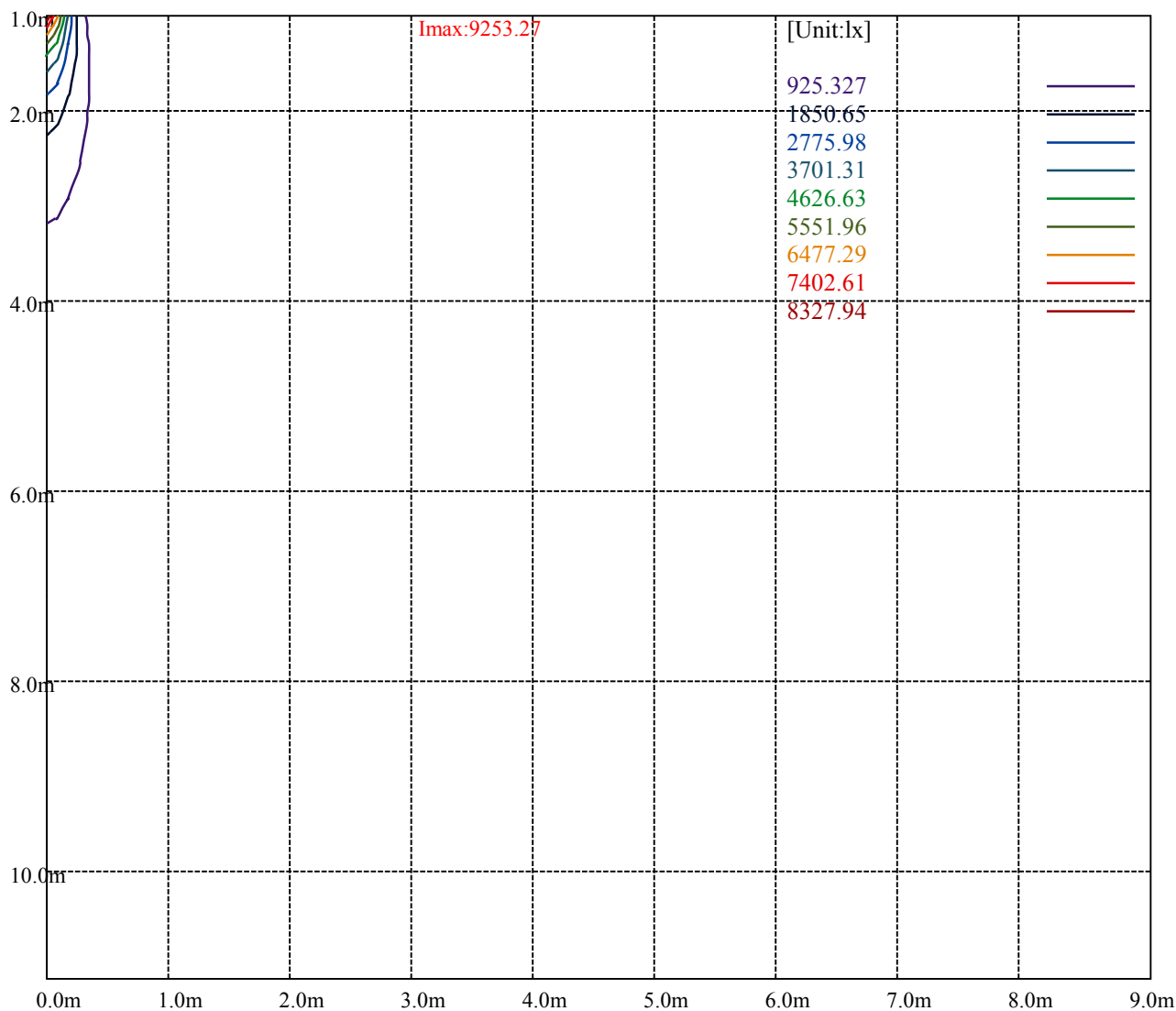


House

[Unit:cd]

Road

Imax:9253.27	
(10%Imax) 925.327	_____
(20%Imax) 1850.65	_____
(30%Imax) 2775.98	_____
(40%Imax) 3701.31	_____
(50%Imax) 4626.63	_____
(60%Imax) 5551.96	_____
(70%Imax) 6477.29	_____
(80%Imax) 7402.61	_____
(90%Imax) 8327.94	_____



Luminance Table

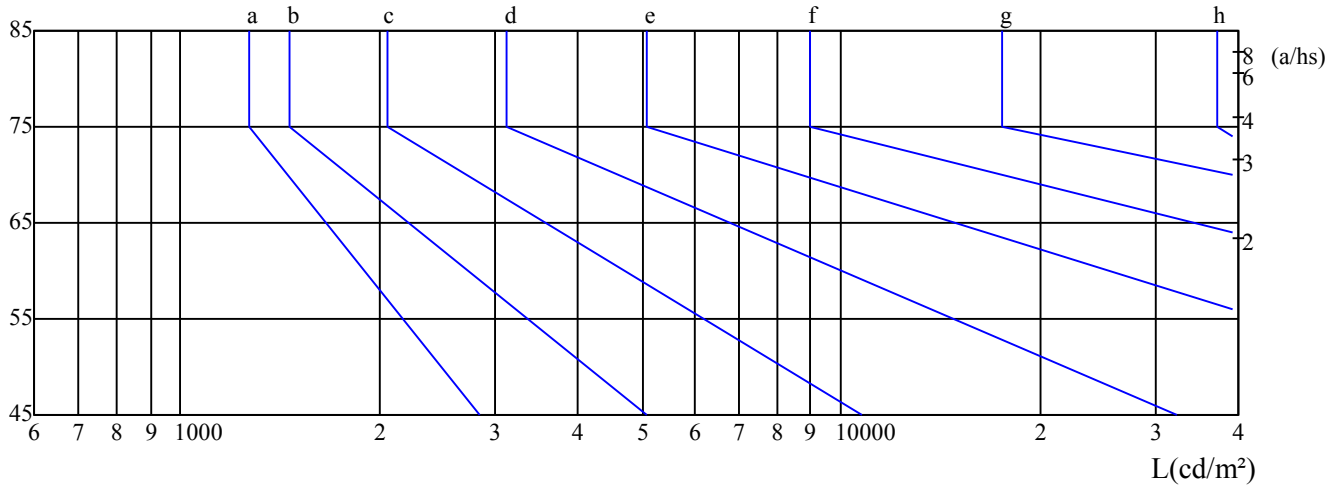
γ	45	50	55	60	65	70	75	80	85
C0	282	272	270	275	286	305	333	371	428
C45	304	296	298	307	323	351	391	447	534
C90	393	399	421	459	519	618	783	1090	1859

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
558	558	558	885	885	885	2604	2604	2604

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

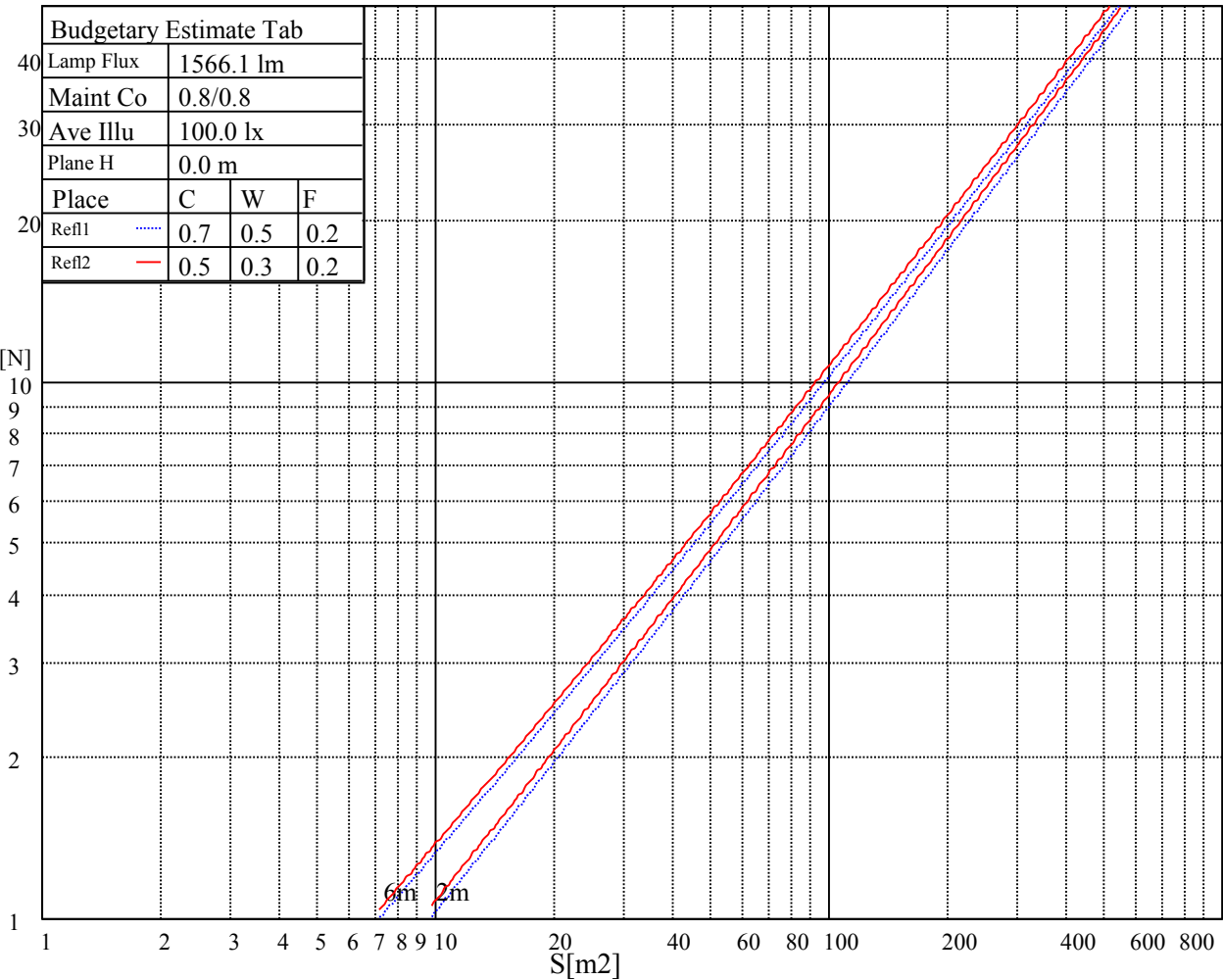
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

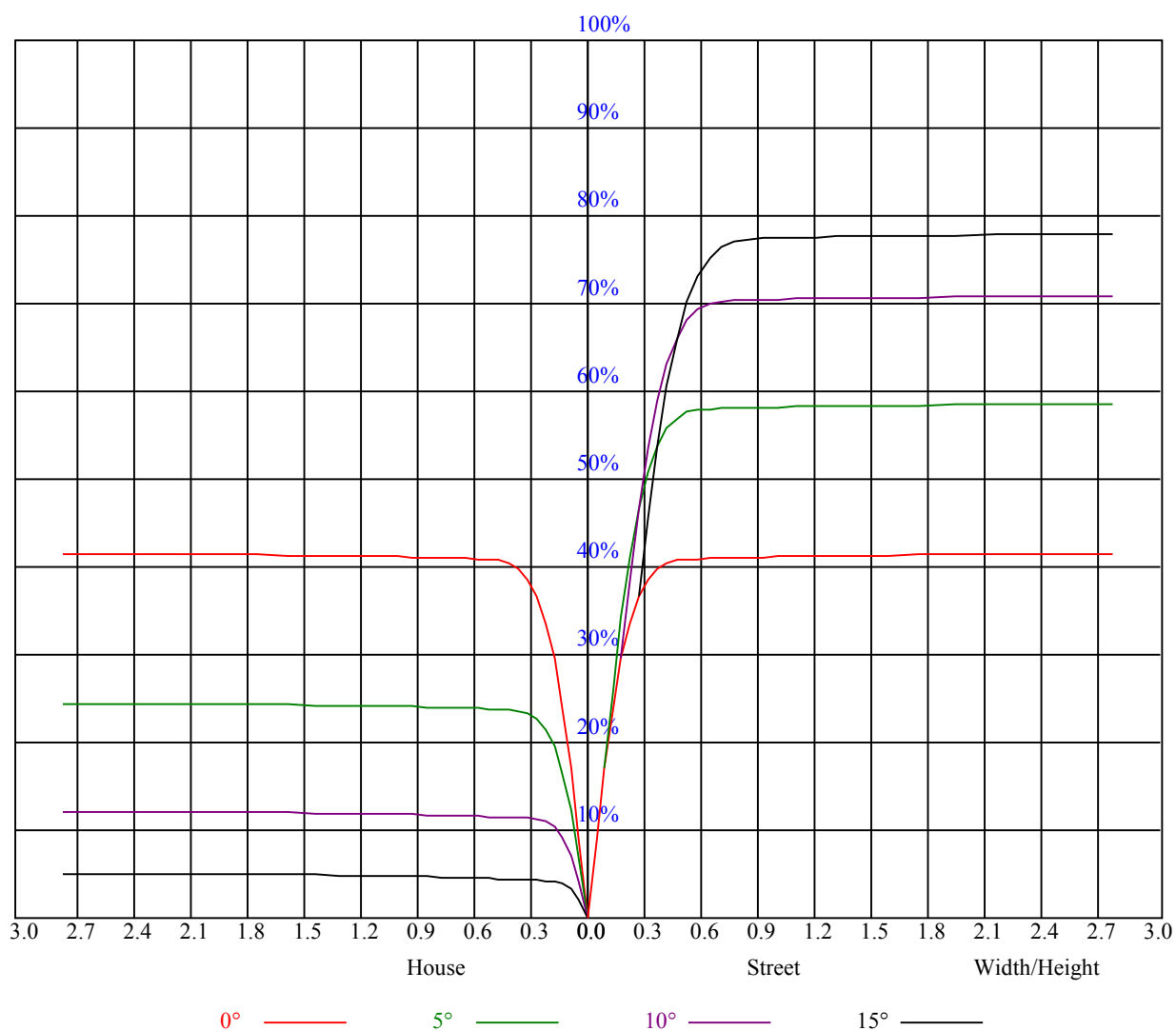
C0 ———

C45 ———

C90 ———



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	1.00	1.00	1.00	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.85	0.85	0.85	0.84
1	0.95	0.93	0.92	0.93	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.85	0.84	0.83	0.82	0.81
2	0.90	0.88	0.86	0.89	0.87	0.85	0.86	0.85	0.83	0.84	0.83	0.82	0.82	0.81	0.80	0.79
3	0.87	0.84	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.79	0.80	0.79	0.78	0.77
4	0.84	0.81	0.79	0.83	0.80	0.78	0.82	0.79	0.77	0.80	0.78	0.77	0.79	0.77	0.76	0.75
5	0.82	0.78	0.76	0.81	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.75	0.77	0.75	0.74	0.73
6	0.79	0.76	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.77	0.74	0.73	0.76	0.74	0.72	0.71
7	0.77	0.74	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.75	0.73	0.71	0.74	0.72	0.71	0.70
8	0.75	0.72	0.70	0.75	0.72	0.70	0.74	0.72	0.70	0.74	0.71	0.69	0.73	0.71	0.69	0.68
9	0.74	0.71	0.68	0.73	0.70	0.68	0.73	0.70	0.68	0.72	0.70	0.68	0.71	0.69	0.68	0.67
10	0.72	0.69	0.67	0.72	0.69	0.67	0.71	0.69	0.67	0.71	0.68	0.67	0.70	0.68	0.67	0.66



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	9372.38	9289.69	8976.38	8395.88	7857.56	7279.31	6531.19	5910.19	5315.63
45.0	9258.19	8856.00	8218.69	7566.75	6985.69	6388.88	5605.31	4997.81	4469.63
90.0	9083.25	8519.06	7953.19	7314.19	6648.75	6035.63	5347.13	4692.38	4191.75
135.0	9299.25	9051.19	8552.81	7973.44	7407.56	6839.44	6091.88	5472.00	4893.75
180.0	9372.38	9176.63	8835.19	8299.13	7735.50	7172.44	6498.56	5801.06	5182.31
225.0	9258.19	9515.25	9494.44	9168.19	8688.38	8151.75	7515.00	6871.50	6256.13
270.0	9083.25	9393.19	9514.69	9338.06	8953.88	8459.44	7773.75	7176.38	6594.19
315.0	9299.25	9343.69	9082.13	8655.75	8059.50	7588.13	6933.94	6185.25	5637.38
360.0	9372.38	9289.69	8976.38	8395.88	7857.56	7279.31	6531.19	5910.19	5315.63
C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4618.69	4132.13	3699.00	3247.31	2828.25	2489.06	2149.88	1870.31	1580.06
45.0	3886.31	3463.88	3072.94	2680.31	2322.56	2031.19	1733.06	1488.38	1247.63
90.0	3736.69	3227.63	2860.88	2529.00	2158.88	1887.19	1631.81	1351.13	1107.62
135.0	4258.13	3812.06	3393.56	2967.75	2582.44	2266.88	1946.81	1684.13	1425.38
180.0	4614.19	3994.31	3568.50	3162.38	2710.69	2381.63	2085.19	1782.56	1501.31
225.0	5626.69	4851.56	4317.75	3838.50	3298.50	2909.25	2561.06	2199.38	1865.81
270.0	5794.88	5165.44	4586.06	4024.69	3513.94	3094.88	2675.81	2337.19	2000.81
315.0	5026.50	4286.25	3867.19	3432.38	2976.19	2574.56	2264.06	1948.50	1653.19
360.0	4618.69	4132.13	3699.00	3247.31	2828.25	2489.06	2149.88	1870.31	1580.06
C/ γ (°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1317.94	1102.50	877.50	667.69	498.94	347.63	314.44	102.32	46.35
45.0	1003.50	810.56	609.19	425.81	284.63	211.73	74.14	30.94	20.36
90.0	927.51	732.71	537.47	362.25	232.76	123.86	51.24	24.64	18.11
135.0	1172.81	967.50	741.94	556.31	395.44	286.88	125.16	56.93	30.04
180.0	1104.47	1053.23	826.71	619.26	457.93	296.94	172.63	91.35	40.89
225.0	1609.31	1350.00	1102.05	895.16	689.18	520.88	347.23	211.89	122.06
270.0	1701.56	1461.94	1209.38	975.38	780.75	604.13	407.81	289.69	160.82
315.0	1414.13	1112.29	960.64	742.39	565.14	387.45	239.46	139.05	61.37
360.0	1317.94	1102.50	877.50	667.69	498.94	347.63	314.44	102.32	46.35
C/ γ (°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	24.69	19.13	17.10	15.36	13.95	12.94	11.93	11.19	10.46
45.0	16.82	14.63	13.28	12.38	11.31	10.58	10.13	9.45	9.06
90.0	15.64	13.89	12.83	11.87	11.08	10.29	9.79	9.28	8.89
135.0	19.07	16.37	14.79	13.44	12.32	11.42	10.69	10.18	9.73
180.0	23.34	17.89	15.75	14.40	13.28	12.04	11.25	10.63	9.96
225.0	57.54	28.29	21.26	18.06	16.03	14.46	13.22	12.09	11.19
270.0	79.76	34.93	23.12	19.58	16.88	15.36	14.06	12.88	11.93
315.0	32.23	21.60	18.39	16.65	15.19	13.73	12.71	11.87	10.91
360.0	24.69	19.13	17.10	15.36	13.95	12.94	11.93	11.19	10.46
C/ γ (°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	9.90	9.45	9.11	8.66	8.38	8.21	7.93	7.76	7.65
45.0	8.78	8.38	8.16	7.99	7.71	7.54	7.43	7.20	7.14
90.0	8.55	8.27	8.04	7.76	7.65	7.48	7.37	7.20	7.09
135.0	9.28	8.83	8.61	8.33	8.10	7.88	7.71	7.54	7.37
180.0	9.56	9.17	8.83	8.49	8.27	7.99	7.82	7.65	7.54
225.0	10.52	9.90	9.39	9.00	8.61	8.33	8.10	7.82	7.65
270.0	11.14	10.46	9.90	9.45	9.00	8.66	8.38	8.10	7.93
315.0	10.35	9.84	9.34	9.00	8.66	8.33	8.16	7.93	7.76
360.0	9.90	9.45	9.11	8.66	8.38	8.21	7.93	7.76	7.65

Intensity data(cd)										Appendix Page: 17 Total:18	
C/ γ (°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0		
0.0	7.48	7.37	7.26	7.14	7.09	6.98	6.86	6.81	6.75		
45.0	7.03	6.92	6.86	6.75	6.64	6.58	6.53	6.47	6.41		
90.0	6.98	6.92	6.81	6.75	6.69	6.58	6.53	6.47	6.41		
135.0	7.31	7.20	7.09	6.98	6.92	6.81	6.75	6.69	6.64		
180.0	7.37	7.26	7.14	7.03	6.98	6.86	6.81	6.75	6.64		
225.0	7.48	7.31	7.20	7.03	6.98	6.86	6.75	6.69	6.58		
270.0	7.76	7.54	7.43	7.31	7.20	7.09	6.98	6.92	6.81		
315.0	7.59	7.48	7.31	7.20	7.09	7.03	6.92	6.86	6.75		
360.0	7.48	7.37	7.26	7.14	7.09	6.98	6.86	6.81	6.75		
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0		
0.0	6.69	6.58	6.58	6.47	6.41	6.36	6.30	6.24	6.24		
45.0	6.36	6.30	6.24	6.19	6.19	6.08	6.08	6.08	6.02		
90.0	6.36	6.30	6.30	6.30	6.19	6.19	6.13	6.13	6.08		
135.0	6.58	6.53	6.47	6.41	6.30	6.30	6.24	6.24	6.19		
180.0	6.58	6.53	6.47	6.41	6.36	6.30	6.30	6.24	6.19		
225.0	6.58	6.47	6.41	6.36	6.30	6.19	6.13	6.13	6.08		
270.0	6.75	6.69	6.64	6.53	6.47	6.47	6.41	6.30	6.30		
315.0	6.69	6.64	6.58	6.47	6.47	6.36	6.36	6.30	6.30		
360.0	6.69	6.58	6.58	6.47	6.41	6.36	6.30	6.24	6.24		
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0		
0.0	6.19	6.19	6.13	6.13	6.08	6.08	6.02	6.02	6.02		
45.0	5.96	5.96	5.91	5.91	5.91	5.85	5.85	5.79	5.79		
90.0	6.08	6.02	5.96	5.96	5.96	5.96	5.91	5.91	5.91		
135.0	6.19	6.13	6.08	6.08	6.02	6.02	6.02	5.96	5.96		
180.0	6.13	6.13	6.08	6.08	6.02	6.02	5.96	5.96	5.96		
225.0	6.02	6.02	5.96	5.96	5.91	5.91	5.85	5.85	5.85		
270.0	6.24	6.24	6.19	6.19	6.13	6.13	6.13	6.08	6.08		
315.0	6.19	6.19	6.13	6.13	6.13	6.08	6.02	6.02	6.02		
360.0	6.19	6.19	6.13	6.13	6.08	6.08	6.02	6.02	6.02		
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0		
0.0	6.02	5.96	5.96	5.96	5.91	5.91	5.91	5.91	5.91		
45.0	5.79	5.74	5.79	5.79	5.74	5.74	5.74	5.74	5.68		
90.0	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.79	5.85		
135.0	5.96	5.91	5.91	5.91	5.91	5.91	5.91	5.85	5.85		
180.0	5.96	5.91	5.91	5.91	5.91	5.91	5.85	5.85	5.79		
225.0	5.79	5.79	5.74	5.74	5.74	5.74	5.68	5.68	5.68		
270.0	6.02	6.02	5.96	5.96	5.96	5.96	5.96	5.96	5.91		
315.0	5.96	5.96	5.96	5.91	5.91	5.91	5.91	5.85	5.91		
360.0	6.02	5.96	5.96	5.96	5.91	5.91	5.91	5.91	5.91		
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0		
0.0	5.85	5.91	5.91	5.91	5.91	5.85	5.79	5.79	5.85		
45.0	5.68	5.68	5.68	5.68	5.74	5.63	5.68	5.63	5.68		
90.0	5.85	5.91	5.96	5.85	5.74	5.74	5.74	5.74	5.74		
135.0	5.85	5.85	5.85	5.85	5.85	5.85	5.79	5.85	5.79		
180.0	5.79	5.79	5.85	5.79	5.79	5.79	5.79	5.79	5.79		
225.0	5.68	5.68	5.68	5.68	5.68	5.68	5.68	5.63	5.63		
270.0	5.91	5.96	5.91	5.96	6.02	5.79	5.74	5.74	5.74		
315.0	5.85	5.91	5.85	5.85	5.85	5.85	5.79	5.79	5.79		
360.0	5.85	5.91	5.91	5.91	5.91	5.85	5.79	5.79	5.85		

Intensity data(cd)

Appendix Page: 18 Total:18

C/ $\gamma(^{\circ})$	90.0
0.0	5.79
45.0	5.63
90.0	5.68
135.0	5.85
180.0	5.79
225.0	5.63
270.0	5.74
315.0	5.79
360.0	5.79