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Nata

LumCAT: 3-1548-A3
Luminaire: 99.02.73.172+92.76.365.00
Report No: 200407-B013
Test No: 200407-C013
LampCAT: LUMINUS CXM-14 AC40
Lamp flux(lm): 1553.5
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 33.3300
Current(A): 0.3470
Power (W): 11.5660
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 1392.95
Efficiency(%): 89.67%
Lumens(lm)/Power(W): 120.44
Central intensity(cd): 9224.437
Maximum intensity(cd): 9224.437
Angle of maximum intensity: $C=0.0$ $\gamma=0.0$
Beam Angle(50%Imax): [C0/180]Total=15.8
[C90/270]Total=15.8
Field angle(10%Imax): [C0/180]Total=33.8
[C90/270]Total=33.8
Maximum s/h(1/2): C0_180=0.27 C90_270=0.27
Maximum s/h(1/4): C0_180=0.27 C90_270=0.27
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.67%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.695%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9224.438	0.000	0	.000%	.000%
1.0	9122.063	8.778	8.778	.565%	.630%
2.0	8818.242	25.750	34.528	1.658%	2.479%
3.0	8330.836	41.015	75.543	2.640%	5.423%
4.0	7733.531	53.773	129.316	3.461%	9.284%
5.0	6964.242	63.229	192.545	4.070%	13.823%
6.0	6127.875	68.803	261.347	4.429%	18.762%
7.0	5293.969	70.895	332.242	4.564%	23.852%
8.0	4519.828	70.235	402.478	4.521%	28.894%
9.0	3707.578	66.679	469.157	4.292%	33.681%
10.0	3020.203	60.884	530.041	3.919%	38.052%
11.0	2429.578	54.455	584.495	3.505%	41.961%
12.0	1972.266	48.118	632.613	3.097%	45.415%
13.0	1617.138	42.597	675.211	2.742%	48.473%
14.0	1350.197	37.982	713.192	2.445%	51.200%
15.0	1169.726	34.595	747.787	2.227%	53.684%
16.0	1018.969	32.070	779.857	2.064%	55.986%
17.0	910.941	30.054	809.911	1.935%	58.144%
18.0	825.954	28.638	838.549	1.843%	60.199%
19.0	768.994	27.749	866.298	1.786%	62.192%
20.0	718.390	27.223	893.521	1.752%	64.146%
21.0	680.273	26.857	920.378	1.729%	66.074%
22.0	652.894	26.791	947.169	1.725%	67.997%
23.0	628.706	26.891	974.06	1.731%	69.928%
24.0	607.205	27.021	1001.082	1.739%	71.868%
25.0	589.697	27.215	1028.297	1.752%	73.821%
26.0	574.320	27.477	1055.773	1.769%	75.794%
27.0	558.570	27.716	1083.49	1.784%	77.784%
28.0	545.231	27.946	1111.436	1.799%	79.790%
29.0	532.139	28.187	1139.623	1.814%	81.814%
30.0	515.897	28.297	1167.919	1.821%	83.845%
31.0	494.599	28.121	1196.04	1.810%	85.864%
32.0	463.479	27.448	1223.488	1.767%	87.834%
33.0	422.051	26.088	1249.576	1.679%	89.707%
34.0	374.646	24.110	1273.686	1.552%	91.438%
35.0	324.809	21.722	1295.409	1.398%	92.997%
36.0	261.316	18.662	1314.071	1.201%	94.337%
37.0	204.279	15.185	1329.256	.977%	95.427%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	149.119	11.796	1341.052	.759%	96.274%
39.0	98.979	8.468	1349.52	.545%	96.882%
40.0	63.682	5.673	1355.193	.365%	97.289%
41.0	38.067	3.623	1358.817	.233%	97.549%
42.0	23.534	2.238	1361.055	.144%	97.710%
43.0	17.423	1.517	1362.572	.098%	97.819%
44.0	14.013	1.187	1363.758	.076%	97.904%
45.0	11.904	0.996	1364.754	.064%	97.976%
46.0	10.427	0.873	1365.628	.056%	98.038%
47.0	9.148	0.779	1366.406	.050%	98.094%
48.0	8.423	0.710	1367.117	.046%	98.145%
49.0	8.128	0.680	1367.796	.044%	98.194%
50.0	7.882	0.668	1368.464	.043%	98.242%
51.0	7.678	0.658	1369.122	.042%	98.289%
52.0	7.488	0.651	1369.773	.042%	98.336%
53.0	7.313	0.644	1370.417	.041%	98.382%
54.0	7.137	0.637	1371.054	.041%	98.428%
55.0	6.982	0.630	1371.684	.041%	98.473%
56.0	6.841	0.625	1372.309	.040%	98.518%
57.0	6.722	0.620	1372.929	.040%	98.563%
58.0	6.609	0.616	1373.545	.040%	98.607%
59.0	6.518	0.614	1374.159	.040%	98.651%
60.0	6.420	0.611	1374.77	.039%	98.695%
61.0	6.328	0.608	1375.378	.039%	98.738%
62.0	6.265	0.607	1375.985	.039%	98.782%
63.0	6.202	0.606	1376.592	.039%	98.826%
64.0	6.131	0.605	1377.197	.039%	98.869%
65.0	6.075	0.604	1377.801	.039%	98.912%
66.0	6.019	0.603	1378.404	.039%	98.956%
67.0	5.977	0.603	1379.007	.039%	98.999%
68.0	5.913	0.602	1379.61	.039%	99.042%
69.0	5.885	0.602	1380.212	.039%	99.085%
70.0	5.850	0.603	1380.814	.039%	99.129%
71.0	5.815	0.603	1381.417	.039%	99.172%
72.0	5.780	0.603	1382.02	.039%	99.215%
73.0	5.752	0.603	1382.623	.039%	99.259%
74.0	5.730	0.604	1383.227	.039%	99.302%
75.0	5.716	0.605	1383.831	.039%	99.345%

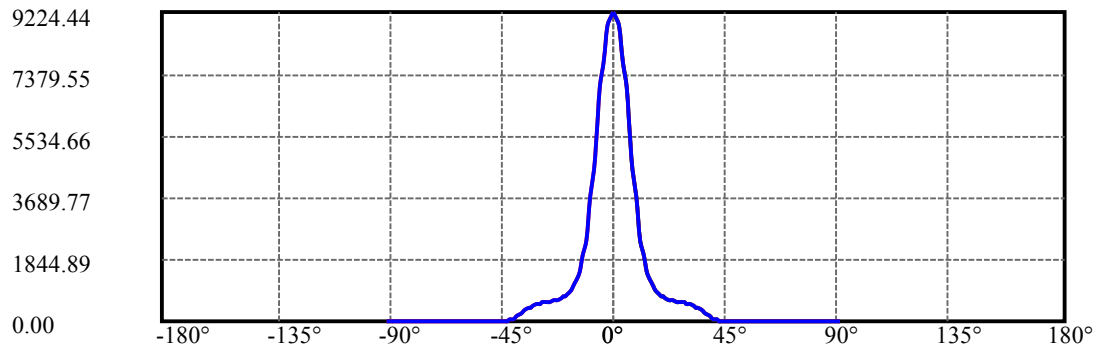
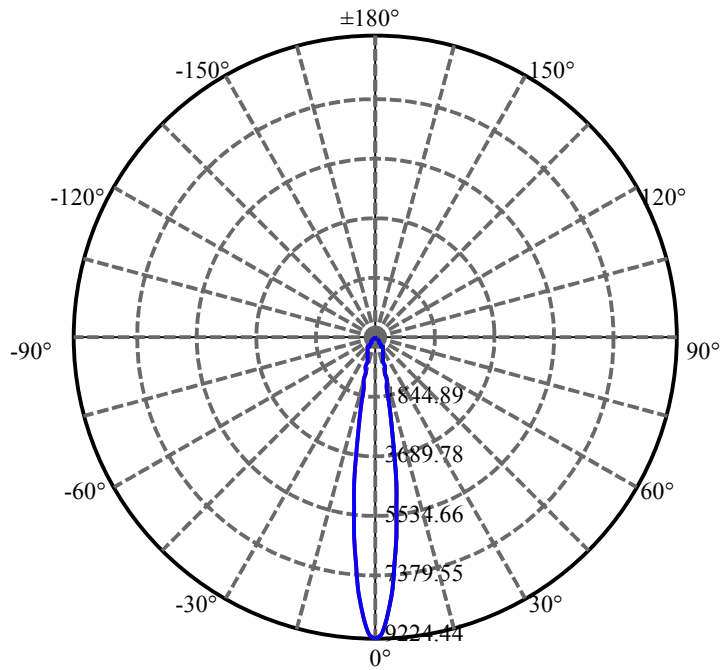
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	5.702	0.606	1384.438	.039%	99.389%
77.0	5.688	0.607	1385.045	.039%	99.432%
78.0	5.660	0.607	1385.652	.039%	99.476%
79.0	5.646	0.607	1386.26	.039%	99.520%
80.0	5.625	0.608	1386.868	.039%	99.563%
81.0	5.618	0.608	1387.476	.039%	99.607%
82.0	5.604	0.609	1388.084	.039%	99.651%
83.0	5.597	0.609	1388.693	.039%	99.694%
84.0	5.597	0.610	1389.303	.039%	99.738%
85.0	5.590	0.611	1389.913	.039%	99.782%
86.0	5.576	0.610	1390.524	.039%	99.826%
87.0	5.541	0.608	1391.132	.039%	99.869%
88.0	5.548	0.607	1391.739	.039%	99.913%
89.0	5.513	0.606	1392.346	.039%	99.956%
90.0	5.541	0.606	1392.952	.039%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1167.92	75.18%	83.84%
0-40	1355.19	87.23%	97.29%
0-60	1374.77	88.50%	98.69%
0-90	1392.35	89.63%	99.96%
0-120	1392.35	89.63%	99.96%
0-180	1392.95	89.67%	100.00%
60-90	18.19	1.17%	1.31%
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%
0-28.10	1114.36	71.73%	80.00%

ZONAL LUMEN SUMMARY

0-10	530.04
10-20	363.48
20-30	274.40
30-40	187.27
40-50	13.27
50-60	6.31
60-70	6.04
70-80	6.05
80-90	5.48
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: —————

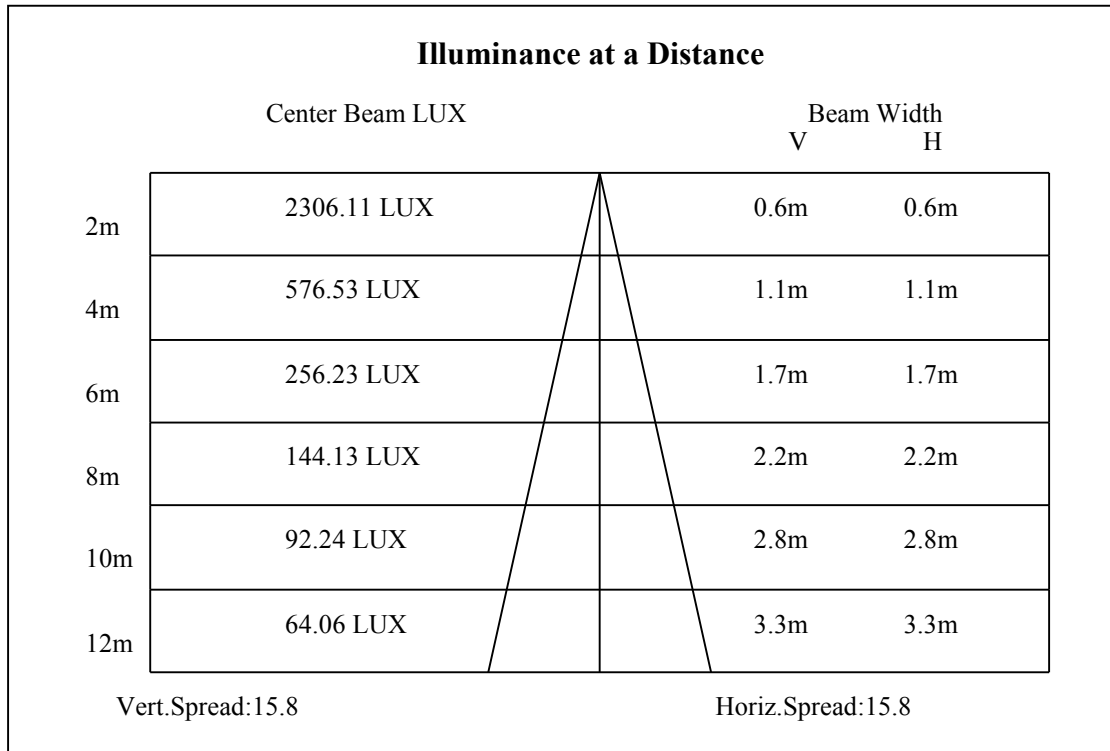
C90/C270: —————

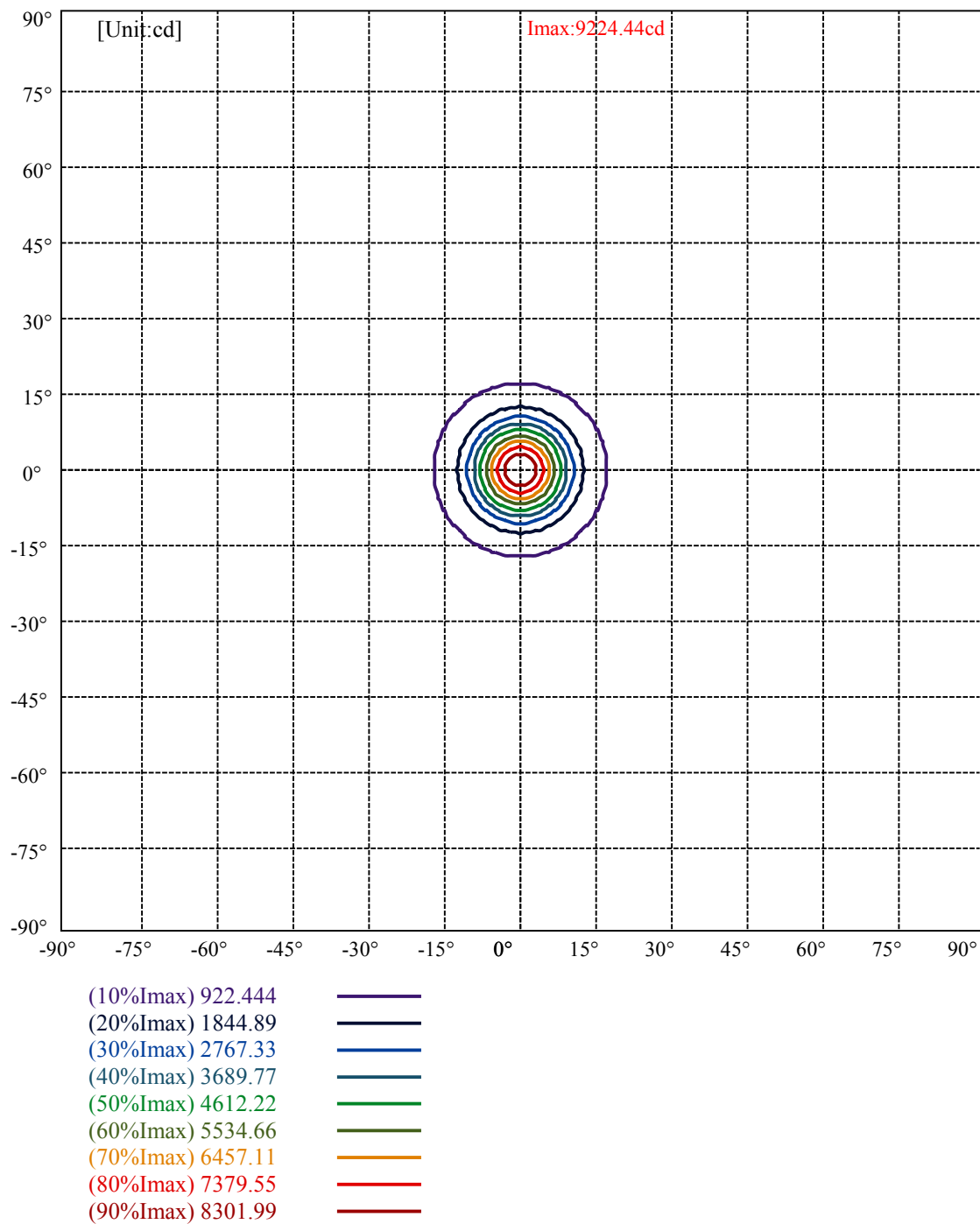
Field angle(10%Imax):C0/180Left:16.9 Right:16.9

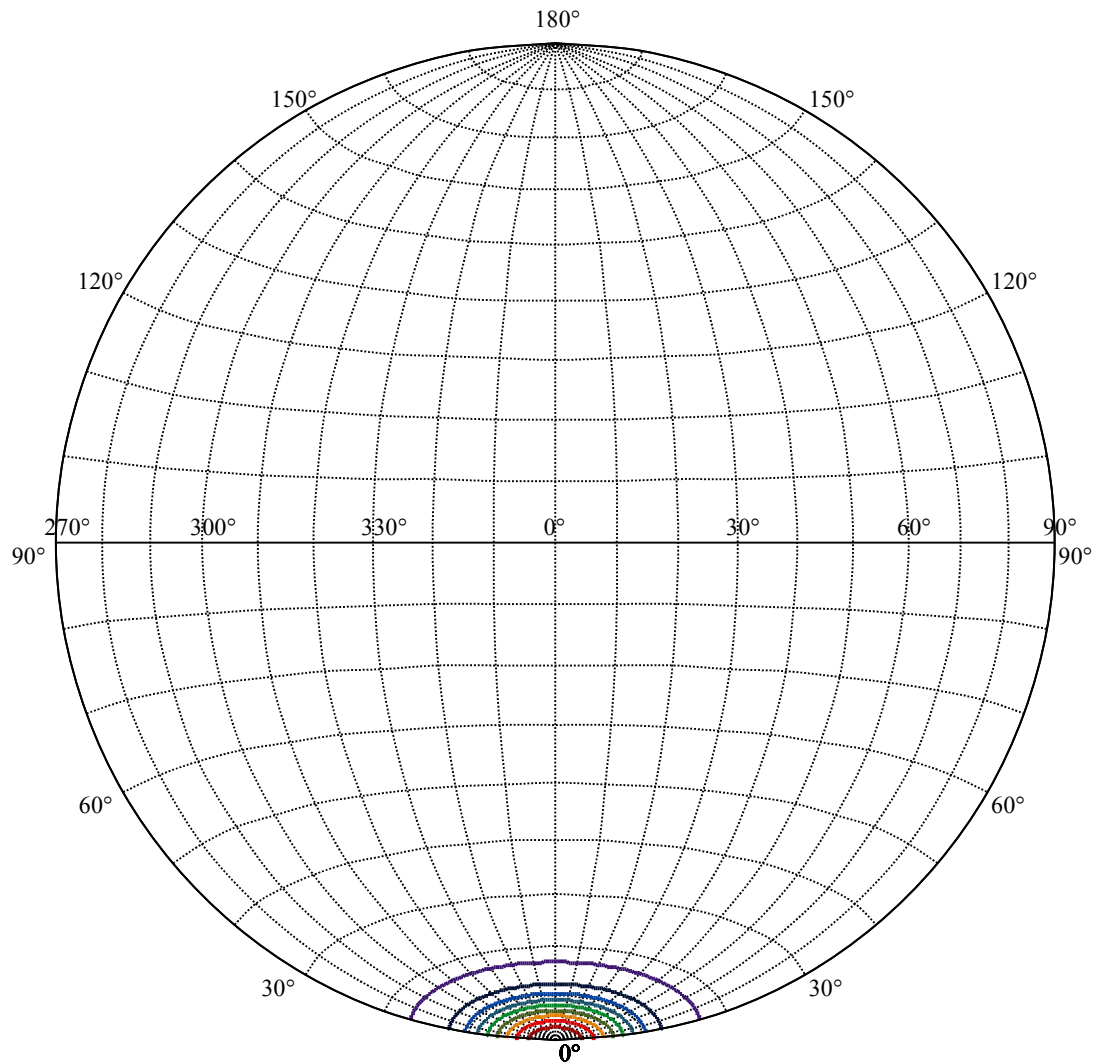
:C90/270Left:16.9 Right:16.9

Beam Angle(50%Imax):C0/180Left:7.9 Right:7.9

:C90/270Left:7.9 Right:7.9







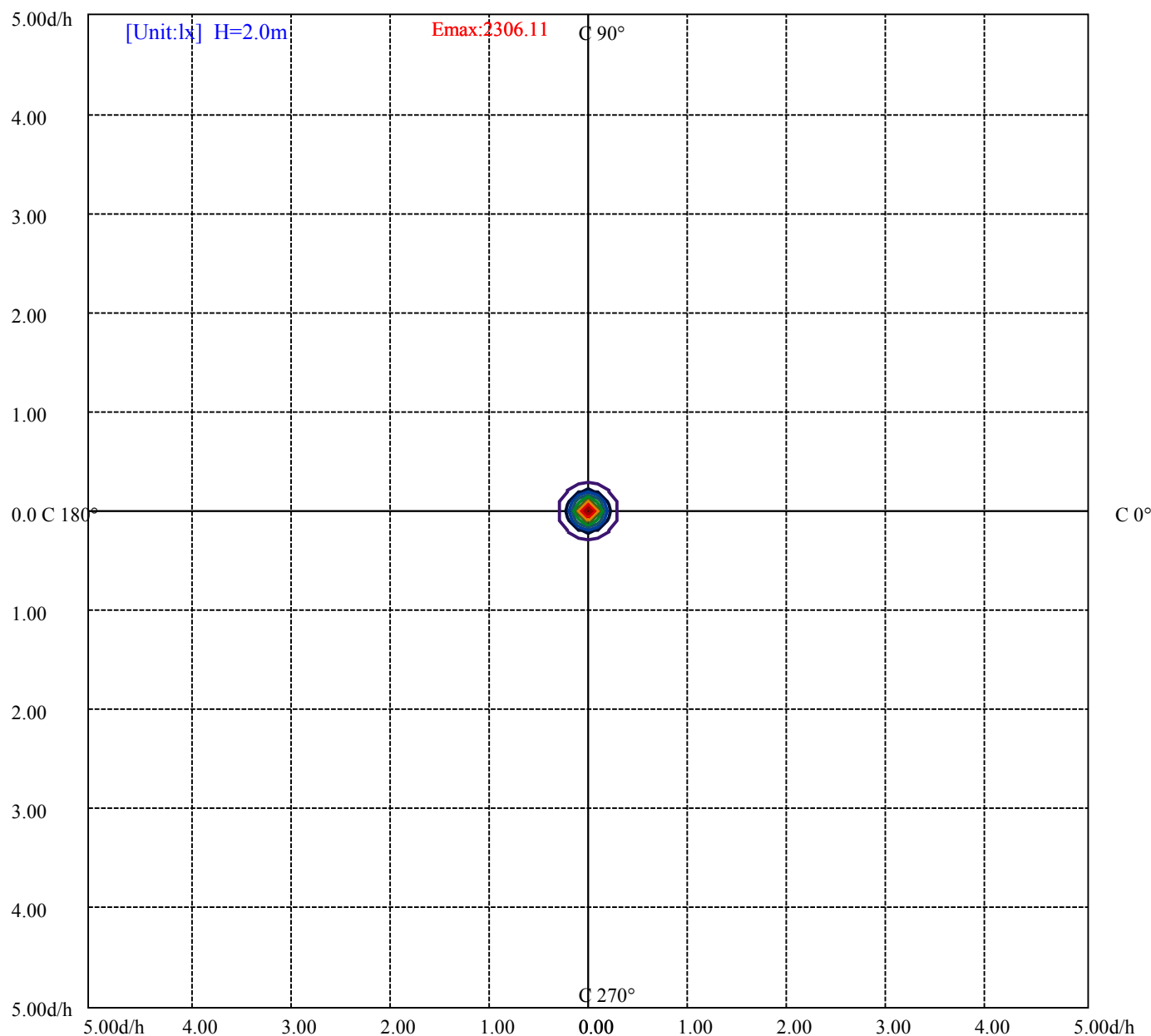
House

[Unit:cd]

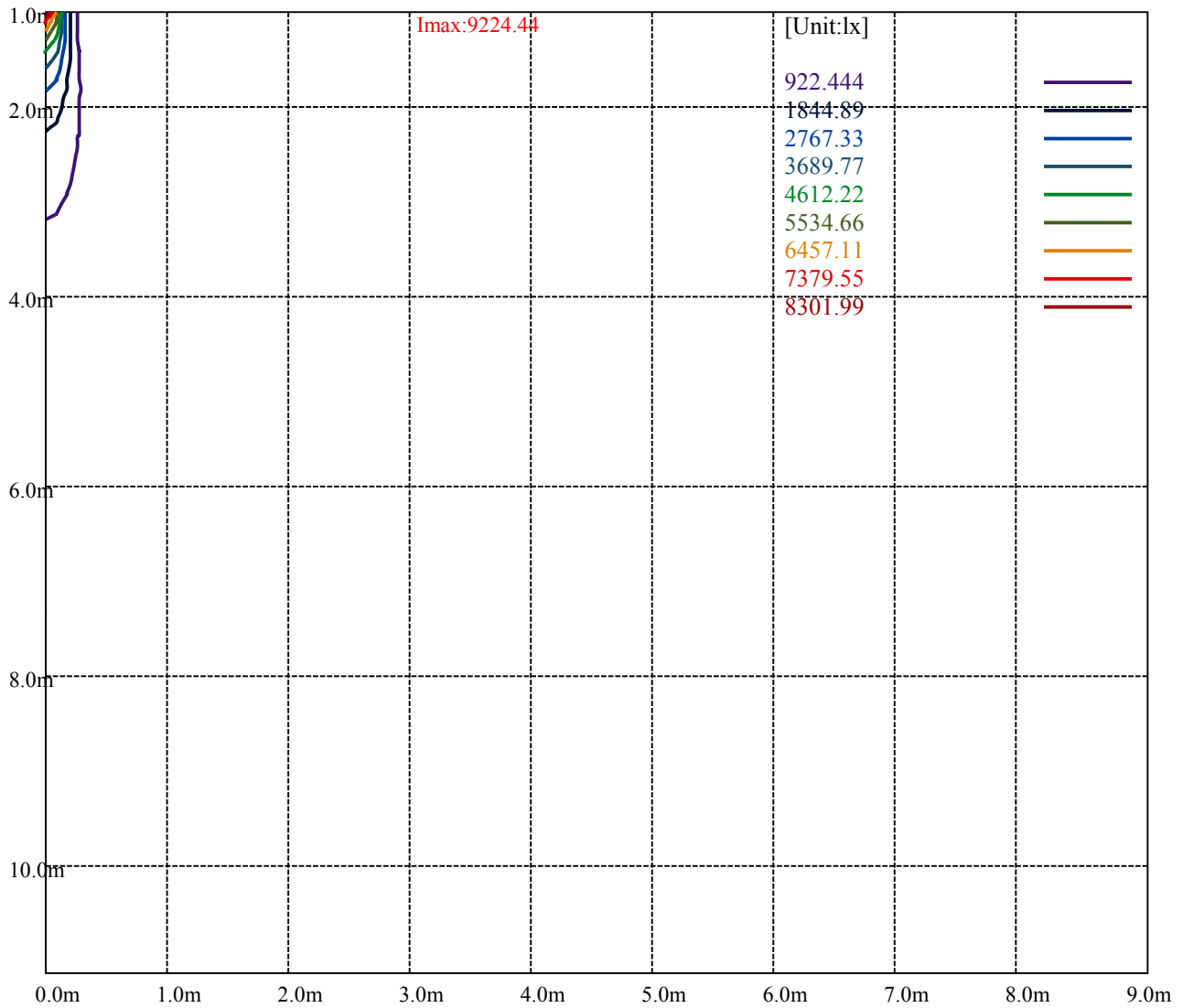
Road

Imax:9224.44

(10%Imax)	922.444	—
(20%Imax)	1844.89	—
(30%Imax)	2767.33	—
(40%Imax)	3689.77	—
(50%Imax)	4612.22	—
(60%Imax)	5534.66	—
(70%Imax)	6457.11	—
(80%Imax)	7379.55	—
(90%Imax)	8301.99	—



(10%Emax) 230.6105	—
(20%Emax) 461.22	—
(30%Emax) 691.8325	—
(40%Emax) 922.4425	—
(50%Emax) 1153.052	—
(60%Emax) 1383.662	—
(70%Emax) 1614.272	—
(80%Emax) 1844.885	—
(90%Emax) 2075.495	—



Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

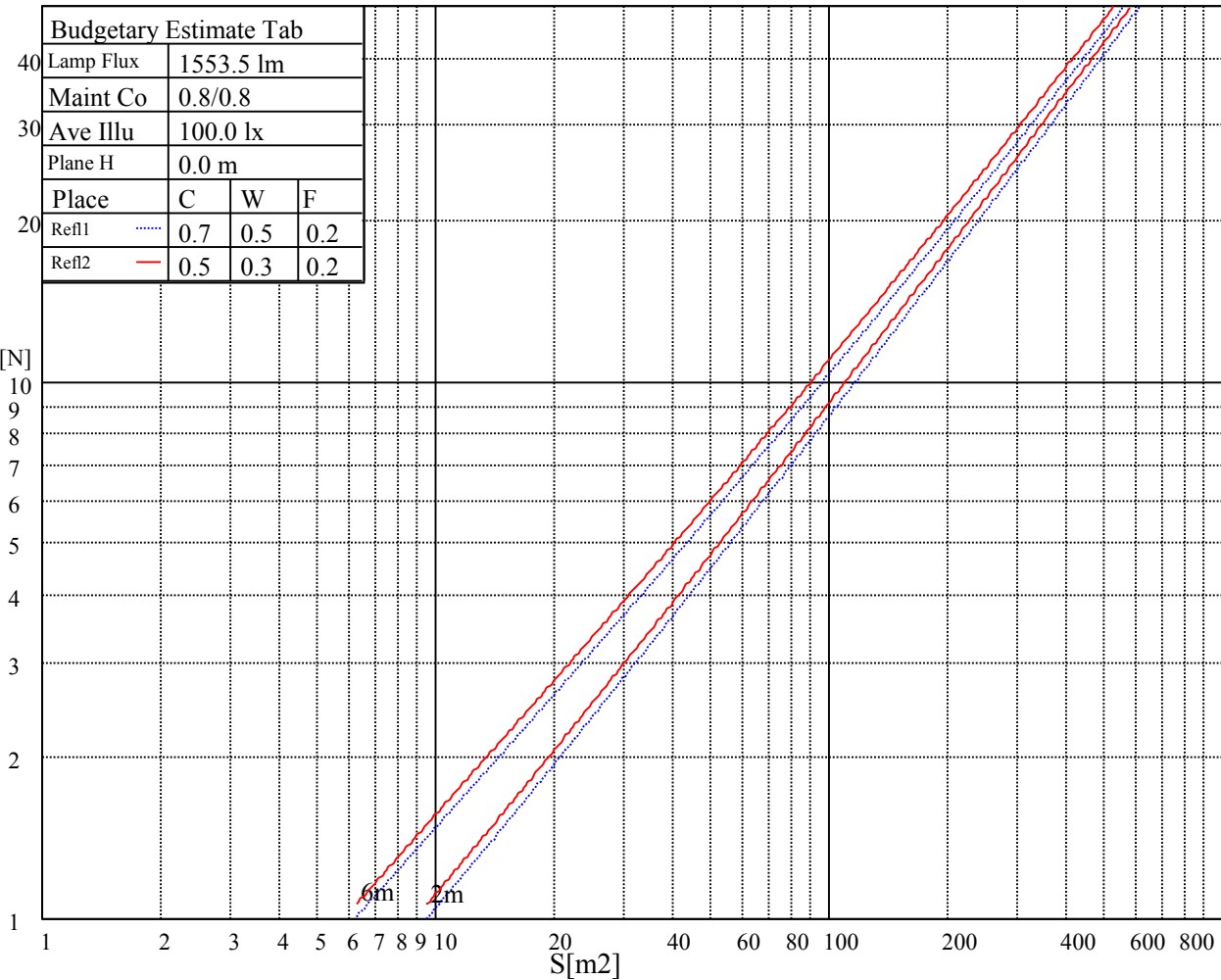
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

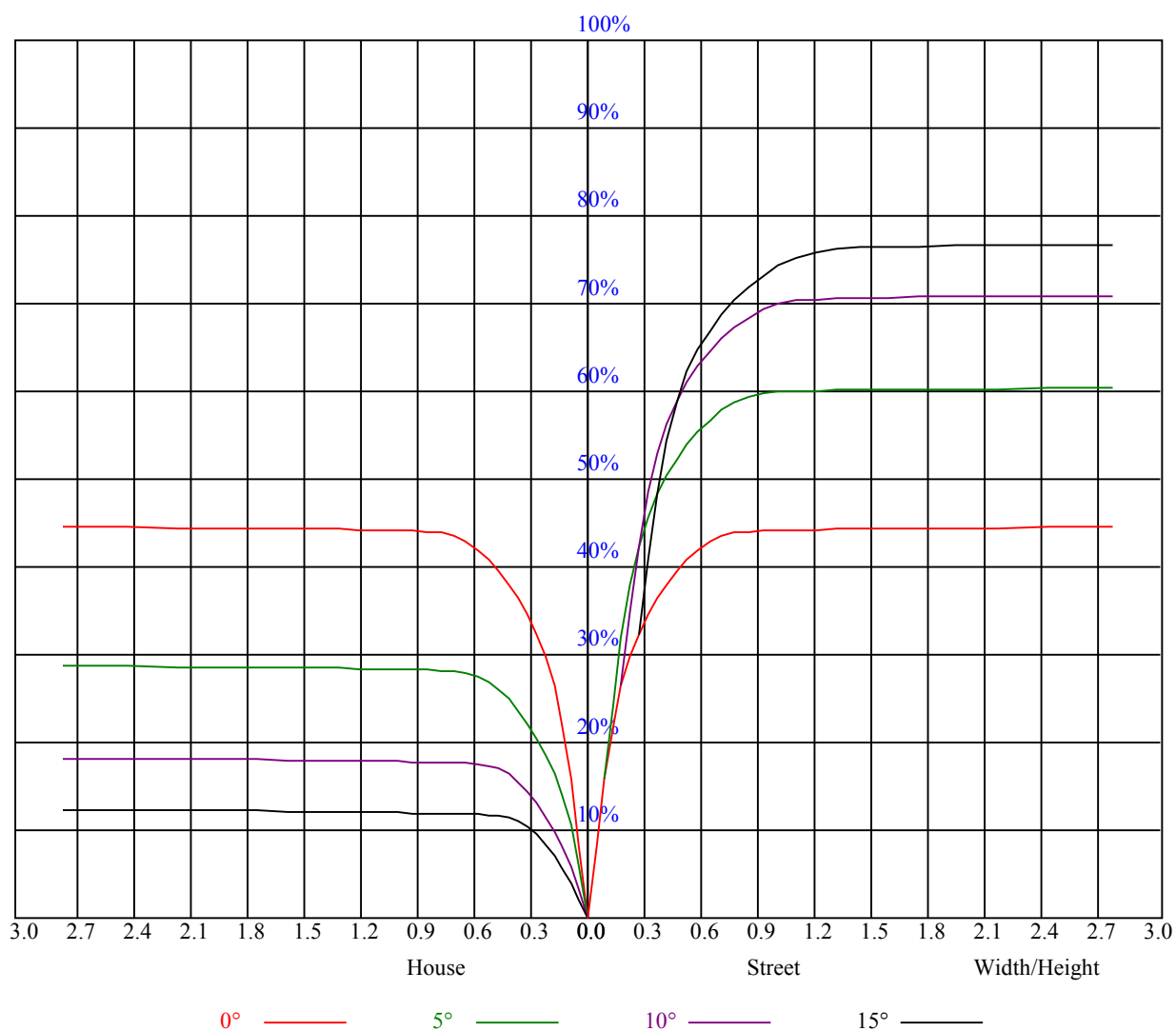
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.07	1.07	1.07	1.04	1.04	1.04	1.00	1.00	1.00	0.95	0.95	0.95	0.91	0.91	0.91	0.90
1	1.01	0.99	0.97	0.99	0.97	0.95	0.95	0.94	0.92	0.92	0.91	0.90	0.89	0.88	0.87	0.86
2	0.95	0.92	0.90	0.94	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	0.84	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	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
5	0.83	0.79	0.76	0.82	0.78	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.78	0.75	0.74	0.72
6	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.75	0.73	0.71	0.70
7	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.73	0.71	0.68	0.67
8	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
9	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
10	0.69	0.65	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.61



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	9254.81	9065.81	8595.00	8056.69	7400.81	6457.50	5660.44	4862.25	3999.38
45.0	9204.75	9209.25	8993.25	8571.94	8058.94	7427.25	6506.44	5707.69	4912.31
90.0	9294.19	9379.13	9270.56	8939.25	8416.13	7804.69	7079.63	5968.13	5258.25
135.0	9144.00	9375.75	9405.56	9243.56	8909.44	8254.13	7567.88	6787.69	6082.31
180.0	9254.81	9256.50	9054.56	8632.13	8089.31	7341.19	6482.81	5696.44	4832.44
225.0	9204.75	8980.88	8599.50	8001.00	7261.31	6503.06	5627.25	4783.50	4071.38
270.0	9294.19	8975.25	8518.50	7846.31	7131.94	6237.56	5325.19	4544.44	3810.38
315.0	9144.00	8733.94	8109.00	7355.81	6600.38	5688.56	4773.38	4001.63	3192.19
360.0	9254.81	9065.81	8595.00	8056.69	7400.81	6457.50	5660.44	4862.25	3999.38
C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3190.50	2553.19	1986.19	1634.63	1348.88	1146.38	1015.31	903.94	815.63
45.0	3954.38	3228.19	2584.69	2014.31	1618.88	1365.19	1157.06	1005.19	900.56
90.0	4470.19	3724.88	2889.00	2331.00	1900.13	1519.88	1297.69	1108.01	981.34
135.0	5007.94	4250.81	3544.88	2844.00	2268.00	1879.88	1560.94	1320.19	1152.56
180.0	4103.44	3351.38	2703.38	2238.19	1878.75	1540.69	1328.63	1121.91	1000.52
225.0	3403.13	2665.13	2189.81	1823.63	1485.00	1219.50	1117.58	995.68	881.72
270.0	2978.44	2406.94	1954.69	1555.88	1326.38	1149.75	998.44	888.75	815.63
315.0	2552.63	1981.13	1584.00	1336.50	1111.11	980.33	882.17	808.09	739.58
360.0	3190.50	2553.19	1986.19	1634.63	1348.88	1146.38	1015.31	903.94	815.63
C/ γ (°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	754.88	708.75	666.00	641.25	621.00	604.69	580.50	565.31	551.81
45.0	803.25	748.69	701.44	665.44	640.13	619.31	596.81	580.50	565.88
90.0	872.72	801.56	741.43	695.64	664.09	636.08	615.94	596.42	578.98
135.0	997.31	905.06	819.00	754.31	712.13	677.25	644.63	624.94	608.06
180.0	908.61	838.24	776.93	727.99	692.94	661.95	639.45	617.74	598.67
225.0	816.36	765.23	719.66	683.44	656.83	632.31	614.19	596.93	582.19
270.0	754.31	714.38	679.50	653.06	632.81	612.56	595.13	581.06	569.25
315.0	700.20	670.05	643.16	621.06	603.23	585.51	570.99	554.68	539.72
360.0	754.88	708.75	666.00	641.25	621.00	604.69	580.50	565.31	551.81
C/ γ (°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	535.50	523.13	514.69	500.63	467.44	431.44	370.69	316.69	289.69
45.0	546.75	533.81	520.88	508.50	496.69	469.13	424.69	375.19	316.69
90.0	565.03	552.15	535.89	523.24	511.88	498.99	468.17	426.60	370.07
135.0	588.38	575.44	564.19	549.00	534.38	522.56	510.75	483.75	436.50
180.0	584.04	569.81	554.85	541.01	527.74	511.88	485.55	445.39	385.65
225.0	570.15	555.36	541.07	528.81	516.04	477.00	431.21	379.69	318.09
270.0	552.94	538.88	527.06	508.50	477.56	433.69	376.31	316.13	289.13
315.0	525.77	513.28	498.49	467.49	425.08	363.15	309.04	253.74	192.66
360.0	535.50	523.13	514.69	500.63	467.44	431.44	370.69	316.69	289.69
C/ γ (°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	191.64	140.40	87.53	46.07	23.63	19.24	14.40	11.59	10.74
45.0	289.69	201.43	143.33	93.71	53.55	28.46	21.32	16.93	13.56
90.0	309.99	255.94	195.30	143.38	88.82	46.80	27.73	22.84	16.88
135.0	380.25	326.25	285.19	198.96	146.08	97.09	47.70	29.08	23.68
180.0	333.34	279.34	209.64	156.49	106.31	55.29	31.89	23.01	16.37
225.0	254.76	199.58	141.19	86.79	48.83	24.86	19.91	14.57	11.42
270.0	196.43	143.49	86.57	44.21	24.02	18.68	14.06	11.19	10.18
315.0	134.44	87.81	44.21	22.22	18.23	14.12	11.25	10.18	9.28
360.0	191.64	140.40	87.53	46.07	23.63	19.24	14.40	11.59	10.74

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	9.84	8.94	8.66	8.33	8.04	7.82	7.59	7.43	7.31		
45.0	12.21	10.52	9.06	8.72	8.38	8.16	7.93	7.76	7.54		
90.0	13.95	12.09	9.28	8.78	8.44	8.16	7.93	7.76	7.59		
135.0	17.89	14.57	12.32	9.00	8.61	8.33	8.04	7.76	7.54		
180.0	13.33	11.36	8.94	8.49	8.16	7.88	7.65	7.43	7.26		
225.0	10.18	8.89	8.44	8.16	7.88	7.65	7.48	7.31	7.09		
270.0	9.11	8.61	8.38	8.04	7.82	7.59	7.43	7.26	7.14		
315.0	8.72	8.44	8.10	7.88	7.71	7.48	7.37	7.20	7.03		
360.0	9.84	8.94	8.66	8.33	8.04	7.82	7.59	7.43	7.31		
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0		
0.0	7.14	6.98	6.81	6.75	6.64	6.53	6.47	6.41	6.30		
45.0	7.37	7.20	7.09	6.98	6.81	6.75	6.64	6.53	6.47		
90.0	7.37	7.20	7.03	6.92	6.81	6.69	6.58	6.47	6.41		
135.0	7.37	7.20	6.98	6.81	6.69	6.58	6.47	6.36	6.30		
180.0	7.03	6.86	6.75	6.58	6.47	6.41	6.30	6.19	6.13		
225.0	6.98	6.81	6.69	6.58	6.47	6.36	6.30	6.19	6.13		
270.0	6.92	6.81	6.69	6.58	6.53	6.41	6.30	6.24	6.19		
315.0	6.92	6.81	6.69	6.58	6.47	6.41	6.30	6.24	6.19		
360.0	7.14	6.98	6.81	6.75	6.64	6.53	6.47	6.41	6.30		
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0		
0.0	6.24	6.13	6.13	6.08	6.02	5.96	5.91	5.85	5.85		
45.0	6.36	6.30	6.24	6.13	6.13	6.08	6.02	5.96	5.91		
90.0	6.30	6.24	6.19	6.08	6.02	5.96	5.91	5.91	5.85		
135.0	6.19	6.13	6.08	6.02	5.96	5.91	5.91	5.85	5.79		
180.0	6.13	6.02	5.96	5.96	5.91	5.79	5.79	5.79	5.74		
225.0	6.13	6.08	5.96	5.96	5.91	5.85	5.85	5.85	5.79		
270.0	6.13	6.08	6.02	5.96	5.91	5.91	5.85	5.79	5.79		
315.0	6.13	6.08	6.02	5.96	5.96	5.85	5.85	5.79	5.79		
360.0	6.24	6.13	6.13	6.08	6.02	5.96	5.91	5.85	5.85		
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0		
0.0	5.79	5.79	5.74	5.68	5.74	5.68	5.63	5.63	5.57		
45.0	5.91	5.85	5.79	5.74	5.79	5.74	5.74	5.68	5.68		
90.0	5.85	5.79	5.74	5.74	5.74	5.74	5.68	5.68	5.63		
135.0	5.74	5.68	5.74	5.74	5.68	5.68	5.63	5.63	5.63		
180.0	5.74	5.68	5.68	5.68	5.63	5.63	5.63	5.63	5.63		
225.0	5.74	5.74	5.74	5.74	5.68	5.68	5.68	5.68	5.63		
270.0	5.74	5.74	5.74	5.74	5.68	5.68	5.68	5.63	5.63		
315.0	5.74	5.74	5.68	5.68	5.68	5.68	5.63	5.63	5.63		
360.0	5.79	5.79	5.74	5.68	5.74	5.68	5.63	5.63	5.57		
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0		
0.0	5.63	5.57	5.57	5.57	5.57	5.57	5.51	5.51	5.46		
45.0	5.68	5.63	5.63	5.63	5.63	5.63	5.57	5.57	5.51		
90.0	5.63	5.63	5.57	5.63	5.57	5.57	5.57	5.57	5.51		
135.0	5.63	5.63	5.57	5.57	5.57	5.57	5.57	5.57	5.51		
180.0	5.57	5.57	5.57	5.51	5.57	5.51	5.51	5.51	5.51		
225.0	5.63	5.63	5.63	5.63	5.68	5.68	5.57	5.57	5.57		
270.0	5.63	5.63	5.63	5.63	5.63	5.57	5.51	5.57	5.51		
315.0	5.57	5.57	5.63	5.63	5.51	5.51	5.51	5.51	5.51		
360.0	5.63	5.57	5.57	5.57	5.57	5.57	5.51	5.51	5.46		

Intensity data(cd)

Appendix Page: 18 Total:18

C/γ(°)	90.0
0.0	5.51
45.0	5.57
90.0	5.57
135.0	5.51
180.0	5.51
225.0	5.57
270.0	5.57
315.0	5.51
360.0	5.51