



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440226 KAI 11.6W 4000K 1400lm

Luminaire:

Report No:

Voltage(V): 230.1800

Test No: KYZ-A251011059-03-002

Current(A): 0.0526

LampCAT: LED

Power (W): 11.6000

Lamp flux(lm): -1.0

PF: 0.9589

Number of Lamps: 1

Ballast type:

Length(mm): -175

Width(mm): -175

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1400.00

Efficiency(%): 100.00%

Lumens(lm)/Power(W): 120.69

Central intensity(cd): 656.373

Maximum intensity(cd): 678.497

Angle of maximum intensity: C=135.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=85.8

[C90/270]Total=85.9

Field angle(10%Imax): [C0/180]Total=149.2

[C90/270]Total=143.2

Maximum s/h(1/2): C0_180=1.22 C90_270=1.15

Maximum s/h(1/4): C0_180=1.23 C90_270=1.17

Up flux rate of lamp(%): 0.85%

Down flux rate of lamp(%): 99.15%

Up flux rate of LUM(%): 0.85%

Down flux rate of LUM(%): 99.15%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 85.941%

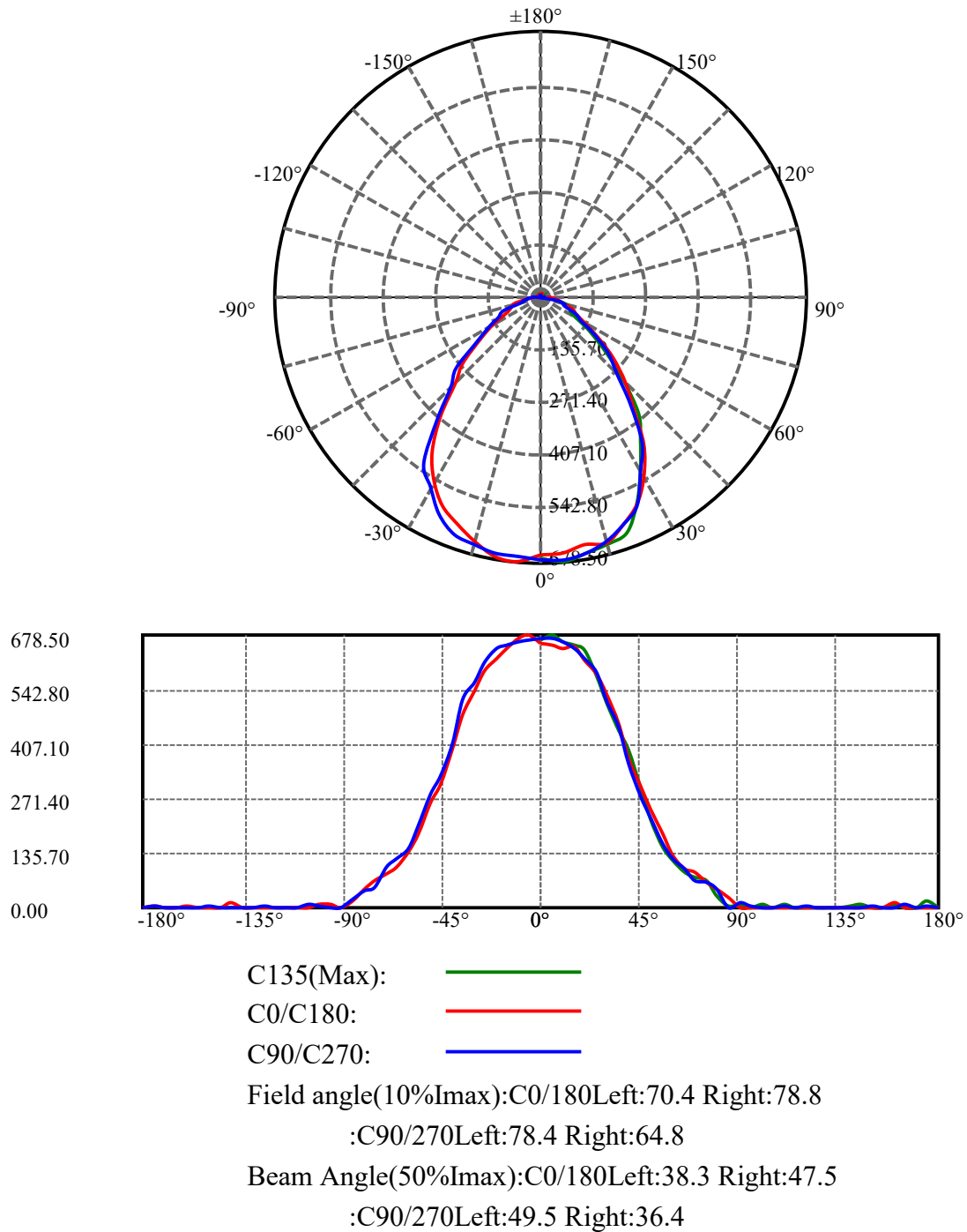
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	740.890	0.000	0	.000%	.000%
5.0	746.728	15.889	15.889	.000%	1.135%
10.0	740.266	47.527	63.416	.000%	4.530%
15.0	727.911	77.812	141.228	.000%	10.088%
20.0	700.242	105.160	246.388	.000%	17.599%
25.0	655.766	127.067	373.455	.000%	26.675%
30.0	592.609	141.151	514.606	.000%	36.758%
35.0	528.013	147.437	662.044	.000%	47.289%
40.0	439.657	144.247	806.29	.000%	57.592%
45.0	342.152	129.335	935.626	.000%	66.831%
50.0	256.702	108.115	1043.74	.000%	74.553%
55.0	197.618	88.259	1131.999	.000%	80.857%
60.0	146.978	71.166	1203.165	.000%	85.941%
65.0	114.693	56.835	1260	.000%	90.000%
70.0	90.038	46.316	1306.317	.000%	93.309%
75.0	65.112	36.233	1342.55	.000%	95.897%
80.0	41.327	25.446	1367.995	.000%	97.714%
85.0	19.604	14.792	1382.788	.000%	98.771%
90.0	2.362	5.374	1388.162	.000%	99.155%
95.0	1.982	1.063	1389.224	.000%	99.231%
100.0	3.041	1.220	1390.444	.000%	99.318%
105.0	2.987	1.441	1391.885	.000%	99.421%
110.0	2.417	1.262	1393.147	.000%	99.511%
115.0	1.276	0.835	1393.982	.000%	99.570%
120.0	0.815	0.454	1394.436	.000%	99.603%
125.0	1.222	0.421	1394.857	.000%	99.633%
130.0	2.199	0.665	1395.522	.000%	99.680%
135.0	1.955	0.750	1396.272	.000%	99.734%
140.0	2.579	0.750	1397.022	.000%	99.787%
145.0	1.874	0.664	1397.685	.000%	99.835%
150.0	2.471	0.572	1398.257	.000%	99.876%
155.0	2.064	0.513	1398.77	.000%	99.912%
160.0	3.611	0.532	1399.302	.000%	99.950%
165.0	1.249	0.358	1399.659	.000%	99.976%
170.0	1.222	0.131	1399.79	.000%	99.985%
175.0	3.693	0.157	1399.947	.000%	99.996%
180.0	0.923	0.049	1399.997	.000%	100.000%

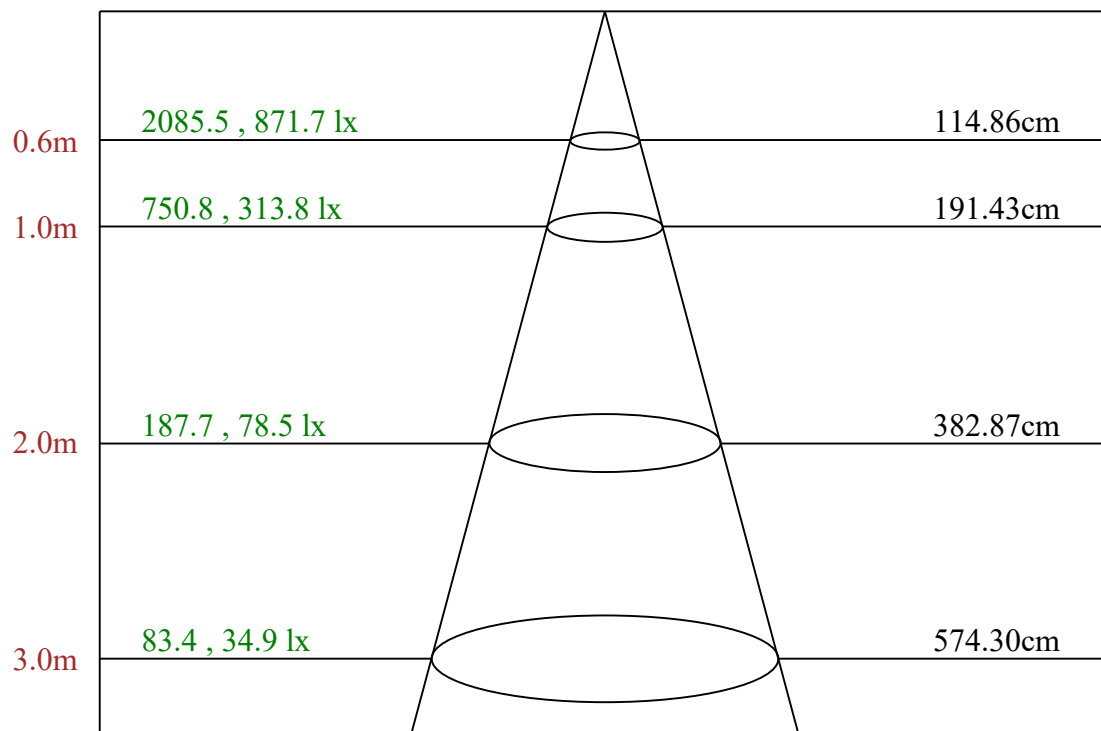
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	514.61	N.A.	36.76%
0-40	806.29	N.A.	57.59%
0-60	1203.17	N.A.	85.94%
0-90	1388.16	N.A.	99.15%
0-120	1394.44	N.A.	99.60%
0-180	1400.00	N.A.	100.00%
60-90	256.16	N.A.	18.30%
90-120	11.65	N.A.	0.83%
90-130	12.73	N.A.	0.91%
90-150	15.47	N.A.	1.10%
90-180	17.16	N.A.	1.23%
0-54.32	1120.00	N.A.	80.00%

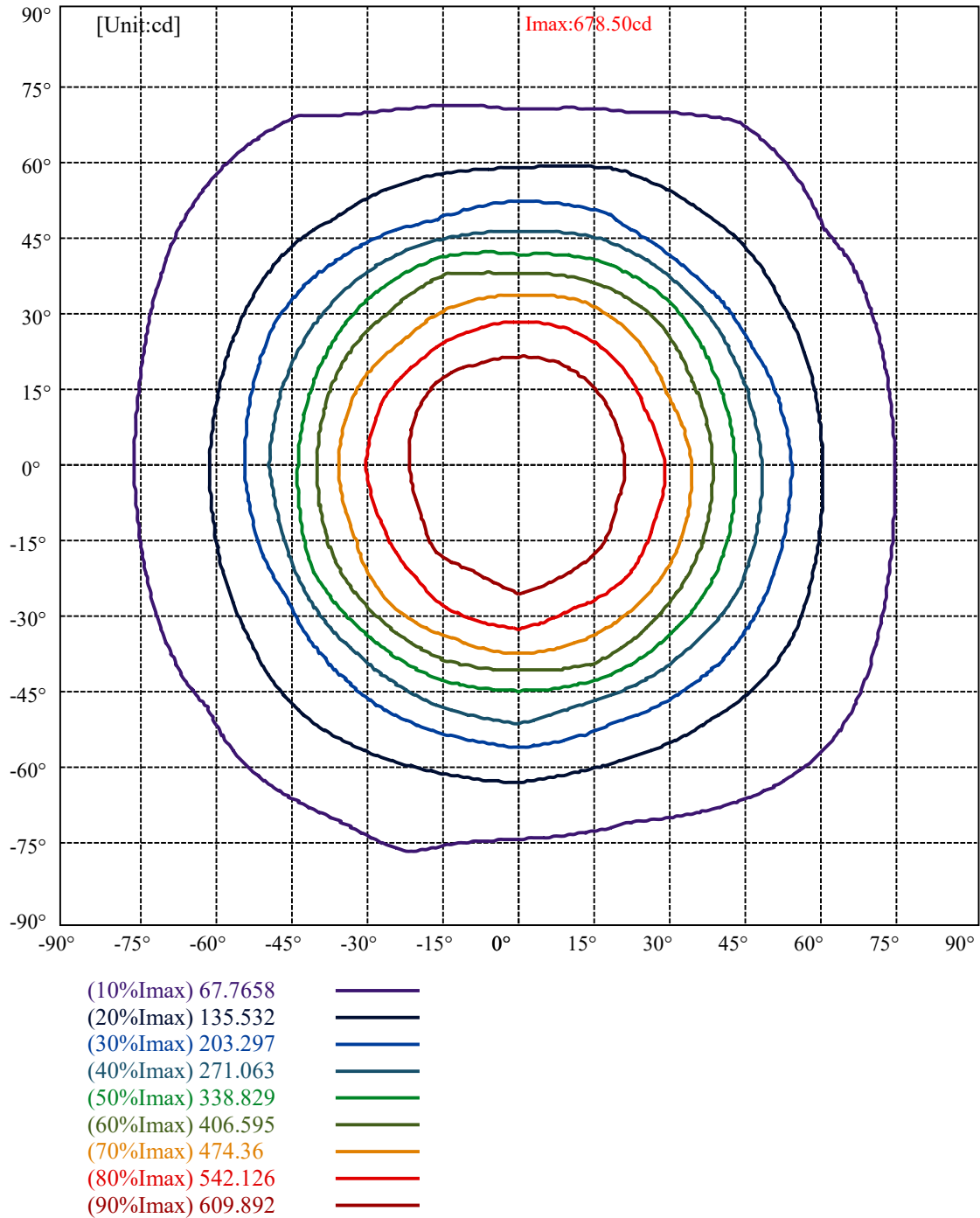
ZONAL LUMEN SUMMARY

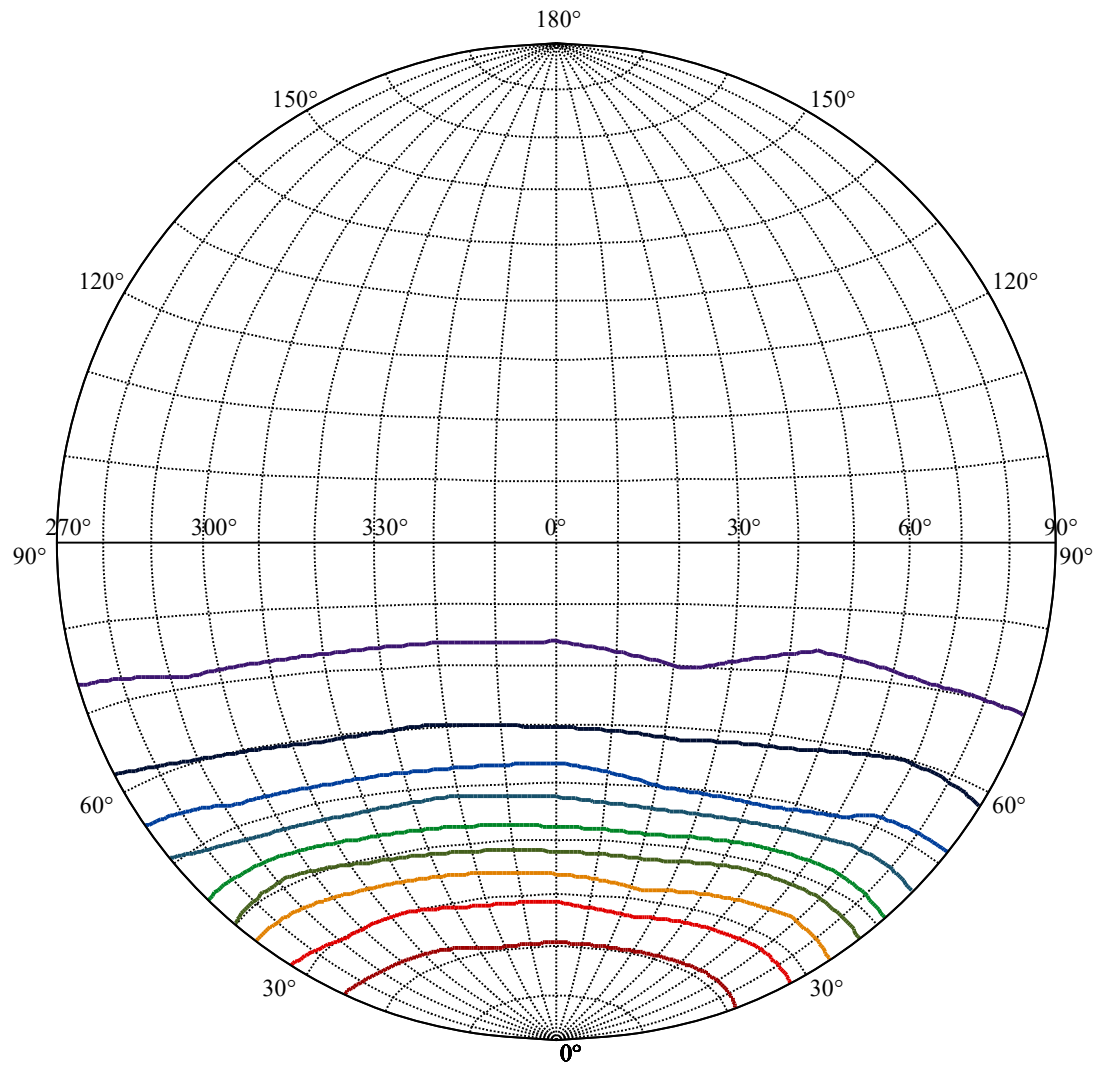
0-10	63.42
10-20	182.97
20-30	268.22
30-40	291.68
40-50	237.45
50-60	159.43
60-70	103.15
70-80	61.68
80-90	20.17
90-100	2.28
100-110	2.70
110-120	1.29
120-130	1.09
130-140	1.50
140-150	1.24
150-160	1.04
160-170	0.49
170-180	0.16





Max , Ave Beam angle of C135 plane 87.49



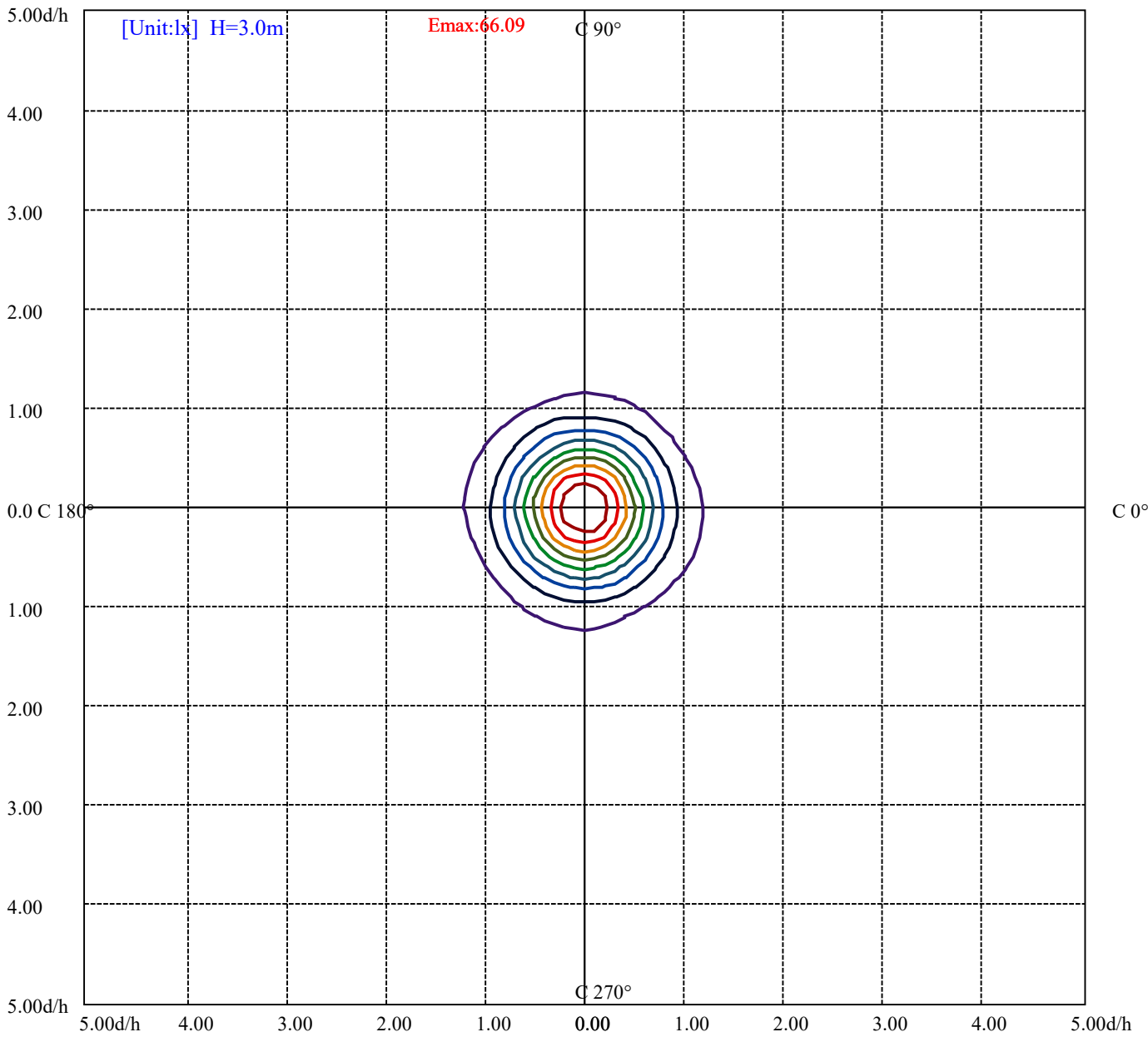


House

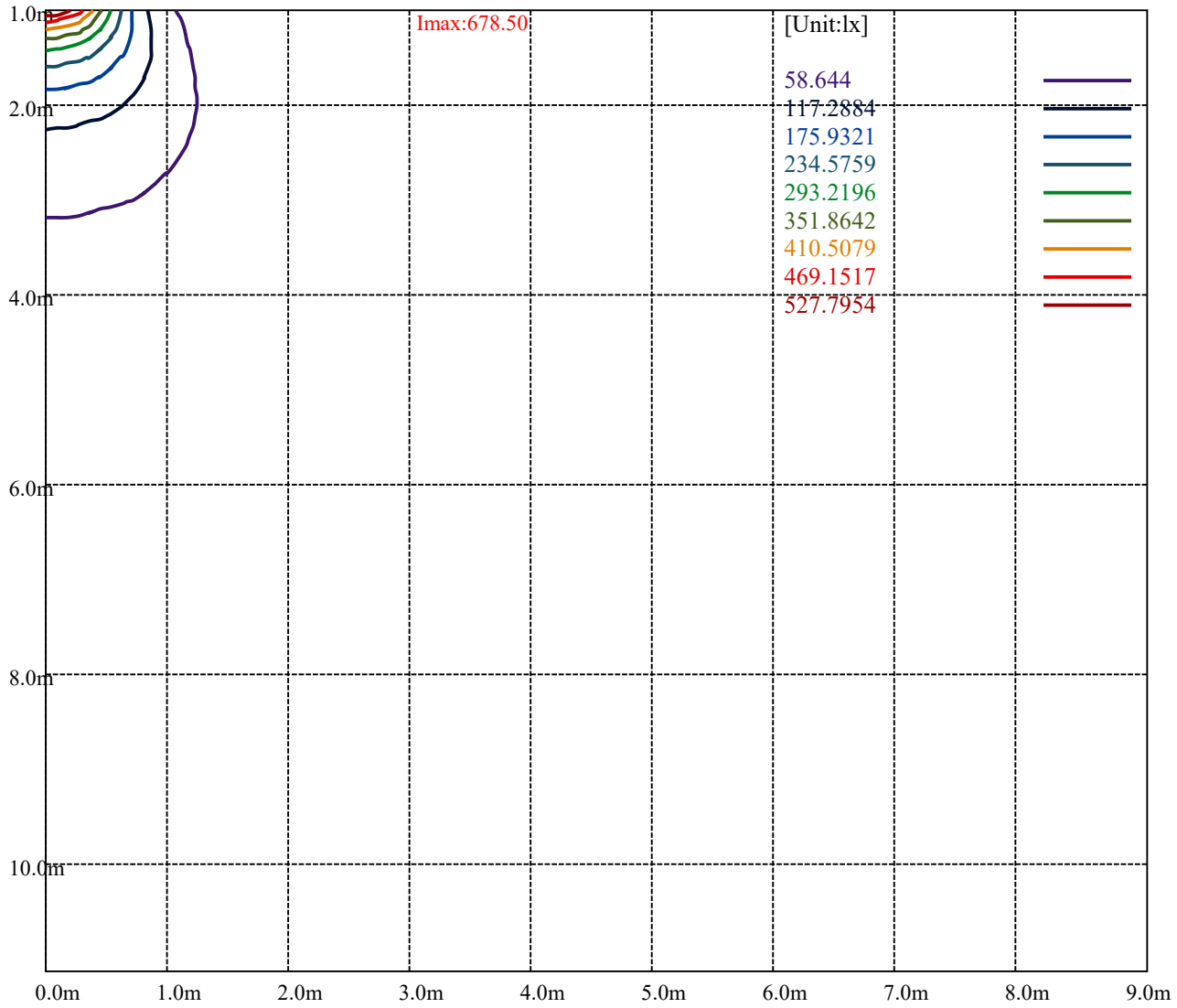
[Unit:cd]

Road

Imax:678.50	
(10%Imax) 60.62069	
(20%Imax) 121.241	
(30%Imax) 181.862	
(40%Imax) 242.4829	
(50%Imax) 303.1039	
(60%Imax) 363.7239	
(70%Imax) 424.3449	
(80%Imax) 484.9658	
(90%Imax) 545.5868	



(10%Emax)	6.608741	
(20%Emax)	13.21748	
(30%Emax)	19.82627	
(40%Emax)	26.43497	
(50%Emax)	33.04375	
(60%Emax)	39.65244	
(70%Emax)	46.26124	
(80%Emax)	52.86993	
(90%Emax)	59.47872	



Luminance Table

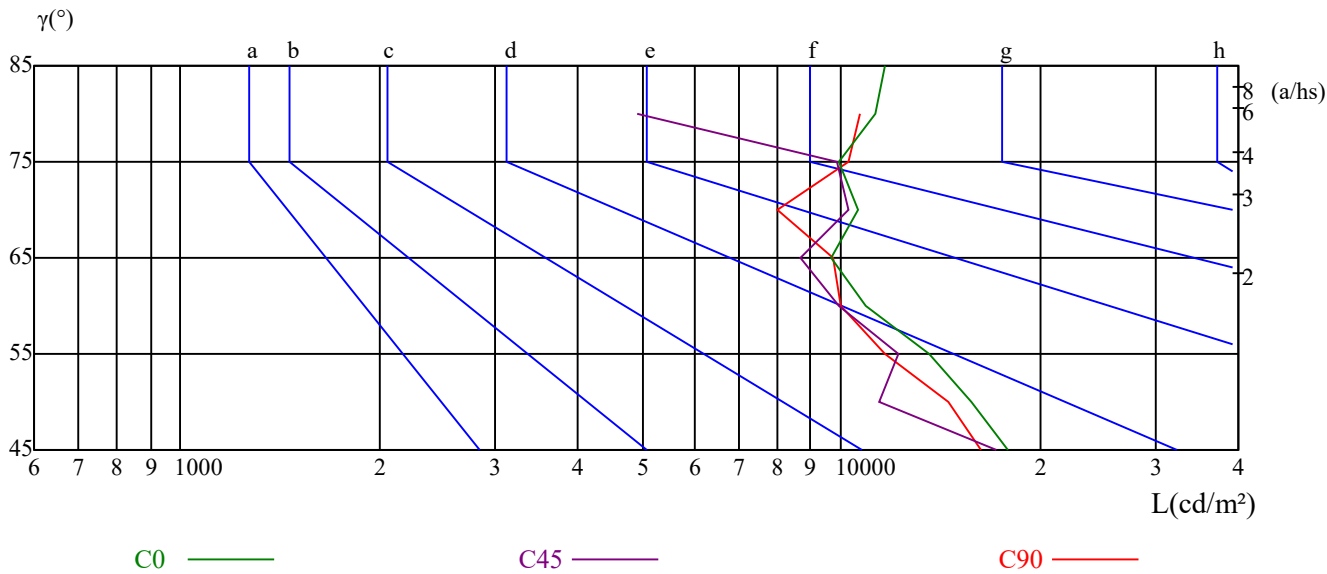
γ	45	50	55	60	65	70	75	80	85
C0	17870	15741	13561	10941	9661	10616	9914	11245	11665
C45	17185	11448	12183	9941	8668	10239	9851	4926	0
C90	16318	14536	11676	10005	9737	8021	10288	10687	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
9871	10787	9241	10537	9228	9462	9999	5277	6110

Glare Table

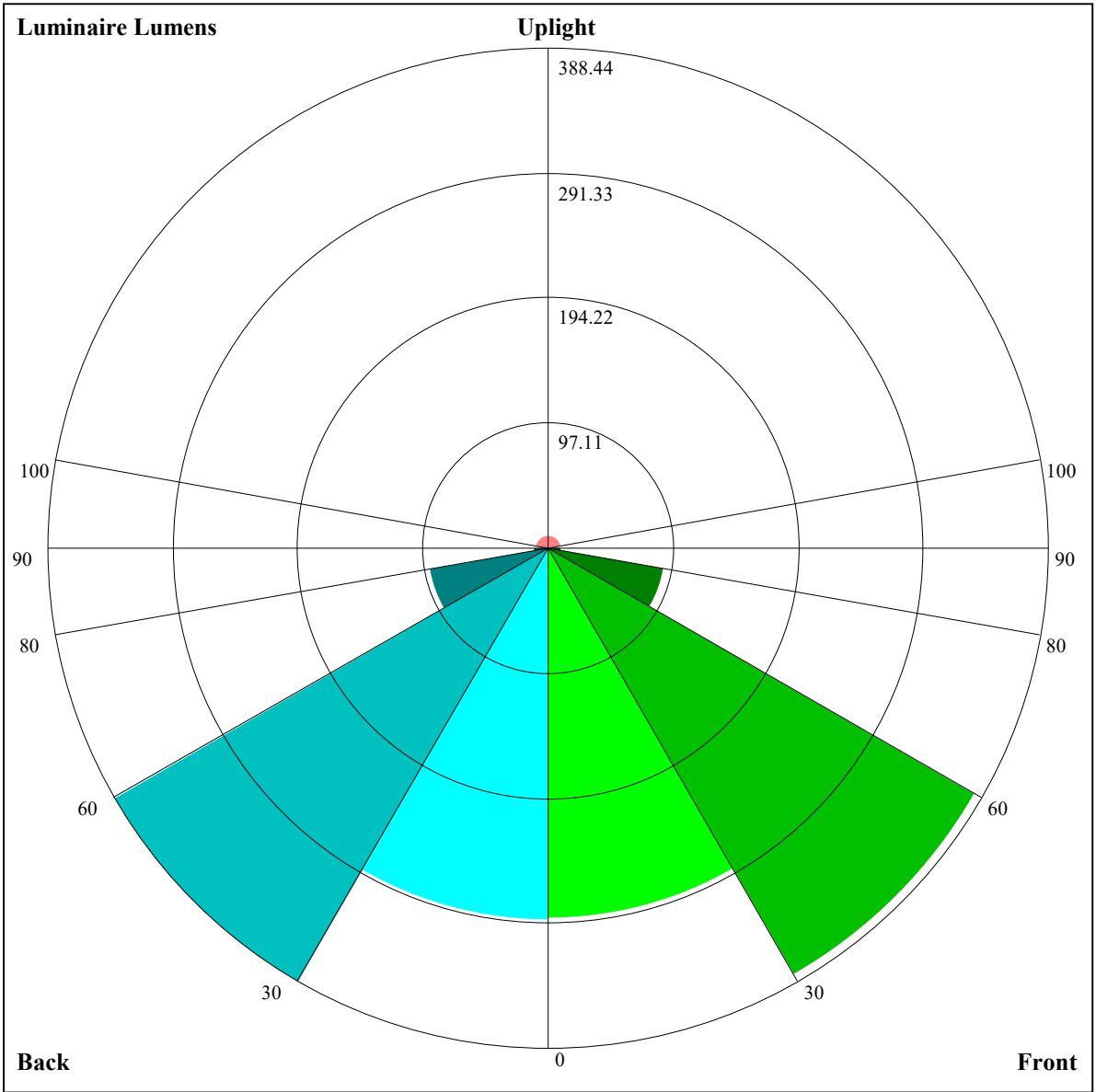
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	16.29	17.74	16.67	18.08	18.41	16.51	17.96	16.89	18.29	18.63
	3H	17.42	18.72	17.81	19.08	19.44	17.61	18.91	18.01	19.27	19.63
	4H	17.96	19.18	18.37	19.55	19.93	18.11	19.33	18.52	19.70	20.08
	6H	18.51	19.64	18.93	20.02	20.44	18.67	19.80	19.09	20.18	20.60
	8H	18.74	19.82	19.16	20.22	20.64	18.79	19.88	19.22	20.27	20.69
	12H	18.92	19.97	19.36	20.37	20.80	18.77	19.81	19.20	20.21	20.64
4H	2H	16.71	17.93	17.12	18.30	18.69	16.91	18.13	17.32	18.50	18.88
	3H	18.01	19.04	18.44	19.44	19.87	18.21	19.24	18.64	19.64	20.07
	4H	18.68	19.59	19.12	20.02	20.48	18.86	19.77	19.31	20.20	20.66
	6H	19.26	20.06	19.73	20.52	20.99	19.51	20.31	19.98	20.77	21.24
	8H	19.56	20.31	20.05	20.78	21.26	19.71	20.46	20.19	20.92	21.41
	12H	19.83	20.53	20.33	20.99	21.52	19.73	20.43	20.22	20.89	21.41
8H	4H	18.88	19.64	19.37	20.10	20.58	19.05	19.80	19.54	20.27	20.75
	6H	19.49	20.12	20.00	20.61	21.13	19.78	20.41	20.28	20.89	21.41
	8H	19.88	20.43	20.41	20.95	21.46	20.09	20.64	20.62	21.17	21.67
	12H	20.22	20.68	20.76	21.21	21.74	20.15	20.62	20.69	21.14	21.67
12H	4H	18.89	19.59	19.38	20.05	20.57	19.04	19.74	19.53	20.20	20.73
	6H	19.54	20.09	20.07	20.62	21.13	19.81	20.36	20.34	20.89	21.40
	8H	19.89	20.36	20.43	20.88	21.41	20.10	20.56	20.64	21.09	21.62
Variation with the observer position at spacings:											
S = 1.0H		0.3/-0.7					0.3/-0.5				
S = 1.5H		1.0/-1.1					0.7/-1.0				
S = 2.0H		1.5/-1.1					1.8/-1.3				
Standard tables:		BK3					BK3				
Uncorrected UGR		5.1					5.1				

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



Luminaire Lumens:

FL=287.18,FM=382.59,FH=90.86,FVH=10.52

BL=288.8,BM=388.44,BH=94.34,BVH=11.92

UL=2.55,UH=10.7

BUG Rating:B1-U2-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	656.37	655.21	642.79	647.45	616.00	581.85	529.06	458.41	372.63
22.5	651.71	665.30	656.37	643.95	614.84	571.37	493.35	443.27	363.31
45.0	661.03	661.81	668.79	649.77	616.00	582.23	508.10	456.08	385.44
67.5	657.54	668.02	667.24	642.01	621.83	579.52	522.07	464.62	376.90
90.0	670.73	670.73	661.42	645.12	617.56	586.12	513.53	452.98	357.49
112.5	669.57	676.17	658.70	652.49	619.89	579.52	513.53	456.08	402.52
135.0	666.08	678.50	662.97	652.88	641.23	579.13	511.20	443.27	390.49
157.5	662.58	662.97	660.64	644.73	625.32	591.55	533.33	470.06	395.92
180.0	656.37	676.56	670.73	646.28	617.56	588.83	541.09	480.54	397.47
202.5	651.71	668.41	673.84	650.16	618.72	579.52	532.16	471.22	406.40
225.0	661.03	665.30	669.18	659.09	634.64	596.60	535.27	504.22	401.35
247.5	657.54	662.20	651.33	648.61	636.19	585.34	561.27	490.24	415.33
270.0	670.73	664.14	662.20	653.27	643.56	611.73	561.27	517.02	408.34
292.5	669.57	670.73	669.57	664.14	638.13	596.21	541.87	489.85	403.08
315.0	666.08	655.60	657.93	652.49	633.86	586.89	544.20	478.60	396.70
337.5	662.58	673.06	648.61	653.27	614.84	577.96	530.22	471.61	384.66
360.0	656.37	655.21	642.79	647.45	616.00	581.85	529.06	458.41	372.63
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	303.93	243.37	187.09	131.59	98.20	87.34	61.72	46.97	24.45
22.5	291.51	200.68	157.59	121.88	91.99	66.37	47.35	24.84	14.36
45.0	292.28	177.00	168.07	119.55	88.11	84.23	61.33	20.57	0.00
67.5	297.72	211.55	183.99	134.30	123.05	70.26	50.07	36.87	12.42
90.0	277.53	224.74	161.08	120.33	98.98	65.99	64.05	44.64	0.00
112.5	293.83	200.68	170.40	117.61	90.44	74.53	47.74	32.22	8.93
135.0	298.88	220.08	153.32	117.22	87.72	76.86	66.76	29.50	4.27
157.5	290.73	251.91	182.82	124.21	113.34	92.38	60.16	45.80	18.24
180.0	307.03	260.84	183.99	140.12	102.47	83.45	69.48	47.35	17.47
202.5	329.16	211.55	164.19	135.08	105.97	70.26	55.51	39.59	34.93
225.0	309.75	220.86	175.83	144.39	100.14	85.78	52.40	38.43	27.17
247.5	323.72	258.51	185.15	142.07	117.61	83.84	76.86	51.24	20.96
270.0	326.83	280.25	207.66	147.89	120.33	100.53	50.85	41.92	22.12
292.5	322.95	230.18	185.93	136.24	100.14	74.91	50.46	35.32	24.45
315.0	312.08	227.07	182.82	128.87	99.76	81.51	55.12	31.05	19.80
337.5	313.24	250.36	175.06	139.74	101.31	88.89	60.94	24.45	30.66
360.0	303.93	243.37	187.09	131.59	98.20	87.34	61.72	46.97	24.45
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.78	0.00	0.78	0.00	0.00	0.00	1.16	1.94	0.00
22.5	0.00	0.00	0.00	0.00	3.49	0.00	0.00	0.00	0.00
45.0	0.00	0.00	3.49	2.72	5.43	6.21	3.11	0.00	9.70
67.5	1.16	5.43	0.00	6.60	0.00	0.00	0.00	0.00	0.00
90.0	10.87	4.27	0.00	0.00	4.27	0.00	5.82	0.00	0.00
112.5	0.00	0.00	1.55	0.00	7.37	0.00	1.55	0.39	8.15
135.0	10.48	0.00	8.15	0.00	8.93	0.00	0.00	0.00	0.00
157.5	0.00	0.00	8.15	17.47	0.00	0.00	0.00	0.00	0.00
180.0	0.00	8.93	7.76	0.78	0.00	0.00	0.00	0.00	0.00
202.5	0.00	0.00	0.00	1.16	0.00	0.00	0.00	7.76	0.00
225.0	4.66	2.33	7.76	0.00	0.00	0.00	0.00	0.00	0.00
247.5	0.00	1.55	0.00	0.00	0.00	6.21	0.00	5.05	0.00
270.0	0.00	0.00	4.27	8.15	1.55	0.00	0.00	2.33	0.00
292.5	5.82	0.00	0.00	5.82	0.00	0.00	0.00	0.00	3.88
315.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.70
337.5	0.00	5.82	1.55	0.00	3.49	5.82	0.00	0.00	0.00
360.0	0.78	0.00	0.78	0.00	0.00	0.00	1.16	1.94	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	0.00	13.59	0.78	0.00	0.78
22.5	0.00	6.99	2.72	0.00	10.87	0.00	0.00	0.00	3.11
45.0	0.00	0.00	3.88	0.00	0.00	0.00	0.00	0.00	0.00
67.5	9.32	6.60	0.00	0.00	1.55	0.00	1.55	0.00	5.43
90.0	0.00	0.39	0.00	3.49	0.00	0.00	7.37	0.00	5.82
112.5	6.21	0.00	2.72	9.32	0.00	11.26	0.00	6.21	4.27
135.0	0.00	3.88	6.60	0.00	0.00	6.60	0.00	0.00	15.14
157.5	0.00	0.00	0.00	1.94	17.08	0.00	2.72	3.88	0.00
180.0	0.00	12.42	0.00	0.00	0.00	6.21	0.78	0.00	2.72
202.5	0.00	1.16	0.00	2.33	0.00	4.66	0.00	3.88	0.00
225.0	10.48	0.00	10.09	0.00	0.00	2.72	0.00	0.00	11.64
247.5	0.00	0.00	0.00	3.11	0.00	0.00	0.00	0.00	0.00
270.0	1.94	0.00	0.00	3.88	0.00	0.00	0.00	0.00	3.88
292.5	0.00	0.00	0.00	5.82	0.00	6.60	0.00	0.00	0.00
315.0	0.00	5.43	0.78	5.43	0.00	0.00	4.66	0.00	0.00
337.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00
360.0	0.00	0.00	0.00	0.00	0.00	13.59	0.78	0.00	0.78

C/γ(°)	180.0
0.0	1.16
22.5	3.88
45.0	1.55
67.5	0.00
90.0	0.00
112.5	0.00
135.0	0.00
157.5	0.00
180.0	1.16
202.5	3.88
225.0	1.55
247.5	0.00
270.0	0.00
292.5	0.00
315.0	0.00
337.5	0.00
360.0	1.16