



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440222 RIO 30W 3000K 3000lm

Luminaire:

Report No:

Voltage(V): 230.2800

Test No: KYZ-A250922053-01-007

Current(A): 0.1363

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(%): 0.00%

Lumens(lm)/Power(W): 100.00

Central intensity(cd): 1531.969

Maximum intensity(cd): 1550.662

Angle of maximum intensity: C=22.5 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=84.2

[C90/270]Total=84.6

Field angle(10%Imax): [C0/180]Total=143.3

[C90/270]Total=143.7

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

Maximum s/h(1/4): C0_180=1.16 C90_270=1.18

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 0.00%

Up flux rate of LUM(%): 0.31%

Down flux rate of LUM(%): 99.69%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 86.939%

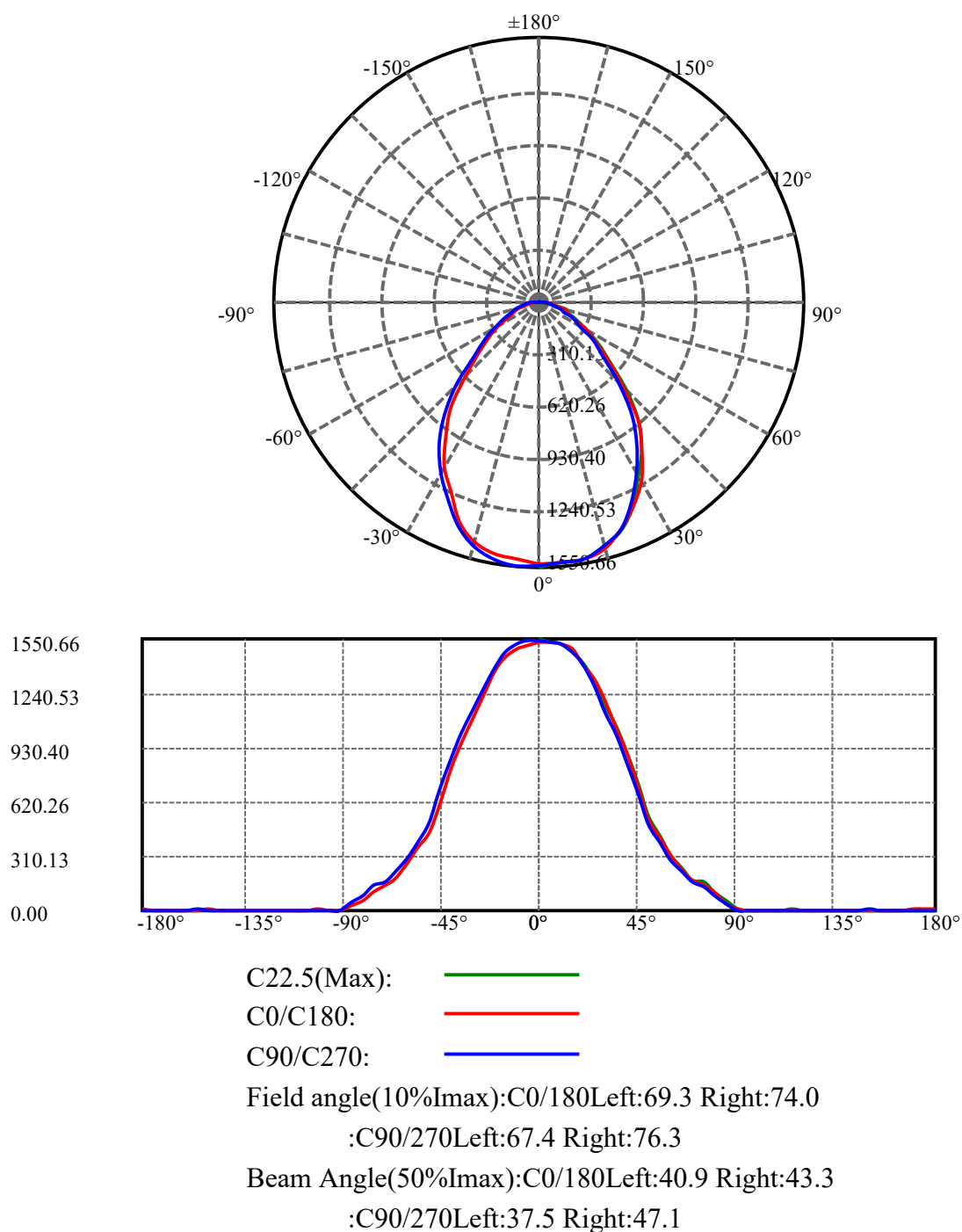
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1550.830	0.000	0	.000%	.000%
5.0	1540.784	36.624	36.624	.000%	1.221%
10.0	1525.072	108.679	145.303	.000%	4.843%
15.0	1476.836	176.454	321.756	.000%	10.725%
20.0	1401.894	235.093	556.849	.000%	18.562%
25.0	1285.661	279.314	836.164	.000%	27.872%
30.0	1148.181	305.207	1141.371	.000%	38.046%
35.0	1007.804	314.600	1455.971	.000%	48.532%
40.0	860.251	308.840	1764.81	.000%	58.827%
45.0	670.127	280.788	2045.598	.000%	68.187%
50.0	491.510	232.593	2278.192	.000%	75.940%
55.0	361.796	183.852	2462.043	.000%	82.068%
60.0	276.242	146.141	2608.184	.000%	86.939%
65.0	211.116	117.401	2725.586	.000%	90.853%
70.0	157.472	92.481	2818.067	.000%	93.935%
75.0	126.869	73.647	2891.714	.000%	96.390%
80.0	83.119	55.677	2947.39	.000%	98.246%
85.0	37.830	32.566	2979.957	.000%	99.332%
90.0	1.948	10.793	2990.749	.000%	99.691%
95.0	1.845	1.029	2991.778	.000%	99.726%
100.0	1.666	0.945	2992.724	.000%	99.757%
105.0	0.564	0.591	2993.315	.000%	99.777%
110.0	0.743	0.339	2993.654	.000%	99.788%
115.0	1.461	0.553	2994.207	.000%	99.807%
120.0	0.794	0.543	2994.75	.000%	99.825%
125.0	1.794	0.593	2995.343	.000%	99.845%
130.0	1.820	0.779	2996.121	.000%	99.871%
135.0	1.435	0.652	2996.773	.000%	99.892%
140.0	2.537	0.729	2997.502	.000%	99.917%
145.0	0.487	0.500	2998.002	.000%	99.933%
150.0	1.666	0.314	2998.316	.000%	99.944%
155.0	2.512	0.524	2998.84	.000%	99.961%
160.0	2.999	0.573	2999.413	.000%	99.980%
165.0	1.051	0.331	2999.744	.000%	99.991%
170.0	0.974	0.119	2999.863	.000%	99.995%
175.0	1.333	0.082	2999.944	.000%	99.998%
180.0	3.742	0.060	3000.004	.000%	100.000%

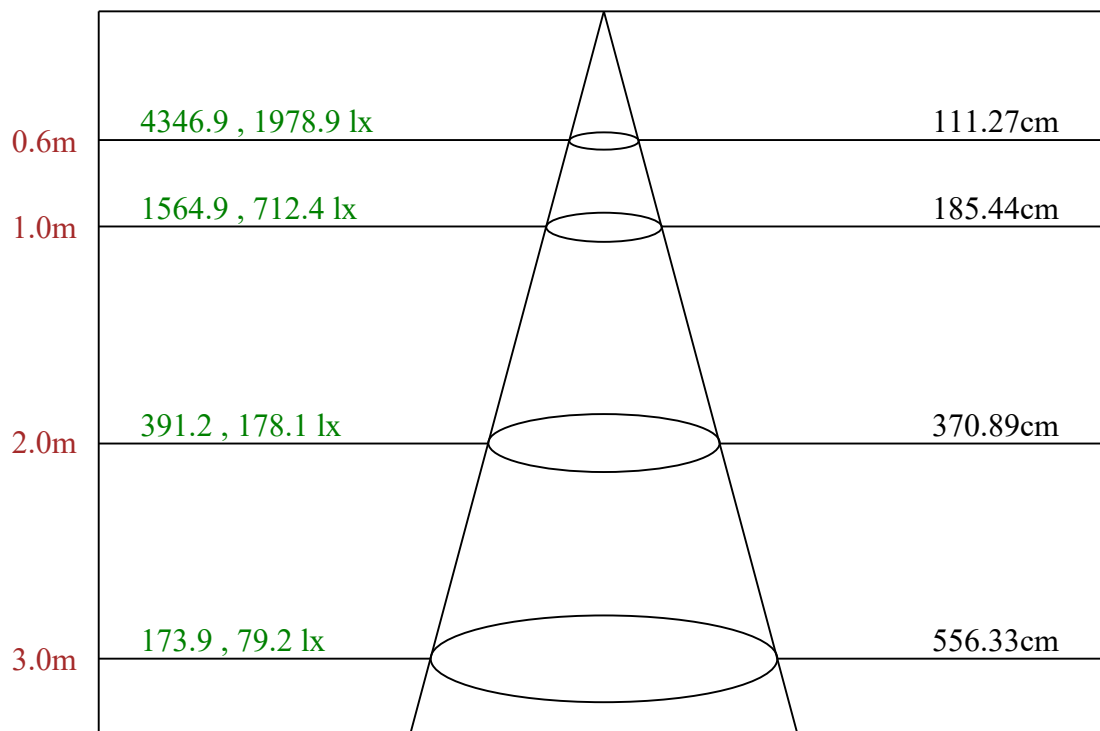
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1141.37	N.A.	38.05%
0-40	1764.81	N.A.	58.83%
0-60	2608.18	N.A.	86.94%
0-90	2990.75	N.A.	99.69%
0-120	2994.75	N.A.	99.82%
0-180	3000.00	N.A.	100.00%
60-90	528.71	N.A.	17.62%
90-120	14.79	N.A.	0.49%
90-130	16.16	N.A.	0.54%
90-150	18.36	N.A.	0.61%
90-180	19.99	N.A.	0.67%
0-53.31	2400.00	N.A.	80.00%

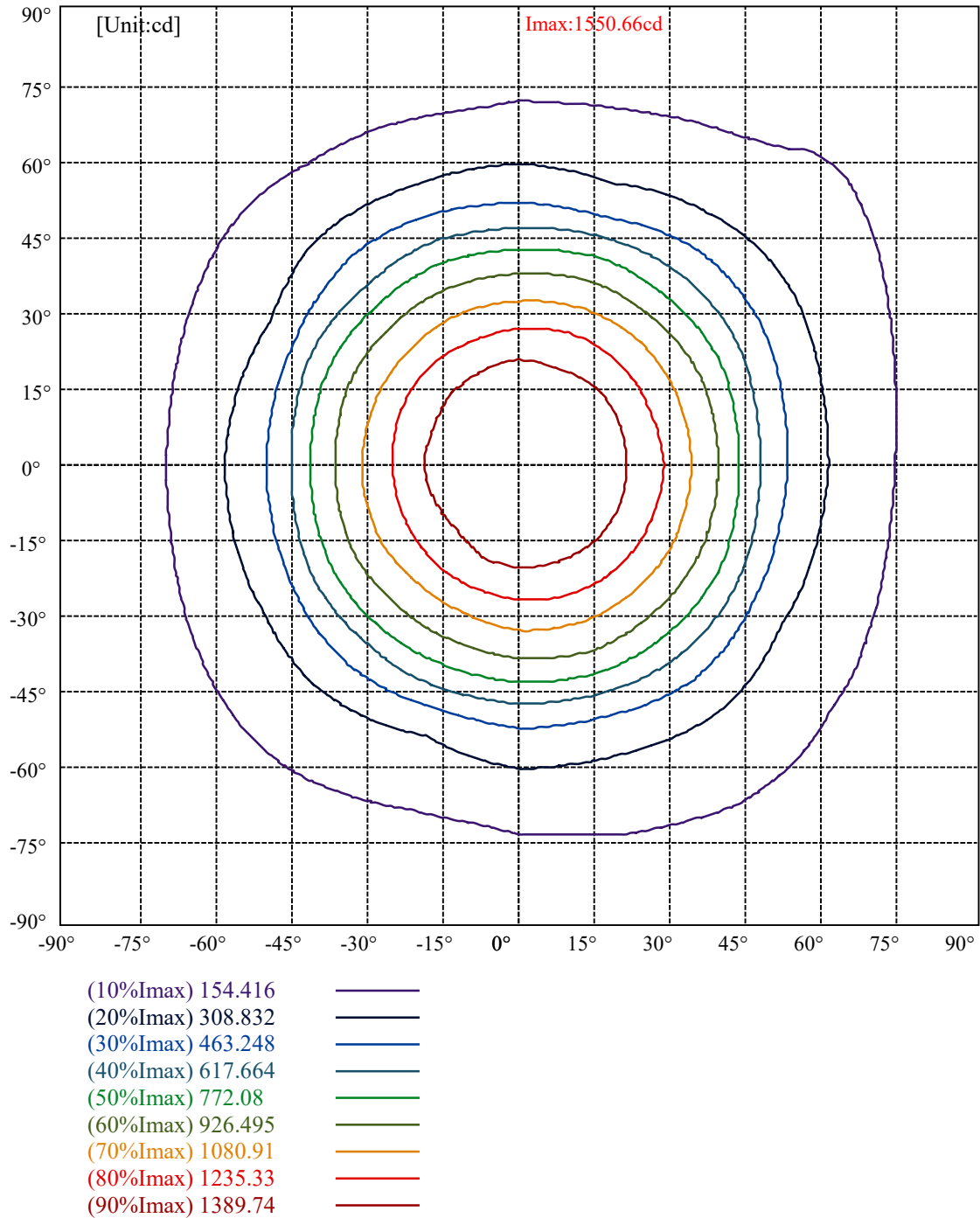
ZONAL LUMEN SUMMARY

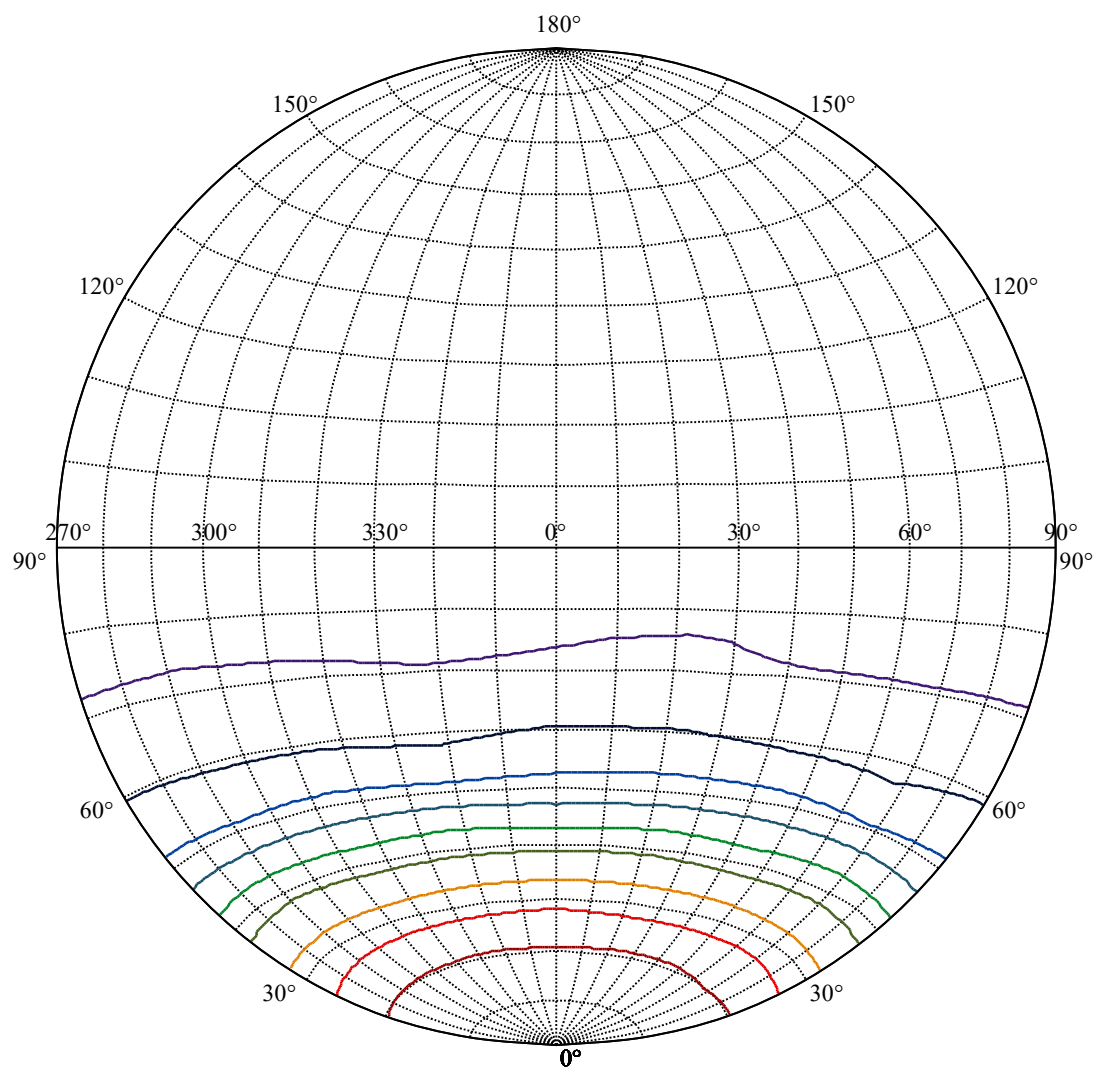
0-10	145.30
10-20	411.55
20-30	584.52
30-40	623.44
40-50	513.38
50-60	329.99
60-70	209.88
70-80	129.32
80-90	43.36
90-100	1.97
100-110	0.93
110-120	1.10
120-130	1.37
130-140	1.38
140-150	0.81
150-160	1.10
160-170	0.45
170-180	0.08





Max , Ave Beam angle of C22.5 plane 85.67





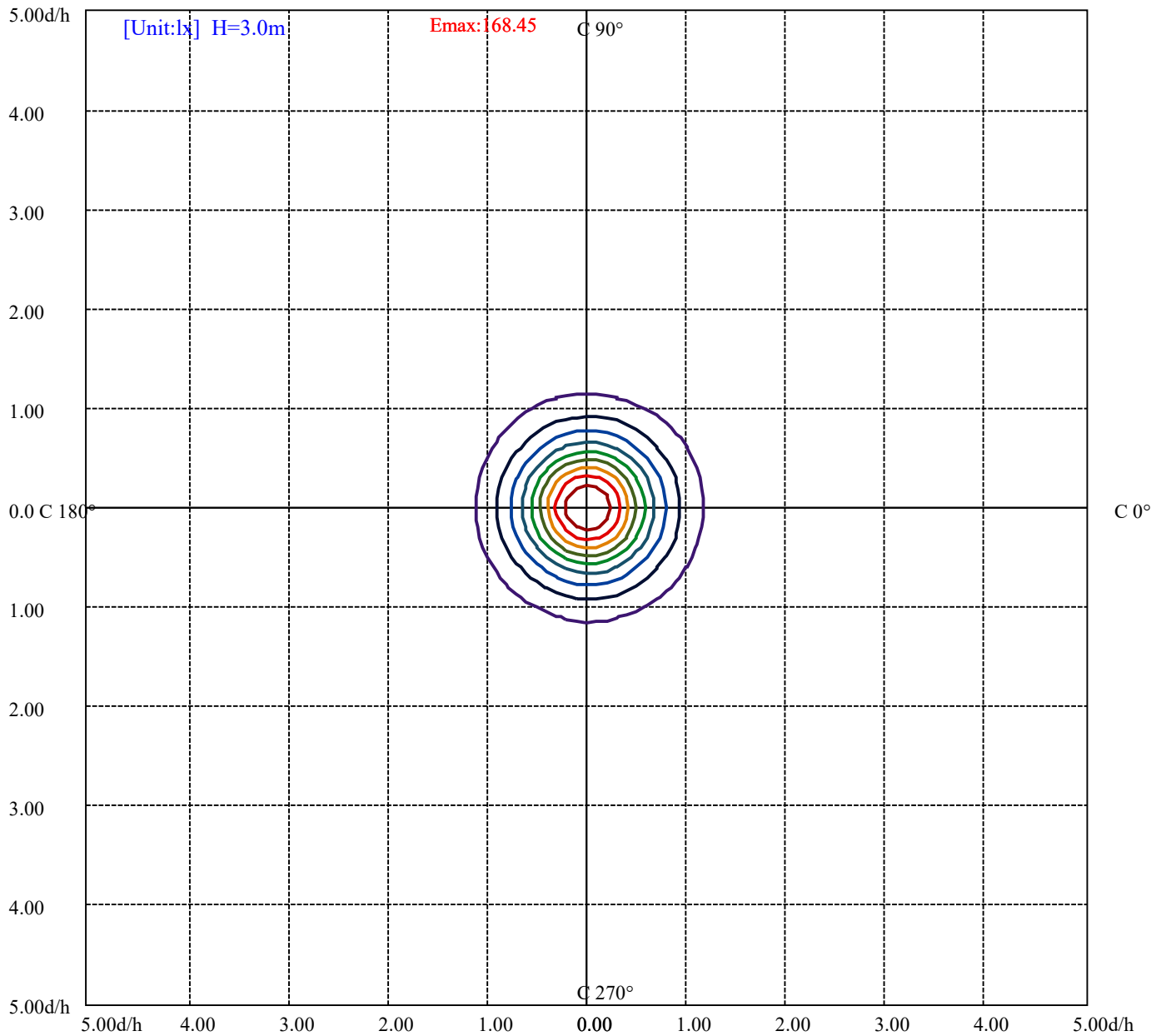
House

[Unit:cd]

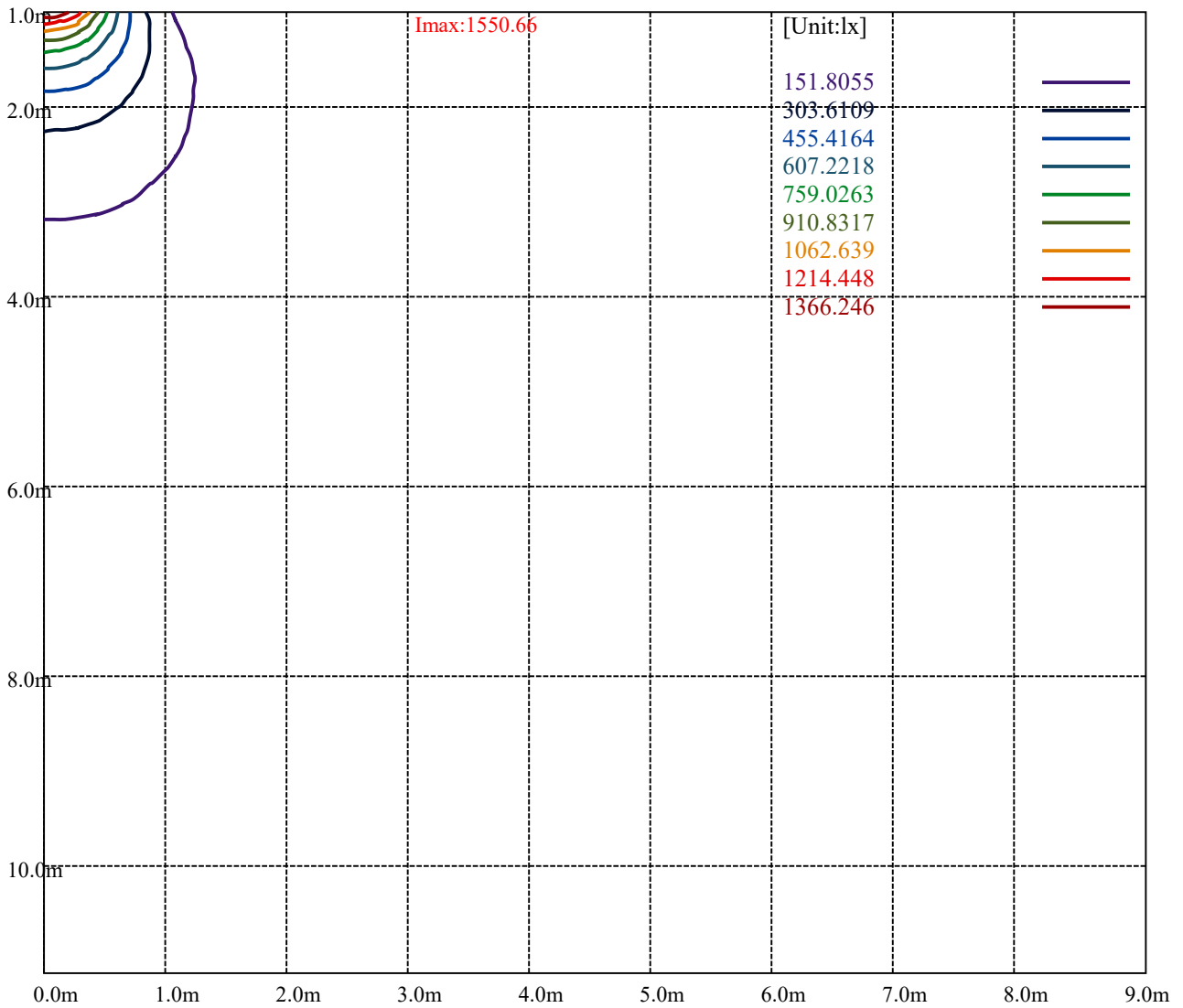
Road

Imax:1550.66
(10%Imax) 153.6168
(20%Imax) 307.2327
(30%Imax) 460.8495
(40%Imax) 614.4664
(50%Imax) 768.0822
(60%Imax) 921.6991
(70%Imax) 1075.313
(80%Imax) 1228.935
(90%Imax) 1382.547





(10%E _{max}) 16.84492	—
(20%E _{max}) 33.68973	—
(30%E _{max}) 50.53465	—
(40%E _{max}) 67.37958	—
(50%E _{max}) 84.22439	—
(60%E _{max}) 101.0693	—
(70%E _{max}) 117.9147	—
(80%E _{max}) 134.7592	—
(90%E _{max}) 151.6036	—



Luminance Table

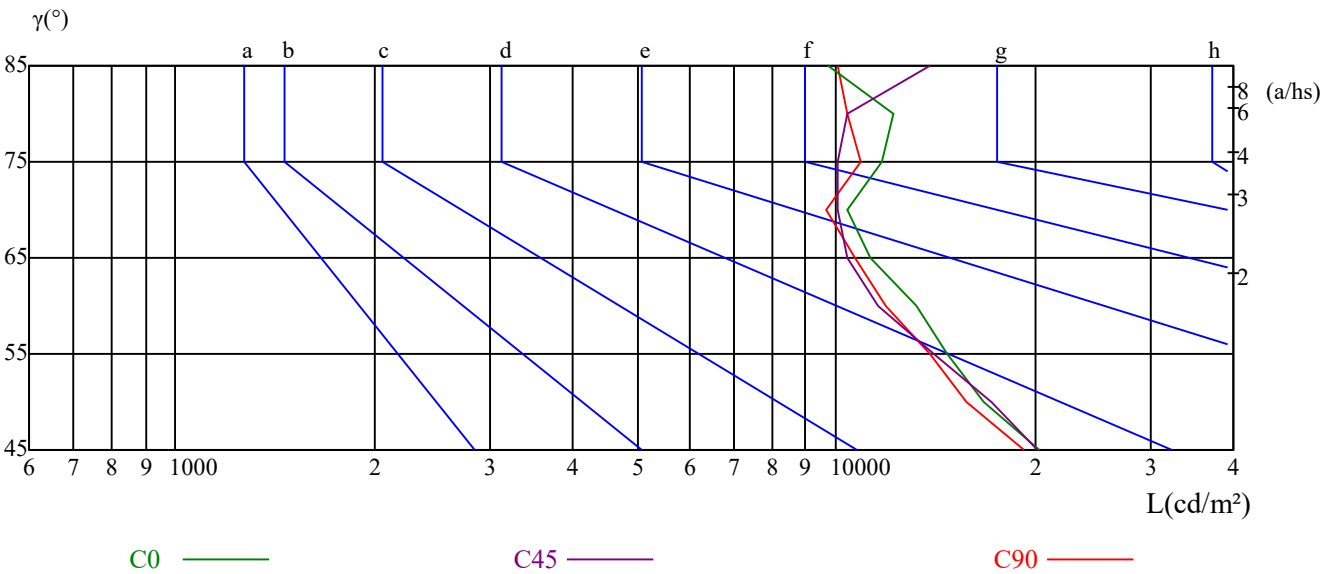
γ	45	50	55	60	65	70	75	80	85
C0	20298	16760	14709	13218	11255	10418	11768	12206	9766
C45	20251	17163	14040	11566	10386	10052	10092	10428	13883
C90	19260	15748	13865	11900	10702	9638	10898	10428	10053

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10041	10663	9621	10205	11075	9205	8330	10389	10077

Glare Table

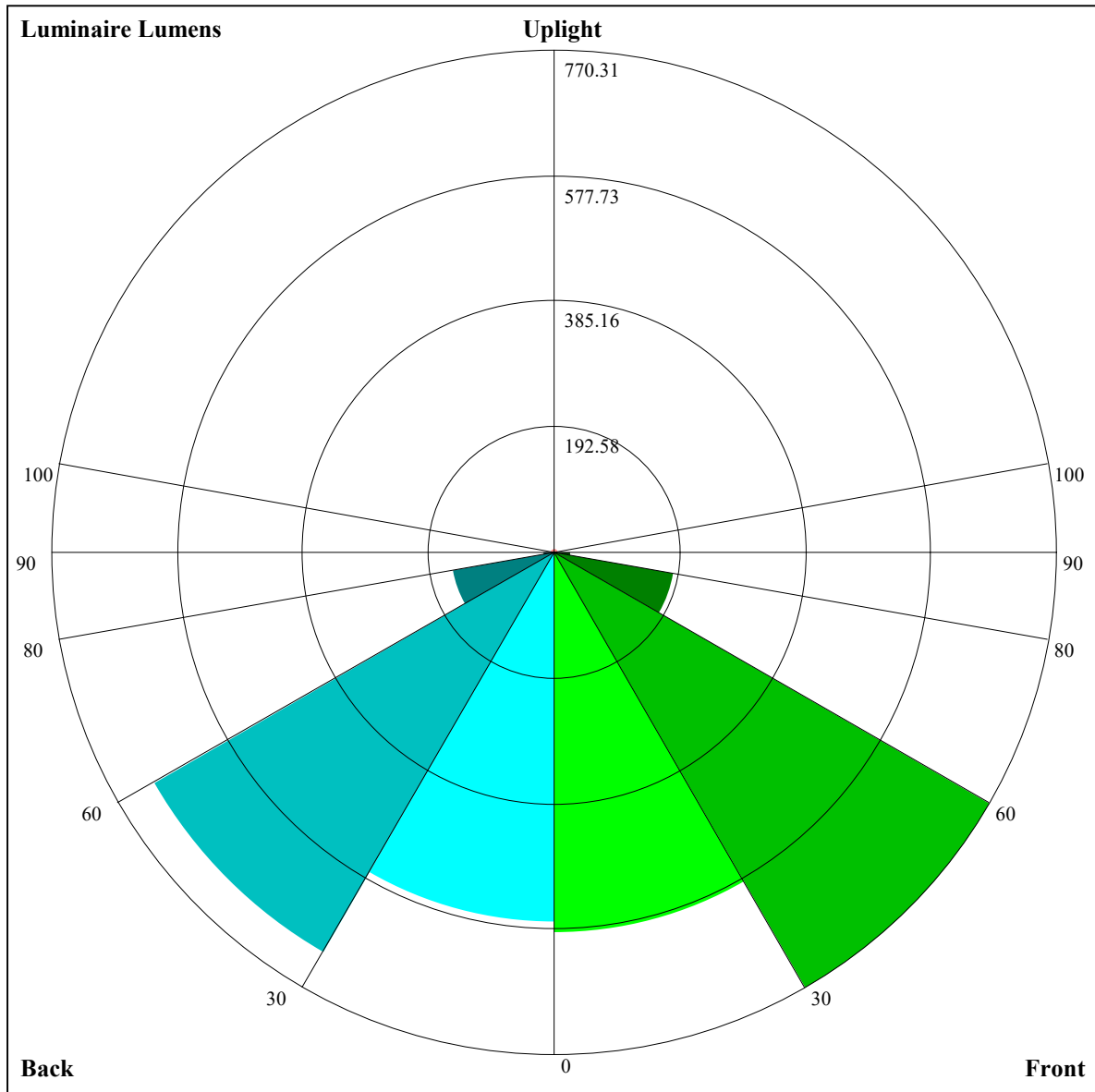
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	16.80	18.25	17.17	18.57	18.89	16.22	17.67	16.59	17.99	18.31
	3H	17.85	19.15	18.23	19.49	19.84	17.26	18.57	17.65	18.91	19.26
	4H	18.45	19.67	18.85	20.03	20.40	17.79	19.01	18.19	19.37	19.74
	6H	19.04	20.17	19.45	20.54	20.94	18.28	19.41	18.70	19.79	20.19
	8H	19.23	20.32	19.65	20.70	21.11	18.45	19.53	18.87	19.92	20.33
	12H	19.34	20.38	19.77	20.78	21.19	18.57	19.61	18.99	20.00	20.42
4H	2H	17.14	18.35	17.53	18.71	19.08	16.66	17.87	17.06	18.23	18.60
	3H	18.41	19.44	18.83	19.83	20.25	17.89	18.92	18.31	19.31	19.73
	4H	19.29	20.20	19.73	20.62	21.07	18.58	19.49	19.02	19.91	20.36
	6H	20.02	20.82	20.49	21.27	21.72	19.14	19.95	19.61	20.40	20.85
	8H	20.31	21.06	20.79	21.52	21.99	19.39	20.14	19.87	20.59	21.06
	12H	20.51	21.21	21.00	21.66	22.17	19.58	20.28	20.07	20.73	21.24
8H	4H	19.49	20.24	19.97	20.70	21.17	18.84	19.59	19.32	20.05	20.52
	6H	20.38	21.01	20.88	21.49	21.99	19.52	20.15	20.02	20.62	21.13
	8H	20.85	21.39	21.37	21.91	22.41	19.88	20.43	20.40	20.95	21.44
	12H	21.18	21.64	21.71	22.15	22.67	20.15	20.61	20.68	21.13	21.65
12H	4H	19.50	20.20	19.99	20.65	21.16	18.89	19.59	19.37	20.04	20.55
	6H	20.48	21.03	21.00	21.55	22.05	19.66	20.21	20.19	20.73	21.23
	8H	20.96	21.43	21.50	21.94	22.46	20.04	20.50	20.57	21.02	21.53
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/-0.9				
S = 2.0H		1.4/-1.1					1.2/-1.2				
Standard tables:		BK3					BK4				
Uncorrected UGR		6.1					7.2				

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



Luminaire Lumens:

FL=583.34,FM=770.31,FH=185.39,FVH=26.27

BL=567.36,BM=710.42,BH=159.12,BVH=17.91

UL=1.99,UH=7.34

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	1531.97	1529.94	1525.47	1489.71	1408.44	1316.60	1199.97	1044.75	901.30
22.5	1550.66	1526.69	1523.84	1473.86	1420.63	1308.88	1173.56	1045.97	900.90
45.0	1529.94	1527.50	1521.00	1494.99	1416.97	1301.97	1173.97	1033.37	863.10
67.5	1523.44	1515.31	1497.83	1472.23	1392.99	1308.47	1167.87	1013.86	881.80
90.0	1537.25	1529.94	1520.18	1471.42	1403.97	1282.47	1137.40	1000.45	850.51
112.5	1543.35	1535.22	1513.68	1456.79	1384.46	1256.05	1128.05	979.73	842.38
135.0	1548.22	1531.16	1508.40	1440.13	1376.74	1256.05	1095.54	965.91	801.74
157.5	1529.12	1515.71	1490.11	1442.98	1358.86	1243.05	1093.92	967.54	815.56
180.0	1531.97	1510.03	1491.74	1447.04	1365.77	1224.36	1101.64	953.72	804.99
202.5	1550.66	1506.37	1512.06	1433.63	1355.20	1225.17	1098.39	960.22	817.19
225.0	1529.94	1535.22	1499.46	1428.75	1347.48	1230.45	1080.51	944.78	806.21
247.5	1523.44	1518.15	1500.27	1433.63	1382.84	1252.39	1099.60	969.57	818.81
270.0	1537.25	1544.16	1523.84	1471.02	1390.15	1266.21	1147.96	1008.17	864.73
292.5	1543.35	1544.16	1523.03	1482.80	1399.50	1295.06	1155.27	1027.27	893.58
315.0	1548.22	1529.12	1519.37	1499.46	1405.59	1307.66	1166.65	1024.02	880.17
337.5	1529.12	1529.94	1509.21	1476.30	1416.97	1308.88	1183.72	1039.06	896.02
360.0	1531.97	1529.94	1525.47	1489.71	1408.44	1316.60	1199.97	1044.75	901.30
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	698.94	524.61	410.83	321.84	231.62	173.51	148.32	103.21	41.45
22.5	720.88	539.64	420.99	318.99	240.97	174.33	168.23	102.00	61.36
45.0	697.31	537.20	392.14	281.61	213.74	167.42	127.19	88.18	58.92
67.5	703.41	484.79	337.68	271.04	211.71	163.76	118.66	71.93	38.20
90.0	663.18	492.91	387.26	289.73	220.25	160.51	137.35	88.18	42.67
112.5	655.46	501.45	342.97	272.67	204.80	145.07	121.09	75.58	35.76
135.0	607.91	475.85	346.62	232.03	169.86	134.50	95.09	58.52	32.51
157.5	622.95	416.92	295.02	240.97	184.08	129.63	97.93	82.90	4.47
180.0	597.75	447.40	352.72	271.45	181.64	148.32	108.90	62.17	29.26
202.5	613.60	427.89	318.18	250.72	192.61	136.13	125.97	75.18	21.13
225.0	603.85	453.09	329.96	220.65	196.27	145.07	102.40	66.64	28.85
247.5	645.30	449.02	309.64	247.47	197.49	145.48	103.62	69.89	10.16
270.0	682.68	501.04	383.60	301.11	218.62	165.79	141.82	84.12	45.51
292.5	693.65	498.19	370.60	292.98	232.03	166.20	149.54	89.40	47.54
315.0	695.28	526.64	382.38	291.76	212.12	177.17	139.38	98.74	50.79
337.5	722.50	516.07	355.56	274.70	239.35	163.76	125.97	101.18	51.20
360.0	698.94	524.61	410.83	321.84	231.62	173.51	148.32	103.21	41.45
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	8.13	0.00	0.00	0.00	0.00	0.00	0.00	2.44	0.00
22.5	6.50	0.00	4.47	0.00	2.03	5.28	1.63	0.00	0.00
45.0	0.81	0.41	0.00	0.00	7.72	7.72	0.00	0.00	0.41
67.5	0.41	0.00	0.00	2.84	0.00	0.00	0.00	0.00	6.50
90.0	0.00	2.84	1.63	0.00	0.00	0.00	0.81	0.00	0.41
112.5	0.00	4.88	0.00	0.00	0.00	0.81	1.63	3.66	0.00
135.0	0.00	0.00	0.00	0.00	0.00	4.06	6.10	6.91	0.41
157.5	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	0.00	0.00	6.50	0.41	0.00	0.00	0.00	4.06	0.00
202.5	1.63	4.88	4.06	2.03	0.00	4.06	0.00	0.00	16.25
225.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03
247.5	8.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
270.0	0.00	2.84	0.00	3.66	1.63	0.00	0.00	3.66	2.84
292.5	0.00	0.00	0.00	0.00	0.41	0.00	0.00	7.72	0.00
315.0	4.06	10.57	9.75	0.00	0.00	1.22	2.44	0.00	0.00
337.5	0.00	2.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00
360.0	8.13	0.00	0.00	0.00	0.00	0.00	0.00	2.44	0.00

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	0.00	0.00	0.00	0.00	4.47	0.00	0.00	5.69	8.13
22.5	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	4.06
45.0	0.00	0.00	0.00	0.00	6.10	8.53	0.00	0.00	0.00
67.5	0.00	1.63	0.00	0.00	0.00	0.00	6.50	0.00	0.00
90.0	0.00	0.00	0.00	13.82	1.22	0.00	0.00	0.00	0.00
112.5	0.00	16.66	0.00	0.00	0.00	0.00	0.00	0.41	2.03
135.0	0.00	1.22	0.00	2.44	0.41	3.25	0.00	2.84	0.00
157.5	0.00	6.10	0.00	1.63	6.91	0.00	0.00	3.25	1.63
180.0	0.81	0.00	3.66	8.53	0.00	0.00	0.00	0.00	0.00
202.5	12.60	0.00	4.06	0.00	4.88	13.82	2.84	0.00	0.41
225.0	4.47	2.03	0.00	0.00	1.22	4.06	0.00	0.00	0.00
247.5	0.00	0.00	0.00	0.00	0.00	17.47	4.06	0.00	0.00
270.0	0.00	0.00	0.00	0.00	5.28	0.00	0.00	2.03	0.00
292.5	0.00	0.81	0.00	0.00	6.50	0.00	3.25	1.22	2.84
315.0	4.88	11.78	0.00	0.00	2.84	0.00	0.00	0.00	0.00
337.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03
360.0	0.00	0.00	0.00	0.00	4.47	0.00	0.00	5.69	8.13

C/γ(°)	180.0
0.0	8.94
22.5	0.00
45.0	6.10
67.5	0.00
90.0	0.00
112.5	4.06
135.0	0.00
157.5	10.57
180.0	8.94
202.5	0.00
225.0	6.10
247.5	0.00
270.0	0.00
292.5	4.06
315.0	0.00
337.5	10.57
360.0	8.94