



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440222 RIO 30W 6500K 3000lm

Luminaire:

Report No:

Voltage(V): 230.3600

Test No: KYZ-A250922053-01-009

Current(A): 0.1362

LampCAT: LED

Power (W): 30.0000

Lamp flux(lm): -1.0

PF: 0.9559

Number of Lamps: 1

Ballast type:

Length(mm): -249

Width(mm): -249

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 3000.00

Efficiency(%): 100.00%

Lumens(lm)/Power(W): 100.00

Central intensity(cd): 1534.895

Maximum intensity(cd): 1545.604

Angle of maximum intensity: C=22.5 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=84.0

[C90/270]Total=84.1

Field angle(10%Imax): [C0/180]Total=144.0

[C90/270]Total=145.0

Maximum s/h(1/2): C0_180=1.10 C90_270=1.12

Maximum s/h(1/4): C0_180=1.15 C90_270=1.18

Up flux rate of lamp(%): 0.22%

Down flux rate of lamp(%): 99.78%

Up flux rate of LUM(%): 0.22%

Down flux rate of LUM(%): 99.78%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 86.909%

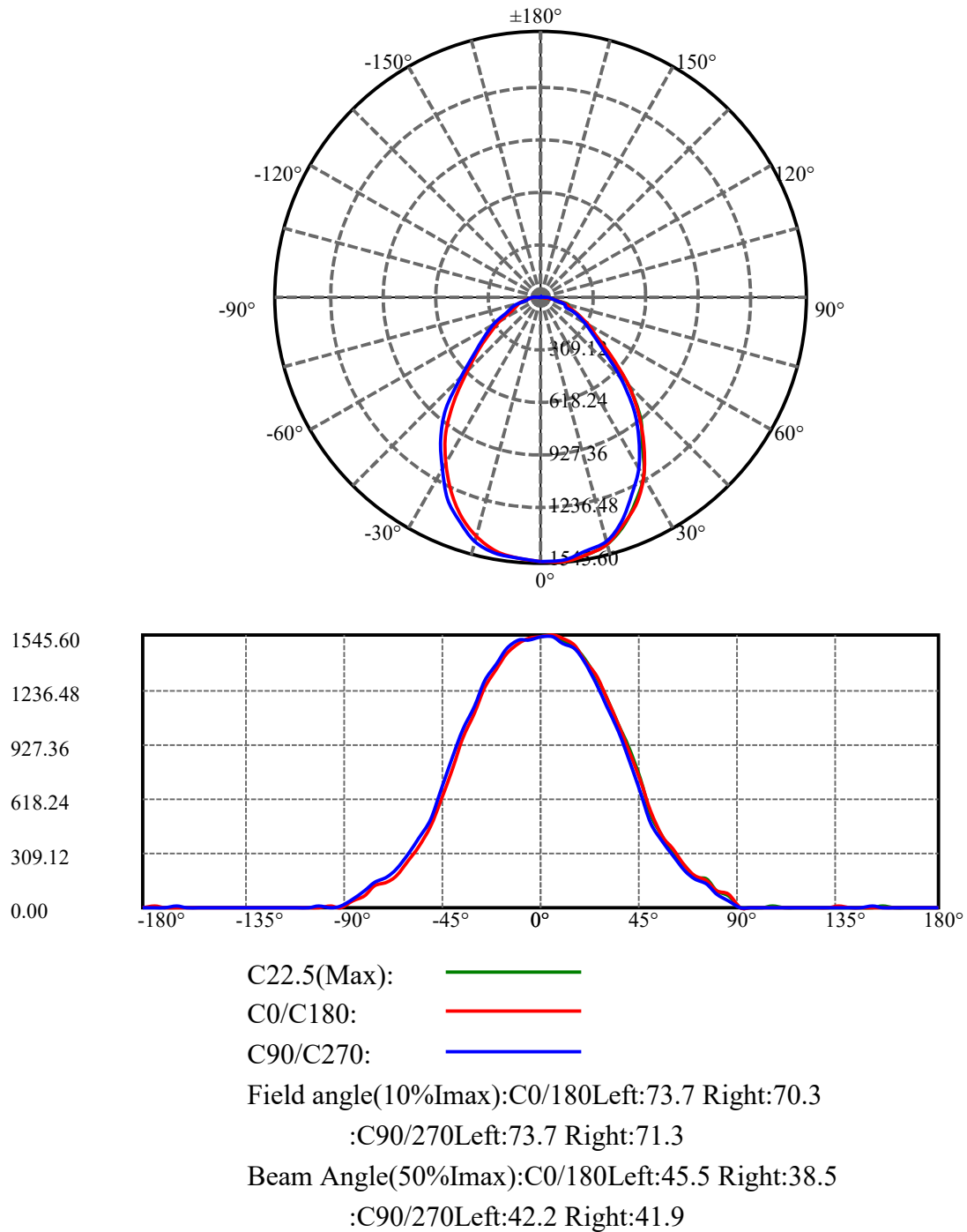
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1584.355	0.000	0	.000%	.000%
5.0	1579.639	36.582	36.582	.000%	1.219%
10.0	1560.314	108.637	145.219	.000%	4.841%
15.0	1513.718	176.360	321.579	.000%	10.719%
20.0	1434.751	235.014	556.593	.000%	18.553%
25.0	1317.109	279.140	835.733	.000%	27.858%
30.0	1178.475	305.445	1141.179	.000%	38.039%
35.0	1028.026	314.251	1455.429	.000%	48.514%
40.0	876.834	307.373	1762.803	.000%	58.760%
45.0	684.172	279.540	2042.342	.000%	68.078%
50.0	504.581	232.315	2274.658	.000%	75.822%
55.0	374.329	184.827	2459.485	.000%	81.983%
60.0	286.725	147.782	2607.267	.000%	86.909%
65.0	213.525	117.617	2724.884	.000%	90.830%
70.0	162.649	92.121	2817.006	.000%	93.900%
75.0	132.072	74.505	2891.511	.000%	96.384%
80.0	84.785	56.119	2947.63	.000%	98.254%
85.0	43.469	33.705	2981.335	.000%	99.378%
90.0	1.563	11.925	2993.26	.000%	99.775%
95.0	1.538	0.821	2994.081	.000%	99.803%
100.0	0.769	0.606	2994.688	.000%	99.823%
105.0	1.179	0.504	2995.192	.000%	99.840%
110.0	0.846	0.512	2995.703	.000%	99.857%
115.0	1.076	0.471	2996.174	.000%	99.873%
120.0	0.795	0.440	2996.614	.000%	99.887%
125.0	1.666	0.550	2997.164	.000%	99.906%
130.0	0.564	0.469	2997.633	.000%	99.921%
135.0	1.307	0.366	2997.999	.000%	99.933%
140.0	0.384	0.303	2998.302	.000%	99.944%
145.0	1.153	0.248	2998.55	.000%	99.952%
150.0	1.820	0.423	2998.973	.000%	99.966%
155.0	0.743	0.314	2999.287	.000%	99.976%
160.0	1.230	0.200	2999.487	.000%	99.983%
165.0	1.640	0.229	2999.716	.000%	99.991%
170.0	1.256	0.166	2999.882	.000%	99.996%
175.0	1.256	0.087	2999.969	.000%	99.999%
180.0	1.128	0.028	2999.996	.000%	100.000%

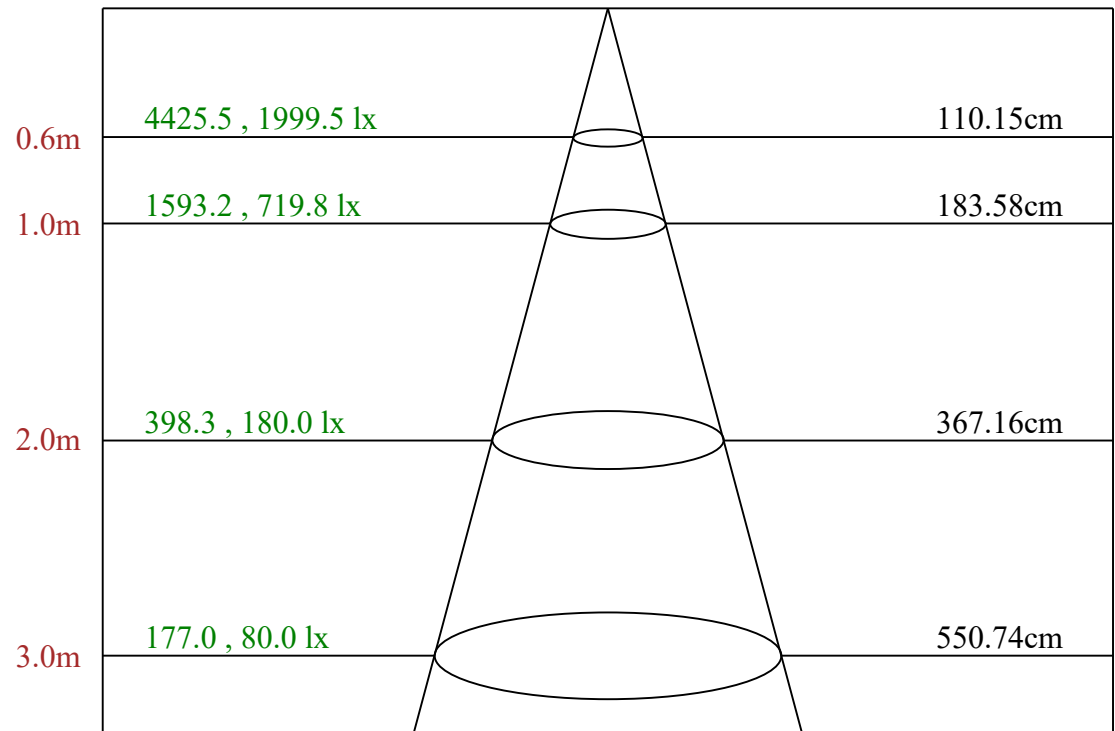
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1141.18	N.A.	38.04%
0-40	1762.80	N.A.	58.76%
0-60	2607.27	N.A.	86.91%
0-90	2993.26	N.A.	99.78%
0-120	2996.61	N.A.	99.89%
0-180	3000.00	N.A.	100.00%
60-90	533.77	N.A.	17.79%
90-120	15.28	N.A.	0.51%
90-130	16.30	N.A.	0.54%
90-150	17.64	N.A.	0.59%
90-180	18.63	N.A.	0.62%
0-53.39	2400.00	N.A.	80.00%

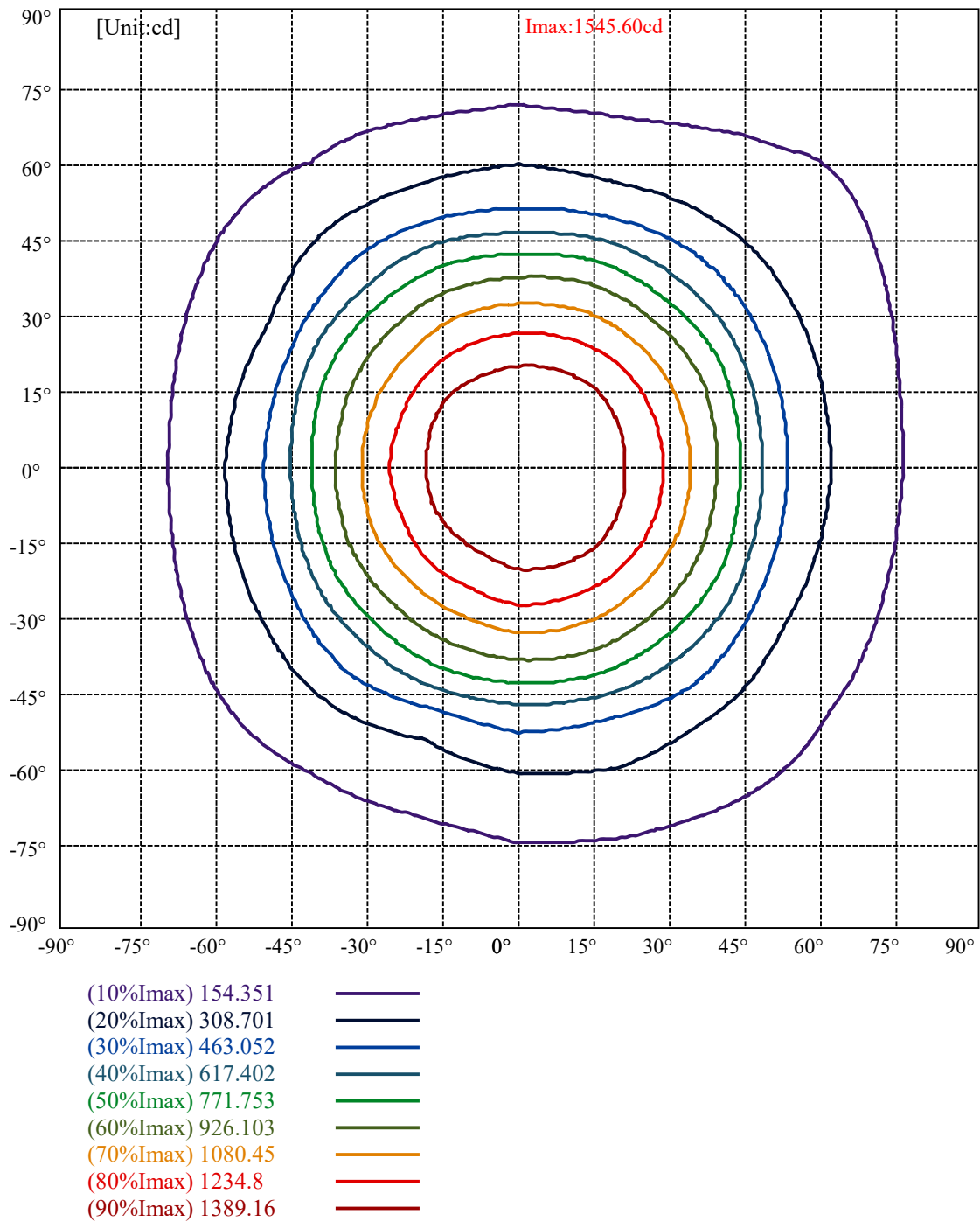
ZONAL LUMEN SUMMARY

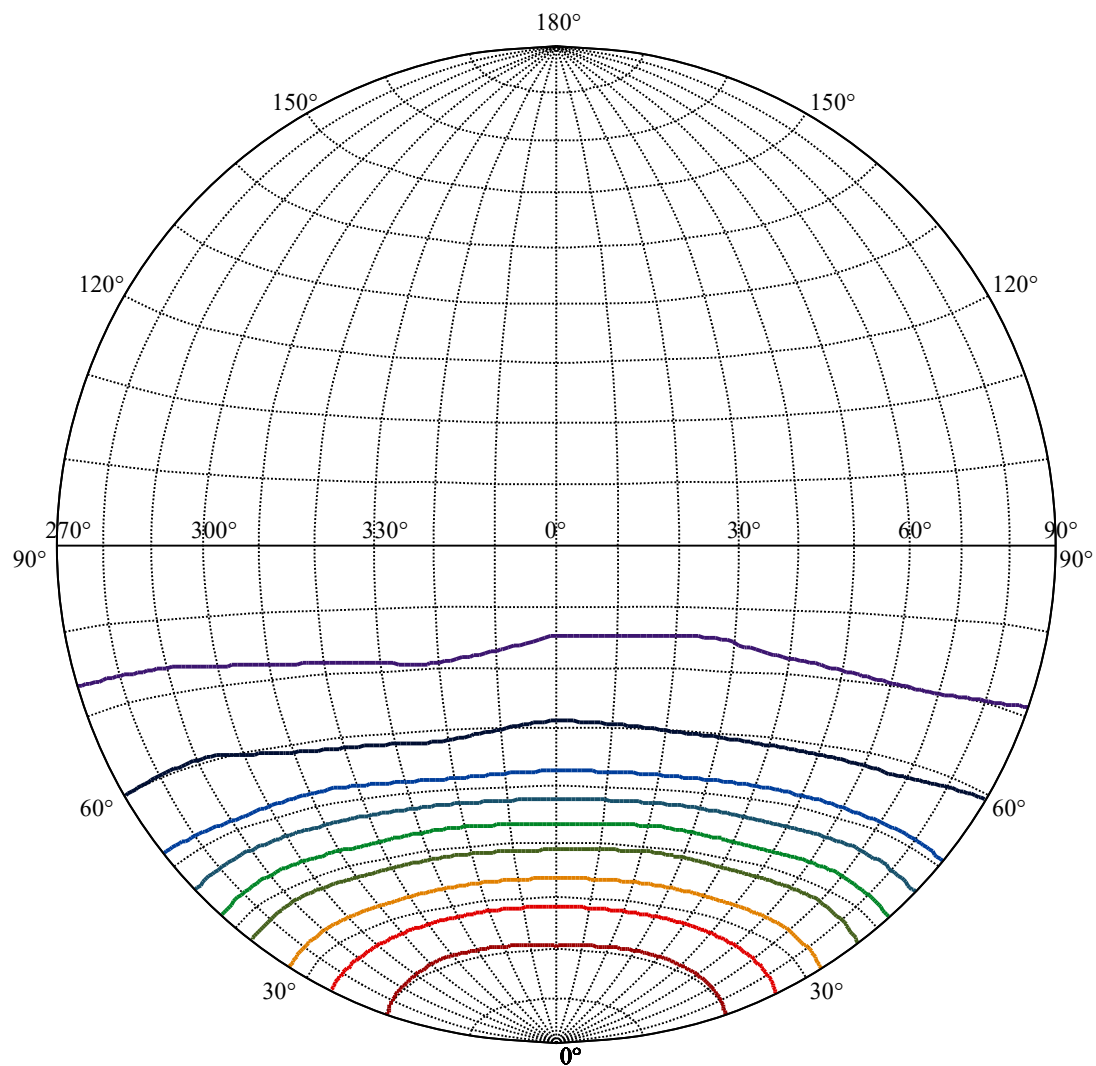
0-10	145.22
10-20	411.37
20-30	584.59
30-40	621.62
40-50	511.86
50-60	332.61
60-70	209.74
70-80	130.62
80-90	45.63
90-100	1.43
100-110	1.02
110-120	0.91
120-130	1.02
130-140	0.67
140-150	0.67
150-160	0.51
160-170	0.39
170-180	0.09





Max , Ave Beam angle of C22.5 plane 85.10





House

[Unit:cd]

Road

Imax:1545.60

(10%Imax) 149.4758

(20%Imax) 298.9506

(30%Imax) 448.4264

(40%Imax) 597.9012

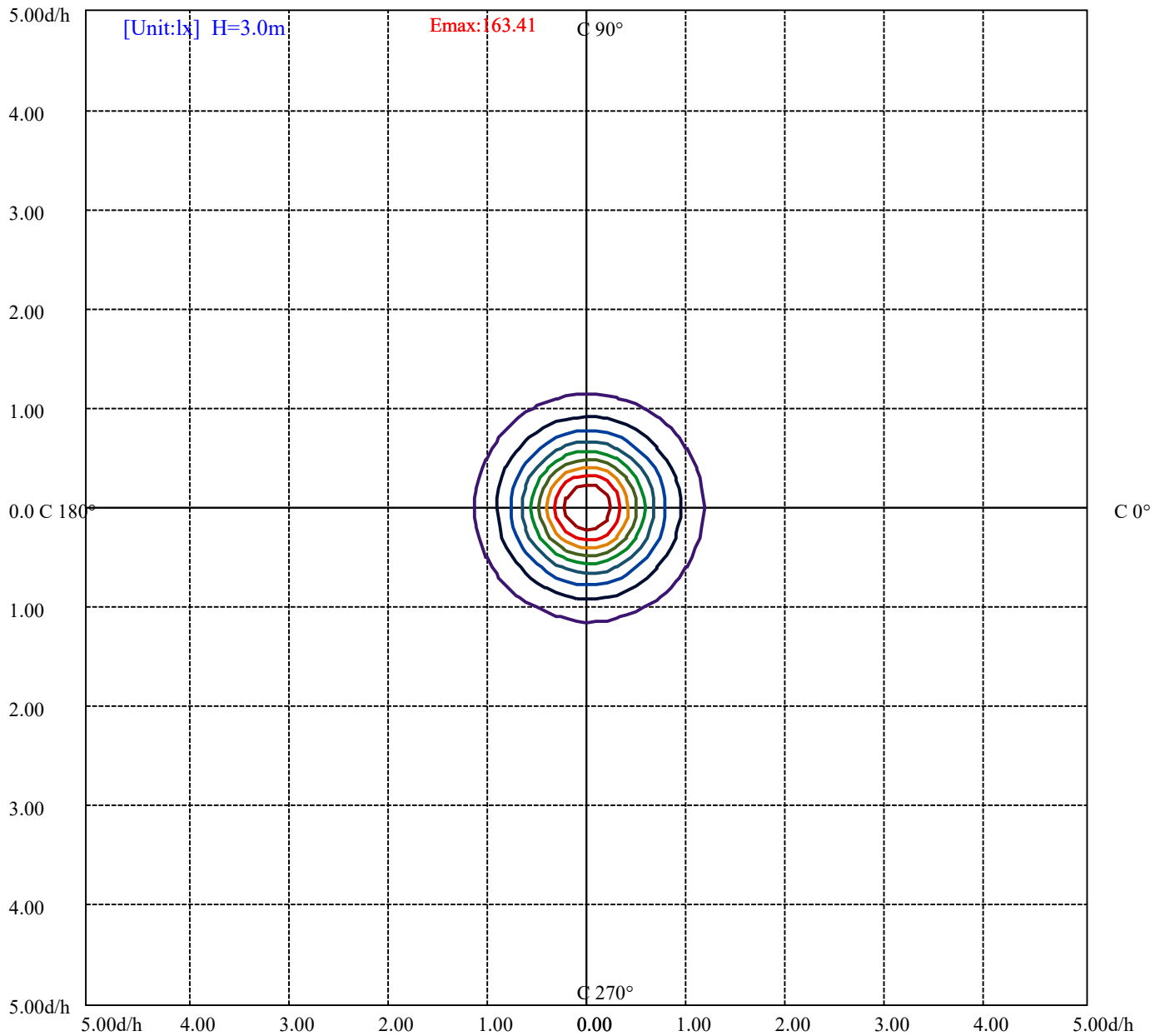
(50%Imax) 747.3771

(60%Imax) 896.8528

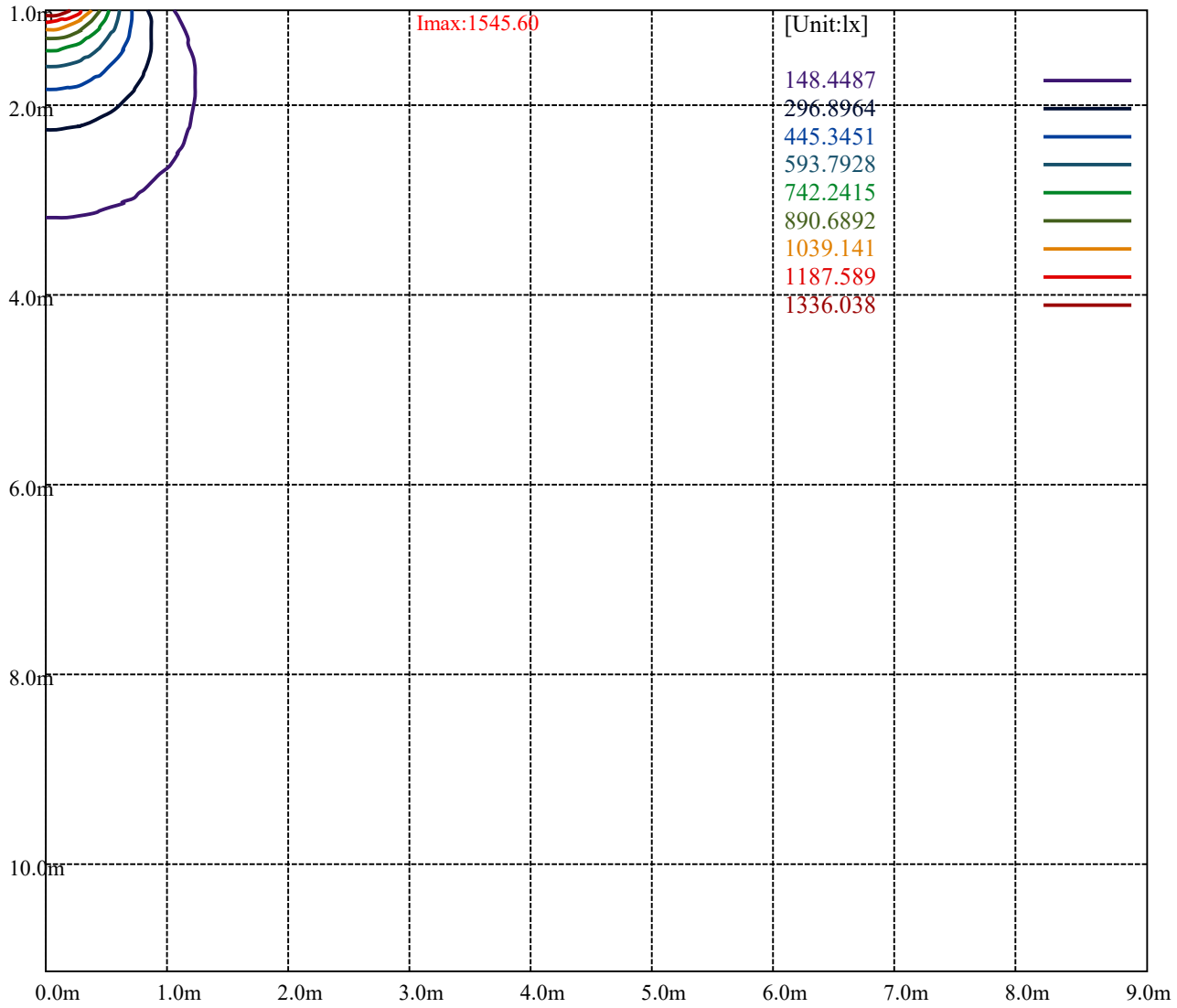
(70%Imax) 1046.327

(80%Imax) 1195.801

(90%Imax) 1345.274



(10%Emax)	16.34084	
(20%Emax)	32.68168	
(30%Emax)	49.02253	
(40%Emax)	65.36327	
(50%Emax)	81.70411	
(60%Emax)	98.04494	
(70%Emax)	114.3855	
(80%Emax)	130.7261	
(90%Emax)	147.0678	



Luminance Table

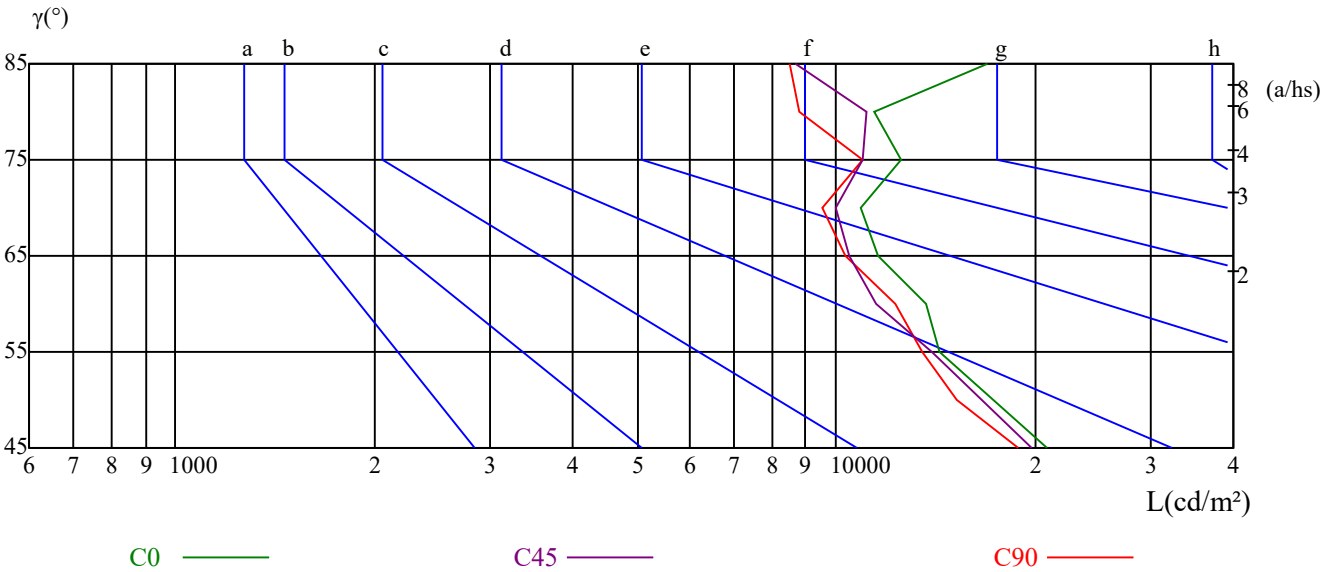
γ	45	50	55	60	65	70	75	80	85
C0	20825	17347	14314	13683	11563	10931	12525	11445	17008
C45	19743	16599	13973	11500	10446	10002	10983	11116	8691
C90	18913	15269	13490	12299	10330	9549	10983	8818	8504

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10156	10532	9251	11124	11266	9692	12943	10326	8084

Glare Table

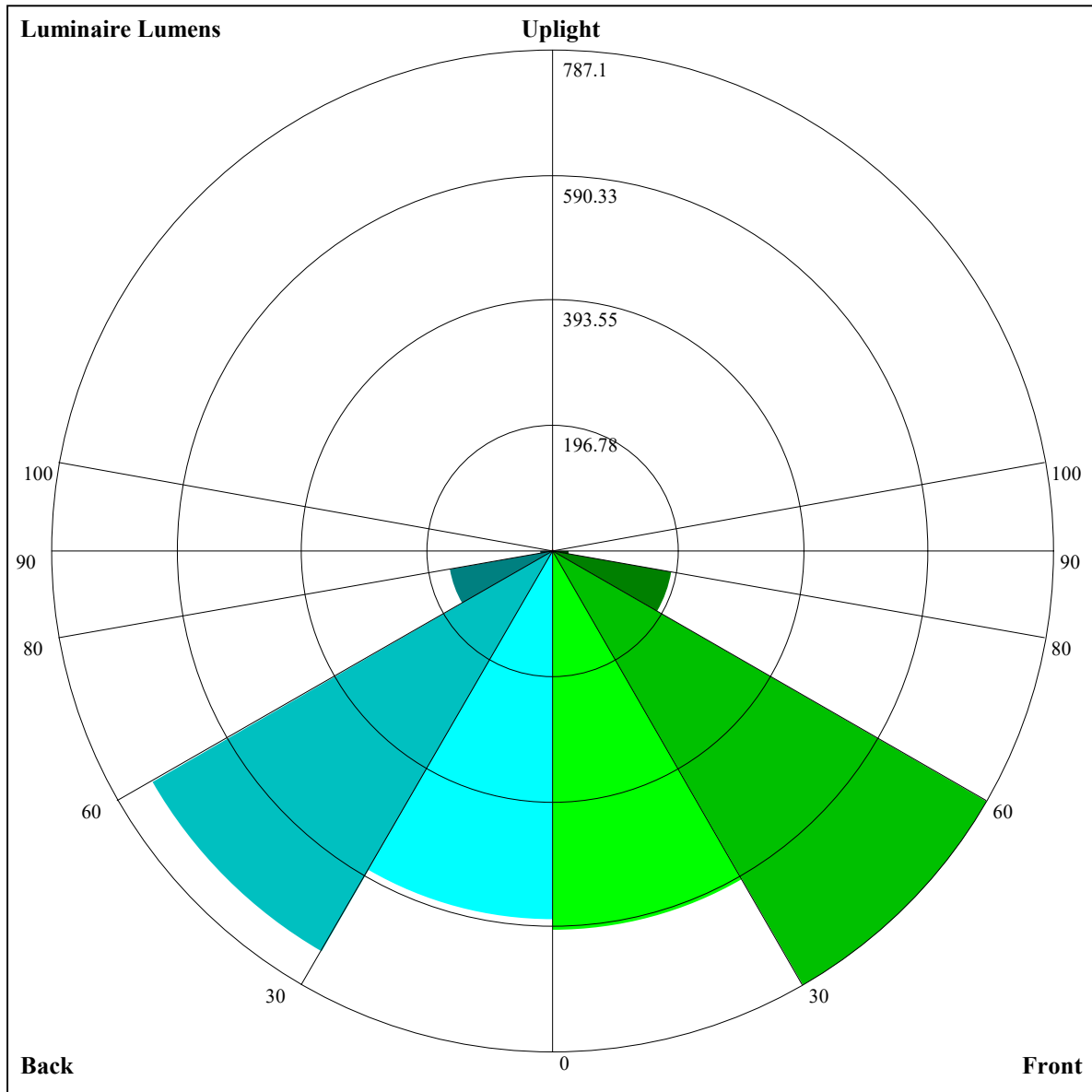
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve



Illumination assessment according UGR											
Rf of Ceiling		70	70	50	50	30	70	70	50	50	30
Rf of Wall		50	30	50	30	30	50	30	50	30	30
Rf of Floor		20	20	20	20	20	20	20	20	20	20
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	16.89	18.34	17.25	18.66	18.98	16.41	17.86	16.78	18.18	18.50
	3H	17.97	19.28	18.36	19.62	19.97	17.39	18.70	17.78	19.04	19.39
	4H	18.62	19.84	19.01	20.19	20.56	17.90	19.12	18.30	19.48	19.84
	6H	19.18	20.32	19.60	20.69	21.09	18.35	19.48	18.76	19.85	20.25
	8H	19.41	20.50	19.83	20.88	21.29	18.47	19.56	18.89	19.95	20.35
	12H	19.68	20.72	20.10	21.11	21.53	18.56	19.60	18.98	20.00	20.41
4H	2H	17.23	18.45	17.63	18.81	19.18	16.83	18.05	17.23	18.41	18.78
	3H	18.53	19.56	18.95	19.95	20.37	17.99	19.02	18.41	19.41	19.83
	4H	19.43	20.34	19.86	20.76	21.20	18.65	19.56	19.09	19.98	20.43
	6H	20.13	20.94	20.60	21.39	21.83	19.21	20.02	19.67	20.46	20.91
	8H	20.47	21.22	20.95	21.68	22.15	19.43	20.19	19.91	20.64	21.11
	12H	20.85	21.55	21.34	22.00	22.51	19.61	20.31	20.09	20.75	21.27
8H	4H	19.64	20.40	20.12	20.85	21.32	18.95	19.70	19.42	20.15	20.62
	6H	20.51	21.15	21.01	21.62	22.13	19.66	20.30	20.16	20.77	21.28
	8H	21.02	21.58	21.54	22.09	22.59	20.04	20.59	20.56	21.11	21.60
	12H	21.56	22.03	22.09	22.54	23.06	20.31	20.77	20.84	21.29	21.80
12H	4H	19.67	20.37	20.15	20.81	21.33	19.00	19.70	19.48	20.15	20.66
	6H	20.62	21.17	21.14	21.69	22.18	19.81	20.36	20.33	20.88	21.37
	8H	21.14	21.60	21.66	22.11	22.63	20.19	20.65	20.72	21.17	21.68
Variation with the observer position at spacings:											
S = 1.0H		0.3/-0.7					0.3/-0.7				
S = 1.5H		0.8/-1.0					0.7/-0.8				
S = 2.0H		1.4/-1.2					1.1/-1.1				
Standard tables:		BK4					BKBF				
Uncorrected UGR		6.4					10.1				

UGR calculation is based on CIE Publ. 117 ,S/H = 0.25



Luminaire Lumens:

FL=597.21,FM=787.1,FH=189.48,FVH=27.61

BL=581.21,BM=728.02,BH=164.91,BVH=19.8

UL=1.48,UH=5.49

BUG Rating:B2-U1-G1

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	1534.89	1541.64	1521.81	1486.51	1402.03	1319.14	1195.00	1040.32	891.19
22.5	1531.72	1545.60	1519.82	1482.94	1415.91	1309.22	1192.22	1038.34	909.04
45.0	1520.62	1528.95	1518.63	1485.32	1419.48	1304.86	1178.34	1019.30	874.93
67.5	1530.93	1524.58	1518.24	1482.54	1402.82	1288.99	1154.15	1026.83	874.93
90.0	1536.88	1534.10	1501.98	1467.07	1387.35	1264.01	1143.44	994.71	842.01
112.5	1540.84	1533.31	1515.46	1471.04	1376.25	1259.25	1129.56	985.59	832.89
135.0	1529.74	1519.82	1510.70	1450.42	1381.01	1245.37	1092.67	956.63	813.85
157.5	1532.91	1514.27	1494.04	1446.45	1369.51	1234.66	1100.21	950.68	820.20
180.0	1534.89	1524.19	1496.03	1440.90	1354.04	1243.38	1101.40	955.44	788.07
202.5	1531.72	1522.20	1487.70	1453.19	1355.63	1225.54	1101.00	956.24	800.76
225.0	1520.62	1516.25	1488.49	1431.38	1356.82	1241.00	1089.10	944.34	792.04
247.5	1530.93	1520.62	1505.55	1450.02	1355.23	1241.00	1102.19	967.74	834.08
270.0	1536.88	1520.62	1512.69	1471.83	1386.56	1288.60	1143.83	1007.00	854.31
292.5	1540.84	1528.15	1510.70	1467.87	1400.84	1285.82	1161.28	1017.31	876.12
315.0	1529.74	1536.08	1522.20	1470.25	1420.67	1315.57	1161.68	1016.92	872.55
337.5	1532.91	1533.71	1521.01	1466.28	1417.89	1315.17	1190.24	1030.80	891.59
360.0	1534.89	1541.64	1521.81	1486.51	1402.03	1319.14	1195.00	1040.32	891.19
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	717.08	542.96	399.79	333.16	237.97	182.05	157.85	96.77	72.18
22.5	727.79	525.12	400.18	305.39	236.38	169.75	161.03	99.55	68.61
45.0	679.80	519.56	390.27	280.01	214.96	166.58	138.42	94.00	36.89
67.5	688.13	500.13	362.51	270.49	211.00	153.49	107.88	86.07	45.21
90.0	651.24	477.92	376.78	299.44	212.58	159.04	138.42	74.56	36.09
112.5	661.16	479.90	347.43	276.84	203.46	149.13	137.63	76.94	35.30
135.0	619.51	467.21	351.40	253.83	163.40	145.95	108.67	63.46	24.19
157.5	628.63	423.98	301.03	235.19	203.07	133.26	97.17	68.61	27.37
180.0	603.65	461.26	350.21	268.51	180.06	145.16	122.55	71.39	37.68
202.5	605.63	448.97	326.41	258.99	186.41	136.43	115.02	59.89	30.54
225.0	604.84	473.95	342.28	229.24	172.92	136.83	116.21	58.70	32.52
247.5	637.36	439.45	311.74	249.87	191.96	149.13	107.48	84.08	28.56
270.0	660.36	501.72	397.41	305.00	220.91	175.70	145.56	93.60	51.56
292.5	689.71	499.34	371.63	323.24	224.48	176.89	145.16	87.65	47.99
315.0	687.33	529.88	393.84	275.25	210.21	175.30	125.33	88.05	43.63
337.5	725.01	516.79	369.64	272.47	234.40	162.22	119.38	108.67	54.34
360.0	717.08	542.96	399.79	333.16	237.97	182.05	157.85	96.77	72.18
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.76
22.5	0.00	0.00	0.00	7.54	0.00	0.00	0.00	0.40	0.00
45.0	2.38	0.00	0.00	0.00	0.00	0.00	0.00	5.95	0.00
67.5	9.92	0.00	0.00	1.98	0.00	0.00	0.00	0.00	0.00
90.0	0.00	1.19	0.00	0.00	0.00	1.19	0.00	3.97	2.38
112.5	0.00	0.00	5.16	0.00	0.00	0.00	4.36	2.78	0.00
135.0	0.00	2.38	0.00	0.00	0.00	0.00	1.59	0.00	0.00
157.5	0.00	2.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	0.00	5.55	0.00	0.00	0.00	0.00	1.19	0.00	0.00
202.5	0.00	7.14	0.79	7.93	0.00	0.00	3.97	2.78	0.00
225.0	0.00	4.76	0.00	0.00	5.95	0.00	0.00	0.00	0.00
247.5	0.00	0.00	0.00	0.79	0.00	3.97	0.00	0.79	0.00
270.0	8.33	0.00	5.95	0.00	0.00	2.38	0.00	3.57	0.00
292.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.0	0.00	0.00	0.00	0.00	7.14	3.17	0.00	0.00	1.59
337.5	1.98	0.00	0.00	0.00	0.00	5.95	1.19	5.55	0.00
360.0	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.76

Intensity data(cd)

Appendix Page: 14 Total:14

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	5.55	0.00	0.00	0.00	0.00	0.00	1.59	0.00	0.00
22.5	0.00	0.00	0.00	1.19	8.33	0.00	0.00	2.38	0.00
45.0	0.00	0.00	0.00	0.00	0.00	14.67	0.00	0.00	0.00
67.5	0.00	0.00	0.00	0.00	0.00	0.00	5.55	0.00	0.00
90.0	0.00	0.00	0.00	10.71	0.00	1.19	3.57	0.00	0.79
112.5	0.00	0.00	0.00	2.38	0.00	0.00	0.00	13.09	0.00
135.0	0.00	0.00	2.38	0.00	0.00	0.00	0.00	0.00	1.59
157.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.93
180.0	1.98	0.00	0.00	0.00	1.19	0.00	0.00	0.00	7.93
202.5	5.16	5.95	0.00	0.00	1.98	0.00	0.00	0.00	0.00
225.0	0.00	0.00	0.00	5.55	0.00	1.59	0.00	1.59	0.00
247.5	6.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
270.0	0.00	0.00	0.00	0.00	0.00	0.00	9.52	0.00	1.19
292.5	0.00	0.00	1.19	1.19	0.00	0.00	5.16	0.00	0.00
315.0	0.79	0.00	1.98	7.14	0.00	1.59	0.00	0.00	0.00
337.5	0.00	0.00	12.30	0.00	0.00	0.00	0.00	2.38	0.00
360.0	5.55	0.00	0.00	0.00	0.00	0.00	1.59	0.00	0.00

C/γ(°)	180.0
0.0	0.00
22.5	0.00
45.0	0.00
67.5	0.00
90.0	0.00
112.5	5.16
135.0	3.57
157.5	0.00
180.0	0.00
202.5	0.00
225.0	0.00
247.5	0.00
270.0	0.00
292.5	5.16
315.0	3.57
337.5	0.00
360.0	0.00